City Council Worksession Agenda

Worksession Meeting
October 24, 2017 at 5:00 p.m.
School District Six Board of Education Meeting Room – 1025 9th Avenue, Greeley, Colorado

1. Railroad Quiet Zone Update (5:00 – 5:30 p.m.)

   Joel Hemesath, Public Works Director

2. 3rd Quarter CIP Report (5:30 – 6:00 p.m.)

   Joel Hemesath, Public Works Director

3. Monthly Financial Report (6:00 – 6:30 p.m.)

   Victoria Runkle, Assistant City Manager

4. Scheduling of Meetings, Other Events

   Roy Otto, City Manager

A City Achieving Community Excellence

Greeley promotes a healthy, diverse economy and high quality of life responsive to all its residents and neighborhoods, thoughtfully managing its human and natural resources in a manner that creates and sustains a safe, unique, vibrant and rewarding community in which to live, work, and play.

Worksession Agenda Summary

October 24, 2017 (5:00 – 5:30 p.m.)
Agenda Item Number 1
Key Staff Contact: Joel Hemesath, Public Works Director, 350-9795

Title
Railroad Quiet Zone Update

Background
In 2016 the Federal Railroad Administration (FRA) opened train horn rules for comment nationwide and also held a meeting with FRA officials, both Colorado US Senators, our US Representative and local officials on June 17, 2016. At the City Council June 14, 2016 Worksession background information on the train horn rules and our comment letter to the FRA were presented. A follow-up report was presented to City Council on January 10, 2017 and a decision was made to conduct a preliminary Quiet Zone study to more accurately determine options and costs for future consideration. To date no changes to the federal train horn rules have come out and none are anticipated any time soon.

Preliminary Quiet Zone Study
With direction from City Council to proceed with a preliminary Quiet Zone study a Request for Proposals was prepared, advertised and distributed to known railroad engineering consultants. Six proposals were received and the top 3 rated submittals were interviewed. CTC, Inc. was selected to perform the study.

CTC began work in May and has prepared two separate reports; one for the Union Pacific Railroad (UPRR) crossings that run N/S located west of Highway 85 and one for the Great Western Railway (GWR) crossings generally running along North Greeley from 8th Ave to 'O' Street just west of 59th Ave; outlining the options and costs of establishing a Quiet Zone within Greeley.

Summary of Options
Establishing a Quiet Zone is not a quick process and involves a number of notifications, a grade crossing inventory, risk assessment and other processes contained within the FRA rules. An outline of the process is shown on the attached FRA Quiet Zone Brochure.

Initial meetings with CTC involved discussion on which Quiet Zone safety measures; medians to prevent driving around gates, 4 gates to completely close a crossing, permanent crossing closure, wayside horns, should be considered. Especially in the downtown area CTC advised against Wayside horns, both from a cost viewpoint; most crossings were amenable to using medians; and a sound perspective involving UPRR switching operations that could lead to the horns blowing more frequently, longer, and directed down roadways instead of along the railroad. Consequently the downtown area has no wayside horns and only the GWR crossing on 'O' Street has the option of a wayside horn.

Union Pacific Railroad

CTC reviewed eight UPRR crossings, from 22nd St to 5th St, and prepared recommendations and cost estimates for 4 possible options. Below are the options recommended for consideration. Of particular note is a recommendation to close 6th Street as it requires the largest cost to bring up to standards. Estimated construction for the Union Pacific quiet zone construction costs range between approximately $734,000; if 6th Street with an average daily traffic of 784 vehicles is closed, or an additional $500,000 is needed if left open due to the gates that would be needed. It should be noted that the PUMA Study completed by the DDA identifies the establishment of an east edge development area that could be negatively impacted by the closure of 6th Street. See attached reference.

UPRR Options: These recommended options are as noted in the CTC report and cost estimates are shown on the following page:

Option A: Closes 6th Street crossing and installs concrete medians at the other 7 crossings sufficient to qualify as a quiet zone.

Option B: Add medians and crossing gates to 6th Street crossing. Install concrete medians at the other 7 crossings sufficient to qualify as a quiet zone.

Great Western Railway

CTC reviewed fourteen GWR crossings, from 8th Ave to "O" St/WCR 64, including three private crossings and a Poudre River Trail crossing and prepared recommendations and cost estimates for each crossing. This report outlines three possible options available for deciding the extent of a Quiet Zone. As outlined in the report a new Quiet Zone could possibly end at 14th Ave, or extend to the "O" St/WCR 64 crossing based on either the cost or the effectiveness of a Quiet Zone. Because the GWR crossings do not have the necessary warning devices at all but the 8th Ave crossing the construction cost estimates for these crossings are demonstrably higher. These quiet zone construction costs range from approximately $1.4 million when ending the quiet zone at 14th Ave. to $4.7 million with four quad gates and ending at 'O' Street.

GWR Options: These options are as noted in the CTC report and costs summarized on the table on the following page:

Option A: Install crossing gates where needed, Quad Gate at 21st Avenue, wayside horns at 'O' Street and concrete medians at crossings sufficient to qualify as a quiet zone.

Option B: Install crossing gates where needed, Quad Gates at 11th Avenue, 14th Avenue, 21st Avenue, 'O' Street and concrete medians at crossings sufficient to qualify as a quiet zone.

Option C: End the quiet zone at 14th Avenue installing crossing gates at 9th Avenue, 11th Avenue, and 14th Avenue with concrete medians sufficient to qualify as a quiet zone.

Safety Concerns

Another issue with railroad crossings is the safety of the traveling public. While there haven't been any accidents in recent years there are crossings where a clear view of approaching trains is obstructed or the tracks are so skewed across the road that a clear view of oncoming trains is difficult, and staff has received several calls regarding concerns for the safety of these crossings. Most notably these are on the Great Western Railway with, 35th Avenue, 59th Avenue and 'O' Street being the biggest concern. However, 6th Street on the Union Pacific Railroad does also lack crossing gates to prevent

vehicles from driving across the tracks. While there may not be a desire to establish a Quiet Zone across all of the Great Western Railway crossings there might be consideration from a safety perspective to upgrade the three additional crossings. Each of the three Great Western Railway crossings noted above would cost approximately $400,000 each to provide the needed upgrades.

Cost

Depending on the desired extent of a Quiet Zone the project costs would vary as shown below:

UPRR Quiet Zone Options	**UPRR Costs**
UPRR Crossings - Option A (Close 6th St)	$734,000
UPRR Crossings - Option B (don't close 6th St)	$1,223,000
GWR Quiet Zone Options	**GWR Costs**
GWR Crossings – Option A	$4,305,000
GWR Crossings – Option B	$4,687,000
GWR Crossings – Option C	$1,365,000

NOTE: These costs are only the consultant's construction cost estimates, an additional cost for a railroad design consultant, project management, railroad engineering agreement and other expenses will be added for a final budget number depending on the extent of the project.

It should be noted that there is a difference in the number of trains each day per railroad. UPRR estimates 14 per day while GWR has 2 trains per day at most and often less. In addition, when this project was initially investigated several years ago GWR was still using a separate track system alongside the UPRR tracks. The railroads have since combined tracks near the 8th Avenue GWR crossing eliminating the need for a second set of safety measures for the 5th Street to 22nd Street crossings. As a result there are 3 crossings where removal of the old GWR tracks would be required as a part of a quiet zone project. This will require a joint application with GWR to the PUC for approval. An estimated $100,000 would be needed in this project for removal of these tracks.

Recommendation

At the January 10, 2017 Worksession Public Works' recommendation was to complete the study of all UPRR and GWR crossings for future use but proceed with a project for only the UPRR crossings in downtown.

Options for a quiet zone project are numerous based on where to start and stop it. The table below shows five of the possibilities that could be completed as one project or broken into phases as funding becomes available.

Quiet Zone Options	**Construction**	**Additional Costs***	**Total Cost**
UPRR Option A (close 6th St)	$734,000	$290,000	$1,024,000
UPRR Option B (6th St stays open)	$1,223,000	$340,000	$1,563,000
UPRR Option B & GWR to 14th Ave	$2,588,000	$370,000	$2,958,000
UPRR Option B & 35th Ave	$1,583,000	$370,000	$1,953,000

UPRR Option B, GWR to 14th Ave & 35th Ave	$2,949,000	$460,000	$3,409,000

* Additional costs include UPRR Engineering costs, GWR Track removal, Greeley Project Management and consultant costs.

Funding Options

City Council has set aside $1 million for downtown improvements that could be put towards this type of a project. This project has been included in the proposed Imagine Greeley funding as well, initially at $12 million although now will be adjusted down to about $6 million with the study now completed. With the reduced cost estimates Public Works would recommend this remain in the Imagine Greeley plans. Grant options have been investigated along with assistance from the Railroads and we did not find any opportunities. The City of Windsor did obtain a TIGER grant for their recent Quiet Zone project but the minimum grant for Greeley based on our population would be $5 million with a minimum 20% match. UPRR has already installed the safety equipment; flashing lights & gates, constant warning device and power out indicator; that is needed for a Quiet Zone as a part of their own upgrade work. GWR is not indicating a willingness to participate in the cost of a quiet zone to install the safety equipment needed. The city FASTER fund was reviewed for its use in this project since it is for bridge and road safety projects. Current annual revenue is $550,000 and is currently earmarked for the 10th Street grant match, bridge maintenance, turn lane and traffic signal projects in 2018. It would take nearly 4 years of saving and not doing any projects including bridge maintenance to accumulate funding to do a minimal quite zone. Some funding for crossings with no gate improvements may be eligible from the Road Development Fund, but would require delaying road projects to fund the railroad project. Another option is the General Fund sales tax money that carries over from 2017 and added to the already set aside $ 1 million for downtown infrastructure to fund at least the first phase which would be all of the Union Pacific Railroad crossings and install gates on the Great Western line at 35th Avenue to improve safety of this crossing. This would be a project totaling $1,963,000.

Next Steps, Timeline

As noted this report and the diagnostic review conducted with the Railroads, the CPUC and the FRA has started the necessary steps for implementation of a Quiet Zone. In accordance with the FRA requirements the next step is to provide a Notice of Intent (NOI) that we wish to establish a Quiet Zone. We will need a consultant such as CTC, Inc. to provide this assistance. Comments on the NOI are required within 60 days. As not all crossings are fully compliant there is an additional 60 day comment period on the proposed improvements followed by an FRA review typically taking up to 4 months. Once that is approved the next steps are design, construction and final notification of the establishment of a Quiet Zone. Optimistically this is a 2 year project given that approvals from FRA or the CPUC do not have a time limit and responses from the railroads have been historically slow.

Council Direction Requested

1. Should a quiet zone move forward and a first phase project on the UPRR crossings as well as gates on the GWR at 35th Avenue?

2. Should the scope expand to include some of the GWR crossings or crossings with safety concerns?

Attachments
FRA Quiet Zone Brochure
CTC Quiet Zone Evaluation Report – Union Pacific Corridor
CTC Quiet Zone Evaluation Report – Great Western Corridor
Crossings Map
Referred Sections from PUMA Study

GUIDE TO THE QUIET ZONE ESTABLISHMENT PROCESS

AN INFORMATION GUIDE

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www.fra.dot.gov

Federal Railroad Administration
Highway-Rail Crossing and Trespasser Programs Division
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Purpose of the Guide

This brochure was developed to serve as a guide for local decision makers seeking a greater understanding of train horn sounding requirements and how to establish quiet zones. Its purpose is to provide a general overview and thus does not contain every detail about the quiet zone establishment process. For more detailed and authoritative information, the reader is encouraged to review the official regulations governing the use of locomotive horns at public highway-rail grade crossings and the establishment of quiet zones that are contained in 49 CFR Part 222. A copy of the rule can be downloaded or printed at http://www.fra.dot.gov/eLib/Details/L02809.

About Quiet Zones

FRA is committed to reducing the number of collisions at highway-rail grade crossings, while establishing a consistent standard for communities who opt to preserve or enhance quality of life for their residents by establishing quiet zones within which routine use of train horns at crossings is prohibited.

Federal regulation requires that locomotive horns begin sounding 15–20 seconds before entering public highway-rail grade crossings, no more than one-quarter mile in advance. Only a public authority, the governmental entity responsible for traffic control or law enforcement at the crossings, is permitted to create quiet zones.

A quiet zone is a section of a rail line at least one-half mile in length that contains one or more consecutive public highway-rail grade crossings at which locomotive horns are not routinely sounded when trains are approaching the crossings. The prohibited use of train horns at quiet zones only applies to trains when approaching and entering crossings and does not include train horn use within passenger stations or rail yards. Train horns may be sounded in emergency situations or to comply with other railroad or FRA rules even within a quiet zone. Quiet zone regulations also do not eliminate the use of locomotive bells at crossings. Therefore, a more appropriate description of a designated quiet zone would be a "reduced train horn area."

Communities wishing to establish quiet zones must work through the appropriate public authority that is responsible for traffic control or law enforcement at the crossings.

Historical Context

Historically, railroads have sounded locomotive horns or whistles in advance of grade crossings and under other circumstances as a universal safety precaution. Some States allowed local communities to create whistle bans where the train horn was not routinely sounded. In other States, communities created whistle bans through informal agreements with railroads.

In the late 1980's, FRA observed a significant increase in nighttime train-vehicle collisions at certain gated highway-rail grade crossings on the Florida East Coast Railway (FEC) at which nighttime whistle bans had been established in accordance with State statute In 1991, FRA issued Emergency Order #15 requiring trains on the FEC to sound their horns again. The number and rate of collisions at affected crossings returned to pre-whistle ban levels.

In 1994, Congress enacted a law that required FRA to issue a Federal regulation requiring the sounding of locomotive horns at public highway-rail grade crossings. It also gave FRA the ability to provide for exceptions to that requirement by allowing communities under some circumstances to establish "quiet zones."

The Train Horn Rule became effective on June 24, 2005. The rule set nationwide standards for the sounding of train horns at public highway-rail grade crossings. This rule changed the criteria for sounding the horn from distance-based to time-based. It also set limits on the volume of a train horn. The rule also established a process for communities to obtain relief from the routine sounding of train horns by providing criteria for the establishment of quiet zones. Locomotive horns may still be used in the case of an emergency and to comply with Federal regulations or certain railroad rules.

Public Safety Considerations

Because the absence of routine horn sounding increases the risk of a crossing collision, a public authority that desires to establish a quiet zone usually will be required to mitigate this additional risk. At a minimum, each public highway–rail crossing within a quiet zone must be equipped with active warning devices: flashing lights, gates, constant warning time devices (except in rare circumstances) and power out indicators.

In order to create a quiet zone, one of the following conditions must be met

1. ***The Quiet Zone Risk Index (QZRI)* is less than or equal to the *Nationwide Significant Risk Threshold (NSRT)*** with or without additional safety measures such as Supplementary Safety Measures (SSMs) or Alternative Safety Measures (ASMs) described below. The QZRI is the average risk for all public highway-rail crossings in the quiet zone, including the additional risk for absence of train horns and any reduction in risk due to the risk mitigation measures. The NSRT is the level of risk calculated annually by averaging the risk at all of the Nation's public highway-rail grade crossings equipped with flashing lights and gates where train horns are routinely sounded.
2. ***The Quiet Zone Risk Index (QZRI) is less than or equal to the Risk Index With Horns (RIWH)*** with additional safety measures such as SSMs or ASMs. The RIWH is the average risk for all public highway-rail crossings in the proposed quiet zone when locomotive horns are routinely sounded.
3. ***Install SSMs at every public highway-rail crossing***. This is the best method to reduce to reduce risks in a proposed quiet zone and to enhance safety.

SSMs are pre-approved risk reduction engineering treatments installed at certain public highway-rail crossings within the quiet zone and can help maximize safety benefits and minimize risk. SSMs include: medians or channelization devices, one-way streets with gates, four quadrant gate systems, and temporary or permanent crossing closures. Examples of SSMs are shown on the next page.

ASMs are safety systems, other than SSMs, that are used to reduce risk in a quiet zone. ASMs typically are improvements that do not fully meet the requirements to be SSMs and their risk reduction effectiveness must be submitted in writing and approved by FRA.

FRA strongly recommends that all crossings in the quiet zone be reviewed by a diagnostic team. A diagnostic team typically consists of representatives from the public authority, railroad, and State agency responsible for crossing safety and FRA grade crossing managers.

Public Safety Considerations continued

Examples of SSMs

Crossing Closure

Four Quadrant Gate System

Gates with Channelization Devices

Gates with Medians

Wayside Horns The train horn rule also provides another method for reducing the impact of routine locomotive horn sounding when trains approach public highway-rail grade crossings. A wayside horn may be installed at highway-rail grade crossings that have flashing lights, gates, constant warning time devices (except in rare circumstances), and power out indicators. The wayside horn is positioned at the crossing and will sound when the warning devices are activated. The sound is directed down the roadway, which greatly reduces the noise footprint of the audible warning. Use of wayside horns is not the same as establishing a quiet zone although they may be used within quiet zones.

Cost Considerations

The enabling Federal statute did not provide funding for the establishment of quiet zones. Public authorities seeking to establish quiet zones should be prepared to finance the installation of SSMs and ASMs used. Costs can vary from $30,000 per crossing to more than $1 million depending on the number of crossings and the types of safety improvements required.

Legal Considerations

The courts will ultimately determine who will be held liable if a collision occurs at a grade crossing located within a quiet zone, based upon the facts of each case, as a collision may have been caused by factors other than the absence of an audible warning. FRA's rule is intended to remove failure to sound the horn as a cause of action in lawsuits involving collisions that have occurred at grade crossings within duly established quiet zones.

The Quiet Zone Establishment Process

Under the Train Horn Rule, only public authorities are permitted to establish quiet zones. Citizens who wish to have a quiet zone in their neighborhood should contact their local government to pursue the establishment of a quiet zone. The following is a typical example of the steps taken to establish a quiet zone:

1. ***Determine*** which crossings will be included in the quiet zone. All public highway-rail crossings in the quiet zone must have, at a minimum, an automatic warning system consisting of flashing lights and gates. The warning systems must be equipped with constant warning time devices (except in rare circumstances) and power out indicators. The length of the quiet zone must be at least one-half mile in length.

2. ***Identify*** any private highway-rail grade crossings within the proposed quiet zone. If they allow access to the public or provide access to active industrial or commercial sites, a diagnostic review must be conducted and the crossing(s) treated in accordance with the recommendations of the diagnostic team.

3. ***Identify*** any pedestrian crossings within the proposed quiet zone and conduct a diagnostic review of those crossings too. They also must be treated in accordance with the diagnostic team's recommendations. *NOTE:* While it is not required by the regulations, FRA recommends that every crossing within a proposed quiet zone be reviewed for safety concerns.

4. ***Update*** the U.S. DOT Crossing Inventory Form to reflect current physical and operating conditions at each public, private, and pedestrian crossing located within a proposed quiet zone.

5. ***Provide*** a Notice of Intent (NOI) to all of the railroads that operate over crossings in the proposed quiet zone, the State agency responsible for highway safety and the State agency responsible for crossing safety. The NOI must list all of the crossings in the proposed quiet zone and give a brief explanation of the tentative plans for implementing improvements within the quiet zone. Additional required elements of the NOI can be found in 49 CFR 222.43(b). The railroads and State agencies have 60 days in which to provide comments to the public authority on the proposed plan.

6. ***Alternative Safety Measures*** – If ASMs are going to be used to reduce risk, an application to FRA must be made. The application must include all of the elements provided in 49 CFR 222.39(b)(1) and copies of the application must be sent to the entities listed in 49 CFR 222.39(b)(3). They will have 60 days to provide comments to FRA on the application. FRA will provide a written decision on the application typically within three to four months after it is received.

The Quiet Zone Establishment Process continued

7. ***Determine*** how the quiet zone will be established using one of the following criteria: (Note that Options 2 through 4 will require the use of the FRA Quiet Zone Calculator available at http://safetydata.fra.dot.gov/quiet/.)

1. Every public highway-rail crossing in the proposed quiet zone is equipped with one or more SSMs.
2. The Quiet Zone Risk Index (QZRI) of the proposed quiet zone is less than or equal to the Nationwide Significant Risk Threshold (NSRT) without installing SSMs or ASMs.
3. The QZRI of the proposed quiet zone is less than or equal to the Nationwide Significant Risk Threshold (NSRT) after the installation of SSMs or ASMs.
4. The QZRI of the proposed quiet zone is less than or equal to the Risk Index with Horns (RIWH) after the installation of SSMs or ASMs.

8. ***Complete*** the installation of SSMs and ASMs and any other required improvements determined by the diagnostic team at all public, private, and pedestrian crossings within the proposed quiet zone.

9. ***Ensure*** that the required signage at each public, private, and pedestrian crossing is installed in accordance with 49 CFR Sections 222.25, 222.27, and 222.35, and the standards outlined in the Manual on Uniform Traffic Control Devices. These signs may need to be covered until the quiet zone is in effect.

10. ***Establish*** the quiet zone by providing a Notice of Quiet Zone Establishment to all of the parties that are listed in 49 CFR Section 222.43(a)(3). Be sure to include all of the required contents in the notice as listed in 49 CFR Section 222.43(d). The quiet zone can take effect no earlier than 21 days after the date on which the Notice of Quiet Zone Establishment is mailed.

*****Appendix C to the Train Horn Rule provides detailed, step by step guidance on how to create a quiet zone.*****

Required Documentation

Public authorities interested in establishing a quiet zone are required to submit certain documentation during the establishment process. FRA has provided checklists for the various documents that can be found at http://www.fra.dot.gov/Elib/Details/L03055.

FRA's Regional Grade Crossing Managers are available to provide technical assistance. A State's department of transportation or rail regulatory agency also may be able to provide assistance to communities pursuing quiet zones.

Public authorities are encouraged to consult with the agencies in their State that have responsibility for crossing safety. Some States may have additional administrative or legal requirements that must be met in order to modify a public highway-rail grade crossing.

Role of Railroads

Communities seeking to establish a quiet zone are required to send a Notice of Intent and a Notice of Quiet Zone Establishment to railroads operating over the public highway-rail grade crossings within the proposed quiet zone. Railroad officials can provide valuable input during the quiet zone establishment process and should be included on all diagnostic teams. Listed below are links to the Class I Railroads and Amtrak.

BNSF Railway (BNSF)	Canadian Pacific (CP)
CSX Transportation (CSX)	Norfolk Southern (NS)
Canadian National (CN)	Union Pacific (UP)
Kansas City Southern (KCS)	Amtrak (ATK)

FINAL NOTE

The information contained in this brochure is provided as general guidance related to the Quiet Zone Establishment Process and should not be considered as a definitive resource. FRA strongly recommends that any public authority desiring to establish quiet zones take the opportunity to review all aspects of safety along its rail corridor. Particular attention should be given to measures that prevent trespassing on railroad tracks since investments made to establish a quiet zone may be negated if the horn has to be routinely sounded to warn trespassers.

POINTS OF CONTACT

General Questions:

Inga Toye, 202-493-6305
Debra Chappell, 202-493-6018
Ron Ries, 202-493-6285

Regional Contacts

Region 1 Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont
1-800-724-5991

Region 2 Delaware, Maryland, Ohio, Pennsylvania, Virginia, West Virginia , and Washington, D.C.
1-800-724-5992

Region 3 Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee
1-800-724-5993

Region 4 Illinois, Indiana, Michigan, Minnesota, and Wisconsin
1-800-724-5040

Region 5 Arkansas, Louisiana, New Mexico, Oklahoma, and Texas
1-800-724-5995

Region 6 Colorado, Iowa, Kansas, Missouri, and Nebraska
1-800-724-5996

Region 7 Arizona, California, Nevada, and Utah
1-800-724-5997

Region 8 Alaska, Idaho, Montana, North Dakota, South Dakota, Oregon, Washington, and Wyoming
1-800-724-5998

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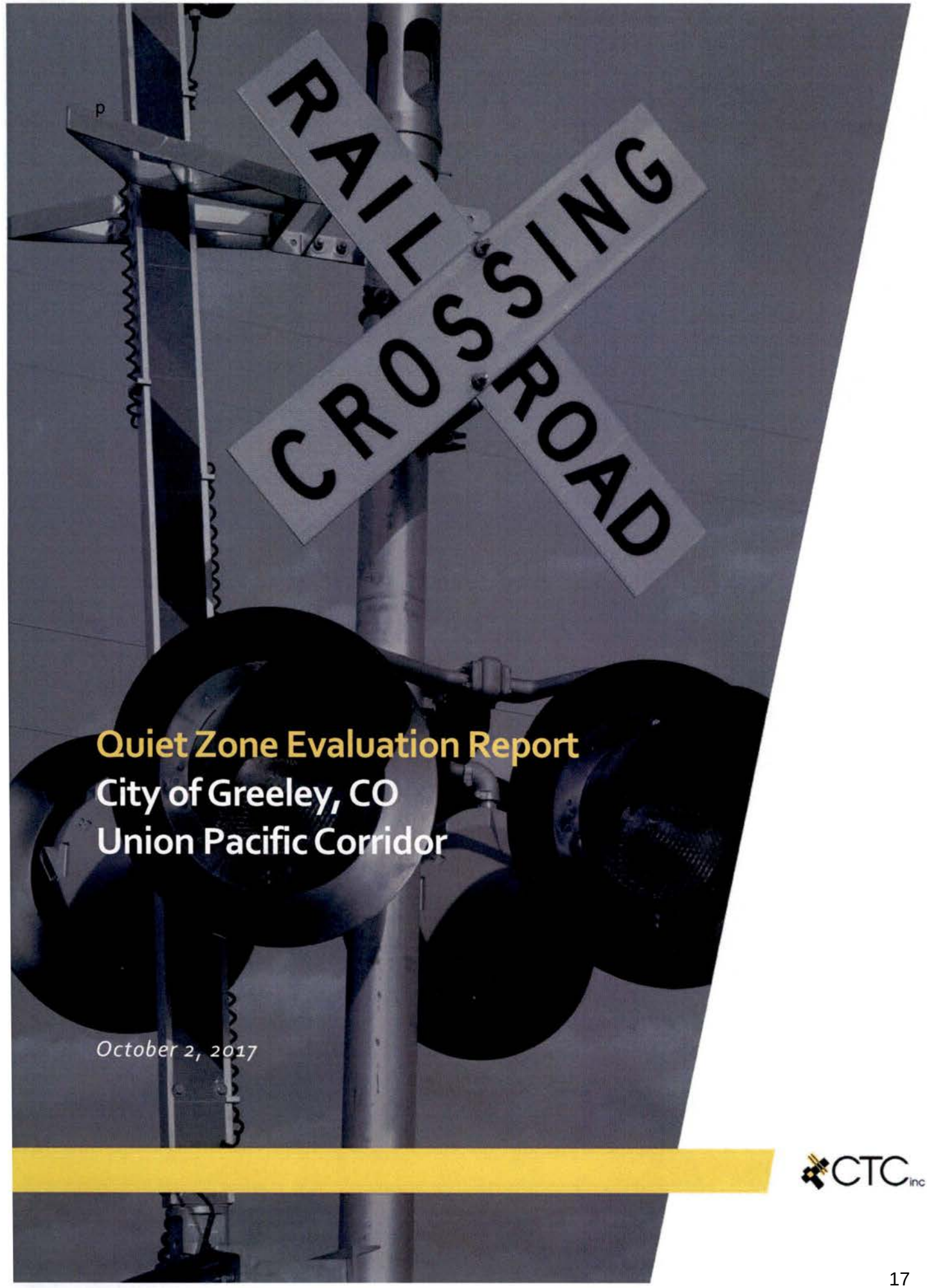

Quiet Zone Evaluation Report
City of Greeley, CO
Union Pacific Corridor

October 2, 2017

CTC inc

Contents

I. Introduction

The City of Greeley (City), in its effort to explore the possibility of prohibiting the sounding of train horns along the Union Pacific Railroad Company (Railroad) through their community, requested CTC, Inc. (CTC) to conduct an evaluation to determine the feasibility and approximate cost associated with creating a new quiet zone through Greeley, Colorado.

In 2005, the Federal Railroad Administration (FRA) issued 49 CFR Parts 222 and 229, the *Final Rule on Use of Locomotive Horns at Highway-Rail Grade Crossings* (Final Rule). The purpose of the rule is to mandate a federal requirement for the sounding of locomotive horns at all public highway-rail grade crossings. The rule also establishes both minimum and maximum decibel levels for the locomotive horns themselves. While the purpose of the rule was to require the sounding of locomotive horns, it also created a methodology by which communities could create quiet zones. The final rule was revised and published August 17, 2006.

In accordance with the Final Rule, locomotive horn sounding is not required if each public highway-rail grade crossing is equipped with Supplemental Safety Measures (SSMs) within the proposed quiet zone. SSMs are safety measures that have been determined by the FRA to adequately compensate for the lack of a locomotive horn. Examples of SSMs include:

- Temporary Closure (can only be used in a Partial Quiet Zone)
- Four-quadrant gate systems installed with or without vehicle detection
- Gates with non-transversable median barriers at least 100 feet in length on each side (60 feet if parallel roads or commercial driveways are present)
- Gates with channelization devices at least 100 feet in length on each side (60 feet if parallel roads or commercial driveways are present)
- One-way streets with gates that completely close off the roadway
- Permanent Closure

Another possibility for use as a treatment in lieu of a SSM is the Wayside Horn System (WHS). The WHS may be used either within or outside of a quiet zone as a one-for-one replacement for the train horn. The WHS is a traffic control device that is mounted at the highway-rail grade crossing and interconnected to the railroad's grade crossing warning system. It is required to sound at a minimum level of 92 dB measured 100 feet along the roadway approach from the nearest track (49 CFR 222, Appendix E, 4). Many communities have implemented this technology as a means of reducing train horn noise levels.

In addition, locomotive horn sounding is not required within highway-rail grade crossing corridors that have a Quiet Zone Risk Index (QZRI) at or below the Nationwide Significant Risk Threshold (NSRT) or the Risk Index with Horns (RIWH). Definitions of each of these terms are listed below:

Quiet Zone Risk Index (QZRI) is the average risk in the proposed quiet zone taking into consideration the increased risk caused by the lack of train horns and the reductions in risk attributable to the installation of SSMs or Alternative Safety Measures (ASMs).

Nationwide Significant Risk Threshold (NSRT) represents a number reflecting a measure of risk, calculated on a nationwide basis, which reflects the average level of risk to the motoring public at public highway-rail grade crossings equipped with flashing lights and gates and at which locomotive horns are sounded.

Risk Index with Horns (RIWH) represents the average initial amount of risk in the proposed quiet zone with the train horn sounding.

Highway-rail grade crossing corridors that have a QZRI ≤ NSRT or RIWH have been deemed, by the FRA, to constitute categories of highway-rail grade crossings that do not present a significant risk with respect to loss of life or serious personal injury or that fully compensate for the absence of the warning provided by the locomotive horn. As a result, communities with highway-rail grade crossing corridors that meet either of these standards may silence the locomotive horn within the crossing corridor if all other applicable quiet zone requirements have been met.

Please note, the establishment of a quiet zone does not result in total elimination of all train horn noise. The Final Rule allows for the locomotive engineer to sound the locomotive horn to provide a warning to vehicle operators, animals, pedestrians, trespassers or crews on other trains in an emergency situation if, in the locomotive engineer's sole judgment, such action is appropriate in order to prevent imminent injury, death or property damage. In addition, nothing in the rule prohibits the use of the locomotive horn in the following situations:

1. When active grade crossing devices have malfunctioned, and use of the horn is required.
2. When grade crossing warning systems are temporarily out of service during inspection, maintenance or testing of the systems.
3. When the SSM, modified SSMs or engineered SSMs no longer comply with the requirements of the rule or as approved by the FRA.
4. There is no restriction for the sounding of the locomotive horn for the purposes of highway-rail crossing safety such as, to announce the approach to roadway workers under chapter 49 or required purposes under railroad operating rules.
5. When a wayside horn is malfunctioning.

The City should make every effort to educate the public through public meetings, website, and news articles that some trains will sound horns after the quiet zone is established. CTC's experience has also indicated that it takes approximately 30-45 days for all railroad engineers to become familiar with a new quiet zone and cease blowing the train horns on a consistent basis. The City should make the public aware of the "grace period" needed once the quiet zone is established.

II. Proposed Quiet Zone Corridor

The City is interested in determining the improvements required and the approximate cost to create a new quiet zone along Union Pacific Railroad, Greeley Subdivision located near the downtown area of Greeley, Colorado. The proposed quiet zone corridor is shown in Figure 1. The Railroad runs approximately 14 trains per day at maximum authorized speed of 50 MPH on this subdivision through the city. The highway-rail grade crossings that were evaluated are described in the table below.

Table 1. Proposed Quiet Zone Crossings

Street	DOT No.	Railroad Milepost (MP)	Subdivision	Nearest Parallel Street
5th Street	804851U	52.08	Greeley	6th Avenue
6th Street	804373W	51.98	Greeley	6th Avenue
8th Street	804372P	51.82	Greeley	7th Avenue
10th Street	804370B	51.69	Greeley	6th Avenue
13th Street	804367T	51.37	Greeley	6th Avenue
16th Street	804366L	51.05	Greeley	17th Street
18th Street	804365E	50.79	Greeley	5th Avenue/BUS 34
22nd Street	816131K	50.25	Greeley	4th Avenue

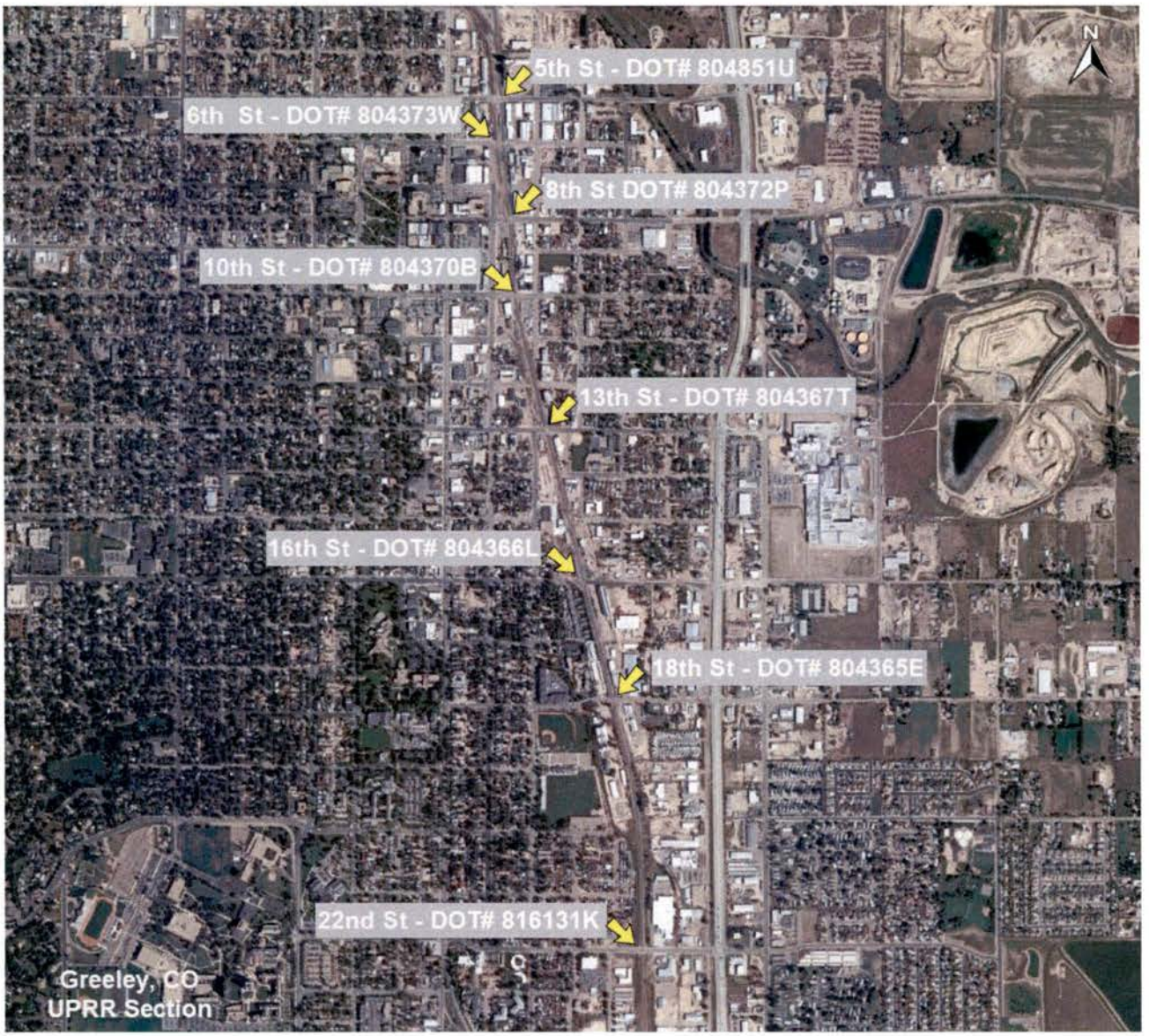

Figure 1. Overall View of Proposed Quiet Zone

The limits of the proposed quiet zone will extend from MP 52.33 (0.25 miles north of 5th Street) to MP 50.00 (0.25 miles south of 22nd Street) for an actual quiet zone length of 2.33 miles. However, due to the location of adjacent crossings within the corridor, the effective length of the proposed quiet zone will be significantly longer. The closest highway-rail grade crossing north of the proposed quiet zone is O street at MP 53.71. The closest highway-rail grade crossing south of the proposed quiet zone is 31st Street at MP 48.98. As a result, the effective length of the proposed quiet zone will be approximately 4.22 miles.

III. Summary of Quiet Zone Safety Improvement Options

CTC conducted a field review of the grade crossings within the proposed Greeley quiet zone on the afternoon of May 31, 2017. The purpose of the review was to evaluate proposed crossings for basic quiet zone requirements and review quiet zone concepts in preparation for the City team meeting and future diagnostic meeting with the Railroad and the FRA. Options available to the City for the creation of the quiet zone were presented after the field evaluation. Factors considered in the evaluation were safety, compliance with the FRA rules, public acceptance and budgetary constraints for the implementation of the proposed quiet zone.

As recommended in 49 CFR 222, Appendix F the crossings proposed for inclusion in a quiet zone should be reviewed in the field by a diagnostic team composed of railroad personnel, public safety or law enforcement, engineering personnel from the State Agency responsible for grade crossing safety and other concerned parties. A diagnostic meeting was conducted on July 25, 2017 consisting of representatives from the City of Greeley, Union Pacific Railroad, Federal Railroad Administration (FRA), Colorado Public Utility Commission (CPUC) and CTC reviewed each of the highway-rail grade crossings in the proposed quiet zone for consideration of the options for approved SSMs as provided in 49 CFR 222, Appendix A. The diagnostic team members in attendance are listed in Appendix A and the diagnostic notes are located in Appendix B.

The Final Rule, Appendix A to Part 222 A, provides a list of approved supplementary safety measures (SSMs) that may be installed at each crossing within a quiet zone for risk reduction credit.

Each SSM has been assigned an effectiveness rate which is defined as a number between zero and one and represents the reduction of the likelihood of a collision at a public highway-rail grade crossing. This reduction is a result of the installation of an SSM or ASM when compared to the same crossing equipped with conventional active warning systems of flashing lights and gates. Zero effectiveness means that the SSM or ASM provides no reduction in the probability of a collision, while an effectiveness rating of one means that the SSM or ASM is 100% effective in eliminating collision risk.

The effectiveness rate for SSMs are as follows:

Approved Supplemental Safety Measure (SSM)	Effectiveness Rate
Temporary or Permanent Closure of a crossing	1.00
One-Way Street with gates	0.82
Gates with Medians (non-traversable curbs)	0.80
Four Quadrant Gate System with presence detection	0.77
Gates with channelization devices	0.75

The options of wayside horn systems and converting the existing two-way streets to one-way were discussed by the diagnostic team but ruled out as options. Conversion to one-way streets were ruled out due to the anticipated impact on businesses, public acceptance and the ability to maintain effective traffic flow throughout the city. Although the wayside horns result in a significant reduction in the number of citizens that would hear the horns, the horn systems would continue to impact the downtown area as well as some residential areas and the city did not find that acceptable as part of an effective quiet zone.

After consideration of remaining quiet zone treatment options for implementing safety improvements at each crossing, the following table was created to outline the preferred option for each location. The team also identified which options were acceptable at each crossing as shown below.

The results of that evaluation are shown as follows:

- P - Preferred Supplemental Safety Measure
- O - Optional Supplemental Safety Measure
- U - Undesirable (due to public acceptability or budget constraints)

Table 2. Supplemental Safety Measures Options

Street or Road Name	DOT No.	Crossing Closure (SSM)	Four-Quadrant Gate System (SSM)	Concrete/ Channelization Median Barrier (SSM or ASM)	One-Way Street (SSM)	Wayside Horn System
5th Street	804851U	U	U	P	U	U
6th Street	804373W	P	U	O	U	U
8th Street	804372P	U	U	P	U	U
10th Street	804370B	U	U	P	U	U
13th Street	804367T	U	O	P	U	U
16th Street	804366L	U	U	P	U	U
18th Street	804365E	U	U	P	U	U
22nd Street	816131K	U	U	P	U	U

This review also determined if the existing railroad active grade crossing warning devices meet the minimum requirements for establishment of a quiet zone. The rule requires that each public highway-rail grade crossing in the quiet zone must be equipped with flashing lights and gates, constant warning time device and power out indicator in accordance with 49 CFR Subpart C 222.35(3)(b). The following table provides the results of that review:

Table 3. Active Grade Crossing Warning Devices

Street or Road Name	DOT No.	Flashing Lights, Gates and Bells	Constant Warning Time Devices	Power Out Indicator
5th Street	804851U	✓	✓	✓
6th Street	804373W	Flashing Lights/ No Gates	✓	✓
8th Street	804372P	✓	✓	✓
10th Street	804370B	✓	✓	✓
13th Street	804367T	✓	✓	✓
16th Street	804366L	✓	✓	✓
18th Street	804365E	✓	✓	✓
22nd Street	816131K	✓	✓	✓

As indicated in the table above, only one of the eight crossings in this corridor does not meet the minimum requirements for quiet zone establishment concerning railroad warning devices due to the lack of gates. Therefore, this crossing will require the railroad to upgrade the existing equipment to provide gates, at the expense of the city, or permanently closed as recommended by the diagnostic team.

An overview of each crossing and discussion of the evaluation are described in the following section.

IV. Crossing Overview

General Information

The quiet zone evaluation for this corridor includes the following assumptions:

- Due to the proximity to downtown and residential areas, wayside horns are not an option in this corridor. The existence of a siding track also presents operational sequence issues where the wayside horn could blow for the programmed maximum allowable time which could be 2 minutes or more.
- Abandoned Great Western Railway (GWR) tracks located west of the Railroad mainline and siding tracks at 5th Street, 6th Street, 8th Street, and 10th Street will be removed by the Railroad and City prior to the establishment of the quiet zone and those cost are not included in this report.
- Railroad house track located east of mainline and siding tracks at 8th Street, and 13th Street will be removed by the railroad as part of the establishment of the quiet zone.
- All median lengths are measured from the railroad gate for quiet zone qualification. However, an additional 5 feet of length is used in construction cost calculations since the median will extend inside the gates.

- All non-mountable concrete medians will be a minimum of 6 inches in height and 2-feet in width. The City agreed with CPUC recommendation to install medians with 4-foot width when possible.

5th Street - DOT No. 804851U

The 5th Street crossing, located at railroad milepost 52.08, is the northernmost crossing of the proposed quiet zone. 5th Street is a four-lane roadway crossing over one mainline and one siding track. The roadway is approximately 48 feet wide. The street is asphalt on the approaches to the crossing. There is a commercial driveway approximately 150 feet to the east of the crossing in the northeast quadrant. There is also commercial driveways approximately 90 feet to the west of the crossing. The crossing has concrete crossing panels.

Figure 2. 5TH Street - Aerial View

The review team considered the approved quiet zone treatment options provided in 49 CFR 222, Appendix A(2) and agreed with the City's preferred option to install non-traversable concrete medians. The proposed median length on the east side is approximately 80 feet long due to a commercial driveway entrance. After removal of the abandoned GWR tracks, a median is proposed on the west side of the crossing that will also be approximately 80 feet due to commercial driveways adjacent to the abandoned GWR tracks.

The team discussed the current conditions of pedestrian sidewalks and found that they are acceptable and had no further recommendations concerning pedestrian treatments.

Option A, B, C: SSM Concrete Medians

Work to be completed by City:

- Install medians to the east and west of the crossing that will be approximately 80 feet in length when measured from the gate.
- Install approximately 25 feet of curb and gutter at each gate.
- W10-1 Advance Warning signs with W10-9P No Train Horn plaques will be installed on both approaches to the crossing.
- R8-8 "Do Not Stop on Track" sign will be installed on both approaches to the crossing.
- New stop lines and railroad pavement markings will be installed prior to each gate.

Work to be completed by Railroad (funded by City): None

6th Street - DOT No. 804373W

The 6th Street crossing, located at railroad milepost 51.98, is the next crossing to the south of the 5th Street crossing. 6th Street is a two-lane roadway crossing over one mainline, one siding and one house track. The roadway is approximately 50 feet wide. The street is asphalt on the approaches to the crossing. There are commercial driveways east of the crossing in the northeast and southeast quadrants and west of the crossing in the southwest quadrant. The crossing has concrete crossing panels.

Figure 3. 6th Street - Aerial View

The diagnostic team considered the approved quiet zone treatment options provided in 49 CFR 222, Appendix A and recommended that the City consider permanent closure of this crossing. This crossing has the lowest traffic count of any crossing in the corridor at 784 ADT. If the

crossing remains open it will require the installation of flashing lights and gates to qualify for a quiet zone. City staff was not sure this was possible but agreed to evaluate the option.

Should permanent closure of this crossing be determined not to be feasible the quiet zone option would be to install non-traversable concrete median barriers. The proposed median lengths of 80 feet on the west approach is long enough to qualify for an SSM and is shortened due to commercial driveway in the southwest quadrant of the crossing. There is a driveway in the southeast quadrant that is currently located within 60 feet of the existing westbound gate. However, the proposed removal of the house track, relocation of the westbound gate, and installation of curb and gutter in the southeast quadrant will provide driveway access at the required 60 feet length for the median. Therefore, the concrete medians will qualify as a SSM.

The team discussed the current conditions of pedestrian sidewalks and found that they are acceptable and had no further recommendations concerning pedestrian treatments.

The diagnostic team recommended the following safety improvements at 6th Street:

Option A- Permanent Closure:

Work to be completed by City:

- Street Closure end of street treatment which includes the installation of Type III barricades and advance signing concerning the street closure.
- Removal of railroad warning signs and pavement markings.

Work to be completed by Railroad:

- Removal of warning devices and bungalow.
- Removal of concrete crossing panels and asphalt within railroad right-of-way

Option B - SSM Concrete Medians:

Work to be completed by City:

- Install concrete medians approximately 4 feet wide. The median to the west will be approximately 80 feet and the median to the east will be a minimum of 60 feet in length when both are measured from the gate.
- Install approximately 30 feet of curb and gutter for eastbound gate.
- Install approximately 65 feet of curb and gutter in southeast quadrant
- W10-1 Advance Warning signs with W10-9P No Train Horn plaques will be installed on each approach.
- R8-8 "Do Not Stop on Track" sign will be installed on both approaches to the crossing.
- New stop lines and railroad pavement markings will be installed prior to each gate.

Work to be completed by Railroad (funded by City):

- Remove the two existing house tracks including tracks, ties, and crossing surface.
- Installation of flashing lights and gates, constant warning time devices, and power out indicator.

8th Street - DOT No. 804372P

The 8th Street crossing, located at railroad milepost 51.82, is the next crossing to the south of the 6th Street crossing. 8th Street is a four-lane roadway crossing over one mainline, one siding and two house tracks. The roadway is approximately 72 feet wide. The street is asphalt composition with curb and gutter on the approaches to the crossing. There is a commercial driveway just to the east of the crossing in the southeast quadrant. Also, approximately 135 feet west of the crossing is an un-signalized highway intersection. The crossing has concrete crossing panels.

Figure 4. 8th Street - Aerial View

The diagnostic team considered the approved quiet zone treatment options provided in 49 CFR 222, Appendix A and agreed with the City's preferred option to install non-traversable concrete medians. A median length of approximately 60 feet is proposed east of the crossing and a minimum of 100 feet west of the crossing. The two UP house tracks to the east of the UP main and siding tracks will be removed and the driveway in the southeast quadrant will need to be relocated 15 to 20 feet to the east for the median to qualify as a SSM. After removal of the abandoned GWR tracks to the west of the crossing, a median is proposed on the west side that will be a minimum of 100 feet from gate.

The team discussed the current conditions of pedestrian sidewalks and recommended that the sidewalk north of the street be extended through the crossing to provide continuous pedestrian access as part of the quiet zone project.

The diagnostic team recommended the following safety improvements at 8th Street:

Option A, B, C - SSM Concrete Medians:

Work to be completed by City:

- Install concrete medians approximately 2 feet width ono both approaches. The median to the west will be approximately 100 feet and the median to the east will be a minimum of 60 feet in length when both measured from the gate.
- Install curb and gutter from westbound gate to sidewalk.
- Extend the existing sidewalk in the northwest quadrant through the crossing.
- W10-1 Advance Warning signs with W10-9P No Train Horn plaques will be installed on each approach.
- R8-8 "Do Not Stop on Track" sign will be installed on both approaches to the crossing.
- New stop lines and railroad pavement markings will be installed prior to each gate.

Work to be completed by Railroad (funded by City):

- Remove the two existing house tracks including tracks, ties, and crossing surface.
- Relocate existing westbound gate and cantilever to within 15 foot of siding center line.

10th Street - DOT No. 804370B

The 10th Street crossing, located at railroad milepost 51.69, is the next crossing to the south of the 8th Street crossing. 10th Street is a two-lane roadway crossing over one mainline and one siding track. The roadway is approximately 40 feet wide. The street is asphalt composition with curb and gutter on the approaches to the crossing. There are commercial driveways just to the east of the crossing in the northeast quadrant. The crossing has concrete crossing panels.

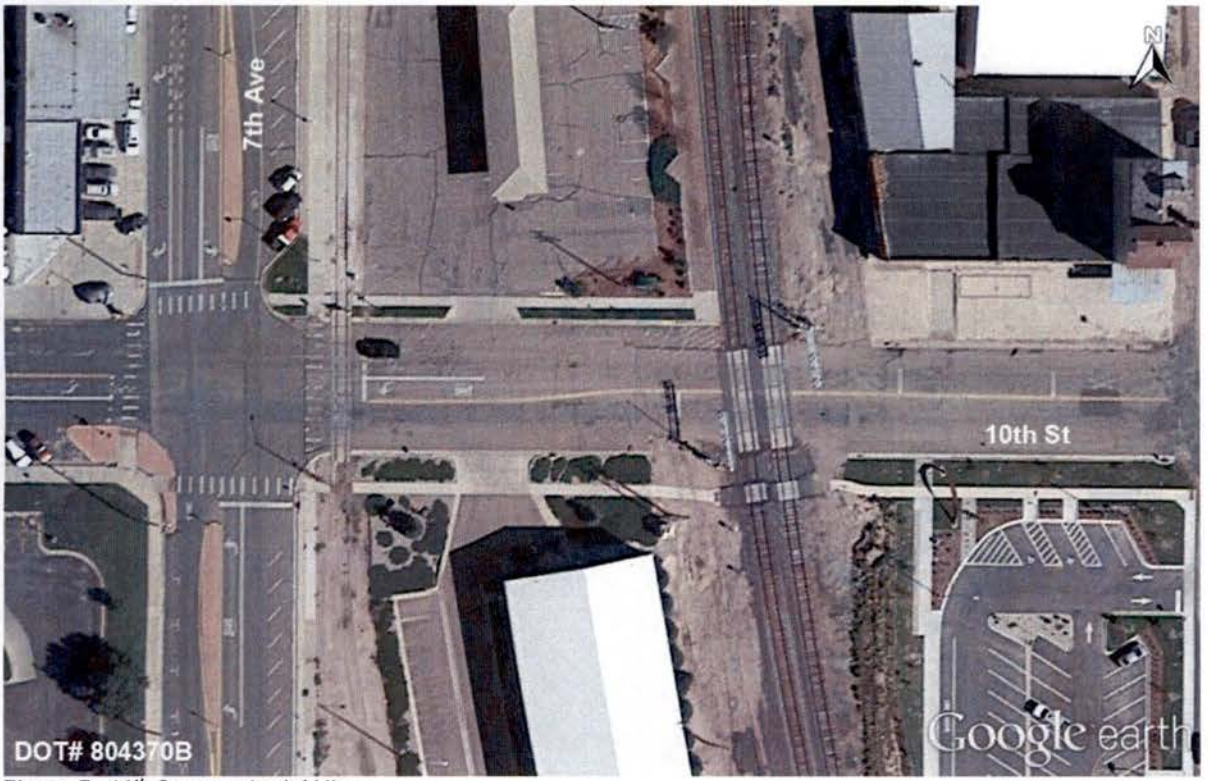

Figure 5. 10th Street - Aerial View

The Diagnostic team considered the approved quiet zone treatment options provided in 49 CFR 222, Appendix A and agreed with the City's preferred option to install non-traversable concrete medians. A median length of a minimum of 100 feet is proposed east of the crossing and approximately 80 feet west of the crossing. Vehicles are currently using the northeast quadrant as access along the track and building to the north. The team recommended this access be eliminated through the installation of curb and gutter beginning 10 feet from center of track in the northeast quadrant and extending approximately 40 feet east of the track. This will eliminate the access to the right of way in the northeast quadrant and define the driveway entrance a minimum of 60 feet from railroad gate.

The team discussed the current conditions of pedestrian sidewalks and concluded that the pedestrian sidewalk be extended across the north side of the crossing.

The diagnostic team recommended the following safety improvements at 10th Street:

Option A, B, C - SSM Concrete Medians:

Work to be completed by City:

- Install concrete medians with minimum 2 feet in width. The median to the west will be approximately 80 feet and the median to the east will be a minimum of 100 feet in length when measured from the gate.
- Install approximately 40 feet of curb and gutter in northeast quadrant.
- Remove section of abandoned track in northeast quadrant for sidewalk installation.

- Extend the existing sidewalk on the west through the crossing and to the concrete area located east of the track with edge of sidewalk 5 feet from westbound gate mast. This will result in approximately 75 feet of 5-foot-wide sidewalk.
- W10-1 Advance Warning signs with W10-9P No Train Horn plaques will be installed on each approach.
- R8-8 "Do Not Stop on Track" sign will be installed on both approaches to the crossing.
- New stop lines and railroad pavement markings will be installed prior to each gate.

Work to be completed by Railroad (funded by City):

- Install crossing panels for sidewalk extension north of the crossing.

13th Street - DOT No. 804367T

The 13th Street crossing, located at railroad milepost 51.37, is the next crossing to the south of the 10th Street crossing. 13th Street is a three-lane roadway crossing over one mainline, one siding and one house track. The roadway is approximately 60 feet wide. The street is asphalt composition with paved shoulders and bike lanes on the approaches to the crossing. There are commercial driveways just to the east of the crossing in the northeast and southeast quadrants and just west of the crossing in the southwest quadrant. The crossing has concrete crossing panels.

Figure 6. 13th Street - Aerial View

The Diagnostic team considered the approved quiet zone treatment options provided in 49 CFR 222, Appendix A and agreed with the City's preferred option to install non-traversable concrete

medians. A median length of 60 feet is proposed east of the crossing and 60 feet west of the crossing. The median to the west includes a left turn lane, starting approximately 10-feet wide at the gates and tapering to 2 feet wide at the west end of the median to facilitate the left turn bay. (See proposed layout in Appendix E) The location of commercial driveways within 60 feet of the gates, in the southwest and southeast quadrants eliminates concrete medians from SSM eligibility. Therefore, the concrete median at this location will be non-SSM and no credit will be taken in quiet zone calculations. Should the agency decide to install SSMs at every crossing in the quiet zone, the proposed quiet zone treatment would be four-quadrant gate system.

The team also recommended the installation of curb and gutter in the northeast quadrant to eliminate the existing access to the railroad right-of-way.

The team discussed the current conditions of pedestrian sidewalks and found that they are acceptable and had no further recommendations concerning pedestrian treatments.

Option A, B - Non-SSM Concrete Medians
The diagnostic team recommended the following safety improvements at 13th Street:

Work to be completed by City:

- Install concrete medians that are a minimum of 10 feet in width with the median to the west narrowing to 2 feet wide to provide left turn lane. The medians will be a minimum of 60 feet in length measured from the gate.
- Install curb and gutter in northeast quadrant beginning 10 feet from center of track and extending approximately 30 feet to the east. This will also eliminate the access to the railroad right-of-way in the northeast quadrant.
- Install curb and gutter in southwest quadrant beginning 10 feet from the center of track and extending approximately 50 feet to the west. This will eliminate the access to the railroad right-of-way in the southeast quadrant and allow the removal of the sidelight mounted on eastbound gate aimed south.
- W10-1 Advance Warning signs with W10-9P No Train Horn plaques will be installed on each approach.
- R8-8 "Do Not Stop on Track" sign will be installed on both approaches.
- New stop lines and railroad pavement markings will be installed prior to each gate.

Work to be completed by Railroad (funded by City):

- Remove house track.
- Relocate the existing gate to be next to the siding track.
- Remove existing cantilever flashing light structures on both approaches to the crossing.
- Remove sidelight aimed south down the railroad right-of-way located on eastbound gate.

Option C - Four Quadrant Gate Systems:
Work to be completed by City:

- W10-1 Advance Warning signs with W10-9P No Train Horn plaques will be installed on each approach.
- R8-8 "Do Not Stop on Track" sign will be installed on both approaches.

- Install curb and gutter in northeast quadrant beginning 10 feet from center of track and extending approximately 30 feet to the east. This will also eliminate the access to the railroad right-of-way in the northeast quadrant.
- Install curb and gutter in southwest quadrant beginning 10 feet from the center of track and extending approximately 50 feet to the west. This will eliminate the access to the railroad right-of-way in the southeast quadrant and allow the removal of the sidelight mounted on eastbound gate aimed south.
- New stop lines and railroad pavement markings will be installed prior to each gate.

Work to be completed by Railroad (funded by City):

- Install two additional gates and vehicle presence detection to create a four-quadrant gate system.
- Relocate the existing gate to be next to the siding track.
- Remove existing cantilevered flashing light structures on both approaches to the crossing.
- Remove sidelight aimed south down the railroad right-of-way located on eastbound gate.

16th Street - DOT No. 804366L

The 16th Street crossing, located at railroad milepost 51.05, is the next crossing to the south of the 13th Street crossing. 16th Street is a three-lane roadway crossing over one mainline track. The roadway is approximately 40 feet wide. The street is asphalt composition with paved shoulders on the approaches to the crossing. The crossing has concrete crossing panels.

Figure 7. 16th Street - Aerial View

The Diagnostic team considered the approved quiet zone treatment options provided in 49 CFR 222, Appendix A and agreed with the City's preferred option to install non-traversable concrete medians. A median length of 60 feet is proposed east of the crossing due to commercial driveways located in the northwest and southwest quadrants. The median to the west will be 100 feet in length. The team recommended the installation of curb and gutter east of the crossing to designate the location of commercial driveways in the northeast and southeast quadrants. The driveways will be located a minimum of 60 feet from the railroad gate to qualify as a SSM.

The team discussed the current conditions of pedestrian sidewalks and found that they are acceptable and had no further recommendations concerning pedestrian treatments.

Option A, B, C: SSM Concrete Medians

The diagnostic team recommended the following safety improvements at 16th Street:

Work to be completed by City:

- Install concrete medians on both approaches to the crossing. The median to the east will be a minimum of 60 feet in length and 10 feet wide. The median to the west will be a minimum of 100 feet in length and 10 feet wide.
- Install concrete curb and gutter east of the crossing beginning 10 feet from center line of track and extending approximately 65 feet.
- W10-1 Advance Warning signs with W10-9P No Train Horn plaques will be installed on each approach.
- R8-8 "Do Not Stop on Track" sign will be installed on both approaches.
- New stop lines and railroad pavement markings will be installed prior to each gate.

Work to be completed by Railroad (funded by City): None

18th Street - DOT No. 804365E

The 18th Street crossing, located at railroad milepost 50.79, is the next crossing to the south of the 16th Street crossing. 18th Street is a two-lane roadway crossing over one mainline track. The roadway is approximately 34 feet wide. The street is asphalt composition with curb and gutter on the approaches to the crossing. There are commercial driveways to the east and west of the crossing located more than 60 feet from the gates. The crossing has concrete crossing panels.

Figure 8. 18th Street - Aerial View

The Diagnostic team considered the approved quiet zone treatment options provided in 49 CFR 222, Appendix A and agreed with the City's preferred option to install non-traversable concrete medians. A minimum median length of 60 feet is proposed east of the crossing and approximately 80 feet west of the crossing. Commercial driveways are located more than 60 feet from the gate and therefore the median will qualify as SSM.

The team discussed the current conditions of pedestrian sidewalks and found that they are acceptable and had no further recommendations concerning pedestrian treatments.

Option A, B, C: SSM Concrete Medians

The diagnostic team recommended the following safety improvements at W 18th Street:

Work to be completed by City:

- Install concrete medians with a minimum width of 2 feet. The median to the east will be a minimum of 60 feet and the median to the west will be approximately 80 feet in length when measured from the gate.
- Install concrete curb and gutter along the south edge of street east of the crossing to designate the specific location of the commercial driveway located in the southeast quadrant. The curb and gutter will begin 10 feet from center of track and extend to a minimum of 60 feet from the railroad gate.
- W10-1 Advance Warning signs with W10-9P No Train Horn plaques will be installed on each approach.
- R8-8 "Do Not Stop on Track" sign will be installed on both approaches.

- New stop lines and railroad pavement markings will be installed prior to each gate.

Work to be completed by Railroad (funded by City): None

22nd Street - DOT No. 816131K

The 22nd Street crossing, located at railroad milepost 50.25, is the next crossing to the south of the 18th Street crossing. 22nd Street is a two-lane roadway crossing over one mainline track. The roadway is approximately 54 feet wide. The street is asphalt composition with curb and gutter on the approaches to the crossing. The crossing has concrete crossing panels.

Figure 9. 22nd Street - Aerial View

The Diagnostic team considered the approved quiet zone treatment options provided in 49 CFR 222, Appendix A and agreed with the City's preferred option to install non-traversable concrete medians. A minimum median length of 100 feet is proposed for both approaches to the crossing. Commercial driveways are located greater than 100 feet from the gate which will result in the concrete median qualifying as a SSM.

The team discussed the current conditions of pedestrian sidewalks and found that they are acceptable and had no further recommendations concerning pedestrian treatments.

Option A, B, C: SSM Concrete Medians

The diagnostic team recommended the following safety improvements at 22nd Street:

Work to be completed by City:

- Install non-mountable concrete medians with a minimum 6 inches in height and 10 feet wide. The medians will be a minimum of 100 feet in length measured from the gate on both approaches to the crossing.
- W10-1 Advance Warning signs with W10-9P No Train Horn plaques will be installed on each approach.
- R8-8 "Do Not Stop on Track" sign will be installed on both approaches.
- New stop lines and railroad pavement markings will be installed prior to each gate.

Work to be completed by Railroad (funded by City): None

V. Summary of Estimated Quiet Zone Safety Improvement Costs

The table below summarizes the proposed quiet zone improvements and approximate costs for each crossing location and option. *These are budget estimates to evaluate alternatives for planning purposes only. Specific detailed cost estimates should be obtained from Railroad, traffic engineering firms, and construction contractors once the City has determined the final quiet zone plan.*

Three alternatives are provided for comparison of cost and types of quiet zone methods that are available to the City for establishing the quiet zone.

- Option A - ASMs and SSMs to reduce the QZRI below RIWH with Closure of 6th Street
- Option B - ASMs and SSMs to reduce the QZRI below RIWH without Closure of 6th Street
- Option C - SSMs at every crossing without 6th Street closure
- Option D - SSMs at every crossing with 6th Street closure

Table 4. Summary of Quiet Zone Options

Street Name	DOT No.	Option A QZRI<RIWH W/ Closure	Option B QZRI<RIWH W/O Closure	Option C SSMs at every crossing W/O Closure	Option D SSMs at every crossing W/ Closure
5th Street	804851U	SSM Concrete Median	SSM Concrete Median	SSM Concrete Median	SSM Concrete Median
6th Street	804373W	Closure	SSM Concrete Median	SSM Concrete Median	Closure
8th Street	804372P	SSM Concrete Median	SSM Concrete Median	SSM Concrete Median	SSM Concrete Median
10th Street	804370B	SSM Concrete Median	SSM Concrete Median	SSM Concrete Median	SSM Concrete Median
13th Street	804367T	Non - SSM Concrete Median	Non - SSM Concrete Median	Four-Quadrant Gates	Four-Quadrant Gates
16th Street	804366L	SSM Concrete Median	SSM Concrete Median	SSM Concrete Median	SSM Concrete Median
18th Street	804365E	SSM Concrete Median	SSM Concrete Median	SSM Concrete Median	SSM Concrete Median
22nd Street	816131K	SSM Concrete Median	SSM Concrete Median	SSM Concrete Median	SSM Concrete Median

Option A - Enough SSMs to reduce QZRI below RIWH with Closure of 6th Street

This option includes the closure of 6th Street crossing and the installation of SSM compliant concrete medians at 5th, 8th, 10th, 16th, 18th and 22nd Streets. The concrete median at 13th Street will not be SSM compliant due to commercial driveways located in the southwest and southeast quadrants.

This option uses the ASM method to reduce the QZRI below the RIWH.

The advantages of this option are as follows:

- Lowest construction cost
- No railroad signal construction cost at 6th Street
- UP funds available for closure of 6th Street (estimated at $20,000 but negotiable)

The disadvantages of this option are as follows:

- Obtaining public and business support for closure of 6th Street.
- Requires re-authorization of quiet zone every 2 ½ years.

Option B - Enough SSMs to reduce the QZRI below RIWH - without closure of 6th Street

This option is identical to Option A except for the closing the 6th Street crossing. The 6th Street crossing remains open and requires the railroad to upgrade the crossing to flashing lights and gates with constant warning time devices.

The advantages of this option are as follows:

- All streets remain open
- No public or business support needed for street closure

The disadvantages of this option are as follows:

- Increased railroad cost to upgrade 6th Street
- No railroad contribution for closure
- Requires re-authorization of quiet zone every 2 ½ years.

Option C - SSMs at every crossing without 6th Street Closure

This option includes installation of SSM compliant quiet zone treatments at every crossing in the quiet zone without the closure of 6th Street. This includes the installation of a four-quadrant gate system at 13th Street and SSM compliant concrete medians at 5th, 6th, 8th, 10th, 16th, 18th and 22nd Streets.

The advantages of this option are as follows:

- All streets remain open.

- Requires re-authorization of quiet zone every 4 ½ years.
- No public or business support needed for street closure.

The disadvantages of this option are as follows:

- Higher construction cost.
- Higher annual maintenance cost due to four-quadrant gate system at 13th Street.

Option D - SSMs at every crossing with 6th Street Closure

This option includes installation of SSM compliant quiet zone treatments at every crossing in the quiet zone with the closure of 6th Street. This includes the installation of a four-quadrant gate system at 13th Street and SSM compliant concrete medians at 5th, 8th, 10th, 16th, 18th and 22nd Streets and the closure of 6th Street.

The advantages of this option are as follows:

- Requires re-authorization of quiet zone every 4 ½ years.
- UP funds available for closure of 6th Street (estimated at $20,000 but negotiable)

The disadvantages of this option are as follows:

- Obtaining public and business support for closure of 6th Street.
- Higher construction cost.
- Higher annual maintenance cost due to four-quadrant gate system at 13th Street.

Construction Cost

The following table provides break down of the estimated construction cost for each quiet zone option. The cost is separated into work to be completed by the city and work completed by the railroad. However, the total estimated cost is funded by the city to create the quiet zone.

Table 5. Summary of Quiet Zone Construction Options A & B

Street	OPTION A		OPTION B	
	City	Railroad	City	Railroad
5th Street	$32,134	$6,000	$32,134	$6,000
6th Street	$9,180	$1,500	$32,384	$369,500
8th Street	$42,509	$112,500	$42,509	$112,500
10th Street	$37,770	$30,000	$37,770	$30,000
13th Street	$34,090	$73,000	$34,090	$73,000
16th Street	$51,520	$6,000	$51,520	$6,000
18th Street	$32,892	$6,000	$32,892	$6,000
22nd Street	$54,892	$6,000	$54,892	$6,000
Other Cost	$92,400	$0	$92,400	$0
Contingency (20%)	$77,477	$48,200	$82,118	$121,800
Sub-Total	$464,864	$289,200	$492,709	$730,800
UP Closure Contribution	$20,000		$0	
TOTAL ESTIMATED COST	**$734,064**		**$1,223,509**	

Table 5a. Summary of Quiet Zone Construction Options C & D

Street	OPTION C		OPTION D	
	City	Railroad	City	Railroad
5th Street	$32,134	$6,000	$32,134	$6,000
6th Street	$32,384	$369,500	$9,180	$1,500
8th Street	$45,009	$112,500	$45,009	$112,500
10th Street	$37,770	$30,000	$37,770	$30,000
13th Street	$8,590	$628,000	$8,590	$628,000
16th Street	$51,520	$6,000	$51,520	$6,000
18th Street	$32,892	$6,000	$32,892	$6,000
22nd Street	$54,892	$6,000	$54,892	$6,000
Other Cost	$92,400	$0	$92,400	$0
Contingency (20%)	$77,518	$232,800	$72,877	$159,200
Sub-Total	$465,109	$1,396,800	$437,264	$955,200
UP Closure Contribution	$0		$20,000	
TOTAL ESTIMATED COST	**$1,861,909**		**$1,372,464**	

Options A and D include a $20,000 reduction in total cost due to cash contributions from UP for the closure of 6th Street. This is an estimated value and City will obtain actual numbers after negotiating with UP during the construction contract and engineering process.

Maintenance Cost

Signs and Pavement Markings - (Minimal Maintenance Cost)
Many of the signs and pavement markings recommended by the diagnostic team are already in place and being maintained by the City. The additional signs and pavement marking will have

a minimal impact in additional cost to the City. The maintenance cost should be included in the annual budget cost for maintaining signs and pavement markings throughout the City.

Concrete Sidewalks and Medians - (Minimal Maintenance Cost)
The proposed concrete sidewalks and medians will require minimal additional maintenance cost for the City. These new sidewalks and medians, once installed, should be included in the annual maintenance budget of the City for routine concrete repair.

Four-Quadrant Gate Systems - (High Maintenance Cost)
The Union Pacific Railroad Company (UP) does not charge cities for maintenance cost of railroad flashing lights and gates and/or cantilevers with flashing lights. However, they do require cities to pay maintenance cost for four quadrant gate systems. This is approximately $10,000 per year for the life of the crossing. The city would also be responsible for future replacement cost if needed.

VI. Quiet Zone Implementation Process

Once the City has made the determination to proceed with implementation of the quiet zone, there is a sequence of events that must occur. Those events are described below.

USDOT Grade Crossing Inventory Updates - Existing Conditions
The City along with the assistance of the Railroad will be required to update USDOT Grade Crossing Inventory Forms for each of the highway-rail grade crossings within the limits of the proposed quiet zone to reflect the existing conditions. An average daily traffic count for each affected roadway will be required. Once the City has collected traffic data for all crossings located in the quiet zone, the grade crossing inventory can be updated.

Notice of Intent to Create a New Quiet Zone
The purpose of the Notice of Intent (NOI) is to provide notice to the Railroads operating over the public highway-rail grade crossings within the quiet zone, the highway or traffic control authority or law enforcement authority having jurisdiction over vehicular traffic at grade crossings within the quiet zone, the State agency responsible for highway and road safety that the City is planning on creating a new quiet zone. The NOI provides an opportunity for the Railroads and the agencies to give input to the City during the quiet zone development process. The agencies and railroads will be given sixty days to provide information and comments to the public City.

The NOI must contain the following information:

1. A list of each public highway-rail grade crossing, private highway-rail grade crossing, and pedestrian crossing within the proposed quiet zone. The crossings are to be identified by both the U.S. DOT Crossing Inventory Number and the street or highway name.
2. A statement of the time period within which the restrictions would be in effect on the routine sounding of train horns (i.e., 24 hours or from 10 p.m. to 7 a.m.).
3. A brief explanation of the City's tentative plans for implementing improvements within the proposed quiet zone.

4. The name and title of the person who will act as the point of contact during the quiet zone development process and how that person can be contacted.
5. A list of the names and addresses of each party that will receive a copy of the NOI.

The City must provide the written NOI, by certified mail, return receipt requested to the Railroad(s), Colorado Department of Transportation (CDOT). Although it is not required by the rule, it is recommended to also send a copy of the NOI to the Associate Administrator of the Federal Railroad Administration. If the City receives comments within the sixty-day period, assistance from the FRA may be required to resolve any of the issues raised. Since we will include the Railroad and the FRA in the planning process, it is not anticipated that there will be any issues raised during the NOI process.

Diagnostic Team Review

The diagnostic team review, conducted on July 25, 2017, provided the information necessary to develop a plan and budgetary costs for proposed improvements throughout the quiet zone. Although a diagnostic team inspection is not required, it is highly recommended to allow the Railroad, FRA, and CPUC the opportunity to be involved from the beginning and provide recommendations during the design process and prevent issues from occurring late in the process. This is also the time when project details can be finalized with all stakeholders involved in the decision-making process. The diagnostic team must, at a minimum, consist of representatives from the Railroad, CPUC, and the City. It is also recommended to include a representative from the FRA to ensure that the proposed quiet zone meets all the necessary requirements.

Implementation of Improvements

Upon conclusion of the diagnostic team review, specific recommendations will be developed and responsibility for work to be done will be defined. The following steps are required for implementation of the improvement plan.

1. The City may be requested to enter into a preliminary engineering agreement with the Railroad authorizing preparation of plans and estimates for the proposed improvements to be performed by the Railroad. (This information was provided to the City by the Railroad during the diagnostic meeting). Railroad requires a deposit of $10,000 per crossing signal location when executing the preliminary engineering agreement. This will allow UP to complete necessary field work to provide the city with engineered estimates for the proposed quiet zone improvements.
2. The Railroad will prepare project agreements, plans and estimates for approval and execution by the City.
3. Once the agreements have been fully executed, the Railroad will begin assembling the material and schedule proposed improvements.
4. Upon completion of improvements by the Railroad, the City will place all of the appropriate signing as required in the implementation plan.

USDOT Grade Crossing Inventory Updates - After Improvements

The City will also be required to update USDOT Grade Crossing Inventory Forms for each of the highway-rail grade crossing within the limits of the proposed quiet zone to reflect the conditions after the proposed improvements. The Grade Crossing Inventory Forms will be included as part of the Notice of Quiet Zone Establishment to be filed.

Notice of Quiet Zone Establishment

The purpose of the Notice of Quiet Zone Establishment is to provide a means for the City to formally advise affected parties that a new quiet zone is being established. All quiet zone improvements need to be in place and confirmed by the city and/or its consultant that the proposed improvement have been installed per the quiet zone design and meets FRA requirements. Once that is confirmed, the City must provide written notice, by certified mail, return receipt requested, to the following:

1. Union Pacific Railroad (UP)
2. City of Greeley Police Department
3. Colorado Public Utility Commission (CPUC)
4. Associate Administrator for the Federal Railroad Administration (FRA)

The Notice of Establishment must contain the following information:

1. The date upon which the quiet zone will be established, but in no event, shall the date be earlier than 21 days after the date of the mailing.
2. A list of each public highway-rail grade crossing and private highway-rail grade crossing within the quiet zone, identified by both U.S. DOT National Highway-Rail Grade Crossing Inventory Number and street or highway name.
3. A specific reference to the regulatory provision that provides the basis for quiet zone establishment. For example, if the improvements are completed as proposed, the appropriate regulatory provision is § 222.39(a)(1). This indicates that the quiet zone is established by Public Authority Designation utilizing an SSM treatment the only public highway-rail grade crossing in the corridor.
4. A statement affirming that the State agency responsible for grade crossing safety and all affected railroads were provided an opportunity to participate in the diagnostic team review as required under § 222.25 (private crossings). The Notice of Quiet Establishment shall also include a list of recommendations by the diagnostic team.
5. A statement of the time period within which restrictions on the routine sounding of the locomotive horn will be imposed (i.e., 24 hours or from 10 p.m. until 7 a.m.)
6. An accurate and complete Grade Crossing Inventory Form for each public highway-rail grade crossing and private highway-rail grade crossing within the quiet zone that reflects the conditions existing at the crossing before any new SSMs or ASMs were implemented.
7. An accurate, complete and current Grade Crossing Inventory Form for each public highway-rail grade crossing and private highway-rail grade crossing within the quiet zone that reflects SSMs and ASMs in place upon establishment of the quiet zone. SSMs and ASMs that cannot be fully described on the Inventory Form shall be separately described.
8. A statement affirming that the Notice of Intent was provided in accordance with the rule. This statement shall also state the date on which the Notice of Intent was mailed.
9. The name and title of the person responsible for monitoring compliance with the requirements of this part and the manner in which that person can be contacted.
10. A list of the name and address of each party that is receiving a copy of the Notice of Quiet Establishment.
11. A statement signed by the chief executive officer of each public authority participating in the establishment of the quiet zone, in which the chief executive officer shall certify that the information submitted by the public authority is accurate and complete to the best of his/her knowledge and belief.

Quiet Zone Creation and Continuation
Once the Notice of Quiet Zone Establishment has been filed properly, the quiet zone will be created on the establishment date described in the notice. It will then be the City's responsibility to maintain all the appropriate signs, pavement markings, and medians as well as the sight distance improvements for the crossings. The Railroad will maintain the flashing lights and gates at the affected crossings. The project agreement will define cost responsibility associated with the Railroad's maintenance.

Between 4½ and 5 years after the date of the quiet zone establishment notice, the City must:

1. Affirm in writing to the Associate Administrator that the SSMs implemented within the quiet zone continue to conform to the requirements of appendix A of this part. Copies of such affirmation must be provided by certified mail, return receipt requested, to the parties identified in § 222.43(a)(3) of this part; and
2. Provide to the Associate Administrator an up-to-date, accurate, and complete Grade Crossing Inventory Form for each public highway-rail grade crossing and private highway-rail grade crossing within the quiet zone. This will include up-to-date traffic counts at the affected roadways.

This affirmation must be submitted every 4½ to 5 years thereafter.

For quiet zones that are not established with SSMs at every crossing, the affirmation is required every 2 ½ to 3 years.

VII. Liability

During the development of the federal rule for use of locomotive horns, several agencies and railroads provided comments related to the lack of guidance concerning liability when a crash occurs at a highway-rail grade crossing within a quiet zone established in accordance with the rule. The comments ranged from those who felt the rule should include language that local communities should not be liable for crashes occurring at crossing within the quiet zone to those who felt the communities implementing the quiet zones should assume all risk associated with the quiet zones. In Part II Department of Transportation Federal Railroad Administration 49 CFR Parts 222 and 229 Use of Locomotive Horns at Highway-Rail Grade Crossings; Interim Final Rule issued on December 18, 2003, (See Appendix D) the FRA concluded that the rule is intended to remove failure to sound the horn as a cause of action in a lawsuit involving crossings within a quiet zone. After reviewing the nature of this rule and its federal requirements, the FRA added that they expect the courts will determine liability issues based on facts of each case. As a result, the existing final rules issued in 2005 does not include guidance for or requirement of an agency to accept liability for crashes at crossings located in a quiet zone they establish under this rule. Additional detail on this subject is provided in Appendix D

APPENDIX A: Final Diagnostic Notes

Union Pacific Quiet Zone Corridor
Diagnostic Notes
City of Greeley, CO
July 25, 2017

The City of Greeley (City), in its effort to explore the possibility of prohibiting the sounding of train horns along the Union Pacific Railroad Company (Railroad) through their community, requested CTC, Inc. (CTC) to conduct an evaluation to determine the feasibility and approximate cost associated with creating a new quiet zone through Greeley, Colorado. As part of the evaluation study a diagnostic meeting was held on July 25, 2017 in Greeley.

Those attending the meeting were as follows (see sign in sheet in Attachment A):

Pam Fischhaber	CPUC	Steven Jankowski	FRA
Erran Holtz	UPRR	Lance Kippen	UPRR
Tom Hellen	City	Tim Oster	CTC

The UP Quiet Zone Corridor includes the following crossings:

Street or Road Name	DOT No.	Railroad Milepost (MP)	Subdivision	Nearest Parallel Street
5th Street	804851U	52.08	Greeley	8th Ave/ BUS 85
6th Street	804373W	51.98	Greeley	8th Ave/ BUS 85
8th Street	804372P	51.82	Greeley	6th Ave/ 7th Ave
10th Street	804370B	51.69	Greeley	6th Ave/ 7th Ave
13th Street	804367T	51.37	Greeley	7th Ave
16th Street	804366L	51.05	Greeley	6th Ave/ US 85
18th Street	804365E	50.79	Greeley	6th Ave/ US 85
22nd Street	816131K	50.25	Greeley	4th Ave/ US 85

The team met in the city conference room to begin the field inspections. After a safety briefing, Tom welcomed the participants and provided the history and background of the planned quiet zone along the Union Pacific Railroad (UP). Tom explained that the funding for this project will be provided through a quality of life tax that will be voted on next year. Therefore, he believes it may be two years before the actual construction begins on this project. The participants were provided a handout outlining the quiet zone corridor, planned quiet zone treatments, and draft layouts of each crossing located within the quiet zone. Tim lead the remainder of the meeting as he detailed the plans for the quiet zone and placed an aerial of each crossing and preferred quiet zone treatment on the screen for discussion.

UP provided current information concerning train counts, maximum authorized speed, and types of warning devices. Erran informed the team that all the crossing within the quiet

corridor have recently been upgraded to constant warning time devices. This upgrade was completed due to UP plans to increase the maximum authorized speed to 50 MPH throughout the corridor. The current train count is 14 trains per day and some local trains that may switch at the crossings with multiple tracks several times per week. Therefore, it was agreed that CTC would use 50 MPH, 14 trains per day for the corridor and 2 switch moves at crossings with multiple tracks to complete the quiet zone calculations.

After completing the overview of the city plans, the team proceeded to the city van and completed a field inspection of all the crossings. After the conference room discussions and field inspection of each crossing the diagnostic team had the following recommendations:

General Recommendations:

- With the exception of 6th Street, all crossings are equipped with flashing lights and gates, constant warning time devices, and power out indicator as required by quiet zone rule. Constant warning is provided on the mainline and the siding. House track, when circuited, is island only circuit.
- The preferred quiet zone treatment at several of the crossings will be concrete medians. The proposed non-mountable median will be minimum 6" in height and a two-foot wide. The city plans to install 7" high medians. The CPUC requested and the city agreed that they will attempt to install the concrete medians a minimum of 4-foot wide when possible. The details of the median width will be determined during final roadway design.
- Unless otherwise noted below, the diagnostic team agreed that the existing flashing lights and bells provided adequate warning for pedestrians and the team had no other recommendations for pedestrian treatment.
- Advance warning signs, pavement markings, and Do Not Stop on Track signs will be installed per CMUTCD at each crossing.
- The Great Western Railroad (GWR) tracks located west of UP have been abandoned and will be removed.

5th Street – DOT# 804851U MP 52.08 – SSM – Concrete Medians

The quiet zone treatment for this location will be SSM compliant concrete medians which will be a minimum of 60 feet on both approaches to the crossing. The median to the east will be approximately 80 feet long, shortened due to commercial entrance to adjacent building. The median to the west will be approximately 80 feet in length due to commercial driveways.

6th Street - DOT# 804373W MP 51.98 - SSM - Closure (Option B - concrete median)
The UP house track located furthest to the east will be removed as part of the quiet zone project.

The existing crossing does not have flashing lights and gates. Due to the low average daily traffic (ADT), the team's first recommendation is to consider the closure of this crossing. The

city agreed to pursue that idea but was not confident that council and the public would support the plan.

The preferred option, should the city be unable to close the crossing, would be to install SSM compliant medians. With the removal of the tracks, as mentioned above, the railroad gate would be relocated and the city will install SSM compliant concrete medians at the crossing that will be a minimum of 60 foot in length. The length of this median to the east is restricted due to the commercial business located in the southeast quadrant and the commercial driveway in the northeast quadrant. The city will install curb and gutter along the south side of the road to define the location of the commercial driveway. The median to the west will be approximately 80 feet in length due to commercial driveway.

8th Street – DOT# 804372P MP 51.82 – SSM – Concrete Medians
The preferred plan will be to install SSM compliant concrete medians. The recommendations to accomplish this are as follows:

Railroad work to be completed:

- Remove two house tracks located to the east of the mainline and siding tracks.
- Relocate the westbound gate to 15 feet from centerline of UP siding.
- Remove the sidelight on the westbound and eastbound gate mast.
- Add crossing panels for extension of sidewalk in northwest quadrant.

City work to be completed:

- Install concrete medians.
- Install curb and gutter that extends from the new WB gate location to the existing sidewalk. This will eliminate the access currently being used in the northeast quadrant along the track.
- Extend the sidewalk in the northwest quadrant through the crossing.

The concrete median to the west will be 100 feet in length. The concrete median to the east will be 60 feet in length due to commercial driveway located in the southeast quadrant.

10th Street – DOT# 80437oB MP 51.69 – SSM – Concrete Medians
The preferred plan will be to install SSM compliant concrete medians. The recommendations to accomplish this are as follows:

Railroad work to be completed:

- Add crossing panels for extension of sidewalk in northwest quadrant.

City work to be completed:

- Install concrete medians.

- Install curb and gutter that extends from the new WB gate location to the existing sidewalk. This will eliminate the access currently being used in the northeast quadrant along the track.
- Extend the sidewalk in the northwest quadrant through the crossing.
- Remove section of old track located in northeast quadrant near building for sidewalk construction.

The concrete median to the east will be 100 feet in length. The concrete median to the west will be 80 feet in length due to commercial driveways located on both sides of the street.

13th Street – DOT# 804367T MP 51.37 – Non-SSM – Concrete Medians
The preferred plan will be to install non-SSM compliant concrete medians. The recommendations to accomplish this are as follows:

Railroad work to be completed:
- Remove house track.
- Relocate the gate to 15 feet from centerline of siding.
- Remove cantilevers – the team agreed that since there is one travel lane in each direction the existing cantilevers are not needed and can be removed as part of the project.
- Remove sidelight aimed down the railroad right of way located on the EB gate.

City work to be completed:
- Install concrete medians.
- Install curb and gutter that extends from the just inside the EB gate location to the existing sidewalk approximately 25 feet from gate to eliminate access to railroad right of way.
- Extend the sidewalk in the northwest quadrant through the crossing.

The concrete median to the east and west of the crossing will be 60 feet in length. However, the medians will not be SSM compliant due to the commercial driveways located in the southeast and southwest quadrants. The city will work with the property owners to evaluate the possibility of relocating access to their property that will allow for the installation of SSM compliant concrete medians.

16th Street – DOT# 804366L MP 51.05 – SSM – Concrete Medians
The preferred plan will be to install SSM compliant concrete medians. The recommendations to accomplish this are as follows:

City work to be completed:
- Install concrete medians.

- Install curb and gutter that extends from 10 feet from near rail in the southeast quadrant and extends a minimum of 60 feet measured from the railroad gate.

The concrete median to the west will be 100 feet in length. The concrete median to the east will be 60 feet in length due to commercial driveways located in the southeast quadrant.

18th Street – DOT# 804365E MP 50.79 – SSM – Concrete Medians
The preferred plan will be to install SSM compliant concrete medians. The recommendations to accomplish this are as follows:

City work to be completed:

- Install concrete medians (city will evaluate the stripping to see if some of the shoulder can be used to allow for wider median).
- Install curb and gutter that extends from 10 feet from near rail in the southeast quadrant and extends a minimum of 60 feet measured from the railroad gate.

The concrete median to the west will be 100 feet in length. The concrete median to the east will be 60 feet in length due to commercial driveways located in the southeast quadrant. There are no pedestrian treatments through the crossing and the team did not recommend any changes since this is an industrial area.

22nd Street – DOT# 816131K MP 50.25 – SSM – Concrete Medians
The preferred plan will be to install SSM compliant concrete medians. The recommendations to accomplish this are as follows:

City work to be completed:

- Install concrete median.

The concrete medians will be 100 feet in length on both approaches to the crossing.

Table 1: The following is a summary of planned quiet zone treatments:

Street Name	DOT No.	Preferred Option SSMs to Reduce QZRI<RIWH
5th Street	804851U	SSM - Concrete Median
6th Street	804373W	Closure or SSM -Concrete Median
8th Street	804372P	SSM -Concrete Median
10th Street	804370B	Non-SSM -Concrete Median
13th Street	804367T	Non-SSM -Concrete Median
16th Street	804366L	SSM - Concrete Median
18th Street	804365E	SSM - Concrete Median
22nd Street	816131K	SSM - Concrete Median

Table 2: Union Pacific data for quiet zone calculation:

Street Name	DOT No.	MP	MAX SPEED (MPH)	Average Trains per Day
5th Street	804851U	52.08	50	14 2 switch
6th Street	804373W	51.98	50	14 2 switch
8th Street	804372P	51.82	50	14 2 switch
10th Street	804370B	51.69	50	14 2 switch
13th Street	804367T	51.39	50	14 2 switch
16th Street	804366L	51.05	50	14
18th Street	804365E	50.79	50	14
22nd Street	816131K	50.25	50	14

Table 3: Existing railroad equipment and constant warning devices:

Street Name	DOT No.	Flashing Lights, Gates and Bells	Constant Warning Time Devices	Power Out Indicator
5th Street	804851U	✓	✓	✓
6th Street	804373W	×	✓	✓
8th Street	804372P	✓	✓	✓
10th Street	804370B	✓	✓	✓
13th Street	804367T	✓	✓	✓
16th Street	804366L	✓	✓	✓
18th Street	804365E	✓	✓	✓
22nd Street	816131K	✓	✓	✓

Attachments:

Attachment A – Diagnostic Team sign in sheet
Attachment B - Union Pacific crossing layouts for quiet zone corridor

CTC inc

Diagnostic Notes
Attachment A

Diagnostic Team Sign-in Sheet

www.ctcinc.com

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CTC inc

City of Greeley, CO UP Quiet Zone Diagnostic Meeting

July 25, 2017 – 8:00 am

NAME	COMPANY	PHONE	EMAIL
Tim Oster	CTC	817-713-5899	toster@ctcinc.com
Tom Hacker	Greeley	970-350-9793	tom.hacker@greeleygov.com
Steven Jankowski	FRA	720-526-4296	STEVEN.JANKOWSKI@DOT.GOV
Pam Fischle	CPK	303-894-2529	pamela.fischlabar@state.co.us
Erran Holtz	UPRR	402-289-7289	ejholtz@up.com
Lance Kippen	UPRR	303 405-5039	lkippen@up.com

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Diagnostic Notes
Attachment B

Crossing Layouts

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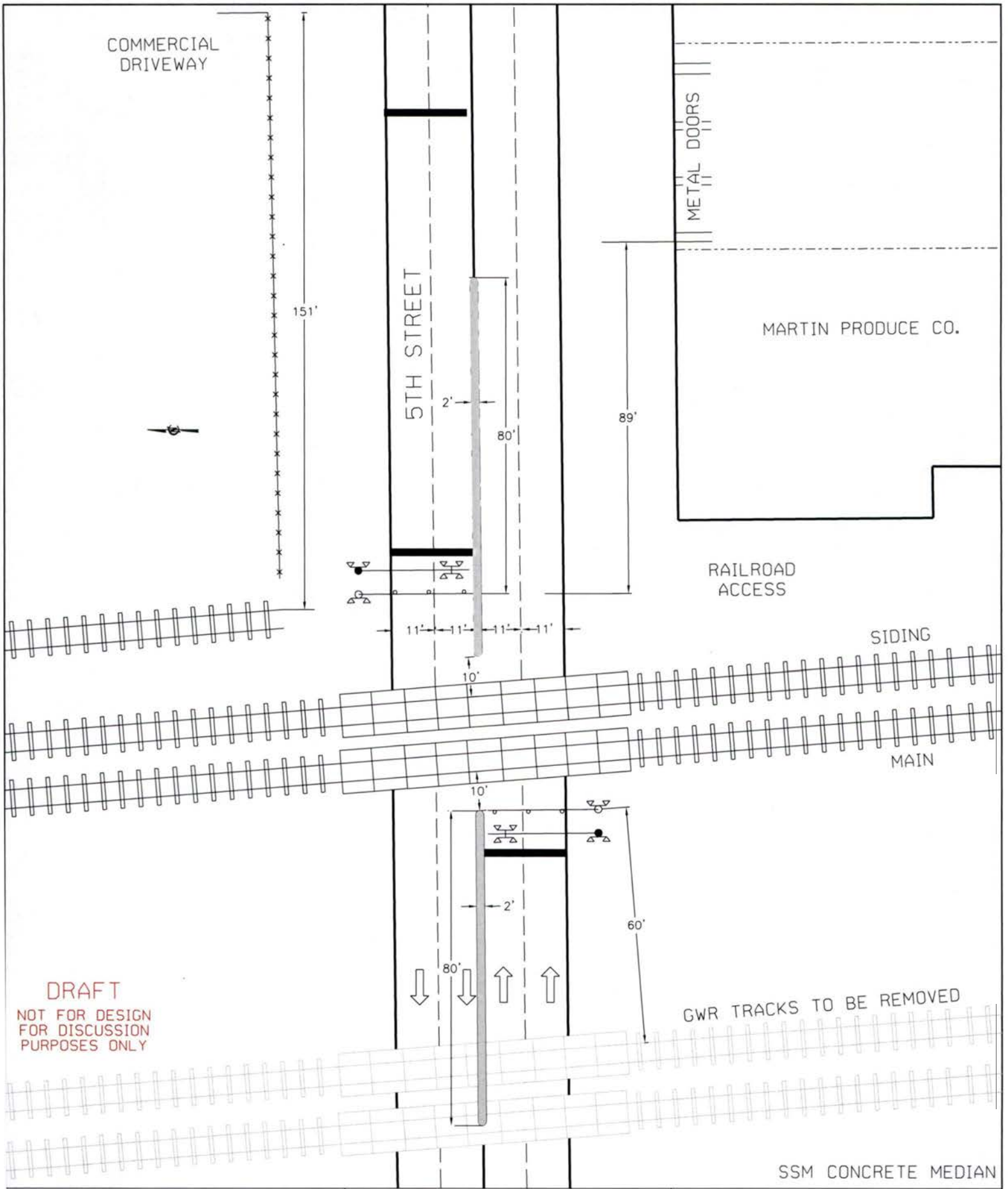
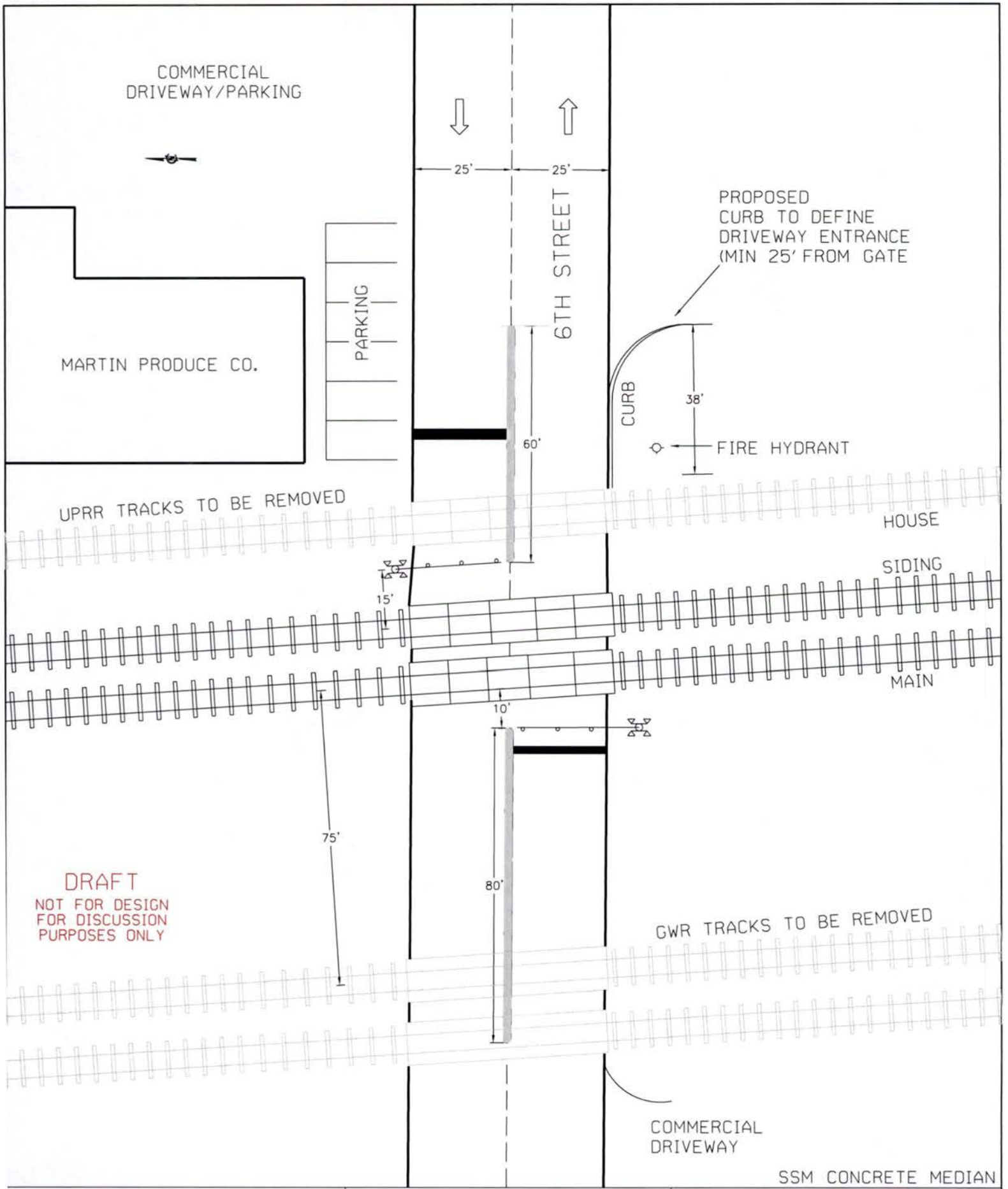


CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
5TH STREET
ADT: 13,486

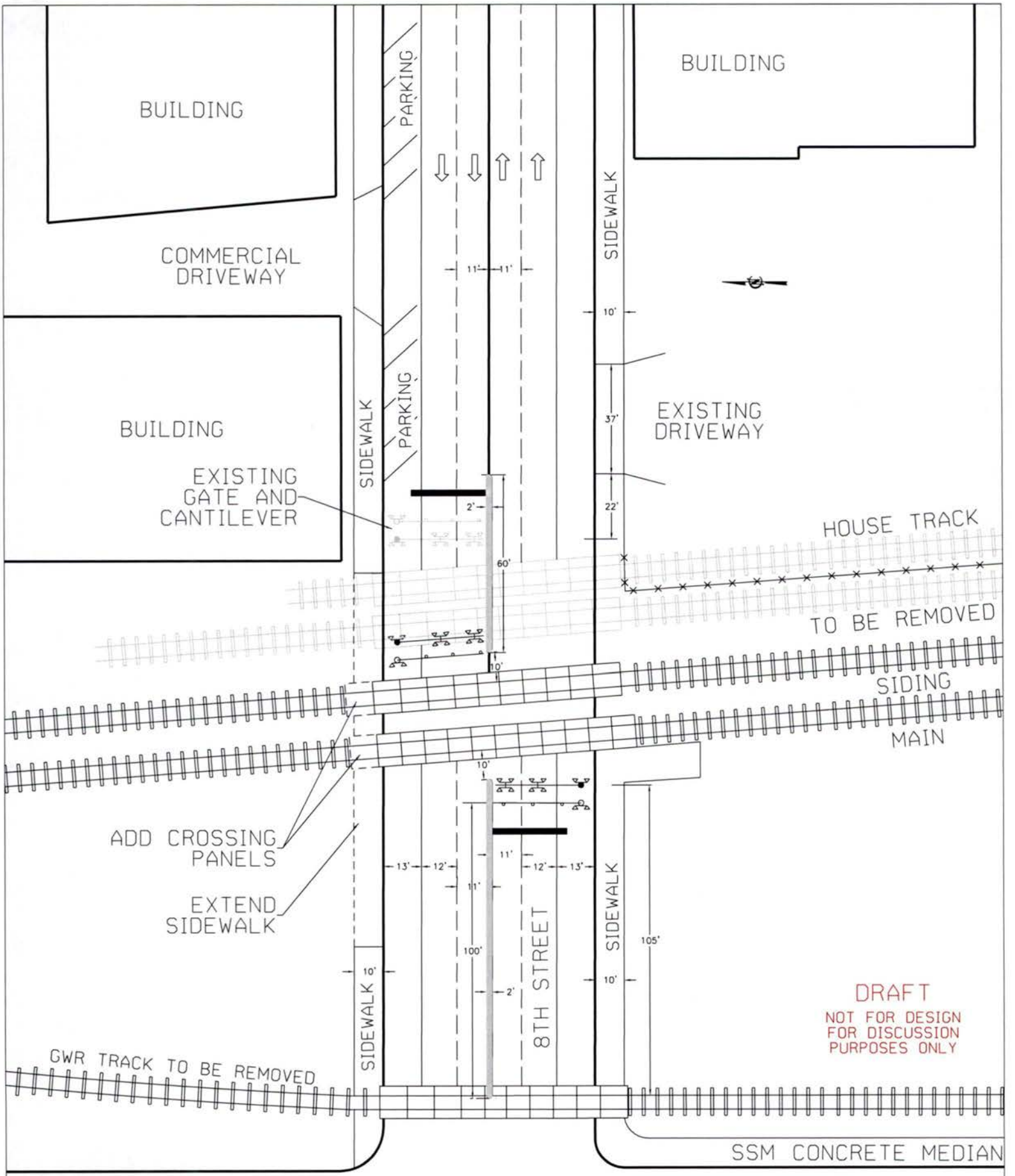
UP RAILROAD
DOT# 804851U
RRMP 52.08
SCALE: 1' = 30'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
6TH STREET
ADT: 784

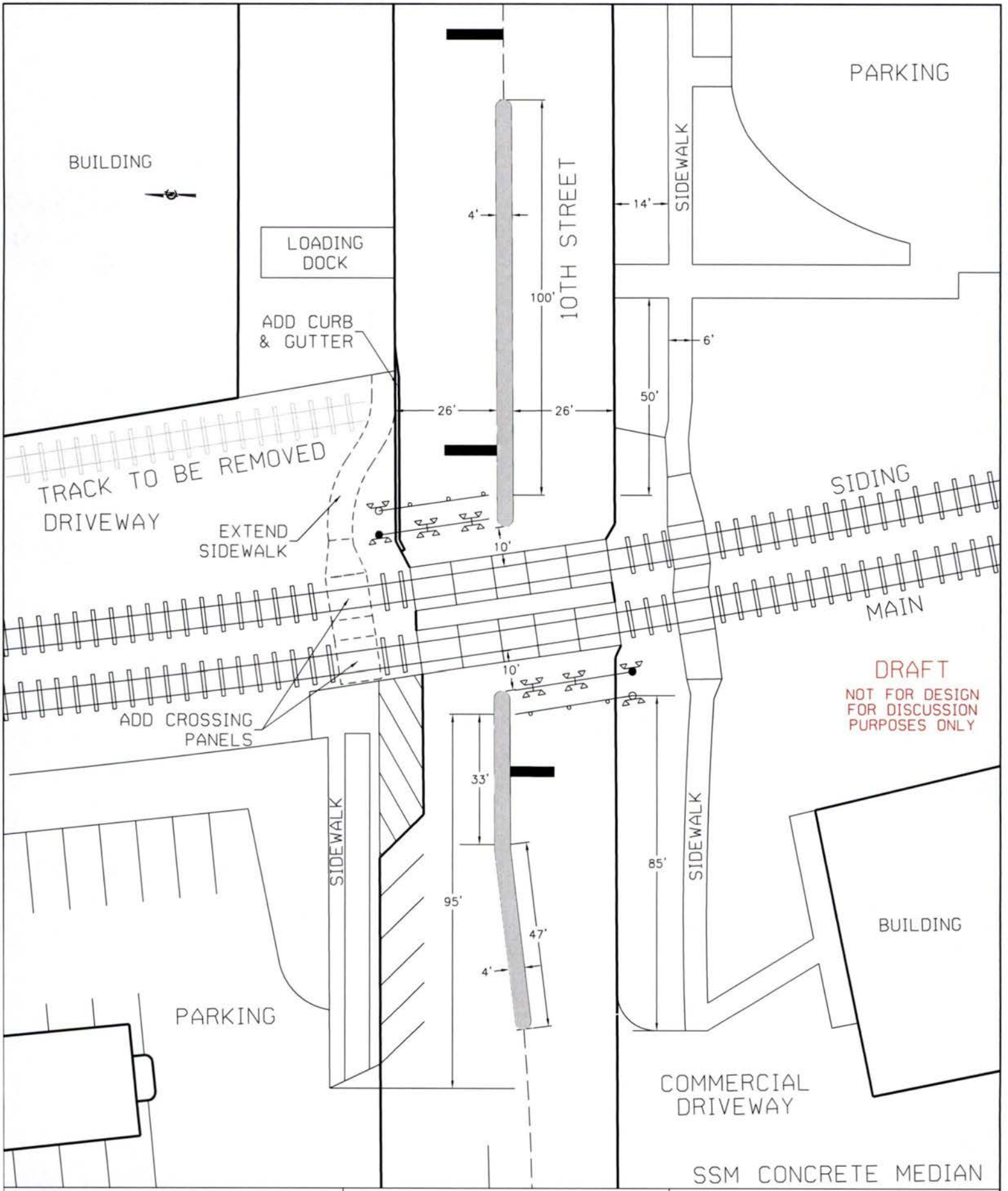
UP RAILROAD
DOT# 804373W
RRMP 51.98
SCALE: 1' = 30'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
8TH STREET
ADT: 4607

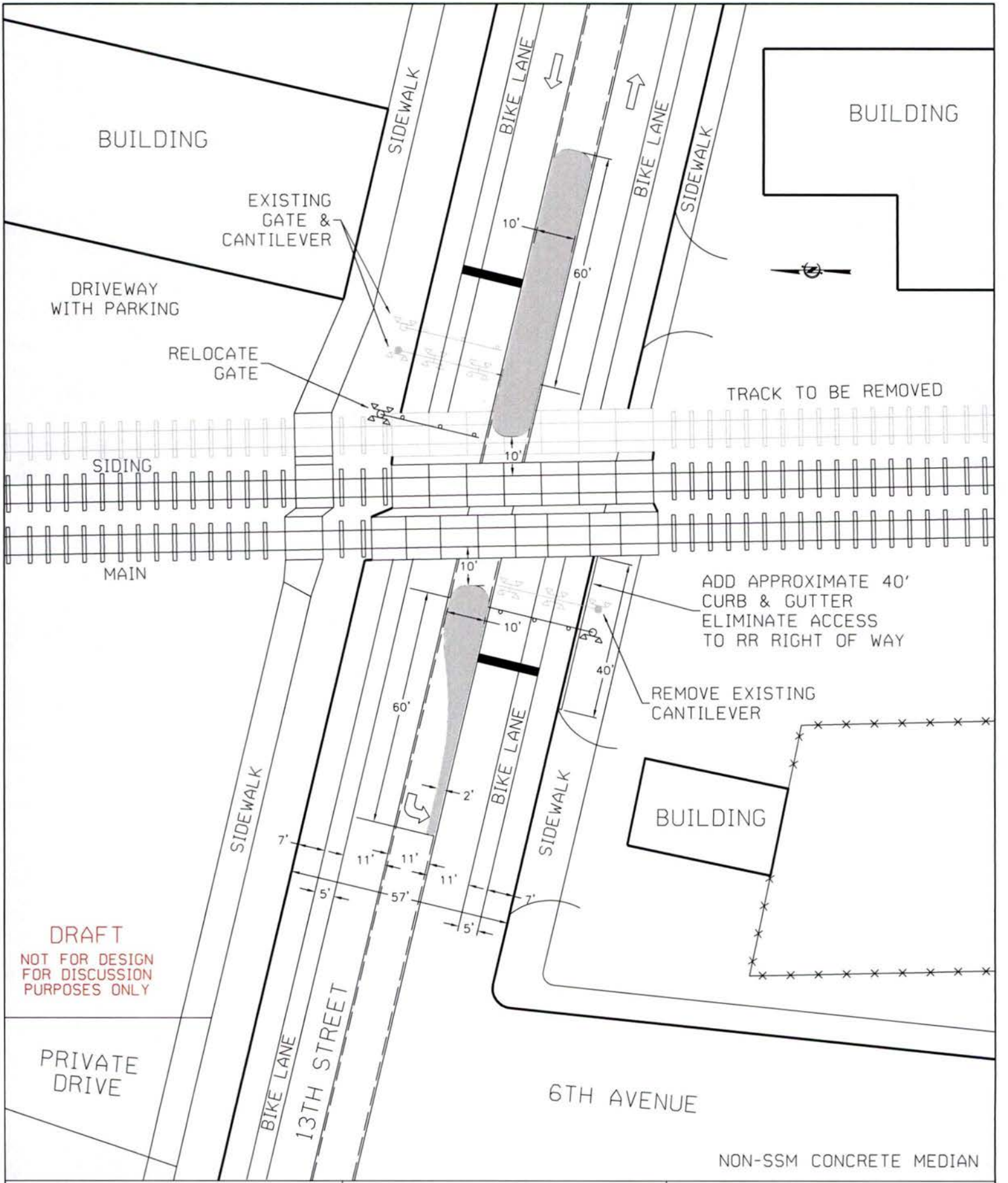
UP RAILROAD
DOT# 804372P
RRMP 51.82
SCALE: 1' = 40'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
10TH STREET
ADT: 6,240

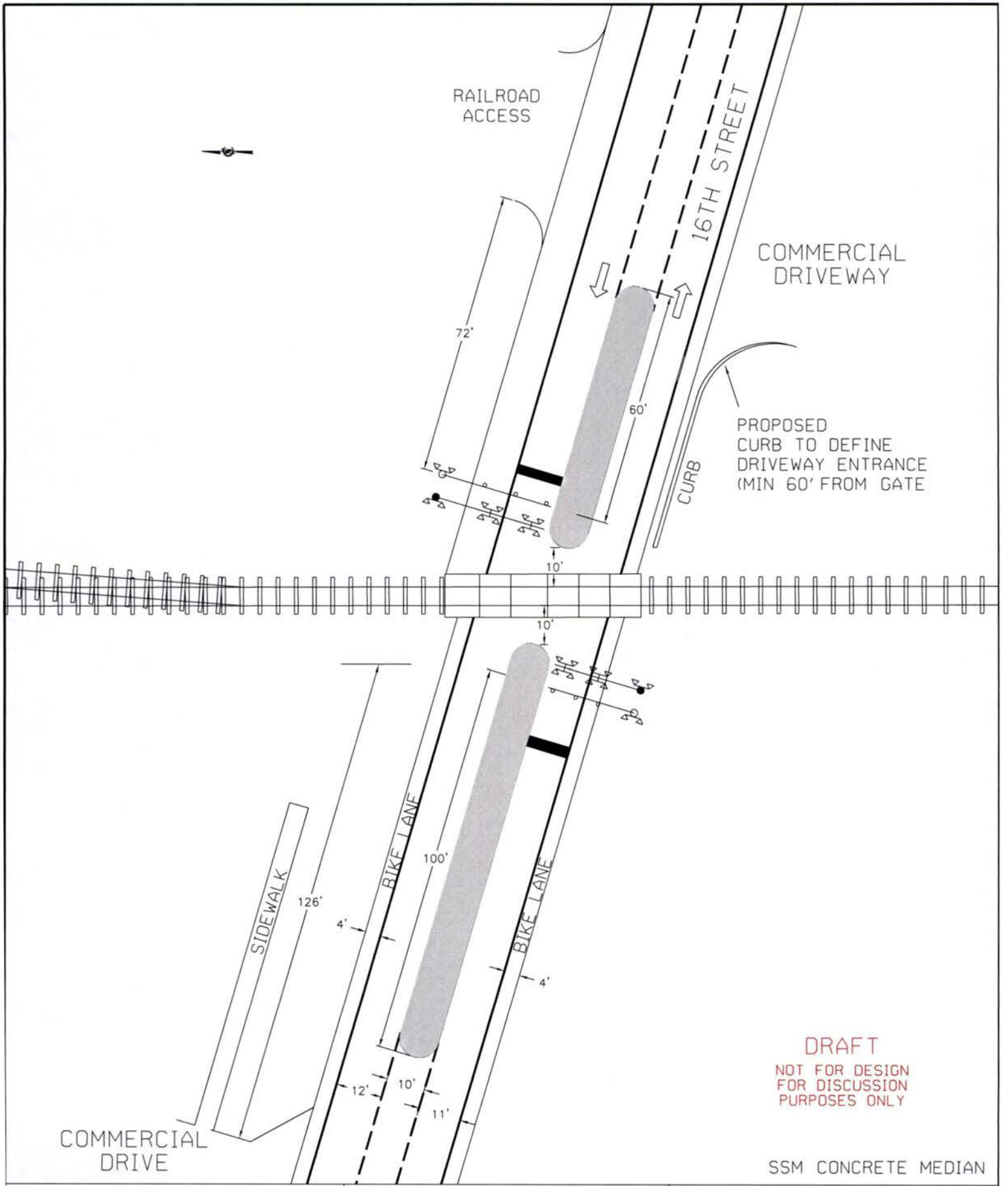
UP RAILROAD
DOT# 804370B
RRMP 51.69
SCALE: 1' = 30'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
13TH STREET
ADT: 6240

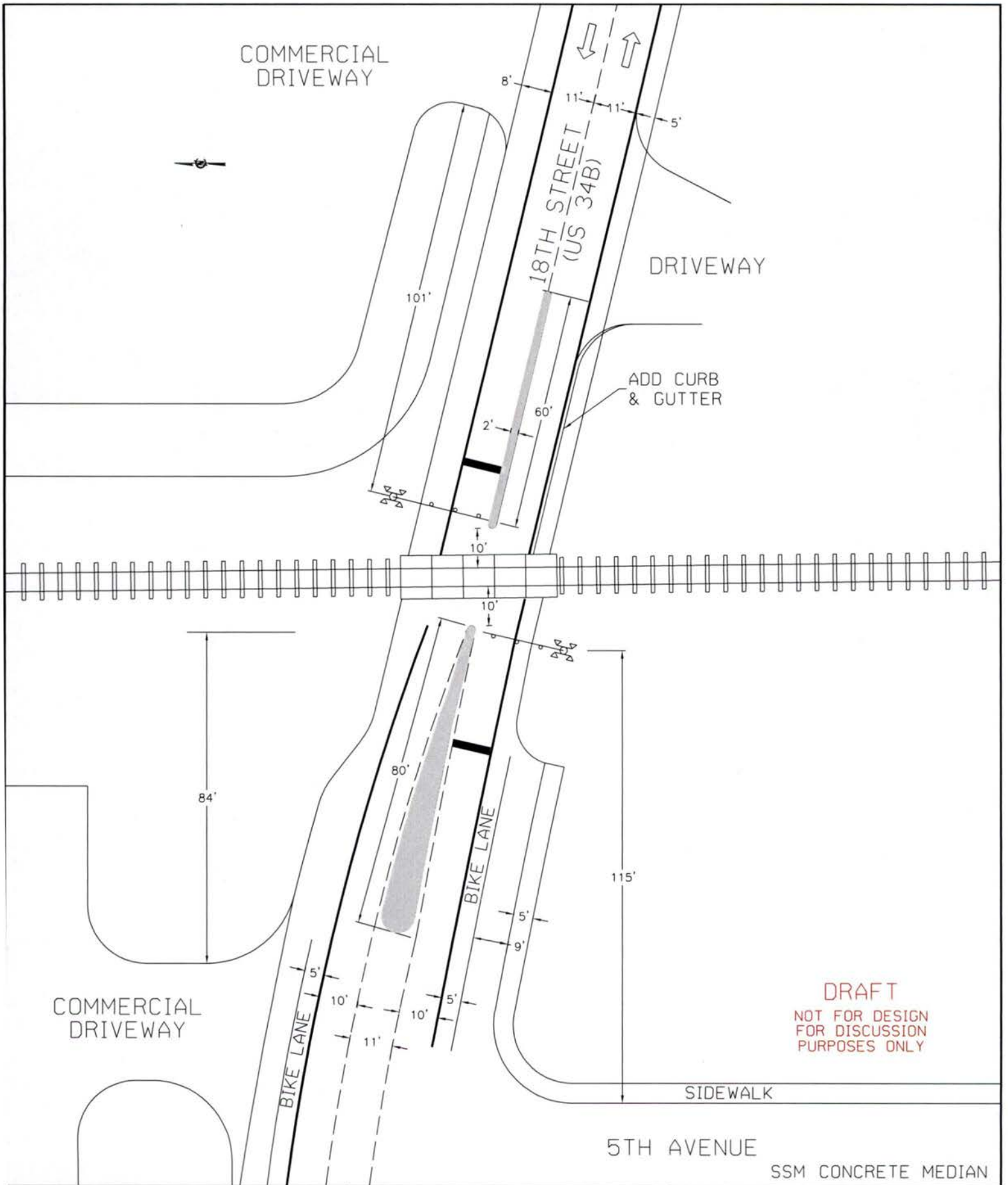
UP RAILROAD
DOT# 804367T
RRMP 51.37
SCALE: 1' = 30'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
16TH STREET
ADT: 5,793

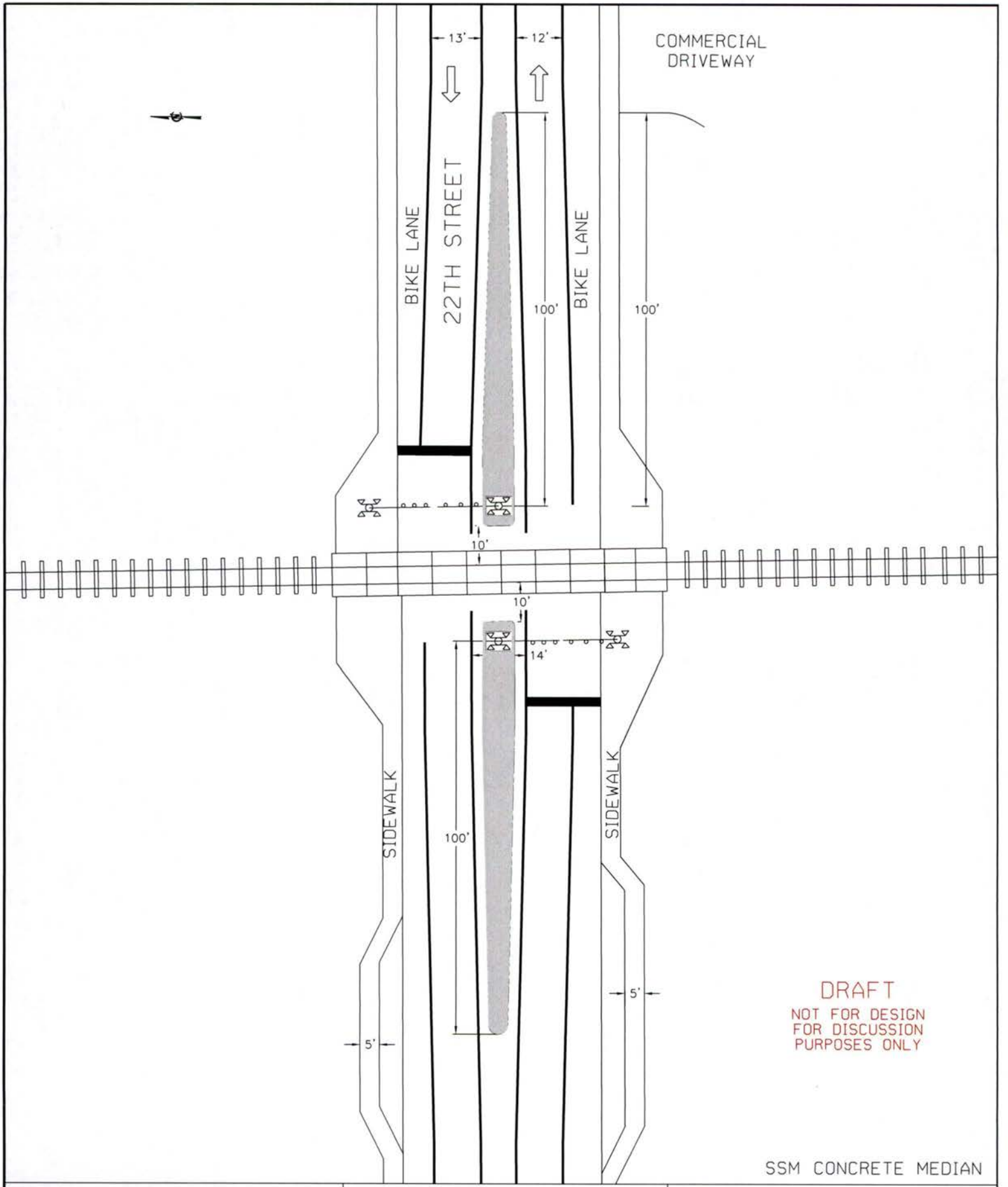
UP RAILROAD
DOT# 804366L
RRMP 51.05
SCALE: 1' = 30'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
18TH STREET
(US 34B)
ADT: 3,448

UP RAILROAD
DOT# 804365E
RRMP 50.79
SCALE: 1' = 30'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
22ND STREET
ADT: 5,798

UP RAILROAD
DOT# 816131K
RRMP 50.25
SCALE: 1' = 30'

APPENDIX B: Quiet Zone Option Construction Costs

QUIET ZONE OPTION A
DETAILED COST ESTIMATE

5th Street

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
48	LF	24" SLD PVMNT MARKING HAE (W)	$8	$384	2- 24 ft stop lines
4	EA	LANE LEGEND RR	$525	$2,100	
4	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$1,800	2- W10-1; 2 R8-8;
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$4,884**	
50	LF	Curb and gutter at gates - 25 long each gate	$30	$1,500	
375	LF	Curb and gutter for median construction	$30	$11,250	85' median (85*2*2 plus 6 ft nose*s) = 352
700	SF	Median Patterned Concrete	$15	$10,500	85*4*2 = 680
1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$1,500	$1,500	
		SUB-TOTAL CONSTRUCTION		**$27,250**	
		TOTAL CITY WORK		**$32,134**	
		RAILROAD WORK			
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$6,000**	
		TOTAL 5th Street		**$38,134**	

6th Street

Qty.	Unit	Description	Unit Price	Amount	Comments:
		CITY WORK			
1	EA	Removal of existing signs and pavement ma	$750	$750	
1	EA	Installation of No Outlet signs, etc. for closu	$750	$750	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$1,500**	
96	FT	Installation of Type III Barricade	$80	$7,680	
		SUB-TOTAL CONSTRUCTION		**$7,680**	
		TOTAL CITY WORK		**$9,180**	
		RAILROAD WORK			
1	EA	Flagging Cost for street construction	$1,500	$1,500	
		TOTAL RAILROAD WORK		**$1,500**	
		Total 6th Street		**$10,680**	

QUIET ZONE OPTION A
DETAILED COST ESTIMATE

8th Street

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
48	LF	24" SLD PVMNT MARKING HAE (W)	$8	$384	2- 24 ft stop lines
4	EA	LANE LEGEND RR	$525	$2,100	
4	EA	Furnish and install Alum Sign Pole	$450	$1,800	2- W10-1; 2 R8-8;
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$4,884**	
75	LF	Curb and gutter at gates	$30	$2,250	50' EB Gate and 25' WB gate
125	LF	Curb and gutter southeast quadrant, adjust (	$30	$3,750	65' from near rail to driveway plus turnout
1	EA	Relocate Street Light	$2,500	$2,500	
375	LF	Curb and gutter for median construction	$30	$11,250	170'of median(170*2 plus 2-6 ft nose)= 352
725	SF	Median Patterned Concrete	$15	$10,875	170*4 = 680
100	SY	Concrete Sidewalk - 6 inch thickness	$45	$4,500	130*5' wide/9 =72.22 SY
1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$2,500	$2,500	
		SUB-TOTAL CONSTRUCTION		**$37,625**	
		TOTAL CITY WORK		**$42,509**	
		RAILROAD WORK			
1	EA	Remove two house tracks, replace with asph	$12,500	$12,500	
1	EA	Install new asphalt	$25,000	$25,000	80 X50 street section= 4000 SF
1	EA	Relocate WB flashing light and gate to siding	$45,000	$45,000	
16	FT	Add concrete crossing panels	$1,500	$24,000	1 - 8 foot panel for each track
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$112,500**	
		TOTAL 8th Street		**$155,009**	

10th STREET

Qty.		Description	Unit Price	Amount	
		CITY WORK			
40	LF	24" SLD PVMNT MARKING HAE (W)	$8	$320	2- 20 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
4	EA	Mount/with Sign	$450	$1,800	2- W10-1; 2 R8-8
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$3,770**	

QUIET ZONE OPTION A
DETAILED COST ESTIMATE

125	LF	Curb and gutter at gates	$30	$3,750	75' EB Gate and 40' WB gate
450	LF	Curb and gutter for median construction	$30	$13,500	190'of median(190*2 plus 2-6 ft nose)=392
800	SF	Median Patterned Concrete	$15	$12,000	190*4 = 760
50	SY	Concrete Sidewalk - 6 inch thickness	$45	$2,250	75' long *5' wide/9 =41.7 SY
1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$1,500	$1,500	
		SUB-TOTAL CONSTRUCTION		**$34,000**	
		TOTAL CITY WORK		**$37,770**	
		RAILROAD WORK			
16	FT	Add concrete crossing panels	$1,500	$24,000	1- 8 foot panel for each track
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$30,000**	
		TOTAL 10th Street		**$67,770**	

13th STREET

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
30	LF	24" SLD PVMNT MARKING HAE (W)	$8	$240	2- 15 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
4	EA	Furnish and install Alum Sign Pole	$450	$1,800	2- W10-1; 2 R8-8
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$3,690**	
80	LF	Curb and gutter at gates	$30	$2,400	30' WB Gate and 50' EB gate
300	LF	Curb and gutter for median construction	$30	$9,000	130'of median(130*2 plus 1-2 ft nose and 1 -12 ft nose)= 274
1000	SF	Median Patterned Concrete	$15	$15,000	65*10+65*5 = 975 SF
1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$1,500	$1,500	
		SUB-TOTAL CONSTRUCTION		**$30,400**	
		TOTAL CITY WORK		**$34,090**	
		RAILROAD WORK			
1	EA	Remove house track	$25,000	$25,000	
1	EA	Relocate WB flashing light and gate to siding	$45,000	$45,000	
2	EA	Flagging Cost for street construction	$1,500	$3,000	
		TOTAL RAILROAD WORK		**$73,000**	
		TOTAL 13th Street		**$107,090**	

QUIET ZONE OPTION A
DETAILED COST ESTIMATE

16th STREET

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
40	LF	24" SLD PVMNT MARKING HAE (W)	$8	$320	2- 20 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
4	EA	Mount/with Sign	$450	$1,800	2- W10-1; 1 R8-8
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$3,770**	
150	LF	Curb and gutter at gates	$30	$4,500	65' both sides of street east of crossing
400	LF	Curb and gutter for median construction	$30	$12,000	170'of median(170*2 plus 2-12 ft noses)= 364
1750	SF	Median Patterned Concrete	$15	$26,250	170*10 = 1700 SF
1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$2,500	$2,500	
		SUB-TOTAL CONSTRUCTION		**$47,750**	
		TOTAL CITY WORK		**$51,520**	
		RAILROAD WORK			
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$6,000**	
		TOTAL 16th Street		**$57,520**	

18th STREET

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
24	LF	24" SLD PVMNT MARKING HAE (W)	$8	$192	2- 12 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
4	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$1,800	2- W10-1; 1 R8-8
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$3,642**	
75	LF	Curb and gutter at gates	$30	$2,250	65' in southeast quadrant
400	LF	Curb and gutter for median construction	$30	$12,000	170'of median(170*2 plus noses)= 354
700	SF	Median Patterned Concrete	$15	$10,500	170*4 = 680 SF

QUIET ZONE OPTION A
DETAILED COST ESTIMATE

1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$2,000	$2,000	
		SUB-TOTAL CONSTRUCTION		**$29,250**	
		TOTAL CITY WORK		**$32,892**	
		RAILROAD WORK			
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$6,000**	
		TOTAL 18th Street		**$38,892**	

22nd STREET

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
24	LF	24" SLD PVMNT MARKING HAE (W)	$8	$192	2- 12 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
4	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$1,800	2- W10-1; 1 R8-8
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$3,642**	
475	LF	Curb and gutter for median construction	$30	$14,250	210'of median(210*2 plus noses)= 444
2200	SF	Median Patterned Concrete	$15	$33,000	220*10 = 2200 SF
1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$1,500	$1,500	
		SUB-TOTAL CONSTRUCTION		**$51,250**	
		TOTAL CITY WORK		**$54,892**	
		RAILROAD WORK			
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$6,000**	
		TOTAL 22nd Street		**$60,892**	

OTHER COST

		Quiet Zone Consultant		$35,000	
		Street Engineering Design Consultant (PS&E for medians, sidewalks, pavement markings, etc)		$40,000	
		Contractor Railroad Liability Insurance (Construction Contractor to obtain)		$15,000	

QUIET ZONE OPTION A
DETAILED COST ESTIMATE

8	EA	Traffic Counts for each crossing	$300	$2,400	
		Total Other Costs		**$92,400**	

TOTAL ESTIMATED COST - OPTION A	**$628,387**
CONTINGENCY 20%	**$125,677**
UPRR Contribution for 6th St Closure	**-$20,000**
TOTAL ESTIMATED COST - OPTION A	**$734,064**

QUIET ZONE OPTION B
DETAILED COST ESTIMATE

5th Street

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
48	LF	24" SLD PVMNT MARKING HAE (W)	$8	$384	2- 24 ft stop lines
4	EA	LANE LEGEND RR	$525	$2,100	
4	EA	Mount/with Sign	$450	$1,800	2- W10-1; 2 R8-8;
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$4,884**	
50	LF	Curb and gutter at gates - 25 long each gate	$30	$1,500	
375	LF	Curb and gutter for median construction	$30	$11,250	85' median (85*2*2 plus 6 ft nose*s) = 1000
700	SF	Median Patterned Concrete	$15	$10,500	85*4*2 = 680
1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$1,500	$1,500	
		SUB-TOTAL CONSTRUCTION		**$27,250**	
		TOTAL CITY WORK		**$32,134**	
		RAILROAD WORK			
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$6,000**	
		TOTAL 5th Street		**$38,134**	

6th Street

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
48	LF	24" SLD PVMNT MARKING HAE (W)	$8	$384	2- 24 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
4	EA	Furnish and install Alum Sign Pole	$450	$1,800	2- W10-1; 2 R8-8;
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$3,834**	
30	LF	Curb and gutter at gates	$30	$900	30' WB gate
80	LF	Curb and gutter southeast quadrant, adjust	$30	$2,400	65' from near rail to driveway plus turnout
350	LF	Curb and gutter for median construction	$30	$10,500	150'of median(150*2 plus 2-6 ft nose)= 312
650	SF	Median Patterned Concrete	$15	$9,750	150*4 = 600
1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$2,500	$2,500	
		SUB-TOTAL CONSTRUCTION		**$28,550**	

QUIET ZONE OPTION B
DETAILED COST ESTIMATE

		TOTAL CITY WORK		**$32,384**	
		RAILROAD WORK			
1	EA	Remove house track, replace with asphalt	$7,000	$7,000	
1	EA	Install new asphalt	$6,500	$6,500	44'X25 street section= 1100 SF
1	EA	Install new railroad flashing lights, gates, cor	$350,000	$350,000	
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$369,500**	
		TOTAL 6th Street		**$401,884**	

8th Street

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
48	LF	24" SLD PVMNT MARKING HAE (W)	$8	$384	2- 24 ft stop lines
4	EA	LANE LEGEND RR	$525	$2,100	
4	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$1,800	2- W10-1; 2 R8-8;
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$4,884**	
75	LF	Curb and gutter at gates	$30	$2,250	50' EB Gate and 25' WB gate
125	LF	Curb and gutter southeast quadrant, adjust	$30	$3,750	65' from near rail to driveway plus turnout
1	EA	Relocate Street Light	$2,500	$2,500	
375	LF	Curb and gutter for median construction	$30	$11,250	170'of median(170*2 plus 2-6 ft nose)= 352
725	SF	Median Patterned Concrete	$15	$10,875	170*4 = 680
100	SY	Concrete Sidewalk - 6 inch thickness	$45	$4,500	130*5' wide/9 =72.22 SY
1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$2,500	$2,500	
		SUB-TOTAL CONSTRUCTION		**$37,625**	
		TOTAL CITY WORK		**$42,509**	
		RAILROAD WORK			
1	EA	Remove two house tracks, replace with asph	$12,500	$12,500	
1	EA	Install new asphalt	$25,000	$25,000	80'X50 street section = 4000 SF
1	EA	Relocate WB flashing light and gate to siding	$45,000	$45,000	
16	FT	Add concrete crossing panels	$1,500	$24,000	1 - 8 foot panel for each track
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$112,500**	
		TOTAL 8th Street		**$155,009**	

QUIET ZONE OPTION B
DETAILED COST ESTIMATE

10th STREET

Qty.		Description	Unit Price	Amount	
		CITY WORK			
40	LF	24" SLD PVMNT MARKING HAE (W)	$8	$320	2- 20 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
4	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$1,800	2- W10-1; 2 R8-8
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$3,770**	
125	LF	Curb and gutter at gates	$30	$3,750	75' EB Gate and 40' WB gate
450	LF	Curb and gutter for median construction	$30	$13,500	190'of median(190*2 plus 2-6 ft nose)=392
800	SF	Median Patterned Concrete	$15	$12,000	190*4 = 760
50	SY	Concrete Sidewalk - 6 inch thickness	$45	$2,250	75' long *5' wide/9 =41.7 SY
1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$1,500	$1,500	
		SUB-TOTAL CONSTRUCTION		**$34,000**	
		TOTAL CITY WORK		**$37,770**	
		RAILROAD WORK			
16	FT	Add concrete crossing panels	$1,500	$24,000	1- 8 foot panel for each track
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$30,000**	
		TOTAL 10th Street		**$67,770**	

13th STREET

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
30	LF	24" SLD PVMNT MARKING HAE (W)	$8	$240	2- 15 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
4	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$1,800	2- W10-1; 2 R8-8
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$3,690**	
80	LF	Curb and gutter at gates	$30	$2,400	30' WB Gate and 50' EB gate

QUIET ZONE OPTION B
DETAILED COST ESTIMATE

300	LF	Curb and gutter for median construction	$30	$9,000	130'of median(130*2 plus 1-2 ft nose and 1 -12 ft nose)= 274
1000	SF	Median Patterned Concrete	$15	$15,000	65*10+65*5 = 975 SF
1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$1,500	$1,500	
		SUB-TOTAL CONSTRUCTION		**$30,400**	
		TOTAL CITY WORK		**$34,090**	
		RAILROAD WORK			
1	EA	Remove house track	$25,000	$25,000	
1	EA	Relocate WB flashing light and gate to siding	$45,000	$45,000	
2	EA	Flagging Cost for street construction	$1,500	$3,000	
		TOTAL RAILROAD WORK		**$73,000**	
		TOTAL 13th Street		**$107,090**	

16th STREET

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
40	LF	24" SLD PVMNT MARKING HAE (W)	$8	$320	2- 20 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
4	EA	Mount/with Sign	$450	$1,800	2- W10-1; 1 R8-8
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$3,770**	
150	LF	Curb and gutter at gates	$30	$4,500	65' both sides of street east of crossing
400	LF	Curb and gutter for median construction	$30	$12,000	170'of median(170*2 plus 2-12 ft noses)= 364
1750	SF	Median Patterned Concrete	$15	$26,250	170*10 = 1700 SF
1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$2,500	$2,500	
		SUB-TOTAL CONSTRUCTION		**$47,750**	
		TOTAL CITY WORK		**$51,520**	
		RAILROAD WORK			
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$6,000**	
		TOTAL 16th Street		**$57,520**	

QUIET ZONE OPTION B
DETAILED COST ESTIMATE

18th STREET

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
24	LF	24" SLD PVMNT MARKING HAE (W)	$8	$192	2- 12 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
4	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$1,800	2- W10-1; 1 R8-8
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$3,642**	
75	LF	Curb and gutter at gates	$30	$2,250	65' in southeast quadrant
400	LF	Curb and gutter for median construction	$30	$12,000	170'of median(170*2 plus noses)= 354
700	SF	Median Patterned Concrete	$15	$10,500	170*4 = 680 SF
1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$2,000	$2,000	
		SUB-TOTAL CONSTRUCTION		**$29,250**	
		TOTAL CITY WORK		**$32,892**	
		RAILROAD WORK			
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$6,000**	
		TOTAL 18th Street		**$38,892**	

22nd STREET

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
24	LF	24" SLD PVMNT MARKING HAE (W)	$8	$192	2- 12 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
4	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$1,800	2- W10-1; 1 R8-8
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$3,642**	
475	LF	Curb and gutter for median construction	$30	$14,250	210'of median(210*2 plus noses)= 444
2200	SF	Median Patterned Concrete	$15	$33,000	220*10 = 2200 SF
1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$1,500	$1,500	
		SUB-TOTAL CONSTRUCTION		**$51,250**	

QUIET ZONE OPTION B
DETAILED COST ESTIMATE

		TOTAL CITY WORK		**$54,892**	
		RAILROAD WORK			
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$6,000**	
		TOTAL 22nd Street		**$60,892**	

OTHER COST

		Quiet Zone Consultant		$35,000	
		Street Engineering Design Consultant (PS&E for medians, sidewalks, pavement markings, etc)		$40,000	
		Contractor Railroad Liability Insurance (Construction Contractor to obtain)		$15,000	
8	EA	Traffic Counts for each crossing	$300	$2,400	
		Total Other Costs		**$92,400**	

TOTAL ESTIMATED COST - OPTION B	**$1,019,591**
CONTINGENCY 20%	**$203,918**
UPRR Contribution for 6th St Closure	**$0**
TOTAL ESTIMATED COST - OPTION B	**$1,223,509**

QUIET ZONE OPTION C
DETAILED COST ESTIMATE

5th Street

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
48	LF	24" SLD PVMNT MARKING HAE (W)	$8	$384	2- 24 ft stop lines
4	EA	LANE LEGEND RR	$525	$2,100	
4	EA	Mount/with Sign	$450	$1,800	2- W10-1; 2 R8-8;
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$4,884**	
50	LF	Curb and gutter at gates - 25 long each gate	$30	$1,500	
375	LF	Curb and gutter for median construction	$30	$11,250	85' median (85*2*2 plus 6 ft nose*s) = 1000
700	SF	Median Patterned Concrete	$15	$10,500	85*4*2 = 680
1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$1,500	$1,500	
		SUB-TOTAL CONSTRUCTION		**$27,250**	
		TOTAL CITY WORK		**$32,134**	
		RAILROAD WORK			
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$6,000**	
		TOTAL 5th Street		**$38,134**	

6th Street

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
48	LF	24" SLD PVMNT MARKING HAE (W)	$8	$384	2- 24 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
4	EA	Furnish and install Alum Sign Pole	$450	$1,800	2- W10-1; 2 R8-8;
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$3,834**	
30	LF	Curb and gutter at gates	$30	$900	30' WB gate
80	LF	Curb and gutter southeast quadrant, adjust	$30	$2,400	65' from near rail to driveway plus turnout
350	LF	Curb and gutter for median construction	$30	$10,500	150'of median(150*2 plus 2-6 ft nose)= 312
650	SF	Median Patterned Concrete	$15	$9,750	150*4 = 600
1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$2,500	$2,500	
		SUB-TOTAL CONSTRUCTION		**$28,550**	

QUIET ZONE OPTION C
DETAILED COST ESTIMATE

		TOTAL CITY WORK		**$32,384**	
		RAILROAD WORK			
1	EA	Remove house track, replace with asphalt	$7,000	$7,000	
1	EA	Install new asphalt	$6,500	$6,500	44'X25 street section=1100 SF
1	EA	Install new railroad flashing lights, gates, cor	$350,000	$350,000	
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$369,500**	
		TOTAL 6th Street		**$401,884**	

8th Street

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
48	LF	24" SLD PVMNT MARKING HAE (W)	$8	$384	2- 24 ft stop lines
4	EA	LANE LEGEND RR	$525	$2,100	
4	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$1,800	2- W10-1; 2 R8-8;
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$4,884**	
75	LF	Curb and gutter at gates	$30	$2,250	50' EB Gate and 25' WB gate
125	LF	Curb and gutter southeast quadrant, adjust	$30	$3,750	65' from near rail to driveway plus turnout
1	EA	Relocate Street Light	$2,500	$2,500	
375	LF	Curb and gutter for median construction	$30	$11,250	170'of median(170*2 plus 2-6 ft nose)= 352
725	SF	Median Patterned Concrete	$15	$10,875	170*4 = 680
100	SY	Concrete Sidewalk - 6 inch thickness	$45	$4,500	130*5' wide/9 =72.22 SY
1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$2,500	$2,500	
		SUB-TOTAL CONSTRUCTION		**$40,125**	
		TOTAL CITY WORK		**$45,009**	
		RAILROAD WORK			
1	EA	Remove two house tracks, replace with asph	$12,500	$12,500	
1	EA	Install new asphalt	$25,000	$25,000	80X50 street section = 4000 SF
1	EA	Relocate WB flashing light and gate to siding	$45,000	$45,000	
16	FT	Add concrete crossing panels	$1,500	$24,000	1 - 8 foot panel for each track
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$112,500**	
		TOTAL 8th Street		**$157,509**	

QUIET ZONE OPTION C
DETAILED COST ESTIMATE

10th STREET

Qty.		Description	Unit Price	Amount	
		CITY WORK			
40	LF	24" SLD PVMNT MARKING HAE (W)	$8	$320	2- 20 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
4	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$1,800	2- W10-1; 2 R8-8
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$3,770**	
125	LF	Curb and gutter at gates	$30	$3,750	75' EB Gate and 40' WB gate
450	LF	Curb and gutter for median construction	$30	$13,500	190'of median(190*2 plus 2-6 ft nose)=392
800	SF	Median Patterned Concrete	$15	$12,000	190*4 = 760
50	SY	Concrete Sidewalk - 6 inch thickness	$45	$2,250	75' long *5' wide/9 =41.7 SY
1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$1,500	$1,500	
		SUB-TOTAL CONSTRUCTION		**$34,000**	
		TOTAL CITY WORK		**$37,770**	
		RAILROAD WORK			
16	FT	Add concrete crossing panels	$1,500	$24,000	1- 8 foot panel for each track
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$30,000**	
		TOTAL 10th Street		**$67,770**	

13th STREET

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
30	LF	24" SLD PVMNT MARKING HAE (W)	$8	$240	2- 15 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
4	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$1,800	2- W10-1; 2 R8-8
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$3,690**	
80	LF	Curb and gutter at gates	$30	$2,400	30' WB Gate and 50' EB gate
1	EA	Site prep/mobilization	$1,500	$1,500	
1	EA	Traffic control	$1,000	$1,000	

QUIET ZONE OPTION C
DETAILED COST ESTIMATE

		SUB-TOTAL CONSTRUCTION		**$4,900**	
		TOTAL CITY WORK		**$8,590**	
		RAILROAD WORK			
1	EA	Remove house track	$25,000	$25,000	
1	EA	Four-quadrant gate system with presence de	$600,000	$600,000	
2	EA	Flagging Cost for street construction	$1,500	$3,000	
		TOTAL RAILROAD WORK		**$628,000**	
		TOTAL 13th Street		**$636,590**	

16th STREET

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
40	LF	24" SLD PVMNT MARKING HAE (W)	$8	$320	2- 20 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
4	EA	Mount/with Sign	$450	$1,800	2- W10-1; 1 R8-8
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$3,770**	
150	LF	Curb and gutter at gates	$30	$4,500	65' both sides of street east of crossing
400	LF	Curb and gutter for median construction	$30	$12,000	170'of median(170*2 plus 2-12 ft noses)= 364
1750	SF	Median Patterned Concrete	$15	$26,250	170*10 = 1700 SF
1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$2,500	$2,500	
		SUB-TOTAL CONSTRUCTION		**$47,750**	
		TOTAL CITY WORK		**$51,520**	
		RAILROAD WORK			
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$6,000**	
		TOTAL 16th Street		**$57,520**	

18th STREET

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
24	LF	24" SLD PVMNT MARKING HAE (W)	$8	$192	2- 12 ft stop lines

QUIET ZONE OPTION C
DETAILED COST ESTIMATE

2	EA	LANE LEGEND RR	$525	$1,050	
4	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$1,800	2- W10-1; 1 R8-8
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$3,642**	
75	LF	Curb and gutter at gates	$30	$2,250	65' in southeast quadrant
400	LF	Curb and gutter for median construction	$30	$12,000	170'of median(170*2 plus
700	SF	Median Patterned Concrete	$15	$10,500	170*4 = 680 SF
1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$2,000	$2,000	
		SUB-TOTAL CONSTRUCTION		**$29,250**	
		TOTAL CITY WORK		**$32,892**	
		RAILROAD WORK			
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$6,000**	
		TOTAL 18th Street		**$38,892**	

22nd STREET

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
24	LF	24" SLD PVMNT MARKING HAE (W)	$8	$192	2- 12 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
4	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$1,800	2- W10-1; 1 R8-8
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$3,642**	
475	LF	Curb and gutter for median construction	$30	$14,250	210'of median(210*2 plus noses)= 444
2200	SF	Median Patterned Concrete	$15	$33,000	220*10 = 2200 SF
1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$1,500	$1,500	
		SUB-TOTAL CONSTRUCTION		**$51,250**	
		TOTAL CITY WORK		**$54,892**	
		RAILROAD WORK			
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$6,000**	
		TOTAL 22nd Street		**$60,892**	

QUIET ZONE OPTION C
DETAILED COST ESTIMATE

OTHER COST

		Quiet Zone Consultant		$35,000	
		Street Engineering Design Consultant (PS&E for medians, sidewalks, pavement markings, etc)		$40,000	
		Contractor Railroad Liability Insurance (Construction Contractor to obtain)		$15,000	
8	EA	Traffic Counts for each crossing	$300	$2,400	
		Total Other Costs		**$92,400**	

TOTAL ESTIMATED COST - OPTION C	**$1,551,591**
CONTINGENCY 20%	**$310,318**
UPRR Contribution for 6th St Closure	**$0**
TOTAL ESTIMATED COST - OPTION C	**$1,861,909**

QUIET ZONE OPTION C
DETAILED COST ESTIMATE

5th Street

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
48	LF	24" SLD PVMNT MARKING HAE (W)	$8	$384	2- 24 ft stop lines
4	EA	LANE LEGEND RR	$525	$2,100	
4	EA	Mount/with Sign	$450	$1,800	2- W10-1; 2 R8-8;
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$4,884**	
50	LF	Curb and gutter at gates - 25 long each gate	$30	$1,500	
375	LF	Curb and gutter for median construction	$30	$11,250	85' median (85*2*2 plus 6 ft nose*s) = 1000
700	SF	Median Patterned Concrete	$15	$10,500	85*4*2 = 680
1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$1,500	$1,500	
		SUB-TOTAL CONSTRUCTION		**$27,250**	
		TOTAL CITY WORK		**$32,134**	
		RAILROAD WORK			
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$6,000**	
		TOTAL 5th Street		**$38,134**	

6th Street

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
1	EA	Removal of existing signs and pavement mar	$750	$750	
1	EA	Installation of No Outlet signs, etc. for closur	$750	$750	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$1,500**	
96	FT	Installation of Type III Barricade	$80	$7,680	
		SUB-TOTAL CONSTRUCTION		**$7,680**	
		TOTAL CITY WORK		**$9,180**	
		RAILROAD WORK			
1	EA	Flagging Cost for street construction	$1,500	$1,500	
		TOTAL RAILROAD WORK		**$1,500**	
		TOTAL 6th Street		**$10,680**	

QUIET ZONE OPTION C
DETAILED COST ESTIMATE

8th Street

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
48	LF	24" SLD PVMNT MARKING HAE (W)	$8	$384	2- 24 ft stop lines
4	EA	LANE LEGEND RR	$525	$2,100	
4	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$1,800	2- W10-1; 2 R8-8;
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$4,884**	
75	LF	Curb and gutter at gates	$30	$2,250	50' EB Gate and 25' WB gate
125	LF	Curb and gutter southeast quadrant, adjust (	$30	$3,750	65' from near rail to driveway plus turnout
1	EA	Relocate Street Light	$2,500	$2,500	
375	LF	Curb and gutter for median construction	$30	$11,250	170'of median(170*2 plus 2-6 ft nose)= 352
725	SF	Median Patterned Concrete	$15	$10,875	170*4 = 680
100	SY	Concrete Sidewalk - 6 inch thickness	$45	$4,500	130*5' wide/9 =72.22 SY
1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$2,500	$2,500	
		SUB-TOTAL CONSTRUCTION		**$40,125**	
		TOTAL CITY WORK		**$45,009**	
		RAILROAD WORK			
1	EA	Remove two house tracks, replace with asph	$12,500	$12,500	
1	EA	Install new asphalt	$25,000	$25,000	80X50 street section = 4000 SF
1	EA	Relocate WB flashing light and gate to siding	$45,000	$45,000	
16	FT	Add concrete crossing panels	$1,500	$24,000	1 - 8 foot panel for each track
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$112,500**	
		TOTAL 8th Street		**$157,509**	

10th STREET

Qty.		Description	Unit Price	Amount	
		CITY WORK			
40	LF	24" SLD PVMNT MARKING HAE (W)	$8	$320	2- 20 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
4	EA	Mount/with Sign	$450	$1,800	2- W10-1; 2 R8-8
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	

QUIET ZONE OPTION C
DETAILED COST ESTIMATE

		SUB-TOTAL SIGNS/PVMT MKINGS		**$3,770**	
125	LF	Curb and gutter at gates	$30	$3,750	75' EB Gate and 40' WB gate
450	LF	Curb and gutter for median construction	$30	$13,500	190'of median(190*2 plus 2-6 ft nose)=392
800	SF	Median Patterned Concrete	$15	$12,000	190*4 = 760
50	SY	Concrete Sidewalk - 6 inch thickness	$45	$2,250	75' long *5' wide/9 =41.7 SY
1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$1,500	$1,500	
		SUB-TOTAL CONSTRUCTION		**$34,000**	
		TOTAL CITY WORK		**$37,770**	
		RAILROAD WORK			
16	FT	Add concrete crossing panels	$1,500	$24,000	1- 8 foot panel for each track
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$30,000**	
		TOTAL 10th Street		**$67,770**	

13th STREET

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
30	LF	24" SLD PVMNT MARKING HAE (W)	$8	$240	2- 15 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
4	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$1,800	2- W10-1; 2 R8-8
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$3,690**	
80	LF	Curb and gutter at gates	$30	$2,400	30' WB Gate and 50' EB gate
1	EA	Site prep/mobilization	$1,500	$1,500	
1	EA	Traffic control	$1,000	$1,000	
		SUB-TOTAL CONSTRUCTION		**$4,900**	
		TOTAL CITY WORK		**$8,590**	
		RAILROAD WORK			
1	EA	Remove house track	$25,000	$25,000	
1	EA	Four-quadrant gate system with presence de	$600,000	$600,000	
2	EA	Flagging Cost for street construction	$1,500	$3,000	
		TOTAL RAILROAD WORK		**$628,000**	

QUIET ZONE OPTION C
DETAILED COST ESTIMATE

TOTAL 13th Street **$636,590**

16th STREET

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
40	LF	24" SLD PVMNT MARKING HAE (W)	$8	$320	2- 20 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
4	EA	Mount/with Sign	$450	$1,800	2- W10-1; 1 R8-8
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$3,770**	
150	LF	Curb and gutter at gates	$30	$4,500	65' both sides of street east of crossing
400	LF	Curb and gutter for median construction	$30	$12,000	170'of median(170*2 plus 2-12 ft noses)= 364
1750	SF	Median Patterned Concrete	$15	$26,250	170*10 = 1700 SF
1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$2,500	$2,500	
		SUB-TOTAL CONSTRUCTION		**$47,750**	
		TOTAL CITY WORK		**$51,520**	
		RAILROAD WORK			
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$6,000**	

TOTAL 16th Street **$57,520**

18th STREET

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
24	LF	24" SLD PVMNT MARKING HAE (W)	$8	$192	2- 12 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
4	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$1,800	2- W10-1; 1 R8-8
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$3,642**	
75	LF	Curb and gutter at gates	$30	$2,250	65' in southeast quadrant
400	LF	Curb and gutter for median construction	$30	$12,000	170'of median(170*2 plus
700	SF	Median Patterned Concrete	$15	$10,500	170*4 = 680 SF

QUIET ZONE OPTION C
DETAILED COST ESTIMATE

1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$2,000	$2,000	
		SUB-TOTAL CONSTRUCTION		**$29,250**	
		TOTAL CITY WORK		**$32,892**	
		RAILROAD WORK			
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$6,000**	
		TOTAL 18th Street		**$38,892**	

22nd STREET

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
24	LF	24" SLD PVMNT MARKING HAE (W)	$8	$192	2- 12 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
4	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$1,800	2- W10-1; 1 R8-8
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$3,642**	
475	LF	Curb and gutter for median construction	$30	$14,250	210'of median(210*2 plus noses)= 444
2200	SF	Median Patterned Concrete	$15	$33,000	220*10 = 2200 SF
1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$1,500	$1,500	
		SUB-TOTAL CONSTRUCTION		**$51,250**	
		TOTAL CITY WORK		**$54,892**	
		RAILROAD WORK			
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$6,000**	
		TOTAL 22nd Street		**$60,892**	

OTHER COST

		Quiet Zone Consultant		$35,000	
		Street Engineering Design Consultant (PS&E for medians, sidewalks, pavement markings, etc)		$40,000	
		Contractor Railroad Liability Insurance (Construction Contractor to obtain)		$15,000	

QUIET ZONE OPTION C
DETAILED COST ESTIMATE

8	EA	Traffic Counts for each crossing	$300	$2,400	
		Total Other Costs		**$92,400**	

TOTAL ESTIMATED COST - OPTION C	**$1,160,387**
CONTINGENCY 20%	**$232,077**
UPRR Contribution for 6th St Closure	**-$20,000**
TOTAL ESTIMATED COST - OPTION C	**$1,372,464**

APPENDIX C: FRA 49 CFR Parts 222 and 229

Federal Register

Thursday,
December 18, 2003

Part II

Department of Transportation

Federal Railroad Administration

49 CFR Parts 222 and 229
Use of Locomotive Horns at Highway-Rail Grade Crossings; Interim Final Rule

for whistle bans—and which are required in this rule for New Quiet Zones—were in most cases installed with primarily Federal funds. Thus prior Federal funding has already assisted local governments to some extent in preserving Pre-Rule Quiet Zones and creating New Quiet Zones.

"Section 152 funds" (23 U.S.C. 152 (Hazard Elimination Program) are intended to implement safety improvement projects to reduce the number and severity of crashes at hazardous highway locations, sections, and elements on any public road. Typical projects include intersection improvements (channelization, traffic signals, and sight distance); pavement and shoulder widening; guardrail and barrier improvements; installation of crash cushions; modification of roadway alignment; signing, pavement marking, and delineation; breakaway utility poles and sign supports; pavement grooving and skid resistant overlays; shoulder rumble strips; and minor structure replacements or modifications. It is important to note that grade crossing improvements can be funded under section 152 if they are identified in a State's hazardous location survey.

The difference between the sum of the funding levels for sections 130 and 152 and the overall 10 percent safety set-aside in STP is in a category called "Optional Safety Funds" and is eligible for use in either section 130 or section 152. In FY 2000, there was a total of $368 million available in Optional Safety Funds, but only $21 million (or 6 percent) was used on section 130 grade crossing safety enhancement. Clearly this is an area where States can be encouraged to change the mix of safety projects advanced using this funding to accommodate more grade crossing safety improvements.

It should be noted that 90 percent of the STP funds are available for general use. Local Metropolitan Planning Organizations, working with the State departments of transportation, help determine how those funds should be allocated. As FRA was advised by commenters in this proceeding, community transportation needs differ. Without question, engineering improvements under this rule would constitute eligible projects deserving of consideration for use of this 90 percent share.

Under section 1103(c) of TEA 21, an amount of $5,250,000 per year was set aside from STP funds, and this funding is to be used for projects on designated high speed passenger rail corridors. Should a quiet zone be desired on a portion of such a designated high speed corridor, such funds could be used as a part of the overall high speed corridor improvement project. Given the relatively small amount of funding available under section 1103(c), it is perhaps unlikely that any quiet zone improvements would rise to the top of the list on any such corridor. However, note that there is a strong compatibility between the kind of safety improvements desired for high-speed rail corridors ("sealed corridor" treatments) and the supplementary safety measures identified in this rule.

Transfers of funds from other categories into the STP are permitted, and any such transfers are not subject to STP set-asides or suballocations.

- Up to 50 percent of National Highway System (NHS) apportionments may be transferred to the STP; indeed, up to 100 percent of NHS funds may be transferred to STP if approved by the Secretary of Transportation, and if sufficient notice and opportunity for public comment is given.
- Up to 50 percent of Interstate Maintenance apportionments may be transferred to STP.
- Up to 50 percent of Bridge Replacement funds may be transferred to STP.
- Funds apportioned to the Congestion Mitigation and Air Quality (CMAQ) Program may also be transferred to STP, subject to the following conditions. Up to 50 percent of the amount by which the CMAQ apportionment for the fiscal year exceeds the amount that would have been apportioned to CMAQ for that fiscal year if the program had been funded at $1.35 billion annually may be transferred to STP. Transferred CMAQ funds may only be used in air quality non-attainment and maintenance areas.

Finally, please note that, with respect to roadways on the National Highway System, improvements would be eligible for funding out of the NHS.

The subject matter of this regulatory proceeding is the use of the train horn at highway-rail crossings, not the development of appropriations requests. Accordingly, FRA neither endorses nor argues against earmarked Federal funding for this purpose. FRA does note that, in general, State and local governments have argued against categorical transportation programs and in favor of broad block grants over which recipients could exercise full control. As reflected above, to a large extent that has become Federal policy. Whether any deviation from that policy is warranted by the fiscal impacts claimed to be associated with this rule is a matter for review in other forums. Accordingly, FRA's principal response to those arguing for Federal funding has been to ensure, to the extent practicable, that any expenses attributed to establishing Quiet Zones are no greater than necessary to maintain safety.

As this interim final rule was being drafted, the Congress and the Administration were preparing to address the reauthorization of surface transportation programs (extending or replacing TEA–21). That process was being complicated by reduced revenues, confirming FRA's conviction that this interim final rule should allow additional time for implementation of the rule. Although it is possible that the program structure outlined above may be reorganized significantly in new legislation, FRA does not expect any resulting reduction in the flexibility afforded to the States (working with local Metropolitan Planning Organizations) to affect the utilization of Federal transportation funds.

11. Liability

Several commenters noted that the NPRM was silent as to the issue of liability when an accident occurs at a highway-rail grade crossing within a quiet zone established in accordance with the rule. The New Jersey Department of Transportation ("DOT") explained that consideration should be given to how liability issues presented by the rulemaking will affect public safety. Several commenters suggested that legislation was necessary to prohibit lawsuits by anyone injured while circumventing highway-rail grade crossing safety devices within quiet zones. The Massachusetts town of Manchester-by-the-Sea commented that the NPRM appeared to be a paternalistic effort directed towards those who willfully violate traffic laws and illegally proceed around grade crossing safety devices. This commenter also expressed concern that railroads may be reluctant to agree to implementation of quiet zones under the rule for fear that it would increase their risk of liability if an accident did occur at a crossing within a quiet zone where the railroads did not routinely sound their locomotive horns. Manchester-by-the-Sea suggested that when there is willful conduct by a motorist or pedestrian that jeopardizes his life or those of others, *e.g.*, proceeding through activated gate crossing devices, railroads and local communities should not be subject to liability if an accident occurs. Accordingly, the Town recommended that FRA work with Congress to codify limits to the liability of railroads and communities when those who willfully violate traffic or trespassing laws are injured at rail crossings within a quiet zone. Similarly, a Wisconsin State

legislative representative suggested that local communities should not be liable for accidents occurring at grade crossings within quiet zones established under the rule.

The North Carolina DOT suggested that communities pursuing quiet zones in their jurisdictions should enter into agreements with the relevant State and operating railroads agreeing to hold harmless the State and railroads for any accidents or injuries that occur as a direct result of these quiet zones. This same commenter emphasized that the communities implementing quiet zones should assume all of the risk associated with the quiet zones.

Commenters from the railroad industry strongly advocated that municipalities seeking the establishment of quiet zones under the rule should assume liability for all accidents that occur at crossings within the quiet zones. Citing the historical sounding of locomotive horns as a safety feature of railroads for the past century, the Florida East Coast Railway argued that if a community insists that it cease the sounding of the locomotive horns when traveling through its jurisdiction, then that community should be willing to accept the liability associated with the decision. The American Public Transportation Association projected that passage of a rule permitting quiet zones as proposed in the NPRM would probably lead to increased insurance premiums for railroads.

Another concern raised by several railroad industry participants, as well as an individual locomotive engineer, was the fact that State law often imposes liability on individual members of train crews and their employers when a train does not sound its horn at a highway-rail crossing and an accident occurs. These commenters contended that nothing in the NPRM would remove liability from individual train crew members or their employers for failure to sound the locomotive horn in the event of an accident in a quiet zone established pursuant to the rule. A representative of the Wisconsin Central System suggested that the rule should clearly state that failure to sound the locomotive horn in a FRA approved quiet zone could not serve as a basis for imposing civil liability on either the train crew or the employing railroad.

FRA appreciates the legitimate concern of the commenters regarding liability issues surrounding creation of quiet zones under this rule. We note that the proposed rule would have had the effect of relieving individual train crew members and their employers from liability for failure to sound the locomotive horn. The proposed rule clearly provides that establishment of a quiet zone created no legal duty to sound the horn in emergency situations. Because the rule clearly covered the subject matter of such a duty, it would have prevented State laws imposing such a duty. FRA does not expect that lawsuits will never arise over collisions which may occur at crossings within quiet zones, nor should FRA attempt to prohibit such suits since the cause of such collision may in fact be due to factors other than the lack of an audible warning. However, this rule is intended to remove failure to sound the horn as a cause of action in such lawsuits involving crossings within a quiet zone. We expect that the courts will determine liability issues based on the facts of each case and after reviewing the nature of this rule and its Federal requirements.

We expect that courts, following *Norfolk Southern* v. *Shanklin*, 529 U.S. 344 (2000) and *CSX* v. *Easterwood*, 507 U.S. 658 (1993), will conclude that this regulation substantially subsumes the subject matter of whether trains must sound warning devices at highway-rail grade crossings and, therefore, preempts state law on that subject.

FRA perceives no reason why establishment of quiet zones under this rule should result in higher insurance premium costs for railroads. In fact, a quiet zone under this rule should be evaluated as much less of an underwriting risk than a current whistle ban.

12. Wayside Horn

During FRA's initial outreach process prior to issuing the NPRM, several commenters asked whether placement of a wayside horn (a horn at the crossing and directed at oncoming motorists) might be entertained as a supplementary safety measure. FRA also received comments in the docket and at the public hearings on this subject. It is apparent that there is interest in using such a device as an alternative means of providing an audible warning to the motorist of an approaching train.

A wayside horn system would typically consist of horns mounted on poles that are placed at the crossing. A horn would be directed towards each direction of oncoming vehicular traffic. The system would be activated by the same track circuits used to detect the train's approach for purposes of other automated warning devices at the crossing (flashing lights and gates) and would produce a sound similar to the horn signal given by an approaching train.

At FRA's direction, the Volpe National Transportation Systems Center conducted an initial evaluation of two wayside horn installations at Gering, Nebraska in 1995 (*Field Evaluation of a Wayside Horn at a Highway-Railroad Grade Crossing*, Final Report, June 1998). This evaluation noted that use of the wayside horn in lieu of the train horn reduced net community noise impacts. The evaluation also showed a 52 percent reduction in the number of incidents in which motorists continued to drive over the crossing after the warning device's gate arms had started to descend as compared to the baseline data collected with the train horn sounding. There was no significant difference between train horns and wayside horns for motorists that drove around lowered gates. While the report indicated improved driver behavior with the wayside horn, the report also contains analysis that suggests questions regarding the effectiveness of that particular installation in alerting motorists that should be answered before implementing wayside horns as a substitute for train-borne horns. Further, this evaluation did not contain adequate data or analysis to permit a determination of whether a wayside horn could fully substitute for a train-borne audible warning and additional evaluations at other sites should be performed. The NPRM suggested three questions related to the effectiveness of the wayside horn:

1. Does the particular system provide the same quality of warning, determined by loudness at appropriate frequencies, within the motor vehicle while it is approaching the motorist's decision point?

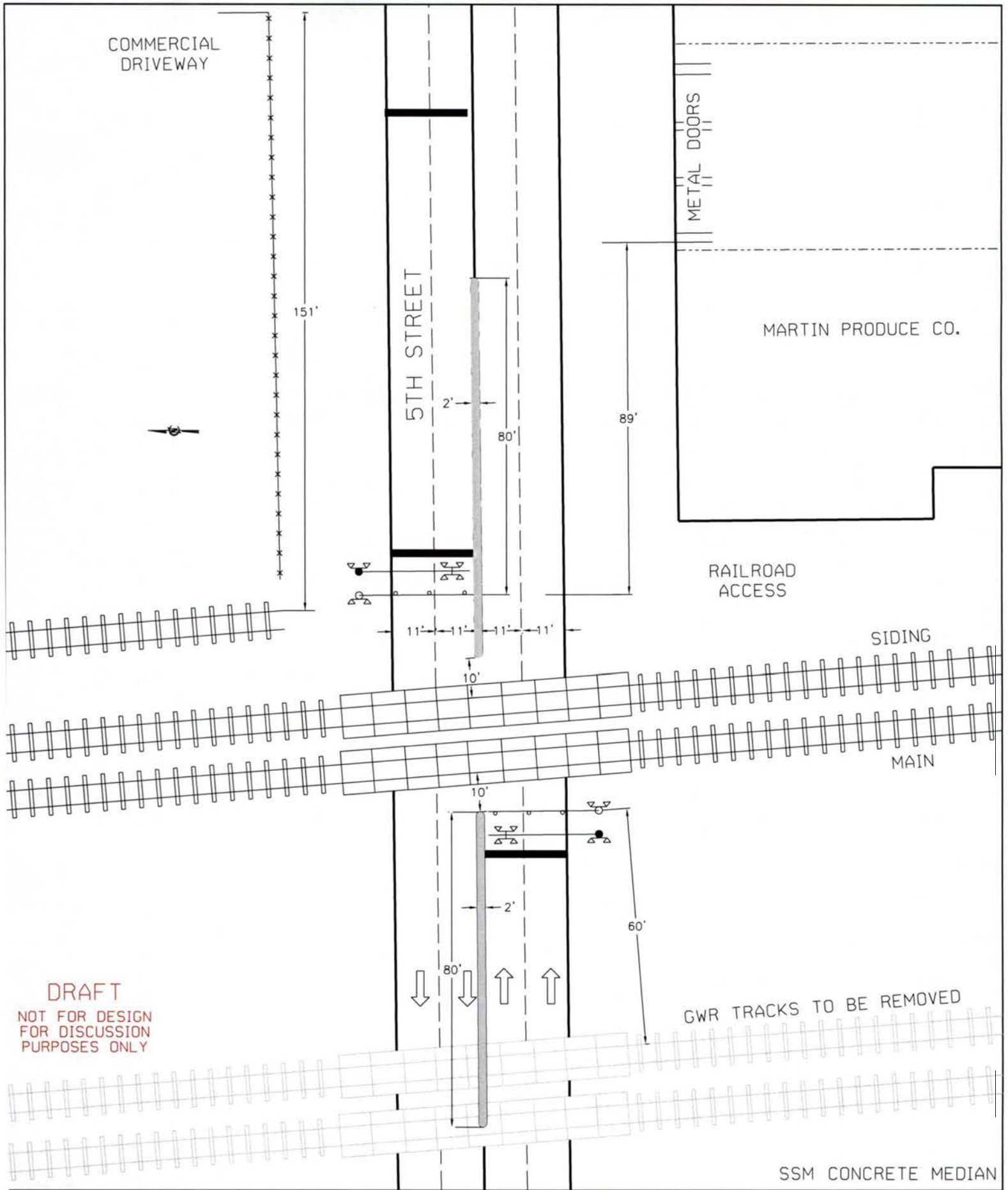
2. As currently conceived, a single stationary horn cannot give the motorist a cue as to the direction of approach of the train or trains. To what extent does this lack of directionality detract from the effectiveness of the warning? Can wayside installation design be altered to compensate?

3. To what extent will the stationary horn suffer from the lack of credibility sometimes associated with automated warning devices, due to the fact that it is activated by the same means? Over what period of time may this problem arise, if at all?

Since the installation of the original wayside horn system in Gering, NE, several other communities have installed wayside horns. These sites include: Ames, Iowa, Parsons, Kansas, Wichita, Kansas and Richardson, Texas. Additionally, other communities have had temporary test installations of the wayside horns.

This topic generated a number of comments from various parties. Additionally, the departments of

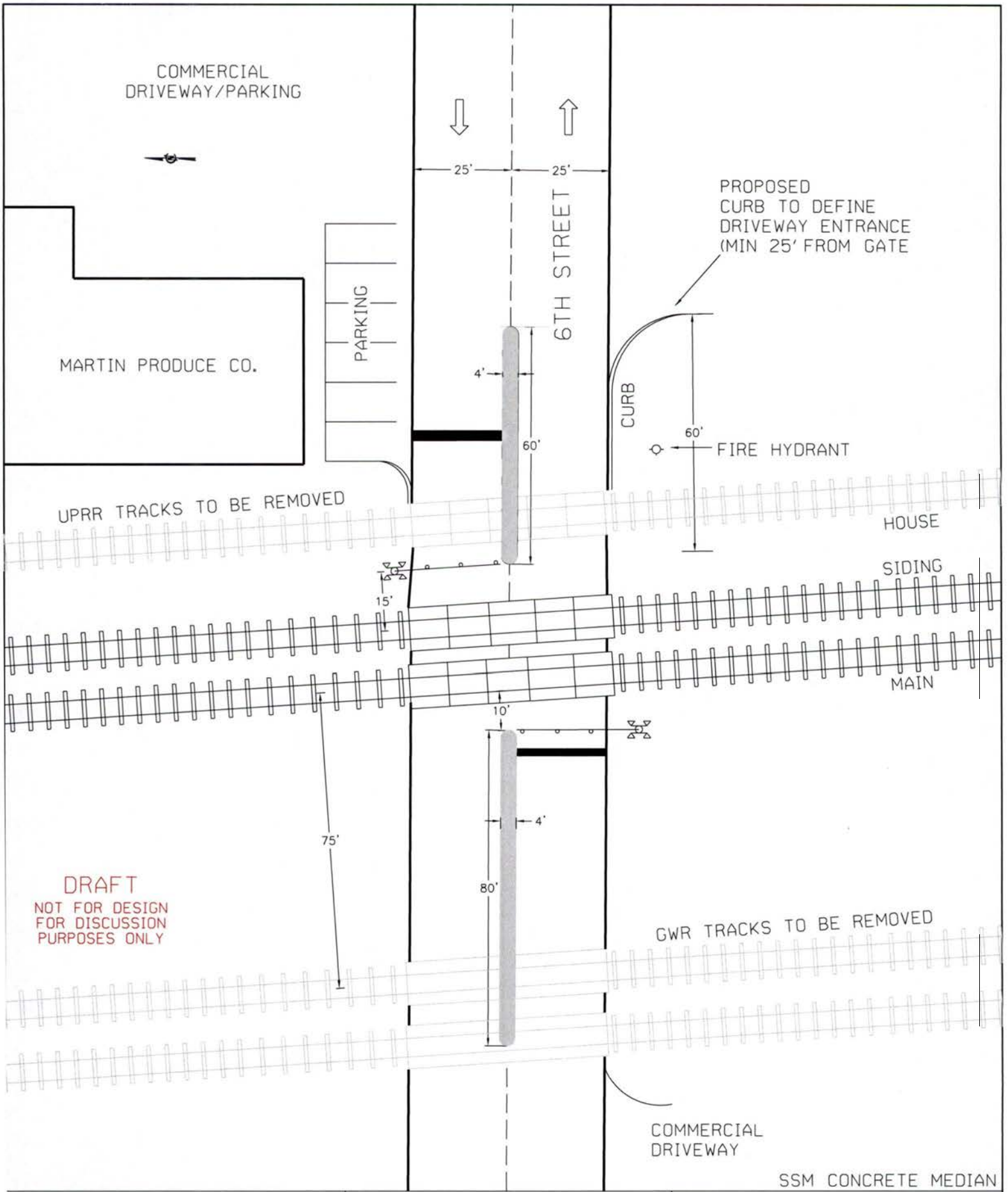
APPENDIX D: Crossing Layouts



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
5TH STREET
ADT: 13,486

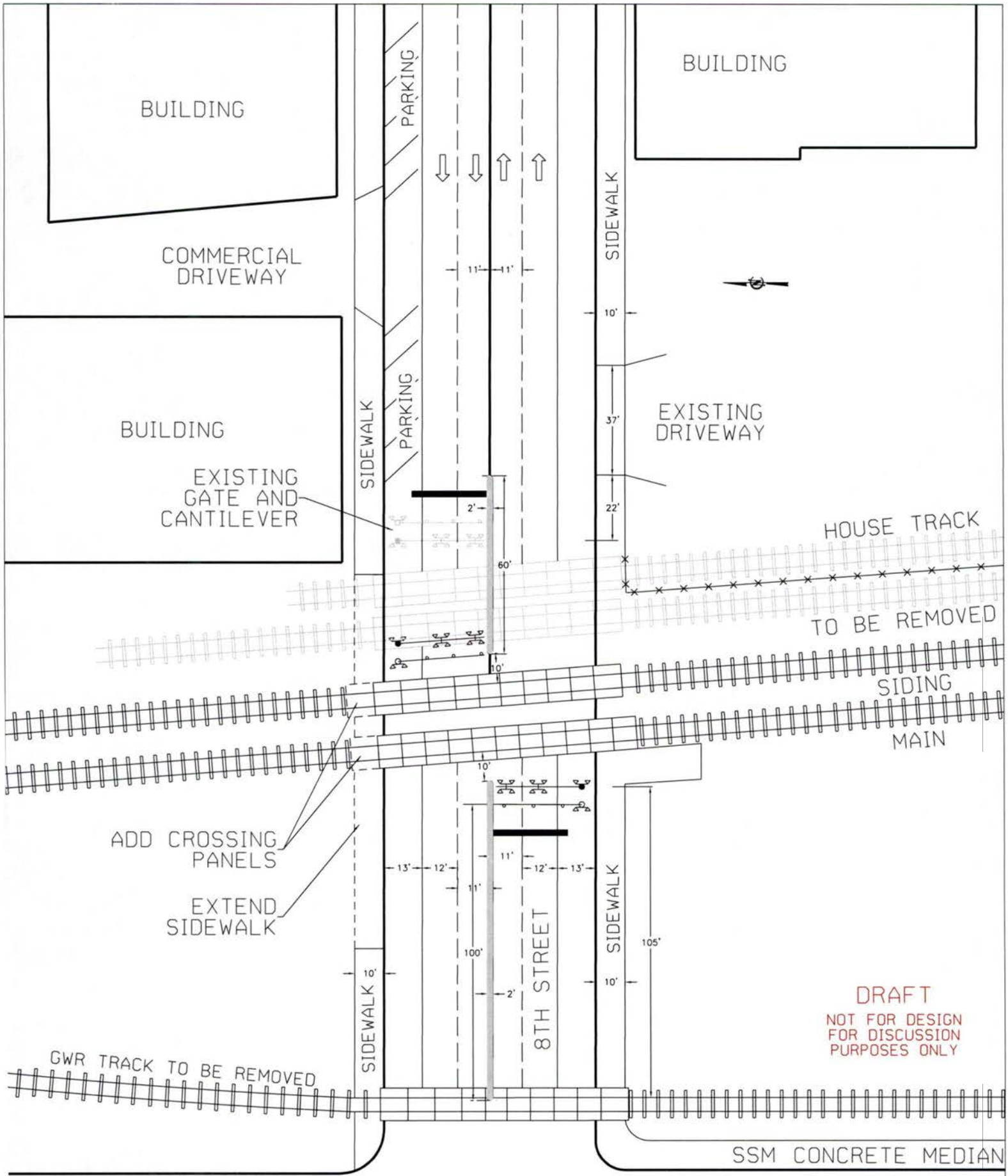
UP RAILROAD
DOT# 804851U
RRMP 52.08
SCALE: 1' = 30'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
6TH STREET
ADT: 784

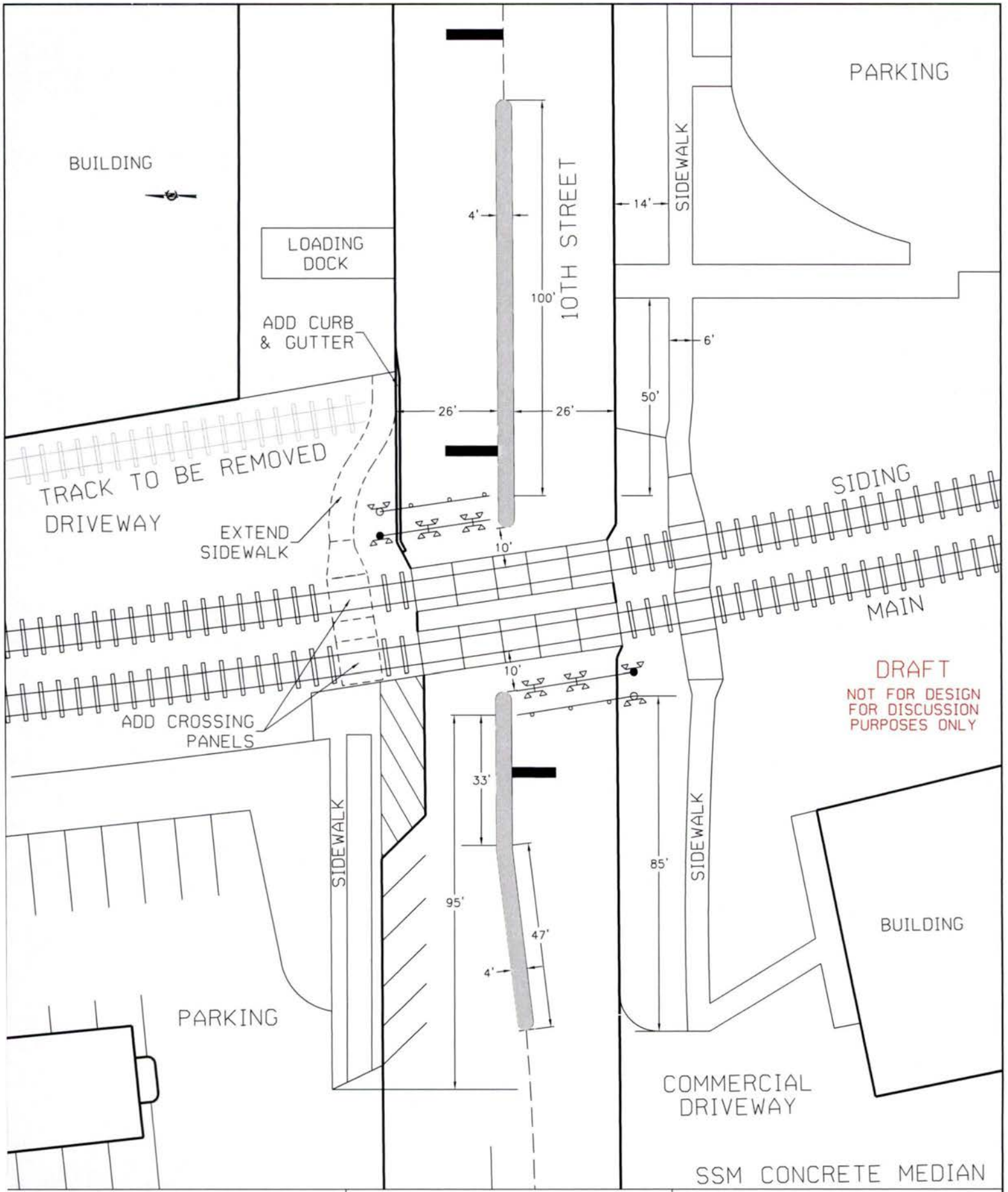
UP RAILROAD
DOT# 804373W
RRMP 51.98
SCALE: 1' = 30'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
8TH STREET
ADT: 4607

UP RAILROAD
DOT# 804372P
RRMP 51.82
SCALE: 1' = 40'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
10TH STREET
ADT: 6,240

UP RAILROAD
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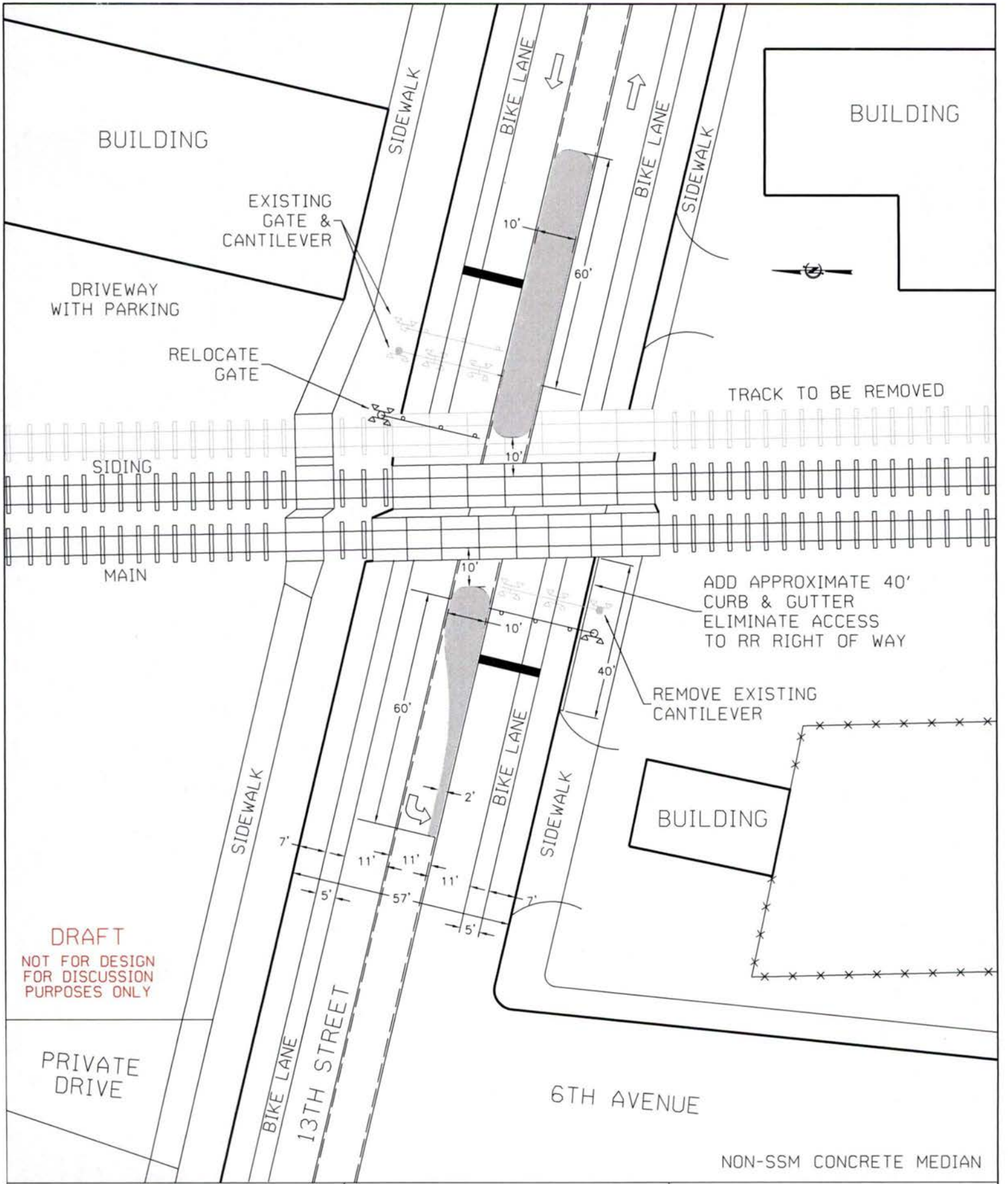
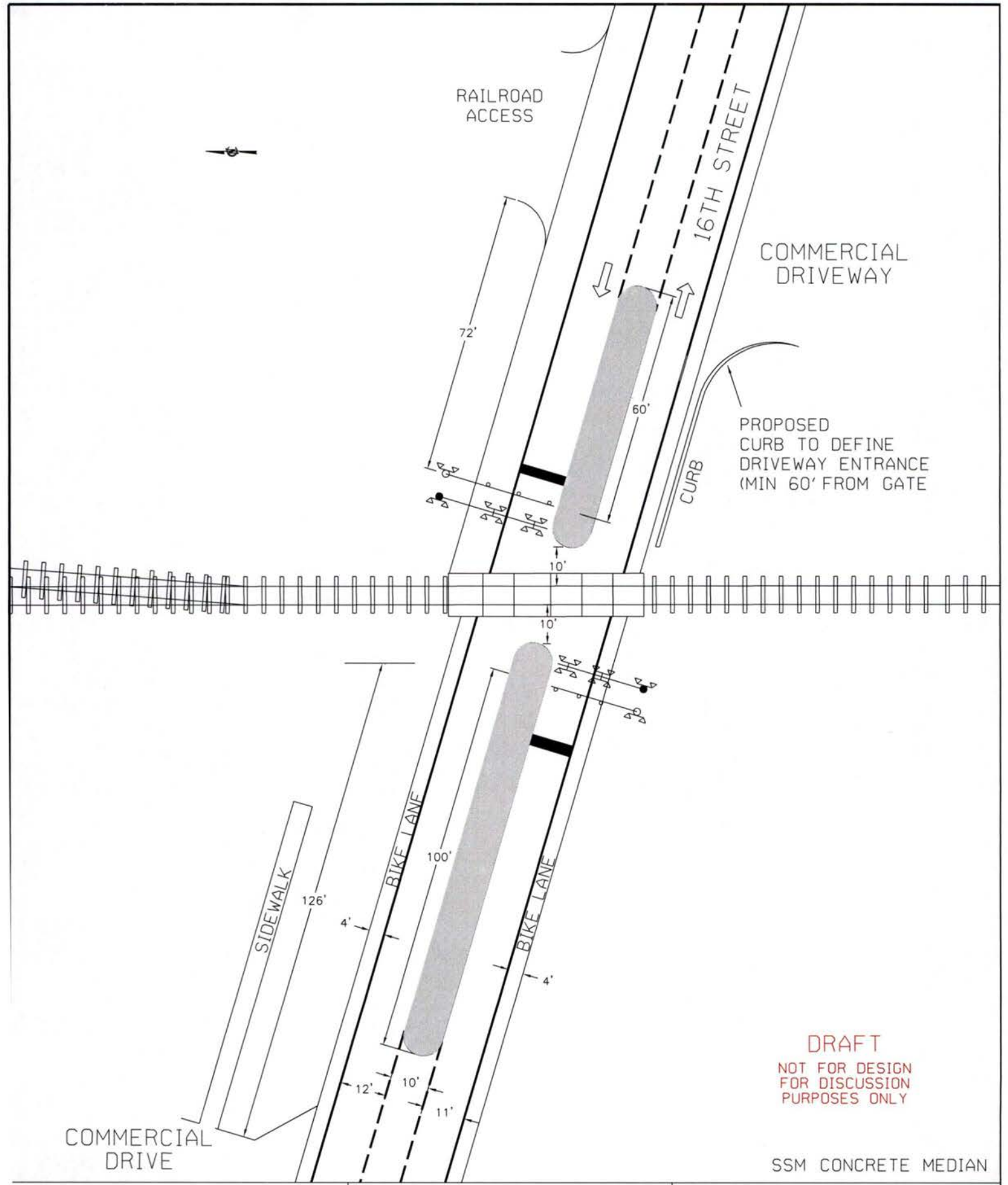
RRMP 51.69
SCALE: 1' = 30'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
13TH STREET
ADT: 6240

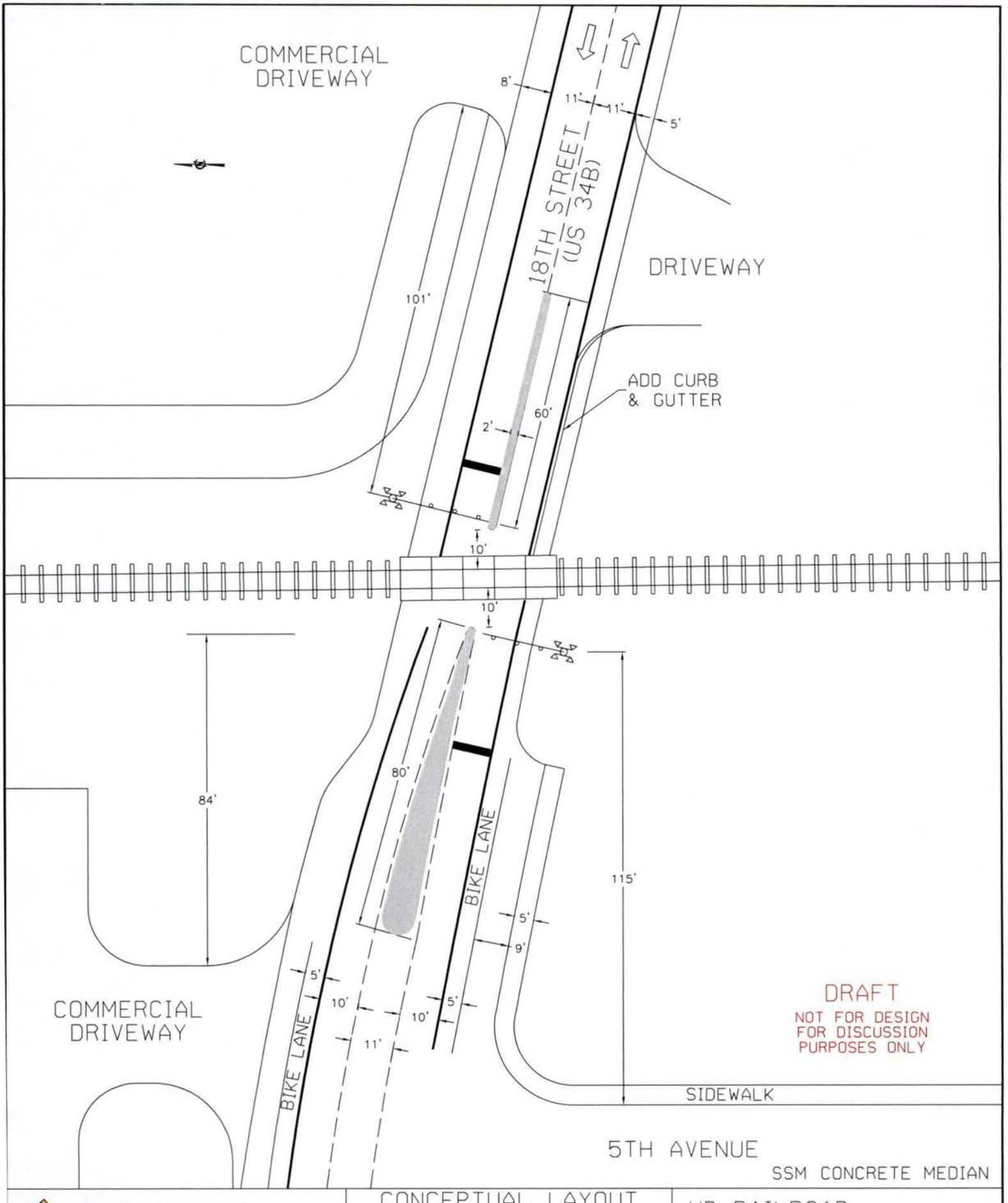
UP RAILROAD
DOT# 804367T
RRMP 51.37
SCALE: 1' = 30'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
16TH STREET
ADT: 5,793

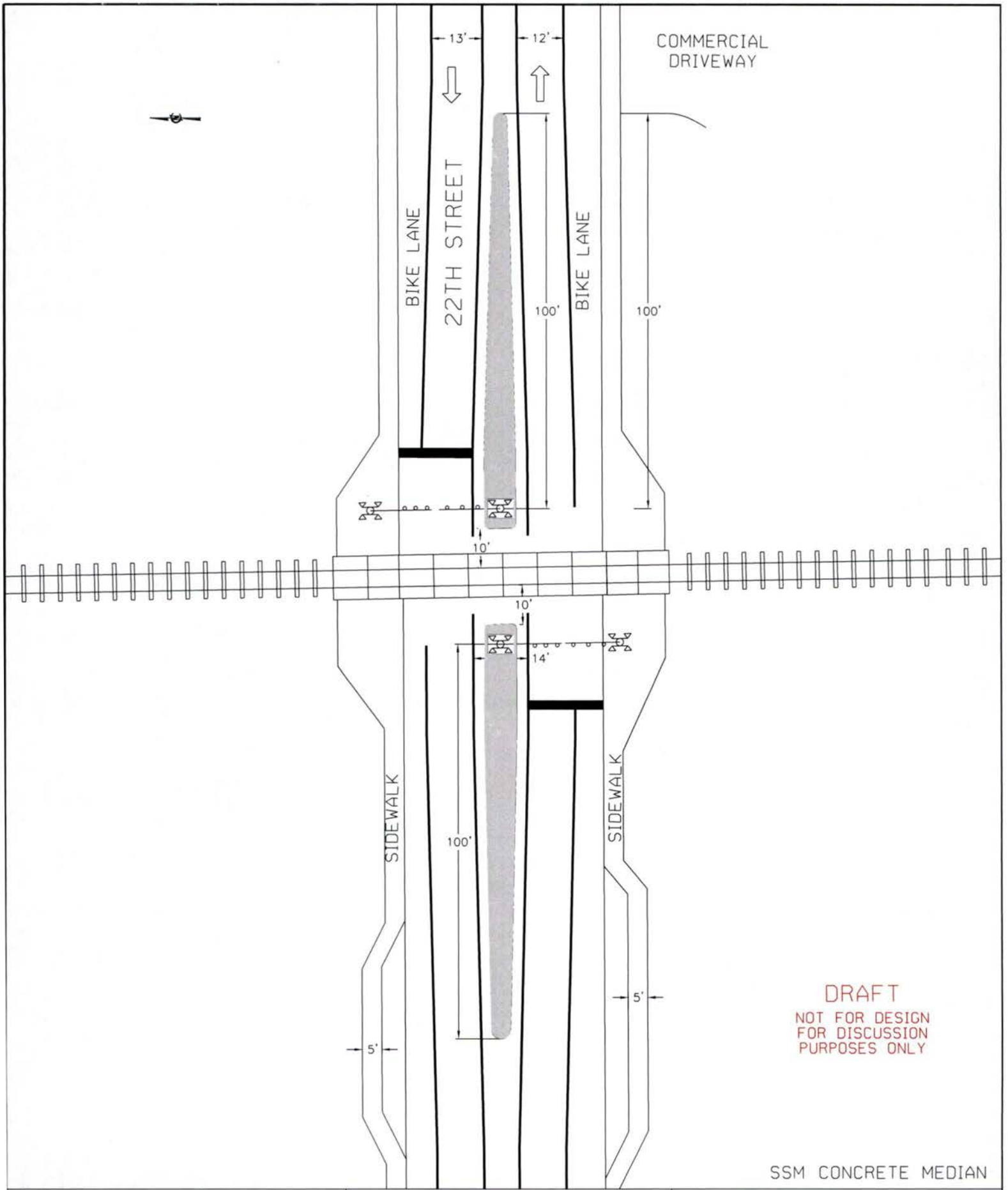
UP RAILROAD
DOT# 804366L
RRMP 51.05
SCALE: 1' = 30'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
18TH STREET
(US 34B)
ADT: 3,448

UP RAILROAD
DOT# 804365E
RRMP 50.79
SCALE: 1' = 30'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
22ND STREET
ADT: 5,798

UP RAILROAD
DOT# 816131K
RRMP 50.25
SCALE: 1' = 30'

APPENDIX E: Quiet Zone Calculations

Quiet Zone Option A

Print This Page

Home | Help | Contact | logoff qz@ctcinc.com

Cancel | Change Scenario: GREELEY UP_50949 | Continue

Create New Zone

Manage Existing Zones

Log Off

Crossing	Street	Traffic	Warning Device	Pre-SSM	SSM	Risk	
804365E	**18TH STREET**	**3448**	**Gates**	0	13	5,057.40	MODIFY
804366L	**16TH STREET**	**5793**	**Gates**	0	13	5,719.10	MODIFY
804367T	**13TH STREET**	**6240**	**Gates**	0	0	26,866.11	MODIFY
804370B	**10TH STREET**	**6240**	**Gates**	0	13	5,373.22	MODIFY
804372P	**8TH STREET**	**4607**	**Gates**	0	13	6,246.10	MODIFY
804373W	**6TH STREET**	**0**	**CLOSED(SSM 2)**	0	2	0	Closed
804851U	**5TH STREET**	**14270**	**Gates**	0	13	7,944.68	MODIFY
816131K	**22ND STREET**	**5798**	**Gates**	0	13	5,720.25	MODIFY

Step by Step Instructions:

Step 1: To specify New Warning Device (For Pre-Rule Quiet Zone Only) and/or SSM, click the MODIFY Button

Step 2: Select proposed warning device or SSM. Then click the UPDATE button.To generate a spreadsheet of the values on this page, click on ASM button—This spreadsheet can then be used for ASM calculations.

Step 3: Repeat Step (2) until the SELECT button is shown at the bottom right side of this page. Note that the SELECT button is shown ONLY when the Quiet Zone Risk Index falls below the NSRT or the Risk Index with Horn.

Step 4: To save the scenario and continue, click the SELECT button

* Only Public At Grade Crossings are listed.

Click for Supplementary Safety Measures [SSM]

Click for ASM spreadsheet: **ASM** * Note:The use of ASMs requires an application to and approval from the FRA.

Summary	
Proposed Quiet Zone:	GREELEY UP 20170830
Type:	New 24-hour QZ
Scenario:	GREELEY UP_50949
Estimated Total Cost:	$95,000.00
Nationwide Significant Risk Threshold:	14723 .00
Risk Index with Horns:	16449.13
Quiet Zone Risk Index:	**7865.86**

Select

Quiet Zone Option B

Print This Page

Cancel | Change Scenario: GREELEY UP_50949 | Continue

Create New Zone

Manage Existing Zones

Log Off

Crossing	Street	Traffic	Warning Device	Pre-SSM	SSM	Risk	
804365E	**18TH STREET**	**3448**	**Gates**	0	13	5,057.40	MODIFY
804366L	**16TH STREET**	**5793**	**Gates**	0	13	5,719.10	MODIFY
804367T	**13TH STREET**	**6240**	**Gates**	0	0	26,866.11	MODIFY
804370B	**10TH STREET**	**6240**	**Gates**	0	13	5,373.22	MODIFY
804372P	**8TH STREET**	**4607**	**Gates**	0	13	6,246.10	MODIFY
804373W	**6TH STREET**	**784**	**Gates**	0	13	2,556.20	MODIFY
804851U	**5TH STREET**	**13486**	**Gates**	0	13	7,853.95	MODIFY
816131K	**22ND STREET**	**5798**	**Gates**	0	13	5,720.25	MODIFY

Step by Step Instructions:

Step 1: To specify New Warning Device (For Pre-Rule Quiet Zone Only) and/or SSM, click the MODIFY Button

Step 2: Select proposed warning device or SSM. Then click the UPDATE button.To generate a spreadsheet of the values on this page, click on ASM button—This spreadsheet can then be used for ASM calculations.

Step 3: Repeat Step (2) until the SELECT button is shown at the bottom right side of this page. Note that the SELECT button is shown ONLY when the Quiet Zone Risk Index falls below the NSRT or the Risk Index with Horn.

Step 4: To save the scenario and continue, click the SELECT button

* Only Public At Grade Crossings are listed.

Click for Supplementary Safety Measures [SSM]

Click for ASM spreadsheet: **ASM** * Note:The use of ASMs requires an application to and approval from the FRA.

Summary	
Proposed Quiet Zone:	GREELEY UP 20170830
Type:	New 24-hour QZ
Scenario:	GREELEY UP_50949
Estimated Total Cost:	$105,000.00
Nationwide Significant Risk Threshold:	14723 .00
Risk Index with Horns:	16449.13
Quiet Zone Risk Index:	**8174.04**

Select

Quiet Zone Option C

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Cancel | Change Scenario: GREELEY UP_50949 | Continue

Create New Zone

Manage Existing Zones

Log Off

Crossing	Street	Traffic	Warning Device	Pre-SSM	SSM	Risk	
804365E	**18TH STREET**	**3448**	**Gates**	0	13	5,057.40	MODIFY
804366L	**16TH STREET**	**5793**	**Gates**	0	13	5,719.10	MODIFY
804367T	**13TH STREET**	**6240**	**Gates**	0	6	6,179.21	MODIFY
804370B	**10TH STREET**	**6240**	**Gates**	0	13	5,373.22	MODIFY
804372P	**8TH STREET**	**4607**	**Gates**	0	13	6,246.10	MODIFY
804373W	**6TH STREET**	**784**	**Gates**	0	13	2,556.20	MODIFY
804851U	**5TH STREET**	**13486**	**Gates**	0	13	7,853.95	MODIFY
816131K	**22ND STREET**	**5798**	**Gates**	0	13	5,720.25	MODIFY

Step by Step Instructions:

Step 1: To specify New Warning Device (For Pre-Rule Quiet Zone Only) and/or SSM, click the MODIFY Button

Step 2: Select proposed warning device or SSM. Then click the UPDATE button.To generate a spreadsheet of the values on this page, click on ASM button—This spreadsheet can then be used for ASM calculations.

Step 3: Repeat Step (2) until the SELECT button is shown at the bottom right side of this page. Note that the SELECT button is shown ONLY when the Quiet Zone Risk Index falls below the NSRT or the Risk Index with Horn.

Step 4: To save the scenario and continue, click the SELECT button

* Only Public At Grade Crossings are listed.

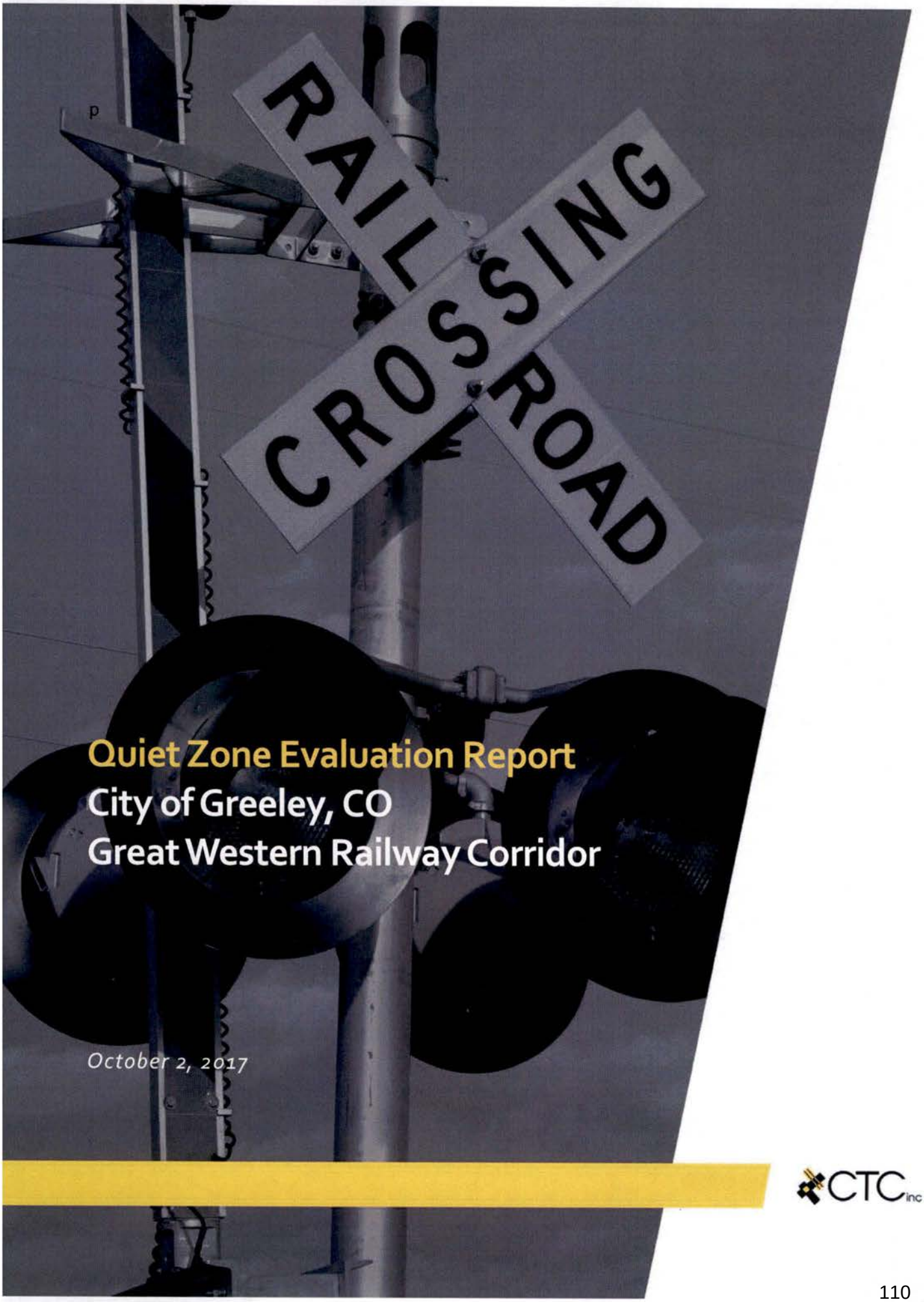
ALERT: Quiet Zone qualifies because SSM has been applied in each crossing.

Click for Supplementary Safety Measures [SSM]

Click for ASM spreadsheet: **ASM** * Note:The use of ASMs requires an application to and approval from the FRA.

Summary	
Proposed Quiet Zone:	GREELEY UP 20170830
Type:	New 24-hour QZ
Scenario:	GREELEY UP_50949
Estimated Total Cost:	$233,000.00
Nationwide Significant Risk Threshold:	14723 .00
Risk Index with Horns:	16449.13
Quiet Zone Risk Index:	**5588.18**

Select



Quiet Zone Evaluation Report
City of Greeley, CO
Great Western Railway Corridor

October 2, 2017

CTC inc

Contents

I. Introduction

The City of Greeley (City), in its effort to explore the possibility of prohibiting the sounding of train horns along the Great Western Railway Company (Railroad) through their community, requested CTC, Inc. (CTC) to conduct an evaluation to determine the feasibility and approximate cost associated with creating a new quiet zone through Greeley, Colorado.

In 2005, the Federal Railroad Administration (FRA) issued 49 CFR Parts 222 and 229, the *Final Rule on Use of Locomotive Horns at Highway-Rail Grade Crossings* (Final Rule). The purpose of the rule is to mandate a federal requirement for the sounding of locomotive horns at all public highway-rail grade crossings. The rule also establishes both minimum and maximum decibel levels for the locomotive horns themselves. While the purpose of the rule was to require the sounding of locomotive horns, it also created a methodology by which communities could create quiet zones.

In accordance with the Final Rule, locomotive horn sounding is not required if each public highway-rail grade crossing is equipped with Supplemental Safety Measures (SSMs) within the proposed quiet zone. SSMs are safety measures that have been determined by the FRA to adequately compensate for the lack of a locomotive horn. Examples of SSMs include:

- Temporary Closure (can only be used in a Partial Quiet Zone)
- Four-quadrant gate systems installed with or without vehicle detection
- Gates with non-transversable median barriers at least 100 feet in length on each side (60 feet if parallel roads or commercial driveways are present)
- Gates with channelization devices at least 100 feet in length on each side (60 feet if parallel roads or commercial driveways are present)
- One-way streets with gates that completely close off the roadway
- Permanent Closure

Another possibility for use as a treatment in lieu of a SSM is the Wayside Horn System (WHS). The WHS may be used either within or outside of a quiet zone as a one-for-one replacement for the train horn. The WHS is a traffic control device that is mounted at the highway-rail grade crossing and interconnected to the railroad's grade crossing warning system. It is required to sound at a minimum level of 92 dB measured 100 feet along the roadway approach from the nearest track (49 CFR 222, Appendix E, 4). Many communities have implemented this technology as a means of reducing train horn noise levels.

In addition, locomotive horn sounding is not required within highway-rail grade crossing corridors that have a Quiet Zone Risk Index (QZRI) at or below the Nationwide Significant Risk Threshold (NSRT) or the Risk Index with Horns (RIWH). Definitions of each of these terms are listed below:

Quiet Zone Risk Index (QZRI) is the average risk in the proposed quiet zone taking into consideration the increased risk caused by the lack of train horns and the reductions in risk attributable to the installation of SSMs or Alternative Safety Measures (ASMs).

Nationwide Significant Risk Threshold (NSRT) represents a number reflecting a measure of risk, calculated on a nationwide basis, which reflects the average level of risk to the motoring public at public highway-rail grade crossings equipped with flashing lights and gates and at which locomotive horns are sounded.

Risk Index with Horns (RIWH) represents the average initial amount of risk in the proposed quiet zone with the train horn sounding.

Highway-rail grade crossing corridors that have a QZRI ≤ NSRT or RIWH have been deemed, by the FRA, to constitute categories of highway-rail grade crossings that do not present a significant risk with respect to loss of life or serious personal injury or that fully compensate for the absence of the warning provided by the locomotive horn. As a result, communities with highway-rail grade crossing corridors that meet either of these standards may silence the locomotive horn within the crossing corridor if all other applicable quiet zone requirements have been met.

Please note, the establishment of a quiet zone does not result in total elimination of all train horn noise. The Final Rule allows for the locomotive engineer to sound the locomotive horn to provide a warning to vehicle operators, animals, pedestrians, trespassers or crews on other trains in an emergency situation if, in the locomotive engineer's sole judgment, such action is appropriate in order to prevent imminent injury, death or property damage. In addition, nothing in the rule prohibits the use of the locomotive horn in the following situations:

1. When active grade crossing devices have malfunctioned, and use of the horn is required.
2. When grade crossing warning systems are temporarily out of service during inspection, maintenance or testing of the systems.
3. When the SSM, modified SSMs or engineered SSMs no longer comply with the requirements of the rule or as approved by the FRA.
4. There is no restriction for the sounding of the locomotive horn for the purposes of highway-rail crossing safety such as, to announce the approach to roadway workers under chapter 49 or required purposes under railroad operating rules.
5. When a wayside horn is malfunctioning.

The City should make every effort to educate the public through public meetings, website, and news articles that some trains will sound horns after the quiet zone is established. CTC's experience has also indicated that it takes approximately 30-45 days for all railroad engineers to become familiar with a new quiet zone and cease blowing the train horns on a consistent basis. The City should make the public aware of the "grace period" needed once the quiet zone is established.

II. Proposed Quiet Zone Corridor

The City is interested in determining the improvements required and the approximate cost to create a new quiet zone along Great Western Railway Company (Railroad), Greeley Subdivision located in Greeley, Colorado. The proposed quiet zone corridor is shown in Figure 1. The Railroad runs approximately 2 trains per day with some local trains that may switch at the yard just north of the 35th Street crossing. The trains travel at speeds up to 10 mph on this subdivision through the city. The highway-rail grade crossings that were evaluated are described in the table below.

Table 1. Proposed Quiet Zone Crossings

Street or Road Name	DOT No.	Railroad Milepost (MP)	Subdivision	Nearest Parallel Street
8th Avenue	245132N	98.29	Greeley	3rd Street
9th Avenue	245131G	98.19	Greeley	2nd Street
11th Avenue	245130A	97.96	Greeley	1st Street
14th Avenue	245129F	97.70	Greeley	A Street
N 21st Avenue	245128Y	97.15	Greeley	N W C Street
N 23rd Avenue	245126K	96.91	Greeley	W C Street
W F Street	245125D	96.05	Greeley	N 35th Avenue
N 35th Avenue	245124W	95.85	Greeley	F Street
Poudre River Trail	934035G*	94.60	Greeley	O Street (CR 64)
Private Drive	245121B*	94.06	Greeley	O Street (CR 64)
N 59th Avenue (CR 31)	245120U	93.74	Greeley	O Street (CR 64)
Private Drive	934034A*	93.40	Greeley	O Street (CR 64)
O Street (CR 64)	245119A	93.31	Greeley	N 71st Avenue
Private Drive	245118T*	93.21	Greeley	O Street (CR 64)

*NOTE: Private crossing and pedestrian crossing identification numbers have not been confirmed by GWR as of the date of this report. Information in Table 1 is from FRA database.

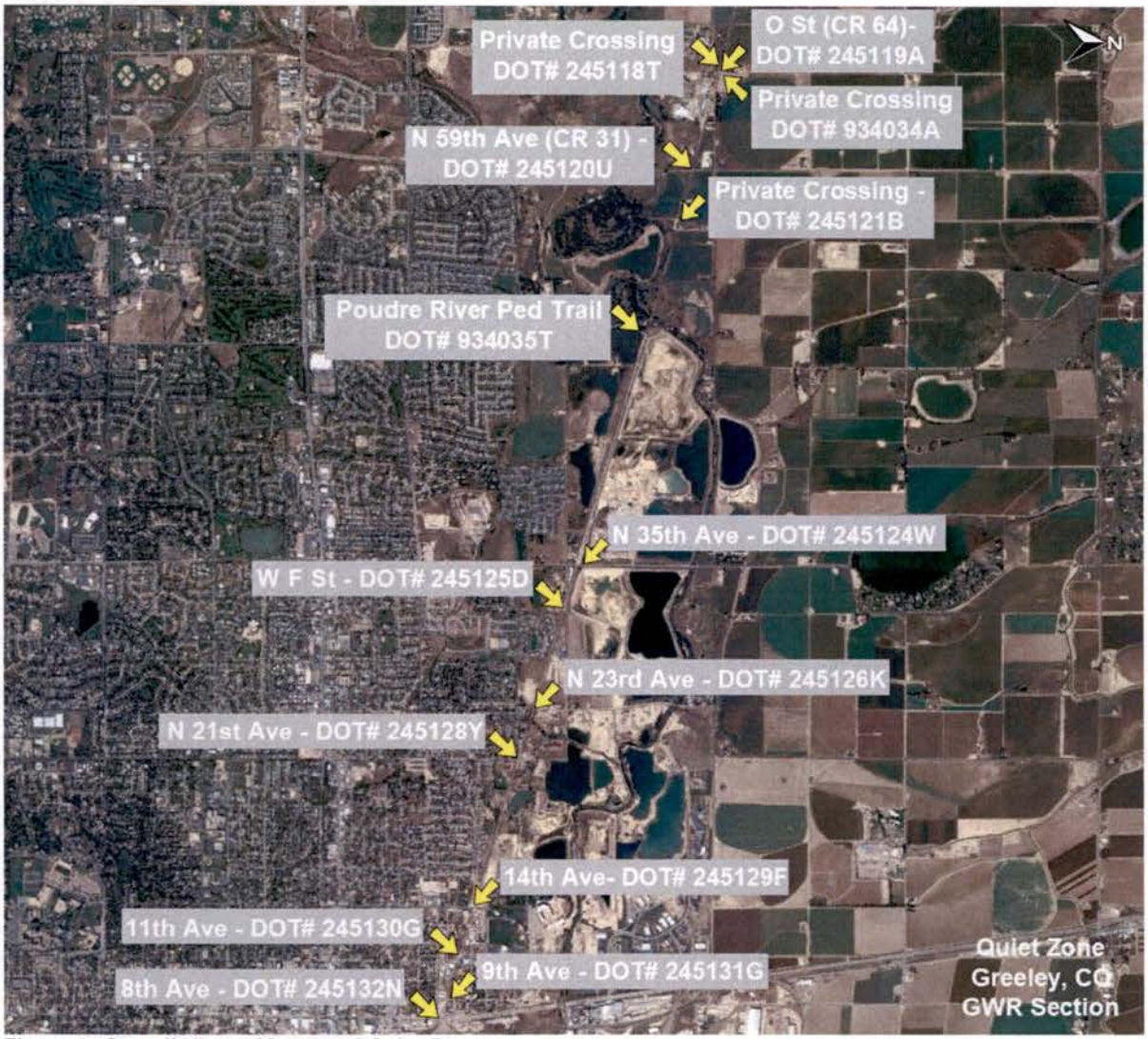


Figure 1. Overall View of Proposed Quiet Zone

The limits of the proposed quiet zone will extend from MP 92.96 (0.25 miles Northwest of the Private Crossing to the furthest west) to MP 98.54 (0.25 miles southeast of 8th Street) for an actual quiet zone length of 5.58 miles. However, due to the location of adjacent crossings within the corridor, the effective length of the proposed quiet zone will be significantly longer. The closest highway-rail grade crossing northwest of the proposed quiet zone is CR 29 at MP 92.70. The closest highway-rail grade crossing southeast of the proposed quiet zone on the Union Pacific Railroad is 5st Street at MP 98.56. As a result, the effective length of the proposed quiet zone will be approximately 5.86 miles.

III. Summary of Quiet Zone Safety Improvement Options

CTC conducted a field review of the grade crossings within the proposed Greeley quiet zone on the afternoon of May 31, 2017. The purpose of the review was to evaluate proposed crossings for basic quiet zone requirements and review quiet zone concepts in preparation for the City team meeting and future diagnostic meeting with the Railroad and the FRA. Options available to the City for the creation of the quiet zone were presented after the field evaluation. Factors considered in the evaluation were safety, compliance with the FRA rules, public acceptance and budgetary constraints for the implementation of the proposed quiet zone.

As recommended in 49 CFR 222, Appendix F the crossings proposed for inclusion in a quiet zone should be reviewed in the field by a diagnostic team composed of railroad personnel, public safety or law enforcement, engineering personnel from the State Agency responsible for grade crossing safety and other concerned parties. A diagnostic meeting was conducted on July 25, 2017 consisting of representatives from the City of Greeley, Federal Railroad Administration (FRA), Colorado Public Utilities Commission (CPUC), Great Western Railway Company (Railroad) and CTC. The diagnostic team reviewed each of the highway-rail grade crossings in the proposed quiet zone for consideration of the options for approved SSMs as provided in 49 CFR 222, Appendix A. The diagnostic team members in attendance are listed in Appendix A and the diagnostic notes are located in Appendix B.

The Final Rule, Appendix A to Part 222 A, provides a list of approved supplementary safety measures (SSMs) that may be installed at each crossing within a quiet zone for risk reduction credit.

Each SSM has been assigned an effectiveness rate which is defined as a number between zero and one and represents the reduction of the likelihood of a collision at a public highway-rail grade crossing. This reduction is a result of the installation of an SSM or ASM when compared to the same crossing equipped with conventional active warning systems of flashing lights and gates. Zero effectiveness means that the SSM or ASM provides no reduction in the probability of a collision, while an effectiveness rating of one means that the SSM or ASM is 100% effective in eliminating collision risk.

The effectiveness rate for SSMs are as follows:

Approved Supplemental Safety Measure (SSM)	Effectiveness Rate
Temporary or Permanent Closure of a crossing	1.00
One-Way Street with gates	0.82
Gates with Medians (non-traversable curbs)	0.80
Four Quadrant Gate System with presence detection	0.77
Gates with channelization devices	0.75

The option of converting the existing two-way streets to one-way were discussed by the diagnostic team but ruled out as an option. Conversion to one-way streets were ruled out due to the anticipated impact on businesses, public acceptance and the ability to maintain effective traffic flow throughout the city.

After consideration of remaining quiet zone treatment options for implementing safety improvements at each crossing the following table outlines the preferred option for each location. The team also identified which options were acceptable at each crossing as shown below.

The results of that evaluation are shown as follows:

- P - Preferred Safety Measure
- O - Optional Safety Measure
- U - Undesirable (due to public acceptability or budget constraints)

Table 2. Supplemental Safety Measures Options

Street or Road Name	DOT No.	Crossing Closure (SSM)	Four-Quadrant Gate System (SSM)	Concrete/ Channelization Median Barrier (SSM or ASM)	One-Way Street (SSM)	Wayside Horn System
8th Avenue	245132N	U	U	P	U	U
9th Avenue	245131G	U	O	P	U	U
11th Avenue	245130A	U	O	P	U	U
14th Avenue	245129F	U	U	P	U	U
21st Avenue	245128Y	U	P	U	U	U
23rd Avenue	245126K	U	U	P	U	U
F Street	245125D	U	U	P	U	U
35th Avenue	245124W	U	U	P	U	U
59th Street	245120U	U	O	P	U	U
O Street	245119A	U	O	U	U	P

This review also determined if the existing railroad active grade crossing warning devices meet the minimum requirements for establishment of a quiet zone. The rule requires that each public highway-rail grade crossing in the quiet zone must be equipped with flashing lights and gates, constant warning time device and power out indicator in accordance with 49 CFR Subpart C 222.35(3)(b). The following table provides the results of that review:

Table 3. Active Grade Crossing Warning Devices

Street or Road Name	DOT No.	Flashing Lights, Gates and Bells	Constant Warning Time Devices	Power Out Indicator
8th Avenue	245132N	✓	✓	✓
9th Avenue	245131G	×	×	×
11th Avenue	245130A	Flashing Lights and Bells Only	×	✓
14th Avenue	245129F	Flashing Lights and Bells Only	×	✓
N 21st Avenue	245128Y	×	×	×
N 23rd Avenue	245126K	×	×	×
W F Street	245125D	×	×	×
N35th Avenue	245124W	×	×	×
N 59th Avenue/CR 31	245120U	×	×	×
O Street/CR 64	245119A	×	×	×

As indicated in the table above, nine (9) of the crossings do not meet the minimum requirements for quiet zone establishment concerning railroad warning devices due to the lack of gates and constant warning equipment. Therefore, establishment of the quiet zone will require the railroad to upgrade the crossings with new equipment and constant warning at the expense of the city.

An overview of each crossing and discussion of the evaluation are described in the following section.

IV. Crossing Overview

General Information
The quiet zone evaluation for this corridor is based on the recommendations of the diagnostic team and includes the following assumptions:

- The crossings from 23rd Street to O Street are located just outside the current city limits of Greeley. The train horn rule states that only the agency with jurisdiction at the crossing can establish a quiet zone for that location. However, quiet zones can be multijurisdictional or one agency can provide letter giving another jurisdiction the right to establish a quiet zone at their crossings. Should Greeley decide to include these crossings in the proposed quiet zone, one of the options must be followed in establishing the quiet zone.
- The 8th Avenue crossing is the only crossing that meets the minimum requirements for quiet zone establishment including constant warning time devices. The 14th and 11th Avenue crossings have flashing lights, bells, and power out indicators but do not have

gates or constant warning time devices. All nine crossings will require an upgrade to meet the minimum requirements for quiet zones concerning railroad warning systems.

- All non-mountable concrete medians will be a minimum of 6 inches in height and 2-feet in width. The City agreed with CPUC recommendations to install medians with 4-foot width when possible.
- The CPUC stated during the diagnostic and later confirmed that there is no application or crossing DOT number for the Poudre River Trail pedestrian crossing. The City and CPUC will work to resolve this issue. For the purpose of this quiet zone analysis, it will be assumed that the crossing will be allowed to remain and the safety improvement will be the installation of flashing lights and gates.
- The average daily train count is 2 trains per day at a maximum allowable speed of 10 MPH.

8th Avenue (US Highway 85 Business) - DOT No. 245132N

The 8th Avenue crossing, located at railroad milepost 98.29, is the southeasternmost crossing of the proposed quiet zone. 8th Avenue is a four-lane roadway crossing over one mainline track and one wye track. The roadway is approximately 76 feet wide. The street is asphalt composition with paved shoulders and bike lanes on each approach to the crossing. There are raised medians for both approaches. There is a un-signalized T-intersection approximately 90 feet to the south of the 8th Avenue crossing.

Figure 2. 8th Avenue - Aerial View

The review team considered the approved quiet zone treatment options provided in 49 CFR 222, Appendix A (2) and agreed with the City's preference for this location to install non-traversable concrete medians. Median lengths exist at a minimum of 100 feet north of the crossing and approximately 80 feet south of the crossing. The existing median between the tracks is proposed to be extended to approximately 59 feet to be within 10 feet of the nearest rail to the north and south.

The team recommended the evaluation of the roadway stripping and lane width over the crossing. The lane configuration requires a gate length of nearly 40 feet for the southbound approach. The city agreed to work with the state to see if the lane striping can be revised to reduce the length of the gate.

The team discussed the current conditions of pedestrian pathways along 8th Avenue and found that they are acceptable and had no further recommendations.

Option A & B - SSM Concrete Medians
Work to be completed by City:

- Upgrade the existing concrete medians with minimum 6 inches in height. The median to the north will be approximately 100 feet and the median to the south will be a minimum of 80 feet in length when measured from the gate. The median between the tracks will be approximately 59 feet located 10 feet from each rail.
- Evaluate lane configuration in order to reduce the length of railroad gates.
- Install W10-1 Advance Warning signs with W10-9P No Train Horn plaques on each approach.
- Install W10-4 Advance Warning signs with W10-9P No Train Horn plaques on 3rd Street.
- New stop lines and pavement markings will be installed prior to each gate.

Work to be completed by Railroad (funded by City): None

9th Avenue - DOT No. 245131G

The 9th Avenue crossing, located at railroad milepost 98.19, is the next crossing to the northwest of the 8th Avenue crossing. 9th Avenue is a two-lane roadway crossing over one mainline track. The roadway is approximately 54 feet wide. The street is asphalt composition with paved shoulders and bike lanes on the approaches to the crossing. There is a commercial driveway south of the crossing in the southwest quadrant.

Figure 3. 9th Avenue - Aerial View

The City review team considered the approved quiet zone treatment options provided in 49 CFR 222, Appendix A and agreed with the City's preferred option to install non-traversable concrete medians. The proposed median length north of the tracks is a minimum of 100 feet in length, limiting the private driveways located northeast of the crossing to right-in and right-out access. Due to the commercial driveway, south of the tracks, the proposed median length south the tracks is approximately 45 feet, eliminating the concrete median from SSM eligibility. Therefore, the concrete medians at this location will be non-SSM and no credit will be taken in quiet zone calculations. If the city decides to install SSM compliant treatment at this location, a four-quadrant gate system would be the preferred option.

The team discussed the current conditions of pedestrian pathways along W 9th Avenue and found that they are acceptable and require no further recommendations.

Option A - Non-SSM compliant Concrete Median

Work to be completed by City:

- Install concrete median to the north a minimum length of 100 feet and the median to the south will be approximately 45 feet in length when measured from the gate.
- Install W10-1 Advance Warning signs with W10-9P No Train Horn plaques on each approach.
- Install new stop lines and pavement markings prior to each gate.

Work to be completed by Railroad (funded by City):

- Install flashing lights and gates, constant warning time devices, and power out indicator.

Option B - SSM - Four-Quadrant Gate System

Work to be completed by City:

- Install W10-1 Advance Warning signs with W10-9P No Train Horn plaques on each approach.
- Install new stop lines and pavement markings prior to each gate.

Work to be completed by Railroad (funded by City):

- Install four quadrant gate system with vehicle detection, constant warning time devices and power out indicator.

11th Avenue - DOT No. 245130A

The 11th Avenue crossing, located at railroad milepost 97.96, is the next crossing to the northwest of the 9th Avenue crossing. 11th Avenue is a four-lane roadway crossing over one mainline track. The roadway is approximately 54 feet wide. The street is asphalt composition with curb and gutter and bike lanes on the approaches to the crossing. There is a commercial driveway just north of the crossing in the northeast quadrant. The crossing has concrete crossing panels.

Figure 4. 11th Avenue - Aerial View

The City review team considered the approved quiet zone treatment options provided in 49 CFR 222, Appendix A and agreed with the City's preferred option to install non-traversable concrete medians. The roadway width is currently too narrow to install concrete medians at this time and the city will widen the street to allow the installation of concrete medians with a minimum width of 2 feet. The widening of the street would require the relocation of railroad southbound cantilever.

The proposed median length south of the tracks is a minimum of 100 feet. The proposed median length north of the tracks is approximately 60 feet and will not qualify as SSM due to commercial driveways located in northeast quadrant less than 60 feet from the gate.

The team recommended working with the property owner in the northeast quadrant to extend the curb and gutter further south to 10 feet from the rail, allowing access to the parking lot through the two driveways further north. While the median north of the tracks is the minimum required length for an SSM, the remaining driveway in the northeast quadrant closest to the crossing is 45 feet from the tracks, eliminating the concrete median from SSM eligibility. Therefore, the concrete medians at this location will be non-SSM and no credit will be taken in quiet zone calculations. If the city decides to install SSM compliant treatment at this location, a four-quadrant gate system would be the preferred option.

The team discussed the current conditions of pedestrian pathways along 11th Avenue and found that they are acceptable and require no further recommendations.

Option A - Non-SSM compliant Concrete Median

Work to be completed by City:

- Widen the roadway to the west to provide necessary width for the installation of concrete medians.
- Install concrete medians with minimum 2 feet in width and 6 inches in height. The median to the north will be approximately 60 feet and the median to the south will be a minimum of 100 feet in length when measured from the gate.
- Install a barricade as well as curb and gutter in northeast quadrant to eliminate access to the parking lot adjacent to the crossing.
- Install W10-1 Advance Warning signs with W10-9P No Train Horn plaques on each approach.
- Install new stop lines and pavement markings prior to each gate.

Work to be completed by Railroad (funded by City):

- Install flashing lights and gates, constant warning time devices, and power out indicator. Relocate cantilever for street widening.

Option B - SSM - Four-Quadrant Gate System

Work to be completed by City:

- Install W10-1 Advance Warning signs with W10-9P No Train Horn plaques on each approach.
- Install new stop lines and pavement markings prior to each gate.

Work to be completed by Railroad (funded by City):

- Install four quadrant gate system with vehicle detection, constant warning time devices and power out indicator.

14th Avenue - DOT No. 245129F

The 14th Avenue crossing, located at railroad milepost 97.70, is the next crossing to the northwest of the 11th Avenue crossing. 14th Avenue is a four-lane roadway crossing over one mainline track. The roadway is approximately 60 feet wide. The street is asphalt composition with curb and gutter on the approaches to the crossing. There is a commercial driveway 60 feet just to the south of the crossing in the southwest quadrant.

Figure 5. 14th Ave - Aerial View

The City review team considered the approved quiet zone treatment options provided in 49 CFR 222, Appendix A and agreed with the City's preferred option to install non-traversable concrete medians. The proposed median length north of the tracks is a minimum of 100 feet. The proposed median length south of the tracks is a minimum of 60 feet due to the commercial driveway located in the southwest quadrant. The roadway width is currently too narrow to install concrete medians at this time and the city will widen the street to allow the installation of concrete medians with a minimum width of 2 feet.

The diagnostic team discussed the fact that there are no existing pedestrian treatments at 14th Avenue and due to low pedestrian traffic in the area had no recommendations.

Option A & B - SSM Concrete Medians

Work to be completed by City:

- Widen the roadway to provide necessary width for the installation of concrete medians.
- Install concrete medians with minimum 2 feet in width and 6 inches in height. The median to the north will be approximately 100 feet and the median to the south will be a minimum of 60 feet in length when measured from the gate.
- Install W10-1 Advance Warning signs with W10-9P No Train Horn plaques on each approach.
- Install new stop lines and pavement markings prior to each gate.

Work to be completed by Railroad (funded by City):

- Install flashing lights and gates, constant warning time devices, and power out indicator.
- Install additional railroad crossing surface for widening street.

North 21th Avenue - DOT No. 245128Y

The North 21th Avenue crossing, located at railroad milepost 97.15, is the next crossing to the northwest of the 14th Avenue crossing. North 21th Avenue is a two-lane roadway crossing over one mainline track. The roadway is approximately 24 feet wide. The street is asphalt composition with paved shoulders on the approaches to the crossing. There is a T-Intersection just 40 feet to the north of the crossing.

Figure 6. N 21st Ave - Aerial View

The City review team considered the approved quiet zone treatment options provided in 49 CFR 222, Appendix A and agreed with the City's preferred option to install four quadrant gate system with vehicle detection.

The City recently purchased the gated private driveway located in the northeast quadrant to provide public access to the city's Centennial Village. Therefore, the four-quadrant gate system will ensure vehicles exiting the driveway are not able to maneuver inside the railroad gates.

The diagnostic team discussed the fact that there are no existing pedestrian treatments at 21st Avenue and due to low pedestrian traffic in the area had no recommendations.

Option A & B - SSM Four-Quadrant Gate System

Work to be completed by City:

- Install W10-1 Advance Warning signs with W10-9P No Train Horn plaques on the northbound and southbound North 21st Avenue approach.
- Install W10-2 Advance Warning signs with W10-9P No Train Horn plaques on Northwest C Street and the private driveway proposed for purchase by the City.
- Install new stop lines prior to each gate and railroad pavement markings.

Work to be completed by Railroad (funded by City):

- Install four quadrant gate system with vehicle detection, constant warning time devices and power out indicator.
- Install additional railroad crossing surface for widening street.

North 23th Avenue - DOT No. 245126K

The North 23th Avenue crossing, located at railroad milepost 96.91, is the next crossing to the northwest of the North 21th Avenue crossing. North 23th Avenue is a two-lane roadway crossing over one mainline track. The roadway is approximately 24 feet wide. The street is asphalt composition with paved shoulders on the approaches to the crossing. There is a T-Intersection just 25 feet to the south of the crossing.

Figure 7. N 23rd Ave - Aerial View

The City review team considered the approved quiet zone treatment options provided in 49 CFR 222, Appendix A and agreed with the City's preferred option to install non-traversable concrete medians. Due to the close proximity of the West C Street and North 23rd Avenue T-Intersection to the crossing, gates and non-traversable concrete medians are proposed for the northbound and southbound approaches on North 23rd Avenue as well as the eastbound approach on West C Street. All proposed medians will be a minimum of 100 feet in length.

CPUC stated that they would require three gates at this location to prevent eastbound traffic from driving inside the northbound gate. The installation of the third gate will require the purchase of additional right of way to allow adequate room for the eastbound gate. The cost for this right of way purchase is not included in the cost estimate since the amount of property needed is not known at this time.

The diagnostic team discussed the fact that there are no existing pedestrian treatments at 23rd Avenue and due to low pedestrian traffic in the area had no recommendations.

Option A & B - SSM Concrete Medians

Work to be completed by City:

- Widen the roadways to provide necessary width for the installation of concrete medians.
- Install concrete medians with minimum 2 feet in width. The median to the north and south of the crossing will 100 feet in length, and the median to the west will be 100 feet when measured from the gate.

- Install W10-1 Advance Warning signs with W10-9P No Train Horn plaques on the northbound and southbound North 23rd Avenue approach.
- Install W10-4 Advance Warning sign with W10-9P No Train Horn plaques on the eastbound West C Street approach.
- Install new stop lines and pavement markings prior to each gate.

Work to be completed by Railroad (funded by City):

- Install flashing lights and gates, constant warning time devices and power out indicator for the northbound, southbound, and eastbound approaches to the crossing.
- Install additional railroad crossing surface for widening street.

West F Street - DOT No. 245125D

The West F Street crossing, located at railroad milepost 96.05, is the next crossing to the northwest of the North 23th Ave crossing. West F Street is a two-lane roadway crossing over one mainline track. The roadway is approximately 24 feet wide. The street is asphalt on the approaches to the crossing.

Figure 8. W F St - Aerial View

The City review team considered the approved quiet zone treatment options provided in 49 CFR 222, Appendix A and agreed with the City's preferred option to install non-traversable concrete medians. The proposed median length is minimum of 100 feet both east and west of the tracks. The roadway width is currently too narrow to install concrete medians at this time and the city will widen the street to allow the installation of concrete medians with a minimum width of 2 feet.

The diagnostic team discussed the fact that there are no existing pedestrian treatments at F Avenue and due to low pedestrian traffic in the area had no recommendations.

Option A & B - SSM Concrete Medians

Work to be completed by City:

- Widen the roadways to provide necessary width for the installation of concrete medians.
- Install concrete medians with minimum 2 feet in width and 6 inches in height. The median to the east will be a minimum of 100 feet and the median to the west will be a minimum of 100 feet in length from the gate.
- Install W10-1 Advance Warning signs with W10-9P No Train Horn plaques on the eastbound and westbound West F Street approaches.
- Install new stop lines and pavement markings will be installed prior to each gate.

Work to be completed by Railroad (funded by City):

- Install flashing lights and gates, constant warning time devices, and power out indicator.
- Install additional crossing panels to provide adequate roadway width over the crossing.

North 35th Avenue - DOT No. 245124W

The North 35th Avenue crossing, located at railroad milepost 95.85, is the next crossing to the northwest of the West F Street crossing. North 35th Avenue is a two-lane roadway crossing over one mainline track. The roadway is approximately 24 feet wide. The street is asphalt composition with paved shoulders on the approaches to the crossing.

Figure 9. N 35th Ave - Aerial View

The City review team considered the approved quiet zone treatment options provided in 49 CFR 222, Appendix A and agreed with the City's preferred option to install non-traversable concrete medians. The proposed median length is approximately 100 feet both east and west of the tracks. The roadway width is currently too narrow to install concrete medians at this time and the city will widen the street to allow the installation of concrete medians with a minimum width of 2 feet.

The existing highway speed limit south of the crossing is posted at 50 mph. The quiet zone rule requires for a curb to be considered non-mountable, the speed limit of the roadway must have a maximum posted speed limit of 40 MPH (49 CFR 222.9).

The diagnostic team discussed the fact that there are no existing pedestrian treatments at 35th Avenue and due to low pedestrian traffic in the area had no recommendations.

Option A & B - SSM Concrete Medians

Work to be completed by City:

- Widen the roadways to provide necessary width for the installation of concrete medians.
- Install concrete medians with minimum 2 feet in width and 6 inches in height. The median to the north will be approximately 100 feet and the median to the south will be approximately 100 feet from the gate.
- Revise the speed limit over the crossing to meet quiet zone rule requirements (49 CFR 222.9).
- Install W10-1 Advance Warning signs with W10-9P No Train Horn plaques on the eastbound and westbound West F Street approaches.
- Install new stop lines and pavement markings will be installed prior to each gate.

Work to be completed by Railroad (funded by City):

- Install flashing lights and gates mechanisms, constant warning time devices, and power out indicator.
- Install additional crossing panels to provide adequate roadway width over the crossing.

Poudre River Trail Pedestrian Crossing - DOT No. 934035G - Pedestrian Crossing Only

The Poudre River Trail pedestrian crossing is located at railroad milepost 94.06, northwest of the North 35th Avenue crossing. The pedestrian crossing is a single-lane pedestrian pathway crossing over one mainline track. There are currently no railroad warning devices located along this crossing. The crossing is approximately 10 feet wide and constructed of asphalt composition. The pedestrian crossing is used as a hike and bike trail.

Figure 10. Poudre River Trail - Aerial View

In accordance with 49 CFR Part 222.27(b)(1) all pedestrian highway-rail grade crossings located in a new quiet zone must be evaluated by a diagnostic team and equipped or treated with the recommendations of such diagnostic team.

CPUC has notified the city that there is no application for the establishment of this pedestrian crossing. The city and CPUC will work to resolve this issue but CPUC has also stated that the installation of flashing lights and gates at this crossing may be needed to allow the continued existence of the crossing. Therefore, the cost estimate for this location will include the cost of flashing lights and gates.

Option A & B - Diagnostic Team Recommendations

Work to be completed by City:

- W10-1 Railroad Warning signs with W10-9P No Train Horn plaques will be installed on each approach.

Work to be completed by Railroad:

- Install flashing lights, gates, constant warning time devices, bells, and power out indicator.

Private Drive Crossing #1 - DOT No. 245121B

The Private Crossing #1 is located at railroad milepost 94.06, 2,850 feet northwest of the edge of the Poudre River Trail Pedestrian crossing. South of O Street (CR 64) and east of North 59th Ave (CR 31), Private Crossing #1 is a single-lane private drive crossing over one mainline track.

There are currently no railroad warning devices located along this crossing. The crossing is approximately 24 feet wide and constructed of asphalt composition.

Figure 11. Private Crossing #1 - Aerial View

In accordance with 49 CFR Part 222.25(b)(1) all private highway-rail grade crossings located in a new quiet zone must be evaluated by a diagnostic team and equipped or treated with the recommendations of such diagnostic team.

The team discussed the current conditions of pedestrian pathways along 14th Avenue and found that they are acceptable and require no further recommendations.

Option A & B - Diagnostic Team Recommendations

Work to be completed by City:

- Install R15-1 Cross buck signs on each approach.
- Install R1-1 Stop Sign on each approach.
- Install W10-1 Railroad Warning signs with W10-9P No Train Horn plaques on each approach.

Work to be completed by Railroad (funded by City): None

North 59th Avenue (County Road 31) - DOT No. 245120U

The North 59th Avenue (County Road 31) crossing, located at railroad milepost 93.74, is the next crossing to the northwest of the private crossing #1. North 59th Avenue / County Road 31 is a

two-lane roadway crossing over one mainline track. The roadway is approximately 24 feet wide. The street is asphalt composition with paved shoulders on the approaches to the crossing. Also, 38 feet just south of the crossing is an unpaved access road in the southwest quadrant.

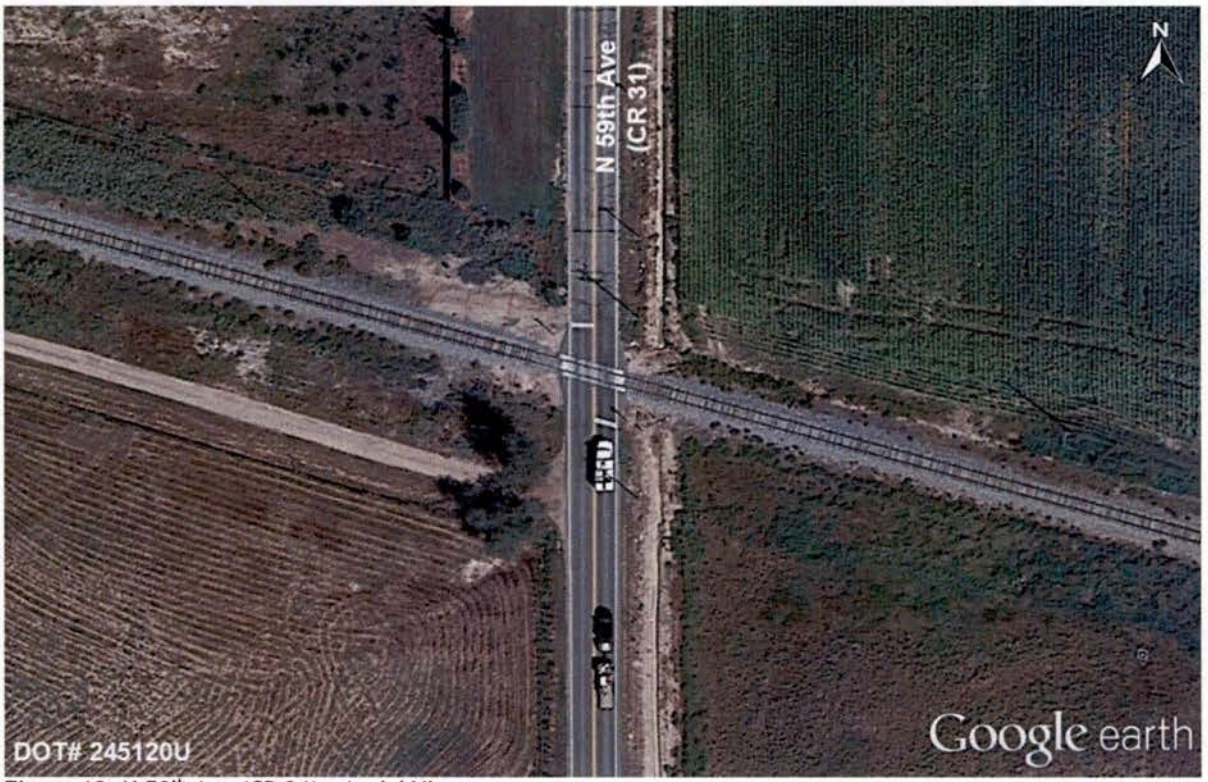


Figure 12. N 59th Ave (CR 31) - Aerial View

The City review team considered the approved quiet zone treatment options provided in 49 CFR 222, Appendix A and agreed with the City's preferred option to install non-traversable concrete medians. The proposed median length north of the tracks is a minimum of 100 feet. Due to the commercial driveway in the southwest quadrant, the proposed median length south the tracks is approximately 38 feet, eliminating the concrete median from SSM eligibility. Therefore, the concrete medians at this location will be non-SSM and no credit will be taken in quiet zone calculations. If non-SSM compliant medians are not acceptable to the City, the installation of a four quadrant gate system is the preferred option.

The existing highway speed limit south of the crossing is posted at 50 mph. The quiet zone rule requires for a curb to be considered non-mountable, the speed limit of the roadway must have a maximum posted speed limit of 40 MPH (49 CFR 222.9).

The diagnostic team discussed the fact that there are no existing pedestrian treatments at 59th Avenue and due to low pedestrian traffic in the area had no recommendations.

Option A - Non-SSM Concrete Medians

- Widen the roadways to provide necessary width for the installation of concrete medians.

- Install concrete medians with minimum 2 feet in width and 6 inches in height. The median to the north will be a minimum of 100 feet and the median to the south will be approximately 38 feet from the gate.
- Revise the speed limit over the crossing to meet quiet zone rule requirements (49 CFR 222.9).
- W10-1 Advance Warning signs with W10-9P No Train Horn plaques will be installed on the northbound and North 59th Street (County Road 31) approaches.
- New stop lines and pavement markings will be installed prior to each gate.

Work to be completed by Railroad (funded by City):

- Install flashing lights and gates mechanisms, constant warning time devices, and power out indicator.
- Install additional crossing panels to provide adequate roadway width over the crossing.

Option B - Four Quadrant Gate System

Work to be completed by City:

- W10-1 Advance Warning signs with W10-9P No Train Horn plaques will be installed on the northbound and southbound North 59th Street (County Road 31) approach.
- New stop lines will be installed prior to each gate and railroad pavement markings.

Work to be completed by Railroad (funded by City):

- Install four quadrant gate system with constant warning time devices and power out indicator.

Private Crossing #2 - DOT No. 934034A

The private crossing #2 is located at railroad milepost 93.40, 1,800 feet northwest of the North 59th Avenue (County Road 31) crossing, and 475 feet southeast of the O Street (County Road 64) crossing. Private Crossing #2 is a single-lane private drive crossing over one mainline track. There are currently no railroad warning devices located at this crossing. The crossing is approximately 30 feet wide and constructed of asphalt composition.

Figure 13. Private Crossing #2 - Aerial View

In accordance with 49 CFR Part 222.25(b)(1) all private highway-rail grade crossings located in a new quiet zone must be evaluated by a diagnostic team and equipped or treated with the recommendations of such diagnostic team.

The team discussed the current conditions of pedestrian pathways along 14th Avenue and found that they are acceptable and require no further recommendations.

Option A & B - Diagnostic Team Recommendations

Work to be completed by City:

- Install R15-1 cross buck signs on each approach.
- Install R1-1 Stop Sign on each approach.
- Install W10-1 Railroad Warning signs with W10-9P No Train Horn plaques on each approach.

Work to be completed by Railroad (funded by City): None

O Street (County Road 64) - DOT No. 245119A

The O Street (County Road 64) crossing, located at railroad milepost 93.31, is the next crossing to the northwest of the private crossing #2. O Street (County Road 64) is a two-lane roadway crossing over one mainline track. The roadway is approximately 24 feet wide. The street is asphalt on the approaches to the crossing. Also, 27 feet southwest of the crossing is a private drive located in the southwest quadrant.

Figure 14. O St (CR 64) - Aerial View

The City review team considered the approved quiet zone treatment options provided in 49 CFR 222, Appendix A and agreed with the City's preferred option to install a wayside horn system.

The diagnostic team discussed the fact that there are no existing pedestrian treatments at O Street and due to low pedestrian traffic in the area had no recommendations.

Option A - Wayside Horn System

Work to be completed by City:

- Install W10-1 Advance Warning signs with W10-9P No Train Horn plaques on the eastbound and westbound O Street (County Road 64) approaches.
- Install new stop lines and pavement markings prior to each gate.
- Install Wayside Horn System at the crossing.

Work to be completed by Railroad (funded by City):

- Install flashing lights and gates, constant warning time devices, and power out indicator. Railroad design to include circuits for wayside horn system interconnection.

- Install barricade from eastbound gate towards the track to prevent vehicles from driving inside the gate.

Option B - SSM - Four-Quadrant Gate System

Work to be completed by City:

- Install W10-1 Advance Warning signs with W10-9P No Train Horn plaques on the eastbound and westbound O Street (County Road 64) approaches.
- Install new stop lines and pavement markings prior to each gate.

Work to be completed by Railroad (funded by City):

- Install four quadrant gate system with constant warning time devices and power out indicator.
- Install barricade from eastbound gate towards the track to prevent vehicles from driving inside the gate.

Private Crossing #3 - DOT No. 245118T

The private crossing #3 is located at railroad milepost 93.21, 400 feet northwest of the edge of O Street (County Road 64) crossing. Private Crossing #3 is a single-lane private drive crossing over one mainline track. There are currently no railroad warning devices located along this crossing. The crossing is approximately 22 feet wide and constructed of asphalt composition.

Figure 15. Private Crossing #3 - Aerial View

In accordance with 49 CFR Part 222.25(b)(1) all private highway-rail grade crossings located in a new quiet zone must be evaluated by a diagnostic team and equipped or treated with the

recommendations of such diagnostic team.

The team discussed the current conditions of pedestrian pathways along 14th Avenue and found that they are acceptable and require no further recommendations.

Option A & B - Diagnostic Team Recommendations

Work to be completed by City:

- Install R15-1 cross buck signs on each approach.
- Install R1-1 Stop Sign on each approach.
- Install W10-1 Railroad Warning signs with W10-9P No Train Horn plaques on each approach.

Work to be completed by Railroad (funded by City): None

V. Summary of Estimated Quiet Zone Safety Improvement Costs

The table below summarizes the proposed quiet zone improvements and approximate costs for each crossing location and option. *These are budget estimates to evaluate alternatives for planning purposes only. Specific detailed cost estimates should be obtained from Railroad, traffic engineering firms, and construction contractors once the City has determined the final quiet zone plan.*

Two alternatives are provided for comparison of cost and types of quiet zone methods that are available to the City for establishing the quiet zone.

- Option A - ASMs and SSM to reduce the QZRI below RIWH
- Option B - SSMs at every crossing
- Option C - GWR crossing within existing city limits

Table 4. Summary of Quiet Zone Options

Street or Road Name	DOT No.	Option A QZRI<RIWH	Option B SSMs at every crossing	Option C Crossing within City limits
8th Avenue	245132N	SSM Median	SSM Median	SSM Median
9th Avenue	245131G	Non-SSM Median	SSM Four-Quadrant Gates	Non-SSM Median
11th Avenue	245130A	Non-SSM Median	SSM Four-Quadrant Gates	Non-SSM Median
14th Avenue	245129F	SSM Median	SSM Median	SSM Median
21st Avenue	245128Y	SSM Four-Quadrant Gates	SSM Four-Quadrant Gates	N/A
23rd Avenue	245126K	SSM Median	SSM Median	N/A
F Street	245125D	SSM Median	SSM Median	N/A
35th Avenue	245124W	SSM Median	SSM Median	N/A
59th Street	245120U	Non-SSM Median	SSM Four-Quadrant Gates	N/A
O Street	245119A	Wayside Horn System	SSM Four-Quadrant Gates	N/A

Option A - ASMs and SSM to reduce QZRI below RIWH - Diagnostic Team Recommendations

This option includes installation of SSM compliant concrete medians at five crossings, four-quadrant gate system at one crossing and wayside horn system at one crossing. The implementation of these safety measures provides sufficient risk reduction to lower the QZRI below the RIWH. (see calculations in Appendix E).

The advantages of this option are as follows:

- Lower construction cost

The disadvantages of this option are as follows:

- Reauthorization of quiet zone every 2 ½ to 3 years

Option B - SSMs at every crossing

This option includes installation of SSM compliant four quadrant gates at four crossings and SSM compliant concrete medians at six crossings.

The advantages of this option are as follows:

- Quiet zone calculations not required.
- Future crashes at crossings will not impact the quiet zone qualification.
- Reauthorization of quiet zone every 4 ½ to 5 years.

The disadvantages of this option are as follows:

- Higher railroad construction cost

Option C - GWR crossing within existing Greeley City Limits

This option would allow the city to divide the crossings into multiple quiet zones that can be implemented over several years as funding is available. This option includes only those crossings that are within the existing city limits of Greeley. This includes the crossings from 8th Avenue through the 14th Street crossing.

The advantages of this option are as follows:

- Does not require multijurisdictional quiet zone of letter from county authorizing Greeley to create a quiet zone in the city.
- Lower cost than implementing a quiet zone throughout the GWR corridor.
- Provides time for City to obtain funding for additional quiet zones.
- City may choose to annex the other crossings prior to implementation of the quiet zone.

The disadvantages of this option are as follows:

- GWR will continue to sound the horn at the other crossings located just outside city limits.
- Citizens will hear the horns sounding at the other crossing and may believe railroad is violating the established quiet zone.

Table 5. Summary of Quiet Zone Construction

Street	OPTION A		OPTION B		OPTION C	
	City	Railroad	City	Railroad	City	Railroad
8th Avenue	$40,234	$6,000	$40,234	$6,000	$40,234	$6,000
9th Avenue	$25,634	$256,000	$2,934	$400,000	$25,634	$256,000
11th Avenue	$64,784	$365,000	$3,984	$500,000	$64,784	$365,000
14th Avenue	$56,384	$377,000	$52,634	$377,000	$56,384	$377,000
N 21st Avenue	$3,742	$500,000	$3,742	$500,000	N/A	N/A
N 23rd Avenue	$127,463	$339,000	$136,488	$339,000	N/A	N/A
W F Street	$92,720	$280,000	$99,245	$280,000	N/A	N/A
N 35th Avenue	$91,842	$268,000	$29,342	$268,000	N/A	N/A
Poudre River Trail	$1,192	$175,000	$1,192	$175,000	N/A	N/A
Private Drive	$1,900	$0	$1,900	$0	N/A	N/A
N 59th Avenue (CR 31)	$93,042	$280,000	$2,742	$430,000	N/A	N/A
Private Drive	$1,900	$0	$1,900	$0	N/A	N/A
O Street (CR 64)	$82,742	$267,500	$2,742	$500,000	N/A	N/A
Private Drive	$1,900	$0	$1,900	$0	N/A	N/A
Other Cost	$115,000	$0	$105,000	$0	$50,000	$0
Contingency (10%)	$80,048	$311,350	$48,598	$377,500	$23,704	$100,400
Sub-Total	$880,527	$3,424,850	$534,577	$4,152,500	$260,740	$1,104,400
TOTAL ESTIMATED COST	**$4,305,377**		**$4,687,077**		**$1,365,140**	

Note: Estimated construction cost does not include right-of-way acquisition.

Maintenance Cost

Signs and Pavement Markings - (Minimal Maintenance Cost)
Many of the signs and pavement markings recommended by the diagnostic team are already in place and being maintained by the City. The additional signs and pavement marking will have a minimal impact in additional cost to the City. The maintenance cost should be included in the annual budget cost for maintaining signs and pavement marking throughout the City.

Concrete Sidewalks and Medians - (Minimal Maintenance Cost)
The proposed concrete sidewalks and medians will require minimal additional maintenance cost for the City. These new sidewalk and medians, once installed should be included in the annual maintenance budget of the City for routine concrete repair.

Four-Quadrant Gate Systems - (High Maintenance Cost)
The Great Western Railway Company (GWR) does not charge cities for maintenance cost of railroad flashing lights and gates and/or cantilevers with flashing lights or four quadrant gate systems. The railroad will be responsible for maintenance of all railroad warning devices.

VI. Quiet Zone Implementation Process

Once the City has made the determination to proceed with implementation of the quiet zone, there is a sequence of events that must occur. Those events are described below.

USDOT Grade Crossing Inventory Updates - Existing Conditions

The City along with the assistance of the Railroad will be required to update USDOT Grade Crossing Inventory Forms for each of the highway-rail grade crossings within the limits of the proposed quiet zone to reflect the existing conditions. An average daily traffic count for each affected roadway will be required. Once the City has collected traffic data for all crossings located in the quiet zone, the grade crossing inventory can be updated.

Notice of Intent to Create a New Quiet Zone

The purpose of the Notice of Intent (NOI) is to provide notice to the Railroads operating over the public highway-rail grade crossings within the quiet zone, the highway or traffic control authority or law enforcement authority having jurisdiction over vehicular traffic at grade crossings within the quiet zone, the State agency responsible for highway and road safety that the City is planning on creating a new quiet zone. The NOI provides an opportunity for the Railroads and the agencies to give input to the City during the quiet zone development process. The agencies and railroads will be given sixty days to provide information and comments to the public City.

The NOI must contain the following information:

1. A list of each public highway-rail grade crossing, private highway-rail grade crossing, and pedestrian crossing within the proposed quiet zone. The crossings are to be identified by both the U.S. DOT Crossing Inventory Number and the street or highway name.

2. A statement of the time period within which the restrictions would be in effect on the routine sounding of train horns (i.e., 24 hours or from 10 p.m. to 7 a.m.).
3. A brief explanation of the City's tentative plans for implementing improvements within the proposed quiet zone.
4. The name and title of the person who will act as the point of contact during the quiet zone development process and how that person can be contacted.
5. A list of the names and addresses of each party that will receive a copy of the NOI.

The City must provide the written NOI, by certified mail, return receipt requested to the Railroad(s), Colorado Department of Transportation (CDOT). Although it is not required by the rule, it is recommended to also send a copy of the NOI to the Associate Administrator of the Federal Railroad Administration. If the City receives comments within the sixty-day period, assistance from the FRA may be required to resolve any of the issues raised. Since we will include the Railroad and the FRA in the planning process, it is not anticipated that there will be any issues raised during the NOI process.

Diagnostic Team Review

The diagnostic team review conducted on July 25, 2017 provided the information necessary to develop a plan and budgetary costs for proposed improvements throughout the quiet zone. Although a diagnostic team inspection is not required, it is highly recommended to allow the Railroad, FRA, and CDOT the opportunity to be involved from the beginning and provide recommendations during the design process and prevent issues from occurring late in the process. This is also the time when project details can be finalized with all stakeholders involved in the decision-making process. The diagnostic team must, at a minimum, consist of representatives from the Railroad, CDOT, and the City. It is also recommended to include a representative from the FRA to ensure that the proposed quiet zone meets all the necessary requirements.

Implementation of Improvements

Upon conclusion of the diagnostic team review, specific recommendations will be developed and responsibility for work to be done will be defined. The following steps are required for implementation of the improvement plan.

1. The City may be requested to enter into a preliminary engineering agreement with the Railroad authorizing preparation of plans and estimates for the proposed improvements to be performed by the Railroad. (This information was provided to the City by the Railroad during the diagnostic meeting). Railroad requires a deposit of $10,000 per crossing signal location when executing the preliminary engineering agreement. This will allow GWR to complete necessary field work to provide the city with engineered estimates for the proposed quiet zone improvements.
2. The Railroad will prepare project agreements, plans and estimates for approval and execution by the City.
3. Once the agreements have been fully executed, the Railroad will begin assembling the material and schedule proposed improvements.
4. Upon completion of improvements by the Railroad, the City will place all of the appropriate signing as required in the implementation plan.

USDOT Grade Crossing Inventory Updates - After Improvements
The City will also be required to update USDOT Grade Crossing Inventory Forms for each of the highway-rail grade crossing within the limits of the proposed quiet zone to reflect the conditions after the proposed improvements. The Grade Crossing Inventory Forms will be included as part of the Notice of Quiet Zone Establishment to be filed.

Notice of Quiet Zone Establishment

The purpose of the Notice of Quiet Zone Establishment is to provide a means for the City to formally advise affected parties that a new quiet zone is being established. All quiet zone improvements need to be in place and confirmed by the city and/or its consultant that the proposed improvement have been installed per the quiet zone design and meets FRA requirements. Once that is confirmed, the City must provide written notice, by certified mail, return receipt requested, to the following:

1. Great Western Railway
2. City of Greely Police Department
3. CDOT
4. Associate Administrator for the FRA

The Notice of Establishment must contain the following information:

1. The date upon which the quiet zone will be established, but in no event, shall the date be earlier than 21 days after the date of the mailing.
2. A list of each public highway-rail grade crossing and private highway-rail grade crossing within the quiet zone, identified by both U.S. DOT National Highway-Rail Grade Crossing Inventory Number and street or highway name.
3. A specific reference to the regulatory provision that provides the basis for quiet zone establishment. For example, if the improvements are completed as proposed, the appropriate regulatory provision is § 222.39(a)(1). This indicates that the quiet zone is established by Public Authority Designation utilizing an SSM treatment the only public highway-rail grade crossing in the corridor.
4. A statement affirming that the State agency responsible for grade crossing safety and all affected railroads were provided an opportunity to participate in the diagnostic team review as required under § 222.25 (private crossings). The Notice of Quiet Establishment shall also include a list of recommendations by the diagnostic team.
5. A statement of the time period within which restrictions on the routine sounding of the locomotive horn will be imposed (i.e., 24 hours or from 10 p.m. until 7 a.m.)
6. An accurate and complete Grade Crossing Inventory Form for each public highway-rail grade crossing and private highway-rail grade crossing within the quiet zone that reflects the conditions existing at the crossing before any new SSMs or ASMs were implemented.
7. An accurate, complete and current Grade Crossing Inventory Form for each public highway-rail grade crossing and private highway-rail grade crossing within the quiet zone that reflects SSMs and ASMs in place upon establishment of the quiet zone. SSMs and ASMs that cannot be fully described on the Inventory Form shall be separately described.
8. A statement affirming that the Notice of Intent was provided in accordance with the rule. This statement shall also state the date on which the Notice of Intent was mailed.
9. The name and title of the person responsible for monitoring compliance with the requirements of this part and the manner in which that person can be contacted.

10. A list of the name and address of each party that is receiving a copy of the Notice of Quiet Establishment.
11. A statement signed by the chief executive officer of each public authority participating in the establishment of the quiet zone, in which the chief executive officer shall certify that the information submitted by the public authority is accurate and complete to the best of his/her knowledge and belief.

Quiet Zone Creation and Continuation

Once the Notice of Quiet Zone Establishment has been filed properly, the quiet zone will be created on the establishment date described in the notice. It will then be the City's responsibility to maintain all the appropriate signs, pavement markings, and medians as well as the sight distance improvements for the crossings. The Railroad will maintain the flashing lights and gates at the affected crossings. The project agreement will define cost responsibility associated with the Railroad's maintenance.

Between 2½ and 3 years after the date of the quiet zone establishment notice, the City must:

1. Affirm in writing to the Associate Administrator that the SSMs and ASMs implemented within the quiet zone continue to conform to the requirements of Appendix A and B of this part. Copies of such affirmation must be provided by certified mail, return receipt requested, to the parties identified in § 222.43(a)(3) of this part; and
2. Provide to the Associate Administrator an up-to-date, accurate, and complete Grade Crossing Inventory Form for each public highway-rail grade crossing and private highway-rail grade crossing within the quiet zone. This will include up-to-date traffic counts at the affected roadways.

This affirmation must be submitted every 2½ to 3 years thereafter.

VII. Liability

During the development of the federal rule for use of locomotive horns, several agencies and railroads provided comments related to the lack of guidance concerning liability when a crash occurs at a highway-rail grade crossing within a quiet zone established in accordance with the rule. The comments ranged from those who felt the rule should include language that local communities should not be liable for crashes occurring at crossing within the quiet zone to those who felt the communities implementing the quiet zones should assume all risk associated with the quiet zones. In Part II Department of Transportation Federal Railroad Administration 49 CFR Parts 222 and 229 Use of Locomotive Horns at Highway-Rail Grade Crossings; Interim Final Rule issued on December 18, 2003, (See Appendix D) the FRA concluded that the rule is intended to remove failure to sound the horn as a cause of action in a lawsuit involving crossings within a quiet zone. After reviewing the nature of this rule and its federal requirements, the FRA added that they expect the courts will determine liability issues based on facts of each case. As a result, the existing final rules issued in 2005 does not include guidance for or requirement of an agency to accept liability for crashes at crossings located in a quiet zone they establish under this rule. Additional detail on this subject is provided in Appendix D.

APPENDIX A: Final Diagnostic Notes

CTC inc

Great Western Railway Quiet Zone Corridor
Diagnostic Notes
City of Greeley, CO
July 25, 2017

The City of Greeley (City), in its effort to explore the possibility of prohibiting the sounding of train horns along the Great Western Railway Company (Railroad) through their community, requested CTC, Inc. (CTC) to conduct an evaluation to determine the feasibility and approximate cost associated with creating a new quiet zone through Greeley, Colorado. As part of the evaluation study a diagnostic meeting was held on July 25, 2017 in Greeley.

Those attending the meeting were as follows (see sign in sheet in Attachment A):

Pam Fischhaber	CPUC	Steven Jankowski	FRA
Jason Scott	GWR	Dave Thomas	Omnitrax
Tom Hellen	City	Tim Oster	CTC

The GWR Quiet Zone Corridor includes the following crossings:

Street or Road Name	DOT No.	Railroad Milepost (MP)	Subdivision	Nearest Parallel Street
8th Avenue	245132N	98.29	Greeley Line	3rd Street
9th Avenue	245131G	98.19	Greeley Line	3rd Street
11th Avenue	245130A	97.96	Greeley Line	1st Street
14th Avenue	245129F	97.70	Greeley Line	A Street
21st Avenue	245128Y	97.15	Greeley Line	N. West C Street
23rd Avenue	245126K	96.91	Greeley Line	West C Street
West F Street	245125D	96.05	Greeley Line	
35th Avenue	245124W	95.85	Greeley Line	F Street
Poudre River Trail		94.06	Greeley Line	
Private Drive	245121B	94.00	Greeley Line	
59th Avenue	245120U	93.74	Greeley Line	O Street/CR 64
Private Drive		93.04	Greeley Line	59th Ave
O Street/CR 64	245119A	93.31	Greeley Line	
Private Drive		93.01	Greeley Line	

The team met in city conference room to begin the field inspections. After a safety briefing, Tom welcomed the participants and provided the history and background of the planned quiet zone along the Great Western Railway (GWR). Tom explained that the funding for this project will be provided through a quality of life tax that will be voted on next year. Therefore, he believes it may be two years before the actual construction begins on this project. The participants were provided a handout outlining the quiet zone corridor, planned quiet zone treatments, and draft layouts of each crossing located within the quiet zone.

Tim lead the remainder of the meeting as he detailed the plans for the quiet zone and placed an aerial of each crossing and preferred quiet zone treatment on the screen for discussion. The preferred quiet zone plan for this corridor is to install enough Supplemental Safety Measures (SSMs) to reduce the Quiet Zone Risk Index (QZRI) below the Risk Index with Horns (RIWH) per 49 CFR 222.39(a)(3).

GWR provided current information concerning train counts, maximum authorized speed, and types of warning devices. The current train count is 2 trains per day and some local trains that may switch at the yard just north of 35th Street crossings. Therefore, it was agreed that CTC would use 10 MPH, 2 trains per day for the corridor and 2 switch moves at 35th Street crossing to complete the quiet zone calculations.

After completing the overview of the city plans, the team proceeded to the city van and completed a field inspection of all the crossings. After the conference room discussions and field inspection of each crossing the diagnostic team had the following recommendations:

General Recommendations:

- The 8th Ave crossing is the only crossing with constant warning time devices required by the quiet zone rule. All other crossings will require upgrade to constant warning and installation of flashing lights and gates.
- The preferred quiet zone treatment at several of the crossings will be concrete medians. The proposed non-mountable median will be minimum 6" in height and a two-foot wide. The city plans to install 7" high medians. The CPUC requested and the city agreed that they will attempt to install the concrete medians a minimum of 4-foot wide when possible. The details of the median width will be determined during final roadway design.
- Unless otherwise noted below, the diagnostic team agreed that the existing flashing lights and bells provided adequate warning for pedestrians and the team had no other recommendations for pedestrian treatment.
- Advance warning signs, pavement markings, and Do Not Stop on Track signs will be installed per CMUTCD at each crossing.

8th Avenue – DOT# 245132N MP 98.29 – SSM – Concrete Medians

The quiet zone treatment for this location will be SSM compliant concrete medians which will be a minimum of 60 feet on both approaches to the crossing.

The railroad requested and the city agreed to evaluate the roadway stripping and lane configuration in an effort to reduce the length of the railroad gates. The southbound gate is currently around 40 feet in length. The CPUC and City agreed to have discussions with Colorado Department of Transportation (CDOT) since this is a state highway, concerning the roadway configuration.

The preferred plan will be to install SSM compliant concrete medians. The recommendations to accomplish this are as follows:

City work to be completed:

- Reconstruct concrete medians to minimum of 6 inches in height and extend median to 10 feet from near rail.
- Evaluate lane configuration to reduce length of railroad gates.

The existing median to the south is 60 feet long, shortened due to parallel 3rd Street. The existing median to the north is over 200 feet in length. The existing medians, including the concrete median between the tracks will be extended to within 10 feet of near rail and height increased to minimum of 6 inches.

9th Avenue – DOT No. 245131G MP 98.19 – Non-SSM – Concrete Median

The existing crossing does not have flashing lights and gates. Flashing lights, gates and power out indicator will be installed to meet requirement of 49 CFR Subpart C 222.35(3)(b).

The preferred plan will be to install non-SSM compliant concrete medians. The recommendations to accomplish this are as follows:

Railroad work to be completed:

- Install constant warning time devices, flashing lights, gates and power out indicator.

City work to be completed:

- Install concrete medians.

The concrete median to the north of the crossing will be 100 feet in length. There are two private driveways located north and east or the crossing that will be limited to a

right-in right-out access. The concrete median to the south will be approximately 44 feet in length due to a commercial driveway located in the southwest quadrant.

11th Avenue – DOT# 245130A MP 97.96 – Non-SSM – Concrete Medians
The existing crossing has flashing lights and cantilevers. Constant warning time devices, additional flashing lights and gates and will be installed to meet requirement of 49 CFR Subpart C 222.35(3)(b).

The preferred plan will be to install non-SSM compliant concrete medians. The street lanes are too narrow to install concrete median at this time. The city will widen the street to allow the installation of concrete median with a minimum width of 2-feet. The city will also work with property owner in northeast quadrant to add curb and gutter to restrict access from parking lot to street. This work will not result in an SSM compliant median length be will improve safety and make it more difficult for drivers to exit the parking lot and drive behind the railroad gates. The recommendations to accomplish this are as follows:

Railroad work to be completed:

- Install constant warning time devices, flashing lights, gates and power out indicator.
- Remove sidelight on southbound cantilever. This will not be needed once the median is installed and parking lot entrance is a right turn only.

City work to be completed:

- Install concrete medians.
- Install curb and gutter and barricade in northeast quadrant to eliminate access to parking lot near the crossing.
- Widen the street to provide width needed for installation of concrete median.

The concrete median to the north of the crossing will be 60 feet in length due to the commercial driveway located in the northeast quadrant. The concrete median to the south will be a minimum of 100 feet in length.

14th Avenue – DOT# 245129F MP 97.70 – SSM – Concrete Medians
The existing crossing has flashing lights and cantilevers. Constant warning time devices, additional flashing lights and gates and will be installed to meet requirement of 49 CFR Subpart C 222.35(3)(b). The team had some concern about the power lines over the proposed location of the southbound gate. City and railroad need to evaluate this issue to determine if relocation of the power lines will be required for the installation of the railroad gate.

The preferred plan will be to install SSM compliant concrete medians. The street lanes are too narrow to install concrete median at this time. The recommendations to accomplish this are as follows:

Railroad work to be completed:

- Install constant warning time devices, flashing lights, gates and power out indicator.

City work to be completed:

- Install concrete medians.
- Adjust sidewalk to provide proper clearance behind the gate and cantilever.

The concrete median to the south of the crossing will be 60 feet in length due to the commercial driveway located in the southwest quadrant. The concrete median to the north will be a minimum of 100 feet in length.

21st Avenue – DOT# 245128Y MP 97.15 – SSM – Four Quadrant Gate System

The preferred plan will be to install SSM compliant four quadrant gate system. The original plan was to install a wayside horn system at this location. However, during the diagnostic meeting the city explained they may be purchasing the private driveway located in the northeast quadrant to provide public access to the city's Centennial Village. Due the possibility of vehicles driving behind the railroad gates if a two-gate system is installed, the team recommended the installation of a four quadrant gate system.

The recommendations to accomplish this are as follows:

Railroad work to be completed:

- Install four quadrant gate system with constant warning time devices and power out indicator.

23rd Avenue – DOT# 245126K MP 96.91 – SSM – Concrete Medians

The existing crossing does not have flashing lights and gates. Flashing lights, gates and power out indicator will be installed to meet requirement of 49 CFR Subpart C 222.35(3)(b).

The options presented for this location included wayside horn system with two railroad gates or the installation of third gate on West C Street with medians that are SSM compliant. During the diagnostic meeting, Pam stated that the CPUC would require the third gate on West C Street due to the ease with which eastbound vehicle on West C Street could drive behind the northbound 23rd Ave gate. Therefore, the preferred option for this location is to install the third gate and SSM compliant medians on all three approaches. The installation of the third gate will require city to purchase additional right-of-way on West C Street.

The recommendations to accomplish this are as follows:

Railroad work to be completed:

- Install constant warning time devices, flashing lights, gates and power out indicator.

City work to be completed:

- Install concrete medians on all three approaches.
- Redesign intersection to provide width for medians.
- Acquire right-of-way as needed.

The concrete median on all approaches will be 100 feet in length. The city will widen the road to allow for the installation of two-foot wide concrete median. The intersection design for median and gate location must take into account the turning radius for the design vehicle of 53-foot tractor trailer. The city also stated that this is city bus route.

F Street – DOT# 245125D MP 96.05 – SSM – Concrete Medians

The existing crossing does not have flashing lights and gates. Flashing lights, gates and power out indicator will be installed to meet requirement of 49 CFR Subpart C 222.35(3)(b).

The preferred plan will be to install SSM compliant concrete medians. The recommendations to accomplish this are as follows:

Railroad work to be completed:

- Install constant warning time devices, flashing lights, gates and power out indicator.
- Widen crossing surface as needed.

City work to be completed:

- Install concrete medians.
- Widen roadway to provide for installation of a minimum 2-foot concrete median.

The concrete median to the east and west of the crossing will be 100 feet in length.

35th Avenue – DOT# 245124W MP 94.06 – SSM – Concrete Medians

The existing crossing does not have flashing lights and gates. Flashing lights, gates and power out indicator will be installed to meet requirement of 49 CFR Subpart C 222.35(3)(b).

The preferred plan will be to install SSM compliant concrete medians. The existing speed limit, as posted just south of the crossing, is 50 MPH. The quiet zone rule defines non-mountable curb as a minimum of 6-inches high with a maximum speed limit of 40 MPH (49 CFR 222.9). The recommendations to accomplish this are as follows:

Railroad work to be completed:

- Install constant warning time devices, flashing lights, gates and power out indicator.
- Widen crossing surface as needed.

City work to be completed:

- Install concrete medians
- Widen roadway to provide for installation of a minimum 2-foot concrete median as needed.
- Revise the speed limit over the crossing to meet quiet zone rule requirements.
- Evaluate the power lines over the northbound railroad gate. The team was concerned that there is not enough clearance for gate.

The concrete median to the north and south of the crossing will be 100 feet in length.

Poudre River Trail Crossing – No DOT# MP 92.17 – Pedestrian Only Crossing

The train horn rule does not require the routine sounding of locomotive horns at the pedestrian crossings. Jason informed the diagnostic team that GWR does not sound the horn at the crossing at the current time. Per 49 CFR 222.27, pedestrian crossing located within the quiet zone must be evaluated by a diagnostic team and equipped or treated in accordance with the recommendations of such diagnostic team.

The diagnostic team recommended the following:

- Railroad cross buck on both approaches.
- Stop signs on both approaches.
- Railroad warning signs (W10-1) on both approaches.
- No Train Horn signs (W10-9P) on both approaches.

However, Pam stated that she had no recollection of receiving an application for the establishment of this crossing and later verified in an email to the city that there is no record of an application or approval for the installation of this crossing. Pam also stated that the CPUC does not approve at-grade trail crossing and requires grade separation. The team evaluated the area for possible grade separation by going under but did not think that is a possibility. Pam stated that the city might be able to get a waiver by installing active warning devices on the trail. The city will continue to work with the CPUC to resolve this issue. The diagnostic team will be advised and their input requested if the quiet zone proceeds for this location.

59th Street – DOT# 245120U MP 93.74 – Non-SSM – Concrete Medians
The existing crossing does not have flashing lights and gates. Flashing lights, gates and power out indicator will be installed to meet requirement of 49 CFR Subpart C 222.35(3)(b).

The preferred plan will be to install SSM compliant concrete medians. The existing speed limit is 45 MPH. The quiet zone rule defines non-mountable curb as a minimum of 6-inches high with a maximum speed limit of 40 MPH (49 CFR 222.9). The recommendations to accomplish this are as follows:

Railroad work to be completed:

- Install constant warning time devices, flashing lights, gates and power out indicator.
- Widen crossing surface as needed.

City work to be completed:

- Install concrete medians
- Widen roadway to provide for installation of a minimum 2-foot concrete median as needed.
- Revise the speed limit over the crossing to meet quiet zone rule requirements.

.

The concrete median to the south of the crossing will be 38 feet in length due to the commercial driveway located in the southwest quadrant. The concrete median to the north will be a minimum of 100 feet in length.

Private Crossings located in Quiet Zone

The GWR quiet zone corridor includes the following three private crossings:

- Private Crossing – north of 59th Street
- Private Crossing – south of O Street
- Private Crossing – north of O Street

Per 49 CFR 222.25, this rule does not require the routine sounding of the locomotive horns. However, the railroad stated that they do sound the horn at the private crossing located near 59th Street. The two private crossing near O Street are located within the whistle boards for O Street and therefore, the train horns routinely sound at these crossings. The rule states that private crossing must be evaluated by a diagnostic team and equipped or treated in accordance with the recommendations of the diagnostic team.

The diagnostic team visited each private crossing and recommends the following at each private crossing:

- Railroad cross buck on both approaches.
- Stop signs on both approaches.
- Railroad warning signs (W10-1) on both approaches.
- No Train Horn signs (W10-9P) on both approaches.

Table 1: The following is a summary of planned quiet zone treatments:

Street Name	DOT No.	Preferred Option SSMs Reduce QZRI<RIWH
8th Avenue	245132N	SSM - Concrete Median
9th Avenue	245131G	Non-SSM Concrete Median
11th Avenue	245130A	Non-SSM Concrete Median
14th Avenue	245129F	SSM - Concrete Median
21st Avenue	245128Y	SSM - 4-Quadrant Gates
23rd Avenue	245126K	SSM - Concrete Median
F Street	245125D	SSM - Concrete Median
35th Avenue	245124W	SSM - Concrete Median
59th Street	245120U	Non-SSM Concrete Median
O Street	245119A	Wayside Horn System

Table 2: Great Western Railway data for quiet zone calculation:

Street Name	DOT No.	MP	MAX SPEED (MPH)	Average Trains per Day
8th Avenue	245132N	98.29	10	2
9th Avenue	245131G	98.19	10	2
11th Avenue	245130A	97.96	10	2
14th Avenue	245129F	97.70	10	2
21st Avenue	245128Y	97.15	10	2
23rd Avenue	245126K	96.91	10	2
F Street	245125D	96.05	10	2
35th Avenue	245124W	95.85	10	2 2 switching
Poudre River Trail		94.6	10	2
Private Drive	245121B	94.0	10	2
59th Street	245120U	93.74	10	2
Private Drive		93.4	10	2
O Street/CR 64	245119A	93.31	10	2
Private Drive		93.1	10	2

Table 3: Existing railroad equipment and constant warning devices:

Street Name	DOT No.	Flashing Lights, Gates and Bells	Constant Warning Time Devices	Power Out Indicator
8th Avenue	245132N	✓	✓	✓
9th Avenue	245131G	×	×	×
11th Avenue	245130A	Flashing Lights/Cants	×	✓
14th Avenue	245129F	Flashing Lights/Cants	×	✓
21st Avenue	245128Y	×	×	×
23rd Avenue	245126K	×	×	×
F Street	245125D	×	×	×
35th Avenue	245124W	×	×	×
59th Avenue	245120U	×	×	×
O Street/CR 64	245119A	×	×	×

Attachments:

Attachment A – Diagnostic Team sign in sheet
Attachment B - Great Western Railway crossing layouts for quiet zone corridor

Diagnostic Notes
Attachment A

Diagnostic Team Sign-in Sheet

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9601 Camp Bowie West | Fort Worth, TX 76116 | +1 817 886 8210 (T) | +1 817 886 8225 (F)

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City of Greeley, CO GWR Quiet Zone Diagnostic Meeting

July 25, 2017 – 11:30 am

NAME	COMPANY	PHONE	EMAIL
Steven Jankowski	FRA	720 526 4296	Steven.Jankowski@DOT.GOV
Pam Fischhaber	CPUC	303-894-2501	pamela.fischhaber@state.co.us
Tim Oster	CTC	817-713-5899	toster@ctcinc.com
Tom Hellen	Greeley	970-350-9793	tom.hellen@greeleygov.com
Dave Thomas	Omnitrax	801-502-3914	dthomas@omnitrax.com
Jason Scott	Great West/Omni	303 588 0075	JPScott@omnitrax.com

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Diagnostic Notes
Attachment B

Crossing Layouts

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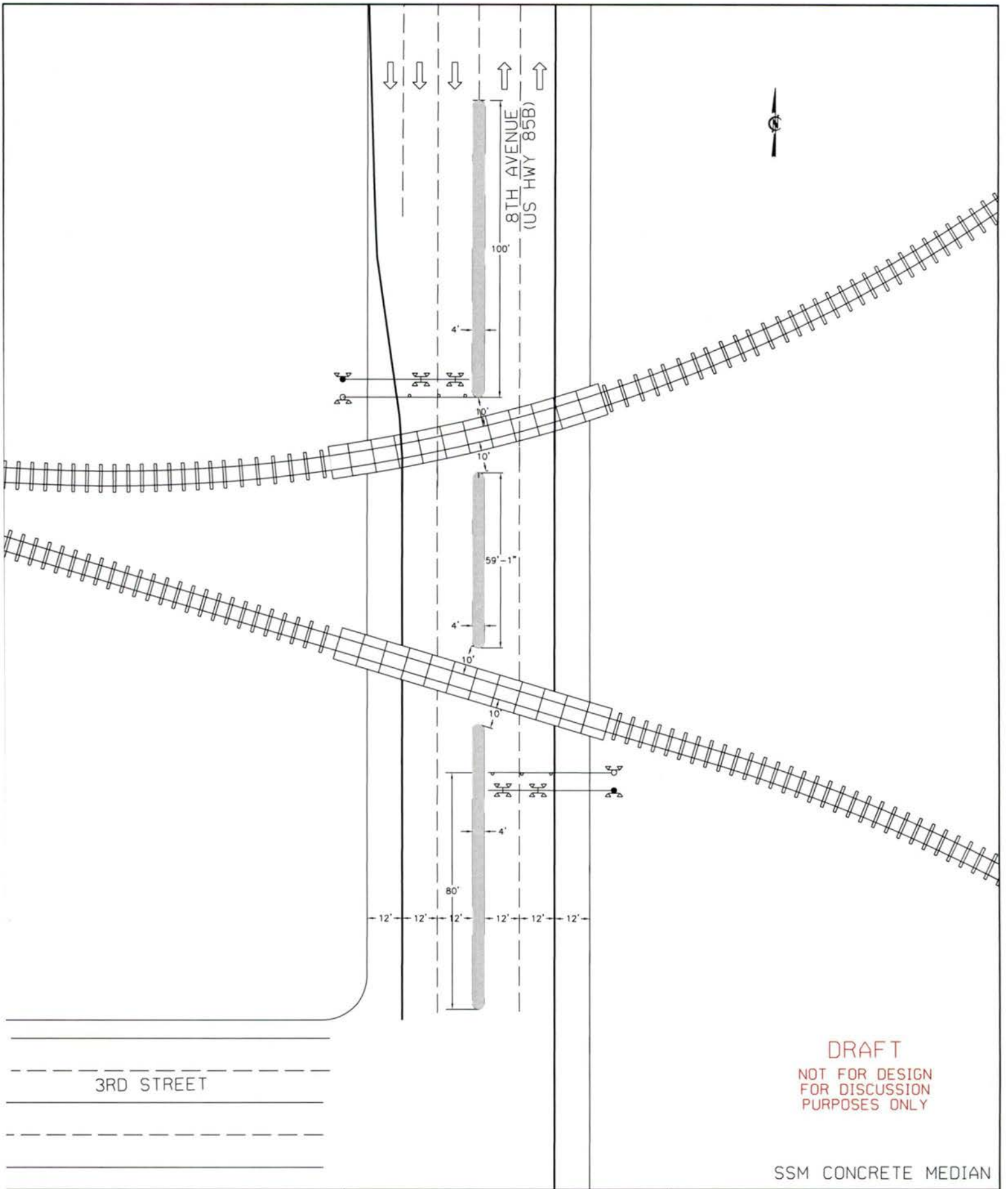
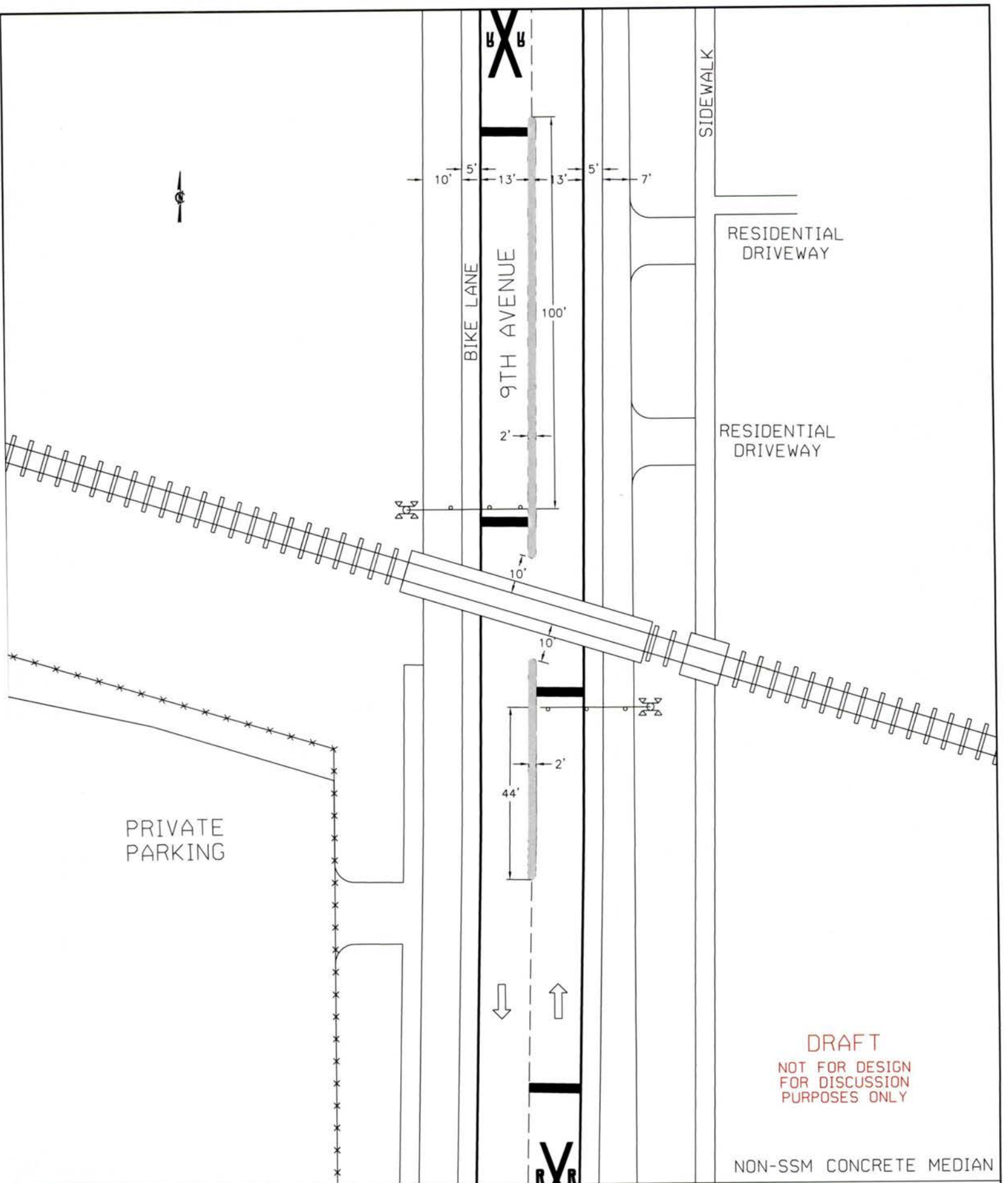


CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
8TH AVENUE(US HWY 85B)
ADT: 12,933

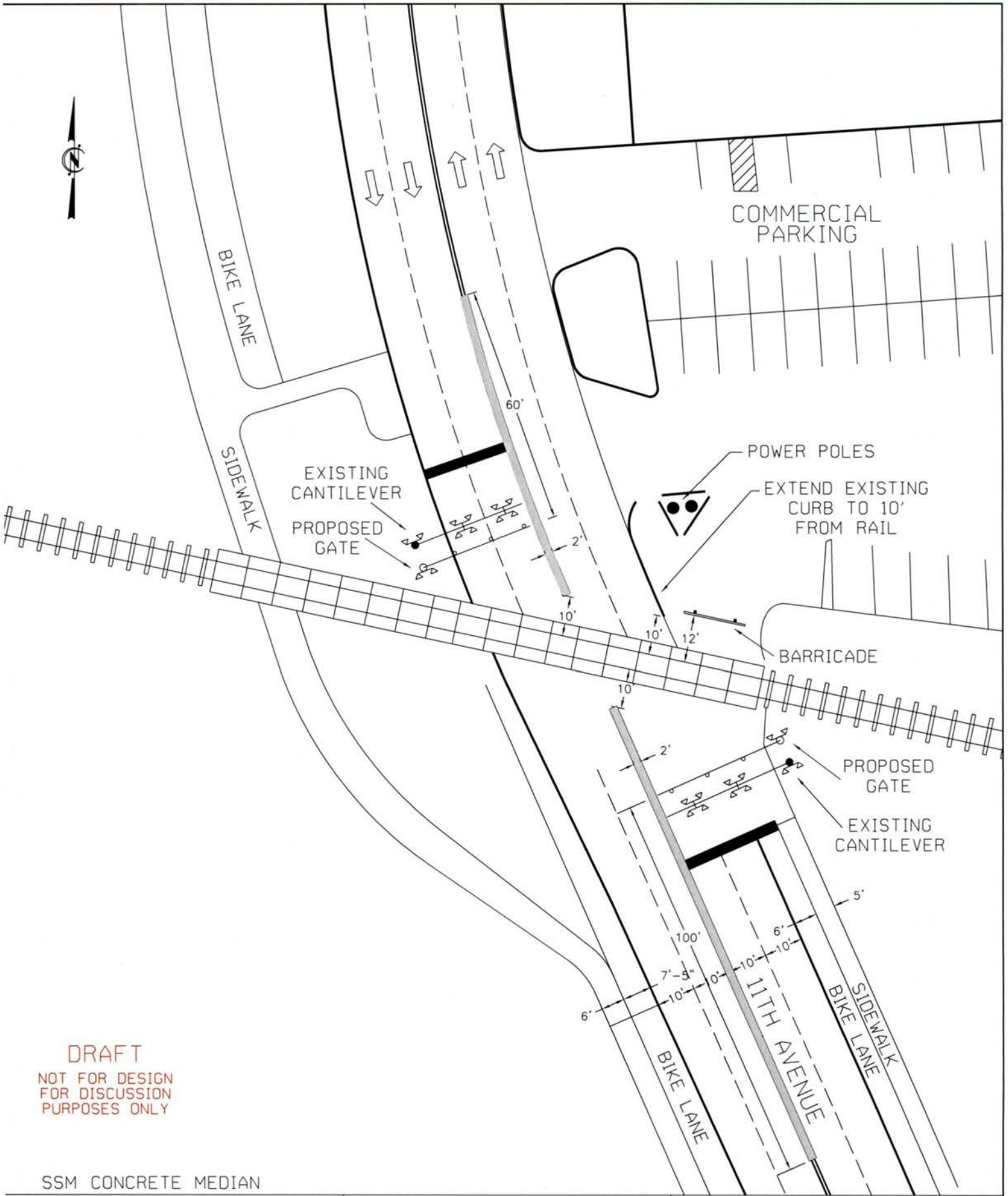
GWR RAILROAD
DOT# 245132N
RRMP 52.35
SCALE: 1' = 40'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
9TH AVENUE
ADT: 968

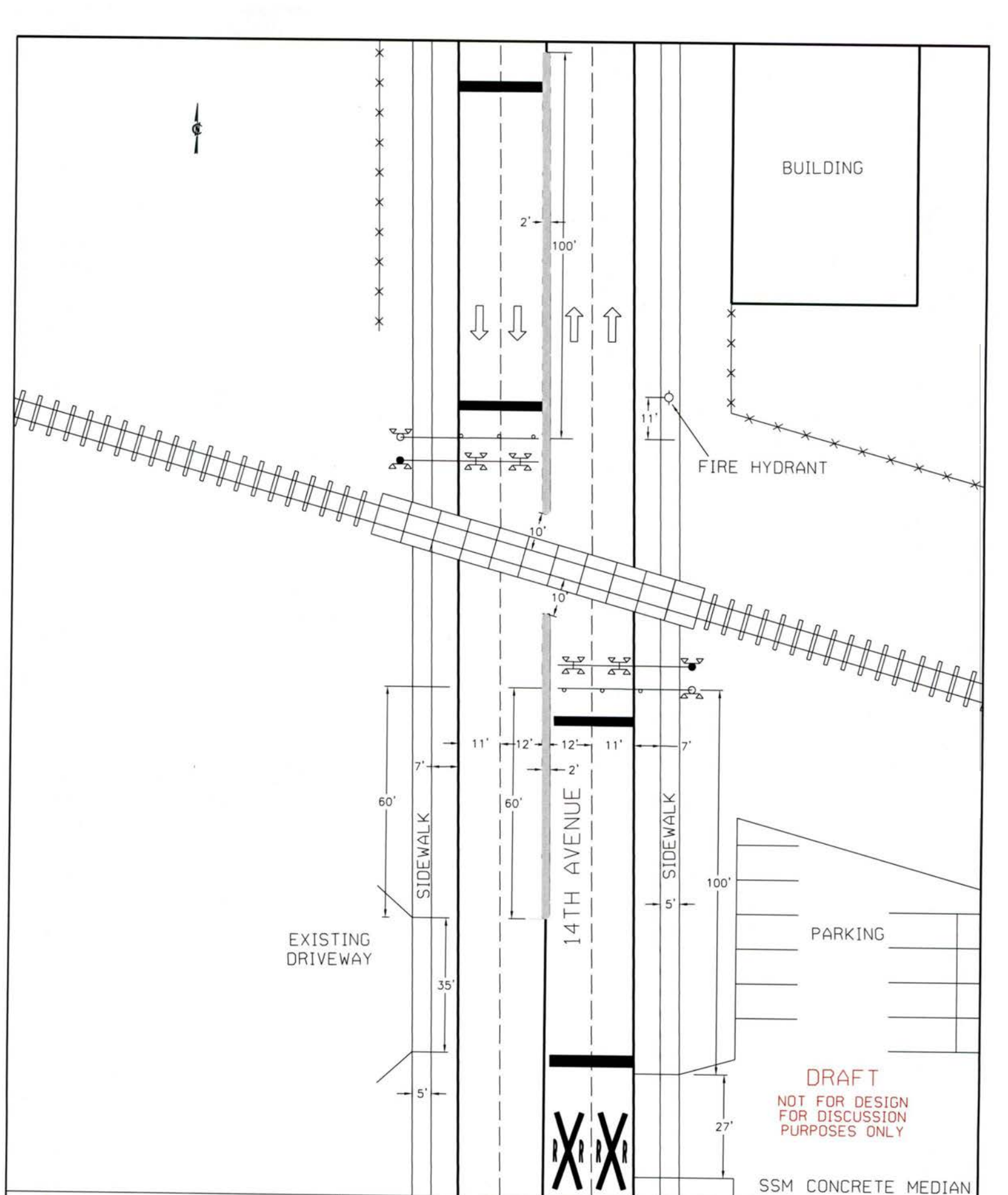
GWR RAILROAD
DOT# 245131G
RRMP 98.19
SCALE: 1' = 30'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
11TH AVENUE
ADT: 9,458

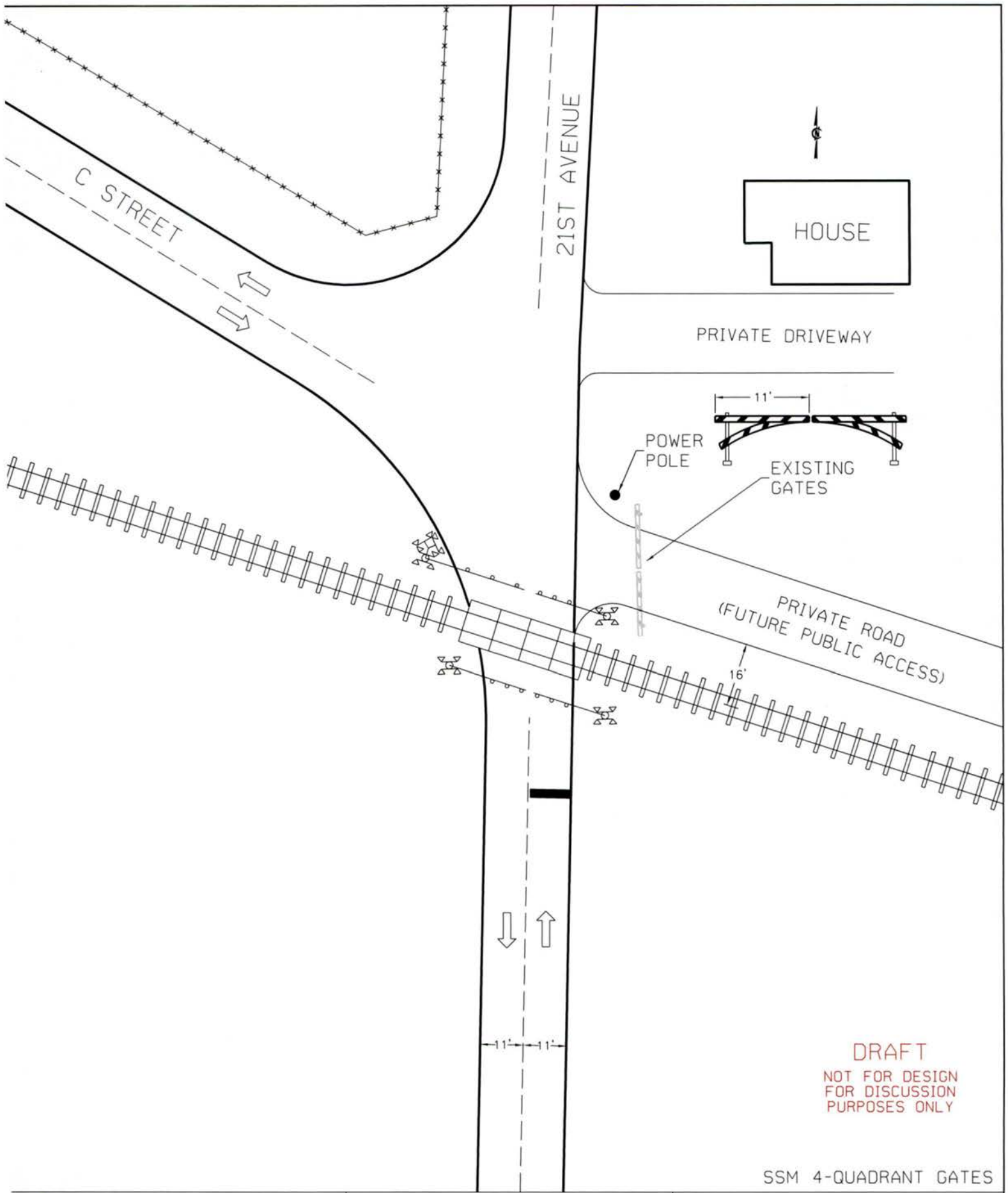
GWR RAILROAD
DOT# 245130A
RRMP 97.96
SCALE: 1' = 30'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
14TH AVENUE
ADT: 9458

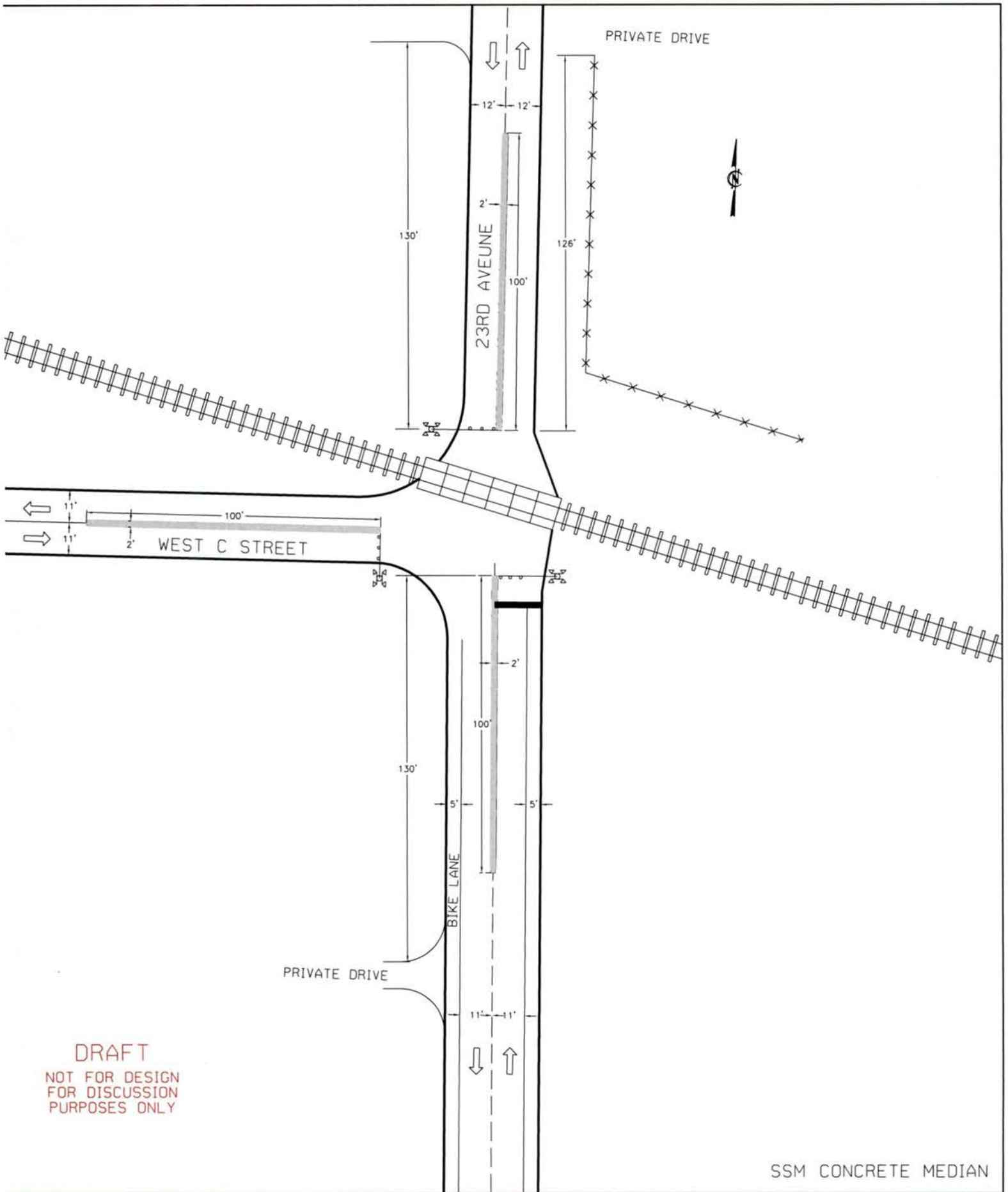
GWR RAILROAD
DOT# 245129F
RRMP 97.70
SCALE: 1' = 30'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
21ST AVENUE
ADT: 649

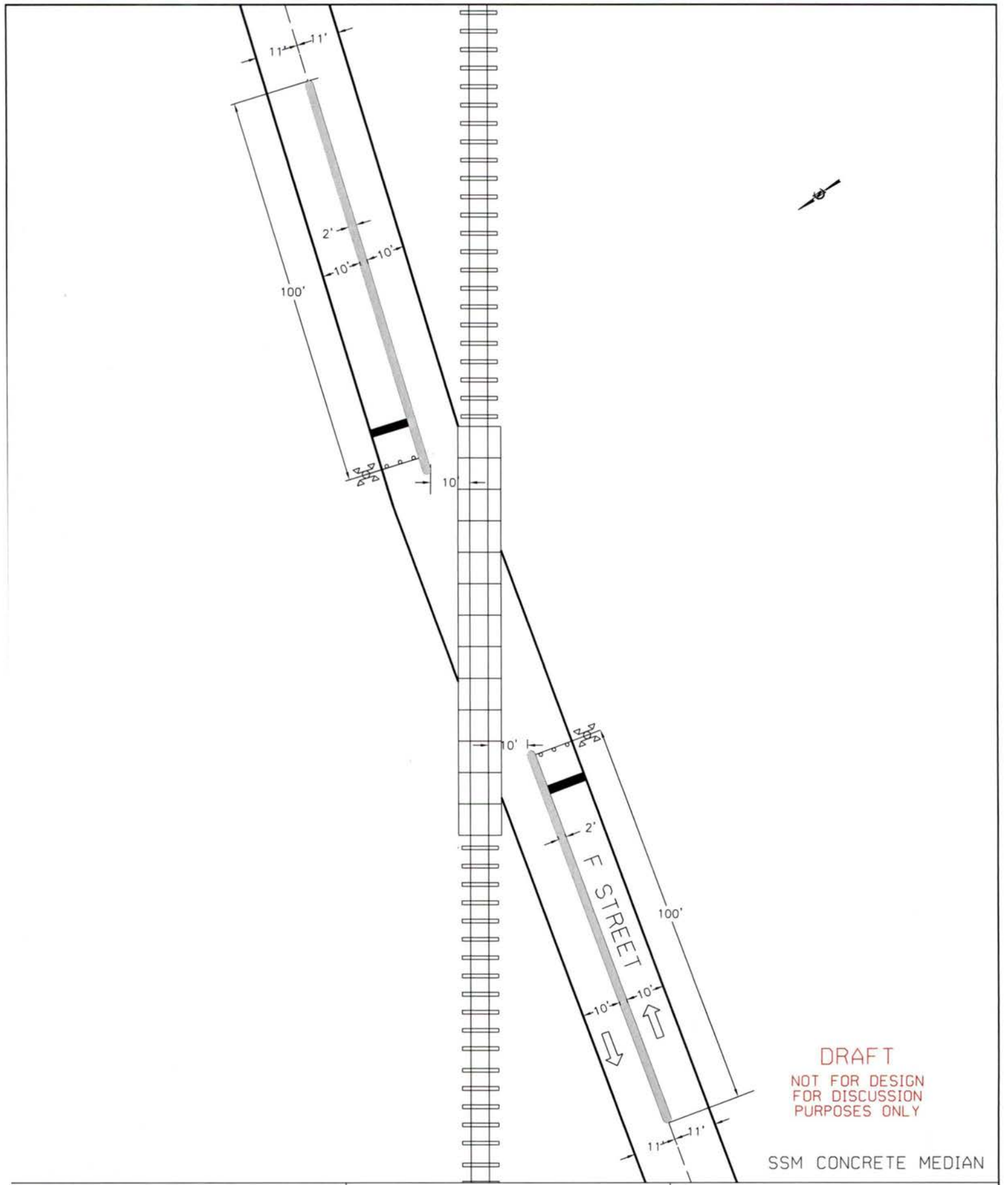
GWR RAILROAD
DOT# 245128Y
RRMP 97.15
SCALE: 1' = 30'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
23RD AVENUE
ADT: 3700

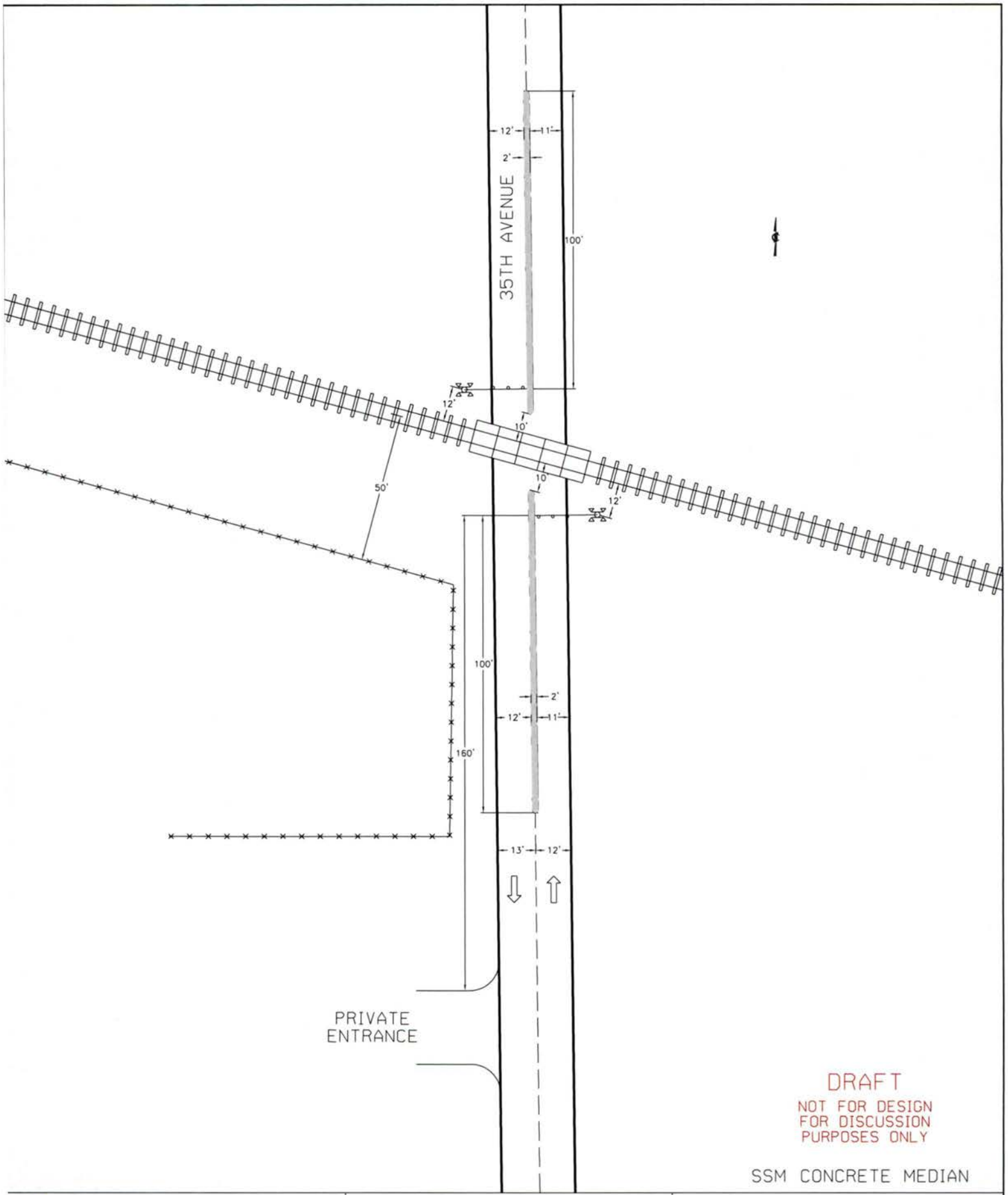
GWR RAILROAD
DOT# 245126K
RRMP 96.91
SCALE: 1' = 40'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
F STREET
ADT: 1574

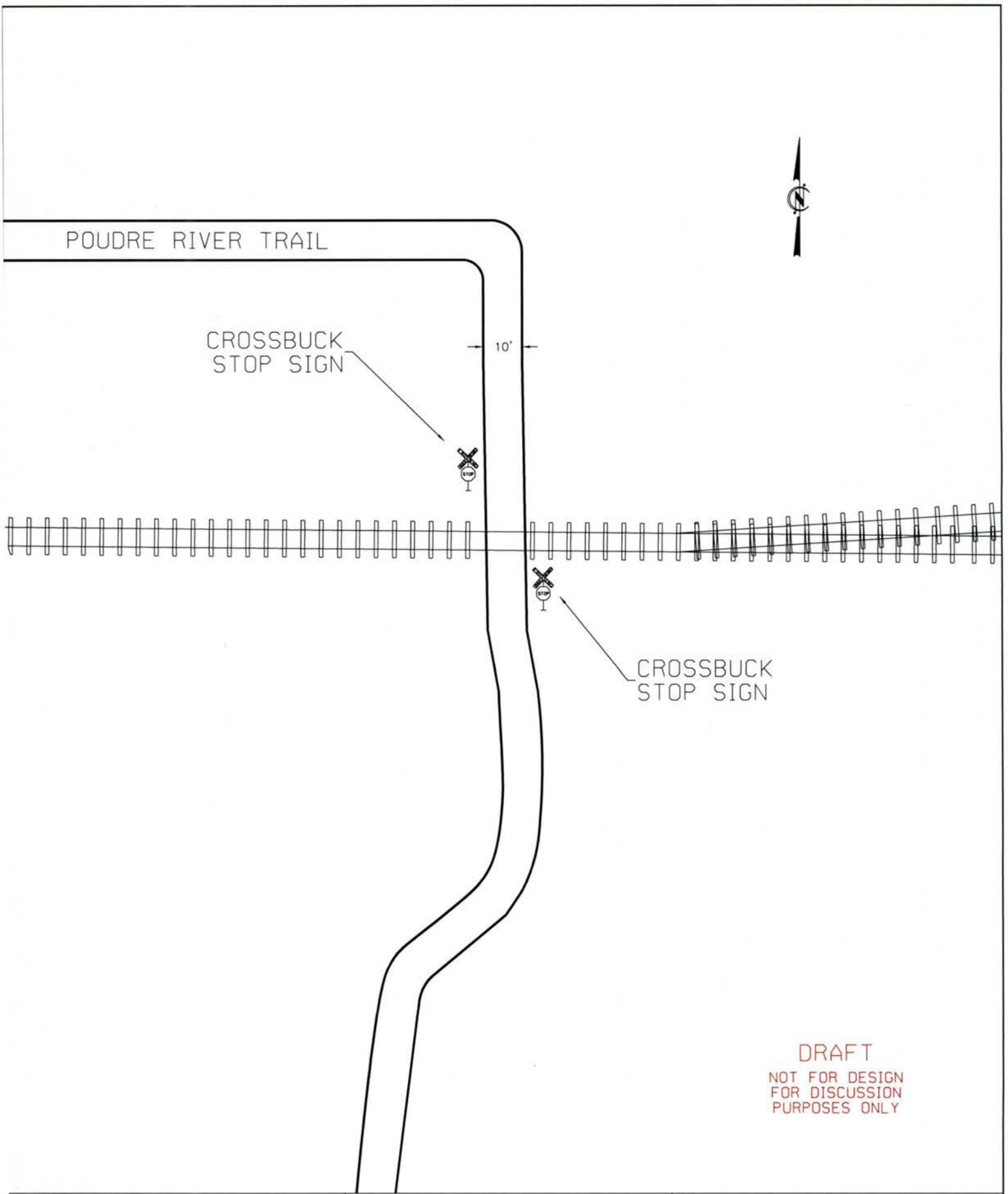
GWR RAILROAD
DOT# 245125D
RRMP 96.05
SCALE: 1' = 30'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
35TH AVENUE
ADT: 9600

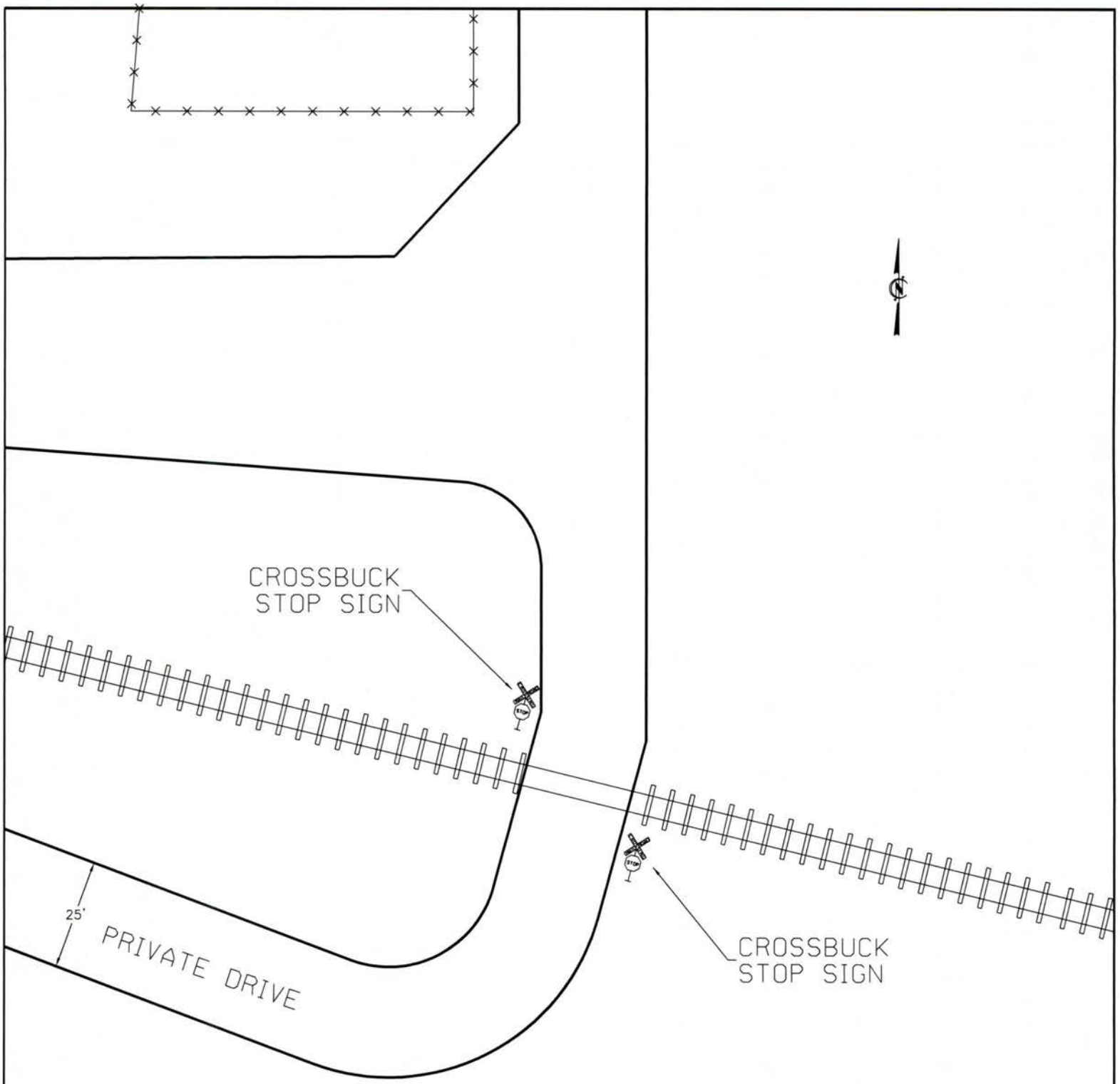
GWR RAILROAD
DOT# 245124W
RRMP 94.06
SCALE: 1' = 40'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
POUDRE RIVER TRAIL

GWR RAILROAD
DOT# 245114R
RRMP 92.17
SCALE: 1' = 30'

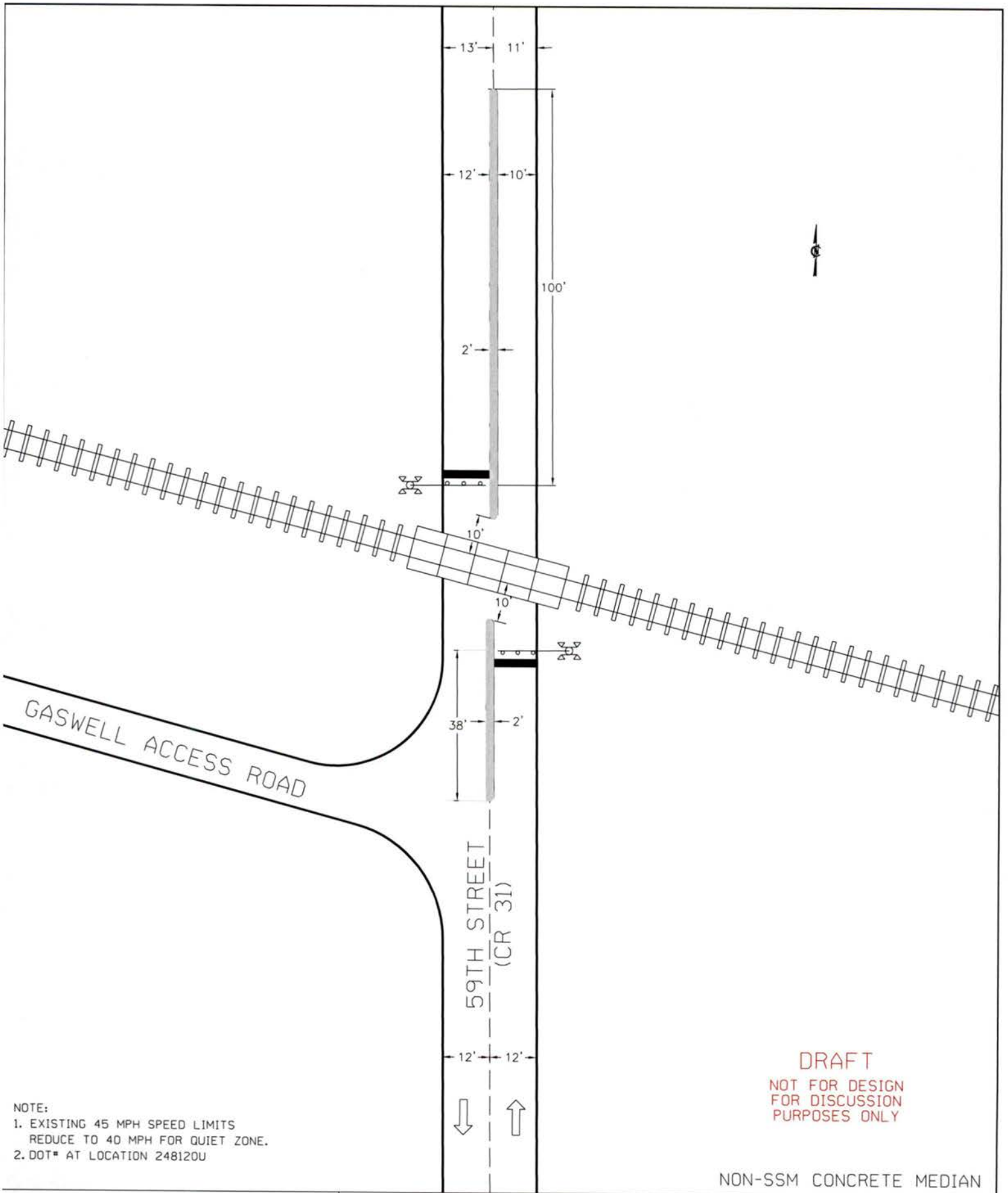


DRAFT
NOT FOR DESIGN
FOR DISCUSSION
PURPOSES ONLY

CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
PRIVATE DRIVE
NEAR 59TH AVE

GWR RAILROAD
DOT# 245113J
RRMP 91.79
SCALE: 1' = 30'



DRAFT
NOT FOR DESIGN
FOR DISCUSSION
PURPOSES ONLY

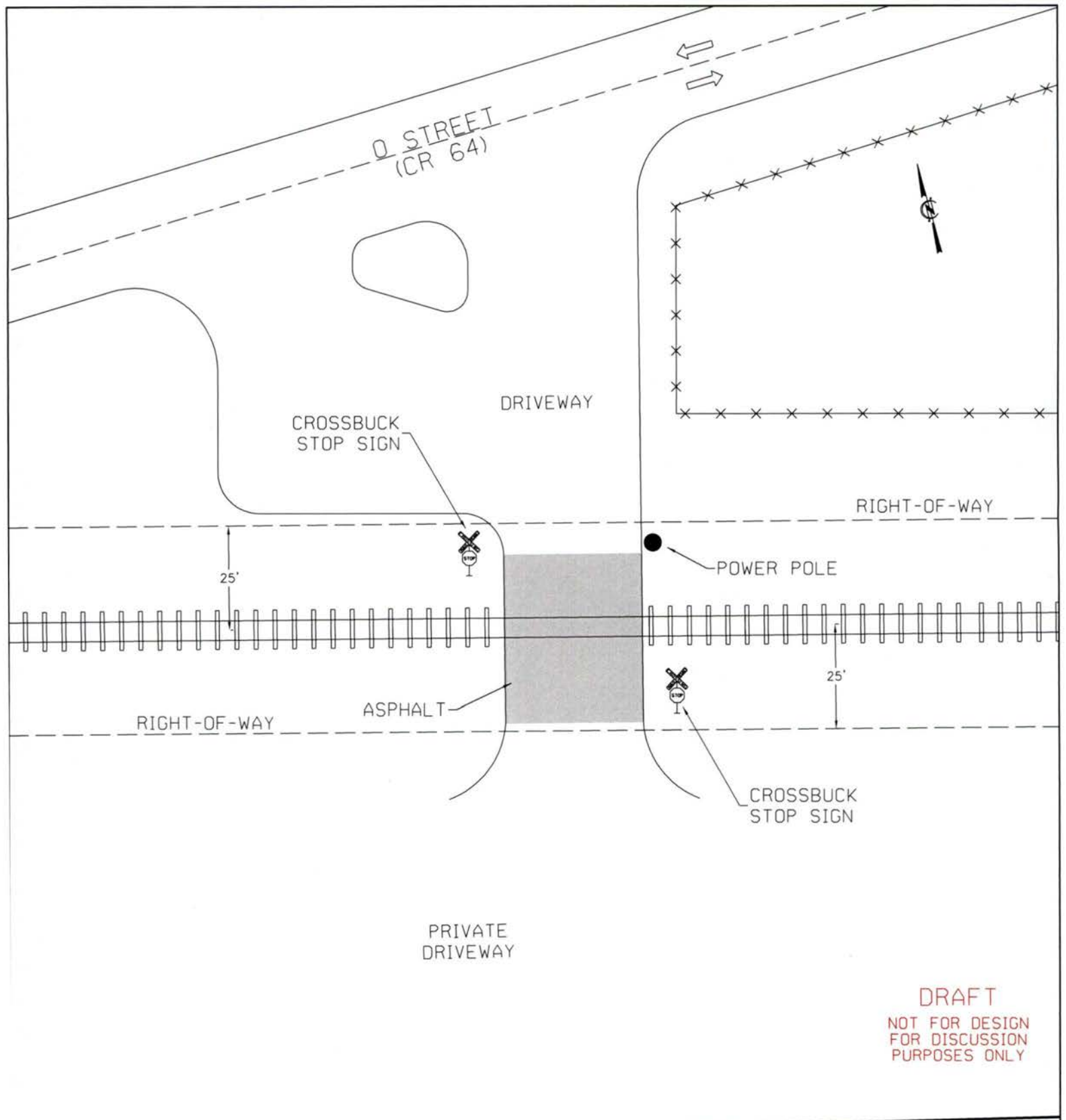
NOTE:
1. EXISTING 45 MPH SPEED LIMITS REDUCE TO 40 MPH FOR QUIET ZONE.
2. DOT# AT LOCATION 248120U

NON-SSM CONCRETE MEDIAN

CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
59TH STREET (CR 31)
ADT: 6759

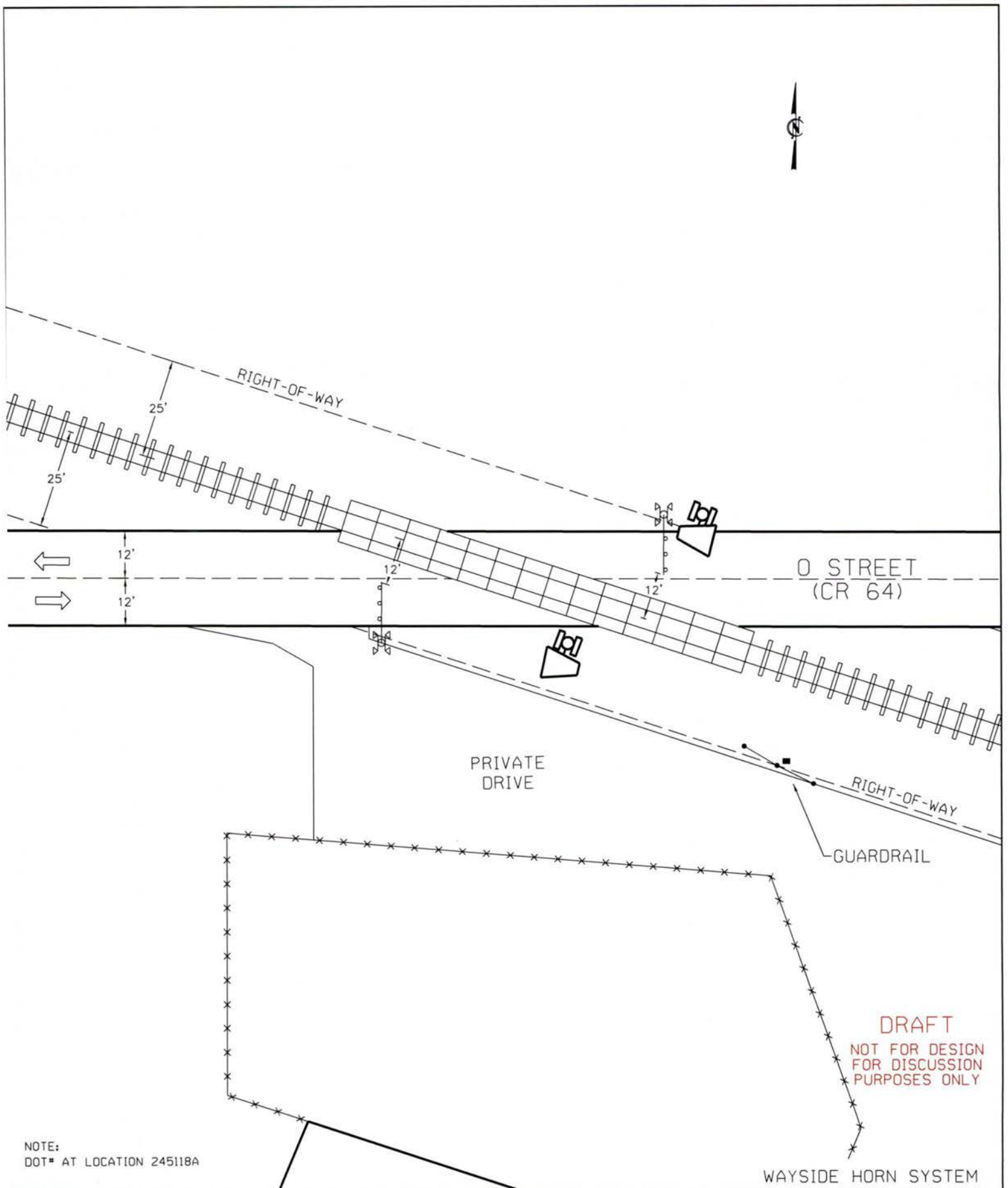
GWR RAILROAD
DOT# 245120U
RRMP 93.74
SCALE: 1' = 30'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
PRIVATE CROSSING
SOUTH OF O STREET

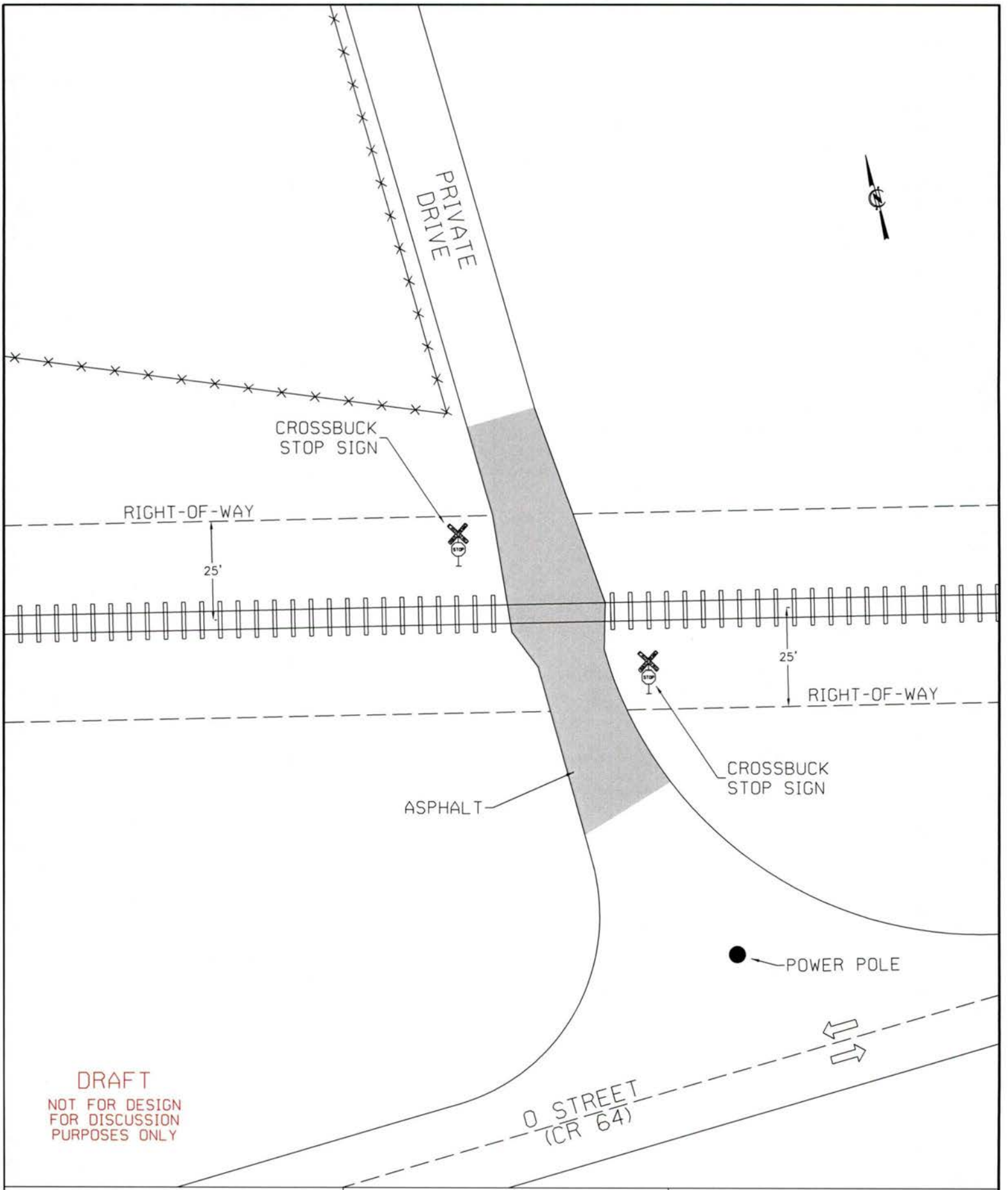
GWR RAILROAD
DOT#
RRMP
SCALE: 1' = 30'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
O STREET(CR 64)
ADT: 4,030

GWR RAILROAD
DOT# 245119A
RRMP 93.31
SCALE: 1' = 30'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
PRIVATE CROSSING
NORTH OF O STREET

GWR RAILROAD
DOT#
RRMP
SCALE: 1' = 30'

APPENDIX B: Quiet Zone Option Costs

QUIET ZONE OPTION A
DETAILED COST ESTIMATE

8th Avenue

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
48	LF	24" SLD PVMNT MARKING HAE (W)	$8	$384	2- 24 ft stop lines
4	EA	LANE LEGEND RR	$525	$2,100	
5	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$2,250	4- W10-1; 1 W10-4
4	EA	W10-9P Plaque furnish and install	$50	$200	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$5,434**	
140	LF	Curb and gutter for median construction	$30	$4,200	Extend median 30 feet - 60 x 2 plus 20 for noses = 140
480	SF	Median Patterned Concrete	$15	$7,200	60*8 = 480
530	LF	Curb and gutter for median construction	$30	$15,900	Upgrade median to 6" - 240' x2 =480 plus noses 40=530
1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$5,000	$5,000	
		SUB-TOTAL CONSTRUCTION		**$34,800**	
		TOTAL CITY WORK		**$40,234**	
		RAILROAD WORK			
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$6,000**	
		TOTAL 8th Avenue		**$46,234**	

9th Avenue

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
48	LF	24" SLD PVMNT MARKING HAE (W)	$8	$384	2- 24 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
2	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$900	2- W10-1
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$2,934**	
300	LF	Curb and gutter for median construction	$30	$9,000	145'of median(145*2 plus 2-5 ft nose)= 300
580	SF	Median Patterned Concrete	$15	$8,700	145*4 = 580
1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$2,500	$2,500	
		SUB-TOTAL CONSTRUCTION		**$22,700**	

QUIET ZONE OPTION A
DETAILED COST ESTIMATE

		TOTAL CITY WORK		**$25,634**	
		RAILROAD WORK			
1	EA	Install two quadrant gate system with constant warning	$250,000	$250,000	
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$256,000**	
		TOTAL 9th Avenue		**$281,634**	

11th Avenue

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
48	LF	24" SLD PVMNT MARKING HAE (W)	$8	$384	2- 24 ft stop lines
4	EA	LANE LEGEND RR	$525	$2,100	
2	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$900	2- W10-1
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$3,984**	
50	LF	Curb and gutter for northeast quadrant to eliminat driveway	$30	$1,500	
40	LF	Install concrete jersey barrier at driveway entrance	$125	$5,000	40 feet of barrier
440	LF	Curb and gutter for median	$30	$13,200	1-100 '+ 1 60' medians = 160 ft + 60 due to angle = 220 X 2=440
300	LF	Removal of Curb and gutter for street widening	$20	$6,000	Approximately 300 feet
130	LF	Reconstruct 80 feet of 5 foot sidewalk	$25	$3,250	80 feet south of crossing and bus area north
300	LF	Installation of new curb and gutter for street widening	$30	$9,000	
30	Tons	Asphalt installtion	$125	$3,750	
440	SF	Median Patterned Concrete	$15	$6,600	220*2 = 440 SF
1	EA	Site prep/mobilization	$10,000	$10,000	
1	EA	Traffic control	$2,500	$2,500	
		SUB-TOTAL CONSTRUCTION		**$60,800**	
		TOTAL CITY WORK		**$64,784**	
		RAILROAD WORK			
1	EA	Install two quadrant gate system with constant warning with cantilevers	$350,000	$350,000	
10	EA	Flagging Cost for street construction	$1,500	$15,000	

QUIET ZONE OPTION A
DETAILED COST ESTIMATE

		TOTAL RAILROAD WORK		**$365,000**	
		TOTAL 11th Avenue		**$429,784**	

14th Avenue

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
48	LF	24" SLD PVMNT MARKING HAE (W)	$8	$384	2- 24 ft stop lines
4	EA	LANE LEGEND RR	$525	$2,100	
2	EA	Furnish and install Alum Sign Pole	$450	$900	2- W10-1
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$3,984**	
200	LF	Curb and gutter for median	$30	$6,000	1- 70 & 1-110 foot medians = 180 ft plus noses = 200 LF
360	SF	Median Patterned Concrete	$15	$5,400	180*2 = 360 SF
300	LF	Removal of Curb and gutter for median	$20	$6,000	Street Widening - 300 feet
300	LF	Installation of new curb and gutter for	$30	$9,000	Street Widening
300	LF	Remove sidewalk	$8	$2,250	Street Widening
300	LF	Reconstruct 300 feet of 5 foot sidewalk	$25	$7,500	Street Widening
30	Tons	Asphalt installtion	$125	$3,750	
1	EA	Site prep/mobilization	$10,000	$10,000	
1	EA	Traffic control	$2,500	$2,500	
		SUB-TOTAL CONSTRUCTION		**$52,400**	
		TOTAL CITY WORK		**$56,384**	
		RAILROAD WORK			
1	EA	Install two quadrant gate system with constant warning with cantilevers	$350,000	$350,000	
8	FT	Add concrete crossing panels	$1,500	$12,000	
10	EA	Flagging Cost for street construction	$1,500	$15,000	
		TOTAL RAILROAD WORK		**$377,000**	
		TOTAL 14th Avenue		**$433,384**	

21st Avenue

Qty.		Description	Unit Price	Amount	
		CITY WORK			
24	LF	24" SLD PVMNT MARKING HAE (W)	$8	$192	2- 12 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
4	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$1,800	2- W10-1; 2 W10-2
4	EA	W10-9P Plaque furnish and install	$50	$200	
1	EA	Traffic Control	$500	$500	

QUIET ZONE OPTION A
DETAILED COST ESTIMATE

		SUB-TOTAL SIGNS/PVMT MKINGS		**$3,742**	
		SUB-TOTAL CONSTRUCTION		**$0**	
		TOTAL CITY WORK		**$3,742**	
		RAILROAD WORK			
1	EA	Installation of four quadrant gate system with vehicle detection	$500,000	$500,000	
		TOTAL RAILROAD WORK		**$500,000**	
		TOTAL 21st Avenue		**$503,742**	

23rd Avenue

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
36	LF	24" SLD PVMNT MARKING HAE (W)	$8	$288	3- 12 ft stop lines
3	EA	LANE LEGEND RR	$525	$1,575	
3	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$1,350	2- W10-1;1-W10-4
3	EA	W10-9P Plaque furnish and install	$50	$150	
1	EA	Traffic Control	$1,000	$1,000	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$4,363**	
400	LF	WidenConstruct 400 feet of roadway for 2 foot median installation	$250	$100,000	
90	LF	Curb and gutter at gates	$30	$2,700	30 feet for each gate
660	SF	Median Patterned Concrete	$15	$9,900	330*2 = 660 SF
350	LF	Curb and gutter for medians	$30	$10,500	3-100' median = 300 plus noses
		SUB-TOTAL CONSTRUCTION		**$123,100**	
		TOTAL CITY WORK		**$127,463**	
		RAILROAD WORK			
1	EA	Install three quadrant gate system with constant warning	$300,000	$300,000	
16	FT	Add concrete crossing panels	$1,500	$24,000	
10	EA	Railroad flagging for street constuction	$1,500	$15,000	
		TOTAL RAILROAD WORK		**$339,000**	
		TOTAL 23th Avenue		**$466,463**	

QUIET ZONE OPTION A
DETAILED COST ESTIMATE

F STREET

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
40	LF	24" SLD PVMNT MARKING HAE (W)	$8	$320	2- 20 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
4	EA	Mount/with Sign	$450	$1,800	2- W10-1; 1 R8-8
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$3,770**	
100	LF	Curb and gutter at gates	$30	$3,000	50 feet for each gate
300	LF	Construct 300 feet of roadway for 2 foot median installation	$250	$75,000	
230	SF	Median Patterned Concrete	$15	$3,450	115*2 = 230 SF
250	LF	Curb and gutter for median	$30	$7,500	2-115' median = 250 plus noses
		SUB-TOTAL CONSTRUCTION		**$88,950**	
		TOTAL CITY WORK		**$92,720**	
		RAILROAD WORK			
1	EA	Install two quadrant gate system with	$250,000	$250,000	
4	EA	Flagging Cost for street construction	$1,500	$6,000	
16	FT	Add concrete crossing panels	$1,500	$24,000	
		TOTAL RAILROAD WORK		**$280,000**	
		TOTA F Street		**$372,720**	

35th Avenue

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
24	LF	24" SLD PVMNT MARKING HAE (W)	$8	$192	2- 12 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
2	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$900	2- W10-1
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$2,742**	
50	LF	Curb and gutter at gates	$30	$1,500	25' at each gate
220	LF	Curb and gutter for median construction	$30	$6,600	100'of median(100*2 plus noses)= 220

QUIET ZONE OPTION A
DETAILED COST ESTIMATE

400	SF	Median Patterned Concrete	$15	$6,000	200*2 = 400 SF
300	LF	Construct 300 feet of roadway for 2 foot median installation	$250	$75,000	
		SUB-TOTAL CONSTRUCTION		**$89,100**	
		TOTAL CITY WORK		**$91,842**	
		RAILROAD WORK			
1	EA	Install two quadrant gate system with constant warning	$250,000	$250,000	
8	FT	Add concrete crossing panels	$1,500	$12,000	
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$268,000**	
		TOTAL 35th Avenue		**$359,842**	

Poudre River Trail

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
24	LF	24" SLD PVMNT MARKING HAE (W)	$8	$192	2- 12 ft stop lines
2	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$900	2- W10-1
2	EA	W10-9P Plaque furnish and install	$50	$100	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$1,192**	
		SUB-TOTAL CONSTRUCTION		**$0**	
		TOTAL CITY WORK		**$1,192**	
		RAILROAD WORK			
1	EA	Install two quadrant gate system	$175,000	$175,000	
		TOTAL RAILROAD WORK		**$175,000**	
		TOTAL Poudre River Trail		**$176,192**	

Private Crossing #1

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
2	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$900	2- W10-1
2	EA	Private Sign with Cross Buck	$450	$900	
2	EA	W10-9P Plaque furnish and install	$50	$100	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$1,900**	
		SUB-TOTAL CONSTRUCTION		**$0**	
		TOTAL CITY WORK		**$1,900**	

QUIET ZONE OPTION A
DETAILED COST ESTIMATE

		RAILROAD WORK			
		TOTAL RAILROAD WORK		**$0**	
		TOTAL Private Crossing #1		**$1,900**	

59th Avenue

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
24	LF	24" SLD PVMNT MARKING HAE (W)	$8	$192	2- 12 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
2	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$900	2- W10-1
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$2,742**	
50	LF	Curb and gutter at gates	$30	$1,500	25' at each gate
300	LF	Curb and gutter for median construction	$30	$9,000	100' + 40 of median(140*2 plus noses)= 300
320	SF	Median Patterned Concrete	$15	$4,800	160*2 = 320 SF
300	LF	Construct 300 feet of roadway for 2 foot median installation	$250	$75,000	
		SUB-TOTAL CONSTRUCTION		**$90,300**	
		TOTAL CITY WORK		**$93,042**	
		RAILROAD WORK			
1	EA	Install two quadrant gate system with constant warning	$250,000	$250,000	
4	EA	Flagging Cost for street construction	$1,500	$6,000	
16	FT	Add concrete crossing panels	$1,500	$24,000	
		TOTAL RAILROAD WORK		**$280,000**	
		TOTAL 59th Avenue		**$373,042**	

Private Crossing #2

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
2	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$900	2- W10-1
2	EA	Private Sign with Cross Buck	$450	$900	
2	EA	W10-9P Plaque furnish and install	$50	$100	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$1,900**	
		SUB-TOTAL CONSTRUCTION		**$0**	

QUIET ZONE OPTION A
DETAILED COST ESTIMATE

		TOTAL CITY WORK		**$1,900**	
		RAILROAD WORK			
		TOTAL RAILROAD WORK		**$0**	
		TOTAL Private Crossing #2		**$1,900**	

O Street

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
24	LF	24" SLD PVMNT MARKING HAE (W)	$8	$192	2- 12 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
2	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$900	2- W10-1
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$2,742**	
1	EA	Install Wayside Horn System	$80,000	$80,000	
		SUB-TOTAL CONSTRUCTION		**$80,000**	
		TOTAL CITY WORK		**$82,742**	
		RAILROAD WORK			
1	EA	Install two quadrant gate system with constant warning	$250,000	$250,000	
5	EA	Flagging Cost for wayside horn construction	$1,500	$7,500	
80	LF	Concrete jersey barrier or equivalent	$125	$10,000	prevent driving behind eastboud gate
		TOTAL RAILROAD WORK		**$267,500**	
		TOTAL O Street		**$350,242**	

Private Crossing #3

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
2	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$900	2- W10-1
2	EA	Private Sign with Cross Buck	$450	$900	
2	EA	W10-9P Plaque furnish and install	$50	$100	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$1,900**	
		SUB-TOTAL CONSTRUCTION		**$0**	

QUIET ZONE OPTION A
DETAILED COST ESTIMATE

		TOTAL CITY WORK		**$1,900**	
		RAILROAD WORK			
		TOTAL RAILROAD WORK		**$0**	
		TOTAL Private Crossing #3		**$1,900**	

OTHER COST

		Quiet Zone Consultant		$50,000	
		Street Engineering Design Consultant (PS&E for medians, sidewalks, pavement markings, etc)		$40,000	
		Contractor Railroad Liability Insurance (Construction Contractor to obtain)		$25,000	
		Total Other Costs		**$115,000**	

TOTAL ESTIMATED COST - OPTION A **$3,913,979**

CONTINGENCY 10% **$391,398**

TOTAL ESTIMATED COST - OPTION A **$4,305,377**

QUIET ZONE OPTION B
DETAILED COST ESTIMATE

8th Avenue

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
48	LF	24" SLD PVMNT MARKING HAE (W)	$8	$384	2- 24 ft stop lines
4	EA	LANE LEGEND RR	$525	$2,100	
5	EA	Mount/with Sign	$450	$2,250	4- W10-1; 1 W10-4
4	EA	W10-9P Plaque furnish and install	$50	$200	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$5,434**	
140	LF	Curb and gutter for median construction	$30	$4,200	Extend median 30 feet - 60 x 2 plus 20 for noses = 140
480	SF	Median Patterned Concrete	$15	$7,200	60*8 = 480
530	LF	Curb and gutter for median construction	$30	$15,900	Upgrade median to 6" - 240' x2 =480 plus noses 40=530
1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$5,000	$5,000	
		SUB-TOTAL CONSTRUCTION		**$34,800**	
		TOTAL CITY WORK		**$40,234**	
		RAILROAD WORK			
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$6,000**	
		TOTAL 8th Avenue		**$46,234**	

9th Avenue

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
48	LF	24" SLD PVMNT MARKING HAE (W)	$8	$384	2- 24 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
2	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$900	2- W10-1
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$2,934**	
		SUB-TOTAL CONSTRUCTION		**$0**	
		TOTAL CITY WORK		**$2,934**	
		RAILROAD WORK			
1	EA	Install four-quadrant gate system with constant warning	$400,000	$400,000	

QUIET ZONE OPTION B
DETAILED COST ESTIMATE

		TOTAL RAILROAD WORK		**$400,000**	

TOTAL 9th Avenue **$402,934**

11th Avenue

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
48	LF	24" SLD PVMNT MARKING HAE (W)	$8	$384	2- 24 ft stop lines
4	EA	LANE LEGEND RR	$525	$2,100	
2	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$900	2- W10-1
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$3,984**	
		SUB-TOTAL CONSTRUCTION		**$0**	
		TOTAL CITY WORK		**$3,984**	
		RAILROAD WORK			
1	EA	Install four-quadrant gate system with constant warning with cantilevers	$500,000	$500,000	
		TOTAL RAILROAD WORK		**$500,000**	

TOTAL 11th Avenue **$503,984**

14th Avenue

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
48	LF	24" SLD PVMNT MARKING HAE (W)	$8	$384	2- 24 ft stop lines
4	EA	LANE LEGEND RR	$525	$2,100	
2	EA	Furnish and install Alum Sign Pole	$450	$900	2- W10-1
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$3,984**	
200	LF	Curb and gutter for median	$30	$6,000	1- 70 & 1-110 foot medians =
360	SF	Median Patterned Concrete	$15	$5,400	180*2 = 360 SF
300	LF	Removal of Curb and gutter for median	$20	$6,000	Street Widening - 300 feet
300	LF	Installation of new curb and gutter for	$30	$9,000	Street Widening
300	LF	Remove sidewalk	$8	$2,250	Street Widening
300	LF	Reconstruct 300 feet of 5 foot sidewalk	$25	$7,500	Street Widening
1	EA	Site prep/mobilization	$10,000	$10,000	
1	EA	Traffic control	$2,500	$2,500	

QUIET ZONE OPTION B
DETAILED COST ESTIMATE

		SUB-TOTAL CONSTRUCTION		**$48,650**	
		TOTAL CITY WORK		**$52,634**	
		RAILROAD WORK			
1	EA	Install two quadrant gate system with constant warning with cantilevers	$350,000	$350,000	
8	FT	Add concrete crossing panels	$1,500	$12,000	
10	EA	Flagging Cost for street construction	$1,500	$15,000	
		TOTAL RAILROAD WORK		**$377,000**	
		TOTAL 14th Avenue		**$429,634**	

21st Avenue

Qty.		Description	Unit Price	Amount	
		CITY WORK			
24	LF	24" SLD PVMNT MARKING HAE (W)	$8	$192	2- 12 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
4	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$1,800	2- W10-1; 2 W10-2
4	EA	W10-9P Plaque furnish and install	$50	$200	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$3,742**	
		SUB-TOTAL CONSTRUCTION		**$0**	
		TOTAL CITY WORK		**$3,742**	
		RAILROAD WORK			
1	EA	Installation of four quadrant gate system with vehicle detection	$500,000	$500,000	
		TOTAL RAILROAD WORK		**$500,000**	
		TOTAL 21st Avenue		**$503,742**	

23rd Avenue

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
36	LF	24" SLD PVMNT MARKING HAE (W)	$8	$288	3- 12 ft stop lines
3	EA	LANE LEGEND RR	$525	$1,575	
3	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$1,350	2- W10-1;1-W10-4
3	EA	W10-9P Plaque furnish and install	$50	$150	

QUIET ZONE OPTION B
DETAILED COST ESTIMATE

1	EA	Traffic Control	$1,000	$1,000	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$4,363**	
90	LF	Curb and gutter at gates	$30	$2,700	30 feet for each gate
445	SY	Remove Asphalt Pavement	$45	$20,025	400 feet by 30 = 445
400	LF	Construct 400 feet of roadway for 2 foot median installation	$185	$74,000	
660	SF	Median Patterned Concrete	$15	$9,900	330*2 = 660 SF
350	LF	Curb and gutter for median	$30	$10,500	3-100' median = 300 plus noses
1	EA	Site prep/mobilization	$10,000	$10,000	
1	EA	Traffic control	$5,000	$5,000	
		SUB-TOTAL CONSTRUCTION		**$132,125**	
		TOTAL CITY WORK		**$136,488**	
		RAILROAD WORK			
1	EA	Install three quadrant gate system with constant warning	$300,000	$300,000	
16	FT	Add concrete crossing panels	$1,500	$24,000	
10	EA	Railroad flagging for street constuction	$1,500	$15,000	
		TOTAL RAILROAD WORK		**$339,000**	
		TOTAL 23th Avenue		**$475,488**	

F STREET

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
40	LF	24" SLD PVMNT MARKING HAE (W)	$8	$320	2- 20 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
4	EA	Mount/with Sign	$450	$1,800	2- W10-1
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$3,770**	
100	LF	Curb and gutter at gates	$30	$3,000	50 feet for each gate
245	SY	Remove Asphalt Pavement	$45	$11,025	300 feet by 22 = 245 SY
300	LF	Construct 300 feet of roadway for 2 foot median installation	$185	$55,500	
230	SF	Median Patterned Concrete	$15	$3,450	115*2 = 230 SF
250	LF	Curb and gutter for median	$30	$7,500	2-115' median = 250 plus noses
1	EA	Site prep/mobilization	$10,000	$10,000	
1	EA	Traffic control	$5,000	$5,000	
		SUB-TOTAL CONSTRUCTION		**$95,475**	

QUIET ZONE OPTION B
DETAILED COST ESTIMATE

		TOTAL CITY WORK		**$99,245**	
		RAILROAD WORK			
1	EA	Install two quadrant gate system with	$250,000	$250,000	
4	EA	Flagging Cost for street construction	$1,500	$6,000	
16	FT	Add concrete crossing panels	$1,500	$24,000	
		TOTAL RAILROAD WORK		**$280,000**	
		TOTA F Street		**$379,245**	

35th Avenue

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
24	LF	24" SLD PVMNT MARKING HAE (W)	$8	$192	2- 12 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
2	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$900	2- W10-1
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$2,742**	
50	LF	Curb and gutter at gates	$30	$1,500	25' at each gate
220	LF	Curb and gutter for median construction	$30	$6,600	100'of median(100*2 plus noses)= 220
400	SF	Median Patterned Concrete	$15	$6,000	200*2 = 400 SF
300	LF	Construct 300 feet of roadway for 2 foot median installation	$250	$75,000	
1	EA	Site prep/mobilization	$10,000	$10,000	
1	EA	Traffic control	$2,500	$2,500	
		SUB-TOTAL CONSTRUCTION		**$101,600**	
		TOTAL CITY WORK		**$104,342**	
		RAILROAD WORK			
1	EA	Install two quadrant gate system with constant warning	$250,000	$250,000	
8	FT	Add concrete crossing panels	$1,500	$12,000	
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$268,000**	
		TOTAL 35th Avenue		**$372,342**	

Poudre River Trail

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
24	LF	24" SLD PVMNT MARKING HAE (W)	$8	$192	2- 12 ft stop lines

QUIET ZONE OPTION B
DETAILED COST ESTIMATE

2	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$900	2- W10-1
2	EA	W10-9P Plaque furnish and install	$50	$100	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$1,192**	
		SUB-TOTAL CONSTRUCTION		**$0**	
		TOTAL CITY WORK		**$1,192**	
		RAILROAD WORK			
1	EA	Install two quadrant gate system	$175,000	$175,000	
		TOTAL RAILROAD WORK		**$175,000**	
		TOTAL Poudre River Trail		**$176,192**	

Private Crossing #1

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
2	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$900	2- W10-1
2	EA	Private Sign with Cross Buck	$450	$900	
2	EA	W10-9P Plaque furnish and install	$50	$100	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$1,900**	
		SUB-TOTAL CONSTRUCTION		**$0**	
		TOTAL CITY WORK		**$1,900**	
		RAILROAD WORK			
		TOTAL RAILROAD WORK		**$0**	
		TOTAL Private Crossing #1		**$1,900**	

59th Avenue

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
24	LF	24" SLD PVMNT MARKING HAE (W)	$8	$192	2- 12 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
2	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$900	2- W10-1
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$2,742**	
		SUB-TOTAL CONSTRUCTION		**$0**	

QUIET ZONE OPTION B
DETAILED COST ESTIMATE

		TOTAL CITY WORK		**$2,742**	
		RAILROAD WORK			
1	EA	Installation of four quadrant gate system with vehicle detection	$400,000	$400,000	
4	EA	Flagging Cost for street construction	$1,500	$6,000	
16	FT	Add concrete crossing panels	$1,500	$24,000	
		TOTAL RAILROAD WORK		**$430,000**	
		TOTAL 59th Avenue		**$432,742**	

Private Crossing #2

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
2	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$900	2- W10-1
2	EA	Private Sign with Cross Buck	$450	$900	
2	EA	W10-9P Plaque furnish and install	$50	$100	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$1,900**	
		SUB-TOTAL CONSTRUCTION		**$0**	
		TOTAL CITY WORK		**$1,900**	
		RAILROAD WORK			
		TOTAL RAILROAD WORK		**$0**	
		TOTAL Private Crossing #2		**$1,900**	

O Street

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
24	LF	24" SLD PVMNT MARKING HAE (W)	$8	$192	2- 12 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
2	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$900	2- W10-1
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$2,742**	
		SUB-TOTAL CONSTRUCTION		**$0**	
		TOTAL CITY WORK		**$2,742**	

QUIET ZONE OPTION B
DETAILED COST ESTIMATE

		RAILROAD WORK			
1	EA	Install four quadrant gate system with constant warning	$500,000	$500,000	Additional cost due to angle of crossing need for barrier
		TOTAL RAILROAD WORK		**$500,000**	
		TOTAL O Street		**$502,742**	

Private Crossing #3

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
2	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$900	2- W10-1
2	EA	Private Sign with Cross Buck	$450	$900	
2	EA	W10-9P Plaque furnish and install	$50	$100	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$1,900**	
		SUB-TOTAL CONSTRUCTION		**$0**	
		TOTAL CITY WORK		**$1,900**	
		RAILROAD WORK			
		TOTAL RAILROAD WORK		**$0**	
		TOTAL Private Crossing #3		**$1,900**	

OTHER COST

		Quiet Zone Consultant		$50,000	
		Street Engineering Design Consultant (PS&E for medians, sidewalks, pavement markings, etc)		$30,000	
		Contractor Railroad Liability Insurance (Construction Contractor to obtain)		$25,000	
		Total Other Costs		**$105,000**	

TOTAL ESTIMATED COST - OPTION B **$4,335,979**

CONTINGENCY 10% **$433,598**

TOTAL ESTIMATED COST - OPTION B **$4,769,577**

QUIET ZONE OPTION C
DETAILED COST ESTIMATE

8th Avenue

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
48	LF	24" SLD PVMNT MARKING HAE (W)	$8	$384	2- 24 ft stop lines
4	EA	LANE LEGEND RR	$525	$2,100	
5	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$2,250	4- W10-1; 1 W10-4
4	EA	W10-9P Plaque furnish and install	$50	$200	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$5,434**	
140	LF	Curb and gutter for median construction	$30	$4,200	Extend median 30 feet - 60 x 2 plus 20 for noses = 140
480	SF	Median Patterned Concrete	$15	$7,200	60*8 = 480
530	LF	Curb and gutter for median construction	$30	$15,900	Upgrade median to 6" - 240' x2 =480 plus noses 40=530
1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$5,000	$5,000	
		SUB-TOTAL CONSTRUCTION		**$34,800**	
		TOTAL CITY WORK		**$40,234**	
		RAILROAD WORK			
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$6,000**	
		TOTAL 8th Avenue		**$46,234**	

9th Avenue

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
48	LF	24" SLD PVMNT MARKING HAE (W)	$8	$384	2- 24 ft stop lines
2	EA	LANE LEGEND RR	$525	$1,050	
2	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$900	2- W10-1
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$2,934**	
300	LF	Curb and gutter for median construction	$30	$9,000	145'of median(145*2 plus 2-5 ft nose)= 300
580	SF	Median Patterned Concrete	$15	$8,700	145*4 = 580
1	EA	Site prep/mobilization	$2,500	$2,500	
1	EA	Traffic control	$2,500	$2,500	
		SUB-TOTAL CONSTRUCTION		**$22,700**	

QUIET ZONE OPTION C
DETAILED COST ESTIMATE

		TOTAL CITY WORK		**$25,634**	
		RAILROAD WORK			
1	EA	Install two quadrant gate system with constant warning	$250,000	$250,000	
4	EA	Flagging Cost for street construction	$1,500	$6,000	
		TOTAL RAILROAD WORK		**$256,000**	
		TOTAL 9th Avenue		**$281,634**	

11th Avenue

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
48	LF	24" SLD PVMNT MARKING HAE (W)	$8	$384	2- 24 ft stop lines
4	EA	LANE LEGEND RR	$525	$2,100	
2	EA	Furnish and install Alum Sign Pole Mount/with Sign	$450	$900	2- W10-1
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$3,984**	
50	LF	Curb and gutter for northeast quadrant to eliminat driveway	$30	$1,500	
40	LF	Install concrete jersey barrier at driveway entrance	$125	$5,000	40 feet of barrier
440	LF	Curb and gutter for median	$30	$13,200	1-100 '+ 1 60' medians = 160 ft + 60 due to angle = 220 X 2=440
300	LF	Removal of Curb and gutter for street widening	$20	$6,000	Approximately 300 feet
130	LF	Reconstruct 80 feet of 5 foot sidewalk	$25	$3,250	80 feet south of crossing and bus area north
300	LF	Installation of new curb and gutter for street widening	$30	$9,000	
30	Tons	Asphalt installtion	$125	$3,750	
440	SF	Median Patterned Concrete	$15	$6,600	220*2 = 440 SF
1	EA	Site prep/mobilization	$10,000	$10,000	
1	EA	Traffic control	$2,500	$2,500	
		SUB-TOTAL CONSTRUCTION		**$60,800**	
		TOTAL CITY WORK		**$64,784**	
		RAILROAD WORK			
1	EA	Install two quadrant gate system with constant warning with cantilevers	$350,000	$350,000	
10	EA	Flagging Cost for street construction	$1,500	$15,000	

QUIET ZONE OPTION C
DETAILED COST ESTIMATE

		TOTAL RAILROAD WORK		**$365,000**	
		TOTAL 11th Avenue		**$429,784**	

14th Avenue

Qty.	Unit	Description	Unit Price	Amount	
		CITY WORK			
48	LF	24" SLD PVMNT MARKING HAE (W)	$8	$384	2- 24 ft stop lines
4	EA	LANE LEGEND RR	$525	$2,100	
2	EA	Furnish and install Alum Sign Pole	$450	$900	2- W10-1
2	EA	W10-9P Plaque furnish and install	$50	$100	
1	EA	Traffic Control	$500	$500	
		SUB-TOTAL SIGNS/PVMT MKINGS		**$3,984**	
200	LF	Curb and gutter for median	$30	$6,000	1- 70 & 1-110 foot medians = 180 ft plus noses = 200 LF
360	SF	Median Patterned Concrete	$15	$5,400	180*2 = 360 SF
300	LF	Removal of Curb and gutter for median	$20	$6,000	Street Widening - 300 feet
300	LF	Installation of new curb and gutter for	$30	$9,000	Street Widening
300	LF	Remove sidewalk	$8	$2,250	Street Widening
300	LF	Reconstruct 300 feet of 5 foot sidewalk	$25	$7,500	Street Widening
30	Tons	Asphalt installtion	$125	$3,750	
1	EA	Site prep/mobilization	$10,000	$10,000	
1	EA	Traffic control	$2,500	$2,500	
		SUB-TOTAL CONSTRUCTION		**$52,400**	
		TOTAL CITY WORK		**$56,384**	
		RAILROAD WORK			
1	EA	Install two quadrant gate system with constant warning with cantilevers	$350,000	$350,000	
8	FT	Add concrete crossing panels	$1,500	$12,000	
10	EA	Flagging Cost for street construction	$1,500	$15,000	
		TOTAL RAILROAD WORK		**$377,000**	
		TOTAL 14th Avenue		**$433,384**	

OTHER COST

		Quiet Zone Consultant		$25,000	
		Street Engineering Design Consultant (PS&E for medians, sidewalks, pavement markings, etc)		$15,000	
		Contractor Railroad Liability Insurance (Construction Contractor to obtain)		$10,000	
		Total Other Costs		**$50,000**	

QUIET ZONE OPTION C
DETAILED COST ESTIMATE

TOTAL ESTIMATED COST - OPTION C	**$1,241,036**
CONTINGENCY 10%	**$124,104**
TOTAL ESTIMATED COST - OPTION C	**$1,365,140**

APPENDIX C: FRA 49 CFR Parts 222 and 229

Federal Register

Thursday,
December 18, 2003

Part II

Department of Transportation

Federal Railroad Administration

49 CFR Parts 222 and 229
Use of Locomotive Horns at Highway-Rail Grade Crossings; Interim Final Rule

for whistle bans—and which are required in this rule for New Quiet Zones—were in most cases installed with primarily Federal funds. Thus prior Federal funding has already assisted local governments to some extent in preserving Pre-Rule Quiet Zones and creating New Quiet Zones.

"Section 152 funds" (23 U.S.C. 152 (Hazard Elimination Program) are intended to implement safety improvement projects to reduce the number and severity of crashes at hazardous highway locations, sections, and elements on any public road. Typical projects include intersection improvements (channelization, traffic signals, and sight distance); pavement and shoulder widening; guardrail and barrier improvements; installation of crash cushions; modification of roadway alignment; signing, pavement marking, and delineation; breakaway utility poles and sign supports; pavement grooving and skid resistant overlays; shoulder rumble strips; and minor structure replacements or modifications. It is important to note that grade crossing improvements can be funded under section 152 if they are identified in a State's hazardous location survey.

The difference between the sum of the funding levels for sections 130 and 152 and the overall 10 percent safety set-aside in STP is in a category called "Optional Safety Funds" and is eligible for use in either section 130 or section 152. In FY 2000, there was a total of $368 million available in Optional Safety Funds, but only $21 million (or 6 percent) was used on section 130 grade crossing safety enhancement. Clearly this is an area where States can be encouraged to change the mix of safety projects advanced using this funding to accommodate more grade crossing safety improvements.

It should be noted that 90 percent of the STP funds are available for general use. Local Metropolitan Planning Organizations, working with the State departments of transportation, help determine how those funds should be allocated. As FRA was advised by commenters in this proceeding, community transportation needs differ. Without question, engineering improvements under this rule would constitute eligible projects deserving of consideration for use of this 90 percent share.

Under section 1103(c) of TEA 21, an amount of $5,250,000 per year was set aside from STP funds, and this funding is to be used for projects on designated high speed passenger rail corridors. Should a quiet zone be desired on a portion of such a designated high speed corridor, such funds could be used as a part of the overall high speed corridor improvement project. Given the relatively small amount of funding available under section 1103(c), it is perhaps unlikely that any quiet zone improvements would rise to the top of the list on any such corridor. However, note that there is a strong compatibility between the kind of safety improvements desired for high-speed rail corridors ("sealed corridor" treatments) and the supplementary safety measures identified in this rule.

Transfers of funds from other categories into the STP are permitted, and any such transfers are not subject to STP set-asides or suballocations.

- Up to 50 percent of National Highway System (NHS) apportionments may be transferred to the STP; indeed, up to 100 percent of NHS funds may be transferred to STP if approved by the Secretary of Transportation, and if sufficient notice and opportunity for public comment is given.
- Up to 50 percent of Interstate Maintenance apportionments may be transferred to STP.
- Up to 50 percent of Bridge Replacement funds may be transferred to STP.
- Funds apportioned to the Congestion Mitigation and Air Quality (CMAQ) Program may also be transferred to STP, subject to the following conditions. Up to 50 percent of the amount by which the CMAQ apportionment for the fiscal year exceeds the amount that would have been apportioned to CMAQ for that fiscal year if the program had been funded at $1.35 billion annually may be transferred to STP. Transferred CMAQ funds may only be used in air quality non-attainment and maintenance areas.

Finally, please note that, with respect to roadways on the National Highway System, improvements would be eligible for funding out of the NHS.

The subject matter of this regulatory proceeding is the use of the train horn at highway-rail crossings, not the development of appropriations requests. Accordingly, FRA neither endorses nor argues against earmarked Federal funding for this purpose. FRA does note that, in general, State and local governments have argued against categorical transportation programs and in favor of broad block grants over which recipients could exercise full control. As reflected above, to a large extent that has become Federal policy. Whether any deviation from that policy is warranted by the fiscal impacts claimed to be associated with this rule is a matter for review in other forums. Accordingly, FRA's principal response to those arguing for Federal funding has been to ensure, to the extent practicable, that any expenses attributed to establishing Quiet Zones are no greater than necessary to maintain safety.

As this interim final rule was being drafted, the Congress and the Administration were preparing to address the reauthorization of surface transportation programs (extending or replacing TEA–21). That process was being complicated by reduced revenues, confirming FRA's conviction that this interim final rule should allow additional time for implementation of the rule. Although it is possible that the program structure outlined above may be reorganized significantly in new legislation, FRA does not expect any resulting reduction in the flexibility afforded to the States (working with local Metropolitan Planning Organizations) to affect the utilization of Federal transportation funds.

11. Liability

Several commenters noted that the NPRM was silent as to the issue of liability when an accident occurs at a highway-rail grade crossing within a quiet zone established in accordance with the rule. The New Jersey Department of Transportation ("DOT") explained that consideration should be given to how liability issues presented by the rulemaking will affect public safety. Several commenters suggested that legislation was necessary to prohibit lawsuits by anyone injured while circumventing highway-rail grade crossing safety devices within quiet zones. The Massachusetts town of Manchester-by-the-Sea commented that the NPRM appeared to be a paternalistic effort directed towards those who willfully violate traffic laws and illegally proceed around grade crossing safety devices. This commenter also expressed concern that railroads may be reluctant to agree to implementation of quiet zones under the rule for fear that it would increase their risk of liability if an accident did occur at a crossing within a quiet zone where the railroads did not routinely sound their locomotive horns. Manchester-by-the-Sea suggested that when there is willful conduct by a motorist or pedestrian that jeopardizes his life or those of others, *e.g.*, proceeding through activated gate crossing devices, railroads and local communities should not be subject to liability if an accident occurs. Accordingly, the Town recommended that FRA work with Congress to codify limits to the liability of railroads and communities when those who willfully violate traffic or trespassing laws are injured at rail crossings within a quiet zone. Similarly, a Wisconsin State

legislative representative suggested that local communities should not be liable for accidents occurring at grade crossings within quiet zones established under the rule.

The North Carolina DOT suggested that communities pursuing quiet zones in their jurisdictions should enter into agreements with the relevant State and operating railroads agreeing to hold harmless the State and railroads for any accidents or injuries that occur as a direct result of these quiet zones. This same commenter emphasized that the communities implementing quiet zones should assume all of the risk associated with the quiet zones.

Commenters from the railroad industry strongly advocated that municipalities seeking the establishment of quiet zones under the rule should assume liability for all accidents that occur at crossings within the quiet zones. Citing the historical sounding of locomotive horns as a safety feature of railroads for the past century, the Florida East Coast Railway argued that if a community insists that it cease the sounding of the locomotive horns when traveling through its jurisdiction, then that community should be willing to accept the liability associated with the decision. The American Public Transportation Association projected that passage of a rule permitting quiet zones as proposed in the NPRM would probably lead to increased insurance premiums for railroads.

Another concern raised by several railroad industry participants, as well as an individual locomotive engineer, was the fact that State law often imposes liability on individual members of train crews and their employers when a train does not sound its horn at a highway-rail crossing and an accident occurs. These commenters contended that nothing in the NPRM would remove liability from individual train crew members or their employers for failure to sound the locomotive horn in the event of an accident in a quiet zone established pursuant to the rule. A representative of the Wisconsin Central System suggested that the rule should clearly state that failure to sound the locomotive horn in a FRA approved quiet zone could not serve as a basis for imposing civil liability on either the train crew or the employing railroad.

FRA appreciates the legitimate concern of the commenters regarding liability issues surrounding creation of quiet zones under this rule. We note that the proposed rule would have had the effect of relieving individual train crew members and their employers from liability for failure to sound the locomotive horn. The proposed rule clearly provides that establishment of a quiet zone created no legal duty to sound the horn in emergency situations. Because the rule clearly covered the subject matter of such a duty, it would have prevented State laws imposing such a duty. FRA does not expect that lawsuits will never arise over collisions which may occur at crossings within quiet zones, nor should FRA attempt to prohibit such suits since the cause of such collision may in fact be due to factors other than the lack of an audible warning. However, this rule is intended to remove failure to sound the horn as a cause of action in such lawsuits involving crossings within a quiet zone. We expect that the courts will determine liability issues based on the facts of each case and after reviewing the nature of this rule and its Federal requirements.

We expect that courts, following *Norfolk Southern* v. *Shanklin,* 529 U.S. 344 (2000) and *CSX* v. *Easterwood,* 507 U.S. 658 (1993), will conclude that this regulation substantially subsumes the subject matter of whether trains must sound warning devices at highway-rail grade crossings and, therefore, preempts state law on that subject.

FRA perceives no reason why establishment of quiet zones under this rule should result in higher insurance premium costs for railroads. In fact, a quiet zone under this rule should be evaluated as much less of an underwriting risk than a current whistle ban.

12. Wayside Horn

During FRA's initial outreach process prior to issuing the NPRM, several commenters asked whether placement of a wayside horn (a horn at the crossing and directed at oncoming motorists) might be entertained as a supplementary safety measure. FRA also received comments in the docket and at the public hearings on this subject. It is apparent that there is interest in using such a device as an alternative means of providing an audible warning to the motorist of an approaching train.

A wayside horn system would typically consist of horns mounted on poles that are placed at the crossing. A horn would be directed towards each direction of oncoming vehicular traffic. The system would be activated by the same track circuits used to detect the train's approach for purposes of other automated warning devices at the crossing (flashing lights and gates) and would produce a sound similar to the horn signal given by an approaching train.

At FRA's direction, the Volpe National Transportation Systems Center conducted an initial evaluation of two wayside horn installations at Gering, Nebraska in 1995 (*Field Evaluation of a Wayside Horn at a Highway-Railroad Grade Crossing,* Final Report, June 1998). This evaluation noted that use of the wayside horn in lieu of the train horn reduced net community noise impacts. The evaluation also showed a 52 percent reduction in the number of incidents in which motorists continued to drive over the crossing after the warning device's gate arms had started to descend as compared to the baseline data collected with the train horn sounding. There was no significant difference between train horns and wayside horns for motorists that drove around lowered gates. While the report indicated improved driver behavior with the wayside horn, the report also contains analysis that suggests questions regarding the effectiveness of that particular installation in alerting motorists that should be answered before implementing wayside horns as a substitute for train-borne horns. Further, this evaluation did not contain adequate data or analysis to permit a determination of whether a wayside horn could fully substitute for a train-borne audible warning and additional evaluations at other sites should be performed. The NPRM suggested three questions related to the effectiveness of the wayside horn:

1. Does the particular system provide the same quality of warning, determined by loudness at appropriate frequencies, within the motor vehicle while it is approaching the motorist's decision point?

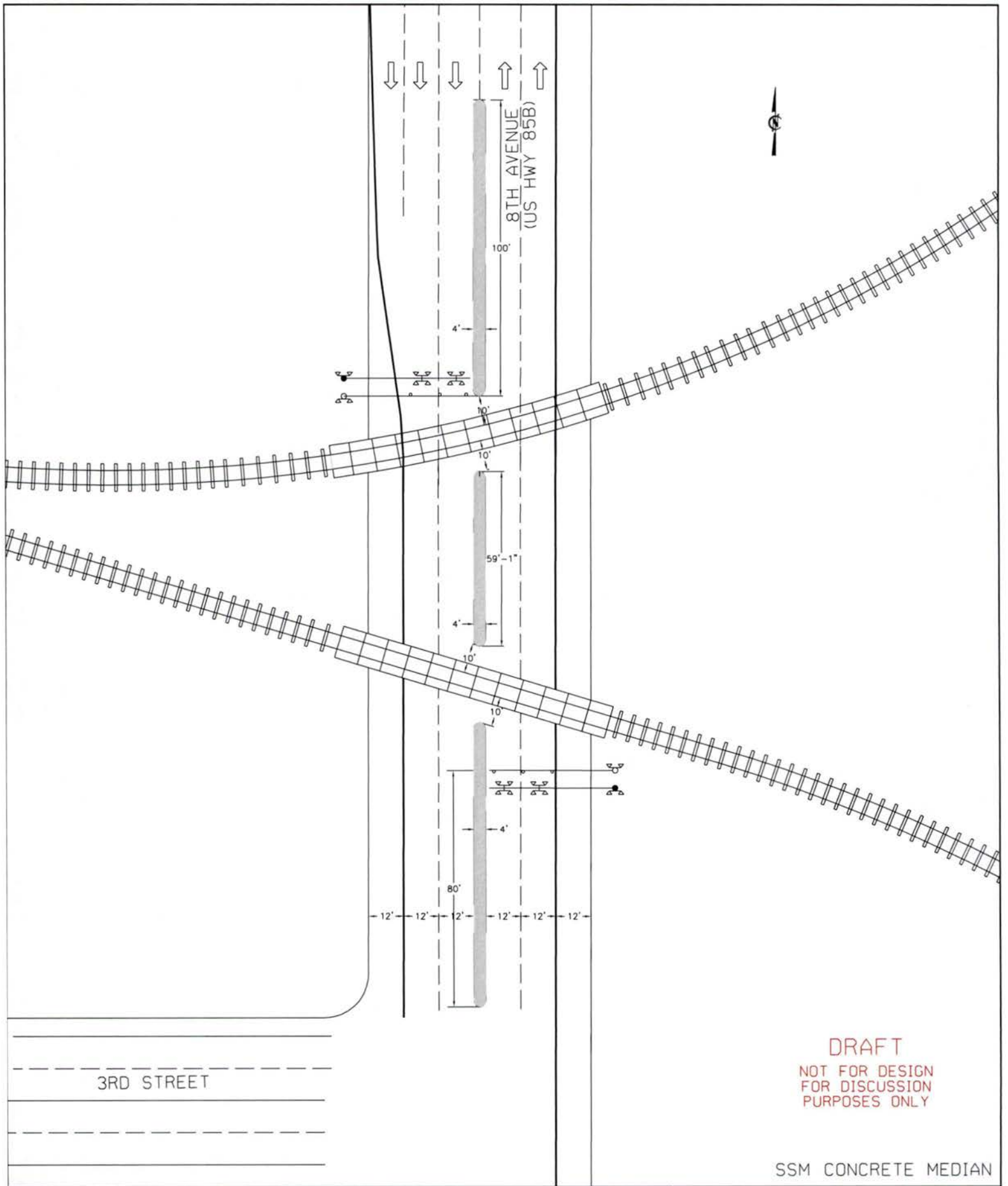
2. As currently conceived, a single stationary horn cannot give the motorist a cue as to the direction of approach of the train or trains. To what extent does this lack of directionality detract from the effectiveness of the warning? Can wayside installation design be altered to compensate?

3. To what extent will the stationary horn suffer from the lack of credibility sometimes associated with automated warning devices, due to the fact that it is activated by the same means? Over what period of time may this problem arise, if at all?

Since the installation of the original wayside horn system in Gering, NE, several other communities have installed wayside horns. These sites include: Ames, Iowa, Parsons, Kansas, Wichita, Kansas and Richardson, Texas. Additionally, other communities have had temporary test installations of the wayside horns.

This topic generated a number of comments from various parties. Additionally, the departments of

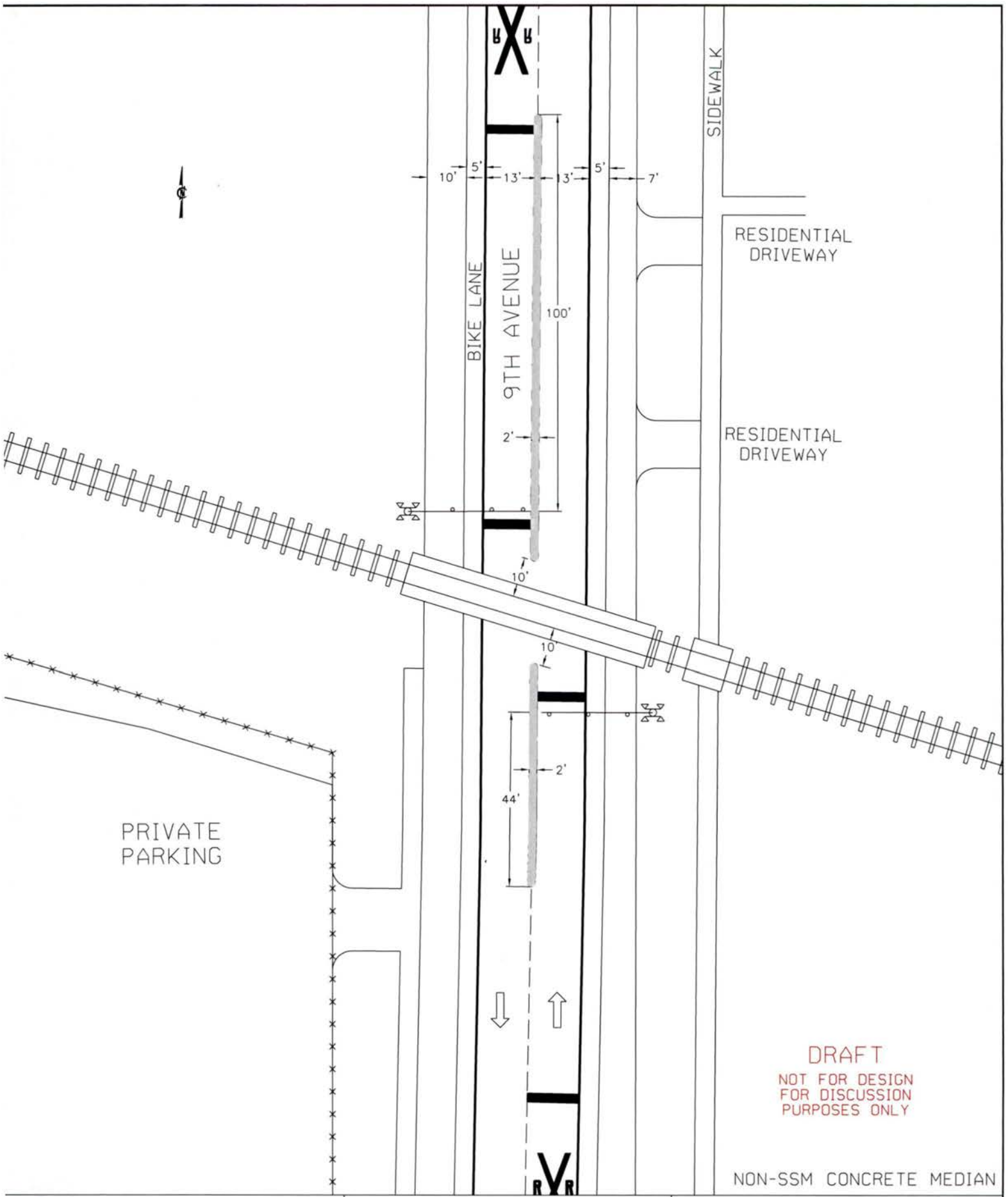
APPENDIX D: Crossing Layouts



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
8TH AVENUE(US HWY 85B)
ADT: 12,933

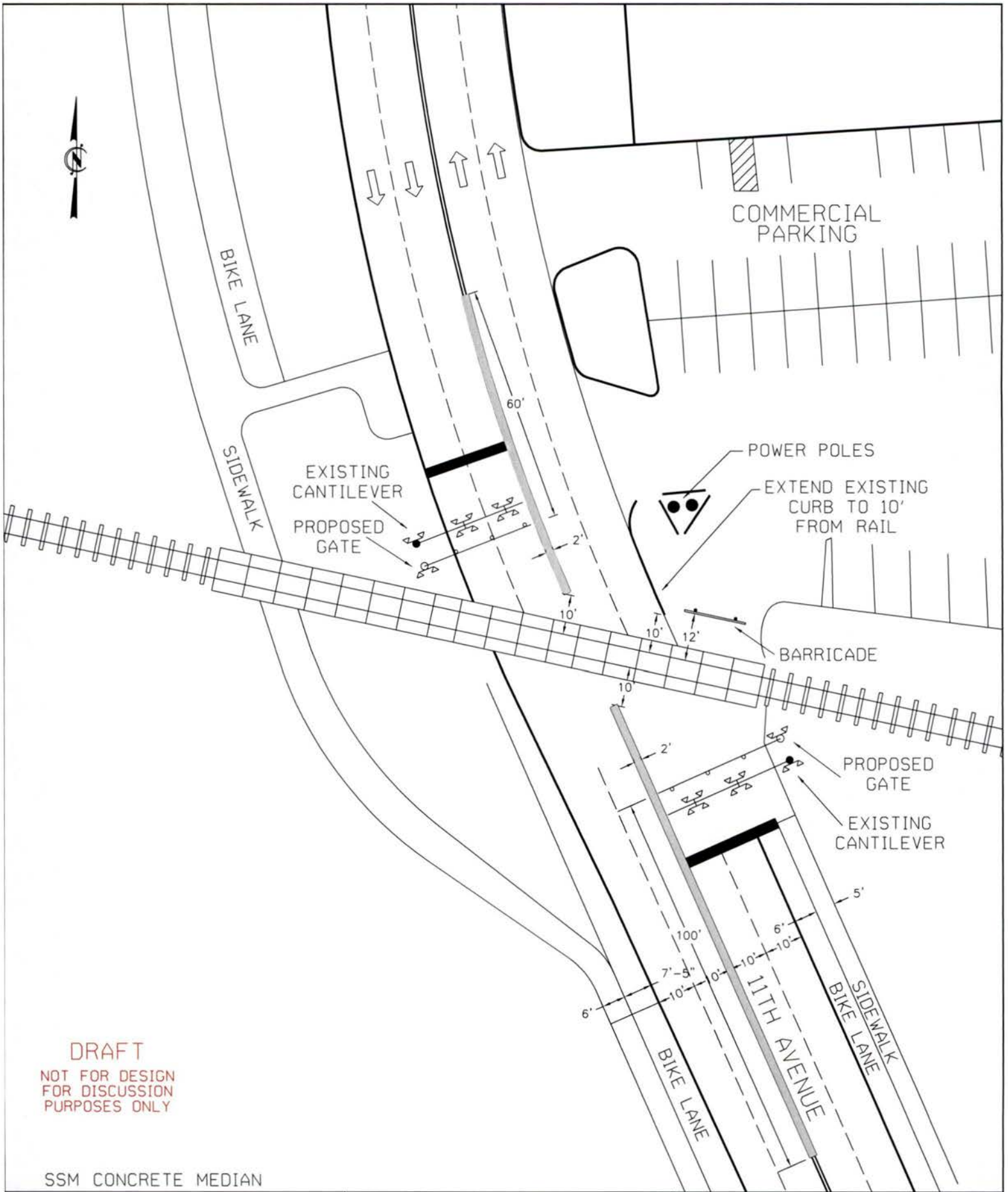
GWR RAILROAD
DOT# 245132N
RRMP 52.35
SCALE: 1' = 40'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
9TH AVENUE
ADT: 968

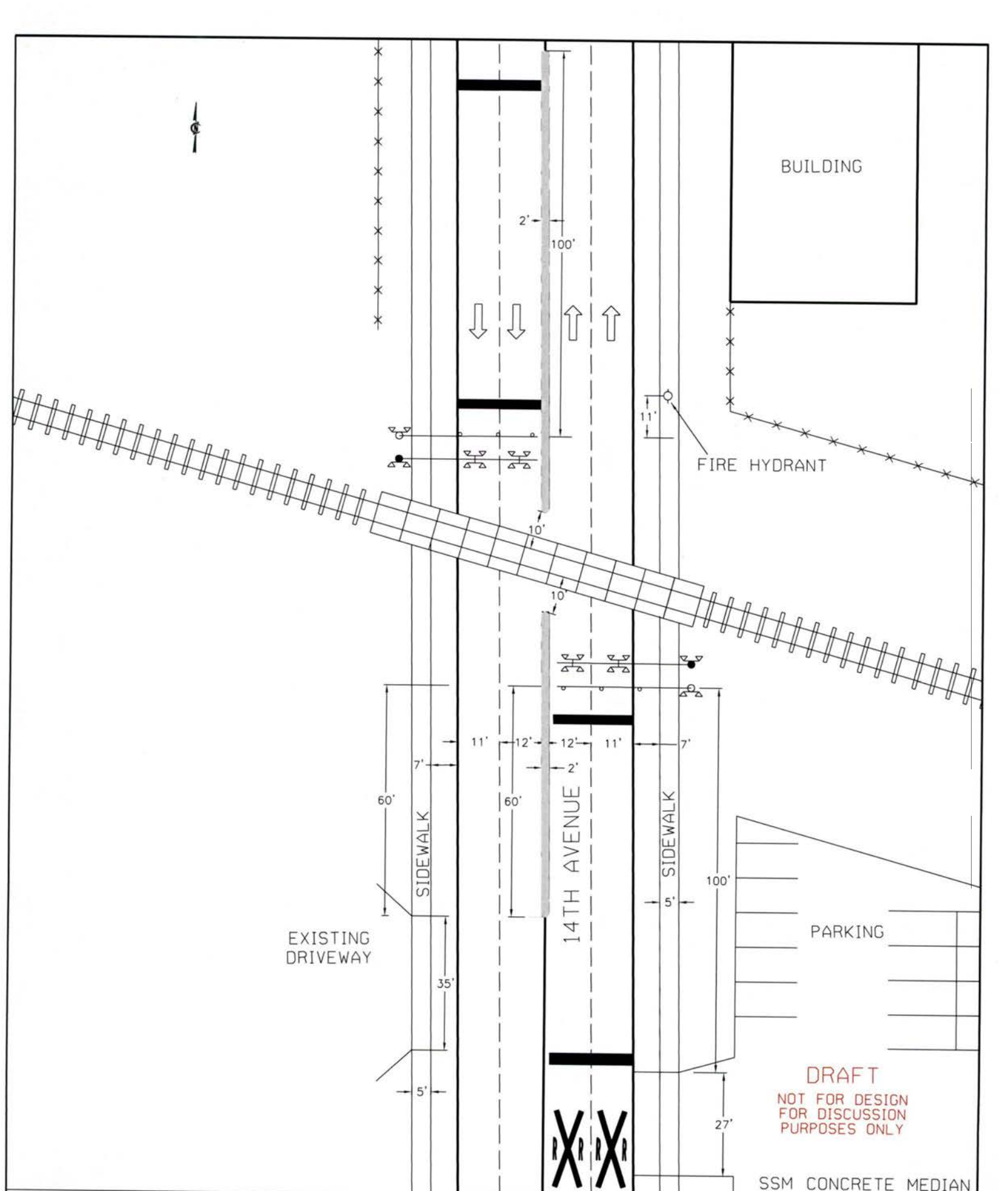
GWR RAILROAD
DOT# 245131G
RRMP 98.19
SCALE: 1' = 30'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
11TH AVENUE
ADT: 9,458

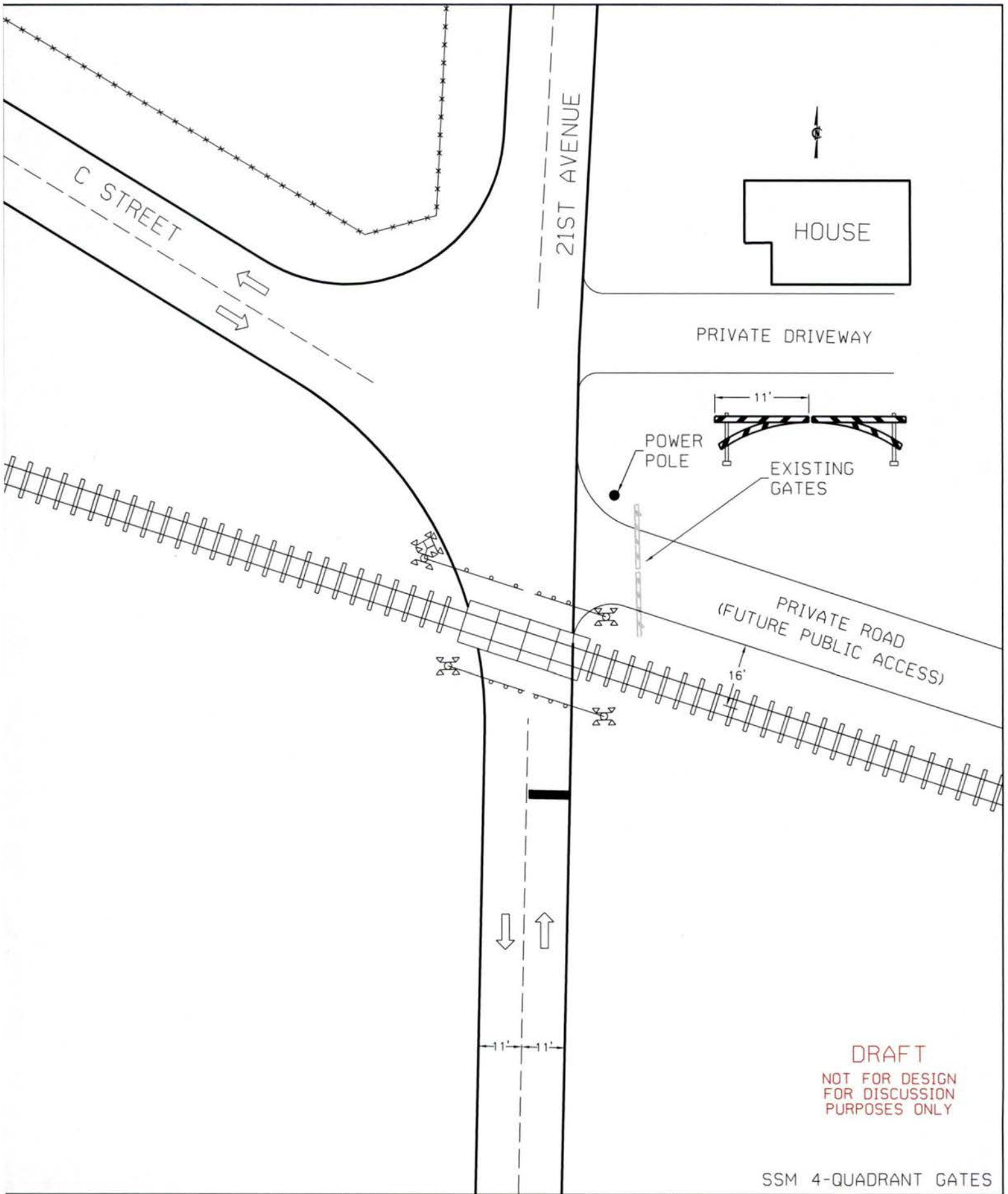
GWR RAILROAD
DOT# 245130A
RRMP 97.96
SCALE: 1' = 30'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
14TH AVENUE
ADT: 9458

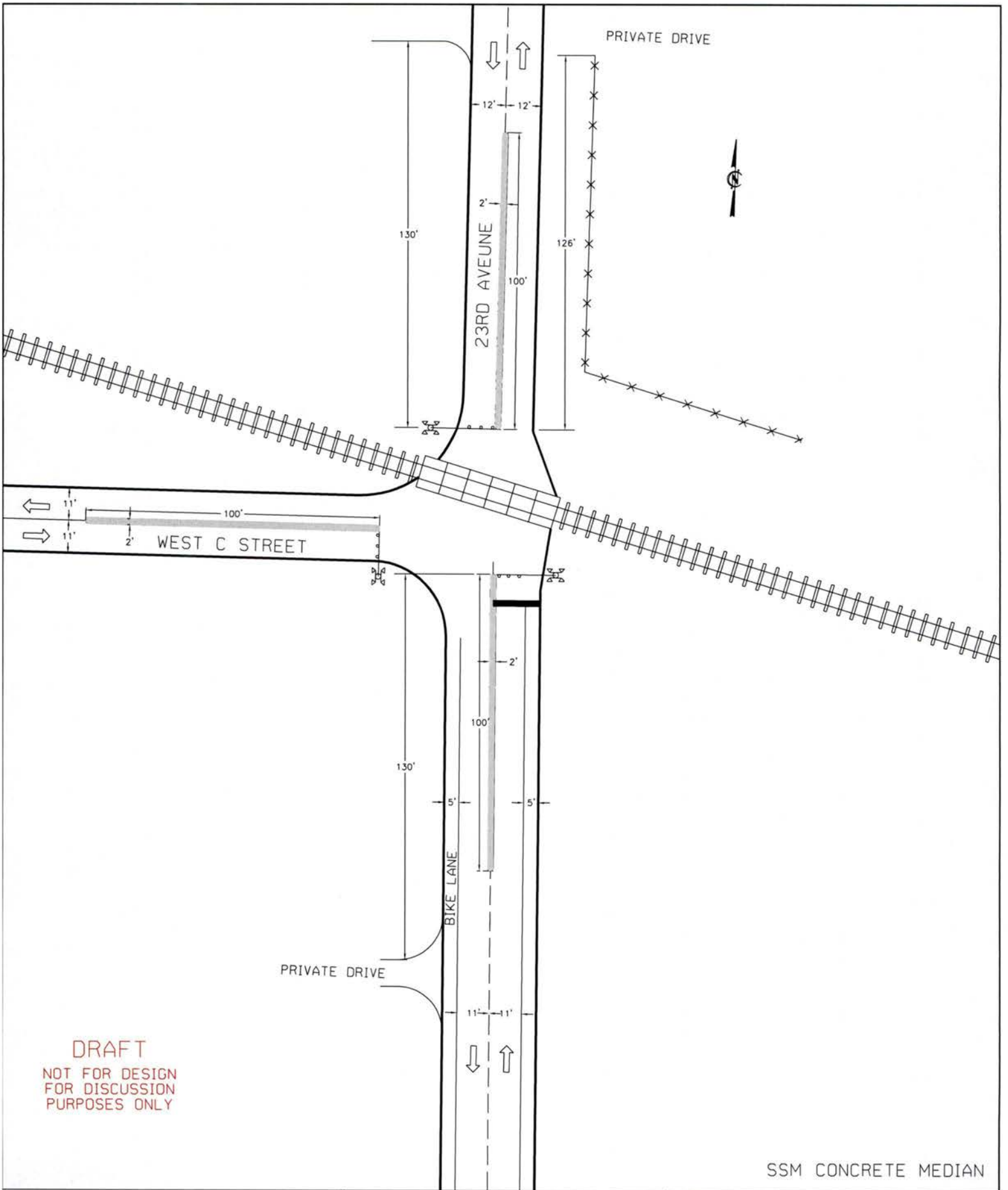
GWR RAILROAD
DOT# 245129F
RRMP 97.70
SCALE: 1' = 30'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
21ST AVENUE
ADT: 649

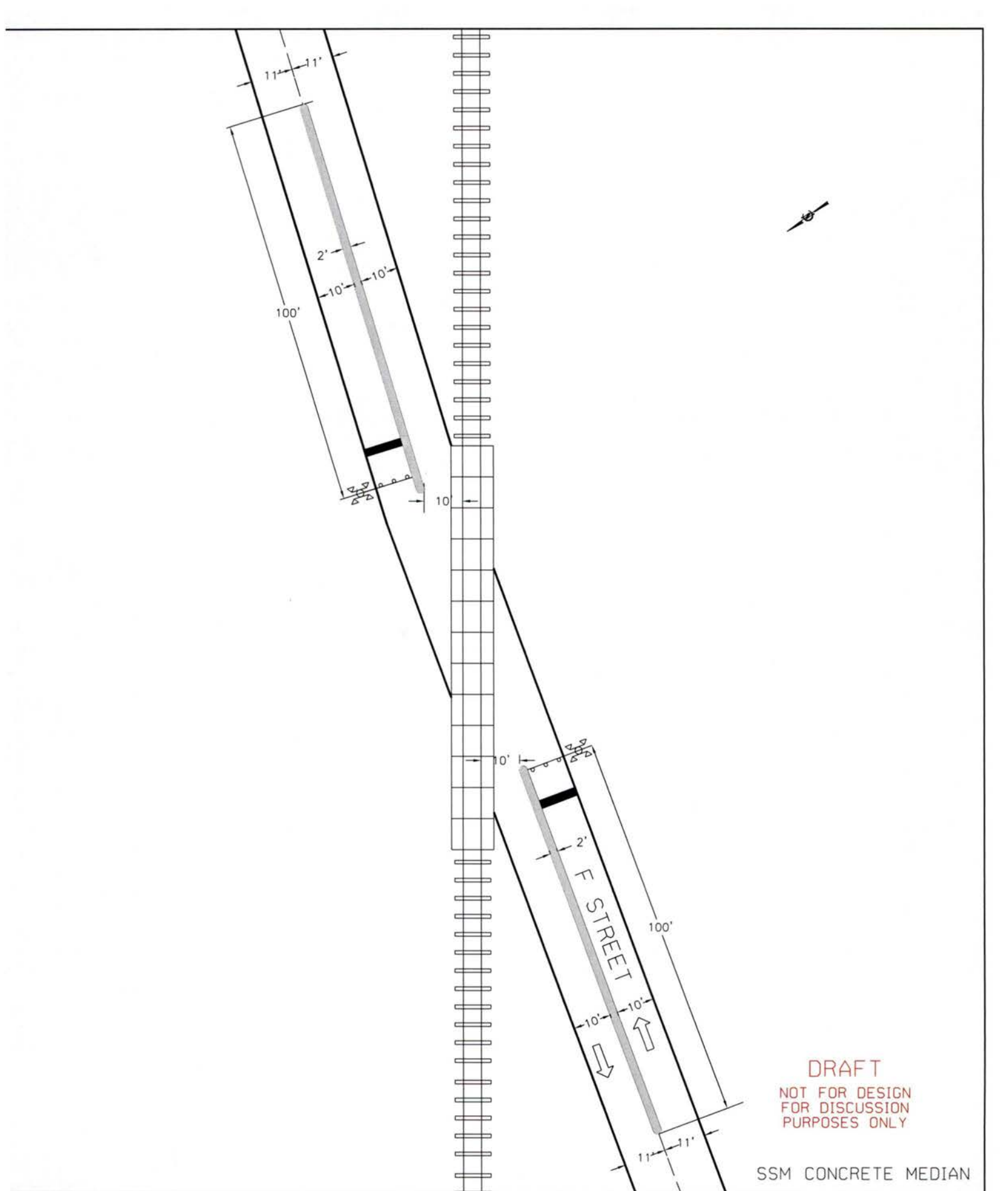
GWR RAILROAD
DOT# 245128Y
RRMP 97.15
SCALE: 1' = 30'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
23RD AVENUE
ADT: 3700

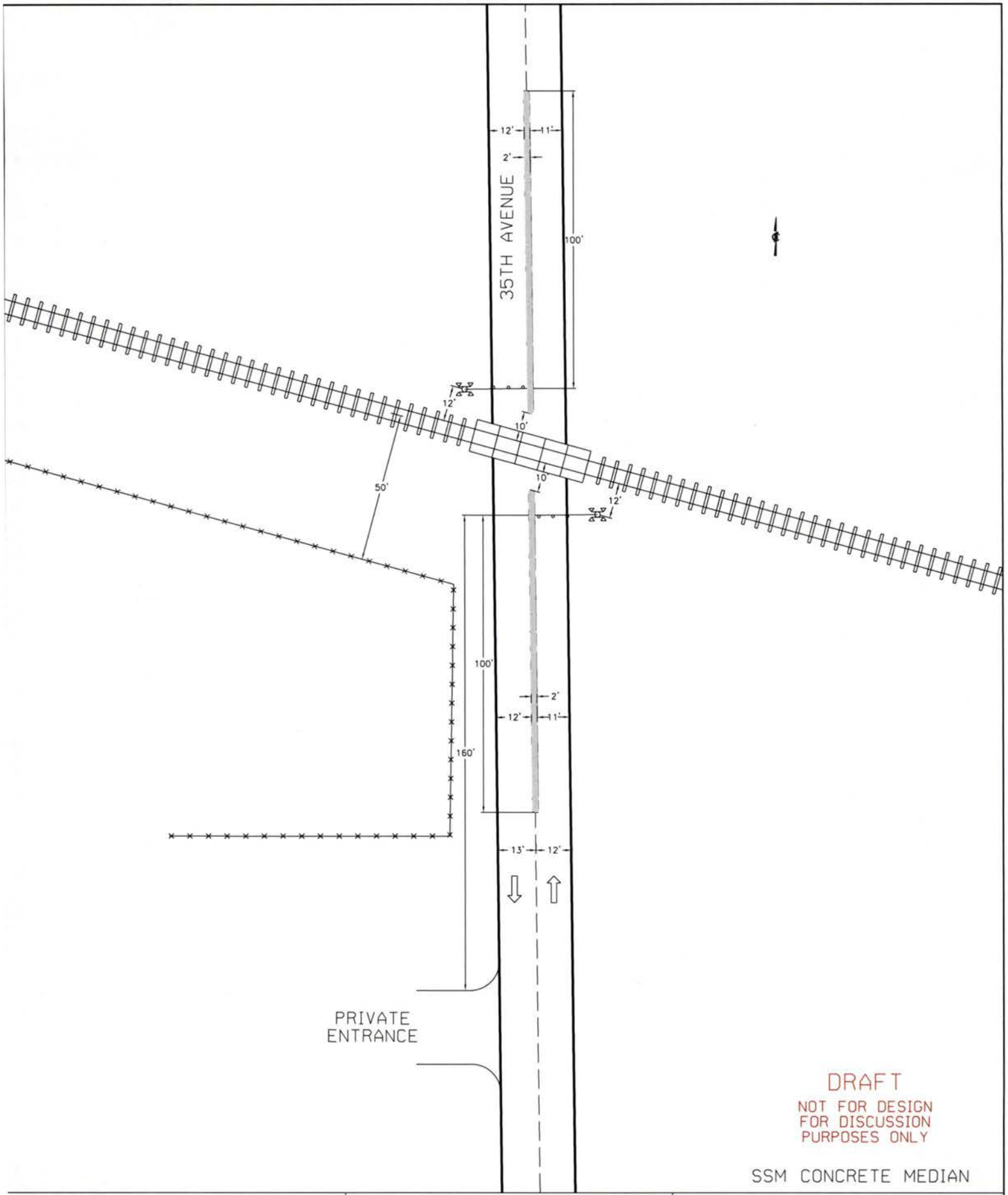
GWR RAILROAD
DOT# 245126K
RRMP 96.91
SCALE: 1' = 40'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
F STREET
ADT: 1574

GWR RAILROAD
DOT# 245125D
RRMP 96.05
SCALE: 1' = 30'



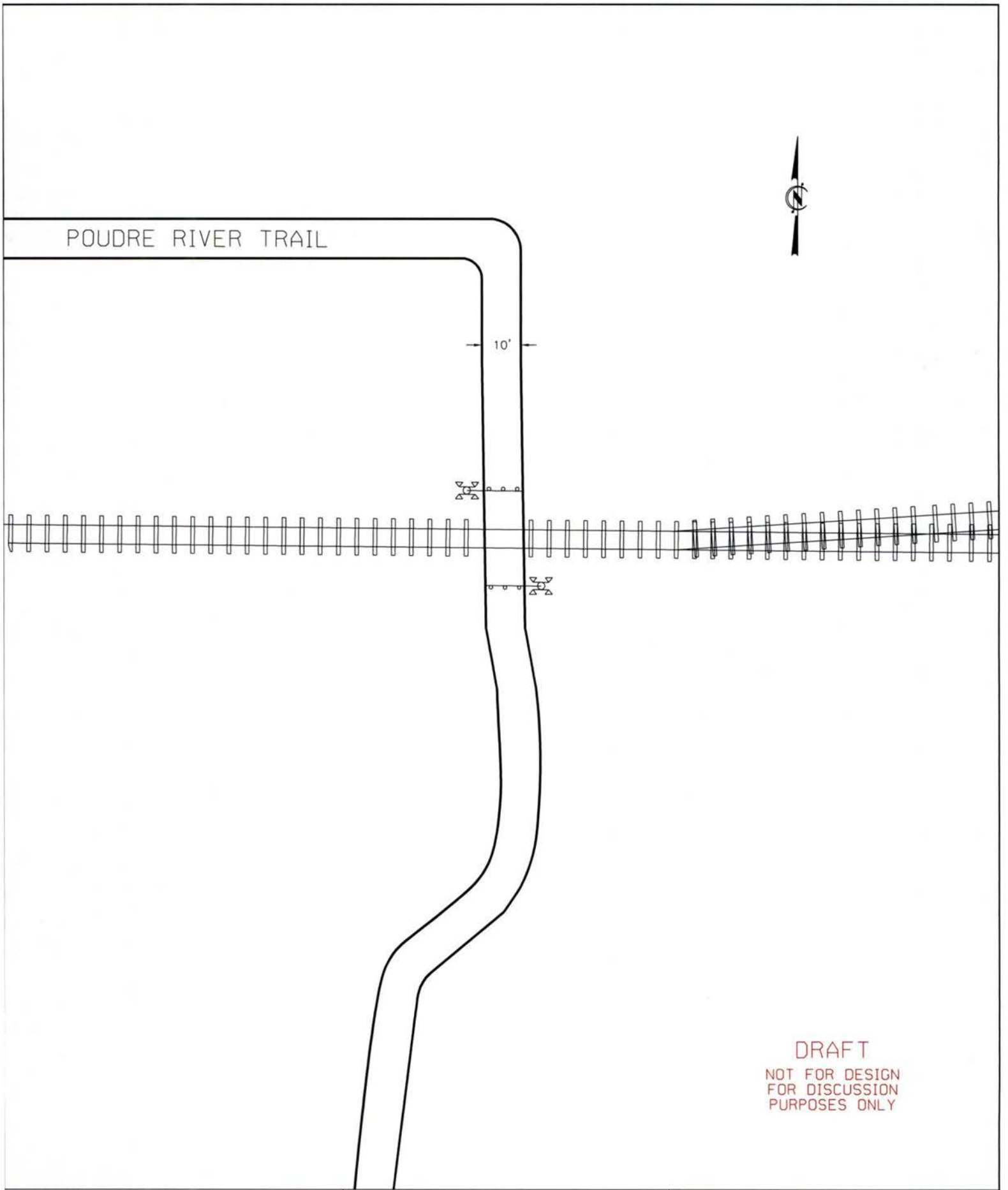
DRAFT
NOT FOR DESIGN
FOR DISCUSSION
PURPOSES ONLY

SSM CONCRETE MEDIAN

CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
35TH AVENUE
ADT: 9600

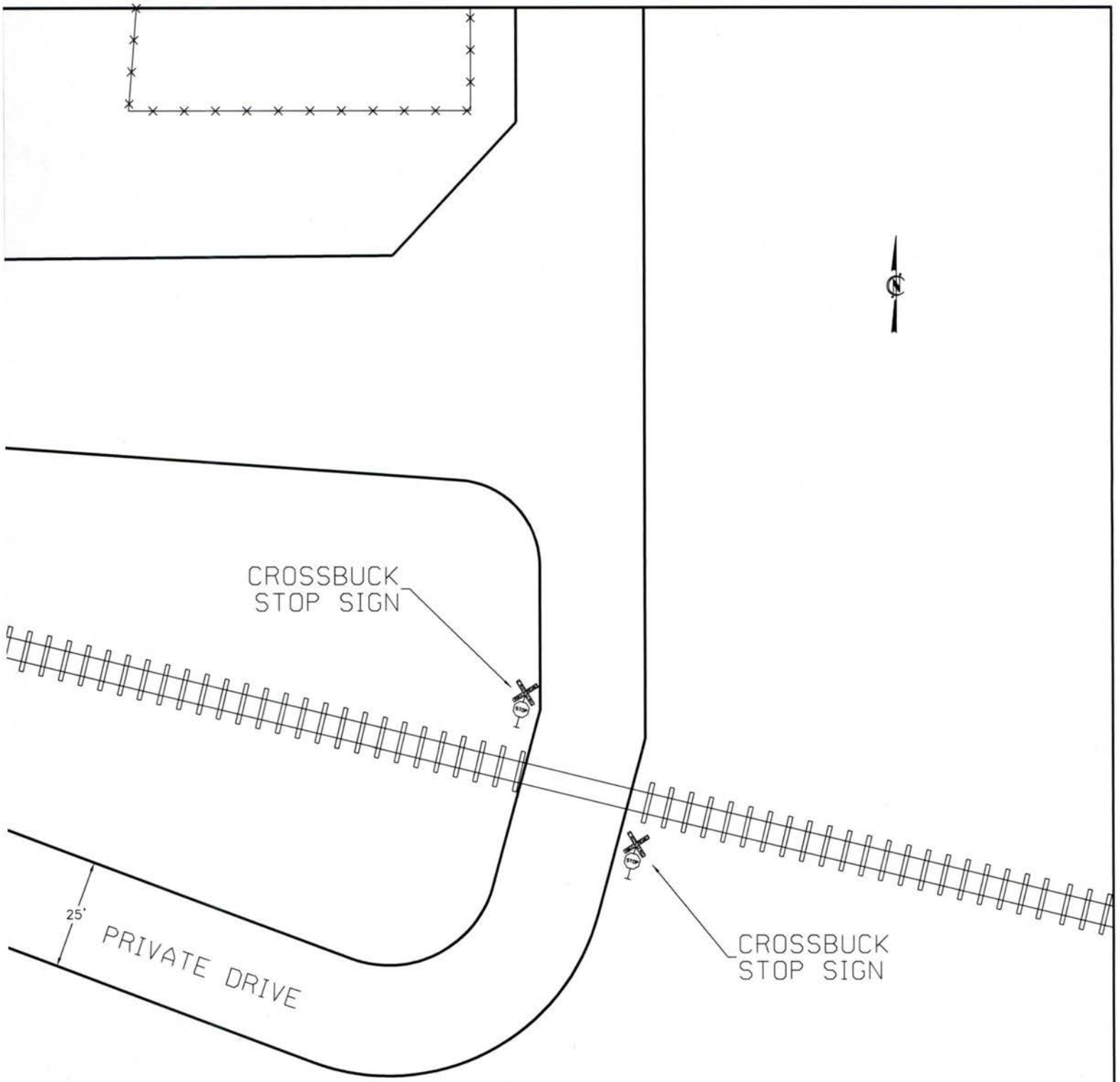
GWR RAILROAD
DOT# 245124W
RRMP 94.06
SCALE: 1' = 40'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
POUDRE RIVER TRAIL

GWR RAILROAD
DOT# 245114R
RRMP 92.17
SCALE: 1' = 30'

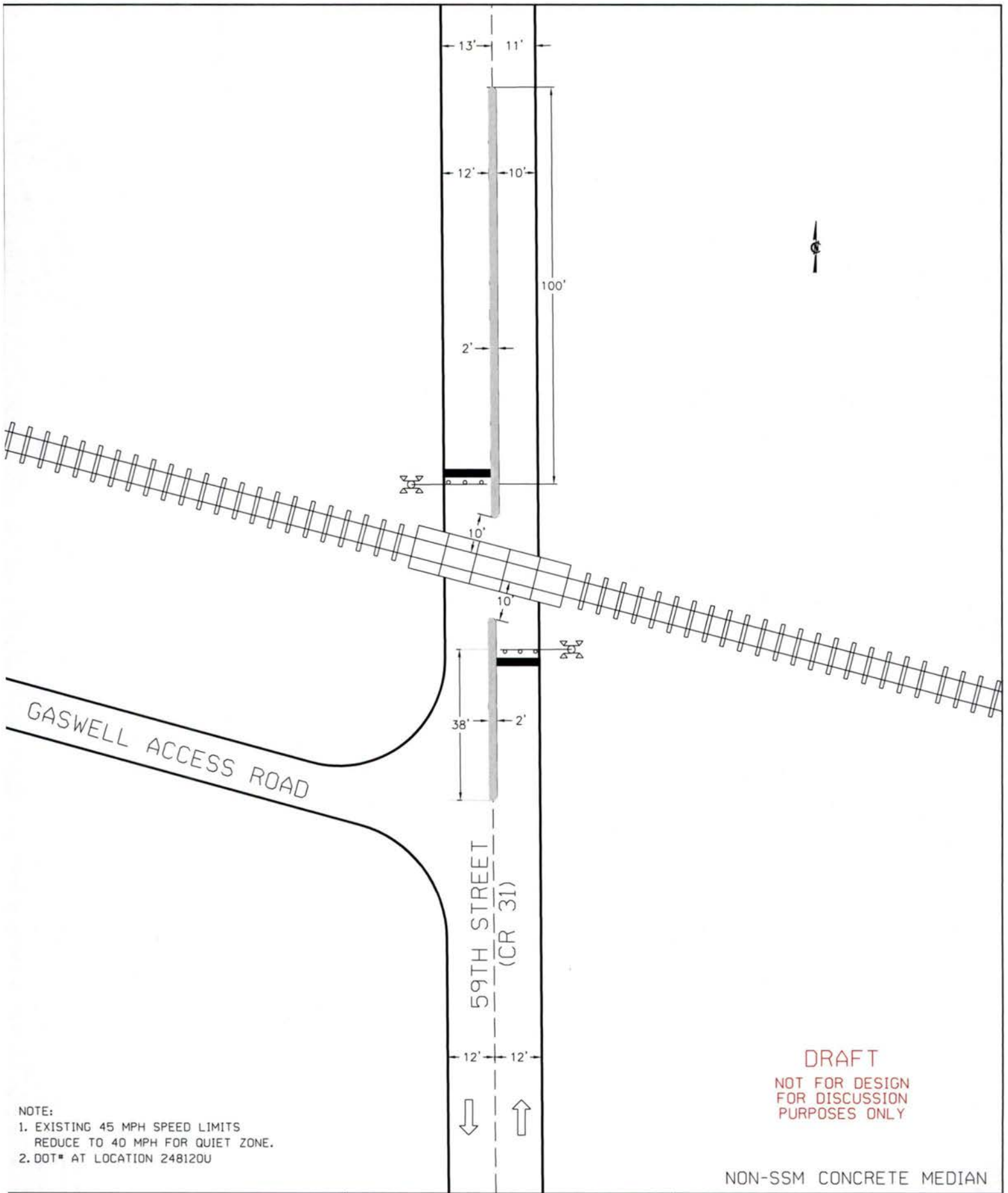


DRAFT
NOT FOR DESIGN
FOR DISCUSSION
PURPOSES ONLY

CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
PRIVATE DRIVE
NEAR 59TH AVE

GWR RAILROAD
DOT# 245113J
RRMP 91.79
SCALE: 1' = 30'



NOTE:
1. EXISTING 45 MPH SPEED LIMITS REDUCE TO 40 MPH FOR QUIET ZONE.
2. DOT# AT LOCATION 248120U

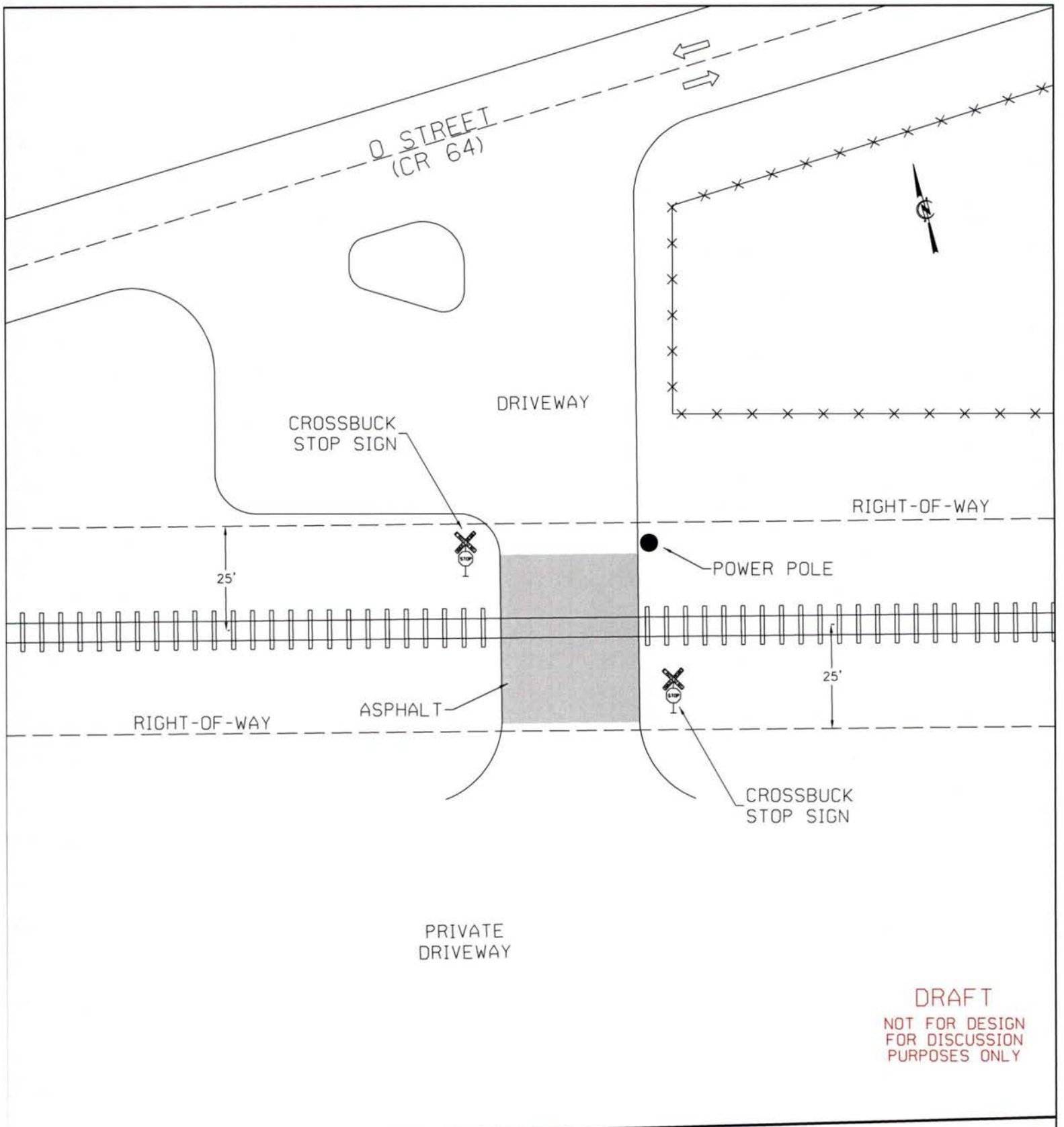
DRAFT
NOT FOR DESIGN
FOR DISCUSSION
PURPOSES ONLY

NON-SSM CONCRETE MEDIAN

CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
59TH STREET (CR 31)
ADT: 6759

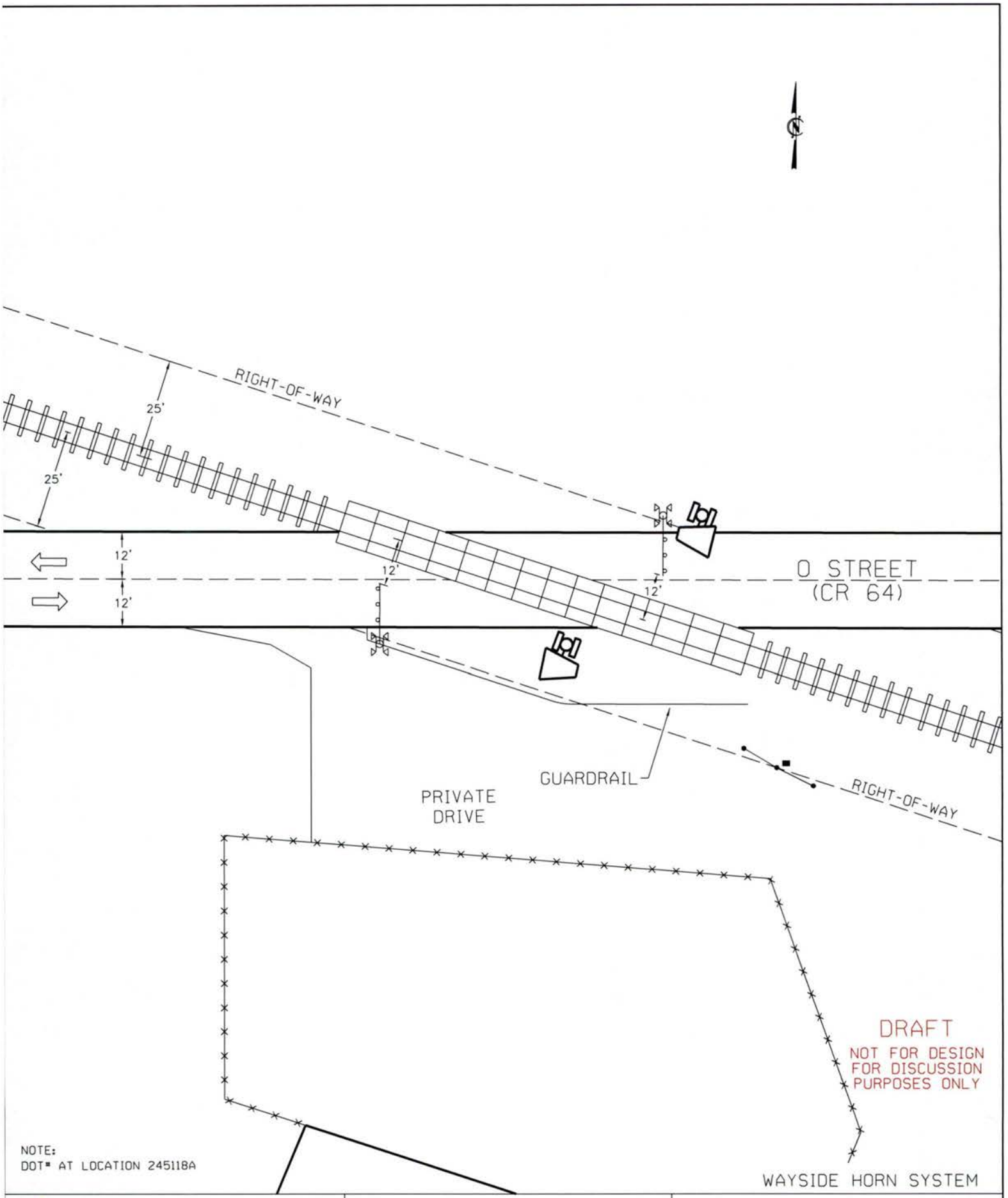
GWR RAILROAD
DOT# 245120U
RRMP 93.74
SCALE: 1' = 30'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
PRIVATE CROSSING
SOUTH OF O STREET

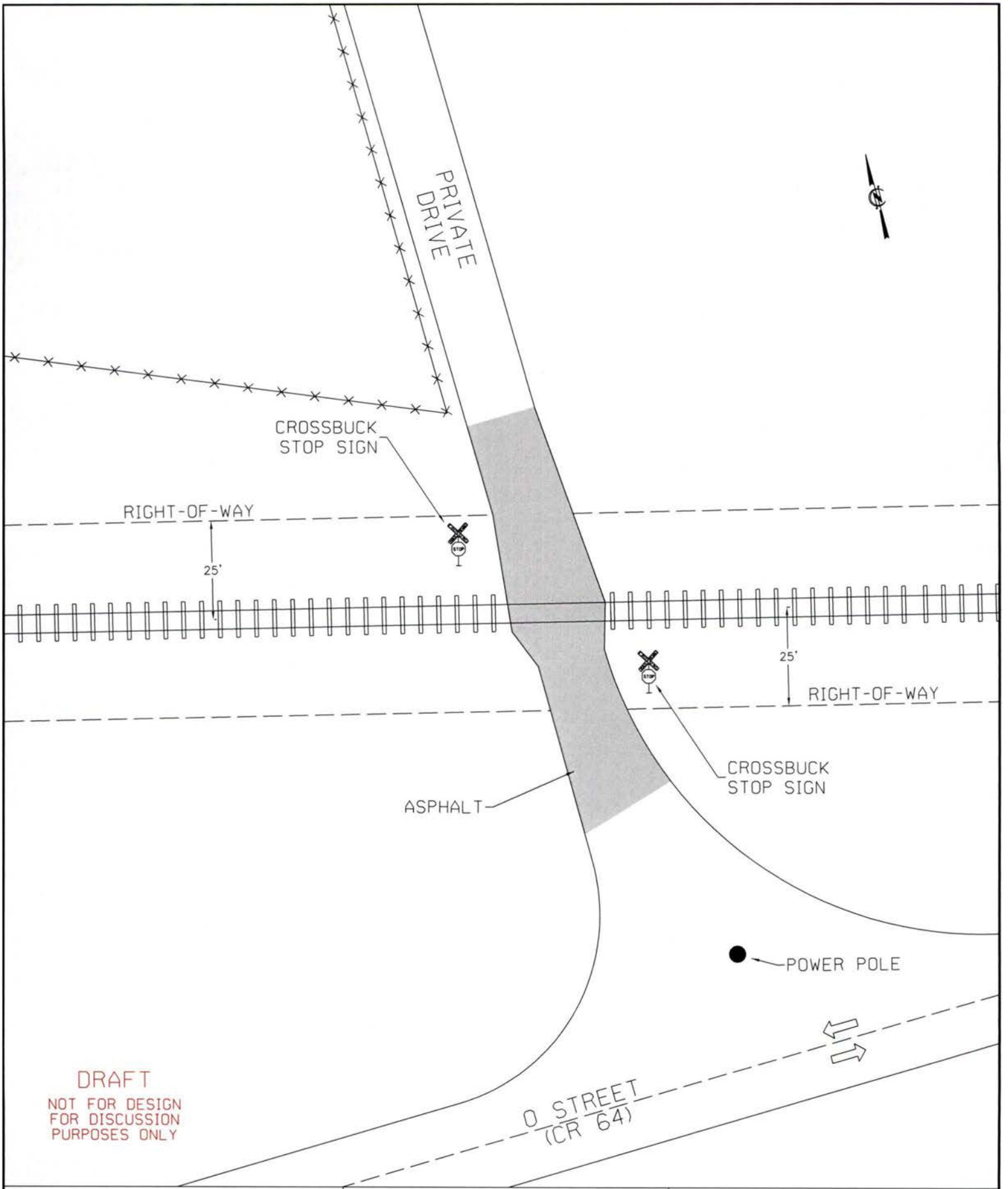
GWR RAILROAD
DOT#
RRMP
SCALE: 1' = 30'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
O STREET(CR 64)
ADT: 4,030

GWR RAILROAD
DOT# 245119A
RRMP 93.31
SCALE: 1' = 30'



CTC inc

CONCEPTUAL LAYOUT
CITY OF GREELEY, CO
PRIVATE CROSSING
NORTH OF O STREET

GWR RAILROAD
DOT#
RRMP
SCALE: 1' = 30'

APPENDIX E: Quiet Zone Calculations

Quiet Zone Option A

Home | Help | Contact | logoff qz@ctcinc.com

Cancel | Change Scenario: GREELEY GW_51100 | Continue

Create New Zone

Manage Existing Zones

Log Off

Crossing	Street	Traffic	Warning Device	Pre-SSM	SSM	Risk	
245119A	**CR 64 WO CR 31**	**4030**	**Gates**	0	0	N/A	Wayside Horn
245120U	**59THST SO O ST**	**6759**	**Gates**	0	0	5,434.87	MODIFY
245124W	**35TH NO F STREET**	**9600**	**Gates**	0	13	1,589.42	MODIFY
245125D	**F ST EO 35TH AVE.**	**1574**	**Gates**	0	13	506.90	MODIFY
245126K	**23RD AV-AT CR 62**	**3700**	**Gates**	0	13	695.43	MODIFY
245128Y	**21ST AVE SO C ST.**	**649**	**Gates**	0	6	420.02	MODIFY
245129F	**14TH AVE**	**9458**	**Gates**	0	13	984.16	MODIFY
245130A	**11TH AVE**	**9458**	**Gates**	0	0	4,920.78	MODIFY
245131G	**9TH AVE NO 3RD ST**	**968**	**Gates**	0	0	2,117.28	MODIFY
245132N	**8TH AVE**	**12933**	**Gates**	0	13	2,271.51	MODIFY

Step by Step Instructions:

Step 1: To specify New Warning Device (For Pre-Rule Quiet Zone Only) and/or SSM, click the MODIFY Button

Step 2: Select proposed warning device or SSM. Then click the UPDATE button.To generate a spreadsheet of the values on this page, click on ASM button—This spreadsheet can then be used for ASM calculations.

Step 3: Repeat Step (2) until the SELECT button is shown at the bottom right side of this page. Note that the SELECT button is shown ONLY when the Quiet Zone Risk Index falls below the NSRT or the Risk Index with Horn.

Step 4: To save the scenario and continue, click the SELECT button

* Only Public At Grade Crossings are listed.

Click for Supplementary Safety Measures [SSM]

Click for ASM spreadsheet: **ASM** * Note:The use of ASMs requires an application to and approval from the FRA.

Summary	
Proposed Quiet Zone:	GREELEY GWR OPTION A
Type:	New 24-hour QZ
Scenario:	GREELEY GW_51100
Estimated Total Cost:	$203,000.00
Nationwide Significant Risk Threshold:	14723 .00
Risk Index with Horns:	2966.71
Quiet Zone Risk Index:	**2104.49**

Select

Quiet Zone Option B

Home | Help | Contact | logoff qz@ctcinc.com

Cancel | Change Scenario: GREELEY GW_51098 | Continue

Create New Zone

Manage Existing Zones

Log Off

Crossing	Street	Traffic	Warning Device	Pre-SSM	SSM	Risk	
245119A	CR 64 WO CR 31	4030	Gates	0	6	568.49	MODIFY
245120U	59THST SO O ST	6759	Gates	0	6	1,250.02	MODIFY
245124W	35TH NO F STREET	9600	Gates	0	13	1,589.42	MODIFY
245125D	F ST EO 35TH AVE.	1574	Gates	0	13	506.90	MODIFY
245126K	23RD AV-AT CR 62	3700	Gates	0	13	695.43	MODIFY
245128Y	21ST AVE SO C ST.	649	Gates	0	6	420.02	MODIFY
245129F	14TH AVE	9458	Gates	0	13	984.16	MODIFY
245130A	11TH AVE	9458	Gates	0	6	1,131.78	MODIFY
245131G	9TH AVE NO 3RD ST	968	Gates	0	6	486.97	MODIFY
245132N	8TH AVE	12933	Gates	0	13	2,271.51	MODIFY

Step by Step Instructions:

Step 1: To specify New Warning Device (For Pre-Rule Quiet Zone Only) and/or SSM, click the MODIFY Button

Step 2: Select proposed warning device or SSM. Then click the UPDATE button.To generate a spreadsheet of the values on this page, click on ASM button—This spreadsheet can then be used for ASM calculations.

Step 3: Repeat Step (2) until the SELECT button is shown at the bottom right side of this page. Note that the SELECT button is shown ONLY when the Quiet Zone Risk Index falls below the NSRT or the Risk Index with Horn.

Step 4: To save the scenario and continue, click the SELECT button

* Only Public At Grade Crossings are listed.

ALERT: Quiet Zone qualifies because SSM has been applied in each crossing.

Click for Supplementary Safety Measures [SSM]

Click for ASM spreadsheet: **ASM** * Note:The use of ASMs requires an application to and approval from the FRA.

Summary	
Proposed Quiet Zone:	GREELEY GWR OPTION B
Type:	New 24-hour QZ
Scenario:	GREELEY GW_51098
Estimated Total Cost:	$715,000.00
Nationwide Significant Risk Threshold:	14723 .00
Risk Index with Horns:	2818.22
Quiet Zone Risk Index:	**990.47**

Select

Quiet Zone Option C

Cancel | Change Scenario: GREELEY GW_51097 | Continue

Create New Zone

Manage Existing Zones

Log Off

Crossing	Street	Traffic	Warning Device	Pre-SSM	SSM	Risk	
245129F	**14TH AVE**	**9458**	**Gates**	0	13	984.16	MODIFY
245130A	**11TH AVE**	**9458**	**Gates**	0	0	4,920.78	MODIFY
245131G	**9TH AVE NO 3RD ST**	**968**	**Gates**	0	0	2,117.28	MODIFY
245132N	**8TH AVE**	**12933**	**Gates**	0	13	2,271.51	MODIFY

Step by Step Instructions:

Step 1: To specify New Warning Device (For Pre-Rule Quiet Zone Only) and/or SSM, click the MODIFY Button

Step 2: Select proposed warning device or SSM. Then click the UPDATE button.To generate a spreadsheet of the values on this page, click on ASM button—This spreadsheet can then be used for ASM calculations.

Step 3: Repeat Step (2) until the SELECT button is shown at the bottom right side of this page. Note that the SELECT button is shown ONLY when the Quiet Zone Risk Index falls below the NSRT or the Risk Index with Horn.

Step 4: To save the scenario and continue, click the SELECT button

* Only Public At Grade Crossings are listed.

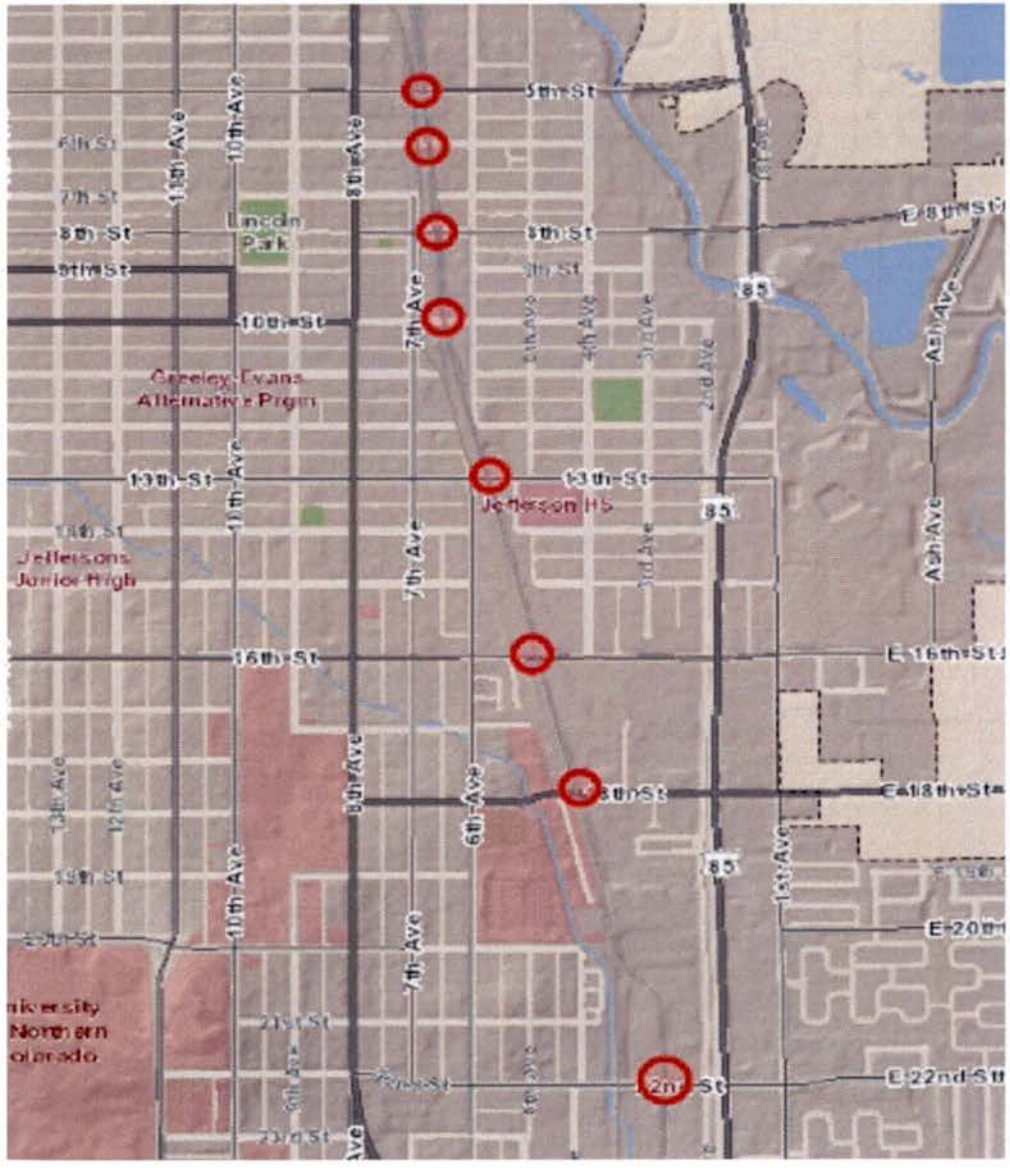
Click for Supplementary Safety Measures [SSM]

Click for ASM spreadsheet: **ASM** * Note:The use of ASMs requires an application to and approval from the FRA.

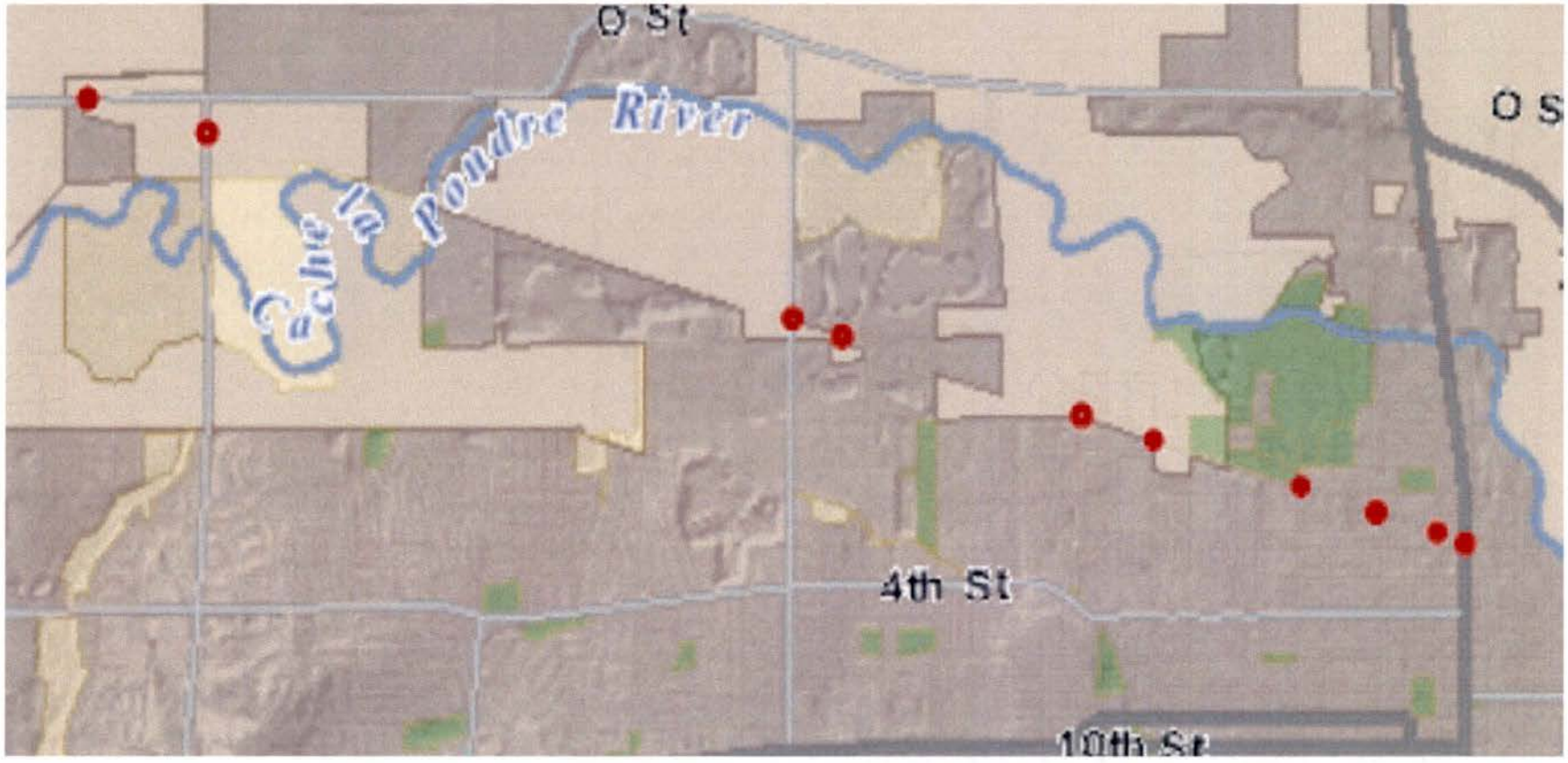
Summary	
Proposed Quiet Zone:	GREELEY GWR OPTION C
Type:	New 24-hour QZ
Scenario:	GREELEY GW_51097
Estimated Total Cost:	$30,000.00
Nationwide Significant Risk Threshold:	14723 .00
Risk Index with Horns:	3494.67
Quiet Zone Risk Index:	**2573.43**

Select

Union Pacific Railroad Crossings



Great Western Railway Crossings



III. SUB-AREA STRATEGIES

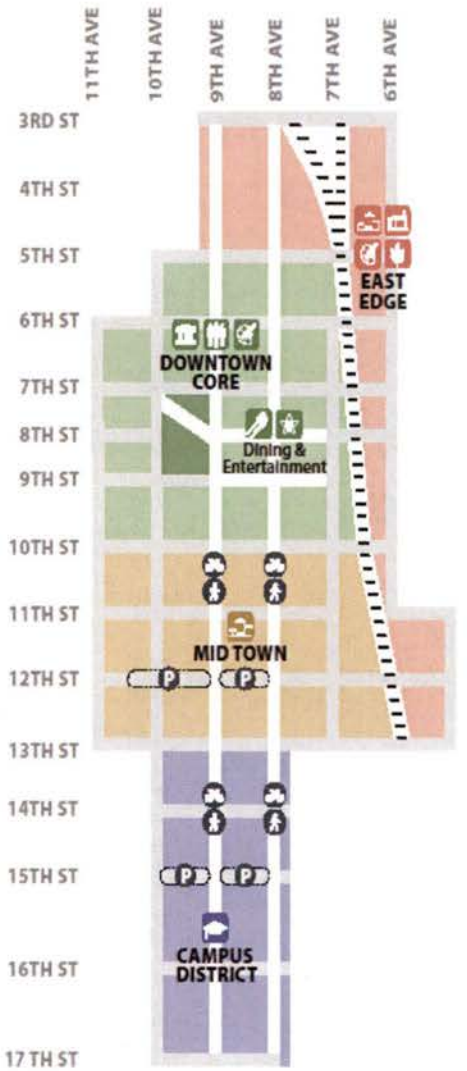
By defining four unique sub-areas in and around Downtown, making more logical connections among them, and valuing the history and diversity each has to offer, the DDA can prioritize its investments to make the whole of Downtown a stronger, more cohesive and interesting place to be.

The DDA Sub-area Strategy is designed to guide future DDA investment in a clear and logical way that maximizes and leverages the DDA's resources. The four sub-areas recommended in this plan include:

- ***Downtown Core***
- ***Campus***
- ***Mid Town***
- ***East Edge***

This plan is organized around creating strategies to strengthen each of the four sub-areas. Implementing actions for the sub-area strategies, as well as collective strategies that will enhance the entire DDA, are detailed in the Action Plan section of this document beginning on page 14. Sub-area strategies are outlined in the following pages.

Downtown Development Authority Subareas and Opportunities



- Neighborhood-serving retail and services would provide a stabilizing compliment to multi-family development.
- Enhanced bike and pedestrian infrastructure will enhance this neighborhood and provide essential connections to the adjoining neighborhoods.

Opportunity Sites

- The Safeway grocery store at 10th Avenue and 12th Street is a huge asset to Mid Town and is important to the future of Downtown. Grocery stores are a critical amenity in any neighborhood and can be a factor to encourage desirable residential development. Per conversations with Safeway corporate offices, there is a desire to upgrade the facility in the near future. A high priority catalyst site in Mid-town is the underutilized adjacent parcels that could be land banked for future Safeway expansion.
- A number of vacant and underutilized commercial properties exist in Mid Town including but not limited to those on 8th Avenue. Beyond improving their physical appearance, DDA participation may be warranted for establishing and retaining neighborhood-serving commercial uses that will strengthen the neighborhood by enhancing the convenience and livability of the area.

Development Challenges

- Eighth Avenue provides the first impression for many visitors coming into town from US Highway 85. It is currently lined with retail, restaurants and professional services. There are a number of vacant storefronts and overall the businesses present an inconsistent look and feel. Design guidelines, façade improvements, transparency requirements and additional lighting and landscaping could provide a tremendous enhancement to the corridor and ultimately provide a catalyst to increased investment and interest in the corridor.
- Small parcels and lack of large assemblages to accommodate mixed-use and multi-family residential development are challenges to redevelopment.

EAST EDGE – Live/Work, Arts & Light Industrial

Location

The East Edge primarily encompasses the area of the DDA that is east of the railroad tracks from 3rd to 13th Streets.

Context

The East Edge embraces Greeley's agricultural and industrial past. Characterized by grain silos, brick warehouses, wide streets and the railroad, the East Edge has a unique feel to it. The East Edge has the potential to be a unique and interesting sub-area where adaptive reuse of the agricultural and railroad buildings should be encouraged.

Vision

The East Edge is envisioned to be a live/work neighborhood with some light industrial manufacturing, agriculture and arts and craft uses. A year-round, expanded farmers' market, further development of uses or events that tie into and build on the rail history, historic depot, rail line, and train museum would fit well in the East Edge.

Desired Development

- Live/work units that promote art and light industrial uses will complement the existing context of the area.
- Adaptive reuse should embrace rail and agricultural history.

Opportunity Sites

- The existing agricultural and warehouse buildings should be preserved and reused whenever possible.
- The old Ice House building has potential for redevelopment and is a strong asset in the East Edge.

Development Challenges

- The railroad tracks are a physical barrier between the East Edge the rest of Downtown. Noise from trains affects some uses.
- The infrastructure in the East Edge has some inadequacies such as missing sidewalk segments and road connections. In addition, 100-year floodplain has been mapped in the northernmost portions of the Sub-area. Rectifying these inadequacies increases the costs of redevelopment on affected parcels.
- Accessibility is a significant challenge for businesses in the East Edge.

Physical Connections

- Better, safer pedestrian and bicycle connections are needed across the railroad tracks, particularly to the Downtown Core.

Worksession Agenda Summary

October 24, 2017 (5:30 – 6:00 p.m.)
Agenda Item Number 2
Key Staff Contact: Joel Hemesath, Public Works Director, 350-9795

Title
3rd Quarter CIP Report

Background
Staff in Public Works, Water & Sewer, and Culture Parks & Recreation work together each month on an internal committee called the Capital Projects Committee (CPC) that consists of department heads and division managers that meet and coordinate capital projects. This coordination includes 5 year planning, budget status updates, and coordination of projects to minimize disruption to areas, debriefing on projects, and training. Each quarter, staff assembles a report that details the status of projects.

This year's budget has 89 projects for a total of $153,032,444. No presentation will be given for 3rd Quarter, but attached is a complete listing of all projects along with their status.

Council Direction Requested
None- Informational

Decision Options
None – Informational

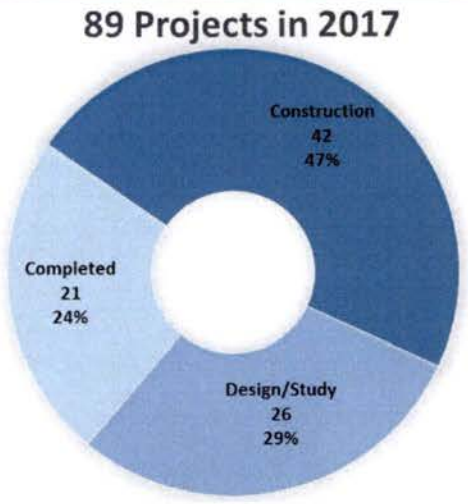
Attachments
3rd Quarter 2017 CIP Report

CITY OF GREELEY, COLORADO
3RD QUARTER 2017 CIP UPDATE

2017 has been another busy year for the City of Greeley with 89 capital improvement projects (CIP) budgeted citywide for a total budget of $153,032,444. The pie chart to the right is a summary of the status of all the projects. A breakdown of projects in each category of the pie chart can be found in Appendix A.

The table below is a summary of the 2017 projects by fund. There is one project in Sewer Construction that has not started yet since development will construct a new sewer line. The City will use the design funds for line oversizing.

Each project's schedule along with a brief update can be found starting on page 2.



FUND	# PROJECTS	# ACTIVE	2017 BUDGET
Fund 301 - Public Improvement	4	4	$ 9,669,190
Fund 304 - Food Tax	20	20	5,718,731
Fund 312 - Transportation Development	5	5	10,542,348
Fund 318 - Quality of Life	14	14	13,309,591
Fund 320 - FASTER	3	3	467,015
Fund 321 - Keep Greeley Moving	8	8	8,337,198
Fund 322 - 2016 City Center	2	2	26,534,711
Fund 402 - Sewer Construction	4	3	6,351,611
Fund 403 - Sewer Capital Replacement	7	7	10,603,168
Fund 405 - Water Construction	1	1	6,861,908
Fund 406 - Water Capital Replacement	13	13	43,737,190
Fund 412 - Stormwater Construction	4	4	8,862,385
Fund 413 - Stormwater Replacement	4	4	2,037,398
Grand Total	**89**	**88**	**$ 153,032,444**

The timing of payments on these projects is monitored in order to optimize short-term financing opportunities. Expenditures by quarter can be found below:

CIP CASH FLOW	
TIME FRAME	EXPENDITURES
Jan-Mar 2017 Actual	6,502,787
Apr-Jun 2017 Actual	21,583,503
Jul-Sep 2017 Actual	25,982,420
Oct-Dec 2017 Estimate	39,415,559
Projected Savings	2,619,249
Future Years*	56,928,926
Total 2017 Budget	**153,032,444**

*Multi year projects that started in 2017

3RD QUARTER 2017 CIP STATUS

Fund Description	Title	Description/Scope	Press Release	Current Year Budget 2017	Status	Construction Completion Date
2016 City Center	11th Avenue & 11th Street Campus - Construction of City Hall Phase I	Construction of a new City Center Ph1 that will replace the displaced city departments that were in the Lincoln Park Annex building that was demolished for the downtown hotel. Phase 1 will consist of Municipal Court, Water & Sewer, IT, GTV8, and Council Chambers and will be nearly 50,000SF.	Installation of the stairs in the stairwells is continuing. The South stair has been completed as much as it can be at this point. The installation of the North stair is currently underway. Installation of the roof beams on the South end of the building is currently underway.	$20,296,720	Construction	11/1/2018
	Fire Station Admin - New Fire Station Construction	New Fire Station #1 at old Safeway lot.	Fire Station #1 was completed, and ribbon cutting was celebrated on August 18th.	$6,237,991	Completed (Punch List Done)	8/18/2017
FASTER	71st Avenue Bridge Over Sheepdraw Design	This project is for the design and right-of-way acquisition for the replacement of the 71st Ave bridge over Sheep Draw, just south of 12th Street. The existing bridge is starting to come apart with holes in the surface and corrosion underneath, and its undersized for flood flows and for the needed street widening to include sidewalks across the bridge. The new bridge will also allow the Sheepdraw Trail to go under the road making for a safer crossing.	Design and construction plans are complete. Right-of-way has not yet been acquired. Bidding and construction of bridge is deferred. Bridge construction will be combined with 71st Avenue Widening and Ashcroft Trunk Sewer improvements. These are planned to start in winter of 2018.	$129,311	Right of Way(ROW)/Land Acquisition	5/31/2018
	Bridge Maintenance	This project is for the on-going maintenance of the City of Greeley's bridges. The city has over 80 bridges that are Greeley's maintenance/replacement responsibility. Maintenance activities include repainting, culvert replacements, guard rail maintenance, structural repairs, signage, and other pavement maintenance treatments on the bridge decks. This also includes the 60+ bridges not inspected by the CDOT Off-System Bridges bi-annual Inspection Program. Future bridge deck repairs include 5th Street and 23rd Avenue, 95th Ave and Poudre River, 11th Ave and Poudre River, and 31st Avenue and 4th Street.	2017 work consists of inspecting minor bridges on bike paths and the #3 ditch with no major work on bridges being done this year. Martian and Martian Engineering of Denver, Colorado was hired to do the inspections. They have completed all but bridges located on the #3 ditch which will be completed in November once the water is drained. First draft of the report is due November to review.	$137,704	Design/Study	11/30/2017

Fund Description	Title	Description/Scope	Press Release	Current Year Budget 2017	Status	Construction Completion Date
FASTER	Turn Lanes on 20th St at Clubhouse Dr & Aims Blvd	A left turn lane addition from the intersection of the western Aims entrance to 59th Ave are needed to relieve congestion and reduce accidents. Preliminary Design will begin in 2017. Design is being funded using FASTER funds with construction being funded with road development fees since new capacity is being added with the turn lanes.	Request for Proposal of alternatives is currently being bid out thru the Purchasing process. Award and Notice to Proceed expected for November. Expected completion date of the Design/Study phase is January 31, 2018. Final report will include preliminary design options, ROW needs and cost estimate.	$200,000	Design/Study	TBD
Food Tax	ADA - Rodarte Building Accessibility into Building	The west entrance at the Rodarte building will be remodeled to provide an accessible route from the main parking lot into the main entrance. The south side emergency egress will be connected to the existing route away from the facility.	This project is in the design stage in order to provide an accessible route to the west entrance of the building which has been determined to be the main entrance of the building. The design stage will be completed by December, 2017. Due to the additional ADA ramp needs and limited 2017 funding, this project will be completed in 2018 when additional funding becomes available.	$151,771	Design/Study	12/29/2017
	ADA - Poudre Trailheads Handicap Access Improvements - 71st, 59th, 25th, 35th Avenues	To improve the accessibly to the Poudre River Trailheads, this project would be to improve accessible parking and routes to the trail. There are several locations that need improvement: 71st Avenue, 59th Avenue, 25th Avenue, 35th Avenue (west side of street), and Island Grove also needs to be redone.	Project to resurface the parking area and provide concrete accessible surface to trailheads is in the design phase. To date, concrete repairs along the irrigation ditch have been repaired.	$134,698	Design/Study	12/31/2017
	ADA - Senior Center Restrooms	This project will remodel the Men's and Women's restrooms on the main floor of the senior center to become ADA Compliant.	Senior Center Restrooms are part of the Rec Center Conference remodel. The restrooms will need to be completed in phases in order to keep restrooms open and available for the staff and seniors during remodel. Construction started in July in conjunction with the rest of the project. Estimated completion date is October 2017.	$150,000	Construction	10/30/2017
	Annual Emergency Facility & Parks Repairs	These emergency repairs are for unplanned repairs to items such as HVAC compressors, roof repairs, larger motors and large water heaters.	Emergency repairs to buildings and park facilities occasionally arise. This program allows staff to make emergency repairs in a timely manner so citizens are not adversely impacted. These projects have been identified so far in 2017. Peak-view Park Playground Signature Bluffs (Red Barn) parking lot Island grove Event Center fire alarm panel will be installed mid- July Funplex Condenser Hail Damage, replacement condensers have be ordered to be installed in July. Ice Haus Exterior Lighting - fixtures have be ordered and should installed in August	$158,082	Construction	12/29/2017

Fund Description	Title	Description/Scope	Press Release	Current Year Budget 2017	Status	Construction Completion Date
Food Tax	Senior Center Exterior Windows & Landscape	Replace window gaskets and windows sills that allow water in during rain storms due to being damaged from the weather.	Although four construction bids stated that old window frames couldn't be used because the windows original to the building were no longer manufactured, we were able to find a contractor that had access to the original parts and was able to install them within budget.	$287,584	Completed (Punch List Done)	9/29/2017
	Roof Repair - Rodarte Main Building Roof Replacement	The 2,900 square foot roof at the Rodarte Building is in poor condition and needs to be replaced. This section is for the original building and roof which was built in 1978.	The original roof was replaced with a rubber roof (EPDM) which has a 25 year warranty.	$103,788	Completed (Punch List Done)	6/2/2017
	Recreation Center Conference Upgrades	Project will replace existing skylights in the hallway on the east hallway between Aux gym and conference room of the facility. These skylights continue to leak during heavy rains causing damage to the interior hallway walls. Numerous repairs have been done over the years with no success in stopping the leaks. In addition, funds will be utilized to upgrade interior finishes in the hallway, Room 101 and the main lobby as well as exterior landscaping improvements.	Conference rooms, pool opening, and reception center have been completed. The sky light, senior center bathrooms, and rec center hallway are currently being constructed.	$560,969	Construction	12/15/2017
	Centennial Park Butch Butler Storage Garage Replacement	Construction of one (approximate) 12x32' garage building to replace three smaller, aging structures	Topographic survey, and geotechnical investigation is under way. Request for proposals for design are anticipated to be issued early November.	$550,000	Design/Study	4/20/2018
	HVAC - Refurbish Roof Top Units at UCCC	This project will refurbish/replace air handler units (AHU) #1 and replace (AHU) #3 and #4 at the Hensel Phelps Theatre in UCCC. These units are used to heat and cool the entire theatre during performances. Numerous repairs have been made over the years, but the frequency of these repairs has recently increased. This is the original equipment and has met its life expectancy of 25 years.	This project is complete. We were able to rebuild rather than replace the RTU units which saved the City over $100,000.	$310,528	Completed (Punch List Done)	9/6/2017

Fund Description	Title	Description/Scope	Press Release	Current Year Budget 2017	Status	Construction Completion Date
Food Tax	Irrigation System Replacement - Pheasant Run Park	Irrigation redesign and replacement at Pheasant Run Park	Project is complete. Despite mid-summer construction timing, the park recovered nicely once the irrigation system was complete.	$159,843	Completed (Punch List Done)	8/31/2017
	Irrigation System Replacement - Anna Gimmestad Park	Irrigation redesign and replacement at Anna Gimmestad 19th Avenue and 31st St Road	Major construction items are complete. Continuing to work with contractor to complete minor punch list items.	$149,863	Completed (Punch List Done)	8/31/2017
	Irrigation System Replacement - Woodbriar Park	Replace irrigation system for 6 acres of park turf.	Design is underway in collaboration with storm water improvement project for the complete redesign of the park. Public engagement process is complete. Design is being finalized for construction and bidding concurrent with selection of construction management team.	$217,955	Design/Study	7/13/2018
	Fuel Site Upgrades	The City has three locations that have underground storage tanks (UST) for gasoline and diesel fuel that have out of date pumps that are very difficult to find replacement parts for. In order to improve the pumps, the tanks must also be brought up to code. These old pumps and tanks are located at Highland Hills Golf Course, Linn Grove Cemetery and Boomerang Golf Course. At all three locations, these UST are 1,000 gallon capacity each and were originally installed between 1992 and 1998. The tanks, pumps, and piping are registered with the Department of Labor and Employment, Division of Oil and Public Safety and fall under the guidelines requiring Class A certification and monitoring. The proposal is to replace the pumps and tanks at the three locations over a three year period. Contingency funds have been included to cover possible soil contamination.	Proposals for the Boomerang Golf Course fuel tanks replacement were received on July 25. Due to budget issues the contract is being awarded for new tank installation only. Street Department crews will remove the existing tanks. Project is scheduled for Fall, 2017 construction. Contract has been signed and materials have been ordered. Construction will start late of October when we receive the equipment for fuel tank.	$129,541	Construction	2/28/2018
	Sanborn Park Walkways	Numerous cracks have developed and potential trip hazards are numerous around the lake. Safety issues are increasing due to deterioration and degradation of asphalt. The walk and bike paths within the park will all be replaced with concrete, which will be more sustainable for the use of the park.	Concrete work is complete at Sanborn Park. Contractor has moved on to work on 20th Street between 35th Ave and 47th Ave. Currently planning for work at Farr Park and Archibeque Park. We will finish work for parks at Butch Butler Field in November. We do not anticipate any more extensions on time however, weather will dictate.	$487,675	Construction	11/30/2017

Fund Description	Title	Description/Scope	Press Release	Current Year Budget 2017	Status	Construction Completion Date
Food Tax	Archibeque Park Shelter/Restroom Replacement	Replace Picnic Pavilion/Shelter	Working to complete project scoping and site planning for the park to combine uses of the existing restroom and the splash park bathhouse. Bidding documents will be developed and put out for bid in late fall.	$415,152	Study Project	12/31/2017
	Highland Hills - Cart Path Replacement	Replace existing asphalt cart paths and replace with concrete paths at Highland Hills GC. Most of cart paths on golf course have eroded away. Replace and extend for 330' the asphalt path along the Tee box on #1. Replace and reroute for 790' along the entire 9th hole. Replace and extend the cart path on #10 from the end of the concrete near the clubhouse to beyond the Forward Tee for 385'. Replace and reroute the cart path on #11 Green for 330' to connect with the Tees on Hole 12. Install a new section of path starting at 12 Green and then replacing the asphalt path past the White Tee on #13. The total distance is 930' for this section. Install a new path to connect #16 Green with #17 Tee Box and the Restroom located on that hole. The total distance for this run is 370'.	Work at Highland Hills Golf Course cart path replacement began on June 7. All paths planned for first phase are completed.	$201,530	Completed (Punch List Done)	8/31/2017
	Bike Path Repairs	This project is for the reconstruction, major and minor maintenance and improvements to the city's asphalt bike and walking paths. These paths provide the walking, riding and running public a safe travelable surface. Future work includes: 20th Street from 35th Ave to 59th Ave 10th Street from 35th Ave to 47th Ave	Construction began with the awarded contractor on June 7 in Highland Hills Golf Course. Contractor will also do the concrete work in Sanborn Park. Location in 2017 is 20th Street from 35th to 59th Ave.	$289,949	Construction	12/31/2017

Fund Description	Title	Description/Scope	Press Release	Current Year Budget 2017	Status	Construction Completion Date
Food Tax	Public Parking Lot Maintenance & Striping	Much like the city streets, the city owned parking lots need maintenance annually. Maintenance treatments can be a minor replacement of an asphalt patch or re-striping or an improvement of an overlay, seal coating, drainage improvement or a minor reconstruction. A full audit of the parking lot system is done each year to determine the most critical needs. 2017 Senior Center Parking Lot. Delay to 2018. Fire station #5. 2018 "A" Street Parking - Overlay and Concrete Drain pans and repair 2019 "A" Street Parking Finish - Overlay and Concrete Drain pans and repair Centennial Pool 2020 Centennial Pool Parking lot 2021 Centennial Pool Parking lot 2022 Highland Golf Course 2022 Highland Golf Course 2021 Centennial Pool Parking lot Highland Golf Course 2022 Highland Golf Course	The City of Greeley maintains 86 parking locations. This year we worked on: 1. Fire Station No. 5 lot by rebuilding the entrance to the east of the Fire Station which is the entrance for fire trucks into the building. Trucks are very heavy, and the asphalt roadway was not able to support the weight. 2. The FunPlex Parking lots were re-striped. 3. One half of the Police Lot was seal coated in 2017 and in 2018 we will complete the other half. 4. A concrete pad for Equipment Maintenance staff was installed by Streets for additional work space for the fire engines. 5. The City Hall parking lot has been added to the scope of work with construction scheduled to start on October 9.	$346,734	Construction	10/27/2017
	35th Avenue & 16th Street Traffic Signal	This is a rebuild of the entire traffic signal. The signal is over 35 years old and has been hit by vehicles numerous times, is structurally unstable, and the signal indicators no longer meet standards. The signal is in need of complete rebuild.	Installation of traffic signals began in September. Work is expected to continue through October.	$259,470	Bidding/Award	9/29/2017
	10th Ave Landscaping from 6th St to 7th St	This project will incorporate improved landscaping and streetscaping along 10th Avenue on the west side from 6th Street to approximately the 7th Street intersection (in front of the UCCC) as well as updated landscaping tied to the Senior Center and Recreation Center. The improvements are also to compliment the new construction of the Lincoln Park Hotel and match pedestrian lighting along this corridor.	A contract was awarded on July 6. Work in advance of overlay work was completed on August 11. Completion of remaining work is expected by the end of September. Work under contract with Mountain Constructors includes stormwater drainage, enhanced pedestrian crosswalks, and sidewalk replacement.	$653,599	Construction	9/29/2017

Fund Description	Title	Description/Scope	Press Release	Current Year Budget 2017	Status	Construction Completion Date
Keep Greeley Moving	Pavement Maintenance	The Pavement Management Program, implemented in 1987, is the key asset management tool for our pavement system, and this budget provides for staff time, consultant assistance, and computer program licensure/maintenance to manage the 371 miles of streets in the City of Greeley. This program allows the City of Greeley to rate the road conditions and then input this information into the management program. This program also allows staff time to maintain the database of the existing street system, evaluate street conditions and provide useful data for planning budget needs, prioritizing, and designing various street maintenance programs. The pavement management program also provides information for required yearly reporting to the State of Colorado (Highway User Trust Fund – HUTF) and also provides information for reporting the GSB34 inventory each year. The HUTF reporting is used to determine our share of HUTF funding.	This year in January we received the Pavement Management update and in late spring of 2017 we completed the upload of update of information from the 2016 pavement management survey. We also hired Ground Engineering to perform non-destructive testing of three roadways being 16th Street from 47th Avenue to 35th, 22nd Street from 35th Avenue to 28th Avenue and 6th Avenue from 18th Street to 22nd Street. Data is being used for road evaluation. Two test programs have taken place this year. One was the use of Kevlar fibers in the asphalt mix. This may allow us to use a smaller thickness of asphalt when paving. Test locations are 22nd Street from 35th Avenue to 28th Avenue and 6th Avenue from 18th Street to 22nd Street. Second was the use of new paving inter-layers. We have learned that the material that we use is being discontinued soon. We installed five different types of materials on 16th Street east of 43rd Avenue in 300 feet sections. Both test programs were donated from the contractors/suppliers for testing and evaluation for the next two years.	$184,011	Design/Study	11/30/2017

Fund Description	Title	Description/Scope	Press Release	Current Year Budget 2017	Status	Construction Completion Date
Keep Greeley Moving	Seal Coat	Two types of seal coat applications are being used in Greeley. Rejuvenating seal coats are used to protect newer asphalt pavements, and chip and slurry seals are used to provide new wearing surfaces and seal deteriorated asphalt pavements, thus, extending the life of a road by five years.	4.4 miles of Rejuvenate Seal Coat has been completed. Chip seal began on August 8th with completion on August 25. The two seal coating programs are complete with a small amount of punch list items for the chip seal. Notable chip seal locations include 10th Avenue from 13th Street to 20th Street and 35th Avenue from 16th Street to 24th Street. Issues with a new striping contractor created problems with traffic flow in various locations. The test sections of road in the Promontory Neighborhood using new Seal Coat products from fourteen different vendors was completed in late October 2016, and was done at almost no cost to the City. Evaluation of the fourteen different types of Seal Coating is on-going, and results are on the Keep Greeley Moving website. The Colorado Publics Journal and CAPA (Colorado Asphalt Producers Association) have published an article about the test section.	$1,006,759	Completed (Punch List Done)	10/31/2017

Fund Description	Title	Description/Scope	Press Release	Current Year Budget 2017	Status	Construction Completion Date
Keep Greeley Moving	Overlay & Striping	The pavement overlay program provides a new pavement surface on existing streets that have deteriorated to a condition that chip sealing is not an acceptable treatment. The overlay process involves many activities including patching ahead of overlay, utility manhole adjustments, traffic signal actuators, and mandated American Disability Act (ADA) access ramp improvements. Most overlay projects include milling off a portion of the existing pavement surface, placement of a paving fabric, and the application of a new asphalt pavement surface. This new asphalt surface is normally two to four inches thick. Collector and arterial streets require new striping with this kind of maintenance treatment.	Completed in 2017 were Cascade Park, Downtown and three major roadways, 1. 10th Avenue from 10th Street to 5th Street, 2. 16th Street from 35th to 47th Avenue and 3. 6th Avenue from 18th to 22nd Street. The City Hall parking lot has been added to the scope of work in the Parking Lot program with construction scheduled to start on October 9 and will be paid with additional 2017 Food Tax revenue. This program is 90% complete.	$4,603,500	Construction	11/22/2017
	Patching	The patching program replaces distressed areas such as, potholes, alligator areas, settlements, utility trenches, and repair areas from other construction work that has compromised the road. This process requires traffic control, removal, and pavement replacement. The patching program is performed by a private contractor with locations city-wide.	The City of Greeley bids out the patching program every three years. Martian Marietta Materials is the current contractor and is in their second year of their three year renewable contract. Patching began on May 8, 2017. Patching ahead of Chip Seal work has been completed. Major areas patched are in front of the Seal Coat and Overlay programs in 2017. Minor patching areas remain for repair work of deteriorated roadways and for city related construction projects including projects for Water, Waste Water, Storm Water, Golf Course and other small locations throughout the city.	$1,072,958	Construction	12/15/2017

Fund Description	Title	Description/Scope	Press Release	Current Year Budget 2017	Status	Construction Completion Date
Keep Greeley Moving	Crack Seal	Our crack seal program fills cracks with flexible asphalt material keeping moisture from getting under the pavement causing damage. This process is being performed by our Street division crews at a competitive price and quality compared to crack fill contractors. Project runs from February to June and September to November.	This year the Street Division will work on 60 streets for a total of 30.0 miles of roadway. Crack seal was completed during the first part of 2017 and was tabled during the warm summer months. The fall/winter program will begin late October and will be completed in December as weather allows.	$460,000	Construction	12/15/2017
	Concrete Repair & Cross Pan Replacement Program	The concrete repair program is for the replacement of deteriorated sidewalks, curbs and gutters, alley entrances, cross pans at intersections, etc. throughout the city. A priority is for areas planned for future overlay/reconstruction street projects and at areas that pose health and safety problems. Curb & gutter that hold water are given special consideration to remove the threat of damage to sub-base materials that can cause deterioration to street pavement sections due to loss of adequate structural support.	09/27/2017 Concrete repairs are wrapping up for the year. Work has been completed in Cascade Park and downtown neighborhoods. Repairs are currently being done at fire station #5 and then we will move on to miscellaneous requests from citizens throughout the city.	$314,269	Construction	12/1/2017
	ADA - Access Ramps/Sidewalks	This project constructs handicap access ramps and adjoining sidewalks at various locations. High priority areas include older areas east of 23rd Avenue, while the rest is to accommodate additional locations as citizens make requests.	ADA improvements have taken place throughout Greeley. Notably intersections and sidewalk improvements in the downtown area. Intersection improvements are underway in the rolling hills neighborhood currently. A time extension will be given to due to the extended amount of work in the project.	$218,701	Construction	12/1/2017
	Neighborhood Concrete Program	With the passing of the 0.65% sales tax increase, the beginning of 2016 was used to address citizens requests to repair deteriorated sidewalks throughout the city.	Planned concrete repairs are complete in the Downtown neighborhood as well as Cascade Park. Our next neighborhood to begin work will be Rolling Hills. We are also completing small miscellaneous requests that create a safety hazard throughout the City.	$477,000	Construction	12/1/2017

Fund Description	Title	Description/Scope	Press Release	Current Year Budget 2017	Status	Construction Completion Date
Public Improvement	Greeley Evans Transit Transfer Center	Construct a new regional transportation transfer facility on city owned property at the southwest corner of 11th Avenue and 1st Street. The city owned site has been cleared of any existing surface improvements. Adjacent street and pedestrian improvements are necessary, as is potential future "offsite" parking. City of Greeley owns some property just to the north of 1st Street that can be utilized for some parking, additional property should be considered. Utility needs are stormwater improvements and lighting. Water and sewer are available. Conformance to COG development standards, and Mercado District standards as well, regarding landscaping, lighting and architecture will be required.	Construction has been completed and the facility use began on August 21. Final documentation processing with CDOT is underway.	$3,503,814	Construction	8/18/2017
	10th Street Access Improvements Phase 2	This project is a federally funded project to improve pedestrian and vehicular access along 10th Street from 23rd Avenue to 35th Avenue. This is a multi-year project and uses federal funds to complete various phases of the work. Combining access points, eliminating others, providing sidewalks where there are none, pedestrian access ramps and landscaping improvements are also included.	The final design is ongoing and the ROW plans have been approved by CDOT. ROW appraisal and acquisition has begun. Acquisition of ROW is expected to continue into 2018 with construction in 2019 following the availability of funds from CDOT.	$4,115,608	Right of Way(ROW)/Land Acquisition	9/30/2019

Fund Description	Title	Description/Scope	Press Release	Current Year Budget 2017	Status	Construction Completion Date
Public Improvement	919 7th Street - Demolition of the Lincoln Park Annex & Parking Lot	GTV8 Access Channel equipment and offices accelerated move out of Lincoln Park Annex to a temporary location in the Greeley Ice Haus: Due to the Lincoln Park Annex planned demolition this spring, we need to move the City of Greeley Government Access Channel (GTV8) equipment and offices to a temporary location. This request funds the construction (interior finishes, HVAC, electrical and lighting upgrades) at the temporary location, and the disconnect and re-connect of the television, studio and office equipment. A portion of this expense includes the purchase of new high efficiency LED studio television lighting, which can be moved to the new City Center campus when that location is ready for the studio. This request includes replacement of a nearly 10 year old piece of playback/broadcast equipment, which has been malfunctioning. In addition, this request will cover the cost of a fiber line from the temporary space in the Ice Haus to an interconnect point on Comcast's customer distribution system; Comcast will install this fiber line. A breakdown of the costs associated with this appropriation are noted as follows: $30,000 in Construction Costs $15,000 in Architect Fees $6,000 for Comcast to move fiber $40,000 to move all equipment $5,000 to install cable at School District 6 $35,000 to move network and phone systems $15,000 to install LED lighting $11,000 to replace old broadcast equipment	Parking lot has been completed in conjunction with the completion of hotel construction.	$1,508,268	Completed (Punch List Done)	8/31/2017
	New Sidewalk Installation	Work in general consists of removal and replacement of an estimated 2000 linear feet of curb and gutter and approximately 2900 square yards of concrete including sidewalks, access ramps, cross pans, alley aprons, etc. This project is located in Central Greeley within the Maplewood Subdivision, with repairs on 11th Street; 19th Ave; 18th Ave, all between 23rd Ave and 14th Ave. Locations are subject to change.	Contractor began work at 14th Ave on 11th Street. working West from the east contractor is at roughly 18th Ave with repairs complete on the north and south side of 11th Street.	$541,500	Construction	11/30/2017

Fund Description	Title	Description/Scope	Press Release	Current Year Budget 2017	Status	Construction Completion Date
Quality of Life	Frontier Academy Athletic Facilities	This funding opportunity is to partner with and further develop principled relationships with Frontier Academy by contributing to the development of new athletic facilities at the Frontier Academy campus (two soccer fields). New athletic facilities are currently under construction and this funding would upgrade the planned soccer field from irrigated sod to synthetic turf and add a second practice field, also in synthetic turf. An agreement was approved by City Council on March 7th. The agreement allows public access to these improvements as community assets. Similar in scope to funding projects with Weld School District 6, the funds, when approved and finalized in the agreement, will be managed by Frontier as the owner of the project with oversight by City of Greeley staff in CPRD. Funds are available within the Quality of Life program funding and do not detract from any existing or programmed/planned projects. The 2016 PTOL Master Plan identified a specific need for access to additional athletic/practice fields as well as outdoor tracks. The Frontier project would also allow public access to a pre-planned outdoor track. All public access will be during non-operational or scheduled activities at the campus.	Construction of the Sports Complex is progressing with an anticipated completion of the end of October. Funds from the City of Greeley were paid to Frontier Academy, who is the owner and is managing the project.	$1,700,000	Bidding/Award	10/27/2017
	District 6 - Greeley West HS Multi-Purpose Field/Track/Restroom	This project will allow for a collaborative relationship with District 6 Greeley West High School to create a multi-purpose field/track and restroom. Design will focus on tying the adjacent Greeley West Park to the proposed improvements.	The overall project funding is being utilized for several projects within District 6. Construction has commenced at: 1) Greeley West High School with six new post-tension tennis courts, a new synthetic running track, new synthetic turf football field, bleacher seating for 500, concrete ADA accessible walkways, and public entry; 2) Heath Middle School with a new synthetic running track and a new synthetic turf football field, and ; 3) Greeley Central high School with six new post-tension tennis courts. Funds from the City were issued to District 6 who will own/manage the projects. Completion of all sites is anticipated by the end of October, 2017.	$4,495,000	Design/Study	10/27/2017

Fund Description	Title	Description/Scope	Press Release	Current Year Budget 2017	Status	Construction Completion Date
Quality of Life	71st Avenue & Sheepdraw Neighborhood Park- South of 10th Street West of 71st Avenue	This project allows for design and construction of a neighborhood park (6-15 acres) in the proximate location: south of 10th Street, west of 71st Avenue, in accordance with the Parks and Trails Master Plan. This development will provide nearby recreation opportunities within walking distance (1/2 mile) of residential areas. Scope will be determined in the future based on neighborhood and site specific needs but would typically include, at minimum, a play space area and landscaping. This project is intended to be phased, with acquisition of land to occur first followed by future design and construction.	Continuing to negotiate purchase agreement with relevant property owner. Construction date undetermined.	$850,115	Right of Way(ROW)/Land Acquisition	12/29/2017
	Youth Sports Complex	This project will provide funding to address identified needs and a re-visited and renewed Master Plan to be completed in 2016 with projected construction in 2017. Funding will address the fourplex/practice fields on the north end of the site with identified needs, parking improvements, softball needs, and other needs. In order for this park to continue to be a premier ball facility and reach its goals of attracting Triple Crown tournaments and play, improvements and expansion will be made.	Bids opened on June 7, 2017. Construction will begin in July with storm water pipe installation in 65th Ave. Remaining construction of parking lot and viewing areas will be started in August to avoid interference with game schedules. Completion expected in November.	$3,066,499	Construction	11/30/2017
	Glenmere - Lighting Around Park	This project will provide for the removal and undergrounding of existing overhead electrical wiring within Glenmere Park and will provide new street lights and pedestrian fixtures.	Project is complete. All lights are installed and running.	$492,234	Completed (Punch List Done)	6/1/2017
	Westmoor - Shelter/Restroom replacement	This line item will allow for the demolition and design build of a prefabricated restroom with two family restroom facilities. Building will include a chase room large enough for secure storage so on site residential shed can be eliminated. A 20x24 pre-manufactured shelter unattached but proximate will be included in the project. ADA accessibility to the playground and main park facilities will be included as a part of this work.	All work is complete to include site reclamation.	$195,436	Completed (Punch List Done)	2/24/2017

Fund Description	Title	Description/Scope	Press Release	Current Year Budget 2017	Status	Construction Completion Date
Quality of Life	Woodbriar - Shelter/Restroom Replacement	This project will allow for the demolition and design build of a pre-fabricated restroom and separate but proximate shelter facility. The new restroom facility will include an enclosed and secure storage area to allow for the removal of the on-site storage shed.	Design is underway in collaboration with storm water improvement project for the complete redesign of the park. Public engagement process is complete. Design is being finalized for construction and bidding concurrent with selection of construction management team.	$330,000	Design/Study	7/6/2018
	Playground Replacement - Aven's Village at IG playground	Island Grove Playground has been removed due to immediate safety concerns. Park staff has identified the need to replace the playground with a universally accessible playground in order to meet the needs of children and families of all abilities within our community.	Water line for mister tents has been bored in place. Working with water department for the installation of the water tap. Fencing alignment has been delayed for final design of field 5 expansion. Fencing for the playgrounds will tie into new fencing associated with the ball field.	$280,304	Construction	12/31/2017
	Playground Replacement - Lincoln Park	Replacement of playground and safety surfacing at Lincoln Park with a new play structure thematically tied to the UCCC and the downtown area.	Playground replacement is complete and open for use. Continue to work with contractor to resolve punch list items associated with drainage and safety surfacing.	$300,000	Completed (Punch List Done)	7/1/2017
	Playground Replacement - Glenmere Park	This project will replace the existing playground at Glenmere Park. The existing playground does not meet current safety standards. Staff will remove the existing playground. Input for playground design will be collected through public engagement. Vendor will supply playground design, subsurface drainage design, playground installation, drainage installation and safety surfacing installation.	Park staff began playground removal 8/23/2017 and installer began installation of new equipment on 9/5/2017 and was completed the beginning of October. Concrete work for new bench pads and ADA picnic tables is complete. Tables and benches have been installed.	$225,000	Construction	10/27/2017
	Playground Replacement - Woodbriar Park	This project will replace the existing playground at Woodbriar Park. The existing playground does not meet current safety standards. Staff will remove the existing playground. Input for playground design will be collected through public engagement. Vendor will supply playground design, subsurface drainage design, playground installation, drainage installation and safety surfacing installation.	Design is underway in collaboration with storm water improvement project for the complete redesign of the park. Public engagement process is complete. Design is being finalized for construction and bidding concurrent with selection of construction management team.	$225,000	Design/Study	5/5/2018

Fund Description	Title	Description/Scope	Press Release	Current Year Budget 2017	Status	Construction Completion Date
Quality of Life	Poudre River Corridor Property	This project is for the purchase of several properties and natural areas along the Poudre River Corridor. This is Greeley's support for the most recent project towards completion of the Poudre River Corridor & Regional Trail Initiative. The City received a grant from Great Outdoors of Colorado to assist with the purchase of these properties; Quality of Life funds of up to $1,243,750 will be used for the grant match.	Acquisition of property is mostly complete and staff have completed management plans and Conservation Easements on each parcel. Partner organizations are established (Town of Windsor and Larimer County) to oversee the CE's. Grant close-out is in process for reimbursement of funds from GOCO. Funds are still needed in 2017 to support miscellaneous costs associated with the US Army Corps of Engineers Poudre Corridor Project (land management and re-vegetation) including land appraisals, surveying, recording exemptions with Weld County, easements, miscellaneous acquisition expenses, a railroad crossing, and matching funds for recreational improvements as required in the COE Project Agreement, originally approved by Council.	$496,000	Design/Study	12/31/2017
	Sheepdraw Trail Boomerang Ranch Area	This project is for the construction of approximately 600 linear feet of the Sheep Draw trail, including a pedestrian bridge. It is located starting at the utility easement parallel to 83rd Avenue and connecting to the pedestrian underpass currently in place at 83rd Avenue and the Sheep Draw. Construction will involve a water crossing on Sheep Draw to align with the underpass on the south side of the draw.	Acquisition of property west of 83rd is nearly complete. This purchase will allow for adequate room for design of a ramped connection to the underpass of 83rd Avenue. Requests for proposals to connect the trail is nearly complete.	$404,003	Right of Way(ROW)/Land Acquisition	7/1/2018
	Sheep Draw Trail Triple Creek Area	Construction of approximately 1,475 linear feet of a Sheepdraw Trail, including a pedestrian bridge. This section connects to the section at the East property line of the City of Greeley Triple Creek Open Space, and transverses the Open Space approximately paralleling the Sheepdraw channel connecting to the section described by Control Number 517. See Trails Master Plan; map #5.	Drexell Barrell has been hired to complete the trail design and construction bid package for the project. Design is approximately 50 percent complete with anticipated completion in October of 2017.	$250,000	Design/Study	TBD

Fund Description	Title	Description/Scope	Press Release	Current Year Budget 2017	Status	Construction Completion Date
Sewer Capital Replacement	Lift Station Rehabilitation	This program rehabs existing lift stations based on the facilities condition and updates pumping systems to meet current State requirements. The lift station master plan is used to prioritize projects.	The replacement of Lift Station 4 and 17 was completed in the summer of 2016. It was originally anticipated that Lift Station 15 was to be replaced in early 2017. However, recent development inquiries have delayed the improvements to the lift station, to evaluate impacts the proposed development will have on future sewer lift station needs in the area. The proposed development would require relocation of the existing lift station. If the development moves forward developer will make the improvements and City will reimburse the developer for a portion of the improvements required to convey existing flows in the basin. Available funds will be utilized for general maintenance by WWC of lift stations, including improving maintenance access to force mains, providing bypass connections, flow measurement on force mains, wet well level measurement, maintenance supplies, and backup submersible pumps.	$443,971	Completed (Punch List Done)	10/31/2017
	59th Avenue & F Street Sewer Repair	The 8 inch sewer line connecting at 59th Avenue and F Street has broken under the Sheepdraw drainage and needs to be repaired. This line is the only service line available to future residents west of Sheepdraw drainage at F street.	The sewer line connecting at 59th Avenue and F Street was reconstructed this spring. Construction is completed with re-seeding of the ground surface in September. The project will be closed out upon the receipt of the as-built drawings from the Contractor.	$321,500	Completed (Punch List Done)	5/14/2017
	WPCF Master Plan Update	The Water Pollution Control Facility (WPCF) Master Plan is updated every five years. The last Master Plan focused on the biosolids systems and was completed in 2012. This update will focus on primary treatment processes and biological nutrient removal. The updating process will also incorporate the necessary changes for the planning, prioritization of work, and budgeting of future plant projects.	Carollo Engineers was selected as the consultant for the project with the study commencing with a project kickoff meeting on September 18, 2017. Phase I of the Master Plan will focus on the basis of planning and tool development, phase 2 will include needs and alternatives analysis, and the final phase is the implementation and documentation of the Master Plan. The anticipated completion date is September 28, 2018.	$540,300	Design/Study	TBD

Fund Description	Title	Description/Scope	Press Release	Current Year Budget 2017	Status	Construction Completion Date
Sewer Capital Replacement	Sewer Collection System Rehabilitation	This is an ongoing program to physically replace undersized lines in the sewer collection system. The City typically replaces two to three blocks of line each year, focusing on the worst problem areas. The budget has been consolidated with Manhole Rehabilitation which includes rehabilitation of various manholes with severe corrosion issues using cementitious materials . The manhole rehabilitation scope has been reduced because all brick manholes to be lined have been coated. As inspections are performed and manholes requiring coating are identified they will be added to a list until there are enough manholes to justify mobilizing a contractor.	Two other projects identified to be completed this year are, the 1300 block of 17th Street and the 1300 block of 19th Street. Projects include the replacement of an existing 4" sewer main and provide stubs for future connection to existing compound sanitary sewer taps. Due to current WWC staffing these projects have been delayed until the beginning of next year using 2018 funding.	$465,262	Construction	5/11/2018
	Trenchless Main and Collector Rehabilitation	This annual program renews about 1% of the sewer system using cured-in-place pipe. The program focuses on the sewers in the worst condition as identified by the City's TV inspection and by maintenance records.	The 2016 and 2017 CIPP project were completed in April 2017.	$929,331	Completed (Punch List Done)	4/14/2017
	Water Pollution Control Facility Solids Processing Improvements	This biosolids capital replacement project includes the replacement of two primary digester covers, mixing systems for the primary digesters, boiler heating system for the plant, sludge thickening equipment, and the conversion of the sludge storage tank to a third primary digester.	The project was bid out in August of 2016 with PCL Construction, Inc. being awarded the bid for $6,235,834. Construction has started and is anticipated to be completed by May 2018. Project is currently on schedule and within budget.	$7,487,791	Construction	5/29/2018
	General Rehabilitation Projects	This is an annual program that includes a variety of replacement and rehabilitation projects for all types of equipment and infrastructure at the WPCF.	This project comprises of repair and replacement equipment requirements at the WPCF. Approximately 70% of all planned rehab projects for 2017 have been completed including a blower evaluation study to determine the best path forward for blowers with recurring maintenance issues.	$415,013	Construction	12/29/2017

Fund Description	Title	Description/Scope	Press Release	Current Year Budget 2017	Status	Construction Completion Date
Sewer Construction	North Greeley Sewer Phase 2A	Construction of 7400 LF of 36" sewer main from 11th Avenue and H Street along the Poudre River to the East Greeley Interceptor. Project consists of 3 river crossings and bored crossings of 8th Avenue, Union Pacific Railroad, and 6th Avenue. Approximately 1300lf of Phase IIA will be constructing in 2017. The remainder is planned to be constructed in 2023 depending on development need. The 2022 scope includes re-permitting the project and revising the bid documents to address scope revisions.	BT Construction is scheduled to mobilize and construct the most difficult aspects of the project in September and completed early in 2018. The scope includes the bored crossing of 8th Avenue (CDOT ROW) and Union Pacific Railroad Right of Way, and the open cut river crossings of the Poudre River and Eaton Draw.	$2,767,581	Construction	1/8/2018
	Aschroft Draw Sewer Phase I	The project will provide a gravity sanitary sewer service solution to the Ashcroft Basin that is located south of Highway 34 and between 95th Avenue and 65th Avenue. The initial phase of this project will consist of 3,600 feet of gravity sewer along 71st Avenue, with a temporary tie in to an existing Homestead Heights subdivision (22nd Street and 71 Avenue).	The bore across Highway 34 has been completed. The pipe contractor will remobilize to construct the remaining sewer in the middle of October. Completion of the remaining sewer will require closure of northbound 71st Avenue for an additional 2 weeks. The project will be completed well in advance of the proposed development connecting to the sewer main.	$2,959,030	Construction	11/27/2017
	Poudre Trunk Phase 2	Design and construct 6,200 feet of 27 inch sewer trunk main along the Poudre River from 83rd Avenue west to 95th Avenue and 4,300 of 18 inch sewer trunk main in 95th Avenue south to 4th Street. This trunk line would serve developments north of 10th street and west of 83rd avenue. This project scheduled for design in 2017 and construction in 2020. Includes Ditch crossing, traffic control 83rd Avenue Crossing 3 transmission lines, Ground water assumed in WCR 62. Design planned for 2017.	Design and construct 6,200 feet of 27 inch sewer trunk main along the Poudre River from 83rd Avenue west to 95th Avenue and 4,300 of 18 inch sewer trunk main in 95th Avenue south to 4th Street. This trunk line would serve developments north of 10th street and west of 83rd avenue. This project scheduled for design in 2017. Construction of this trunk line is dependent on future growth and is not anticipated to be constructed once design is complete.	$420,000	Study Project	1/0/1900
	83rd Ave Sewer Project	This project will install 5600 linear feet of 18 inch sewer pipe in 83rd avenue from Poudre River Road to a point that is approximately 1/4 mile north of 10th Street. The main will provide sewer service for future developments north of 10th Street. Presently there is no method of transporting sewer flows north to the Poudre Trunk line. A developer is looking to construct the sewer line. The funds are intended for reimbursement to the developer for material oversizing upon completion of the project.	A proposed development is currently preparing final construction documents for the 83rd Avenue sewer line and the City will reimburse the developer material costs once constructed. Planning to utilize existing design funds for reimbursement of material costs.	$205,000	Study Project	TBD

Fund Description	Title	Description/Scope	Press Release	Current Year Budget 2017	Status	Construction Completion Date
Stormwater Construction	Poudre River Flood Reduction Feasibility Study - East Greeley	This project is intended to produce a comprehensive Poudre River Flood Mitigation Master Plan document for the following river reaches: Greeley Urban Reach: Specifically from the Ogilvy Ditch head structure (1,400-feet downstream from Ash Avenue) and proceeding upstream to 21st Avenue; approximately 17,600-feet along the Poudre River. East 8th Street Flow Split: Specifically from the flow split off the main channel at US Highway 85 then proceeding east (downstream) along 8th Street until the flow split returns to the main river channel, approximately 7,000 – 8,000-feet along E. 8th Street. This project should produce a Master Plan along the Poudre River to guide river maintenance, reduce flood losses, and potentially remove properties from the FEMA 100-yr floodplain. The Master Plan document will be used by the City to guide a river channel maintenance program, identify and prioritize flood mitigation projects, provide scientific basis for granting opportunities (Federal, State, and Other) to fund capital projects, and facilitate the refinement of the effective FEMA river model along the study reach. This plan shall be feasible, implementable, and provide a foundation for pursuing grant funding opportunities.	Baseline conditions of flooding have been identified and possible alternative solutions are being evaluated for inclusion in the final plan. The final plan will be published by the end of 2017.	$180,890	Design/Study	3/31/2017
	27th Avenue Storm Drain Improvements 17th Street to Poudre River	Design and construct new storm lines in the 28th Ave Drainage Basin. Next steps are improvements to the overflow channel north of the Clarkson Spillway. Future phases include other collection, conveyance and storage facilities yet to be designed. (See Woodbriar, No. 3 Crossing and Basin Conceptual Design Update for other related projects.)	Design of the Clarkson Outfall Channel is underway. Construction is expected to be out to bid in the 4th quarter with construction starting by the end of the year.	$6,706,089	Design/Study	5/22/2018

Fund Description	Title	Description/Scope	Press Release	Current Year Budget 2017	Status	Construction Completion Date
Stormwater Construction	Sunrise Neighborhood Drainage Improvements	Repair and replacement of storm drains, inlets and culverts in the Sunrise Neighborhood as necessary. Replace failing and undersized storm drain system with a new system designed to meet current storm drainage criteria.	9th Street Outfall construction is complete. Future projects will include 6th Street design after Atmos' work in the streets is completed, and Engineering receives additional funding for corridor improvements on 6th Ave.	$1,525,000	Completed (Punch List Done)	8/25/2017
	Westmoor West Improvement Project	The Westmoor West Stormwater Improvement project (located north of Allen Park near 47th Av Ct and 6th St.) is needed to remediate flooding between homes in this area and ensure that 47th Ave is passable for emergency vehicles in a flash flood event. Currently the drainage from approximately 55 acres of residential properties is routed to a system consisting of only two eighteen-inch pipes and two inlets. During the large rain events of the summer of 2014, it was discovered that the current system is drastically undersized, and the drainage floods the properties at the intersection of 47th Ave Ct and 6th St. Discussions with the property owners indicate that flooding is a frequent occurrence, and the water doesn't currently have an adequate way of getting from 47th Ave Ct to the drainage channel on the east side of 47th Ave.	This project reduced structure flooding in the area of 47th Avenue and 6th Street and repaired damage to Dove Creek. Construction completed on time and under budget.	$450,406	Completed (Punch List Done)	6/19/2017
Stormwater Replacement	4th Ave & 31st St Box Culvert Replacement	This project will replace two aging corrugated metal pipe culverts that carry the State Farm lateral under 4th Avenue just north of 31st Street. The culverts are in poor condition and need to be replaced in order to ensure their function and protect the public's health, safety, and property.	Notice to Proceed issued 09/18/17. Contractor has been verifying locations of utilities (potholes), and clearing and grubbing the channel of the State Farm lateral. Contractor began installation of 10" sanitary sewer main relocation on 31st St on 09/25/17 and is expected to complete this work by 10/02/17. Demo of existing twin culverts and pile driving for bridge foundation will follow.	$924,912	Construction	1/15/2018

Fund Description	Title	Description/Scope	Press Release	Current Year Budget 2017	Status	Construction Completion Date
Stormwater Replacement	Other Drainage System Repairs (System Mains, Inlets, and Culverts)	This program consists of miscellaneous repairs of stormwater piping, inlets and manholes throughout the City of Greeley. In 2017 this project consists of the following sub-projects: - Storm Drainage System Repairs (SDSR - Support to Keep Greeley Moving) - Trenchless Repairs (No-dig pipeline repairs) - 9th Avenue and 6th Street Drainage (Repair and replacement of intersection drainage infrastructure) - 16th Street Repairs (Repair and replacement of storm drainage infrastructure along 16th St. between 35th and 47th Avenues) - Storm Drainage Damage Repairs (Repair of drainage infrastructure damaged in flooding events or by traffic accidents)	This is an annual program to repair and replace aging or damaged storm drainage infrastructure throughout the City. Repairs to damage identified for 2017 are complete. Design of repairs under the 2018 program are underway.	$380,418	Design/Study	12/30/2017
	Annual Neighborhood Improvements	This project consists of miscellaneous upgrades of stormwater piping, inlets and manholes in various neighborhoods in Greeley. Specific improvements cannot be listed at this time; they are found through the ongoing storm sewer inspection program and the various Comprehensive Storm Drainage Master Plans. Defects that are found are evaluated and prioritized for repair. Construction is funded either through this program or through a named capital project.	Projects constructed in 2017 include the 23rd Ave Stormwater Replacement, which replaced a pipe under 23rd Ave that had previously caused a sinkhole.	$237,068	Completed (Punch List Done)	1/0/1900
	College Green Pipe Replacement	Replacement of 31-year old metal pipe, bedding and associated landscaping. Landscaping to be water efficient in conjunction with the Water and Sewer Department WETT (Water Efficiency Tactical Team) program.	Pipe replacement was delayed by weather in May, but is now complete. Landscaping was completed July 21, 2017.	$495,000	Completed (Punch List Done)	7/21/2017

Fund Description	Title	Description/Scope	Press Release	Current Year Budget 2017	Status	Construction Completion Date
Transportation Development	71st Ave: Bridge/Road Widening from 12th to 22nd St	This project will replace the bridge at Sheep Draw and then widen 71st Avenue between 12th and 22nd Street. This portion of 71st Avenue needs to be improved to minor arterial standards. Completion of this project will be phased over three years (2016-2018) to allow final design and right of way acquisition the first year, the Sheep Draw bridge replacement the second year, and roadway construction the third year. This road will have one travel lane in each direction and a center turn lane. Sidewalks and bike lanes will also be constructed and connect to the Sheep Draw trail under the 71st Ave bridge.	Project design by Muller Engineering is nearing completion and is expected in November. Draft Final Plans have been reviewed by utilities and City staff. We have met with property owners and developed plans for driveway modifications and retaining walls. Project bidding and construction will be combined with Sheepdraw Bridge and Ashcroft Sanitary Sewer Trunk. Construction is planned to start late winter 2018. Right-of-way acquisition and appraisal work began in May. Offers will be made for an additional 10' per four lane arterial standard as requested by City Council.	$3,363,424	Design/Study	11/15/2018
	65th Ave/34 Bypass - Frontage Rd Relocation and North 65th Ave road widening	This project is to relieve the congestion and safety concerns due to the close location of the frontage road to the signal at 65th Avenue and Highway 34 Bypass. Design will include widening 65th Ave on the north leg of the intersection approximately 500 feet to improve traffic flow onto Highway 34 and to the south and with realignment of the frontage road to remove the direct impact at the traffic signal.	Preliminary plan on hold. Meeting was held with affected neighbors with a preliminary plan with a bypass road on the west side. With the 34 Bypass PEL study underway the decision has been made to delay this project to 2019 construction while continuing design work. Further discussions with both the immediately affected property owners and the Westridge neighborhood will be scheduled. 20th St from 83rd to 86th Ave will move to 2018 construction as a result of this project shift.	$458,000	Design/Study	8/30/2019
	20th Street: 71st to 86th Avenue (Design and right of way)	The design and right of way acquisition of street improvements for 20th Street from 71st to 86th Avenue to arterial standards. This is currently a two-lane county road section which needs to be upgraded to a four lane arterial roadway with medians and turn lanes. The scope includes final design and construction documents for the project from 71st to 74th Avenue in advance of the remaining segments. Right of way needed from Xcel from 83rd to 86th Avenue.	Final design from 83rd Ave to 86th Ave is proceeding along with right-of-way dedication and transmission line relocation with Xcel. Construction moved from 2019 to 2018 as a result of delaying 65th Ave Frontage Rd relocation project.	$156,571	Design/Study	9/28/2018

Fund Description	Title	Description/Scope	Press Release	Current Year Budget 2017	Status	Construction Completion Date
Transportation Development	65th Avenue: 29th Street to City of Evans city limits (Design and construction)	This project will widen 65th Avenue from 29th to 37th Street to arterial four lane standards. Improvements will include curb, gutter, sidewalk, lighting, bike lanes and medians and a traffic signal at 29th Street. This is a CDOT grant project that is administered through the Metropolitan Planning Organization (MPO).	Project construction has been completed. Project close out with CDOT is underway. City of Evans began their portion of the project on June 26 and will complete construction in November.	$5,626,353	Completed (Punch List Done)	8/14/2017
	20th Street Phase II: 74th to 83rd Avenues (Construction)	This project is for the improvement to four lane arterial standards for 20th Street from 74th to 83rd Avenue. This is currently a two-lane county road section with poor pavement quality which needs to be repaired and upgraded to a four lane arterial roadway from 71st to 83rd Avenue with medians and turn lanes. Design was completed for the entire stretch from 71st to 86th Avenue. Construction will be completed in phases.	Landscaping and irrigation installation are complete. Advertising for retainage release and final payment to proceed. Construction has been completed including landscaping and irrigation	$938,000	Construction	8/11/2017
Water Capital Replacement	Bellvue Road & Bridge Realignment	This project will replace the existing bridge over the Pleasant Valley & Lake Canal and adjust the alignment of the access road into the Bellvue Water Treatment Plant. The project will replace the existing bridge over the Pleasant Valley & Lake Canal with a 14' wide x 100' long free span bridge and new abutments, construct 20' wide by 500' long access road between existing roadway segments. The road alignment changes will also require new gates and access control to provide more control of access into the plant.	The engineering design of the bridge and road realignment was completed in the spring of 2017 with construction beginning on August 1, 2017. The improvements and road grading will be completed in mid October with paving to follow. The new bridge is schedule to arrive on site in November with construction finalizing in January, 2018.	$941,431	Construction	1/31/2018
	Bellvue Needs Assessment Projects	This project encapsulates all of the rehabilitation work for Bellvue Water Treatment Plant outlined in the water treatment Needs Assessment. The most significant portion of the project dollars will be the replacement 21 mgd of filters at Bellvue.	The design of the Bellvue WTP improvements is 60% complete in September 2017. The CMAR, Hydro Construction, is planning to provide a Guarantee Maximum Price (GMP) based on the 60% design plans and start construction in November of 2017. The CMAR is under contract currently for early work packages in 2017 that includes new caustic storage tanks. Construction of the planned improvements will extend into 2020.	$23,172,000	Design/Study	3/1/2019

Fund Description	Title	Description/Scope	Press Release	Current Year Budget 2017	Status	Construction Completion Date
Water Capital Replacement	Bellvue Water Treatment Plant General Rehabilitation	This is an annual project for the rehabilitation of buildings, heating/ventilating/air conditioning (HVAC) systems, pumps and motors, electrical replacements, chemical storage & metering, valves, and compressors. For '18: 8202 - rebuild residuals recovery, return flow, & house service pumps, asphalt repair; '18 to '21: 8244 includes 3 VFD drives on EQ basin mixers, and volumetric chemical feeders and replacing a backwash supply pump.	This is an annual project for the rehabilitation of Bellvue WTP infrastructure and equipment. Projects will be addressed as they arise. To date, a 2nd backwash return pump has been purchased, both house water supply pumps have been replaced, and one of the plant air compressors and driers has been replaced. One of the backwash waste pumps will be rebuilt after the high demand season.	$389,500	Construction	12/29/2017
	Hourglass Outlet Gates and Comanche Outlet Rehab	The consultant engineer recommended no remedial work was required for Hourglass outlet at this time. The concrete surface of Comanche's main outlet has eroded down to the reinforcing steel and additional erosion sites along the outlet pipe need to be restored to comply with State Engineer's Office-Dam Safety Branch requirements.	A cured in place pipe (CIPP) rehabilitation was designed and bids were opened in November 2016. Construction is starting on October 2, 2017, after the reservoir is drained. The contractor should be finished by October 15th, 2017.	$552,663	Construction	11/30/2017
	Boyd Water Treatment Plant - General Rehabilitation	This project consists of replacing chemical feed pumps, high service pump overhauls, electrical switchgear components, grounds rehabilitation, and other mechanical items. Account 8202 includes $45,000 for road rehab.-'18, 800 Hp high service motor rebuild @ $25k/year-'17 to '20, $80k for Boyd Lake Raw Water Pump rehab, $250k for chemical line replacement in 2018; $300k for 36" finished water valve replacement in 2019. 2018 Capital includes a 200 Hp motor & high service pump.	This project addresses rehabilitation needs at Boyd Lake WTP. Two of the high service pump 800 Hp motors and two of the Boyd Lake raw water pumps & motors were rebuilt and installed prior to the operating season. A main circuit breaker for the Boyd Lake pump station has been purchased and a motor starter for one of the pumps will be replaced. Crack sealing of all asphalt surfaces as been accomplished.	$470,441	Construction	12/29/2017
	Cache la Poudre River Turnout Rehabilitation	The existing concrete structure is over 80 years old and is in need of maintenance in order to ensure its continued functionality. This project will address maintenance needs at the Bellvue WTP Intake Structure including replacing gates; improving maintenance access to the sediment chamber; and replacing valves and trash racks.	Construction is complete and project close out is underway.	$782,347	Completed (Punch List Done)	3/31/2017

Fund Description	Title	Description/Scope	Press Release	Current Year Budget 2017	Status	Construction Completion Date
Water Capital Replacement	Boyd WTP Needs Assessment Projects	This project encapsulates all of the rehabilitation work for Boyd Water Treatment Plant outlined in the water treatment Needs Assessment. The work performed will replace many dated components within the plant as well as enable Boyd to operate year round.	The design of the Boyd WTP improvements has progressed to 30% Complete, the reminder of the design will be completed in March of 2018 after completion of the Bellvue WTP improvements design. The CMAR, Hydro Construction, is under contract for early work packages in 2017 that includes new chemical lines, providing backup power system, new roof on the High Service Pump Station (completed), and new caustic storage tanks. The remainder of the improvements planned at Boyd WTP will be completed in three phases starting in 2019 and extending into 2021.	$11,907,400	Construction	12/31/2021
	Milton Seaman Bridge Replacement	The project replaces the second segment of Milton Seaman's access bridge over the New Cache La Poudre River and provides access to the Milton Seaman Reservoir. The new bridge will replace the existing south bridge with a 12' x 100' long free span steel bridge placed on new abutments.	The engineering design work was completed in the Spring of 2017 and will start construction in mid October. The bridge replacement is anticipated to be completed in December of 2017.	$741,543	Construction	12/31/2017
	Transmission System Rehabilitation	This project will fund all types of required rehabilitation or replacement of the treated water transmission system. Projects may include the protection of pipe joints, pipe replacement, cathodic protection, lining of pipe, minor upgrades, and repairs to piping for protection prior to impending development. This is an on-going project in part utilizing in-house design and construction.	Pipe rehabilitation is completed as projects are identified. For 2017, CDOT is rebuilding HWY 287 west of Fort Collins where a Greeley 27" concrete pipeline is located. A 3600' section of 80 year old pipeline will be replaced as a part of this project. Construction started in April and will extend into 2018 to correspond with CDOT's construction schedule.	$2,359,265	Construction	9/30/2017

Fund Description	Title	Description/Scope	Press Release	Current Year Budget 2017	Status	Construction Completion Date
Water Capital Replacement	Boyd WTP Plant #2 Demolition	Demolition of the decommissioned water treatment plant that was constructed in 1967 and reclamation of the grounds.	Asbestos was found in the block filler for all the walls, floor tile, pipe fittings, and window and door caulking. Weecycle Environmental Services has developed a scope of work for the asbestos abatement by State approved contractors. A Request for Proposals for the abatement and demolition was completed in July with demolition work planned for the fall to obtain the best prices. Abatement and demolition work is scheduled to begin on October 11. The project should be completed by the end of November.	$456,000	Construction	11/30/2017
	Milton Seaman Outlet Works Evaluation	An engineering evaluation of alternatives and preliminary design to replace the original reservoir outlet gates will occur in 2017. Permitting, surveying, & soils investigation in 2018, final design in 2019, construction in 2020.	City is contracted with AECOM for technical services to evaluate the gate conditions and propose alternatives for fixing the leaking gates. The gate inspections are scheduled for October/November and will be followed by the report that will summarize the inspection observation and repair/replacement alternatives.	$347,000	Design/Study	12/31/2020
	Distribution System Model & Master Plan	Engineering Study to determine what water distribution system improvements are necessary to accommodate future growth. Begins with the Distribution model in 2017 and in 2018 the Master Plan will be developed.	Requests for Proposals for engineering services will occur in October and design work should commence in December. The modeling project is anticipated to be completed in the summer of 2018.	$355,000	Design/Study	
	Gold Hill Tank Repair	Gold Hill reservoir is experiencing leakage through the joints which wastes water and may cause damage to the foundation of the structure. This 2017 project is for the repairs of 9,320 feet of leaking floor joints at the 15 MG Gold Hill Reservoir and other repairs as determined by the 2014 engineering study.	Engineering design of alternative repairs methods for the leaking joints was completed in September with selection of a CMAR contractor completed in the fall of 2017. Repairs are anticipated to start in the winter of 2017 and spring of 2018.	$1,262,600	Design/Study	3/17/2018
Water Construction	Bellvue Transmission Program (60")	This project is the construction of the Northern Segment of the Bellvue Transmission Main, six miles of the 60-inch line between the end of the completed line at Shields in Fort Collins to the Bellvue Filter Plant.	Southland Contracting has completed construction of the Phase 2 tunnel segment. Project got delayed due to the contractor damaging a 50 foot segment of pipe. Contractor has replaced the damaged segment and the City has completed the flushing and disinfecting of the line for operations. This project is now considered substantially complete as of August 30, 2017 and is available for use by the City.	$6,861,908	Construction	8/30/2017

APPENDIX A - PROJECT STATUS

Graphing Status	Fund	Project
Completed	**Fund 301 - Public Improvement**	919 7th Street - Demolition of the Lincoln Park Annex & Parking Lot
	Fund 304 - Food Tax	Highland Hills - Cart Path Replacement
		HVAC - Refurbish Roof Top Units at UCCC
		Irrigation System Replacement - Anna Gimmestad Park
		Irrigation System Replacement - Pheasant Run Park
		Roof Repair - Rodarte Main Building Roof Replacement
		Senior Center Exterior Windows & Landscape
	Fund 312 - Transportation Development	65th Avenue: 29th Street to City of Evans city limits (Design and construction)
	Fund 318 - Quality of Life	Glenmere - Lighting Around Park
		Playground Replacement - Lincoln Park
		Westmoor - Shelter/Restroom replacement
	Fund 321 - Keep Greeley Moving	Seal Coat
	Fund 322 - 2016 City Center	Fire Station Admin - New Fire Station Construction
	Fund 403 - Sewer Capital Replacement	59th Avenue & F Street Sewer Repair
		Lift Station Rehabilitation
		Trenchless Main and Collector Rehabilitation
	Fund 406 - Water Capital Replacement	Cache la Poudre River Turnout Rehabilitation
	Fund 412 - Stormwater Construction	Sunrise Neighborhood Drainage Improvements
		Westmoor West Improvement Project
	Fund 413 - Stormwater Replacement	Annual Neighborhood Improvements
		College Green Pipe Replacement
Construction	**Fund 301 - Public Improvement**	10th Street Access Improvements Phase 2
		Greeley Evans Transit Transfer Center
		New Sidewalk Installation
	Fund 304 - Food Tax	10th Ave Landscaping from 6th St to 7th St
		35th Avenue & 16th Street Traffic Signal
		ADA - Senior Center Restrooms
		Annual Emergency Facility & Parks Repairs
		Bike Path Repairs
		Fuel Site Upgrades
		Public Parking Lot Maintenance & Striping
		Recreation Center Conference Upgrades
		Sanborn Park Walkways

Graphing Status	Fund	Project
Construction	**Fund 312 - Transportation Development**	20th Street Phase II: 74th to 83rd Avenues (Construction)
	Fund 318 - Quality of Life	71st Avenue & Sheepdraw Neighborhood Park- South of 10th Street West of 71st Avenue
		Frontier Academy Athletic Facilities
		Playground Replacement - Aven's Village at IG playground
		Playground Replacement - Glenmere Park
		Sheepdraw Trail Boomerang Ranch Area
		Youth Sports Complex
	Fund 320 - FASTER	71st Avenue Bridge Over Sheepdraw Design
	Fund 321 - Keep Greeley Moving	ADA - Access Ramps/Sidewalks
		Concrete Repair & Cross Pan Replacement Program
		Crack Seal
		Neighborhood Concrete Program
		Overlay & Striping
		Patching
	Fund 322 - 2016 City Center	11th Avenue & 11th Street Campus - Construction of City Hall Phase I
	Fund 402 - Sewer Construction	Aschroft Draw Sewer Phase I
		North Greeley Sewer Phase 2A
	Fund 403 - Sewer Capital Replacement	General Rehabilitation Projects
		Sewer Collection System Rehabilitation
		Water Pollution Control Facility Solids Processing Improvements
	Fund 405 - Water Construction	Bellvue Transmission Program (60")
	Fund 406 - Water Capital Replacement	Bellvue Road & Bridge Realignment
		Bellvue Water Treatment Plant General Rehabilitation
		Boyd Water Treatment Plant - General Rehabilitation
		Boyd WTP Needs Assessment Projects
		Boyd WTP Plant #2 Demolition
		Hourglass Outlet Gates and Comanche Outlet Rehab
		Milton Seaman Bridge Replacement
		Transmission System Rehabilitation
	Fund 413 - Stormwater Replacement	4th Ave & 31st St Box Culvert Replacement
Design/Study	**Fund 304 - Food Tax**	ADA - Poudre Trailheads Handicap Access Improvements - 71st, 59th, 25th, 35th Avenues
		ADA - Rodarte Building Accessibility into Building
		Archibeque Park Shelter/Restroom Replacement
		Centennial Park Butch Butler Storage Garage Replacement
		Irrigation System Replacement - Woodbriar Park
	Fund 312 - Transportation Development	20th Street: 71st to 86th Avenue (Design and right of way)
		65th Ave/34 Bypass - Frontage Rd Relocation and North 65th Ave road widening
		71st Ave: Bridge/Road Widening from 12th to 22nd St
	Fund 318 - Quality of Life	District 6 - Greeley West HS Multi-Purpose Field/Track/Restroom
		Playground Replacement - Woodbriar Park
		Poudre River Corridor Property
		Sheep Draw Trail Triple Creek Area
		Woodbriar - Shelter/Restroom Replacement

Graphing Status	Fund	Project
Design/Study	**Fund 320 - FASTER**	Bridge Maintenance
		Turn Lanes on 20th St at Clubhouse Dr & Aims Blvd
	Fund 321 - Keep Greeley Moving	Pavement Maintenance
	Fund 402 - Sewer Construction	83rd Ave Sewer Project
		Poudre Trunk Phase 2
	Fund 403 - Sewer Capital Replacement	WPCF Master Plan Update
	Fund 406 - Water Capital Replacement	Bellvue Needs Assessment Projects
		Distribution System Model & Master Plan
		Gold Hill Tank Repair
		Milton Seaman Outlet Works Evaluation
	Fund 412 - Stormwater Construction	27th Avenue Storm Drain Improvements 17th Street to Poudre River
		Poudre River Flood Reduction Feasibility Study - East Greeley
	Fund 413 - Stormwater Replacement	Other Drainage System Repairs (System Mains, Inlets, and Culverts)

WEMBER

7525 South Jasmine Court | www.wemberinc.com/blog
Centennial, CO 80112 | facebook.com/Wemberinc
303-378-4130 | wemberinc.com

Project Monthly Update Report

Project Name:	**Greeley City Center (PH-1)**
Wember Inc. Project Number:	2015.54-GMC-CC
Issue Date:	October 15, 2017
Location:	Greeley, Colorado
Purpose:	Project Update thru October 15, 2017

The purpose of this update is to report on the current status of the above Project.

Summary

The project is moving along in the foundation stage in the field and through buyout on budget.

- Project Successes
  - No safety incidents or jobsite injuries with 26,830 man-hours.
  - Concrete Stair and Elevator Cores are complete including steel stairs.
- Project Challenges
  - FFE budget will be challenging to meet, working on evaluating the furnishings and IT systems.

Design / Pre-Construction / Permits

- Design Update
  - 100% CDs published 04/25/17.
- Pre-Construction Update
  - GMP fully executed 06/25/2017.
- Permit Status
  - Full permit received

Schedule

Work in Progress / Recap of Recent Events

- Weekly OAC meetings on Tuesday afternoons.
- Purchasing meetings continue with HP and their potential subcontractors to continue buyout with summary recommendations to Wember prior to contract
- Structural Steel erection in progress.
- Submittals and RFIs continue

Milestones:

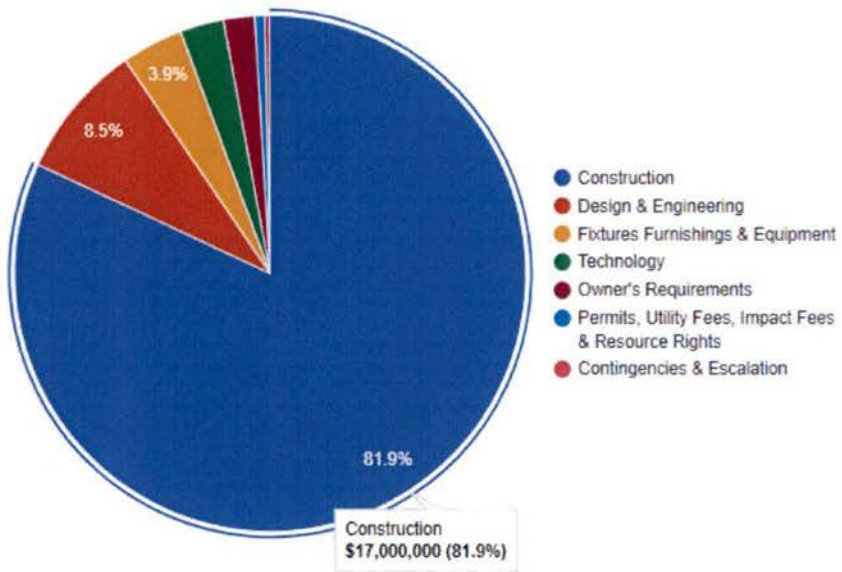
50% CD issuance:	02/03/17
GMP Estimate complete:	04/04/17
Bid Pkg #1, F+F	02/14/17
100% CD issuance:	03/28/17
Bid Pkg #2	04/10/17
Early Mobilization NTP:	02/01/17
Start Work: early Sitework	04/11/17
Start Foundations	05/09/17
❖ GMP Signed	06/25/17
Const Complete:	07/18/18 – maintained completion date with Century Link delay
Furniture Deliver/setup:	06/01/18
Start Move In:	08/01/18
Occupy:	08/31/18

Delays

- Delay in foundation work on North end due to potential delay from Century Link undergrounding delay in alley.
- Weather delays: 3 days due to heavy rains in May.
- Hensel Phelps maintains that these above delays will not affect the scheduled completion date.

Financial

Budget Breakdown



Budget

Project Accounting	C	G	H	I	J
	Budget A+B	Committed D+E+F	To Complete	(Over)/Under C-(G+H)	Costs
Land & Lease Cost	$0.00	$0.00	$0.00	$0.00	$0.00
Design & Engineering	$1,769,560.00	$1,769,560.00	$246,554.00	$0.00	$1,523,006.00
Owner's Requirements	$407,927.00	$401,791.00	$212,886.00	$100.00	$195,041.00
Construction	$17,000,000.00	$16,880,508.00	$13,517,328.00	$0.00	$3,482,672.00
Permits, Utility Fees, Impact Fees & Resource Rights	$128,423.84	$263,132.63	$2,223.84	$0.00	$126,200.00
Fixtures Furnishings & Equipment	$807,500.00	$9,183.40	$798,317.00	$0.60	$9,183.00
Technology	$575,000.00	$5,679.00	$566,758.00	$0.00	$8,242.00
Contingencies & Escalation	$61,589.00	$0.00	$61,589.00	$0.00	$0.00
Funds	$0.00	$0.00	$0.00	$0.00	$0.00
Total	$20,750,000.00	$19,329,854.03	$33,987,882.96	$100.60	$5,344,344.00

Procurement

- Commissioning agent – McKinstry
- Testing agency - Terracon.
- RFP for low voltage wiring is forthcoming
- Working with Workspace innovations on furnishings package, design and pricing
- Modular Storage System RFP forthcoming

Progress Photos

View from Wemcam on top of Annex Bldg, Mock-up of wall systems

View from inside the courtroom looking North, and East, @nd level metal decking installation

Next Steps

- HP to get steel topped out this month and start on exterior skin.
- verify FFE costs within budget

Dan Spykstra
Wember - Owner's Representative

Worksession Agenda Summary

October 24, 2017 (6:00 – 6:30 p.m.)
Agenda Item Number 3
Key Staff Contact: Victoria A. Runkle, Assistant City Manager, 350-9730

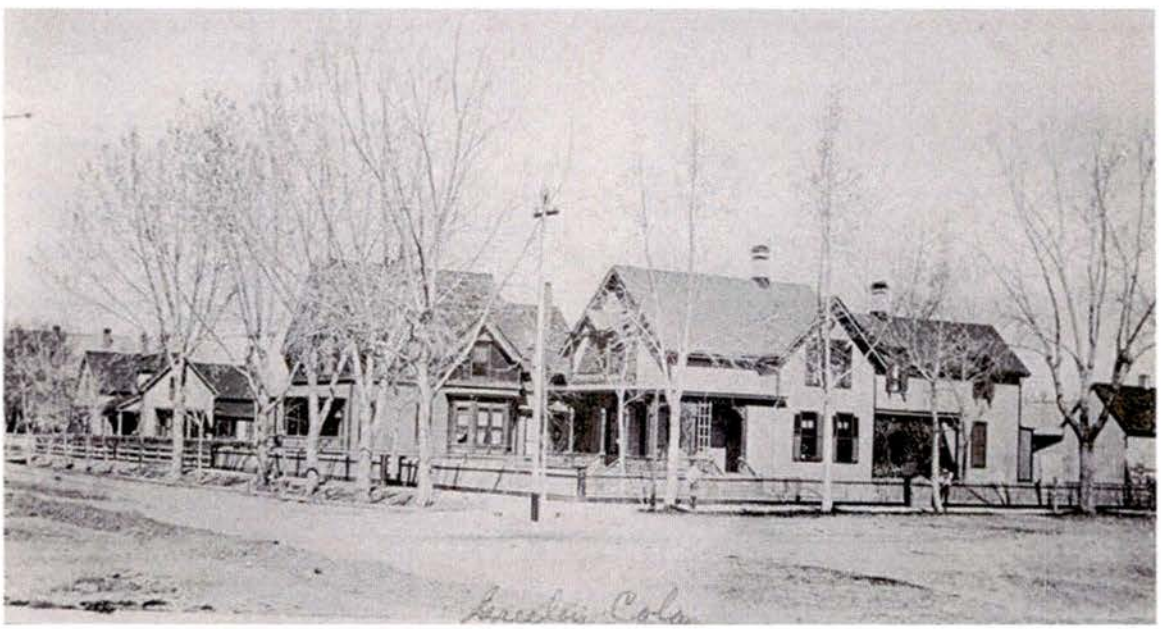
Title
Monthly Financial Report

Background
Attached is the report for the month ended September 30, 2017

Council Direction Requested
For information only

Decision Options
None

Attachments
September Monthly Financial Report
PowerPoint Presentation



September Financial Report

City of Greeley Colorado

2017

Table of Contents

Clockwise from top left: 2007.53.0038, City of Greeley Museums, Permanent Collection. Weldorado Drugs, c.a. 1938 -1950. Photographer unknown; C1_1139.001.15, City of Greeley Museums, Permanent Collection. 143 Sacks of Potatoes, c.a. 1870-1890. Photograph by F.E. Baker; 1970.74.0007, City of Greeley Museums, Permanent Collection. Residential Street in Greeley, Colorado, 1887. Photographer unknown.

September Financial Summary

Governmental accounting can at times be difficult to interpret because most (but not all) revenue is received one month after it is generated, while all expenses are recorded in the month which they were incurred. The following report outlines Greeley's major revenue funds and details 2017 collections to date.

General Fund

The General Fund has a total revenue budget of $88,388,345 and an expenditure budget of $92,445,210 in 2017. The monthly financial report examines the Fund's major revenue sources, expenditures, and overall trends; the report also utilizes historical data and future projections. The proceeding section provides summarized financial information, while detailed data is found in the sections beginning on page 5.

Sales Tax

Sales tax revenues comprise 46% of the General Fund's total revenues. 2017 General Fund share of sales tax revenues total $27,168,829 (67.2%) of a 2017 budget estimate of $40,415,639 through eight months of sales tax payments. The 2017 budget projects sales tax revenue to increase 3.3% from 2016 actuals. Sales tax revenue has increased 8.6% from 2016 and is expected to exceed the 2017 budget based on current payments and projections.

Use Taxes

Use taxes comprise 7.1% ($6,296,622) of the General Fund revenue budget in 2017.

Through eight months, general use tax revenue has increased 17.9% ($193,356) as compared to 2016. The City has collected 93.2% of the 2017 general use tax budget of $1.4 million. Revenue is currently projected to exceed the budget.

The City levies a building use tax upon issuing a new building permit. Through nine months, building use tax is currently 39.0% ($790,364) below 2016 totals. The City has collected 54.3% of the 2017 building use tax budget of $2.3 million. Revenue is projected to total below the budget estimate.

Auto use tax revenue has increased 11.1% ($222,385) from 2016 through eight months of collections. The City has collected 83.8% of the 2017 auto use tax budget of $2.7 million. Revenue is expected to exceed the budget.

Building Permits

New construction permits and filing fee revenues are direct indicators of municipal growth. Building permit revenue has decreased 8.3% from 2016 to 2017. 164 new construction permits ($91.7 million valuation) have been issued in 2017, as compared to 357 ($111.2 million valuation) during the same period in 2016, resulting in a 54.1% decrease in permits issued and a 17.5% decrease in permit valuation to date.

2017 single-family permits to date: 81 issued, $21.4 million total valuation.

2016 single-family permits to date: 213 issued, $38.8 million total valuation.

2017 multi-family permits to date: 63 issued, $40.3 million total valuation.

2016 multi-family permits to date: 126 issued, $31.4 million total valuation.

2017 commercial permits to date: 20 issued, $30.0 million total valuation.

2016 commercial permits to date: 18 issued, $40.9 million total valuation.

Other General Fund Revenue Sources

Franchise fees account for 5.3% of General Fund revenue; $2,756,161 (59.0%) of a budgeted $4.67 million in franchise fees have been collected to date. Property taxes contribute 11.3% of the General Fund's revenue; $9,755,423 (97.6%) of a budgeted $9.99 million in property taxes has been collected to date. Fines and forfeits make up 2.4% of General Fund revenue; $1,370,736 (63.8%) of the budgeted $2.1 million has been collected to date. The remaining 2017 budgeted revenues include $5.2 million (5.9%) from other funds, $8.1 million (9.2%) in intergovernmental revenue, $5 million (5.7%) from service charges, $2 million (2.3%) in severance and mineral taxes, and $2.6 million (3.0%) in other revenues.

Special Fund Revenues & Economic Indicators

Lodging Tax

The Convention and Visitors Fund is supported by the City's 3% lodging tax and is utilized to support convention and visitors activities. Through August, lodging tax revenue has increased 28.1% ($96,297) from 2016, and the City has collected 83.6% of the 2017 budget estimate of $525,000. According to the August Rocky Mountain Lodging Report, Greeley's year-to-date occupancy rate is currently 77.5% as compared to 67.4% in 2016; The 2017 statewide occupancy rate is currently 72.0%.

Food Tax

Greeley's food tax funds a capital maintenance program for the repair of streets, buildings, parks, and other capital assets. Through eight months, food tax revenue has increased 4.2% ($189,337), and the City has collected $4,718,155 (65.1%) of the 2017 budget revised estimate of $7,242,735. Food tax revenues are currently projected to exceed budget.

Economic Indicators

The price of Colorado/Nebraska DJ Basin Crude Oil at the beginning of September (9/5/2017) was $44.25, a 9.9% increase from 2016. August sales tax revenue grew 8.3% from 2016. Several business categories have grown in 2017, including dining out, online shopping, building material and garden equipment suppliers, motor vehicle and parts dealers, utilities, general merchandise stores, furniture stores, gasoline stations, health and personal care stores, and clothing stores.

Summary

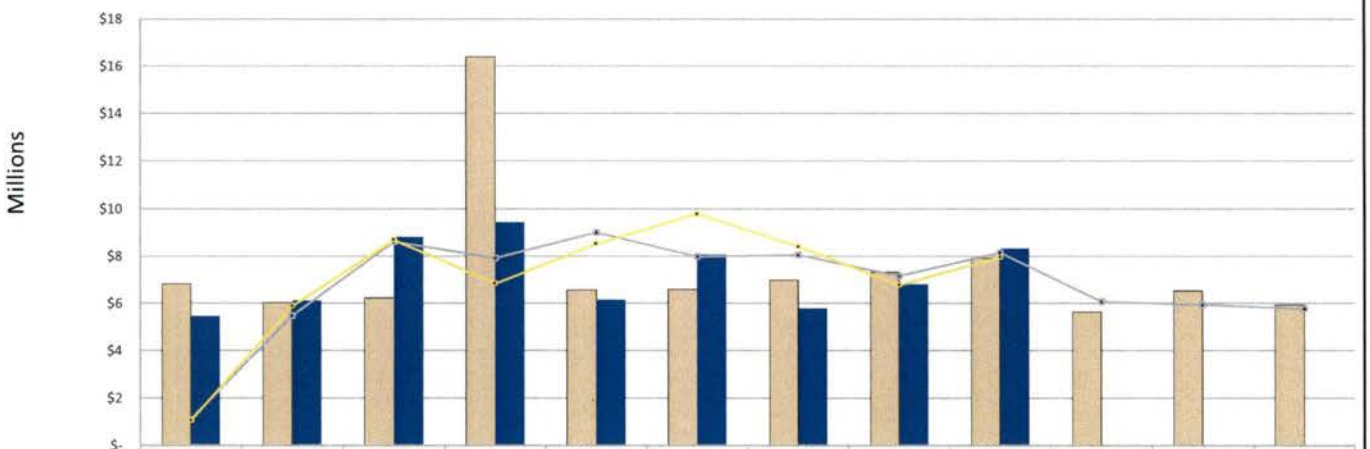
The following sections outline Greeley's major operating funds. Local economic conditions are improving from a year ago, as evidenced by the recent growth in sales tax revenue, property tax, and use taxes. The City is on track to stay on budget with no significant changes to services in 2017.

General Fund

Overview:

Major sources of revenue in the General Fund include sales, property, and use tax; county, state, and federal intergovernmental funds; franchise fees; transfers from other funds; fines, forfeits, and service charges; licenses and permits; and miscellaneous sources.

The following graph compares 2017 expenditures and revenues with the same data from 2016. The first nine months of 2017 revenues and expenditures are following historic trends. The increase in March expenditures is due to three payroll periods occurring in 2017 versus two in 2016. The same payroll variance occurs in April as three payroll periods occurred in 2016 versus two in 2017. The remaining increase in expenditures in April 2016 is due to the transfer of additional carryover funds. There was also a $1.2 million revenue increase in April 2016 from one-time transfers into the General Fund. In May of 2016, a budgeted $350,000 was transferred from the Lodging Tax Fund. The increase in June 2017 revenue and expense was due to the purchase of compressed natural gas transit buses; the Federal Transit Authority provided the City with $1.6 million for the $2 million purchase. The decrease in July 2017 expense and September 2017 revenue is due to the timing of interfund transfers.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016 Expense	$6,805,084	$6,037,833	$6,225,242	$16,404,410	$6,562,320	$6,593,819	$6,973,244	$7,302,201	$7,893,587	$5,624,115	$6,522,967	$5,927,381
2017 Expense	$5,466,396	$6,118,369	$8,808,910	$9,424,569	$6,155,996	$8,047,103	$5,778,378	$6,799,102	$8,325,951			
2016 Revenue	$1,086,085	$5,482,411	$8,587,642	$7,909,315	$8,990,363	$7,957,958	$8,049,810	$7,153,386	$8,121,319	$6,075,619	$5,931,773	$5,767,342
2017 Revenue	$1,035,434	$5,874,520	$8,668,522	$6,831,305	$8,501,383	$9,777,809	$8,398,084	$6,767,288	$7,937,994			

The table below compares 2017 actual and budgeted revenue and expenditures as of September 30th, 2017.

2017 General Fund Overview				
	2017 Actual	2017 Budget	Variance	% of 2017 Budget
Use of Fund Balance	$ 1,130,454	$ 4,056,865	$ (2,926,411)	28%
Revenue	$ 63,794,319	$ 88,388,345	$ 24,594,026	72.2%
Expenditures	$ 64,924,774	$ 92,445,210	$ 27,520,436	70.2%

Revenues:

Eight months of payments have been received from the following revenue sources in 2017: franchise fees, sales tax, general use tax, lodging tax, and property tax. Nine months of payments have been received for the following: building and planning permit fees; building use tax; and charges for interfund services. Total received revenues are currently 72.2% of the 2017 budget and are 0.7% above 2016 to date. The variance in 2017 third quarter revenue is due in part to a one-time FTA grant ($877,982) in 2016 for the purchase of compressed natural gas buses.

General Fund Revenue Comparisons						
	2016	2017	Variance	% Change 2016 - 2017	2017 Budget	% of 2017 Budget
1st Quarter	$ 15,156,139	$ 15,580,456	$ 424,317	2.8%	-	-
2nd Quarter	$ 24,857,636	$ 25,110,498	$ 252,862	1.0%	-	-
3rd Quarter	$ 23,324,516	$ 23,103,366	$ (221,150)	-0.9%	-	-
YTD Total	**$ 63,338,290**	**$ 63,794,319**	**$ 456,030**	**0.7%**	**$ 88,388,345**	**72.2%**

Expenditures:

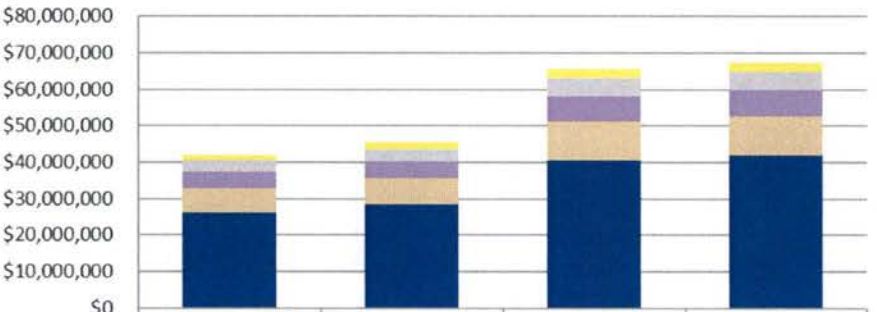
The General Fund is used to provide basic municipal services such as police, fire, parks, culture, recreation, public works, community development, and general administration. Below is a summary of expenditures through September 30th, 2017. The increase in 2016's second quarter expenditures is due to a one-time $5.6 million transfer of carryover monies. Additionally, the City purchased CNG buses ($1,038,634) in the third quarter of 2016 with FTA grant money.

2017 General Fund Expenditure Comparisons						
	2016	2017	Variance	% Change 2016 - 2017	2017 Budget	% of 2017 Budget
1st Quarter	$ 19,068,159	$ 20,393,676	$ 1,325,517	7.0%	-	-
2nd Quarter	$ 29,560,548	$ 23,627,668	$ (5,932,880)	-20.1%	-	-
3rd Quarter	$ 22,169,033	$ 20,903,430	$ (1,265,603)	-5.7%	-	-
YTD Total	**$ 70,797,740**	**$ 64,924,774**	**$ (5,872,966)**	**-8.3%**	**$ 92,445,210**	**70.2%**

Revenue Sources

The City collects sales tax on the retail sale of various goods and commodities at a rate of 4.11%; the state's sales tax rate is 2.9%. City sales tax revenue is distributed to the Public Safety Fund (0.16%), Quality of Life Fund (0.30%), General Fund (3.0%) and Keep Greeley Moving (0.65%). In 2015, the citizens of Greeley re-approved the 3.46% tax on food for home consumption – the Food Tax Fund.

The graph below illustrates the sales tax revenue distribution to five different funds before debt payments: General, Public Safety, Quality of Life, Food, and Keep Greeley Moving. Intergovernmental agreements with Evans and Windsor also affect the fund distribution.



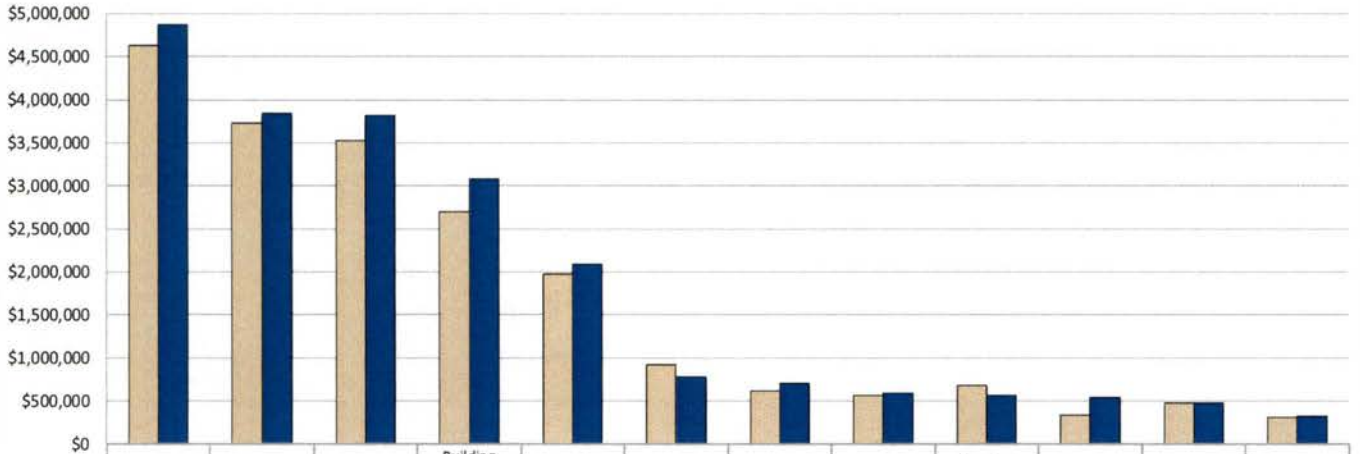
	2016 YTD	2017 YTD	2016 Actual	2017 Budget
Public Safety Bonds	$1,636,144	$1,761,359	$2,544,550	$2,607,571
Quality of Life	$3,067,770	$3,302,549	$4,771,032	$4,889,197
Food	$4,528,818	$4,718,155	$7,083,994	$7,242,735
Keep Greeley Moving	$6,750,154	$7,227,238	$10,489,543	$10,577,072
General Fund	$26,148,881	$28,307,333	$40,626,323	$41,956,230

Sales tax revenues have been collected for eight months in 2017. General sales tax revenue is budgeted at 3.3% above 2016 revenue. The General Fund's sales tax revenues have increased 8.3% as compared to 2016. The growth is attributed to increases in the following business categories: dining out, general merchandise stores, motor vehicle dealers, furniture stores, utilities, health and personal care stores, online shopping, gasoline stations, clothing stores, and building material suppliers.

General Fund sales tax revenues are anticipated to exceed the 2017 budget based on current trends and economic information. The graph below is a summary of the General Fund share of sales tax by month and includes eight months of 2017 actuals and a four-month 2017 forecast.

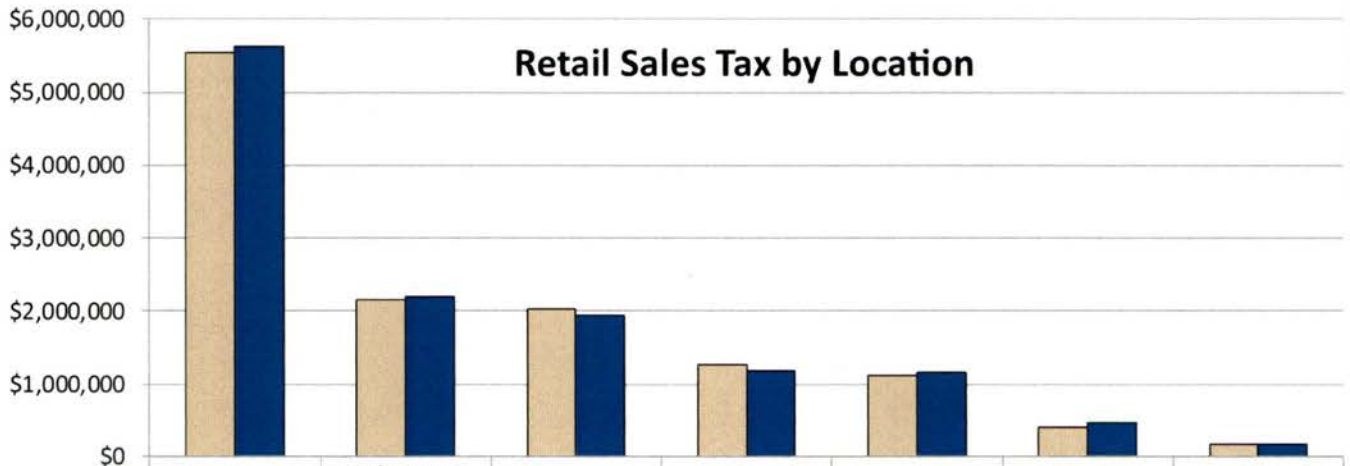
Sales Tax Only: General Fund Share
(After Debt, Expense, & Adjustments)

The North American Industry Classification System (NAICS) is used to categorize sales tax revenue by industry. The graph below compares sales tax revenue by select industries for 2016 and 2017. Adjustments have been made below to account for late payments. Online shopping experienced the largest percentage increase of 59.97% above 2016 totals, while building materials had the largest dollar increase of $389,708.



	Dining Out	General Merchandise Stores	Motor Vehicle and Parts Dealers	Building Material and Garden Equipment and Supplies Dealers	Utilities	Electronics and Appliance Stores	Clothing and Clothing Accessories Stores	Health and Personal Care Stores	Sporting Goods, Hobby, Book, and Music Stores	Online Shopping	Furniture and Home Furnishings Stores	Gasoline Stations
2016 YTD	$4,634,732	$3,725,821	$3,524,016	$2,696,148	$1,975,219	$917,434	$615,285	$565,840	$681,937	$338,374	$472,933	$309,019
2017 YTD	$4,878,796	$3,838,086	$3,811,663	$3,085,851	$2,083,441	$781,920	$704,717	$590,831	$560,748	$541,304	$479,499	$321,776
% Change	5.27%	3.01%	8.16%	14.45%	5.48%	-14.77%	14.53%	4.42%	-17.77%	59.97%	1.39%	4.13%
$ Change	$244,064	$112,264	$287,647	$389,703	$108,222	$(135,513)	$89,432	$24,990	$(121,189)	$202,931	$6,566	$12,757

The graph below outlines retail sales by identified locations for eight months, omitting grocery stores and auto dealers. Centerplace, 10th St., Downtown, Northgate Village, and St. Michaels have increased sales from 2016 to 2017 by 1.81%, 2.19%, 3.95%, 14.26% and 5.32%, respectively. The graph has been modified to adjust for late payments and adjustments to prior periods.



	Centerplace Area	10th Street-23rd Ave - 59th Ave	Greeley Mall Area	University District	Downtown Development	Northgate Village	St. Michaels
2016	5,538,527	2,160,261	2,024,318	1,258,099	1,125,155	398,820	163,571
2017	5,638,925	2,207,502	1,939,544	1,186,982	1,169,626	455,691	172,268
% Change	1.81%	2.19%	-4.19%	-5.65%	3.95%	14.26%	5.32%
$ Change	$100,398	$47,240	$(84,774)	$(71,117)	$44,471	$56,871	$8,697

Property Tax

The City levies property tax based on Weld County's biennial property value appraisal. The mill levy is currently set at 11.274 mils. Property tax revenue has increased 0.3% from 2016 to 2017 through eight months of collection. 2017 Property Tax collections are expected to be slightly below budget based upon the final assessment provided by Weld County at the end of 2016.

Property Tax						
	2016	2017	Variance	% Change 2016 - 2017	2017 Budget	% of 2017 Budget
1st Quarter	$ 2,833,322	$ 2,966,893	$ 133,572	4.7%	-	-
2nd Quarter	$ 4,979,444	$ 4,735,003	$ (244,441)	-4.9%	-	-
3rd Quarter	$ 1,912,914	$ 2,053,527	$ 140,613	7.4%	-	-
YTD Total	**$ 9,725,680**	**$ 9,755,423**	**$ 29,743**	**0.3%**	**$ 9,991,000**	**97.6%**

Estimated 2017 Property Tax Sources from County Assessor		
Source	**%**	**Amount**
Residential	47.0%	$ 4,618,736
Commercial	36.4%	$ 3,571,581
Industrial	4.2%	$ 416,400
Mineral, Oil & Gas	4.4%	$ 431,438
Other	8.0%	$ 788,885
Total	**100%**	**$ 9,827,041**

Franchise Fees

Electricity, natural gas utilities, and cable television providers pay franchise fees to the City for the use of public right-of-way property. Telephone providers pay an occupation tax.

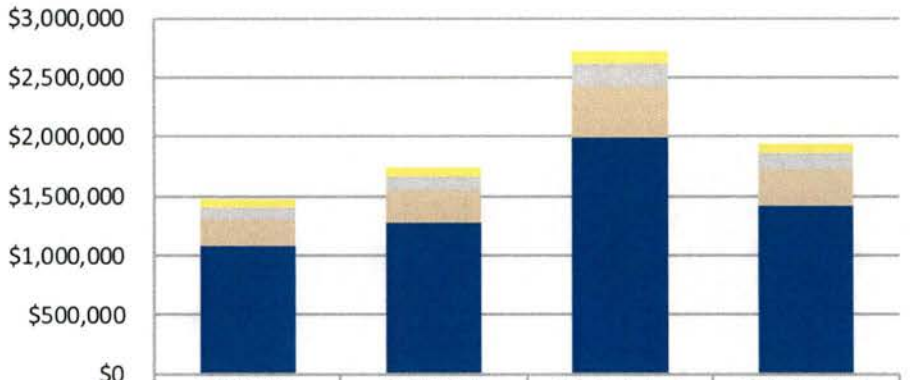
Franchise fees have decreased during the first nine months of 2017, in part due to lower natural gas usage from warmer weather. Franchise fees are anticipated to meet the 2017 budget.

Franchise Fees & Telephone Tax						
	2016 YTD	2017 YTD	Variance	% Change 2016 - 2017	2017 Budget	% of 2017 Budget
Cable	$ 468,154	$ 506,337	$ 38,183	8.2%	$ 943,500	53.7%
Electric	$ 1,357,950	$ 1,409,171	$ 51,220	3.8%	$ 2,446,500	57.6%
Natural Gas	$ 996,921	$ 840,653	$ (156,267)	-15.7%	$ 1,278,900	65.7%
Telephone	$ 87,717	$ 82,531	$ (5,186)	-5.9%	$ 115,000	71.8%
YTD Total	**$ 2,910,743**	**$ 2,838,692**	**$ (72,051)**	**-2.5%**	**$ 4,783,900**	**59.3%**

Use Tax

Use taxes are levied upon individuals using, storing, or consuming tangible personal property that has not been subject to sales tax. Three types of use taxes (general, automobile, and building) provide revenue to the Public Safety Fund, Quality of Life Fund, Keep Greeley Moving, and General Fund.

General Use Tax

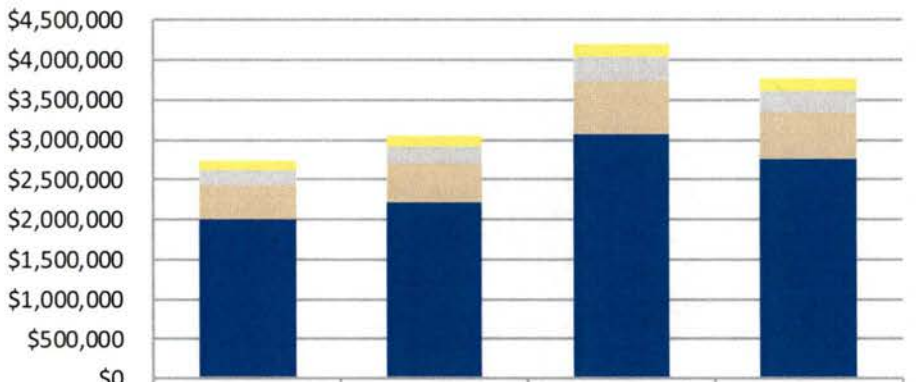


	2016 YTD	2017 YTD	2016 Actual	2017 Budget
Public Safety Bonds	$57,504	$67,816	$106,517	$75,522
Quality of Life	$107,820	$127,156	$199,720	$141,603
Keep Greeley Moving	$225,498	$272,794	$420,733	$306,731
General Fund	$1,078,201	$1,271,557	$1,997,197	$1,416,035

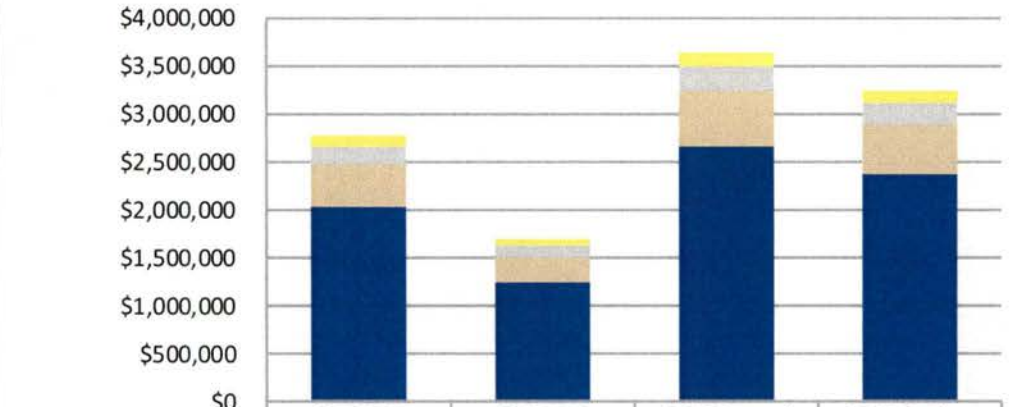
General use tax revenue has increased 18.4% from 2016 to 2017. The majority of the increase is from one-time payments. Based upon current trends, general use taxes are anticipated to exceed budget projections.

Auto Use Tax

Auto use tax revenue has increased 11.1% from 2016 to 2017. Based upon current trends, auto use taxes are anticipated to exceed budget projections.



	2016 YTD	2017 YTD	2016 Actual	2017 Budget
Public Safety Bonds	$106,585	$118,446	$163,569	$146,811
Quality of Life	$199,847	$222,086	$306,691	$275,270
Keep Greeley Moving	$433,002	$481,186	$664,498	$596,269
General Fund	$1,998,472	$2,220,857	$3,066,915	$2,752,699



	2016 YTD	2017 YTD	2016 Actual	2017 Budget
Public Safety Bonds	$108,195	$66,042	$142,136	$126,288
Quality of Life	$202,865	$123,829	$266,505	$236,791
Keep Greeley Moving	$437,441	$267,992	$575,368	$512,918
General Fund	$2,028,651	$1,238,288	$2,665,051	$2,367,907

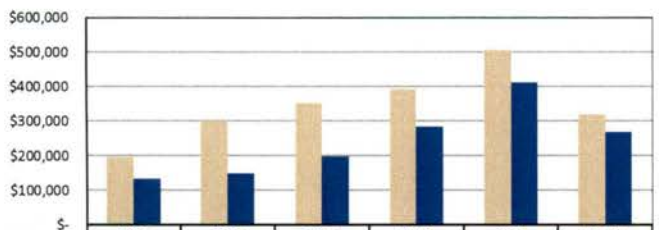
Building Use Tax

After nine months of collections, building use tax revenue has decreased 38.9% from 2016 to 2017. The 2017 budget projected a slower pace of building activity; the 2017 budget is $3.2 million, an 11% reduction from 2016.

Building & Planning Permit Fees

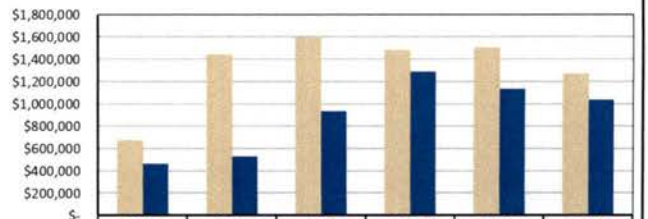
Building and planning permit fees are collected on new commercial, industrial, and residential renovation and construction. Through nine months of 2017, plan filing and check fee revenues have decreased 35.3% ($145,766) from 2016 to 2017 and building permit fees decreased 8.3% ($93,810). The 2017 budget projects a decline of 19% in plan filing and check fees and a 16% decrease in building permit revenue.

Plan & Filing Fees



	2012	2013	2014	2015	2016	2017*
Actuals / Budget*	$196,181	$300,106	$352,917	$392,625	$505,050	$320,000
YTD Actuals	$133,609	$149,462	$196,687	$283,433	$412,637	$266,872

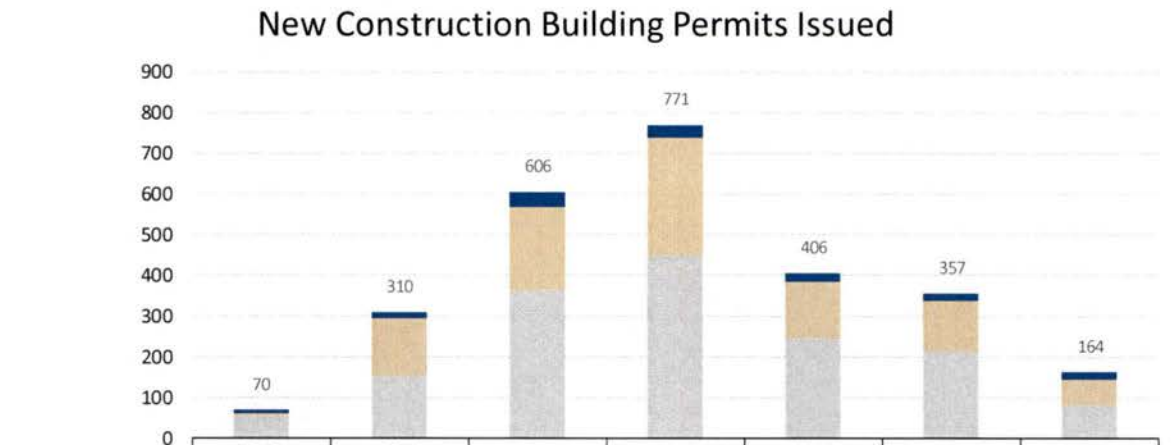
Building Permit Revenue



	2012	2013	2014	2015	2016	2017*
Actuals/Budget*	$669,197	$1,444,774	$1,595,310	$1,483,715	$1,507,978	$1,273,000
YTD Actuals	$465,955	$524,391	$929,264	$1,285,279	$1,133,008	$1,039,199

Building Permits Issued

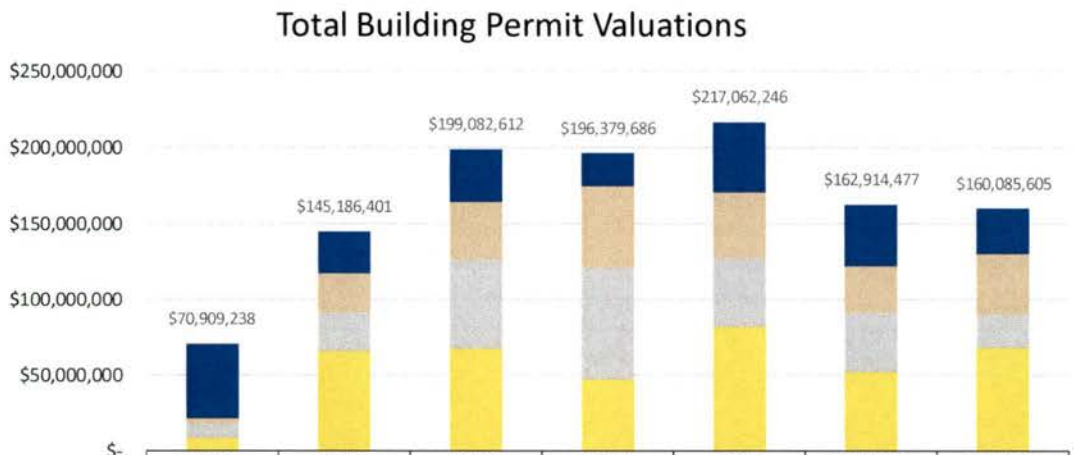
The number of new building permits issued each month is a direct indicator of construction growth in Greeley. The following graph illustrates the number of permits issued for new commercial, single, and multi-family developments. After four consecutive years of robust growth, the number of construction permits issued in 2016 decreased from 2015. The number of permits issued in 2017 is currently behind the pace set in 2016.



	2012	2013	2014	2015	2016	2016 YTD	2017 YTD
New Commercial	9	15	37	32	23	18	20
New Multi-Family	6	140	208	290	139	126	63
New Single-Family	55	155	361	449	244	213	81
Total	70	310	606	771	406	357	164

Building Permit Valuations

Building valuations show both the value of permits issued and also correlate with overall building permit revenues. Although the total number of permits issued in 2017 has decreased by 54.1%, the valuation of these permits is only $2.8 million less than last year. Additionally, "Other" permit valuations have increased 32.2% from 2016. Commercial additions and remodels make up 39.1% ($26.7 million) of the 2017 Other Permits category.



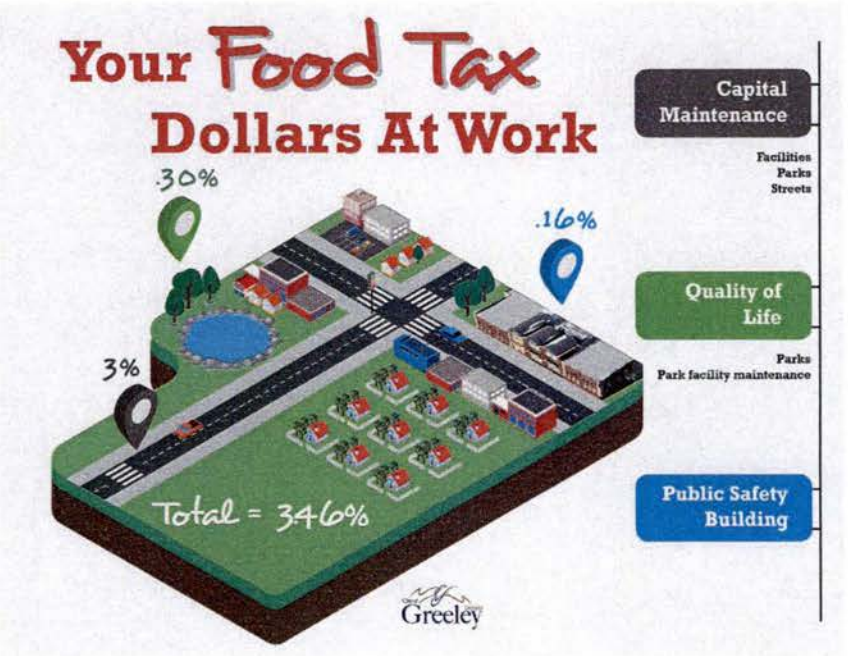
	2012	2013	2014	2015	2016	2016 YTD	2017 YTD
New Commercial	$49,259,303	$28,107,903	$34,692,350	$21,622,922	$46,620,945	$40,910,584	$30,022,225
New Multi-Family	$4,117,538	$26,207,094	$38,421,203	$53,335,909	$43,402,782	$31,416,573	$40,298,530
New Single-Family	$8,759,064	$25,332,659	$58,891,310	$74,046,922	$45,308,198	$38,827,877	$21,361,474
Other Permits	$8,773,333	$65,538,745	$67,077,749	$47,373,933	$81,730,321	$51,759,443	$68,403,376
Total	$70,909,238	$145,186,401	$199,082,612	$196,379,686	$217,062,246	$162,914,477	$160,085,605

Food Tax Fund

Greeley's food tax funds a capital maintenance program for the repair of streets, buildings, parks, and other capital assets. The revenue cannot be used for other governmental purposes. The tax rate is currently 3.46% and 3% of the tax is applied to capital maintenance. The remaining balance is distributed to the Quality of Life and Public Safety Funds (0.30% and 0.16%) as approved by voters in 2002 and 2004.

Nine months of 2017 food tax collection for the Food Tax Fund totaled $4,718,155 (65.1%) of the budgeted $7,242,735. It is anticipated that food tax revenues will meet the 2017 revised budget as $7,083,993 was collected in 2016.

Food Tax Fund Overview						
	YTD 2016 Actual	YTD 2017 Actual	% Change	2017 Encumbrances	2017 Budget	% of 2017 Budget
Sales Tax on Food	$ 4,528,818	$ 4,718,155	4.2%	-	$ 7,242,735	65.1%
Transfer from Designated Revenue	$ -	$ 63,741	-	-	$ 102,365	62.3%
Other	$ 79,979	$ 121,492	52%	-	$ 107,002	113.5%
Total Revenue	**$ 4,608,797**	**$ 4,903,388**	**6.4%**	**-**	**$ 7,452,102**	**65.8%**
Captial Projects	$ 5,226,876	$ 3,979,990	24%	$ 1,544,189	$ 9,093,446	60.7%
Total Expenditures	**$ 5,226,876**	**$ 3,979,990**	**24%**	**$ 1,544,189**	**$ 9,093,446**	**60.7%**
Use of Fund Balance	$ 618,080	$ (923,398)			$ 106,546	

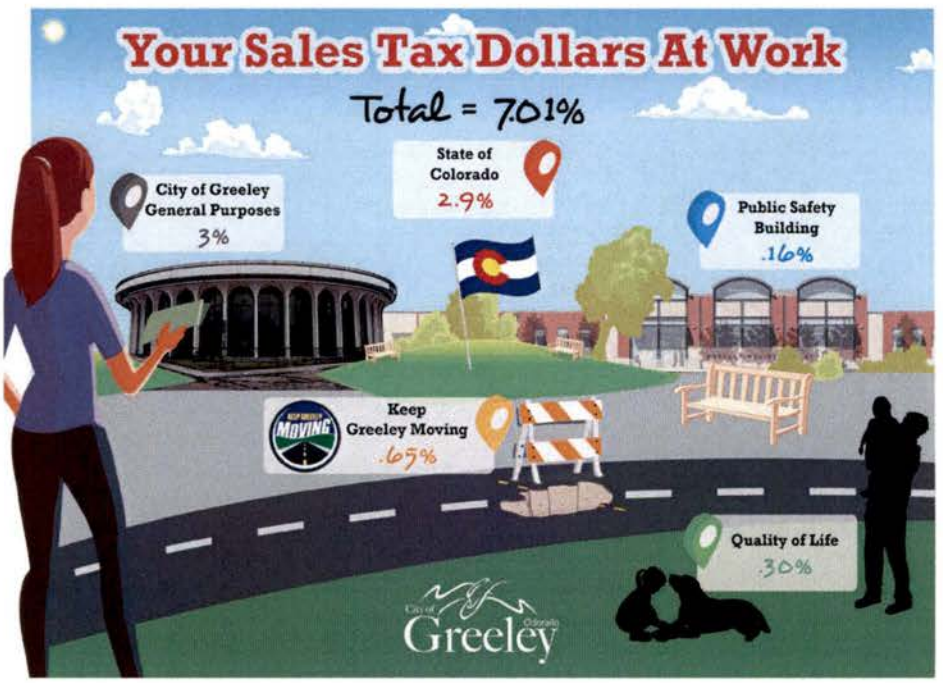


Quality of Life Fund

Grant funds, park development impact fees, and the 0.3% sales tax are used to finance projects throughout Greeley. Projects in 2017 include: $4.58 million for the construction of a Greeley West High School multi-purpose synthetic field, track, and restroom; $1.2 million for the conversion to synthetic turf at Island Grove field 5; $330,00 for the replacement of the Woodbriar shelter and restroom; and $750,000 for playground replacements at Lincoln, Glenmere, and Woodbriar parks. The increase in 2017 project expenditures is due to the use of funds for the Greeley West High School and Frontier Academy athletic fields.

Quality of Life Fund						
	YTD 2016 Actual	YTD 2017 Actual	% Change	2017 Encumbrances	2017 Budget	% of 2017 Budget
Sales and Use Tax*	$ 1,785,793	$ 2,072,500	16.1%	-	$ 3,089,303	67.1%
Park Development Impact Fees	$ 906,877	$ 590,701	-34.9%	-	$ 2,241,265	26.4%
Other Revenues	$ 424,148	$ 105,269	-75.2%	-	$ 512,188	20.6%
Total Revenue	**$ 3,116,818**	**$ 2,768,469**	**-11.2%**	**-**	**$ 5,842,756**	**47.4%**
Projects	$ 3,109,770	$ 8,587,641	176.2%	$ 3,492,777	$ 16,006,187	75.5%
Maintenance	$ 366,573	$ 391,561	6.8%	$ -	$ 522,081	75.0%
Total Expenditures	**$ 3,476,343**	**$ 8,979,202**	**158.3%**	**$ 3,492,777**	**$ 16,528,268**	**75.5%**
Use of Fund Balance	$ 359,525	$ 6,210,733			$ 10,685,512	

*Fund revenue after debt service



Keep Greeley Moving Fund

A new sales tax of 0.65% was approved by voters in the last quarter of 2015 to fund street maintenance and improvements for seven years. The City is responsible for public concrete sidewalk and gutter repairs through the seven-year life of the program. It will additionally make major improvements to ten arterial and collector roads, repave eight neighborhoods, and complete three street capacity projects.

2017 projects include:

- $6.3 million for pavement overlay, seal coat, patching, and striping.
- $3.6 million to fund 71st Avenue Improvements.
- $0.791 million to fund the construction of handicap ramps and sidewalk access points at various locations throughout the city, concrete repair and cross pan replacement program, and the neighborhood concrete program.

Keep Greeley Moving sales and use tax revenue is currently 7.1% above 2016's year-to-date total.

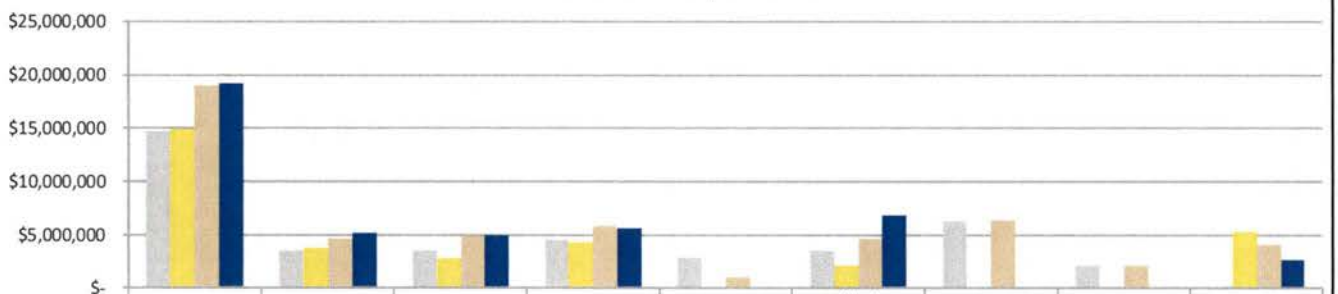
Keep Greeley Moving						
	YTD 2016 Actual	YTD 2017 Actual	% Change	2017 Encumbrances	2017 Budget	% of 2017 Budget
Sales & Use Tax	$ 6,750,154	$ 7,227,238	7.1%	$ -	$ 10,577,072	68.3%
Reserved	$ -	$ -	-	$ -	$ -	-
Transfer from Food Tax Fund	$ 3,464,441	$ 1,500,000	-56.7%	$ -	$ 2,057,000	72.9%
Other Revenues	$ 5,331	$ 19,427	264.4%	$ -	$ -	-
Total Revenue	**$ 10,219,926**	**$ 8,746,664**	**-14.4%**	**-**	**$ 12,634,072**	**69.2%**
Projects	$ 4,618,004	$ 5,916,118	28.1%	$ 2,118,336	$ 8,337,558	96.4%
Road Development Fund Projects	$ 4,557,143	$ 2,700,000	-40.8%	$ -	$ 3,600,000	75.0%
Reserved	$ -	$ -	-	$ -	$ 1,085,443	0.0%
Total Expenditures	**$ 9,175,146**	**$ 8,616,118**	**-6.1%**	**$ 2,118,336**	**$ 13,023,001**	**82.4%**
Use of Fund Balance	$ (1,044,779)	$ (130,546)			$ 388,929	

Water Funds

The Water Department provides clean water to the citizens and industries of Greeley. The department is responsible for 476 miles of distribution lines and 69.75 million gallons of treated water storage reservoirs. Below is a summary table of water revenues and expenditures. 2017 expenditures are budgeted to exceed revenues by $58.4 million as Water Fund balance is used.

Water Overview							
	YTD 2016 Actual	YTD 2017 Actual	YTD % Change	2017 Encumbrances	2016 Actuals	2017 Budget	% of 2017 Budget
Total Revenue	**$ 40,828,401**	**$ 33,512,341**	**-17.9%**	**-**	**$ 52,718,812**	**$ 44,726,818**	**74.9%**
Operating	$ 20,610,670	$ 20,635,939	0.1%	$ 770,828	$ 25,698,962	$ 27,873,081	76.8%
Water Rights Acquisition	$ 5,590,949	$ 1,787,502	-68.0%	$ 393,629	$ 9,773,310	$ 12,465,121	17.5%
Capital	$ 16,372,499	$ 13,133,899	-19.8%	$ 11,737,606	$ 27,019,442	$ 62,994,435	39.5%
Total Expenditures	**$ 42,574,118**	**$ 35,557,340**	**-16.5%**	**$ 12,902,063**	**$ 62,491,714**	**$ 103,332,637**	**46.9%**
Use of Fund Balance	$ 1,745,717	$ 2,044,999			$ 9,772,902	$ 58,605,819	

Water Revenues by Source



	Residential Rates	Commercial Rates	Industrial Rates	Other Rates	Raw Water Sales	Plant Investment Fees	Water Shares	Cash In Lieu	Other
YTD 2016 Actual	$14,759,820	$3,602,115	$3,600,119	$4,593,713	$2,934,133	$3,577,525	$6,322,741	$2,116,697	$(678,460)
YTD 2017 Actual	$14,957,933	$3,735,262	$2,791,707	$4,337,917	$204,000	$2,133,666	$-	$-	$5,351,856
2016 Actuals	$18,999,836	$4,648,305	$4,854,005	$5,892,888	$1,017,707	$4,669,986	$6,405,758	$2,116,697	$4,113,630
2017 Budget	$19,211,417	$5,247,437	$5,027,659	$5,602,102	$125,000	$6,828,660	$172,770	$-	$2,684,543
YTD % Change	1.3%	3.7%	-22.5%	-5.6%	-93.0%	-40.4%	0.0%	0.0%	-888.82%
% of 2017 Budget	77.9%	71.2%	55.5%	77.4%	163.2%	31.2%	0.0%	0.0%	199.4%

2017 revenues for residential, commercial, and industrial rates have moved 1.3%, 3.7%, and –22.5%, respectively, from 2016. To date, total rate revenue has decreased 2.8% from 2016. The total rate revenue is budgeted to increase 3.4% in 2017

Water Funds

Several projects are expected to be completed in 2017. As previously indicated, water expenditures are expected to exceed revenues as fund balance is used to fund capital projects. Listed below is a summary of the budgeted capital expenditures for 2017:

$20.5 million for over 33 water capital replacement & construction projects.

$8.4 million for water rights acquisition.

$22.7 million for Bellvue needs assessment projects.

$6.8 million for the Bellvue transmission line.

$11.9 million Boyd water treatment plant needs assessment projects .

$4 million for Water Acquisition Phase 2.

Water Projects over $1 million in 2017					
Quarter	Beginning Allocated Funds	Budget	Actual Expenditures	Variance from Budget	Ending Allocated Funds
Q1	$ 62,025,867	$ 4,816,592	$ 3,528,129	$ (1,288,463)	
Q2		$ 5,333,910	$ 4,585,014	$ (748,896)	
Q3		$ 10,900,000	$ 3,601,229	$ (7,298,771)	
Q4		$ 12,580,808			$ 28,394,557
Total		**$ 33,631,310**	**$ 11,714,372**	**$ (9,336,130)**	
Project Savings		$ 57,351			
Planned Next Year Expenditures		$ 28,337,206			

Projects over $1 million

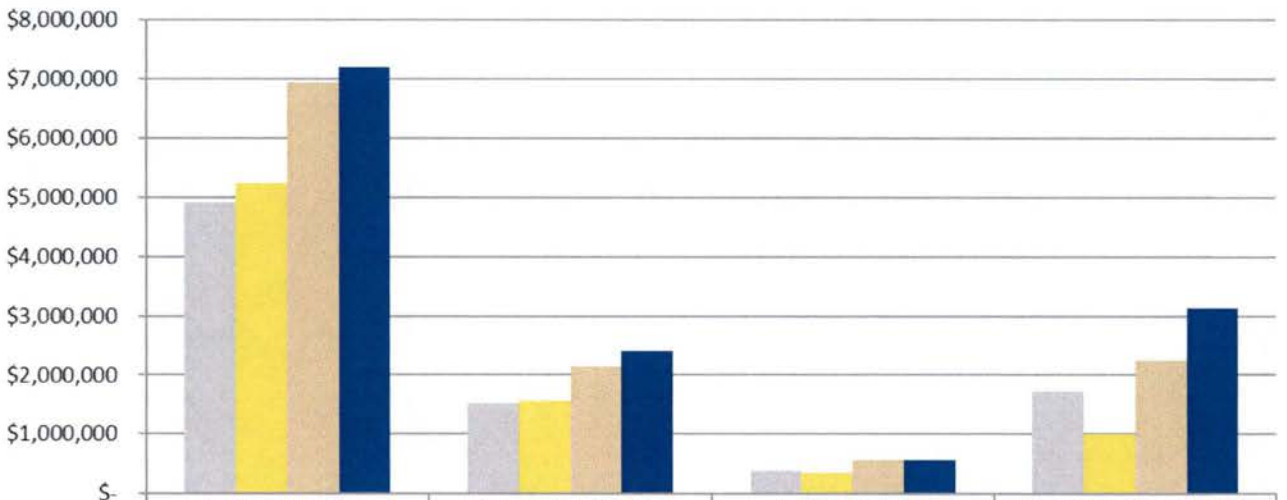
- Milton Seaman Permitting
- Distribution Line Extension & Oversizing
- Windy Gap Firming
- Bellvue Transmission Program (60")
- Boyd WTP Needs Assessment Projects
- Bellvue Needs Assessment Projects
- Gold Hill Tank Repair
- Distribution Pipeline Replacement
- Transmission System Rehabilitation
- Future Water Acquisition - Phase II

Sewer Funds

The Sewer Department collects and treats wastewater from Greeley's residences and businesses. 359 miles of line and 10 sewage pumping stations are operated and maintained by the department in order to perform these critical services.

Residential, commercial, and industrial sewer revenues have moved 6.8%, 1.7%, and –11.4%, respectively, from 2016 to 2017. To date, total sewer rate revenue in 2017 has increased 4.4% as compared to 2016. Total rate revenue was budgeted to increase 5.4% this year.

Sewer Revenues by Source



	Residential Rates	Commercial Rates	Industrial Rates	Plant Investment Fees
YTD 2016 Actual	$4,907,732	$1,534,459	$382,978	$1,723,910
YTD 2017 Actual	$5,240,745	$1,560,989	$339,167	$1,013,825
2016 Actuals	$6,935,731	$2,150,511	$555,638	$2,246,610
2017 Budget	$7,194,063	$2,403,280	$563,595	$3,121,885
YTD % Change	6.8%	1.7%	-11.4%	-41.2%
% of 2017 Budget	72.8%	65.0%	60.2%	32.5%

Sewer Funds

2017 sewer projects include:

- $2.1 million for sewer replacement collection projects.
- $1.3 million for sewer replacement studies.
- $598,383 in sewer replacement treatment projects.
- $700,166 in sewer construction projects.
- $142,902 in sewer treatment projects.
- $3 million for Ashcroft Draw Sewer Phase I.
- $2.8 million for North Greeley Sewer Phase II.
- $7.5 million for Water Pollution Control Facility Phase II.

Sewer Overview							
	YTD 2016 Actual	YTD 2017 Actual	YTD % Change	2017 Encumbrances	2016 Actuals	2017 Budget	% of 2017 Budget
Total Revenue	**$ 8,549,078**	**$ 8,154,726**	**-4.6%**	**-**	**$ 11,888,490**	**$ 13,282,823**	**61.4%**
Operating	$ 4,673,080	$ 4,899,633	4.8%	$ 177,055	$ 6,179,142	$ 6,970,762	72.8%
Capital	$ 1,410,324	$ 8,074,049	472.5%	$ 6,512,507	$ 2,872,112	$ 18,588,217	78.5%
Total Expenditures	**$ 6,083,404**	**$ 12,973,681**	**113.3%**	**$ 6,689,562**	**$ 9,051,254**	**$ 25,558,979**	**76.9%**
Use of Fund Balance	$ (2,465,675)	$ 4,818,956			$ (2,837,236)	$ 12,276,156	

Sewer Projects over $1 million in 2017					
Quarter	Beginning Allocated Funds	Budget	Actual Expenditures	Variance from Budget	Ending Allocated Funds
Q1	$ 13,214,402	$ 1,380,000	$ 985,178	$ (394,822)	
Q2		$ 2,400,000	$ 1,841,158	$ (558,842)	
Q3		$ 3,200,000	$ 3,240,081	$ 40,081	
Q4		$ 3,000,000			$ 3,234,402
Total		**$ 9,980,000**	**$ 6,066,417**	**$ (913,583)**	
Project Savings		$ 967,581			
Planned Next Year Expenditures		$ 2,266,821			

Caustic Metering Pumps at the Water Pollution Control Facility

Projects over $1 million

- Ashcroft Draw Sewer Phase I
- North Greeley Sewer Phase 2A
- Water Pollution Control Facility Solids Processing Improvements

Stormwater Funds

The Stormwater division is responsible for:

- Developing a Capital Improvement Program for Stormwater facilities.
- Monitoring and creating maintenance plans for the existing system.
- Developing City drainage standards.
- Reviewing flood impact issues.
- Regulating illicit discharges.
- Managing the City's Stormwater National Pollution Discharge Elimination System (NPDES) permit.

Capital projects in 2017 include:

- $6.7 million for 27th Avenue storm drain improvements 17th to the Poudre River.
- $1.5 million for Sunrise Neighborhood drainage improvements.
- $390,000 for drainage system repairs to system mains, inlets and culverts.
- $450,000 to fund college green pipe replacement.

A brief summary of Stormwater revenue and expenditures is shown below. Revenues are up 7.4% from 2016 to 2017. Stormwater revenue for 2016 was budgeted at 5.7% over 2017 actual revenues. 2017 expenditures are budgeted to exceed revenues by $9.1 million as Stormwater fund balance is used. To date, 42% of the expenditure budget has been spent (including encumbered expenses).

Stormwater Overview							
	YTD 2016 Actual	YTD 2017 Actual	YTD % Change	2017 Encumbrances	2016 Actuals	2017 Budget	% of 2017 Budget
Rates	$ 3,574,783	$ 3,888,388	8.8%	-	$ 5,161,347	$ 5,465,114	71.1%
Impact Fees	$ 213,268	$ 140,428	-34.2%	-	$ 280,949	$ 285,961	49.1%
Total Revenue	**$ 3,788,051**	**$ 4,028,816**	**6.4%**	**-**	**$ 5,442,296**	**$ 5,751,075**	**70.1%**
Operating	$ 2,379,081	$ 2,493,980	4.8%	-	$ 2,923,065	$ 3,319,094	75.1%
Capital	$ 2,201,372	$ 2,369,844	7.7%	$ 2,217,848	$ 4,441,784	$ 11,607,831	39.5%
Total Expenditures	**$ 4,580,453**	**$ 4,863,824**	**6.2%**	**$ 2,217,848**	**$ 7,364,849**	**$ 14,926,925**	**47.4%**
Use of Fund Balance	$ 792,402	$ 835,008			$ 1,922,553	$ 9,175,850	

Stormwater Projects over $1 million in 2017					
Quarter	Beginning Allocated Funds	Budget	Actual Expenditures	Variance From Budget	Ending Allocated Funds
Q1	$ 8,231,089	$ 107,679	$ 62,679	$ (45,000)	
Q2		$ 285,000	$ 118,615	$ (166,385)	
Q3		$ 800,000	$ 743,138	$ (56,862)	
Q4		$ 2,261,651			$4,776,759
Total		**$ 3,454,330**	**$ 924,432**	**$ (268,247)**	
Project Savings		$ -			
Planned Next Year Expenditures		$ 4,776,759			

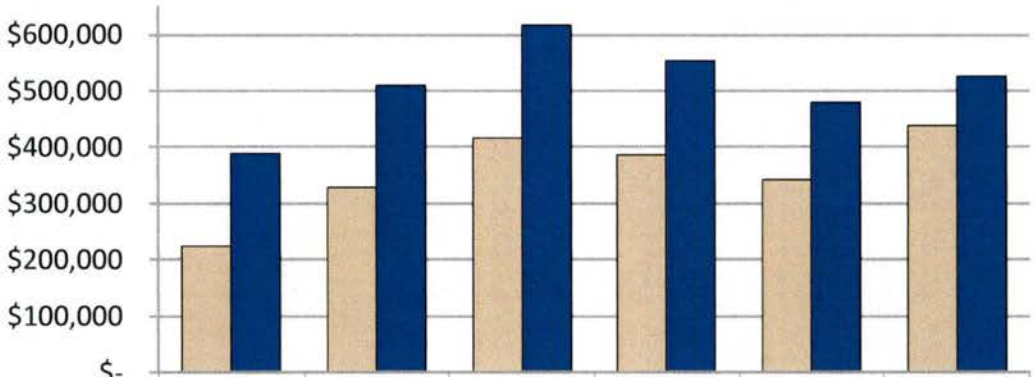
Projects over $1 million

- Sunrise Neighborhood Drainage Improvements
- 27th Avenue Storm Drain Improvements 17th Street to Poudre River

Lodging Tax

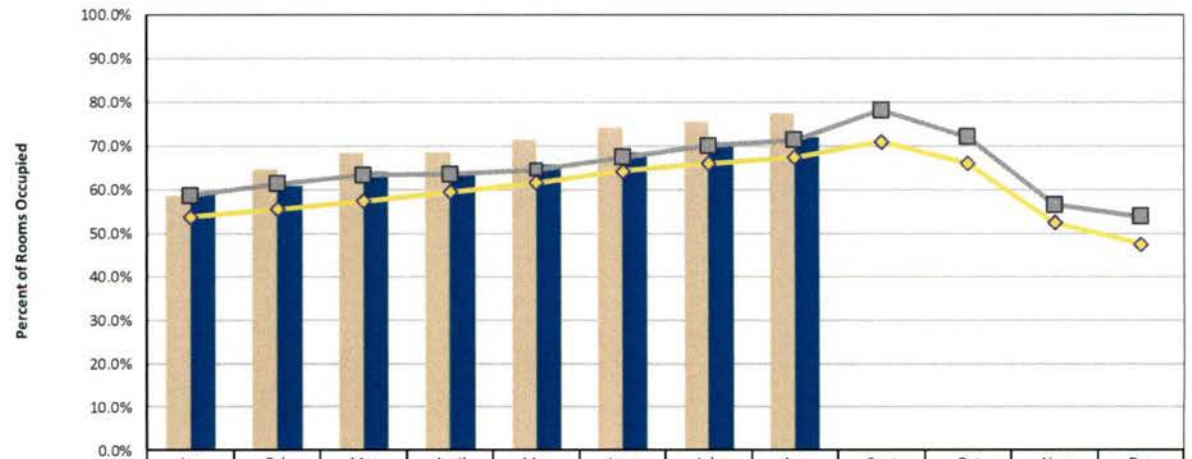
The Convention and Visitors Fund is supported by a 3% lodging tax and is utilized to support convention and visitor activities. For rooms rented through August, revenues increased 28.1% from 2016. Current trends indicate that the budget of $525,000 will be reached in 2017. According to the August Rocky Mountain Lodging Report, Greeley's year-to-date occupancy rate is currently 77.5% as compared to 67.4% in 2016. Greeley's 2017 occupancy rate is the highest among cities in Northern Colorado, outpacing Loveland (75.9%), Fort Collins (69.0%), Longmont (64.9%), and Estes Park (56.1%).

Lodging Tax Revenue



	2012	2013	2014	2015	2016	2017*
YTD Receipts	$223,903	$327,106	$415,668	$387,283	$342,713	$439,010
Actual/Budget*	$389,760	$510,863	$616,765	$554,650	$480,766	$525,000

Greeley vs. Colorado Lodging Occupancy Rates



	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
2017 Greeley YTD Occupancy Rate	58.6%	64.7%	68.4%	68.7%	71.3%	74.2%	75.7%	77.5%				
2017 Colorado YTD Occupancy Rate	59.0%	60.9%	64.1%	64.0%	65.6%	68.4%	70.7%	72.0%				
2016 Greeley YTD Occupancy Rate	53.7%	55.5%	57.4%	59.4%	61.5%	64.2%	66.0%	67.4%	71.0%	66.0%	52.5%	47.5%
2016 Colorado YTD Occupancy Rate	58.6%	61.3%	63.3%	63.5%	64.5%	67.4%	70.0%	71.3%	78.2%	72.0%	56.5%	53.8%

Investments

The City of Greeley's investment objectives include:

- The preservation of capital and protection of investment principal
- Maintaining sufficient liquidity to meet immediate and short-term obligations
- Achieving a market value rate of return

	2011	2012	2013	2014	2015	2016	2017
Investment Earnings	$962,484	$974,476	$734,787	$786,786	$919,544	$1,262,722	$1,158,233

The City's portfolio performance benchmark is the one-year U.S. Treasury rate. As of August 31st, 2017 the weighted average maturity was 1.22 years, book yield was 1.18% and the one-year treasury rate was 1.22%.

Greeley City Council

Mayor Tom Norton

Ward I: Rochelle Galindo

Ward II: Brett Payton

Ward III: John Gates

Ward IV: Michael Finn

At Large: Sandi Elder

At Large: Robb Casseday

FINANCE DEPARTMENT | 1000 10TH STREET | GREELEY CO 80631

greeleygov.com/government/finance

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PREPARED BY:

ROBERT MILLER, BUDGET AND COMPLIANCE MANAGER

JOSE GUTIERREZ, FINANCIAL ANALYST

City of Greeley Colorado

September 2017 Monthly Financial Report

October 24, 2017

Tonight's Presentation

- General Fund
- Enterprise Funds
- Lodging Tax

General Fund Summary

	2017 Actual	2017 Budget	Variance	% of 2017 Budget
Use of Fund Balance	$ 1,130,454	$ 4,056,865	$ (2,926,411)	28%
Revenue	$ 63,794,319	$ 88,388,345	$ 24,594,026	72.2%
Expenditures	$ 64,924,774	$ 92,445,210	$ 27,520,436	70.2%

CITY OF GREELEY

General Fund Revenue

	2016	2017	Variance	% Change 2016 - 2017	2017 Budget	% of 2017 Budget
1st Quarter	$ 15,156,139	$ 15,580,456	$ 424,317	2.8%	-	-
2nd Quarter	$ 24,857,636	$ 25,110,498	$ 252,862	1.0%	-	-
3rd Quarter	$ 23,324,516	$ 23,103,366	$ (221,150)	-0.9%	-	-
YTD Total	$ 63,338,290	$ 63,794,319	$ 456,030	0.7%	$ 88,388,345	72.2%

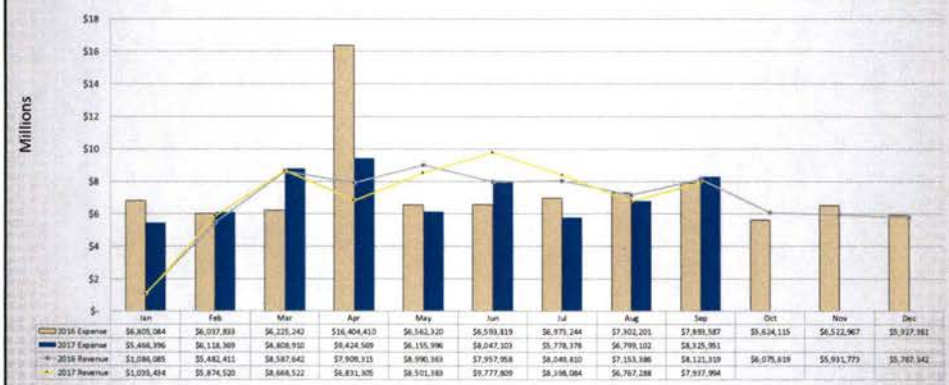
CITY OF GREELEY

General Fund Expenditures

	2016	2017	Variance	% Change 2016 - 2017	2017 Budget	% of 2017 Budget
1st Quarter	$ 19,068,159	$ 20,393,676	$ 1,325,517	7.0%	-	-
2nd Quarter	$ 29,560,548	$ 23,627,668	$ (5,932,880)	-20.1%	-	-
3rd Quarter	$ 22,169,033	$ 20,903,430	$ (1,265,603)	-5.7%	-	-
YTD Total	$ 70,797,740	$ 64,924,774	$ (5,872,966)	-8.3%	$ 92,445,210	70.2%

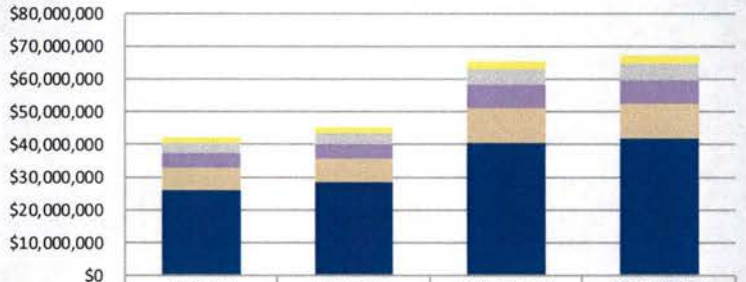
CITY OF GREELEY

General Fund: Revenue and Expenditure Overview Analysis



CITY OF GREELEY

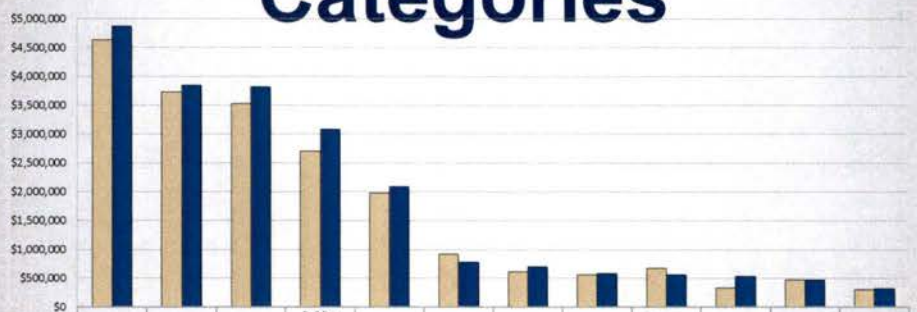
Sales Tax Distribution



	2016 YTD	2017 YTD	2016 Actual	2017 Budget
Public Safety Bonds	$1,636,144	$1,761,359	$2,544,550	$2,607,571
Quality of Life	$3,067,770	$3,302,549	$4,771,032	$4,889,197
Food	$4,528,818	$4,718,155	$7,083,994	$7,242,735
Keep Greeley Moving	$6,750,154	$7,227,238	$10,489,543	$10,577,072
General Fund	$26,148,881	$28,307,333	$40,626,323	$41,956,230

CITY OF GREELEY

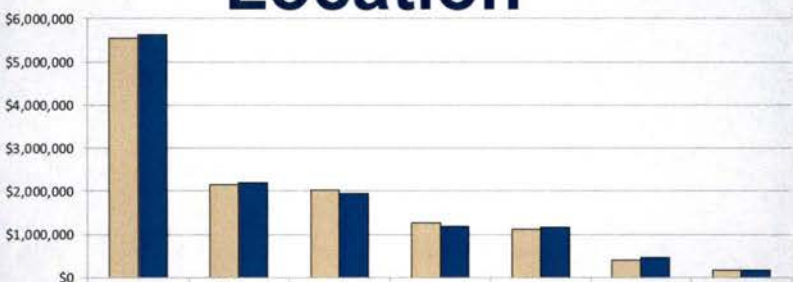
Sales Tax by Major Categories



	Dining Out	General Merchandise Stores	Motor Vehicle and Parts Dealers	Building Material and Garden Equipment and Supplies Dealers	Utilities	Electronics and Appliance Stores	Clothing and Clothing Accessories Stores	Health and Personal Care Stores	Sporting Goods, Hobby, Book, and Music Stores	Online Shopping	Furniture and Home Furnishings Stores	Gasoline Stations
2016 YTD	$4,634,732	$3,725,821	$3,524,016	$2,696,148	$1,975,219	$917,434	$615,285	$565,840	$681,937	$338,374	$472,933	$309,019
2017 YTD	$4,878,796	$3,838,086	$3,811,663	$3,085,851	$2,083,441	$781,920	$704,717	$590,831	$560,748	$541,304	$479,499	$321,776
% Change	5.27%	3.01%	8.16%	14.45%	5.48%	-14.77%	14.53%	4.42%	-17.77%	59.97%	1.39%	4.13%
$ Change	$244,064	$112,264	$287,647	$389,703	$108,222	$(135,513)	$89,432	$24,990	$(121,189)	$202,931	$6,566	$12,757

CITY OF GREELEY

Retail Sales Tax by Location*



	Centerplace Area	10th Street-23rd Ave - 59th Ave	Greeley Mall Area	University District	Downtown Development	Northgate Village	St. Michaels
2016	5,538,527	2,160,261	2,024,318	1,258,099	1,125,155	398,820	163,571
2017	5,638,925	2,207,502	1,939,544	1,186,982	1,169,626	455,691	172,268
% Change	1.81%	2.19%	-4.19%	-5.65%	3.95%	14.26%	5.32%
$ Change	$100,398	$47,240	$(84,774)	$(71,117)	$44,471	$56,871	$8,697

*Excludes businesses selling groceries and auto dealers.

CITY OF GREELEY

Property Tax

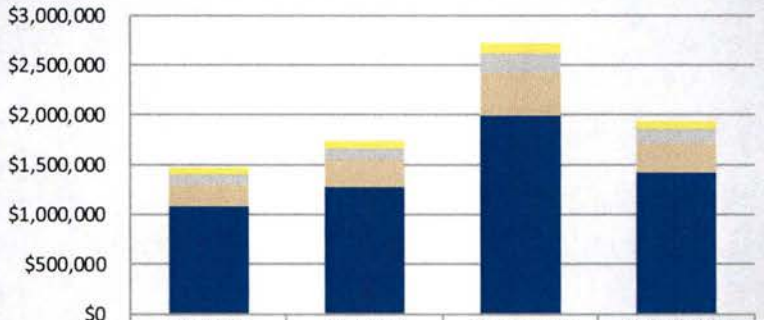
	2016	2017	Variance	% Change 2016 - 2017	2017 Budget	% of 2017 Budget
1st Quarter	$ 2,833,322	$ 2,966,893	$ 133,572	4.7%	-	-
2nd Quarter	$ 4,979,444	$ 4,735,003	$ (244,441)	-4.9%	-	-
3rd Quarter	$ 1,912,914	$ 2,053,527	$ 140,613	7.4%	-	-
YTD Total	**$ 9,725,680**	**$ 9,755,423**	**$ 29,743**	**0.3%**	**$ 9,991,000**	**97.6%**

Estimated 2017 Property Tax Sources from County Assessor

Source	%	Amount
Residential	47.0%	$ 4,618,736
Commercial	36.4%	$ 3,571,581
Industrial	4.2%	$ 416,400
Mineral, Oil & Gas	4.4%	$ 431,438
Other	8.0%	$ 788,885
Total	**100%**	**$ 9,827,041**

CITY OF GREELEY

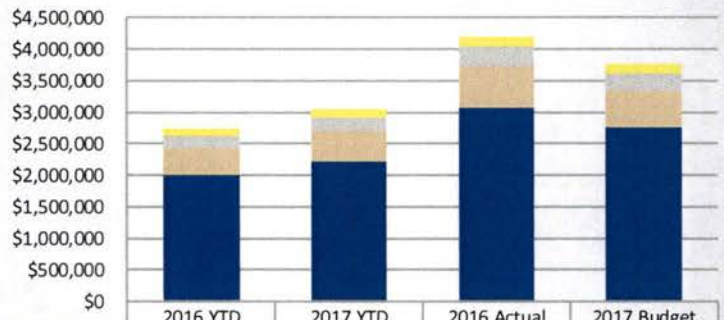
General Use Tax



	2016 YTD	2017 YTD	2016 Actual	2017 Budget
Public Safety Bonds	$57,504	$67,816	$106,517	$75,522
Quality of Life	$107,820	$127,156	$199,720	$141,603
Keep Greeley Moving	$225,498	$272,794	$420,733	$306,731
General Fund	$1,078,201	$1,271,557	$1,997,197	$1,416,035

CITY OF GREELEY

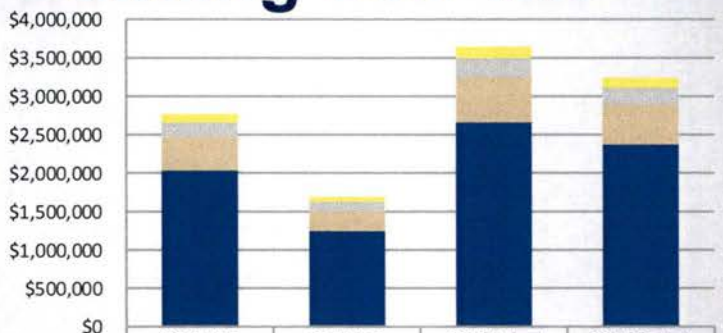
Auto Use Tax



	2016 YTD	2017 YTD	2016 Actual	2017 Budget
Public Safety Bonds	$106,585	$118,446	$163,569	$146,811
Quality of Life	$199,847	$222,086	$306,691	$275,270
Keep Greeley Moving	$433,002	$481,186	$664,498	$596,269
General Fund	$1,998,472	$2,220,857	$3,066,915	$2,752,699

CITY OF GREELEY

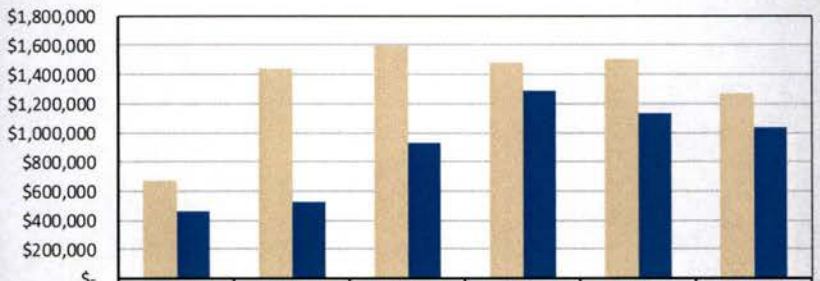
Building Use Tax



	2016 YTD	2017 YTD	2016 Actual	2017 Budget
Public Safety Bonds	$108,195	$66,042	$142,136	$126,288
Quality of Life	$202,865	$123,829	$266,505	$236,791
Keep Greeley Moving	$437,441	$267,992	$575,368	$512,918
General Fund	$2,028,651	$1,238,288	$2,665,051	$2,367,907

CITY OF GREELEY

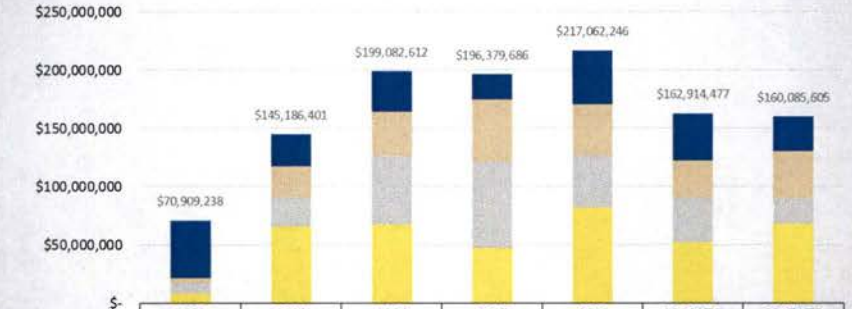
Building Permit Revenue



	2012	2013	2014	2015	2016	2017*
Actuals/Budget*	$669,197	$1,444,774	$1,595,310	$1,483,715	$1,507,978	$1,273,000
YTD Actuals	$465,955	$524,391	$929,264	$1,285,279	$1,133,008	$1,039,199

CITY OF GREELEY

Building Permit Valuations



	2012	2013	2014	2015	2016	2016 YTD	2017 YTD
New Commercial	$49,259,303	$28,107,903	$34,692,350	$21,622,922	$46,620,945	$40,910,584	$30,022,225
New Multi-Family	$4,117,538	$26,207,094	$38,421,203	$53,335,909	$43,402,782	$31,416,573	$40,298,530
New Single-Family	$8,759,064	$25,332,659	$58,891,310	$74,046,922	$45,308,198	$38,827,877	$21,361,474
Other Permits	$8,773,333	$65,538,745	$67,077,749	$47,373,933	$81,730,321	$51,759,443	$68,403,376
Total	$70,909,238	$145,186,401	$199,082,612	$196,379,686	$217,062,246	$162,914,477	$160,085,605

CITY OF GREELEY

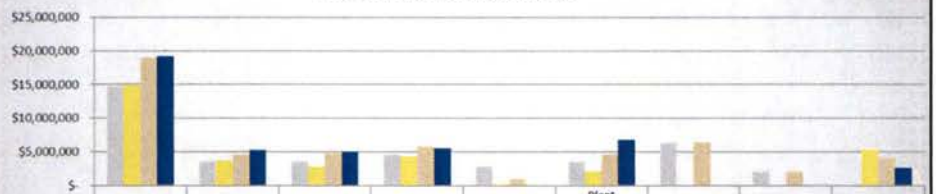
General Fund: Franchise Fees

	2016 YTD	2017 YTD	Variance	% Change 2016 - 2017	2017 Budget	% of 2017 Budget
Cable	$ 468,154	$ 506,337	$ 38,183	8.2%	$ 943,500	53.7%
Electric	$ 1,357,950	$ 1,409,171	$ 51,220	3.8%	$ 2,446,500	57.6%
Natural Gas	$ 996,921	$ 840,653	$ (156,267)	-15.7%	$ 1,278,900	65.7%
Telephone	$ 87,717	$ 82,531	$ (5,186)	-5.9%	$ 115,000	71.8%
YTD Total	**$ 2,910,743**	**$ 2,838,692**	**$ (72,051)**	**-2.5%**	**$ 4,783,900**	**59.3%**

CITY OF GREELEY

Water Funds

Water Revenues by Source



	Residential Rates	Commercial Rates	Industrial Rates	Other Rates	Raw Water Sales	Plant Investment Fees	Water Shares	Cash In Lieu	Other
YTD 2016 Actual	$14,759,820	$3,602,115	$3,600,119	$4,593,713	$2,934,133	$3,577,525	$6,322,741	$2,116,697	$(678,460)
YTD 2017 Actual	$14,957,933	$3,735,262	$2,791,707	$4,337,917	$204,000	$2,133,666	$-	$-	$5,351,856
2016 Actuals	$18,999,836	$4,648,305	$4,854,005	$5,892,888	$1,017,707	$4,669,986	$6,405,758	$2,116,697	$4,113,630
2017 Budget	$19,211,417	$5,247,437	$5,027,659	$5,602,102	$125,000	$6,828,660	$-	$-	$2,684,543
YTD % Change	1.3%	3.7%	-22.5%	-5.6%	-93.0%	-40.4%	0.0%	0.0%	-888.82%
% of 2017 Budget	77.9%	71.2%	55.5%	77.4%	163.2%	31.2%	0.0%	0.0%	199.4%

CITY OF GREELEY

Water Funds

	YTD 2016 Actual	YTD 2017 Actual	YTD % Change	2017 Encumbrances	2016 Actuals	2017 Budget	% of 2017 Budget
Total Revenue	**$ 40,828,401**	**$ 33,512,341**	**-17.9%**	**-**	**$ 52,718,812**	**$ 44,726,818**	**74.9%**
Operating	$ 20,610,670	$ 20,635,939	0.1%	$ 770,828	$ 25,698,962	$ 27,873,081	76.8%
Water Rights Acquisition	$ 5,590,949	$ 1,787,502	-68.0%	$ 393,629	$ 9,773,310	$ 12,465,121	17.5%
Capital	$ 16,372,499	$ 13,133,899	-19.8%	$ 11,737,606	$ 27,019,442	$ 62,994,435	39.5%
Total Expenditures	**$ 42,574,118**	**$ 35,557,340**	**-16.5%**	**$ 12,902,063**	**$ 62,491,714**	**$ 103,332,637**	**46.9%**
Use of Fund Balance	$ 1,745,717	$ 2,044,999			$ 9,772,902	$ 58,605,819	

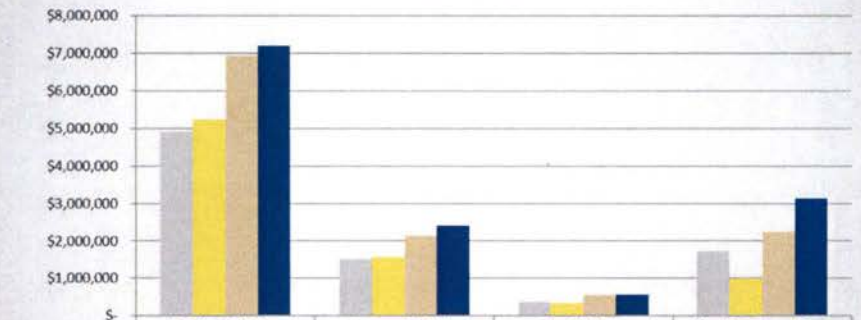
Water Projects over $1 million in 2017

Quarter	Beginning Allocated Funds	Budget	Actual Expenditures	Variance from Budget	Ending Allocated Funds
Q1	$ 62,025,867	$ 4,816,592	$ 3,528,129	$ (1,288,463)	
Q2		$ 5,333,910	$ 4,585,014	$ (748,896)	
Q3		$ 10,900,000	$ 3,601,229	$ (7,298,771)	
Q4		$ 12,580,808			$ 28,394,557
Total		**$ 33,631,310**	**$ 11,714,372**	**$ (9,336,130)**	
Project Savings		$ 57,351			
Planned Next Year Expenditures		$ 28,337,206			

CITY OF GREELEY

Sewer Funds

Sewer Revenues by Source



	Residential Rates	Commercial Rates	Industrial Rates	Plant Investment Fees
YTD 2016 Actual	$4,907,732	$1,534,459	$382,978	$1,723,910
YTD 2017 Actual	$5,240,745	$1,560,989	$339,167	$1,013,825
2016 Actuals	$6,935,731	$2,150,511	$555,638	$2,246,610
2017 Budget	$7,194,063	$2,403,280	$563,595	$3,121,885
YTD % Change	6.8%	1.7%	-11.4%	-41.2%
% of 2017 Budget	72.8%	65.0%	60.2%	32.5%

CITY OF GREELEY

Sewer Funds

	YTD 2016 Actual	YTD 2017 Actual	YTD % Change	2017 Encumbrances	2016 Actuals	2017 Budget	% of 2017 Budget
Total Revenue	**$ 8,549,078**	**$ 8,154,726**	**-4.6%**	**-**	**$ 11,888,490**	**$ 13,282,823**	**61.4%**
Operating	$ 4,673,080	$ 4,899,633	4.8%	$ 177,055	$ 6,179,142	$ 6,970,762	72.8%
Capital	$ 1,410,324	$ 8,074,049	472.5%	$ 6,512,507	$ 2,872,112	$ 18,588,217	78.5%
Total Expenditures	**$ 6,083,404**	**$ 12,973,681**	**113.3%**	**$ 6,689,562**	**$ 9,051,254**	**$ 25,558,979**	**76.9%**
Use of Fund Balance	$ (2,465,675)	$ 4,818,956			$ (2,837,236)	$ 12,276,156	

Sewer Projects over $1 million in 2017

Quarter	Beginning Allocated Funds	Budget	Actual Expenditures	Variance from Budget	Ending Allocated Funds
Q1	$ 13,214,402	$ 1,380,000	$ 985,178	$ (394,822)	
Q2		$ 2,400,000	$ 1,841,158	$ (558,842)	
Q3		$ 3,200,000	$ 3,240,081	$ 40,081	
Q4		$ 3,000,000			$ 3,234,402
Total		**$ 9,980,000**	**$ 6,066,417**	**$ (913,583)**	
Project Savings		$ 967,581			
Planned Next Year Expenditures		$ 2,266,821			

CITY OF GREELEY

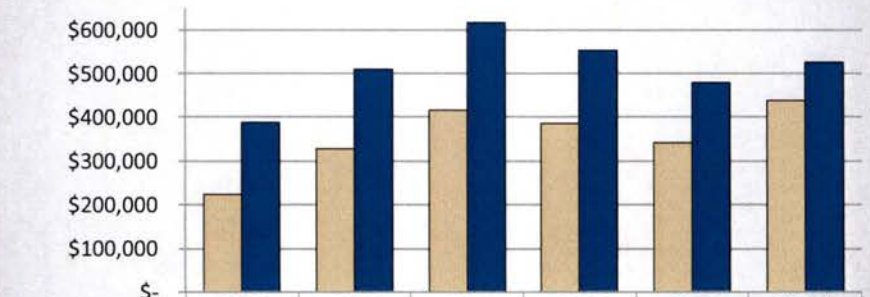
Stormwater Funds

	YTD 2016 Actual	YTD 2017 Actual	YTD % Change	2017 Encumbrances	2016 Actuals	2017 Budget	% of 2017 Budget
Rates	$ 3,574,783	$ 3,888,388	8.8%	-	$ 5,161,347	$ 5,465,114	71.1%
Impact Fees	$ 213,268	$ 140,428	-34.2%	-	$ 280,949	$ 285,961	49.1%
Total Revenue	**$ 3,788,051**	**$ 4,028,816**	6.4%	-	**$ 5,442,296**	**$ 5,751,075**	70.1%
Operating	$ 2,379,081	$ 2,493,980	4.8%	-	$ 2,923,065	$ 3,319,094	75.1%
Capital	$ 2,201,372	$ 2,369,844	7.7%	$ 2,217,848	$ 4,441,784	$ 11,607,831	39.5%
Total Expenditures	**$ 4,580,453**	**$ 4,863,824**	6.2%	**$ 2,217,848**	**$ 7,364,849**	**$ 14,926,925**	47.4%
Use of Fund Balance	$ 792,402	$ 835,008			$ 1,922,553	$ 9,175,850	

Stormwater Projects over $1 million in 2017

Quarter	Beginning Allocated Funds	Budget	Actual Expenditures	Variance From Budget	Ending Allocated Funds
Q1	$ 8,231,089	$ 107,679	$ 62,679	$ (45,000)	
Q2		$ 285,000	$ 118,615	$ (166,385)	
Q3		$ 800,000	$ 743,138	$ (56,862)	
Q4		$ 2,261,651			$4,776,759
Total		**$ 3,454,330**	**$ 924,432**	**$ (268,247)**	
Project Savings		$ -			
Planned Next Year Expenditures		$ 4,776,759			

Lodging Tax Revenues



	2012	2013	2014	2015	2016	2017*
YTD Receipts	$223,903	$327,106	$415,668	$387,283	$342,713	$439,010
Actual/Budget*	$389,760	$510,863	$616,765	$554,650	$480,766	$525,000

September Financial Summary

2017 Revenues as compared to budget

- ↓Building Use Tax
- ↓Water & Sewer Plant Investment Fees
- ↓Residential Building Permits

- ↑Lodging Tax
- ↑General Use
- ↑Auto Use
- ↑Sales Tax

City of Greeley Colorado

Worksession Agenda Summary

October 24, 2017
Agenda Item Number 4
Contact: Roy Otto, City Manager

Title
Scheduling of Meetings, Other Events

Summary
During this portion of the meeting the City Manager or City Council may review the attached Council Calendar or Worksession Schedule regarding any upcoming meetings or events.

Attachments
Council Meetings/Other Events Calendar
Council Meeting/Worksession Schedule
Status Report of Council Petitions and Related Information

October 2017 - November 2017

October 2017

Su	Mo	Tu	We	Th	Fr	Sa
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

November 2017

Su	Mo	Tu	We	Th	Fr	Sa
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
Oct 22	23 11:30am Greeley Chamber of Commerce (Gates) 6:30pm Youth Commission (Payton)	24 11:30am 2017 Profiles Luncheon (DoubleTree Hilton Greeley Lincoln 4:30pm Special City Council Meeting (1025 9th Avenue, 5:00pm City Council Worksession (1025 9th	25 7:00am Upstate Colorado Economic Development (Norton/Finn)	26	27	28 10:00am Roundtables with Rochelle (Joe Molina's Art Gallery, 930 8th Avenue, Greeley CO)
29	30	31	Nov 1	2 7:00am Poudre River Trail (Finn) 3:30pm IG Adv. Board (Gates) 6:00pm MPO (Casseday; Norton)	3 6:00pm 9th Annual Heroes Celebration (Double Tree Hotel, Downtown Greeley, 919 7th Street) - Council Master Calendar	4
5	6	7 6:30pm City Council Meeting (1025 9th Ave)	8 7:30am Thriving Weld Summit (DoubleTree Hotel at Lincoln Park) - Council Master Calendar 5:00pm US34 PEL - Public Meeting (CDOT, 601 W. 10th Street, Greeley CO	9	10	11 11:00am Veteran's Day Proclamation
12	13	14 5:00pm City Council Worksession (1025 9th Ave)	15 2:00pm Water & Sewer Board (Norton) (School District Six Facility)	16 7:30am DDA (Elder/Casseday) 3:30pm Airport Authority (Elder/Finn)	17	18
19	20	21 7:30am Visit Greeley (Finn) 6:30pm City Council Meeting (1025 9th Ave)	22	23	24	25 10:00am Roundtables with Rochelle (Joe Molina's Art Gallery, 930 8th Avenue, Greeley CO) 5:30pm Lights the Night Parade (Details forthcoming....) - Council

City Council Meeting Schedule

Date	Description	Staff Contact	
November 7, 2017 Council Meeting	Possible cancellation due to the lack of items for consideration		
November 14, 2017 Special Meeting	Proposed Special Meeting for New Council to include Oaths of Office	Betsy Holder	
November 21, 2017 Council Meeting	Resolution - 2017 Tax Levy Certification	Victoria Runkle	Consent
	Ordinance - Intro - Amendments to Title 2 of the Greeley Municipal Code	Victoria Runkle	Consent
	Board and Commission Appointments	Betsy Holder	Regular
November 28, 2017 Worksession	Monthly Financial Report	Victoria Runkle	0.50
	2017 Hurricane and Wildland Fires Deployment Report	Dale Lyman	0.50
	Regional Transit Route	Joel Hemesath	1.00
December 5, 2017 Council Meeting	Ordinance - Final - Amendments to Title 2 of the Greeley Municipal Code	Victoria Runkle	Regular
	Ordinance - Intro Triennial Reviews	Betsy Holder	Consent
December 12, 2017 Worksession	Metro District Model Service Plan Ordinance	Brad Mueller	0.50
	Broadband Feasibility Study Update	Victoria Runkle	0.50
December 19, 2017 Council Meeting	Ordinance - Final - Triennial Reviews	Betsy Holder	Regular
	Board and Commission Appointments	Betsy Holder	Regular
December 26, 2017 Worksession	Monthly Financial Report	Victoria Runkle	0.50
January 2, 2018 Council Meeting			
January 9, 2018 Worksession			
January 16, 2018 Council Meeting			
	Board & Commissions Appointments	Betsy Holder	Regular
January 23, 2018 Worksession			
	Monthly Financial Report	Victoria Runkle	0.50
February 6, 2018 Council Meeting			
February 13, 2018 Worksession			
February 20, 2018 Council Meeting			
	Board & Commissions Appointments	Betsy Holder	Regular
February 27, 2018 Worksession			
	Monthly Financial Report	Victoria Runkle	0.50
March 6, 2018 Council Meeting			
March 13, 2018 Worksession			
March 20, 2018 Council Meeting			
	Board & Commissions Appointments	Betsy Holder	Regular
March 27, 2018 Worksession			
	Monthly Financial Report	Victoria Runkle	0.50
April 3, 2018 Council Meeting			
April 10, 2018 Worksession			
April 17, 2018 Council Meeting			
	Board & Commissions Appointments	Betsy Holder	Regular
April 24, 2018 Worksession			
	Monthly Financial Report	Victoria Runkle	0.50