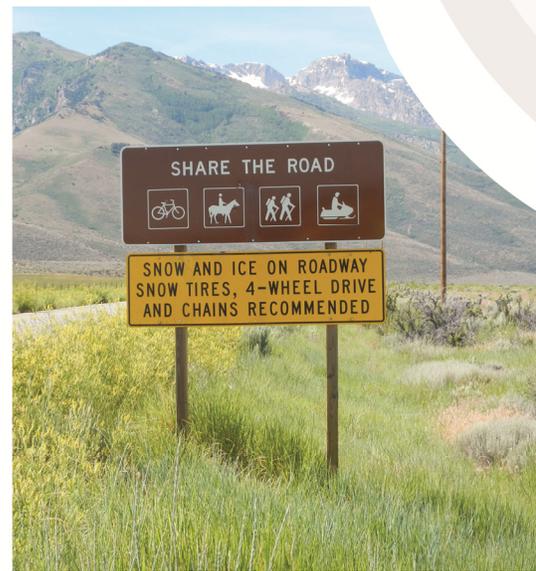




ELKO COUNTY Bicycle Plan





ACKNOWLEDGEMENTS

The Nevada Department of Transportation (NDOT) Transportation Planning Division would like to express its appreciation to the dedicated individuals who provided valuable input in the development of the Elko County Bicycle Plan. The following individuals representing local, regional and state agencies or organizations were instrumental in the preparation of this Plan:

- Jeremy Draper, City of Elko
- Carlie Teague, City of Elko
- Rebecca Hansen, Elko City Planning
- James Wiley, City of Elko Parks and Recreation
- Harry Jackson, Elko County
- Jeffrey Secord, Elko County GIS Tech
- John Kingwell, Elko County Planning and Zoning
- Charlie Ekburg, Local Cyclist
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LIST OF ACRONYMS

AASHTO	American Association of State Highway and Transportation Officials
FHWA	Federal Highway Administration
GIS	Geographic Information Systems
HSIP	Highway Safety Improvement Program
MAP-21	Moving Ahead for Progress in the 21st Century Act
MPO	Metropolitan Planning Organization
NACTO	National Association of City Transportation Officials
NBAB	Nevada Bicycle Advisory Board (Converted to NBPAP in 2011)
NBPAB	Nevada Bicycle and Pedestrian Advisory Board
NDOT	Nevada Department of Transportation
NHPP	National Highway Performance Program
NHS	National Highway System
NHTSA	National Highway Traffic Safety Administration
SHSP	Strategic Highway Safety Plan
SRTS	Safe Routes to School
STP	Surface Transportation Program
TAP	Transportation Alternatives Programs
TMA	Transportation Management Areas



1. INTRODUCTION

Communities throughout Nevada have been steadily expanding their emphasis on improving bicycling over the last few decades. In February 2013, NDOT formalized this momentum in the Nevada Statewide Bicycle Plan (State Bike Plan), which focused on areas outside of the four Metropolitan Planning Organizations (MPOs) in Nevada, including the Carson Area Metropolitan Planning Organization (CAMPO), the Regional Transportation Commission of Southern Nevada (RTC), the Regional Transportation Commission of Washoe County (RTC), and the Tahoe MPO (TMPO). Representatives from NDOT and other public and private organizations throughout the state came together to support bicycle planning within the development of this plan. The State Bike Plan focused on recommendations to improve bicycling through Policies, Programs, Legislation, Tourism, and Infrastructure Improvements. **Appendix A** contains the cover to the State Bike Plan and the website to where it can be found (www.bicyclenevada.com).

The first strategy listed within the State Bike Plan is for NDOT to assist local jurisdictions with adopting local bicycle plans that are endorsed by the Nevada Bicycle and Pedestrian Advisory Board (NBPAB). The Elko County Bicycle Plan has been prepared in support of that strategy. This Plan references the major elements of the State Bike Plan that are relevant to Elko County with a focus on documenting the existing and proposed infrastructure improvements desired within Elko County, as well as adjacent areas.

This Plan has been developed with significant input from county and local representatives, cycling advocates from Elko County and various community groups. The project is being led by NDOT in coordination with the NBPAB.



2. PUBLIC INVOLVEMENT

The development of this Plan was guided by local coordination and public input. Public input was initially gathered during the development of the State Bike Plan. A public meeting for the State Bike Plan was held in Elko/Spring Creek, Nevada on November 15, 2011. This meeting was attended by two people and the following summarizes the key topics identified at the meeting:

Largest Need:

- Completing the path from Elko to Lamoille Canyon

Biggest Issue:

- Bike safety

Greatest Asset:

- Ruby Mountains and Lamoille Canyon

Additional Information:

- There is a need for education and enforcement for bicyclists;
- Signage is needed for regional bicycle routes, including I-80 and US 93
- There is a need for a local bike map; and
- There is an issue with paths having too many stop signs.

Section 3 of the State Bike Plan includes a summary of all public input received, which was from 15 public meetings throughout the state and 777 responses to a user survey. The following is a summary of 51 key issues identified from the surveys that were typical to bicycling in rural counties in Nevada.

1. Advocacy Groups Lacking – Lack of organized bicycle advocacy groups at the local level.
2. Alternate Roadway Corridors Not Inventoried – There are old roads that parallel newer roads in many places throughout rural Nevada. However, they are in various states of repair (some are used, others look partially or entirely abandoned); they are often hard to access and there is not an inventory of their availability (locations) or suitability for bicycling.
3. Alternate Corridors Not Preserved – Former railroad rights-of-way corridors that would make excellent trails are being (or were) lost due to lack of information and knowledge regarding the acquisition and preservation of rail corridors. Stretched budgets have also resulted in a lack of staff resources to pursue rail-trail opportunities.
4. ATVs on Bike Facilities – ATVs, while regulated, are often allowed to ride on designated bicycle facilities including paved pathways and mountain bike trails.
5. Bicyclists Not Respected by Motorists – Many motorists do not respect bicyclists - bicycling is not a legitimate part of local culture. Bicyclists relayed stories of harassment and intimidation by motorists.
6. Bicyclists Often Riding Wrong Way – Observed a lot of wrong-way riding by bicyclists.
7. Bike Lane Width Sometimes Includes Gutter – Gutter pan sometimes included in the width of a bicycle lane even if pavement to gutter pan edge is not smooth.
8. Bike Plans for Communities Lacking – Towns and counties do not have adopted, current bicycle plans. Since NDOT requires that proposed bicycle facilities are in an adopted plan, opportunities to construct bicycle facilities as part of NDOT projects or to receive state/federal funds are often lost. Many towns and counties do not have the time, money, or expertise to develop a bicycle plan.



9. Bikeways Not Coordinated Across Jurisdictional Boundaries – Town and county bicycle planning is not always coordinated. As a result, there is often a lack of connectivity between the more urbanized town areas and bicycle destinations (e.g. state parks, public lands, mountain bike trails, and low-volume country roads) in the rural, county areas.
10. Bikeway Innovation Lagging – Newer bicycle facility options such as shared lane markings are not widely known about or used.
11. Bikeways Have Ridge at Edge – Some overlays stop at the shoulder resulting in a ridge (lip) that can cause bicyclists to fall.
12. Bikeways Lacking in Tunnels – There are few provisions for bicyclists going through tunnels (e.g. lack of signs or bicycle activated flashing lights to warn motorists as is done at tunnel in Tahoe).
13. Bikeways Lacking Along Hwy 50 – Highway 50 is the most popular cross county bicycling route and has significant bicycle travel but lacks a bikeable shoulder through many mountain passes with limited visibility around curves.
14. Bikeways Lacking Access to Mountain Bike Areas – Mountain bike areas close to rural towns are often not accessible by bicycle from the town due to lack of facilities (e.g. road leading out of town is high speed and does not have shoulders). Consequently, bicyclists find it necessary to load their bikes on their motor vehicles and drive to nearby mountain bike trail heads.
15. Bikeway Terms Not Understood – There is a lack of understanding and use of terms to describe various bicycle facilities (e.g. bike route, bicycle lane, bicycle path etc.).
16. Bikeway Variances – Local zoning boards give variances to developers, thereby losing opportunities to install bike lanes and paths required by local zoning regulations.
17. Education Materials Not Readily Available – Locals don't know where to get bicycle educational materials for schools, summer recreational programs, etc.
18. Education Programs Lacking – There are very few bicycle safety education programs offered to children in country towns. In the past, rodeos and other safety programs were more available through schools, and local police and sheriff's departments. These have become less frequent or have disappeared over time.
19. Enforcement Lacking and Uninvolved – Law enforcement officials are typically not involved in bicycle safety (i.e. they do not ticket motorists or bicyclists and they no longer provide safety training rodeos for children).
20. Facilities for Aging Populations Lacking – There are aging populations in many of the small country towns that lack adequate trail (sidewalk) facilities to exercise and access local services.
21. Funding Opportunity Awareness Lacking - Local, rural jurisdictions are not always aware of state funding opportunities. Consequently, there are times when there is a lack of applications for some pots of money.
22. Funding Shortage for Bike Infrastructure – Lack of funding for bicycle infrastructure improvements.
23. Gravel on Facilities – Existing bicycle facilities are not maintained (e.g. trails in disrepair, bicycle lanes and shoulders are full of gravel).
24. Gravel on Shoulder – Gravel on roadways at locations where there are access roads/driveways.
25. Helmet Use Low – Helmet use by bicyclists, especially children is low.
26. High Speed Right Turn Lanes – High speed right turn add lanes on arterial streets create a challenge for bicyclists going straight.
27. Infrastructure Inconsistent – There is a lack of consistency with regard to the design of NDOT vs. non-NDOT roads (e.g. lane width, shoulder width, curbs radii etc.).
28. Interstate Access – For bicyclists traveling from urbanized to rural areas, there are no informational signs to indicate where they are allowed to access interstate freeways.
29. Rumble Strip Takes Up Shoulder – Rumble strips are often placed to right of white edge line on the 12- to 24-inch shoulder forcing bicyclists to ride to the left of the edge line. Also, design and application of rumble strips are inconsistent.



30. Interstate By-pass Wayfinding Lacking – There are no way-finding signs to guide bicyclists through towns in rural areas. This is particularly important for bicyclists who have exited an interstate freeway and must travel through town and back to a freeway entrance.
31. Interstate Locations That Bikes Must Exit Unclear – It is not clear where bicyclists traveling on interstate freeways entering urbanized areas are required to exit the freeway.
32. Interstate Way-Finding Lacking – For bicyclists traveling on interstate freeways, there are no way-finding signs to indicate where they should exit to access small towns.
33. Legality of Bicycling on Sidewalks Not Clear – Lack of clarity regarding bikes on sidewalks. State law says that bicyclists are not allowed on sidewalks unless granted “permission” by “owner”.
34. Locals feel NDOT Not Prioritizing Bicycling – Some locals feel NDOT doesn’t really care about bicyclists and does not recognize the importance of touring bicyclists to economies of small towns. Examples cited include: a) rumble strips in narrow shoulders of NDOT roads; 2) NDOT projects that ignored local requests for bicycle facilities; and 3) non-responsiveness of NDOT officials in district offices. Some locals are concerned that NDOT does not value their input. Locals complained that by the time they find out about a project, it is already scoped, budgeted, and designed.
35. Maps of Local Bike Facilities Lacking – Lack of bicycle maps at the local level that show bicycle facilities, water, bike shop and destinations such as mountain bike areas.
36. Rumble Strips Next to Guard Rail – Rumble strips are sometimes installed immediately adjacent to guardrails, which is inconsistent with state guidelines.
37. School Crossing Guards Lacking – There are often no school crossing guards at crossings of arterial streets near schools (state, county and local roads).
38. School Kid’s Bikes Need Repairs – Children don’t know how to fix their bikes (e.g. flat tires due to puncturevine, also known as goatheads).
39. School Support and Facilities Lacking – Some local school districts do not recognize or support bicycling and/or walking to school; and they are not aware of SRTS programs and grants. Children often cannot bicycle to school due to lack of bicycle facilities.
40. Schools Lacking Adequate Bike Parking – There is often a lack of bicycle parking facilities at schools.
41. Shared Use Path Crossing Advanced Motorist Signing Lacking – Inadequate warning/crossing signs for motorists at locations where paths cross roadways.
42. Shared Use Path Intersection Priority – Assignment of right-of-way at trail crossings. Some trails arbitrarily require trail users to stop at all crossings, including driveways.
43. Shoulders Lacking or Too Narrow – Many state, county and local highways do not have a shoulder, have a very narrow shoulder, and/or have the entire shoulder covered in a rumble strip.
44. Special Event Participants Lacking – Special events (century rides, etc.) need more participants.
45. Special Event Permitting Unclear – Lack of clarity as to whether permits are required for special events with more than 50 participants and the requirements for the application. Regional NDOT offices may have different policies.
46. Special Event Signing Requirements Not Clear – Lack of clarity with regard to state rules regarding way-finding guidance (arrows on the pavement and temporary signs) to direct bicyclists participating in special events (e.g. century ride).
47. Touring Bicyclist Economic Impact Not Quantified – There are no numbers regarding the importance (or potential) of bicycling to the economy of rural towns.
48. Touring Bicyclist Travel on Through – Bicycle tourism in Nevada is an untapped resource. Touring bicyclists do not stop in Nevada to bike (they go on to Utah, Colorado, and other destinations).
49. Touring Bicyclists Lack Water – Touring bicyclists lack places where they can find water. NDOT facilities in rural areas may be able to provide water.



50. Utility Corridors Don't Officially Allow Bikes – Authorities (agencies) that operate irrigation and drainage networks do not allow bicycle facilities on dikes and service roads. However, informal use is widespread and often tolerated.
51. Workzones – On interstate freeways, state highways and local roadways, space for bicyclists is not routinely provided through construction zones. For example, it is not uncommon to see motorists channeled into one lane or on the shoulder, leaving no place for the bicyclists to ride.

These issues identified in the State Bike Plan were used as a baseline for a workshop held specifically for development of the Elko County Bicycle Plan.

The workshop was held on June 24, 2014 in Elko, Nevada. The purpose of the workshop was to gain input from representatives of the local community on specific bicycling conditions in Elko County and to develop recommendations on proposed bicycle facility improvements as well as recommendations for policy, program, legislation, and tourism improvements for bicycling. The following is a list of attendees at the workshop:

- Jeremy Draper, City of Elko
- Carlie Teague, City of Elko
- Rebecca Hansen, Elko City Planning
- James Wiley, City of Elko Parks and Recreation
- Harry Jackson, Elko County
- Jeffrey Secord, Elko County GIS Tech
- John Kingwell, Elko County Planning and Zoning
- Charlie Ekborg, Local Cyclist
- Jeff White, Elko Velo Cycling Club, NBPAB Cyclist
- Annette White, Elko Velo Cycling Club
- Stewart Wilson, Elko Velo Cycling Club
- Bill Story, NDOT Project Manager
- Mike Colety, Kimley-Horn and Associates, Inc.
- Kristen Lohse, Toole Design Group



The workshop covered a variety of bicycling topics and was followed by a field assessment. The workshop schedule is included below.



ELKO COUNTY Bicycle Plan



WORKSHOP

8:00– 8:15am	Meet-and-Greet
8:15 – 9:00am	Overview of planning process, review Statewide Bike Plan
9:00 – 9:45am	Review bicycle facility types
9:45 – 11:45am	Review maps, identify opportunities, barriers
11:45 – 12:30pm	Lunch
12:30 – 2:30pm	Plan development – interactive exercises

The attendees offered input on existing bicycling conditions, existing issues, desired routes, necessary programs and policies, and then specified on priorities. The field assessment reviewed existing conditions and identified potential areas for improvement. Notes from the countywide field assessments are included in **Appendix B**.



3. EXISTING CONDITIONS

3.1 Countywide Observations

Bicycling conditions throughout Elko County were observed as part of the development of the State Bike Plan and during the field assessment as a part of the workshop. The following are examples of preferred existing bicycling conditions in Elko County:

- Bike lanes
- Marked shared lane facilities
- Shared use paths
- Wide shoulders
- Bike parking
- Bike shops
- Bike amenities and lodging

Similarly, the following are examples of non-desirable conditions that were observed in Elko County:

- Narrow shoulders
- No shoulders
- Pinch points for bicyclists
- Lack of bicycle culture
- Lack of directional signage
- Lack of funding
- Lack of bicycle parking
- Development requirements to provide bicycle facilities not always followed

Figure 1 shows a map of population areas found within Elko County from the 2010 census.

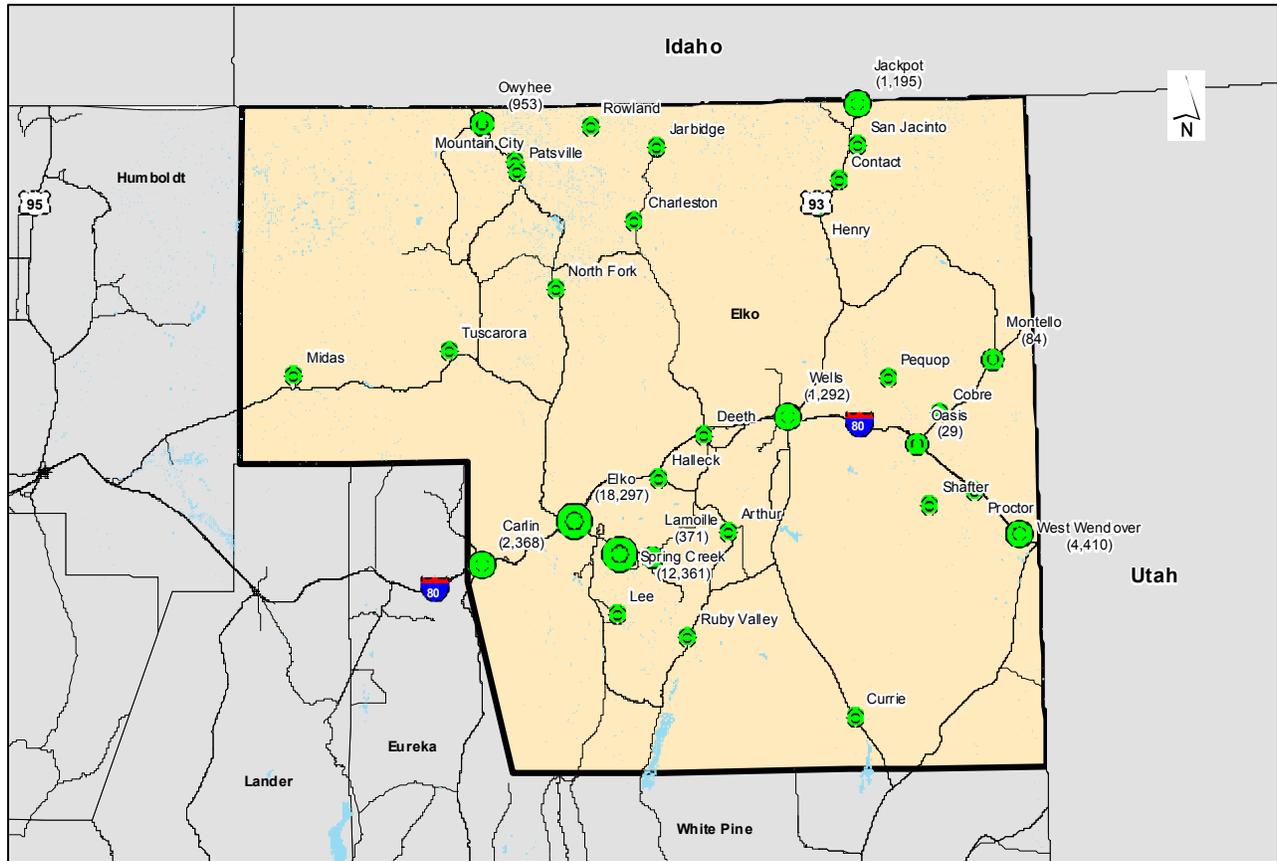


Figure 1 – Elko County Population Point Map

3.2 Existing Documents, Policies, Programs and Legislation

Existing bicycle related documents from Elko County were collected as part of the development of the State Bike Plan. The following sections are a summary of bicycle related documents, policies, programs and legislation in Elko County in matrix form (**Table 1**) and paragraph form.

	Elko County
Elko City Bike Plan	Yes
Major Bikeway Initiatives	Yes
Laws	No
Policies	Yes
Safe Routes to School Program	No
Construction Standards	Yes
Maintenance Expectations and Protocols	Yes
Cycle Tourism Initiatives	Yes

Table 1 – Elko County – Existing Cycling Documents, Policies, Programs, and Legislation



3.2.1 *Elko City Bike Plan 2000:*

The City of Elko proposes to develop an integrated on-street and off-street non-motorized transportation system for pedestrians and cyclists to augment the traditional motorized vehicle transportation system. The City of Elko also proposes to promote public safety through public support, education and awareness of the City's Police Department Bicycle Patrol program.

3.2.2 *West Wendover Major Bikeway Initiatives*

West Wendover major bikeway initiatives include the Wendover Boulevard Enhancements Project, Wendover Boulevard Enhancement Project Phase 2, and the Leppy Hills Trails Addition (expansion of Existing trail system)

3.2.3 *Policies*

Existing bicycle related policies within Elko County include the 2008 Elko County Public Lands Policy Plan, Policy Section 16. This policy is found in **Appendix C**.

3.2.4 *Construction Standards*

The West Wendover Public Works Standards and Specifications for Construction includes bicycle design standards for bike lanes and multi-use trails. These documents can be found in **Appendix D**. The Elko County Development Code and the Design Criteria and Improvement Standards Manual is provided in **Appendix E**.

3.2.5 *Maintenance Expectations and Protocols*

The Spring Creek 1994 Maintenance Agreement of Bicycle Path.

3.2.6 *Legislation*

Although no specific bicycle related legislation was identified in Elko County, existing statewide legislation related to bicycling is summarized in Section 4.3.9 on Page 39 of the State Bike Plan. This legislation is found in **Appendix F**.

3.2.7 *Cycling Tourism Initiatives*

West Wendover City developed a West Wendover Trails Map that includes surrounding trails and destinations to encourage and support cycling tourism.

3.2.8 *US Prioritized and Alternative Bicycle Corridors*

The US Bicycle Route System (US BRS) is a proposed national network of bicycle routes that will link urban, suburban, and rural areas using a variety of appropriate cycling facilities. US Bicycle Routes were first established in 1982. In October, 2008, AASHTO's Board of Directors passed a resolution in support of the National Corridor Plan. The existing National Corridor Plan includes prioritized corridors along existing roadways. In Nevada, priority bicycle corridors exist along the I-80 corridor (USBR 50), along US 50 (USBR 79), and along I-15 (USBR 70). The alternate corridors in Nevada primarily follow US 95 and US 93. These US Bicycle Routes are shown on the maps in **Section 6**.

3.3 **Crash Data**

As part of the State Bike Plan, bicycle crashes with motor vehicles were reviewed. NDOT annually completes a crash data review for the preceding three (3) years. The most recent report includes the years 2008 to 2010. It is



ELKO COUNTY Bicycle Plan



important to recognize that most bicycle crash data only includes bicycle crashes with motor vehicles that are significant enough to require a police report. The data included in NDOT’s report does not include minor collisions with bicycles and motor vehicles that do not have a police report, nor does it include bicycle crashes that do not include a motorist (i.e., crashes between two bicycles or a single bicycle crash). A summary of the bicycle and motor vehicle crashes for years 2008 to 2010 in Elko County is presented in **Table 2**.

COUNTY	2008				2009				2010			
	TOTAL INJURY CRASHES	TOTAL INJURIES	TOTAL FATAL CRASHES	TOTAL FATALITIES	TOTAL INJURY CRASHES	TOTAL INJURIES	TOTAL FATAL CRASHES	TOTAL FATALITIES	TOTAL INJURY CRASHES	TOTAL INJURIES	TOTAL FATAL CRASHES	TOTAL FATALITIES
CARSON	11	12			6	6			8	8		
CHURCHILL	5	5	1	1	3	3			1	1		
CLARK	243	250	6	6	421	432	5	5	380	399	3	3
DOUGLAS	6	6			9	9			10	10		
ELKO	3	3			4	4			1	1		
ESMERALDA												
EUREKA												
HUMBOLDT	2	2										
LANDER												
LINCOLN												
LYON	1	1			4	4			2	2		
MINERAL												
NYE					2	2			4	4		
PERSHING												
STOREY	1	1										
WASHOE	111	115			106	112	1	1	98	102	3	3
WHITE PINE												
TOTAL	383	395	7	7	555	572	6	6	504	527	6	6

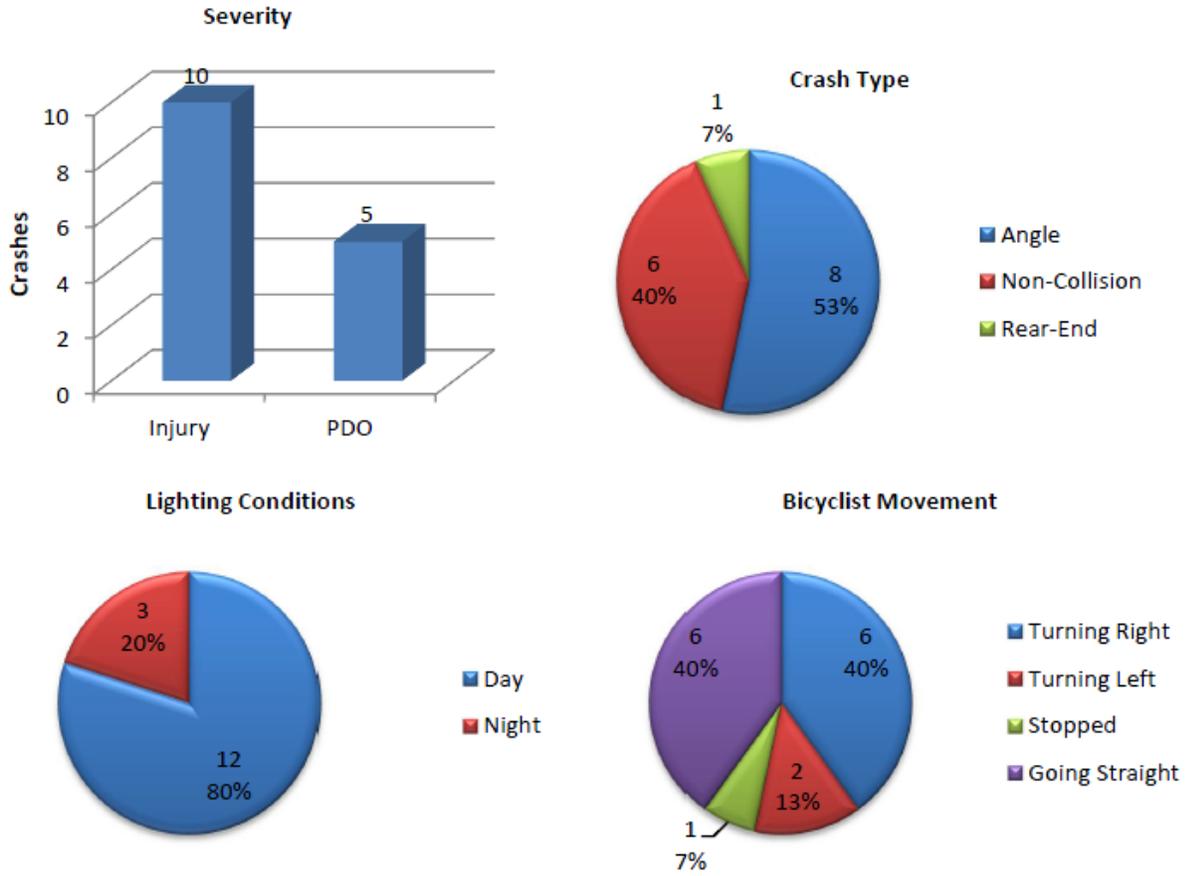
Source: NDOT Crash Data Report 2008-2010

Table 2 – Summary of Elko County Bicycle and Motor Vehicle Crashes 2008-2010

The following are additional key results from the NDOT crash data for all crashes that occurred outside of the four MPOs in Nevada between the years 2008 and 2010:

- Bicycle crashes trended up over the three years, but fatalities decreased slightly.
- Failure to yield is the most common motorist factor.
- Improper crossing and riding on the wrong side of road are the most common bicyclist factors, followed by darting, failure to obey signs, signals, or officer, and failure to yield right-of-way. Not visible, inattentive and lying in roadway are minor contributing factors.
- There are typically more bicycle crashes and fatalities per day on weekdays than on weekends. Most collisions are between 3:00 and 5:00 PM, with Noon to 3:00 PM being secondary.

NDOT also provided Geographic Information System (GIS) bicycle crash data for Nevada from 2006 to 2011. **Figure 2** contains a summary of the crash data provided for Elko County.



Source: NDOT Crash Data 2006-2011

Figure 2 – Summary of Elko County Bicycle and Motor Vehicle Crashes 2006-2011



ELKO COUNTY Bicycle Plan



The data from NDOT has been spatially located to where the event occurred, and is coded with information related to the incident including crash severity and type. **Figure 3** is a GIS map illustrating the exact location of each crash within Elko County. No bicycle crashes were recorded in other communities within Elko County (e.g., Carlin, Spring Creek, and Wells).

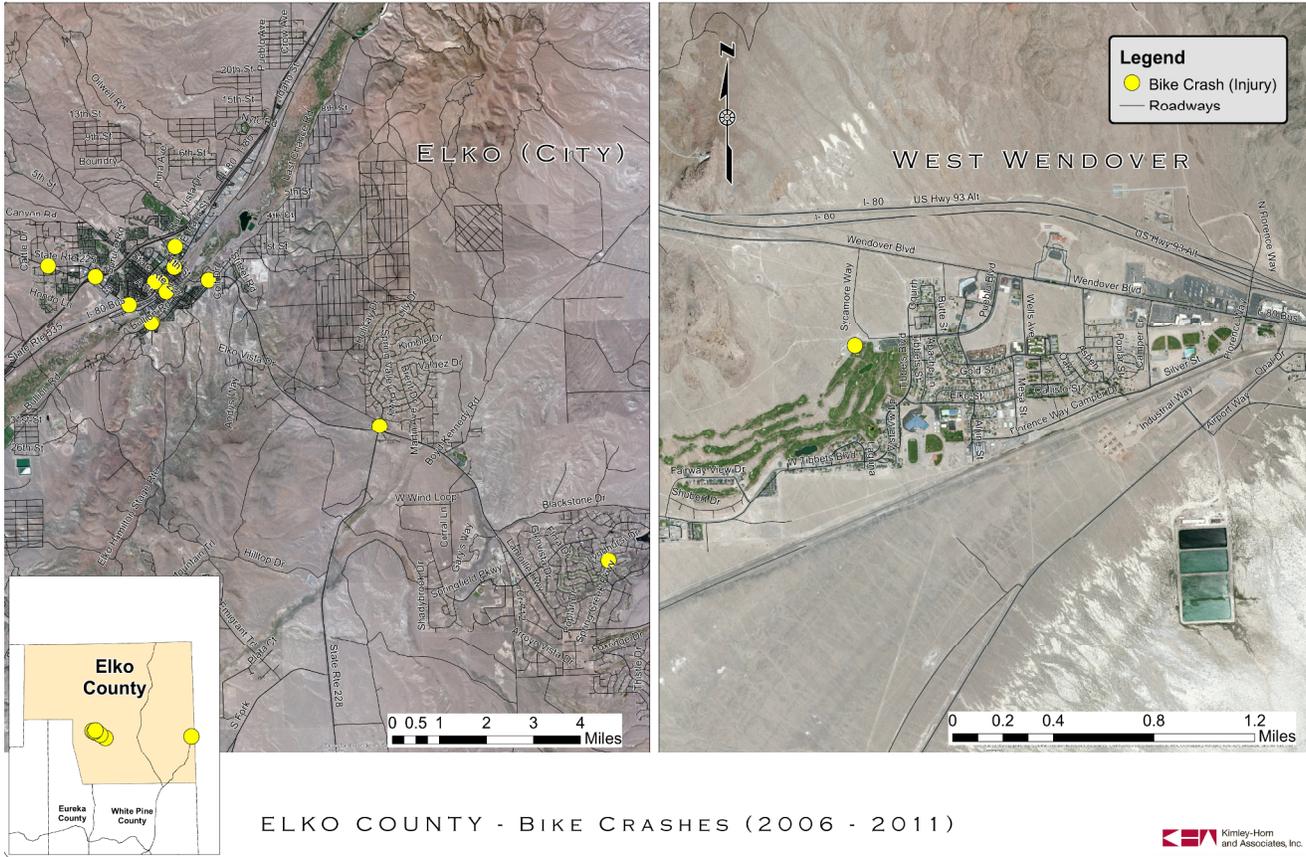


Figure 3 – Reported Bicycle and Motor Vehicle Crashes in Elko County 2006-2011



4. VISION, GOALS, AND OBJECTIVES

The Vision, Goals, and Objectives for the Elko County Bicycle Plan are described in the following sections.

4.1 Vision

For Elko County residents and visitors of all ages and abilities to experience a convenient, pleasant, and safe bicycling environment.

4.2 Goals

There are two major goals of the Elko County Bicycling Plan that will guide the specific objectives and strategies within this plan:

- Increase bicycling's mode share throughout Elko County in and between communities, both by residents and tourists.
- Reduce crashes involving bicyclists and eliminate all bicyclist fatalities in support of Nevada's "Zero Fatalities" and the national "Towards Zero Deaths" initiatives.

4.3 Objectives

The following objectives are the specific tasks to be evaluated in order to determine the success of this Plan and bicycling in Nevada:

- Objective 1: Increase Local Support of Bicycling.
- Objective 2: Increase Bicycle Tourism.
- Objective 3: Accommodate Appropriate Bicycling Facilities on all Roadways in Nevada Open to Bicycling.
- Objective 4: Increase Motorists' and Bicyclists' Compliance with Laws Associated with Bicycling.



5. RECOMMENDED STRATEGIES

The following strategies have been developed for Elko County to support the four main objectives of this Plan.

5.1 Objective 1

Increase Local Support of Bicycling

- Strategy 1A:* Improve the connectivity of bicycle facilities between population centers in a safe and effective manner.
- Strategy 1B:* Adopt a Complete Streets Policy that specifies that all transportation projects with new roadways or modifications to existing roadways are required to include appropriate bicycle accommodation.
- Strategy 1C:* Collaborate with the towns and general improvement districts to employ consistent design and maintenance policies for bicycle facilities.
- Strategy 1D:* Work with local agencies on the creation of funding mechanisms for bicycle related projects.
- Strategy 1E:* Collaborate with local agencies in applying for available state and federal funding opportunities and programs that are available for bicycle related projects.
- Strategy 1F:* Work with the Elko County School District and other health advocates and agencies to promote bicycling as part of a healthy lifestyle for children and adults, including SRTS, Bike Month, and Nevada Moves Day.
- Strategy 1G:* Work with the Elko County School District to develop bicycle plans that identify safe routes and needed bike facilities for each school and incorporate the needs of each school into the County's Community Development overall planning.
- Strategy 1H:* Establish a Bicycle Advisory Committee or Bicycle and Pedestrian Advisory Committee that provides guidance to the County Commission on bicycle (and pedestrian) related issues in Elko County.
- Strategy 1I:* Encourage communities and businesses within each county to achieve "Bike Friendly Status" from the League of American Bicyclists (www.bikeleague.org/bfa). This will help promote each community or business as a destination for bicyclists.

5.2 Objective 2

Increase Bicycle Tourism

- Strategy 2A:* Encourage the County's Economic Development Division to collaborate with the State's Office of Economic Development, local governmental agencies, and business organizations to promote bicycle tourism.
- Strategy 2B:* Assist in the development of bicycle tourism materials related to road and mountain bicycling, including maps that show destinations and designated routes, if supported by local business and local agencies.
- Strategy 2C:* Encourage NDOT to establish US Bicycle Routes and regional bicycle routes in Elko County, Nevada.
- Strategy 2D:* Review the County's existing permit process for bicycle events, and if needed, develop a streamlined permitting process that establishes clear rules and guidelines along with acceptable temporary wayfinding methods.
- Strategy 2E:* Encourage each region/community to develop a free bicycling map/guide highlighting bicycle routes, destinations and services of interest to cyclists.
- Strategy 2F:* Encourage each region/community to explore the development of "scenic bikeway" routes highlighting the regions scenic and cultural attributes.



- Strategy 2G:* Encourage each region/community to explore the development of an annual bicycle event to showcase/market their area and culture. This event may be tied to already established events and gatherings.
- Strategy 2H:* Develop a signage scheme to notify visitors of available trails and cycling destinations and opportunities.

5.3 Objective 3

Accommodate Appropriate Bicycling Facilities on All Roadways in Nevada Open to Bicycling

- Strategy 3A:* Adopt Countywide design guidelines and specifications that address bicycle facility design, including wayfinding and informational signs, and accommodating bicycle facilities in work zones.
- Strategy 3B:* Develop protocols with the state and local agencies that review maintenance projects which require restriping, to evaluate redesign options for adding bicycle facilities.
- Strategy 3C:* Define, inventory, and preserve, as necessary, alternate corridors such as railroad, irrigation easements, utility, and roadway rights-of-way for bicycling.
- Strategy 3D:* Maintain and evaluate, every two years, a list of high priority bicycle improvement projects.
- Strategy 3E:* Strengthen requirements for developers to provide the space for a bicycle facility through street design standards. Provide guidance on when developer is to install the bicycle facility and when the developer must provide the space and funding for a future County improvement if it is not appropriate to install the facility at the time of development.
- Strategy 3F:* Encourage each community to develop a strategy to provide bicycle parking (racks, lockers, etc.) at all key destination points and business districts.

5.4 Objective 4

Increase Motorists' and Bicyclists' Compliance with Laws Associated with Bicycling

- Strategy 4A:* Encourage bicycle training for youth and adult bicyclists, through County, state, local, and private sector organization partnerships.
- Strategy 4B:* Provide assistance with state and local bicycle media and safety campaigns, materials, and outreach.
- Strategy 4C:* Work with the Elko County Sheriff's Office and state law enforcement agencies to encourage the enforcement of state laws related to bicycling from a motorist's and bicyclist's perspective, regarding unsafe and unlawful behaviors.
- Strategy 4D:* Encourage a state sponsored Bicycle Infraction Diversion Program that allows violators of bicycling related infractions (motorists and bicyclists) to complete a training course instead of paying a fine.
- Strategy 4E:* Continue to work with advocates and the state to address legislative issues and needed changes related to bicycling during Nevada's bi-annual legislative sessions.



6. RECOMMENDED BICYCLE FACILITIES

Recommendations within the State Bike Plan are based upon the Vision, Goals and Objectives developed from the review of existing conditions and bicyclists' needs discovered through public input and stakeholder improvement processes.

The Elko County Bike Plan's primary focus is to document the proposed bicycle infrastructure in Elko County. The facility recommendations take into account that bicycle accommodation is not a one-size-fits-all approach and that bicycling accommodation should be responsive to the preferences of different bicycling user groups and trip types. The 2012 American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities (2012 AASHTO Bike Guide) defines two user groups based on bicyclist skill and comfort level: Experienced and Confident, and Casual and Less Confident. Characteristics of the two groups are described below:

Experienced and Confident:

- Most comfortable riding with vehicles on streets and are able to navigate streets like a motor vehicle, including using the full width of a narrow travel lane when appropriate and using left-turn lanes.
- While comfortable on most streets, some prefer on-street bike lanes, paved shoulders or shared use paths when available.
- Ride with the flow of traffic on streets and avoid riding on sidewalks.
- Typically ride at speeds of 15 to 25 miles per hour on level grades and can reach up to 45 miles per hour on steep descents.

Casual and Less Confident:

- Prefer shared use paths, bicycle boulevards, or bike lanes along low-volume streets.
- May have difficulty gauging traffic and may be unfamiliar with rules of the road as they pertain to bicyclists; more likely to walk bike across intersections.
- May use less direct route to avoid arterials with heavy traffic volumes.
- May ride on sidewalk if no on-street facility is available.
- Typically ride around 8 to 12 miles per hour.
- Typically cycle shorter distances, one to five miles.

Bicyclists generally also have different preferences based on local versus long distance trips. Local trips are often more utilitarian (e.g., biking to a shopping destination or school) and long trips more recreational (e.g., biking for exercise or sport), although there are also short recreation trips and long utilitarian trips. Local trips typically do not go much further beyond the populated area; whereas, long distance trips may be cross-state, touring type trips, or regional trips between destinations.

These trip types are also based on information in the 2012 AASHTO Bike Guide and generally have the following characteristics:

Long-Distance Trips:

- Directness of route not as important as visual interest, shade, and protection from wind.
- Loop trips may be preferred to back tracking; start and end points are often the same with an exception being bicycle touring trips.
- Trips typically range from under a mile to over 50 miles.
- Short term parking is needed at recreational sites, parks, trailheads and other activity centers.



- Varied topography may be desired, depending on the fitness and skill level of the bicyclist.
- More likely to be riding in a group.
- Sometimes drive with bicycle to starting point of ride.
- Typically ride on the weekend or on weekday before or after commute hours.

Local Trips:

- Directness of route and connected, continuous facilities more important.
- Trips generally travel from residential to schools, shopping or work areas.
- Trips typically range from 1 to 10 miles in length.
- Short-term and long-term bicycle parking is needed at destinations.
- Flat topography preferred.
- Often ride individually.
- Bicycle is primary mode of transportation for the trip; may transfer to public transportation and may not have access to a car for the trip.

Table 3 summarizes the preferences of both trip types for the two user groups.

		Experienced/Confident Bicyclists		Casual/Less Confident Bicyclists	
		Long Distance	Local	Long Distance	Local
Facility Type	Bicycle Lane	✓	✓	✓	✓
	Paved Shoulder	✓	✓	✓	✓
	Shared Lanes	✓	✓		
	Marked Shared Lanes		✓		✓
	Shared Use Path			✓	✓

Table 3 – User Group and Trip Types

As displayed in **Table 3**, all of the different facility types are preferred by at least one particular user group for either a local or long distance trip. Therefore, the recommendations of this Plan recognize that each of these different facility types serve a particular purpose and should be considered for particular conditions and in some cases two facilities may be appropriate within the same area or corridor.



6.1 Bicycle Facility Types

The following bicycle facility type terms, descriptions and design standards from the 2012 AASHTO Bike Guide and the National Association of City Transportation Officials (NACTO) Urban Bikeway Design Guide will be used for this Plan:

6.1.1 On-street Bicycle Facilities

6.1.1.1 Shared Lane

Bicycles may be operated on all roadways except where prohibited by statute or regulation. Along I-80 between Exit 410 (in West Wendover) and the Nevada State Line with Utah bicycling is prohibited in Elko County. Generally speaking, roadways that carry very low to low volumes of traffic, and may also have traffic typically operating at low speeds (typically 25 mph or less), may be suitable as shared lanes in their present condition. There are two categories of shared lanes for bicycling. Shared lanes where a bicycle and motor vehicle can share side by side, which is generally considered to be 14 or 15 feet or greater. The second category is a shared lane where the lane is too narrow for a motor vehicle and bicycle to share side by side, which is a lane that is less than 14 or 15 feet wide. Various design features can make shared lanes more compatible with bicycling, such as good pavement quality; adequate sight distances; roadway designs that encourage lower speeds; and bicycle-compatible drainage grates, bridge expansion joints, and railroad crossings (2012 AASHTO Bike Guide Section 4.3). **Figure 4** represents an example shared lane facility.



Figure 4 – Shared Lane Facility



6.1.1.2 Marked Shared Lane

In situations where it is desirable to provide a higher level of guidance to bicyclists and motorists, marked shared lanes include the shared-lane marking. On streets with on-street parallel parking, shared-lane markings should be placed at least 11 feet from the face of curb, or edge of the traveled way where there is no curb. Without on-street parallel parking, shared-lane markings should be placed at least four feet from the face of curb, or edge of the traveled way where there is no curb (2012 AASHTO Bike Guide Section 4.4). **Figure 5** represents an example marked shared lane facility.



Figure 5 – Marked Shared Lane Facility



6.1.1.3 Paved Shoulder

Adding or improving paved shoulders can greatly improve bicyclists' accommodation on roadway with higher speeds or traffic volumes as well as benefit motorists, and are most often used on rural roadways. A shoulder with at least five feet is recommended from the face of a guardrail, curb, or other roadside barrier to provide additional operating width, as bicyclists generally shy away from a vertical face. On uncurbed cross sections with no vertical obstructions immediately adjacent to the roadway, paved shoulders should be at least four feet (2012 AASHTO Bike Guide Section 4.5). **Figure 6** represents an example paved shoulder facility.



Figure 6 – Paved Shoulder Facility



6.1.1.4 Bike Lane

A portion of the roadway designated for preferential use by bicyclists. One-way facilities that typically carry bicycle traffic in the same direction as adjacent motor vehicle traffic. Bike lanes are the appropriate and preferred bicycle facilities for thoroughfares in both urban and suburban areas. Under most circumstances the recommended width for bike lanes is five feet. A width of four feet may be used on roadways with no curb and gutter and no on-street parking (2012 AASHTO Bike Guide Section 4.6). **Figure 7** represents an example bike lane facility.



Figure 7 – Bike Lane Facility



6.1.1.5 Buffered Bike Lane

A buffered bike lane is a conventional bike lane paired with a designated buffer space separating the bike lane from the adjacent motor vehicle travel lane and/or parking lane. The design standards for a conventional bike lane apply. The buffer shall be marked with two solid white lines and the interior of the marked buffer shall have diagonal cross hatching or chevron markings if the buffer is three feet in width or wider (NACTO Urban Bikeway Design Guide page 19). **Figure 8** represents an example buffered bike lane facility.



Figure 8 – Buffered Bike Lane Facility



6.1.1.6 Bicycle Boulevard

A bicycle boulevard is a local street or series of continuous street segments that have been modified to function as a through street for bicyclists, while discouraging through automobile travel (2012 AASHTO Bike Guide Section 4.10). A bicycle boulevard incorporates several design elements to accommodate bicyclists. These design elements include, but are not limited to:

- Traffic diverters at key intersections to reduce through motor vehicle traffic while permitting passage for through bicyclists.
- At two-way, stop-controlled intersections, priority assignment that favors the bicycle boulevard, so bicyclists can ride with few interruptions.
- Neighborhood traffic circles and mini-roundabouts at minor intersections that slow motor vehicle traffic but allow bicyclists to maintain momentum.
- Other traffic-calming features to lower motor vehicle speeds where deemed appropriate.

Figure 9 represents an example bicycle boulevard facility.



Figure 9 – Bicycle Boulevard Facility



6.1.2 Off-street Bicycle Facility

6.1.2.1 Shared Use Path

Bikeways that are physically separated from motorized vehicular traffic by an open space or barrier and either within the highway right-of-way or within an independent right-of-way. Paths are most commonly designed for two-way travel. Shared use paths can be paved or unpaved. A paved surface is generally preferred over un-paved surfaces, however unpaved surface may be appropriate on rural paths or as a temporary measure before funding is available for paving (2012 AASHTO Bike Guide Section 5.1). The usable width and the horizontal clearance for a shared use path are the primary design considerations. The minimum paved width for a two-direction shared use path is 10 feet with a typical range from 10 to 14 feet. A path width of eight feet may be used for a short distance due to a physical constraint (2012 AASHTO Bike Guide Section 5.2). **Figure 10** represents an example shared lane bicycle facility.



Figure 10 – Shared Use Path Facility



6.1.2.2 Side-Path

A shared use path that is adjacent to a roadway. The provision of a side-path is not a substitute for an on street bicycle accommodation. Side-paths can create operational issues, but can function along a highway for short sections, or for longer sections where there are few street and/or driveway crossings. A side path should use the same design as a shared use path (2012 AASHTO Bike Guide Section 5.2.2). **Figure 11** represents an example side-path facility.



Figure 11 – Side-Path Facility

6.2 Bicycle Design Guidance

All bicycle facilities recommended in this Plan should be designed and constructed based on the most current version of the AASHTO Bike Guide, the NACTO Urban Bikeway Design Guide and any applicable NDOT and County design standards. Typical roadway cross sections by facility type can be found in **Appendix G**. In addition to the recommended on-street and off-street bicycle facilities, individual improvement projects should include:

- Signage and marking (See **Appendix H**)
 - Bicycle guide signs and wayfinding
 - Signage to alert motorists to the potential presence of bicyclists in travel lanes where no bicycle lane or adjacent shoulders, usable by bicyclists, are present and where travel lanes are too narrow for bicyclists and motor vehicles to operate side by side such as:
 - Mountainous areas with limited sight visibility
 - Narrow bridges



- Narrow lanes (<14 feet wide) without bike lanes or shoulders (less than 4 feet wide usable)
- Bicycle parking at destinations
- Roadway crossings and intersection accommodations (including signal detection)

When changing roadway characteristics result in the narrowing of the roadway and create the need for bicyclists to use the full lane, warning signs may be used to alert both bicyclists and motorists. These warning signs may be installed in advance of the area followed by a “Bicycle May Use Full Lane” sign (R4-11). Signs may be repeated at regular intervals when the narrow roadway condition persists for an extended distance. For specific guidance on how and when to use these different signs, found in **Appendix H**, refer to the latest version of the Manual on Uniform Traffic Control Devices.

6.3 Recommended Bicycle Network

A major purpose of this plan was to document the recommended bicycle network for Elko County. The recommended bicycle network was developed based on input from the Bicycle Plan Workshop and coordination with Elko County. As discussed previously, bicycles are permitted on all roadways in Elko County and bicycles should be accommodated on all roadways in Elko County. Opportunities for additional bicycle facilities that are not identified in this bicycle plan may develop and should be pursued. The recommended bicycle network identified as part of this Plan is included in the following Figures:

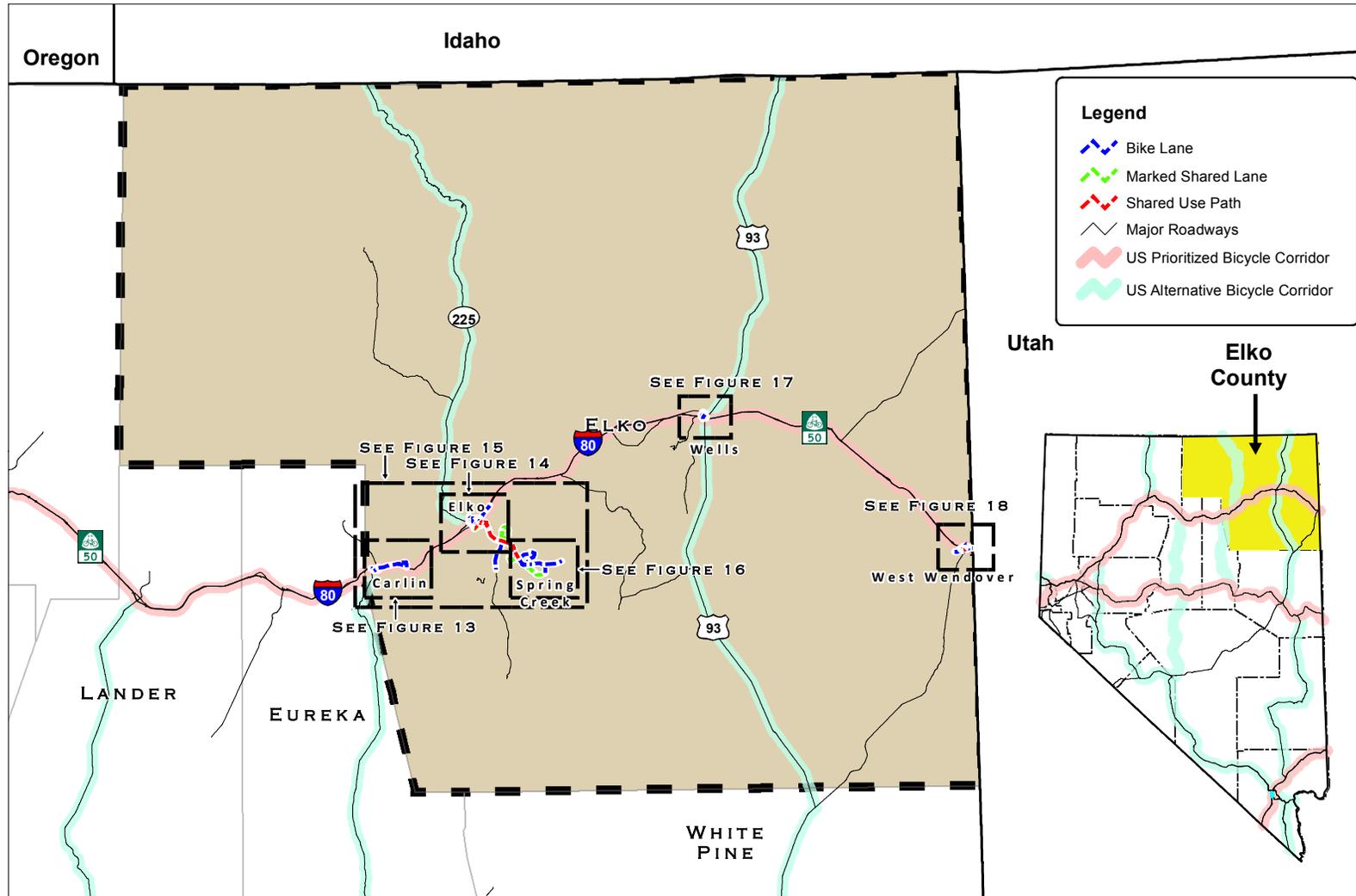
- **Figure 12** – Bicycle Network – Elko County
- **Figure 13** – Bicycle Network – Carlin
- **Figure 14** – Bicycle Network – Elko (City)
- **Figure 15** – Bicycle Network – Elko (City) Area
- **Figure 16** – Bicycle Network – Spring Creek
- **Figure 17**– Bicycle Network – Wells
- **Figure 18** – Bicycle Network – West Wendover

Improvements to a roadway that has a proposed bicycle facility must provide the recommended bicycle facility and necessary right-of-way. In situations where strict compliance with the proposed bicycle facility may not act to protect public health and safety, a variance to the required improvements may be requested.

It is acknowledged that there may be constraints such as a lack of right-of-way or narrow bridges that make it infeasible to implement the recommended bicycle facilities in specific spot locations. In those situations, and upon approval by Elko County, engineering judgment should be used to provide the best accommodation for bicycles that is feasible at that time, while maintaining the potential for a future improvement to accommodate the recommended bicycle facility. This may include providing a shared use path or alternative route connection around the constraint. Locations with limited width should include warning signage as was described in the previous subsection.



ELKO COUNTY Bicycle Plan



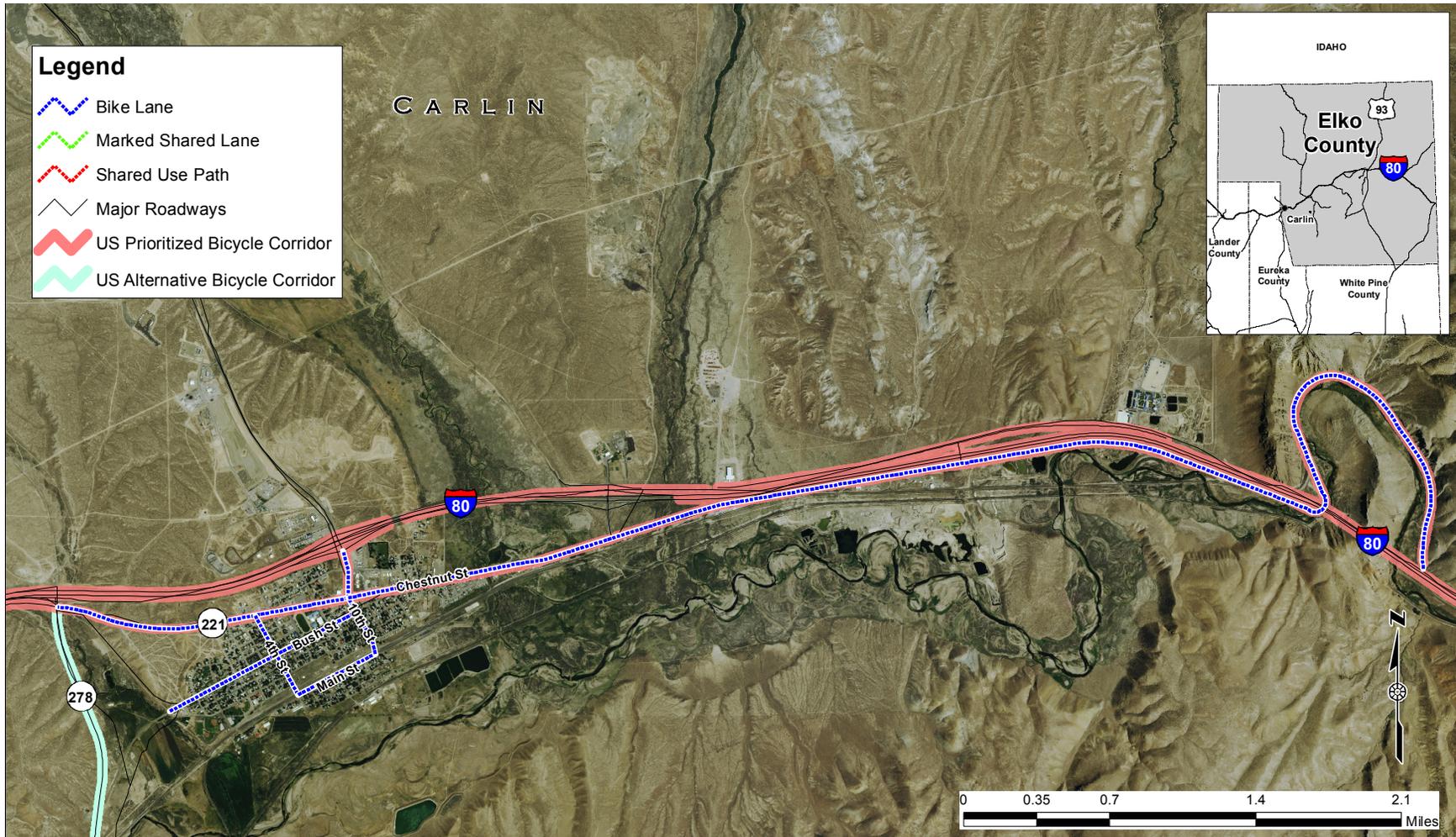
ELKO COUNTY

Bicycles are to be accommodated on all roadways in Elko County. At a minimum, a paved shoulder with a minimum usable width of four feet should be included on all future roadway improvements with a speed limit over 25 miles per hour. Opportunities for additional bicycle facilities that are not identified in this bicycle plan may develop and should be pursued.

Figure 12 – Bicycle Network – Elko County



ELKO COUNTY Bicycle Plan



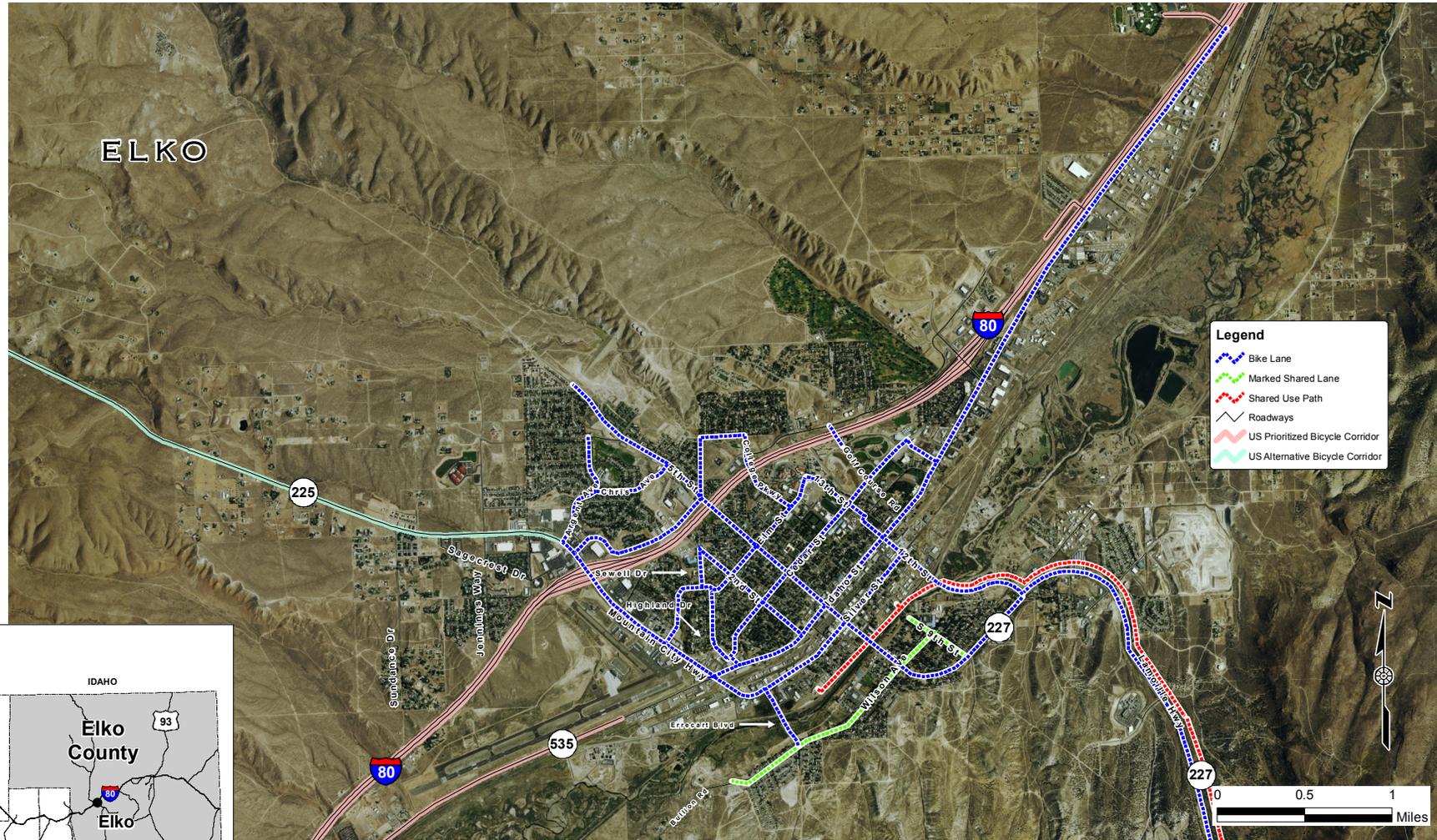
ELKO COUNTY CARLIN

Bicycles are to be accommodated on all roadways in Elko County. At a minimum, a paved shoulder with a minimum usable width of four feet should be included on all future roadway improvements with a speed limit over 25 miles per hour. Opportunities for additional bicycle facilities that are not identified in this bicycle plan may develop and should be pursued.

Figure 13 – Bicycle Network – Carlin



ELKO COUNTY Bicycle Plan



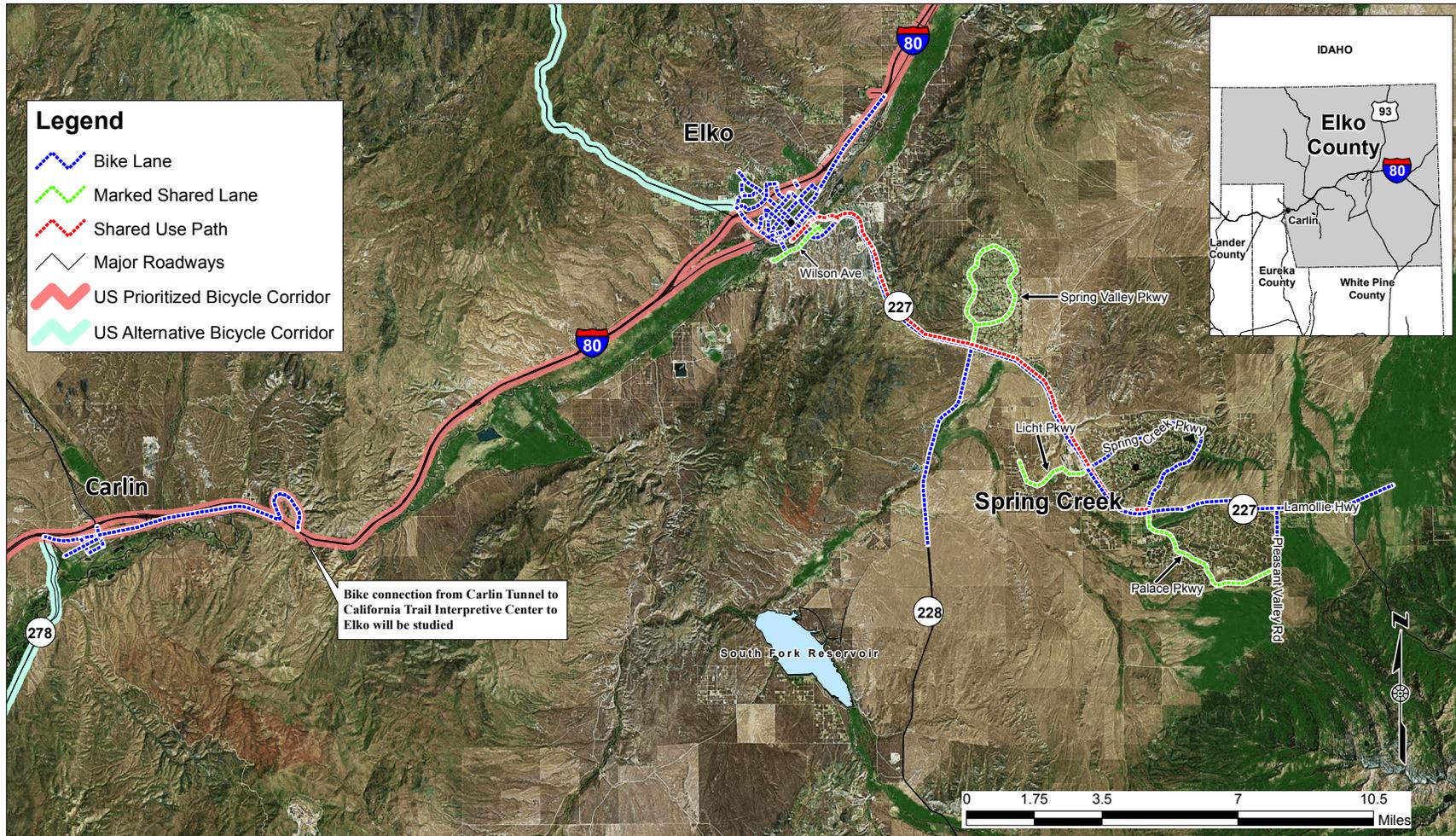
ELKO COUNTY ELKO

Bicycles are to be accommodated on all roadways in Elko County. At a minimum, a paved shoulder with a minimum usable width of four feet should be included on all future roadway improvements with a speed limit over 25 miles per hour. Opportunities for additional bicycle facilities that are not identified in this bicycle plan may develop and should be pursued.

Figure 14 – Bicycle Network – Elko (City)



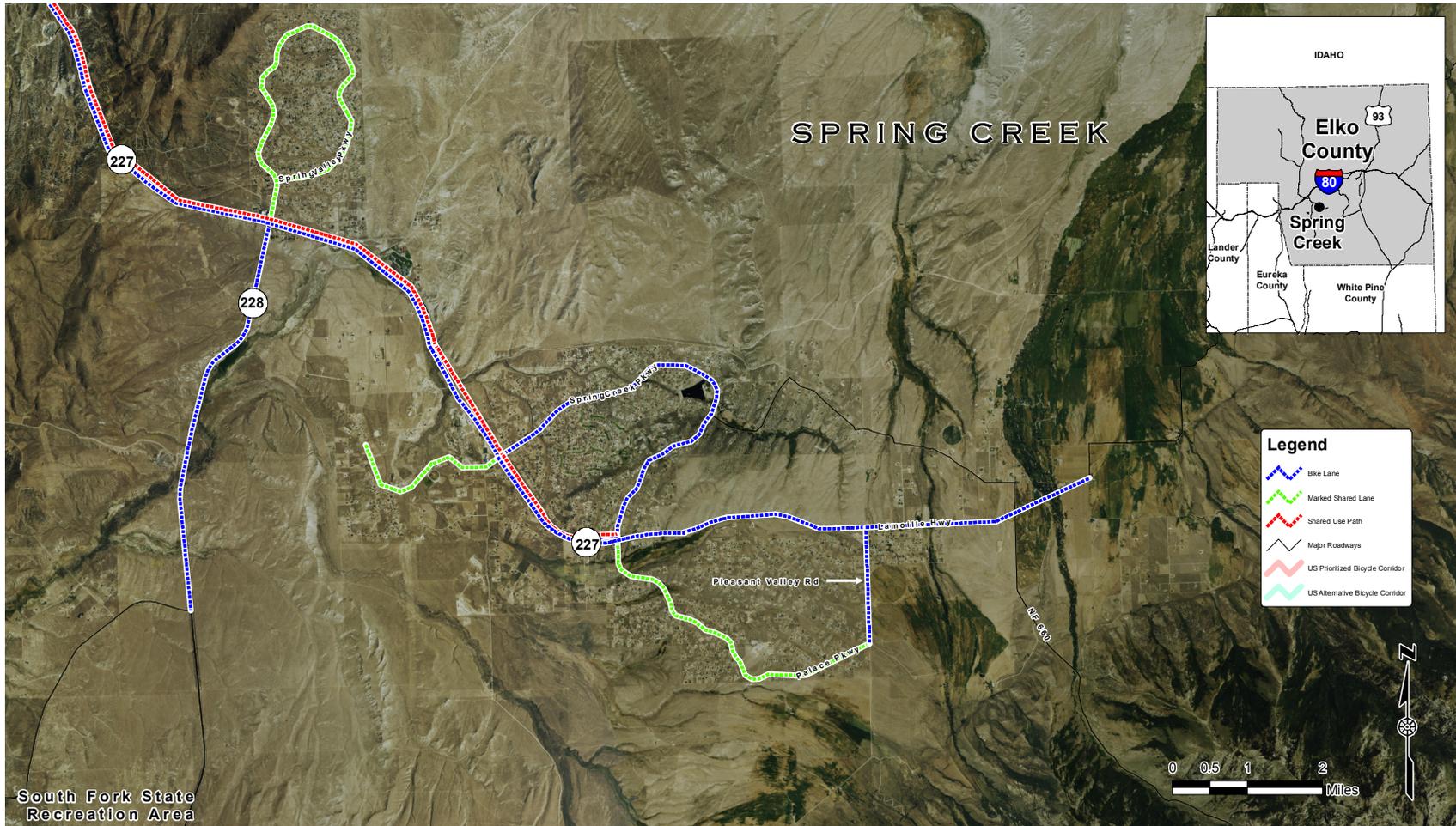
ELKO COUNTY Bicycle Plan



ELKO COUNTY ELKO (AREA)

Bicycles are to be accommodated on all roadways in Elko County. At a minimum, a paved shoulder with a minimum usable width of four feet should be included on all future roadway improvements with a speed limit over 25 miles per hour. Opportunities for additional bicycle facilities that are not identified in this bicycle plan may develop and should be pursued.

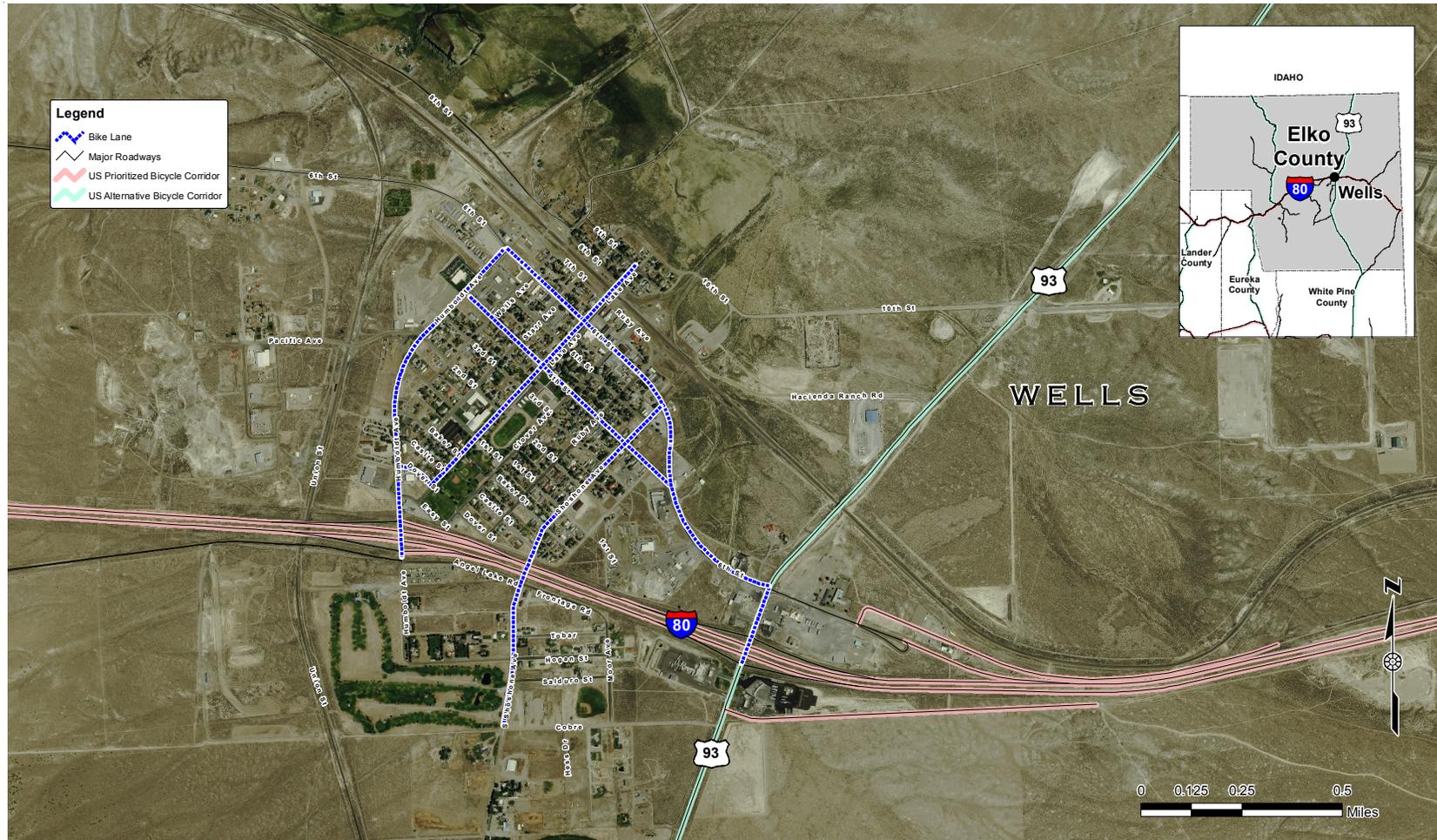
Figure 15 – Bicycle Network – Elko (City) Area



ELKO COUNTY SPRING CREEK

Bicycles are to be accommodated on all roadways in Elko County. At a minimum, a paved shoulder with a minimum usable width of four feet should be included on all future roadway improvements with a speed limit over 25 miles per hour. Opportunities for additional bicycle facilities that are not identified in this bicycle plan may develop and should be pursued.

Figure 16 – Bicycle Network – Spring Creek



ELKO COUNTY WELLS

Bicycles are to be accommodated on all roadways in Elko County. At a minimum, a paved shoulder with a minimum usable width of four feet should be included on all future roadway improvements with a speed limit over 25 miles per hour. Opportunities for additional bicycle facilities that are not identified in this bicycle plan may develop and should be pursued.

Figure 17 – Bicycle Network – Wells



ELKO COUNTY Bicycle Plan



ELKO COUNTY WEST WENDOVER

Bicycles are to be accommodated on all roadways in Elko County. At a minimum, a paved shoulder with a minimum usable width of four feet should be included on all future roadway improvements with a speed limit over 25 miles per hour. Opportunities for additional bicycle facilities that are not identified in this bicycle plan may develop and should be pursued.

Figure 18 – Bicycle Network – West Wendover



6.4 High Priority Bicycle Improvement Projects

The list below identifies high priority bicycle improvement projects identified through the creation of this Plan. The initial project list was developed through the two-day bike plan workshop where input was collected from individuals representing local, regional and state agencies or organizations and a few members of the public who participated in the workshop. High priority bicycle improvement projects include:

- Shared Use Path: Elko to Lamoille
- County Bicycle Map
- Provide wayfinding signage throughout Elko County communities
- Bicycle Parking throughout Elko County communities
- Carlin Tunnel to West Elko Bicycle Facility Study

6.5 US Bicycle Route System

The US Bicycle Route System is an emerging national network of bicycle routes that are of national or regional significance. Routes in the network provide important links to cities, towns, transportation hubs, and scenic, cultural, and historic destinations. They are continuous, crossing state and, maybe in the future, international borders. These routes are on roads and trails and offer facilities that are suitable for bicycle travel. Currently there are no US Bicycle Routes planned in Elko County.

6.6 Complete Street Policy

The implementation of a complete street policy should be considered for Elko County. Below is the policy contained in the State Bike Plan, the cover of the plan and a link to the plan is located in **Appendix A**.

State, regional, and local jurisdictions adopt a policy that all design projects with new roadways or modifications to existing roadways are required to include appropriate bicycle accommodation.

Support: A requirement for bicycle accommodation can come in the form of a bicycle policy or a complete streets policy. As summarized on the national Complete Streets Coalition website (www.completestreets.org):

Instituting a Complete Streets policy ensures that transportation planners and engineers consistently design and operate the entire roadway with all users in mind – including bicyclists, public transportation vehicles and riders, and pedestrians of all ages and abilities.

Complete streets can offer many benefits in all communities, regardless of size or location.

Complete streets make economic sense. A balanced transportation system that includes complete streets can bolster economic growth and stability by providing accessible and efficient connections between residences, schools, parks, public transportation, offices, and retail destinations.

Complete streets improve safety by reducing crashes through safety improvements. One study found that designing for pedestrian travel by installing raised medians and redesigning intersections and sidewalks reduced pedestrian risk by 28 percent (Transportation Research Record 1828, Paper No. 03-3135, pp. 56-66 by Michael R. King, Jon A. Carnegie and Reid Ewing).

Complete streets encourage more walking and bicycling. Public health experts are encouraging walking and bicycling as a response to the obesity epidemic, and complete streets can help. One study found that 43 percent of people with safe places to walk within 10 minutes of home met recommended activity levels, while just 27



ELKO COUNTY Bicycle Plan



percent of those without safe places to walk were active enough (Designing for Active Recreation, Active Living Research, February 2005).

Complete streets can help ease transportation woes. Streets that provide travel choices can give people the option to avoid traffic jams, and increase the overall capacity of the transportation network. Several states, including California, Colorado and Oregon, have adopted complete streets policies as one strategy to increase the overall capacity of their transportation network and reduce congestion.

Complete streets help children. Streets that provide room for bicycling and walking help children get physical activity and gain independence. More children walk to school where there are sidewalks, and children who have and use safe walking and bicycling routes have a more positive view of their neighborhood. Safe Routes to School programs, gaining in popularity across the country, will benefit from complete streets policies that help turn all routes into safe routes.

Complete streets are good for air quality. Poor air quality in our urban areas is linked to increases in asthma and other illnesses. Yet if each resident of an American community of 100,000 replaced one car trip with one bike trip just once a month, it would cut carbon dioxide (CO₂) emissions by 3,764 tons per year in the community. Complete streets allow this to happen more easily.

Complete streets make fiscal sense. Integrating sidewalks, bike lanes, transit amenities, and safe crossings into the initial design of a project spares the expense of retrofits later. Jeff Morales, former Director of Caltrans, said, “by fully considering the needs of all non-motorized travelers (pedestrians, bicyclists, and persons with disabilities) early in the life of a project, the costs associated with including facilities for these travelers are minimized.” Residents of participating counties have the option to make a \$2 donation as part of their annual vehicle registration to the Complete Streets Program in their county. The funding within participating counties can be made available for retrofitting of roads to benefit pedestrians, bicyclists, disabled persons, and motorists.

Guidance:

The following is guidance on the state level policy based on information from the National Complete Streets Coalition website (www.completestreets.org). Additional guidance is provided on the website.

The agency shall provide for the needs of motor vehicle drivers, public transportation vehicles and patrons, bicyclists, and pedestrians of all ages and abilities in all planning, programming, design, construction, reconstruction, retrofit, operations, and maintenance activities and products. The agency shall view all transportation improvements as opportunities to improve safety, access, and mobility for all travelers and recognizes bicycle, pedestrian, and transit modes as integral elements of the transportation system.

The website includes additional recommendations on the considerations for addressing specific issues and exceptions.

If adoption of a Complete Streets Policy is not possible, an alternate approach is a Bicycle and Pedestrian Accommodation Policy. The following summarizes U.S. Department of Transportation (USDOT) document “Accommodating Bicycle and Pedestrian Travel: A Recommended Approach (http://www.fhwa.dot.gov/environment/bicycle_pedestrian/guidance/design_guidance/design.cfm#d1):

1. Bicycle and pedestrian ways shall be established in new construction and reconstruction projects in all urbanized areas unless one or more of three conditions are met:
 - Bicyclists and pedestrians are prohibited by law from using the roadway. In this instance, a greater effort may be necessary to accommodate bicyclists and pedestrians elsewhere within the right-of-way or within the same transportation corridor.



ELKO COUNTY Bicycle Plan



- The cost of establishing bikeways or walkways would be excessively disproportionate to the need or probable use. Excessively disproportionate is defined as exceeding 20 percent of the cost of the larger transportation project.
 - Where population is sparse or other factors indicate an absence of need. For example, the Portland Pedestrian Guide requires "all construction of new public streets" to include sidewalk improvements on both sides, unless the street is a cul-de-sac with four or fewer dwellings or the street has severe topographic or natural resource constraints.
2. In rural areas, paved shoulders should be included in all new construction and reconstruction projects on roadways used by more than 1,000 vehicles per day, as in states such as Wisconsin. Paved shoulders have safety and operational advantages for all road users in addition to providing a place for bicyclists and pedestrians to operate.
- Rumble strips are not recommended where shoulders are used by bicyclists unless there is a minimum clear path of four feet in which a bicycle may safely operate and there is a 12 foot longitudinal gap in the rumble strip every 60 feet.
3. Sidewalks, shared use paths, street crossings (including over- and undercrossings), pedestrian signals, signs, street furniture, transit stops and facilities, and all connecting pathways shall be designed, constructed, operated, and maintained so that all pedestrians, including people with disabilities, can travel safely and independently.
4. The design and development of the transportation infrastructure shall improve conditions for bicycling and walking through the following additional steps:
- Planning projects for the long-term. Transportation facilities are long-term investments that remain in place for many years. The design and construction of new facilities that meet the criteria in item 1 above should anticipate likely future demand for bicycling and walking facilities and not preclude the provision of future improvements. For example, a bridge that is likely to remain in place for 50 years, might be built with sufficient width for safe bicycle and pedestrian use in anticipation that facilities will be available at either end of the bridge even if that is not currently the case
 - Addressing the need for bicyclists and pedestrians to cross corridors as well as travel along them. Even where bicyclists and pedestrians may not commonly use a particular travel corridor that is being improved or constructed, they will likely need to be able to cross that corridor safely and conveniently. Therefore, the design of intersections and interchanges shall accommodate bicyclists and pedestrians in a manner that is safe, accessible, and convenient.
 - Getting exceptions approved at a senior level. Exceptions for the non-inclusion of bikeways and walkways shall be approved by a senior manager and be documented with supporting data that indicates the basis for the decision.
 - Designing facilities to the best currently available standards and guidelines. The design of facilities for bicyclists and pedestrians should follow design guidelines and standards that are commonly used, such as the 2012 AASHTO Bike Guide, AASHTO's A Policy on Geometric Design of Highways and Streets, and the ITE Recommended Practice "Design and Safety of Pedestrian Facilities".



7. FUNDING

Funding bicycling improvements can come from federal, state, and local sources. At the state level, plan recommendations may be implemented by incorporating bicycle infrastructure local improvements into NDOT's Statewide Transportation Improvement Program (STIP). Localities may take similar actions by dedicating staff and budget resources to support bicycle planning and programs (e.g., education, encouragement, and enforcement), incorporating bicycle improvements into capital improvement programs, and routinely accommodating bicycle facilities when making major roadway improvements.

The most recent federal transportation bill passed is the Fixing America's Surface Transportation (FAST) Act, which was signed into law in December 2015. The FAST Act slightly improves funding compared to MAP-21 and provides \$305 billion for surface transportation projects over the next five years. A significant benefit of the FAST Act is that it creates a long-term funding source that agencies can count on. The FAST Act includes an increase in funding for bicycling and makes nonprofits eligible for that funding. The bill also creates a new safety education program and includes complete streets language. The safety education program covered by the FAST Act includes education of law enforcement, motorist, drivers, bicycle and pedestrians, and enforcement campaign implementation. Through these programs, the FAST Act aims to provide a priority safety fund to reduce bicycle and pedestrian fatalities. States in which overall fatalities include 15 percent or more of bicyclists or pedestrians will receive the education funding from the FAST Act. The establishment of complete street design standards by states and MPOs are encouraged through this Act.

Federal transportation funding is an important source of funding for states and localities. The FAST Act moved the stand alone Transportation Alternatives Program (TAP) to be a set aside in the larger Surface Transportation Block Grant Program. The TAP is one component of the total federal transportation funding apportionment that states receive. Other programs that are part of the federal apportionment to states, and which could be important for supporting this Plan's recommendations, include the National Highway Performance Program, the Surface Transportation Program (STP), and the Highway Safety Improvement Program (HSIP). The Section 402 State and Community Highway Safety Grant Program is another potential source of funding for certain types of projects that may benefit bicyclists. The following are details for each of these funding sources.

7.1 Transportation Alternatives Program (TAP)

The TAP includes the same components from MAP-21, which were previously Transportation Enhancements, Safe Routes to School and the Recreational Trails Program. State DOTs are to distribute 50% of TA funding to defined Transportation Management Areas, which consist of cities or metro areas with populations greater than 200,000. TMAs (Regional Transportation Commissions in Nevada and often Metropolitan Planning Organizations) are required to distribute these funds through a competitive grant process. The other 50% of funds are distributed directly by state DOTs through a competitive grant process with no sub-allocation of funding by population.

7.1.1 Eligible Activities for Transportation Alternatives

The following activities that were previously eligible for funding under MAP-21 are still believed to be eligible under the FAST Act with TAP:

- Construction, planning, and design of on-road and off-road trail facilities for pedestrians, bicyclists, and other nonmotorized forms of transportation, including sidewalks, bicycle infrastructure, pedestrian and bicycle signals, traffic calming techniques, lighting and other safety-related infrastructure, and transportation projects to achieve compliance with the Americans with Disabilities Act of 1990.



- Construction, planning, and design of infrastructure-related projects and systems that will provide safe routes for non-drivers, including children, older adults, and individuals with disabilities to access daily needs.
- Conversion and use of abandoned railroad corridors for trails for pedestrians, bicyclists, or other nonmotorized transportation users.
- Construction of turnouts, overlooks, and viewing areas.
- Inventory, control, or removal of outdoor advertising.
- Historic preservation and rehabilitation of historic transportation facilities.
- Vegetation management practices in transportation rights-of-way to improve roadway safety, prevent against invasive species, and provide erosion control.
- Archaeological activities relating to impacts from implementation of a transportation project eligible under this title.
- Any environmental mitigation activity, including pollution prevention and pollution abatement activities and mitigation to address stormwater management, control, and water pollution prevention or abatement related to highway construction or due to highway runoff, including activities described in sections 133(b)(11), 328(a), and 329; or reduce vehicle-caused wildlife mortality or to restore and maintain connectivity among terrestrial or aquatic habitats.

In addition to the eligibilities listed above, eligible Transportation Alternatives projects also include any projects eligible under the Recreational Trails Program and Safe Routes to School Program (SRTS). Law enforcement activities within 2 miles of a K-8 school remain eligible for funding as SRTS projects.

Eligible Transportation Alternatives projects also include the “planning, designing, or constructing boulevards and other roadways largely in the right-of-way of former Interstate System routes or other divided highways.

The Transportation Alternatives program is a part of the Federal-aid Highway Program. Although the program is a “grant” program under Federal regulation, it is not an “up-front” grant program and funds are available only on a reimbursement basis. Only after a project has been approved by the State Department of Transportation or Metropolitan Planning Organization and the FHWA division office can costs become eligible for reimbursement. This means project sponsors must incur the cost of the project prior to being repaid. Costs must be incurred after FHWA division office project approval or they are not eligible for reimbursement.

7.1.2 Relevance of Federal Funding to the Elko County Bicycle Plan

FAST Act’s TAs may be instrumental in funding bicycling improvements in areas with a population less than 200,000, such as Elko County. For areas with populations less than 200,000, the FAST Act directs state DOTs to administer a competitive grant process.

7.2 Surface Transportation Program (STP)

The Surface Transportation Program provides flexible funding that may be used by States and localities for projects on any Federal-aid highway, including the National Highway System (NHS), bridge projects on any public road, transit capital projects, and intracity and intercity bus terminals and facilities. Among the eligible activities under STP are projects relating to intersections that: have disproportionately high crash rates; have high congestion; and are located on a Federal-aid highway.

7.3 Highway Safety Improvement Program (HSIP)

The HSIP emphasizes a data-driven, strategic approach to improving highway safety that focuses on results. A highway safety improvement project corrects or improves a hazardous road location, or addresses a highway



safety problem. Funds may be used for projects on any public road or publicly owned bicycle and pedestrian pathway or trail.

7.4 State and Community Highway Safety Grant Program

Highway Safety Funds are used to support State and Community programs to reduce deaths and injuries on the highways. In each State, funds are administered by the Governor's Representative for Highway Safety. Pedestrian Safety has been identified as a National Priority Area and is therefore eligible for Section 402 funds. Section 402 funds can be used for a variety of safety initiatives including conducting data analyses, developing safety education programs, and conducting community-wide pedestrian safety campaigns. Since the Section 402 Program is jointly administered by NHTSA and FHWA, Highway Safety Funds can also be used for some limited safety-related engineering projects. A State is eligible for these formula grants by submitting a Performance Plan, which establishes goals and performance measures to improve highway safety in the State, and a Highway Safety Plan, which describes activities to achieve those goals.

Additional information is available from the following web sites:

- NHTSA Highway Safety Grant Programs
 - <http://www.nhtsa.gov/About+NHTSA/Highway+Safety+Grant+Programs> <http://www.nhtsa.gov/>
- Uniform Guidelines for State Highway Safety Programs
 - <http://www.nhtsa.gov/nhtsa/whatsup/tea21/tea21programs/>

7.5 National Highway Performance Program

The NHPP provides support for the condition and performance of the NHS, for the construction of new facilities on the NHS, and to ensure that investments of Federal-aid funds in highway construction are directed to support progress toward the achievement of performance targets established in a State's asset management plan for the NHS.

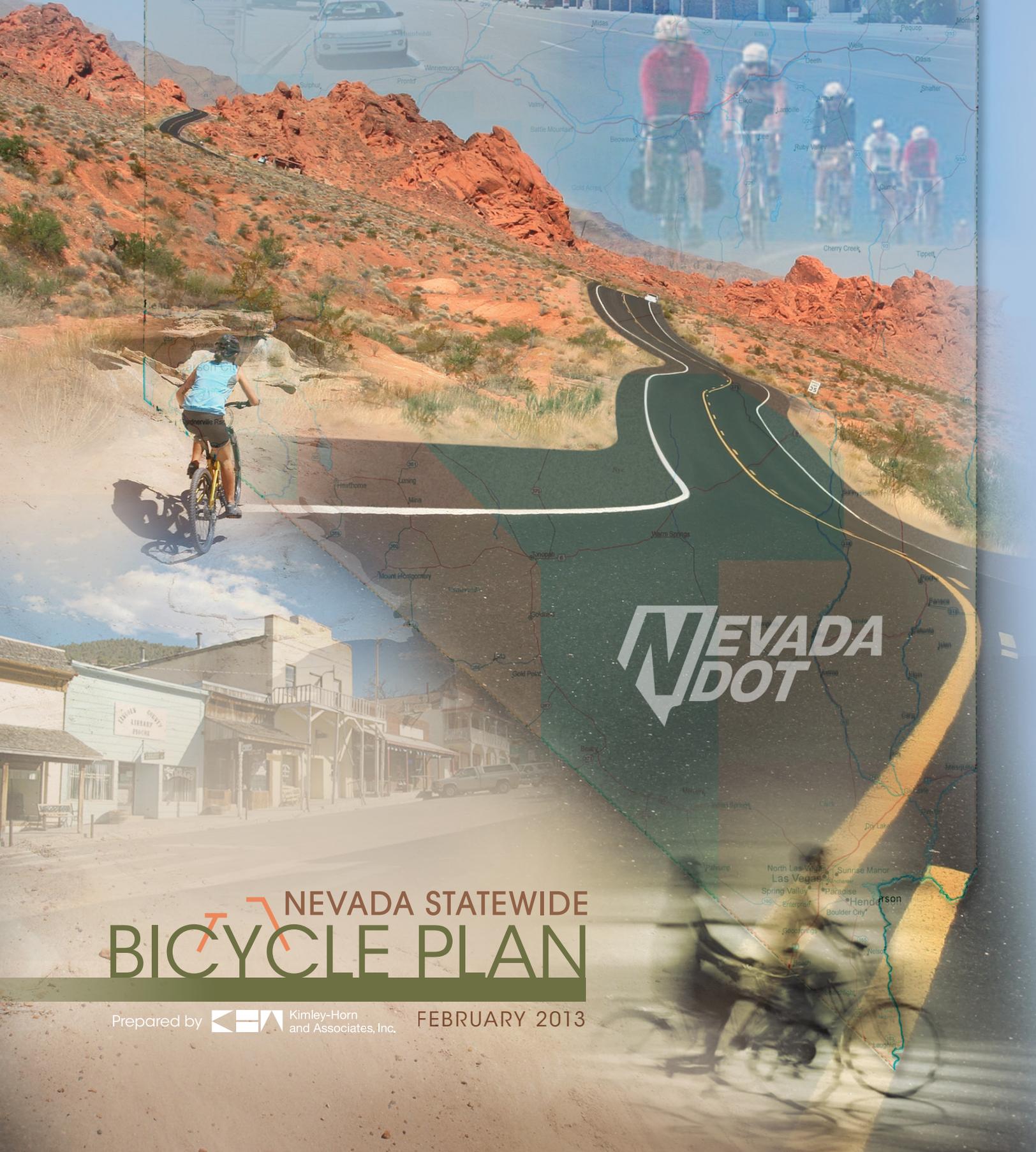
NHPP projects must be on an eligible facility and support progress toward achievement of national performance goals for improving infrastructure condition, safety, mobility, or freight movement on the NHS, and be consistent with Metropolitan and Statewide planning requirements. Eligible activities include:

- Construction, reconstruction, resurfacing, restoration, rehabilitation, preservation, or operational improvements of NHS segments.
- Construction, replacement (including replacement with fill material), rehabilitation, preservation, and protection (including scour countermeasures, seismic retrofits, impact protection measures, security countermeasures, and protection against extreme events) of NHS bridges and tunnels.
- Bridge and tunnel inspection and evaluation on the NHS and inspection and evaluation of other NHS highway infrastructure assets.
- Training of bridge and tunnel inspectors.



APPENDIX A
NEVADA STATEWIDE BICYCLE PLAN

A copy of this plan is available at
www.bicyclenevada.com



NEVADA STATEWIDE BICYCLE PLAN

Prepared by  Kimley-Horn
and Associates, Inc.

FEBRUARY 2013



APPENDIX B
NOTES FROM COUNTYWIDE OBSERVATIONS

Elko County Field Review Notes

ID	EXISTING							PROPOSED			LEGEND
	STREET NAME	FROM	TO	ONEWAY	NUMBER LANES	MEDIAN	WIDTH	RECOMMENDED FACILITY	RECOMMENDED ACTION	CROSS SECTION WIDTH	
1	SR 227	12th St	SR 228	N	4 (5)	STRIPED	varies	BFBL1	ASM	varies	FACILITY CODE
2	SR 228	SR 227	S. Fork Rd	N	2	NONE	25'	PS	WS	32'	SRD - Shared Roadway
3	S. Fork Rd	SR 228	E. Entry	N	2	NONE	32'	NAC	NAC	32'	SH - Sharrow (Shared Lane Marking)
4	E. Entry	S. Fork Rd	Reservoir	N	2	NONE	24'	NAC	NAC	24'	PS - Paved Shoulder
5	Spring Creek Pkwy	SR 227	Pond	N	2	NONE	36.5'	BFBL1	ASM	36.5'	BL - Bike Lane
6	Spring Creek Pkwy	E. of Pond	Palace Pkwy	N	2	NONE	35.5'	BFBL1	ASM	35.5'	BFBL (1) - Buffered Bike Lan (BL & Travel Lane)
7	Palace Pkwy	SR 227	Park Ridge Pkwy	N	2	NONE	36'	BL	ASM	36'	BFBL (2) - Buffered Bike Lane (BL & Parked Car)
8	Park Ridge Pkwy	Palace Pkwy	NW	N	2	NONE	28'	NAC	NAC	28'	SUP - Shared Used Path
9	Pleasant Valley Rd	Palace Pkwy	SR 227	N	2	NONE	28'	SRD	S	28'	SWBP - Sidewalk w/ Bike Permitted
10	SR 227	Pleasant Valley Rd	Thistle Junction	N	2	NONE	28'	BFBL1	WS	40'	S - Further Study Needed
11	SR 227	Pleasant Valley Rd	Lamoille Canyon Rd	N	2	NONE	28'	BFBL1	WS / S	40'	CT1-1 - Cycle Track (1side 1way)
12	Lamoille Canyon Rd	SR 227	South	N	2	NONE	26'	SRD	NAC	26'	CT2-1 - Cycle Track (2sides 1 way)
13	SR 227	Lamoille	Lamoille	N	2	NONE	27'	SRD	NAC	27'	CT2-2W - Cycle Track (2 way operation)
14	Spring Valley Pkwy	SR 227 / Lamoille Hwy		N	2	NONE	26'	SRD	NAC	26'	BBldv - Bicycle Boulevard
15	Last Chance Rd	SR 227	NE	N	2	NONE	42'	NAC	NAC	42'	CFBL - Contra-Flow Bike Lane
16	Lamoille Hwy	12th St	9th St	N	2	NONE	42'	BL	ASM	42'	CL - Climbing Lane & Sharrow
17	9th St	Lamoille Hwy	River	N	2	NONE	42'	NAC	NAC	42'	WOL - Wide Outside Lane
18	Bullion Rd	5th St	W 15 to end of pavement	N	2	NONE	37.5'	BL / SRD	ASM	37.5'	B/BL - Bus/Bike Lane
19	Errecart Blvd	Bullion Rd	Silver St	N	4	NONE	49'	BL	ASM / S	49'	PHB/BL - Peak Hour Bus/Bike Lane
20	Silver St	Errecart Blvd	12th Street	N	2 (3)	STRIPED	54'	BFBL1	ASM	50'	Action Code
21	Mountain City Hwy	Idaho St	Overbridge	N	4 (5)	STRIPED/CURB	64.5'	BFBL2 / SUP	S	34+BFBL2	NAC - No Action Needed
22	Mountain City Hwy	Overbridge	Overbridge	N	4	STRIPED	72'	BFBL2 / SUP	S	72'	ASM - Add Striping/Marking
23	Mountain City Hwy	I-80	N/W Jennings	N	4	STRIPED	varies	NAC	NAC	varies	LD - Lane Diet
24	Copper St	Jennings Way	N 5th St	N	2	NONE	44'	CL / BL	ASM / LD	44'	RD - Road Diet
25	Montrose Ln	Freepport Ave	Jennings Way	N	2	NONE	30'	BL	ASM / LD	30'	RP1 - Remove Parking 1 Side
26	Jennings Way	Montrose Ln	Mountain City Hwy	N	2	NONE	varies	BL	ASM / LD	varies	RP2 - Remove Parking 2 Sides
27	Argent Ave	Copper St	Mountain City Hwy	N	2	NONE	44'	BL	ASM / LD	44'	FTP1 - Add Full Time Parking 1 Side
28	Chris Ave	Argent Ave	Mittry Ave	N	2	NONE	varies	BL	ASM / LD	varies	FTP2 - Add Full Time Parking 2 Sides
29	Mittry Ave	Chris Ave	College Pkwy	N	2	NONE	46'	BL	ASM / LD	46'	WS - Widen Street
30	College Pkwy	Mittry Ave	Elm St	N	2	NONE	46'	BL	NAC - existing	46'	WSw - Widen Sidewalk
31	Elm St	College Pkwy	13th St	N	2	NONE	40'	BL	NAC - existing	40'	CFD - Construct Bike Facility w/ Future Development
32	13 th St	Elm St	Cedar St	N	2	NONE	46'	BL	ASM	44' (7', 5', 10', 10', 5', 7')	S - Further Study Needed
33	Cedar St	13th St	Moren Way	N	2	NONE	58'	BL / BFBL	ASM / LD	58'	MC - Move Center Line
34	Cedar St	Moren Way	NE	N	2	NONE	58'	BL / BFBL	ASM / LD	58'	RhExB - Rehabilitate Existing Bike Fac.
35	Golf Course Rd	Flagview Dr	Ruby Vista Dr	N	2	NONE	46'	BL	ASM	46'	PShdr - Pave Existing Shoulder
36	Ruby Vista Dr	Golf Course Rd	E. Jenning Way	N	2	NONE	32'	BL	ASM	32'	RECON - Reconstruct Roadway
37	Kittridge Canyon Rd	Ruby Vista	Idaho St	N	2	NONE	28'	SRD	ASM	28'	W - Wayfinding
38	Idaho St	E Jenning Way	12th St	N	4	STRIPED/CURB	62'	BL	S / RD	62'	RS- Restripe
39	Idaho St	12th St	5th St	N	2 (3)	STRIPED	57'	BL	ASM / LD	57'	
40	5th St	Idaho St	Commercial St	N	4	NONE	45'		S	45'	
41	5th St	Commercial St	Silver St	N	4	NONE	63'		S	63'	
42	Silver St	5th Street	12th St	N	3 (4)	NONE	53.5'		S	53.5'	
43	5th St	Idaho St	1st St	N	2 (3)	STRIPED	41.5'	SRD	ASM	41.5'	
44	Cedar St	Idaho St	Golf Course Rd	N	2	NONE	52'	BL / BFBL	ASM	52'	
45	8th St	Cedar	Cemetery Rd	N	2	NONE	32'	SRD	ASM	32'	
46	8th St	Cemetery Rd	Walnut St	N	2	NONE	32'	BL / BBldv	ASM	32'	
47	5th St	Walnut St	Copper St	N	2	STRIPED	46'	BL	ASM	46'	
48	Highland Dr	Elm St	Cedar St	N	2	NONE	46'	BL	ASM	46'	
49	Sage S	Elm St	Mountain City Hwy	N	2	NONE	46.5'	BL	ASM	46.5'	
50	Chestnut St	I-80	10th St	N	2	NONE	32'	SRD	ASM	32'	
51	Bush St	10th St	Willow St	N	2	NONE	varies	BL	ASM	varies	
52	Idaho St	Mountain City Hwy	City Limits	N	2/4	NONE	varies	BL		varies	
53	I-80	W Wells	6th St	N	4	NONE	60'	BL	RD	60'	
54	6th St	Humboldt	Ruby Ave	N	4	NONE	61'	BL	RD	61'	

Elko County Field Review Notes

ID	EXISTING							PROPOSED			LEGEND
	STREET NAME	FROM	TO	ONEWAY	NUMBER LANES	MEDIAN	WIDTH	RECOMMENDED FACILITY	RECOMMENDED ACTION	CROSS SECTION WIDTH	
55	6th St	Ruby Ave	Hwy 93	N	2/4	NONE	varies	SH	ASM	varies	FACILITY CODE SRD - Shared Roadway SH - Sharrow (Shared Lane Marking) PS - Paved Shoulder BL - Bike Lane BFBL (1) - Buffered Bike Lan (BL & Travel Lane) BFBL (2) - Buffered Bike Lane (BL & Parked Car) SUP - Shared Used Path SWBP - Sidewalk w/ Bike Permitted S - Further Study Needed CT1-1 - Cycle Track (1side 1way) CT2-1 - Cycle Track (2sides 1 way) CT2-2W - Cycle Track (2 way operation) BBldv - Bicycle Boulevard CFBL - Contra-Flow Bike Lane CL - Climbing Lane & Sharrow WOL - Wide Outside Lane B/BL - Bus/Bike Lane PHB/BL - Peak Hour Bus/Bike Lane Action Code NAC - No Action Needed ASM - Add Striping/Marking LD - Lane Diet RD - Road Diet RP1 - Remove Parking 1 Side RP2 - Remove Parking 2 Sides FTP1 - Add Full Time Parking 1 Side FTP2 - Add Full Time Parking 2 Sides WSw - Widen Street WSw - Widen Sidewalk CFD - Construct Bike Facility w/ Future Development S - Further Study Needed MC - Move Center Line RhExB - Rehabilitate Existing Bike Fac. PShdr - Pave Existing Shoulder RECON - Reconstruct Roadway W - Wayfinding RS - Restripe
56	Hwy 93	I-80	South	N	2	NONE	38'	NAC	NAC	38'	
57	Hwy 93	I-80	North	N	2	NONE	32'	NAC	NAC	varies	
58	Lake Ave	10th St	5th St	N	2	NONE	varies	NAC	NAC	varies	
59	Lake Ave	4th St	Easy St	N	2	NONE	48'	BL	ASM	48'	
60	4th St	Clarke Ave		N	2	NONE	48'	BL	ASM	48'	
61	Florence Way	I-80	Wendover Blvd	N	4	NONE	59'	BL	Move BL left of RTL	59'	
62	Wendover Blvd	W Florence Way	E Florence Way	N	4 (5)	NONE	72'	BL	ASM	72'	
63	Florence Way	Wendover Way	SB	N	2	STRIPED	42'	NAC	NAC	42'	
64	Wendover Blvd	State Line WB	Florence	N	4	STRIPED	64'	BL	ASM	64' (5', 11', 10', 11', 5')	
65	Lincoln Way	Wendover Blvd		N	2	NONE	33'		NAC	33'	
66	Wendover Way	Florence Way	Red Garter St	N	5	STRIPED	varies	BL	ASM	varies	
67	Pueblo Ave	Wendover Blvd	Tibbets St	N	4	NONE	80'	BL	NAC	80'	
68	Tibbets St	Pueblo Ave	Elko St	N	2	NONE	50'	BL	NAC	50'	
69	Elko St	Tibbets St	Alpine Dr	N	2	NONE	40'	BL	ASM	40'	
70	Alpine St	Elko St	Florence Way	N	2	NONE	46'	BL	ASM	46'	
71	Florence Way	Alpine St	Silver St	N	2	NONE	varies	NAC	NAC	varies	
72	Florence Way	Silver St	Camper Dr	N	2	NONE	35'	BL	ASM	35'	
73	Florence Way	Camper Dr	Wendover Blvd	N	2	NONE	varies	BL	NAC	varies	
74	Red Garter St	Wendover Blvd	Butte St	N	2	NONE	40'	BL	ASM	40'	
75	Butte St	Red Garter St	Alpine Dr	N	2	NONE	40'	NAC	NAC	40'	
76	Wendover Blvd	Pueblo Ave	WB	N	2	NONE	65'	BL / SRD	ASM	65'	
77	I-80		WN	N	4	NONE	60'	NAC	NAC	60'	
78	Clover Valley Rd	93 Nevada Rd		N	2	NONE	24'	Signed Route	NAC	24'	
79	93 Nevada Rd	Clover Valley Rd	229 Nevada St	N	2	NONE	28'	NAC	NAC	28'	
80	229 Nevada St	98 Nevada Rd	767 Nevada St	N	2	NONE	24'	NAC	NAC	24'	
81	229 Nevada St	98 Nevada Rd	767 Nevada St	N	2	NONE	24'	NAC	NAC	24'	



APPENDIX C

2008 ELKO COUNTY PUBLIC LANDS POLICY PLAN



Elko County Public Lands Policy Plan

2008

2008 Elko County Public Lands Policy Plan

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Elko County
Public Lands Policy Plan
2008

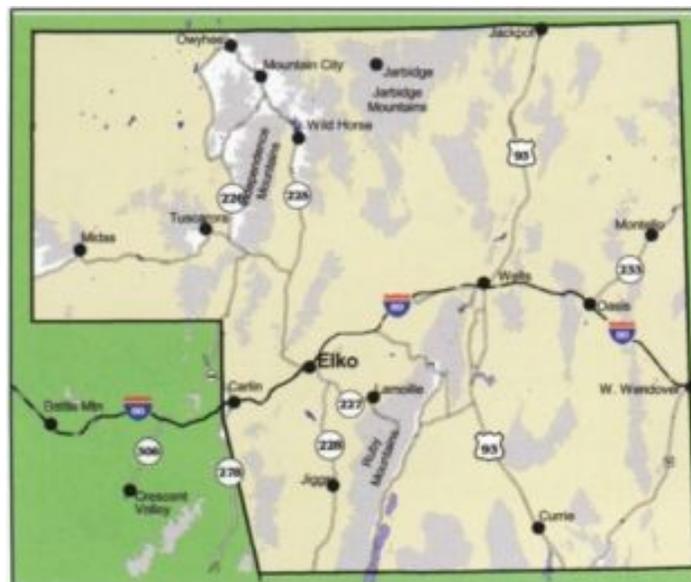
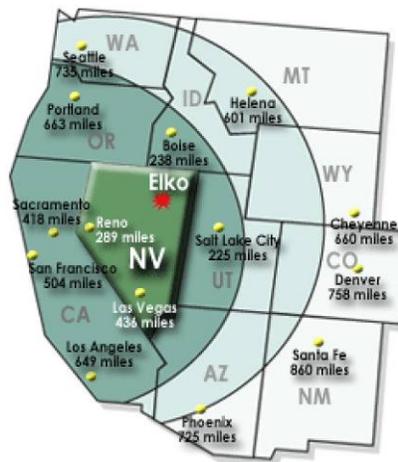


I. PLAN BACKGROUND

Location

Elko County is at a crossroads geographically between Reno, Boise and Salt Lake City. Nearly 45,000 people live in its 17,181 square miles. Elko is the fourth largest county in the lower forty-eight states, as big as five of the New England states plus the District of Columbia. The county enjoys a diversified economy built on mining, ranching and tourism. One of Nevada’s most scenic areas, it offers outdoor enthusiasts opportunities to camp, hike, fish and hunt surrounded by beautiful high desert and mountain vistas. In addition, it has much to offer businesses seeking a central location among the Western states with ample natural resources.

Figure 1 – Location Maps





Pilot Peak

Nevada is a state that is comprised predominately of federally-managed lands. Approximately 86.5% of all lands in the state are under the jurisdiction of federal agencies with the majority percentage under Bureau of Land Management (BLM) jurisdiction. The US Forest Service is secondary, followed by the Department of Defense, National Park Service, US Fish and Wildlife Service, Bureau of Indian Affairs and Bureau of Reclamation. Additional lands are managed by the State of Nevada. This land ownership pattern leaves very few areas under private control for economic development and community expansion. Elko County is no exception to this land use pattern. Since most of the county is under federal management, little private land exists for community expansion.

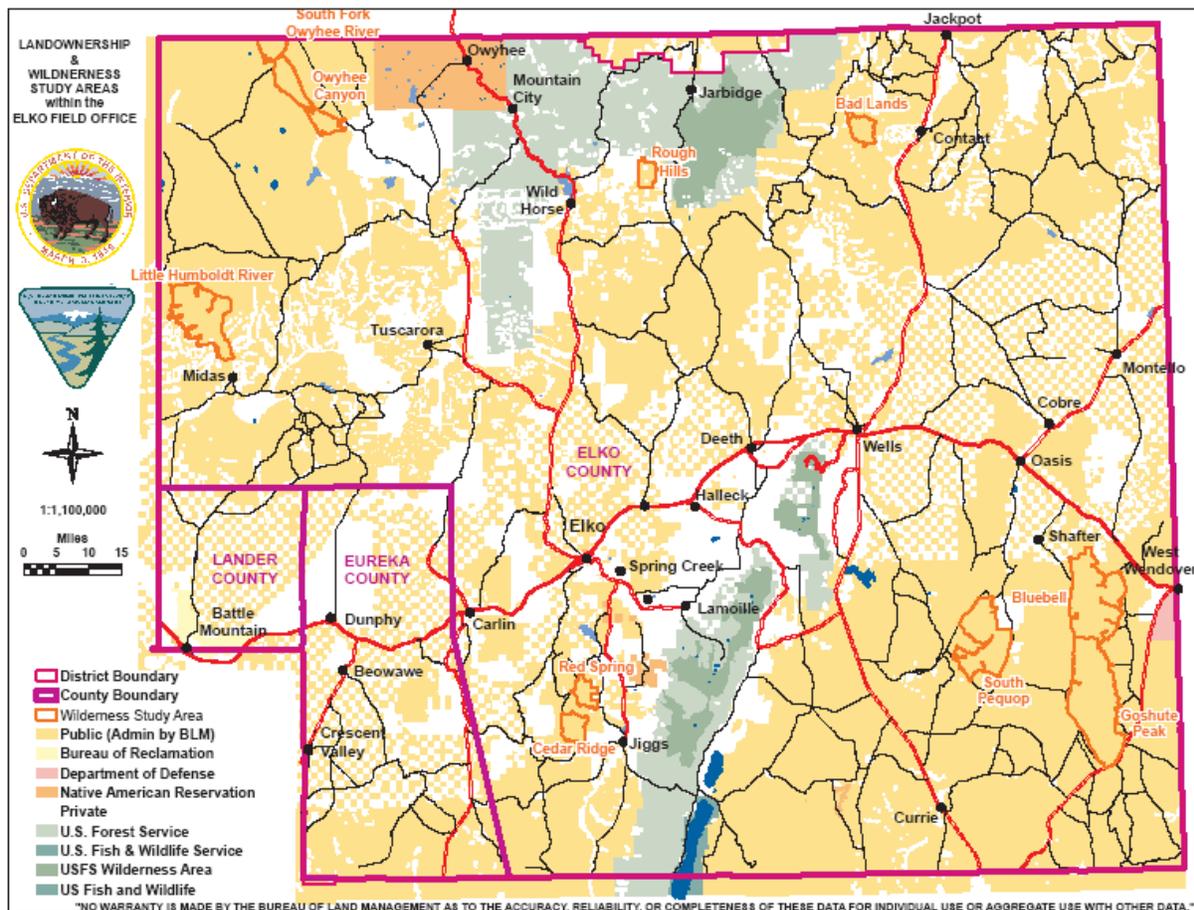
Land Ownership

Of Elko County's 10,995,840 acres, 72.7+/- percent is administrated by the federal government. Another 1.5 percent is sovereign tribal lands. The Humboldt-Toiyabe National Forest is administered by the U.S. Forest Service. Most of the remaining lands are administrated by the Bureau of Land Management. The BLM Elko District Office along with the Tuscarora and Wells Field Offices administers a majority of public lands in the County while the Twin Falls District, Jarbidge Field Office administers a small portion near Jarbidge. US Forest Service lands in the county include the Ruby, Mountain City and Jarbidge Ranger Districts. The Ruby Valley National Wildlife Refuge is administered by the



US Fish and Wildlife Service. The BLM and the County have identified many federal land parcels needed to meet county or community needs. Additional lands have been identified that would enhance economic development, if made available for purchase by the private sector. Appendix A describes the specific BLM parcels identified by the county for acquisition.

Figure 2 - Elko County Land Status



**Figure 3 - Elko County Land Status Acreage**

Land Area	Acres	Land Area in Percent
Lands Administered by Federal Agencies (1)	7,997,339	72.7
BLM (2)	6,882,161	62.6
Forest Service	1,073,143	9.8
Fish and Wildlife Service	26,872	0.2
Department of Defense	15,163	0.1
Tribal	160,823	1.5
State	15,241	0.1
Local Government/Private	2,822,437	25.7
Total Acres	10,995,840	100.0

Source: BLM 2007, (1) Of this total number Wilderness comprises 206,266 acres and Wilderness Study Areas comprise 268,346 acres. (2) This figure includes lands administered by BLM Twin Falls Idaho District (45,850 acres)

Climate

Elko County's annual precipitation is influenced by elevation and averages 10 inches. March to May is the wettest period with one and one-half inches of precipitation per month. August and September are the driest months, averaging 0.47 inches per month. Temperature, on the average, ranges between 13 and 37 in January to a range from 50 to 91 degrees in July.

Population

Elko County's 2007 total population estimate was 50,434 persons while individual community populations are as follows:

<u>County Population</u>		<u>Population within the Cities of Elko County</u>	
Year	Population		
2007	50,434	Carlin	2,295
2006	44,462	City of Elko	18,427
2005	43,415	Jackpot	1,217
		Montello	165
		Mountain City	129
		Wells	1,508
		West Wendover	4,958

Source: State of Nevada Demographer, 2007 numbers



II. PLAN PURPOSE

The initial Elko County Public Lands Policy Plan (Plan) was developed between 1983 and 1984 as part of a state-wide effort resulting from the passage of Senate Bill 40. Under SB40, the State Land Use Planning Agency section of the Nevada Division of State Lands (SLUPA) was directed by the 1983 State Legislature to:

- **“Prepare, in cooperation with appropriate state agencies and local governments throughout the state, plans or policy statements concerning the use of lands in Nevada which are under federal management.”**

SLUPA, in concert with local governments, developed a public lands policy plan for each of Nevada’s 17 counties as well as a statewide element. The 2008 Plan represents a review of existing and emerging public lands issues that are of importance to Elko County as it works with federal agencies under the National Environmental Policy Act (NEPA), the Federal Land Policy Management Act of 1976 (FLPMA) and other public processes.

BLM completed two land use plans that cover the Elko District, the 1985 Wells Resource Management plan (RMP) and the 1987 Elko RMP. Since these plans were originally approved, they have been amended for fire, elk and wild horse management. BLM has tentatively scheduled consolidation and revision of the RMPs beginning in 2010. Revision of the Jarbidge RMP for small portions of northern Elko County administered by the Idaho BLM, Twin Falls District is currently underway. The US Forest Service also has Forest Plans in effect for lands they administer.

The purpose of the Plan is to:

- **Detail Elko County’s vision and strong policy voice concerning public lands.**
- **Define Elko County’s public land-related issues and needs.**
- **Provide locally developed land management policies that enable the federal land management agencies to better understand and respond in a positive fashion to the concerns and needs of Elko County in a collaborative process.**



- **Increase the role Elko County has in determining the management of the federal lands.**
- **Provide an opportunity to positively address federal land use management issues directly and thereby offer a proactive alternative rather than an after-the-fact response.**
- **Encourage public comment and involvement.**

Within the Plan are descriptions of issues and opportunities relating to public lands and how best to work collaboratively with the federal planning partners, most notably Bureau of Land Management (BLM), US Forest Service (USFS), and the Bureau of Indian Affairs.

- The Plan enables the federal land management agencies to better understand and respond to the concerns and needs of Elko County.
- Planning by Nevada's local, state and federal governments, effective communication and coordination by Nevada's governments, in concert with its citizens, can establish a set of policies for the proper use of these lands and to take advantage of the "consistency" language in Section 202(c)(9) of the Federal Land Policy and Management Act (FLPMA).
- Section 202(c)(9) governs BLM Planning and directs the BLM to give consideration to appropriate state, local, and tribal lands in the development of land use plans for federal lands.
- The BLM is to provide for meaningful public involvement of state and local government officials in the development of land use plans, regulations and decisions for federal lands.
- The BLM will review each proposed Resource Management Plan (RMP) and proposed federal action for consistency with the Elko County Public Lands Policy Plan and will attempt to make the RMPs and proposed actions compatible with the Plan to the extent that the Secretary of the Interior finds consistent with federal law and the purpose of FLPMA.



Forest Service Regulations for Land Management Planning and for implementing the National Environmental Policy Act (NEPA) requires that the Forest Service determine the consistency of any project proposal with state and/or local laws and plans.

- The agency is required to describe any inconsistencies and the extent to which the agency would reconcile its proposal with the state/local laws and plans. This consistency review is also provided for by the Council of Environmental Quality (CEQ) regulations (40 CFR 1506.2(d)) developed to implement NEPA.

III. PROCESS

The following is a summary of the process followed to adopt the 2008 Plan:

- The PLUAC reviewed existing policies and issues with the assistance of the State Land Use Planning Agency in 2006 and early 2007 during publicly noticed meetings in Elko.
- The Draft Plan was presented at the January 23, 2008 PLUAC meeting in Elko. The PLUAC held an official public review meeting and recommended approval of the Plan.
- The Planning Commission held two public hearings on July 17, 2008 and August 21, 2008 and recommended approval of the Plan to the Elko County Board of Commissioners.
- The Elko County Board of Commissioners held two public hearings on November 5, 2008 and December 10, 2008 and adopted the 2008 Plan.

IV. HISTORICAL BACKGROUND

It is believed that Native Americans inhabited what is now the Elko County area for 10,000 - 13,000 years prior to the first visits by European trappers and explorers. They lived by hunting, fishing and gathering native plants, including seeds, berries, rose hips and pine nuts. The early Indians trapped fish with willow traps woven out of pliant willow branches, narrow at the neck and widening at the bottom. The first contact with the white man in Nevada was in 1826 when Jedediah Smith made contact with the Shoshone Indians in central Nevada and relayed this information to Meriwether Clark of Lewis and Clark fame.



The first recorded white men in the Elko area were fur trappers led by Peter Skene Ogden in 1827. In 1841, the first of an almost continuous stream of pioneers passed through the county, following the Humboldt River westward along the California Trail. These travelers included the ill-fated Donner Party and later the '49ers. Through the 1850s the wagons creaked painfully along the twisted course of the Humboldt River, their metal rimmed wheels cutting tracks so deep in the rock that in some places they can still be seen today.



The earliest form of scheduled, routine transportation for passengers, freight and mail were the stage lines. As early as 1851, stagecoaches crossed the Humboldt Valley from Salt Lake, Utah to Sacramento, California carrying the mail.

On October 31, 1864, Nevada became the 36th state in the union and that same year the first settlers took up ranching in the Lamoille Valley, which a mere five years later would become part of the newly established Elko County. In 1867, Tuscarora was founded and the first permanent settlers established ranches in Starr Valley and South Fork Valley.



Scottish herders brought bands of sheep into Nevada from California and Oregon in the 1860s. When cattlemen were struggling under the impact of the disastrous Winter of the White Death, the sheepmen invaded! They grazed on the public lands that the cattlemen had come to think of as their own. The cattlemen responded with armed force, but the sheepmen were as tough as the cattlemen, and they stayed! At this

time, to say shepherd was to say Basque. The men from the Pyrenees Mountains in Spain and France had proven their reliability and herding skills. They had become the preferred employees on sheep ranches throughout the west. By late 1869, the city of Elko's population had climbed to 2,000.



No accurate account of the naming of Elko County has come down through the years and the origin of the name remains a matter of speculation. It is rumored that Charles Crocker, of the Central Pacific Railroad, named it Elko because of his passion of wild animals - merely adding an "o" to "elk". Another story has it that a party of Indians watched the surveyors laying out the townsite and when told what they were doing the Indians exclaimed "Elko!", a word of extreme disgust. Whatever the tale, Elko County was created March 5, 1869, with Elko as the county seat.

The Central Pacific Railroad gave birth to the town of Elko, Carlin and Wells in 1868 as it pushed its tracks eastward. That same year the Idaho Central Wagon Road connected Carlin to the mines in Silver City, Idaho. Mountain City was also founded. On new Year's Day in 1869, there were just a few tents among the sagebrush, but two weeks later, hastily laid out plots were selling for \$300 to \$500 each. From that beginning, the town grew rapidly as a freight terminus to supply the mines in the region. On March 5, 1869, the State Legislature created Elko County from part of Lander County and made Elko the county seat.

In May 1869, when the Golden Spike was driven at Promontory Point, Utah, the Central Pacific and Union Pacific Railroads were finally linked. The Chinese laborers from the Central Pacific's track crew were abandoned. On foot, hundreds headed west and many stayed in Elko. One of their chief occupations during the summer months was the raising of vegetables for the town. Their gardens were mostly on the northern banks of the Humboldt River and were watered by hand. Eventually the Chinese built the first water system in Elko. They built a reservoir and dug a ditch to carry the water from Osino to the reservoir, a distance of 8-10 miles (right through what is now City Park).

A special election was held on June 21, 1869 where Len Wines, J. Pierson and J.H. Lettingwell were elected as the first Commissioners of Elko County. One of their first acts was to commission the building of a courthouse and jail. On January 10, 1870, the Commissioners accepted the completed Elko Courthouse building at a cost of \$22,942.48.

When the state legislature passed a law to create a university, they left the location open to competition between the cities and counties. Elko went the extra mile and donated land to the state, as well as providing \$20,000 to back up their offer. The University of Nevada opened on October 12, 1874, and was open for 11 years. In 1885, Elko continued its commitment to educate by opening the first high school in the state. The University of Nevada was moved to Reno in 1886.



The Jarbidge Gold Boom began in 1908 and lasted until 1935. Jarbidge was officially founded in 1910. December 5, 1916 became infamous as the date of the world's last stagecoach robbery and murder, which took place in Jarbidge Canyon. William Smith founded Wendover in 1917, and the legislature authorized the incorporation of the City of Elko. In 1918, President Woodrow Wilson established the Elko Indian Colony by executive order. It was later relocated in 1931.

1927 saw the first completely automatic hydroelectric system in Nevada, planned and organized by H.H. Cazier at Wells. It was the first rural electrification system. In 1934 construction began on Wildhorse Dam and Reservoir on the Owyhee River. Elko helped usher in Nevada's golden age of entertainment with the appearance of Band Leader Ted Lewis on April 26, 1941. Jackpot was founded in 1956.

Newmont Mining Company opened its extensive gold mining operation near Carlin in 1965, and it still operates today along with Barrick Goldstrike Mines, Queenstake Resources USA and several other mining companies.

Elko County gained a treasure in 1968 with the establishment of the Northeastern Nevada Museum. The world famous Cowboy Poetry Gathering started in Elko in 1985 and continues to draw cowboys and spectators from all over the world each January.

On September 23, 1992 the Elko County Courthouse was placed on the national Register of Historic Places and in 1993, Elko was named one of the 100 Best Small Towns in America. In June of 1998, Elko County sold their county-owned hospital to Province Healthcare, who in 2001 completed a new \$50 million, state-of-the-art hospital and medical center for the region.

The new century saw Great Basin College, established in 1967, adding several four year degree programs, a new technology center and health sciences building, a new electrical technical center and continually expanding their facilities, degrees and services.

Elko County had led the way in many firsts for the State of Nevada, and has produced five Nevada Governors. Strong beliefs and pride in an independent spirit, traditions and guaranteed freedoms keep this county in the forefront of protecting its citizens and natural resources while still working toward a prosperous environment in which to live, work, raise children and retire. Not to mention having some of the most beautiful landscapes in Nevada, from the Ruby Mountains to our desert lands.



V. RECREATION

Public recreational uses in Elko County are primarily state or federally owned or managed properties. The BLM currently manages approximately 25 sites totaling 8,218 acres. The Forest Service currently manages approximately 22 sites totaling 160 acres. The State of Nevada provides approximately 5,000 acres of recreation area in the form of State Recreation Areas, including the South Fork State and Wild Horse Recreation Area. The BLM and USFS also note that use of the developed recreational sites is indicating a decrease in annual use. One of the factors that may be causing the decrease in use is that the public is increasingly utilizing the public lands that are not developed for camping or other uses. This trend is referred to as "Dispersed Recreation", areas that are primarily untouched, hard to access and remote to any type of use. Dispersed recreation can provide in a remote setting the solitude a recreationist desires versus the high density uses of a developed camping area. This has historically been a use that hunters frequenting this area have utilized in the past. These uses are increasingly being monitored by federal land management. The use is not being discouraged, but in the effort to protect sensitive lands as well as all public lands, the land managers are increasingly educating the public in the proper uses and procedures.

Over the past 20 years, Elko County has become increasingly a point of destination due to the diversity of many annual recreational, historical, cultural and ethnic special events and attractions, as well as the continued uses that the county has been nationally recognized for. Historically, recreation was primarily hunting, fishing, equestrian use and camping in our many pristine nature areas. This use has also increased over the last 20 years to include all terrain vehicles, cross-country motorcycle racing, long range highway auto racing, hiking, nature viewing, photography, snow skiing, cross country skiing, boating and numerous other uses. Recreation and tourism are considered a resource which to date has not reached its maximum potential. The Elko County Convention and Visitors' Association (ECVA) Trails Committee is developing several trails systems throughout the County, with the cooperation of BLM, US Forest Service, NDOW, ranchers, miners and other public land users. ATVs, mountain bikes, hikers, wildlife viewers and horseback riders and all others are considered in these trail development plans. Elko County has been designated as one of the top ten areas in the World for snowmobiling by Super Trax International Magazine.

The "Tread Lightly" theme is incorporated into all promotional material and NDOW is consulted in regards to wildlife habitat impacts. Elko County fully embraces the multiple use concept of public land management and encourages federal land management agencies to maximize public usage of lands while still addressing environmental concerns.



Opportunities for water-based recreation such as boating, fishing, water-skiing, swimming (not pools) etc:

- | | |
|------------------------|--------------------|
| Willow Creek Reservoir | Wildhorse Lake |
| Willow Creek | Rock Creek |
| Humboldt River | Ruby Lake |
| Wilson Reservoir | South Fork Lake |
| Angel Lake | Dorsey Reservoir |
| Blue Lake | Bull Run Reservoir |
| Lamoille Creek | Trout Creek |
| Franklin Lake | Owyhee River |
| Jarbidge River | Bruneau River |
| Mary's River | Tabor Creek |



Wildhorse Reservoir



South Fork Recreation Area



Open space and recreational opportunities are critical to Elko County's economic, historical and cultural identity. Some prominent resources include:

Wildhorse State Recreation Area	South Fork State Recreation Area
Ruby Lake National Wildlife Refuge	Lamoille Canyon
Ruby Mountains	Spruce Mountain OHV Trails
Jarbidge Wilderness	Merritt Mountain OHV Trails

VI. WILDERNESS

There are three Congressionally designated Wilderness areas in Elko County, Jarbidge, East Humboldt and Ruby Mountains. All are managed by the US Forest Service. BLM manages a number of areas recommended for wilderness as Wilderness Study Areas.

Jarbidge Wilderness	113,176 acres
Ruby Mountains Wilderness	93,090 acres
East Humboldt Wilderness	<u>36,900 acres</u>
Total	243,166 acres



Jarbidge Wilderness



Figure 4 – Wilderness Study Areas (acres)

Bad Lands WSA	9,264
Bluebell WSA	54,413
Cedar Ridge WSA	9,457
Goshute Canyon WSA	340
Goshute Peak WSA	70,138
Little Humboldt River WSA	41,193
N. Fk of the Little Humboldt River WSA	85
Owyhee Canyon WSA	21,380
Red Spring WSA	7,523
Rough Hills WSA	6,484
South Fork Owyhee River WSA	7,847
South Pequop WSA	40,222
Total	268,346

VII. ECONOMIC ACTIVITIES

In 2003, the U.S. Bureau of Census defined a new classification of counties which are designated as "Micropolitan Statistical Areas." To be classified as a Micropolitan Statistical Area, a group of counties must have a community of at least 10,000 to 49,999 people, be distant from a large city, and have proportionately few residents commuting outside the area. The Northeastern Nevada counties of Elko and Eureka comply with these requirements and have been designated as the Elko Micropolitan Statistical Area (S.A.). The Elko Micropolitan S.A. is the primary area of the state's mining industry. During First Quarter 2007, the Elko Micropolitan S.A. employed 5,202 mining employees, which consists of 44.07% of total state of Nevada mining employment. Also for the Elko Micropolitan S.A., the mineral industry accounted for 20.42 percent of total area employment. As for the Gold and Silver Ore Mining Sector in First Quarter 2007, employment was 5,099 employees in the Elko Micropolitan S.A. Elko Micropolitan S.A. made up 58.93 percent of total State of Nevada Gold and Silver Ore Mining Sector employment. As for the Support Activities for Metal Mining Sector employment, the Elko Micropolitan S.A. had 782 employees in First Quarter 2007. This was 74.90 percent of total State of Nevada employment in the Support Activities for Metal Mining Sector employment. This sector's employment data may be somewhat under reported given Eureka County employment in this sector was not disclosed. Using the IMPLAN input-output model database (Minnesota IMPLAN Group, Inc., 2006), sectoral location quotient values show which sectors are importers, self-sufficient, and exporters. In 2004, there were 146 economic sectors in the Elko Micropolitan S.A. The twenty top sectors made up approximately \$3.0 billion in output, or 82 percent of total the Elko Micropolitan S.A. output in 2004. The Gold, Silver and Other Metal Ore Mining Sector in the Elko Micropolitan S.A. recorded a value of output of \$1.58 billion which was 43.77 percent of total Elko Micropolitan S.A. value of output. This output level ranks the Gold, Silver and Other Metal Ore Mining Sector as the largest of the Elko Micropolitan S.A.'s 146 economic sectors in sectoral value of production. The value of production for the Support Activities for Other Mining Sector in 2004 was \$92.9 million which was 2.57 percent of total Elko Micropolitan S.A. value



of output. This ranked the Support for Other Mining Sector seventh among the Elko Micropolitan S.A.'s economic sectors in value of output. In total the Gold, Silver and Other Metal Ore Mining Sector and the Support Activities for Other Mining Sector, or what will be denoted as the Hard Rock Mining Sector, make up approximately 46 percent of total Elko Micropolitan S.A. economy output. The top twenty employment sectors made up approximately 74 percent of total Elko Micropolitan S.A. employment in 2004. The Gold, Silver and Other Metal Ore Mining Sector in the Elko Micropolitan S.A. in 2004 had 3,958 employees which were 16.17 percent of total Elko Micropolitan S.A. employment. This employment level ranks the Gold, Silver and Other Metal Ore Mining Sector first among the Elko Micropolitan S.A.'s 146 economic sectors as to level of sectoral employment. The employment level for the Support Activities for Other Mining Sector in 2004 was 335 employees which was 1.37 percent of total Elko Micropolitan S.A. value of output. This ranked the Support for Other Mining Sector sixteenth among the Elko Micropolitan S.A.'s economic sectors in employment. In total the Hard Rock Mining Sector, made up approximately 17.5 percent of total Elko Micropolitan S.A. employment.

Figure 5 - Top Twenty Economic Sectors by Values of Output for the Elko Micropolitan S.A., 2004

Sector	Output	%Total Output
Gold, silver and other metal ore mining	\$1,579,415,000	43.77%
Hotels and motels, including casino hotels	\$261,469,000	7.25%
State & Local Education	\$129,264,000	3.58%
Owner-occupied dwellings	\$125,214,000	3.47%
Wholesale trade	\$105,590,000	2.93%
New residential 1-unit structures-all	\$103,855,000	2.88%
Support activities for other mining	\$92,863,000	2.57%
Cattle ranching and farming	\$76,564,000	2.12%
Power generation and supply	\$74,750,000	2.07%
All other crop farming	\$57,992,000	1.61%
Food services and drinking places	\$50,803,000	1.41%
Commercial and institutional buildings	\$42,534,000	1.18%
Offices of physicians, dentists and other health practitioners	\$41,264,000	1.14%
Monetary authorities and depository credit institutions	\$40,488,000	1.12%
Federal Non-Military	\$40,465,000	1.12%
State & Local Non-Education	\$37,093,000	1.03%
Telecommunications	\$31,279,000	0.87%
Food and beverage stores	\$28,185,000	0.78%
Motor vehicle and parts dealers	\$27,811,000	0.77%
Machinery and equipment rental and leasing	\$27,354,000	0.76%
Subtotal for top 20 sectors	\$2,974,252,000	82.43%

Source: Dr. Tom Harris, University of Nevada, Reno IMPLAN Model / Minnesota IMPLAN Group, Inc. "IMPLAN Pro Data for Elko County and Eureka County, 2004". Minnesota IMPLAN Group, Inc.: Stillwater, Minnesota, 2006.



Figure 6 - Top Twenty Economic Sectors by Employment for the Elko Micropolitan S.A., 2004.

Sector	Employment	Percentage Total Employment
Gold, silver and other metal ore mining	3,958	16.17%
Hotels and motels, including casino hotels	3,271	13.36%
State & Local Education	2,941	12.02%
Food services and drinking places	1,239	5.06%
New residential 1-unit structures- all	697	2.85%
Wholesale trade	675	2.76%
Cattle ranching and farming	565	2.31%
State & Local Non-Education	480	1.96%
Food and beverage stores	463	1.89%
Employment services	454	1.85%
Private households	445	1.82%
Couriers and messengers	413	1.69%
Offices of physicians, dentists and other health practitioners	406	1.66%
Commercial and institutional buildings	388	1.59%
General merchandise stores	342	1.40%
Support activities for other mining	335	1.37%
Federal Non-Military	327	1.34%
Motor vehicle and parts dealers	298	1.22%
Nonstore retailers	291	1.19%
Hospitals	263	1.07%
Subtotal for top 20 Sectors	18,251	74.56%

Source: Dr. Tom Harris, University of Nevada, Reno IMPLAN Model / Minnesota IMPLAN Group, Inc. "IMPLAN Pro Data for Elko County and Eureka County, 2004". Minnesota IMPLAN Group, Inc.: Stillwater, Minnesota, 2006.

The Cattle Ranching and Farming Sector for Elko County in 2003 had a production level of \$53.8 million, hired 482 employees, and paid labor income of \$3.9 million. Given the multiplier impacts, the Cattle Ranching and Farming Sector in Elko County had total economic impacts of \$96.6 million in 2003. This means that beyond the direct economic benefits of \$53.8 million, the indirect and induced impacts of the Cattle Ranching and Farm Sector on the Elko County economy was \$42.8 million. Indirect impacts are the additional expenditures between economic sectors after the initial direct expenditure is made. Induced impacts are the additional expenditures and economic activity attributable to household sector interactions.



Agriculture and livestock production in Elko County is an important activity that helps meet the needs of Nevada citizens. Agriculture is particularly important when mining activity is slowed. Agriculture helps carry the county through these periods of economic downturns. According to the 2002 Census of Agriculture from the National Agricultural Statistics Services, the following is true for Elko County:

Figure 7 - Agriculture and Livestock

	2002	1997	% Change
Number of Farms:	397	436	-9
Total Farm Acres:	2,472,143	2,832,268	-13
Average Farm Size:	6,227 acres	6,496 acres	-4
Irrigated Acres	183,498	201,376	-9
Production Market Value (Total):	\$45,300,000	\$48,900,000	-7
Crops Revenue:	\$1,680,000	\$4,200,000	-60
Livestock Revenue:	\$43,600,000	\$44,700,000	-2
Farm Average:	\$114,113	\$112,195	+2
Government Payments:	\$1,600,000	N/A	N/A
Gov. Payments Avg/Farm:	\$18,173	\$N/A	N/A

Source: 2002 Census of Agriculture, Farm includes ranches.

Figure 8 -Major Crops and Livestock Production

	2002	1997
Forage Crops	130,361 acres	150,500 acres
Cattle and Calves	135,554 head	163,267 head
Sheep	19,627 head	35,615 head

Source: Nevada Agricultural Statistics Service: Nevada Agricultural Statistics 2004

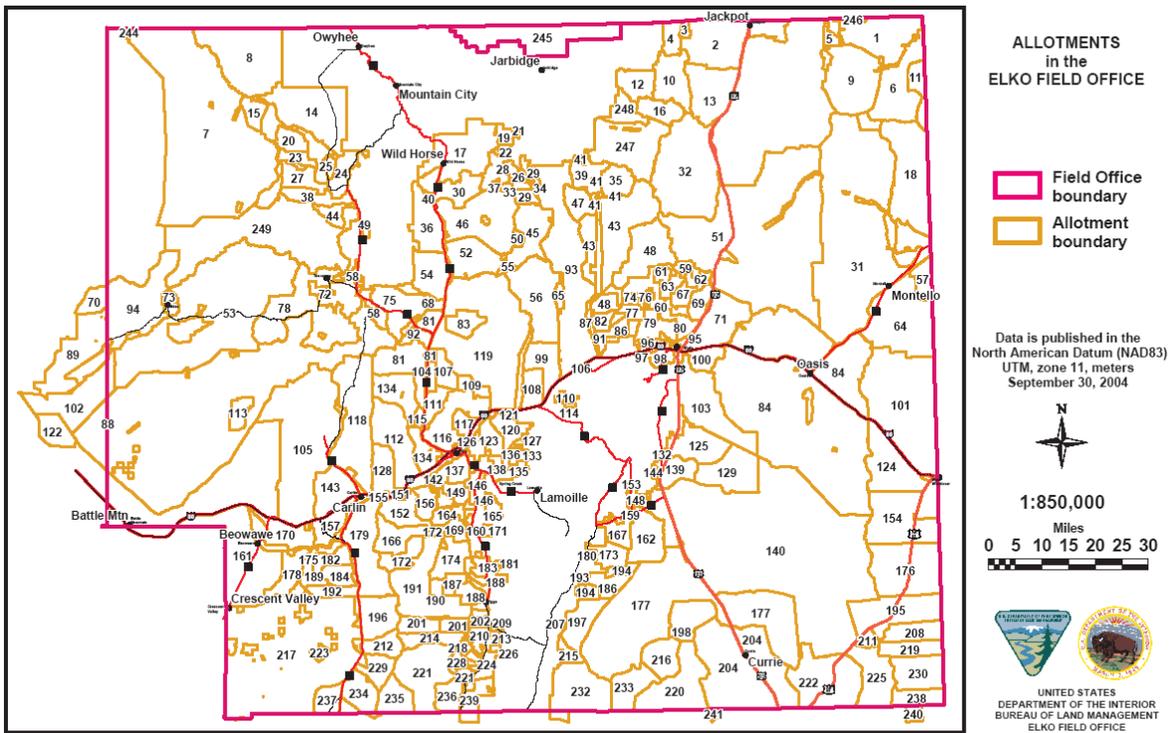
VIII. RANGE AND GRAZING MANAGEMENT

Elko County typifies a true "Cow County" with vast lush grazing lands surrounded by rugged mountains. There are approximately 397 ranches and farms in Elko County. Most are dependent upon federal lands for grazing. There are 135,554 cattle and 19,627



sheep in the county. Elko County ranked first in the State of Nevada for cattle and calves, sheep and lambs and horse production in the 2002 Census of Agriculture. The county also ranked fourth in the nation in number of beef cows tabulated in the 1997 Census of Agriculture. Federal lands are an essential component for most of the county's ranches. Grazing authorized on the federal lands has been reduced over many years for a variety of reasons. Some reasons identified by the federal agencies for the reductions include conflicts with riparian and stream conditions, loss of rangeland productivity, wild horse needs, increases in less desirable species and noxious weeds along with impacts on key wildlife areas such as habitats for threatened and endangered species and other species. Other factors include low market prices, high costs of labor/equipment, and the trend toward purchase of small ranches by large corporations. All of these factors have had some impact on changing the historic ranching trends.

Figure 9 - Allotments



"NO WARRANTY IS MADE BY THE BUREAU OF LAND MANAGEMENT AS TO THE ACCURACY, RELIABILITY, OR COMPLETENESS OF THESE DATA FOR INDIVIDUAL USE OR AGGREGATE USE WITH OTHER DATA."



1	Big Bend	84	Big Springs	166	Emigrant Springs
2	Jackpot	85	Metropolis Seeding	167	Ruby 5
3	Bear Creek	86	Rabbit Creek	168	LDS
4	Gulley	88	Twenty Five	169	White Flats FFR
5	Barton	89	Jake's Creek	170	Horseshoe
6	Bluff Creek	90	Railroad Field	171	South Fork FFR
7	Owyhee	91	Spratling	172	Dixie Flats
8	YP	92	Fox Springs	173	Ruby 6
9	Little Goose Creek	93	Deeth	174	Crane Springs
10	East Buckhorn	94	Little Humboldt	175	Safford Canyon
11	Grouse Creek	95	City	176	Lead Hills
12	West Buckhorn	96	Hylton	177	Valley Mountain
13	Salmon River	97	Clover Creek FFR	178	Scotts Gulch
14	Indian Creek FFR	98	Smiley	179	Pine Mountain
15	Petan-Owyhee Unit	99	Morgan Hill	180	West Gardner FFR
16	Canyon	100	Moor Summit	181	Wilson FFR
17	Wild Horse Group	101	Pilot	182	Iron Blossom
18	Dairy Valley	102	Eleven Mile Flat	183	Willow
19	Rough Hills	103	Wood Hills	184	Devils Gate FFR
20	VN Pocket Petan	104	Long Field	185	Cottonwood FFR
21	Stone Flat FFR	105	T Lazy S	186	Big Meadows
22	Annie Creek	106	Barger FFR	187	Hansel
23	VN Pocket Allied	107	Dorsey	188	Willow Creek Pockets
24	Line Mountain	108	Halleck FFR	189	Thomas Creek
25	Wilson Mountain	109	Jackstone	190	Sleeman
26	Bruneau River	110	Smiraldo	191	El Jiggs
27	Cornucopia	111	Board Corral FFR	192	Thomas Creek FFR
28	South Four Mile	112	McKinley FFR	193	Bennett Field
29	Rattlesnake Canyon	113	Boulder Field	194	Ruby 7
30	North Four Mile	114	King Seeding	195	White Horse
31	Gamble Individual	115	Adobe	196	Indian Springs
32	Hubbard Vineyard	116	Adobe Hills	197	Ruby 8
33	Stone Flat	117	White Rock	198	North Butte Valley
35	Hot Creek	118	Hadley	199	Merkley-Sunino Sdg.
36	Evans FFR	119	North Fork Group	200	Achurra Sdg.
37	Mason Mountain	120	East Fork	201	Robinson Mountain
38	Andrae	121	East Fork FFR	202	Barnes Seeding
39	Anderson Creek	122	White House	203	Little Porter
40	Steven's	123	Elko Hills	204	Currie
42	Spanish Ranch	124	Leppy Hills	205	Little Porter FFR
43	Stormy	125	Tobar	206	Robinson Mountain FF
44	Mori	126	Burner Basin	207	W & C Ruby #9 FFR
45	Stag Mountain	127	Kennedy Seeding	208	Sugarloaf
46	Beaver Creek	128	Carlin Field	209	Corta FFR
47	Antelope Basin	129	Chase Springs	210	Frost Creek
48	Black Butte	130	Walther	211	West White Horse
49	Bucket Flat	131	Falacio	212	Pony Creek
50	Mexican Field	132	Gordon Creek	213	Corral Canyon
51	HD	133	Sandhill North	214	Robinson Creek
52	Double Mountain	134	Blue Basin	215	Harrison
53	Squaw Valley	135	Bellinger Seeding	216	Ogders
54	Mahala Creek	136	Bottari	217	South Buckhorn
55	Cotant Seeding	137	Four Mile Canyon	218	Twin Creek North
56	Devils Gate	138	Ogilvie-Orbe	219	Ferber Flat
57	JP	139	Snow Water Lake	220	West Cherry Creek
58	Taylor Canyon	140	Spruce	221	Red Rock
59	Dalton	141	Sandhill South	222	Boone Springs
60	Metropolis	142	Bullion Road	223	Potato Patch
61	Antelope	143	Mary's Mountain	224	Lindsay Creek
62	Bishop Flat	144	Warm Creek	225	Antelope Valley
63	Trout Creek	145	Hog Tommy	226	Pearl Creek
64	Pilot Valley	146	Shoshone	227	Twin Creek East
65	Pole Creek	147	Legarza FFR	228	Merkley FFR
66	Six Mile	148	Ruby 3	229	Bruffy
67	Cedar Hill	149	Ten Mile Creek	230	Utah/Nevada South
68	Eagle Rock 1	150	Ruby 1	231	Twin Creek South
69	Town Creek	151	Carlin Canyon FFR	232	Maverick/Ruby #9
70	Tall Corral	152	Tonka	233	Bald Mountain
71	Holborn	153	Ruby 2	234	Mineral Hill
72	Quarter Circle S	154	Utah/Nevada North	235	Union Mountain
73	Midas	155	Old Eighty FFR	236	Browne
74	Mud Springs	156	Grindstone Mountain	237	Pine Creek
75	Eagle Rock	157	Falisade	238	Badlands
76	Antelope Springs FFR	158	Twin Bridges	239	Mitchell Creek
77	Bishop Creek	159	Ruby 4	240	Goshute Mountain
78	Tuscarora	160	South Fork State Park	241	Indian Creek
79	Burnt Creek	161	Geysar	244	Admin by Vale OR
80	Wells	162	Curtis Spring	245	Admin by Boise BLM
81	Lone Mountain	163	Cut Off	246	Cavanaugh (ID)
82	Westside	164	River	247	O'Neil
83	Coal Mine Basin	165	Chimney Creek	248	Cottonwood



IX. PURPOSE OF THE POLICY STATEMENTS

The Plan is a guide developed by the citizens of Elko County regarding the use of federal lands. The Plan addresses federal land use management issues directly by establishing a set of principles or specific guidelines. The Plan is intended to be used as a positive guide for federal land management agencies in their development and implementation of federal plans and management actions. The policies are intended to further agriculture, mining and recreation as principal economic bases of the county. This Plan provides a framework whereby the Elko County Board of County Commissioners can coordinate and influence the implementation of federal policies within the county.

POLICIES

Policy statements have been carried forward from the 1984 SB 40 Plan and the previously updated plans. Additional policy statements have been developed from citizens, industry associations, community groups and Elko County Natural Resource Management Advisory Commission feedback as they relate to changing conditions. Many of the statements are reflective of previous positions taken by the Commissioners in resolutions and cooperative agreements.

1. Agency Coordination and Local Voice

Federal agency coordination of planning with State and local governments is mandated by federal laws.

- FLPMA, Section 102 (a) (2) declares the policy of the United States is that the national interest will be best realized if the public lands and their resources are periodically and systematically inventoried and present and future use is projected through the land use planning process coordinated with other federal and state planning efforts.

Policy 1-1:

All proposed actions on public lands should be brought to the attention of the Elko County Natural Resource Management Advisory Commission, as time allows, or the Elko County Board of County Commissioners (ECBC) for purposes of review to determine if the federal program is in conformance with this Plan pursuant to NEPA requirements. The Elko County Natural Resource Management



Advisory Commission's role is to recommend to the ECBC appropriate action concerning such proposals.

Policy 1-2:

Elko County will participate with federal agencies on actions that affect public lands within the county. The Elko County Natural Resource Management Advisory Commission will serve in an advisory capacity only, and act as liaison to the ECBC. Studies concerning impacts of proposed actions affecting public lands should be conducted by professionals. The Elko County Natural Resource Management Advisory Commission requests the commission and the ECBC be notified by the federal agencies before any studies sponsored by the federal land management agencies are initiated. Copies of resource studies should be provided to the ECBC as soon as available.

Policy 1-3:

The Elko County Natural Resource Management Advisory Commission and ECBC will encourage consistency between this Plan and all federal land use plans which apply to Elko County.

2. Management of Public Lands

Policy 2-1:

Elko County supports the concept of Multiple Use Management as an overriding philosophy for management of the public lands based on multiple use and sustainable yield concepts, and in a way that will conserve natural resources.

Policy 2-2:

Whenever possible, protect and preserve the quality of the environment, and economic, cultural, ecological, scenic, historical and archeological values; protect and preserve wildlife habitat values compatible with economic development needed to provide for long term benefits for the people of Elko County and future generations.

3. Federal Land Transactions

The following are policies developed by Elko County relating to the federal land program. Included in the Appendix is a list of parcels generally identified by the County for local



public purposes, for community expansion and economic development. The list and the map provide a general description of the lands identified for acquisition and are intended to be used as a guide for more detailed studies. Each parcel will need to be further reviewed at the time a specific realty action is proposed.

The lands identified in Appendix A represent the latest efforts by the BLM and County in developing an overall plan for transferring some public lands to the county or private sector. This is an on-going process and changes in the list should be expected as new information or needs develop in the future.

Elko County recognizes that many of the policies described below are currently part of the BLM procedures for land transactions. However, the County believes the basic policies on land tenure need to be clearly expressed in this Plan to communicate county policies not only to the federal agencies, but to the citizens of Elko County as well.

Elko County has identified many parcels for public purposes and for economic development. The specific land transaction program is to be guided by the following policies:

Policy 3-1: Specially designated lands (i.e. National Recreation Areas, National Conservation Areas, Wildlife Refuges, Wilderness, State parks, etc.) are valuable assets to the State and its residents. Within Elko County, any new specially designated areas should be reviewed carefully in a public forum to determine if they are suitable and beneficial to our residents.

Policy 3-2: Government agencies should not acquire additional private lands without first ensuring:

1. That private land is not disposed of unless it clearly benefits the citizens of Elko County;
2. That environmental and cultural values are protected;
3. That private property interests are protected or enhanced;
4. That socioeconomic impacts are duly considered;
5. That takings in any form are fully compensated and substantiated to meet the highest public need;
6. That the local tax base is not negatively impacted;



7. That due process is guaranteed to all private parties involved in land use controversies, by means that do not demand or create a financial hardship; and
8. That the State and local government within those jurisdictions that the land is located be consulted in regard to the acquisition.

Policy 3-3:

Isolated tracts of public lands, checkerboard areas, and public lands in rural townships where the majority of land is private should be identified for disposal. All public land easements and/or access should be retained for continued public use. The use of alternative access to accommodate land management through property may be employed if feasible and appropriate.

Policy 3-4:

Increase opportunities for local economic development by selectively increasing the amount of privately owned land within the county. Elko County's goal for land exchanges is to maintain a "no net loss" in private, county or state acreage. Although the County supports exchanges that will increase economic development, the County is also concerned about any proposal that will reduce private, county or state ownership unless it is a clear benefit to the County.

1. Public lands within the municipal service areas of Elko, Spring Creek, Carlin, Wells, Jackpot and Wendover should continue to be made available for urban expansion through the Recreation and Public Purposes (R&PP) process. Sale and Exchange Provisions of the Federal Land Policy Management Act (FLPMA) and the Federal Land Transaction Facilitation Act (FLTFA – BACA Bill) should also be used to transfer lands in an expedited manner. These lands should be transferred only when local governments agree that the transfer is opportune and would not be a burden on local governments.
2. Public lands should be made available as needed for state and local government purposes. Lands identified for public purposes should receive preference to disposal for private purposes.
3. Before public lands are disposed of, adverse impacts on existing uses should be considered. Adverse impacts could include important wildlife habitat, key seasonal grazing rights, municipal watersheds,



flood prone areas, access, mineral potential, oil / natural gas potential, alternative energy potential and recreational use of the lands.

4. Land exchanges and lands sales that consolidate high value public purpose lands and/or make private lands more manageable should be given high priority in federal land transaction processes.
5. Elko County encourages the BLM to review the agency's land sales/exchange procedures to determine ways, including changes in policy and regulations when appropriate, to expedite the sales and exchange process. The existing process can be "cost prohibitive" and time consuming when applied to small isolated land exchanges and sales. All appropriate authorities for land disposal under the BACA Bill should be used for maximum flexibility and for the payment of fees associated with appraisals and other administrative costs to expedite the process.
6. Public access to and through disposed lands should be retained through the recordation of an easement and deed restriction. Whenever public lands are disposed of, existing public access to adjoining or nearby public lands should be retained for recreational and other multiple use needs. The development of alternative routes of access may be necessary, but should be acquired and guaranteed prior to the disposal and loss of any existing access and should be of equal value and public benefit.
7. The public as well as local and state governments should be involved in decisions related to public lands activities. Adequate public notice should be given before the initiation of any federal land transactions.

Policy 3-5:

Public lands should be transferred to the private sector when suitable for intensive agricultural operations through either the Desert Land Act or the sale authority provided by FLPMA and the BACA Bill.

1. Preference should be given to existing land users or adjacent land owners through a direct sale or preferential bid, where possible.



2. The lands made available for irrigated farm land must have adequate water, as determined by the State Engineer.
3. Any public lands fenced in within existing private land, should receive a high priority for sale or exchange.

Policy 3-6: Promote the increased use of, and adherence to, comprehensive planning among all government entities in Nevada.

1. Corridors for the future transmission of energy, communications and transportation need to be planned for in harmony with other multiple uses on federally administrated lands.
2. The County will review all public land withdrawals that include the potential for the transportation, storage, and disposal of all hazardous and toxic refuse or waste materials.

4. Custom and Culture

Elko County recognizes the rich history of cultures and customs that comprises our past and also the newer culture and customs and public land uses that combine to create the present and future. The County is fortunate to have so many expressions of various cultures coming together to form the whole, and is richer for it, and celebrates that richness.

Policy 4-1: Continue to support and aid expressions of culture such as the heritages of ranching and agriculture at the County Fairgrounds, Sherman Station, the Elko County Museum, the California Interpretive Trail Center, the National Basque Festival, the Mining Expo, Western Shoshone Pow-Wows, the Cowboy Poetry Festival and others.

Policy 4-2: Recognize the cultural and economic advantages of modern land uses. Being the wet corner of Nevada allows for excellent game and fish habitat and vast hunting, fishing, hiking, snowmobiling, ORVing, Native American seed gatherings and activities, and other dispersed opportunities accessible to the public. Many visitors from around the State and nation come to Elko County to be part of



these activities. Another modern use is the annual hot air balloon festival, which requires only time and continuity to become custom.

5. Community Stability

Three essential factors are related to measuring community stability and well-being:

- societal and cultural values;
- economic viability; and
- environmental integrity

By incorporating these factors at the onset of planning processes, discussions and decisions move toward furthering community stability, and avoid disruptions. The varied nature of these essential considerations underlies community stability and well-being, corresponds to the breadth and diversity of citizen interests, and their values and needs. Incorporating these factors within the public land planning process will establish a basis for coordinating the multiple use interests and needs of Elko County.

Community stability can be affected by national needs and interests, which are frequently outside the control of the local planning processes. Recognition of potential outside needs and interests within the county planning process, can prepare the community to respond with positive data and constructive options.

Elko County is experiencing consistent growth, and increasing demands on public lands for historic production interests and expanding recreational uses. Additionally, Elko County public land base is increasingly valued for open space amenities, such as, wildlife and view shed. Effective coordination of Elko County public land interests requires expert counsel from within the county government, and expanded citizen involvement within the county planning process.

To promote community stability related to public land issues, and to encourage the practical and successful implementation of the Elko County Public Lands Policy Plan, the following is recommended:

Policy 5-1: Incorporate the concepts of community stability measurement factors within the Elko County Public Lands planning process;



Policy 5-2: Initiate the position of Elko County Federal Lands Program Coordinator to provide specific guidance to Elko County's developing public land plan, which will provide the county and its citizens meaningful involvement in the federal land planning process;

Policy 5-3: Generate resource issue topics through a collaborative forum suitable for inclusion in the Bureau of Land Management, Elko District Office, Resource Management Plan (RMP) process which is scheduled for 2010, and the U.S. Forest Service scheduled planning updates;

Policy 5-4: Initiate a comprehensive county planning process to benefit and maximize the issue topics and desired positive outcomes detailed in the Elko County Public Lands Policy Plan.

6. Public Safety

Elko County appreciates the safe passage of its residents and visitors on public lands.

Policy 6-1: Any unfenced right-of-ways along State highways should be fenced to protect the traveling public and to reduce the loss of livestock. This fencing should be constructed under a cooperative effort between the BLM, US Forest Service, Nevada Department of Transportation, Nevada Department of Wildlife, Nevada Division of Forestry, private property owners, and the permittees.

Policy 6-2: Elko County appreciates the presence and cooperation of federal law enforcement officers on public lands but is opposed to any increase in BLM law enforcement authority. The County prefers the existing protocol between BLM and other federal law enforcement officers and the Elko County Sheriff. The County recognizes the Elko County Sheriff as the primary law enforcement agency.

Policy 6-3: Support cooperative training in areas of public safety such as search and rescue and hazardous materials. The US Forest Service and BLM should work with the County to ensure adequate personnel, training and equipment are available to meet the increased demand for back country rescues. In the event of future nuclear shipments through Elko County, cooperative training,



funding and preparatory response resources should also be provided by DOE, or other federal agencies, to facilitate readiness and prompt response capabilities to Elko County.

Policy 6-4: Military Withdrawals of Land and Air Space: Support full evaluation of criteria listed in the Public Land Use Policy Plan in regard to any public land and air space withdrawals for military use including those with potential for transportation, storage, and disposal of all hazardous, toxic, or nuclear materials. Careful considerations should be given to approval of any additional Air Space designations due to substantial MOA inventories and impacts associated with the MOA's.

Policy 6-5: Roads on public lands should be maintained for safe passage. Areas of high travel should be made a priority. Where road conditions are dangerous, signs and other public notification should be utilized until the condition can be mitigated. Maintenance of roads should be coordinated between the BLM, US Forest Service, County and the public.

7. Agriculture and Livestock Production

Agricultural production is necessary to help maintain the historical, cultural and economic viability of Elko County. Elko County encourages the federal agency use of the 2006 Elko County Grazing Economic Impact study, or updated studies, in all environmental analysis on livestock grazing related decisions.

Policy 7-1: Preserve agricultural land and promote the continuation of agricultural pursuits, both traditional and non traditional;

Policy 7-2: The pursuit and production of renewable agricultural resources are consistent with the long term heritage of Elko County. This private industry benefits the County economically and culturally;

Policy 7-3: Opportunities for agricultural development on public lands should continue at levels that are consistent with historical customs, environmental sustainability, culture and compatibility with other multiple uses;

Policy 7-4: Grazing should utilize sound adaptive management practices. Elko County supports the periodic updating of the Nevada Rangeland Monitoring



Handbook to help establish proper levels of grazing;

Policy 7-5: Allotment management strategies should be developed that provide incentives to optimize stewardship by the permittee. Flexibility should be given to the permittee to reach condition standards for the range. Monitoring should utilize the use of long-term trend studies as described above;

Policy 7-6: Encourage agencies managing public lands to coordinate with the N-1 Grazing Board on all manners affecting livestock grazing on public lands within the County;

Policy 7-7: Range water rights and improvements such as those associated with seeps, springs, streams, lakes and wells used by livestock should be protected in the long term for that use. Encourage cooperation between the federal land management agencies and the grazing operator in protecting the riparian values of these water sources;

Policy 7-8: The Congressional Delegation should be encouraged to develop regionally variable grazing fees that are based on the quality and quantity of forage, accessibility and infrastructure.

Policy 7-9: Elko County requests federal agency notification of all actions regarding permit renewals for potential request by Elko County for status as a cooperating agency in such action.

8. Noxious Weeds and Invasive Species

Due to the broad range of management and ownership of public and private lands, an integrated comprehensive approach to cooperative noxious weed management across all jurisdictional boundaries is essential. Negative impacts due to noxious weeds include low resale value of property, loss of wildlife and fisheries' habitat, accelerated erosion, decreased water quality, degraded recreation opportunities, deadly effects to some animals and humans, reduced forage production for agricultural producers, increased cost of consumer goods and disruption of productive ecosystems. The scope of the noxious weed infestation throughout Elko County is currently sizeable, with 19 identified species, and acreage infested growing at an alarming rate. Many species require multiple years of



treatment and monitoring to eliminate and combination of resources is a necessity for successful weed management.

WANTED

(Dead, Not Alive)

SCOTCH THISTLE

(a.k.a. Onopordium acanthifolium)
Last Seen Growing in This Vicinity

Distinguishing Features

- reaches 8 to 10 feet in height
- stems are erect, branching, sharp spiny leaf wings extend down to the stem
- basal leaves may be over 2 feet long and 1 foot wide
- leaves are coarsely lobed, fine, dense hair on both sides, sharp spines on margin
- flowers are violet to reddish, 1 to 2 inches in diameter, solitary and numerous

Crimes Committed:

- choking & the deliberate takeover of native plants
- stealing land, homes, & food from wildlife
- corrupting & invading open lands, roadsides, & recreation areas
- costing a bundle for taxpayers to control
- wreaking havoc & mayhem on innocent, unsuspecting ecosystems

Join the Invasive-Weed Patrol

- help stop the spread of this weedy, seedy, desperado
- report any sightings to local land managers or rangers
- remove all weed seeds from clothing, shoes, pets, camping gear, & tire treads

Reward

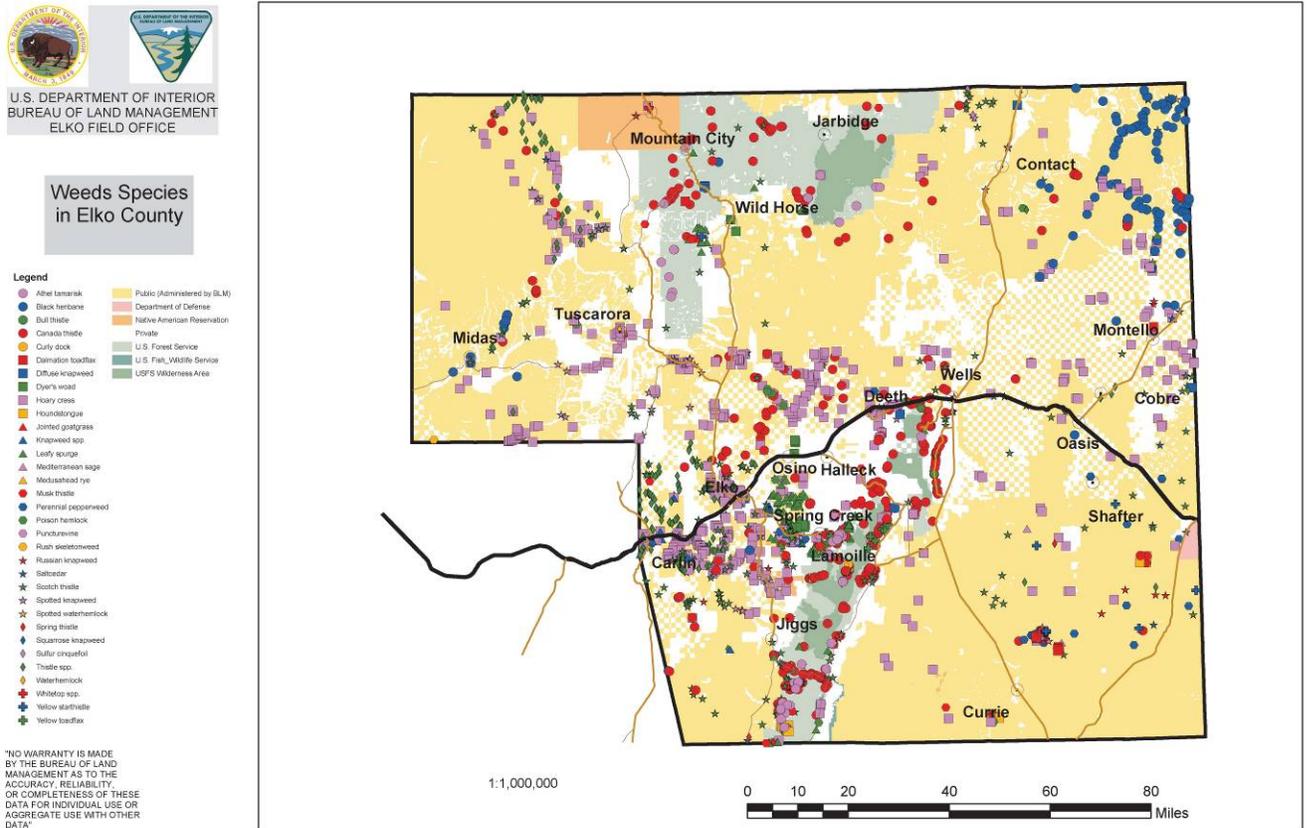
Healthy Ecosystems on Your Public Lands

Local contact: _____ Phone: _____

Elko County, in coordination with Federal agencies, State agencies, Tribal governments, private businesses, Elko County Association of Conservation Districts, non-profit organizations and local citizens, assisted in organizing the Elko County Cooperative Weed Management Association Area in December of 2003. The mission of the ECCWMA is to coordinate integrated activities necessary for prevention and control of noxious and invasive weeds in Elko County. The emphasis is focused on education, prevention, control, treatment and monitoring activities, inventory collection, cooperative work projects, funding and grant solicitation and utilization of all available resources. Priority of control and eradication efforts is concentrated on species listed on the Nevada Noxious Weed List and other species of significance as identified by the local working groups.



Figure 10 – Weed Species in Elko County



Strategies for implementation of the following policies include active and financial support of all Countywide noxious weed treatment activities as able, effectively establishing, implementing and enforcing County codes and ordinances relating to prevention measures and actively lobbying for additional Federal and State funding for noxious weed treatment.

Policy 8-1: Implement an outreach inclusive approach to integrated cooperative noxious weed management;

Policy 8-2: Prevent the introduction, reproduction and spread of designated noxious weeds and invasive exotic plants;

Policy 8-3: Reduce the extent and density of established noxious weeds to a point that natural resource damage is within acceptable limits;



Policy 8-4: Implement the most economical and effective control methods for the target weeds;

Policy 8-5: Implement an integrated management system using all appropriate methods;

Policy 8-6: The County will provide guidance and aid, through county extension agents and control of predators and pests that are harmful to the economic well-being of the agricultural industry and residents of its communities. Active pest and predator control may be used if it is clearly demonstrated there are only minimal undesirable side effects on wildlife and wildlife habitats. Programs to control predators may be used when necessary to maintain optimum levels of domestic and game animals as well as for public safety;

Policy 8-7: The federal agencies should give a priority to working cooperatively with the County and its eight Conservation Districts to control noxious weeds. The continued spread of noxious weeds is a serious threat to agriculture and native grasslands within the County. This threat requires immediate action by federal, state and local agencies along with private land owners while there is still time to control the spread of these weeds. A memorandum of understanding exists between the County, federal agencies and businesses for the purpose of executing the ECCWMA's goals and objectives.

9. Air Quality

Air quality in Elko County is currently some of the best in the nation and it is an important factor influencing the quality of life and well being of its citizens. Therefore, it is the policy of the County to protect air quality.

Policy 9-1: Air quality must be protected with a balanced approach that provides economic growth without a detriment to the social, aesthetic, cultural and ecological values of the County;

Policy 9-2: All energy proposals should attain the lowest feasible emissions, the highest feasible efficiencies, and the highest possible standards using Best Available Control Technology;



Policy 9-3: All water rights applications associated with proposed pipeline projects should require comprehensive monitoring programs to include air quality measurements. If PM-10 levels increase an immediate revegetation project will be necessary to stabilize the surface of any areas where any vegetation is changing as a result of the project;

Policy 9-4: Air quality standards should be established based on best available control techniques by the Nevada Division of Environmental Protection. Elko County's excellent air quality should be maintained as an important aspect of the quality of life of the citizens and visitors;

Policy 9-5: Particulate monitoring stations should be established by the Nevada Division of Environmental Protection to establish local ambient air quality. Naturally occurring fugitive dust should be considered in establishing local ambient air quality baseline measurements;

Policy 9-6: Greenhouse gases should be considered as an air quality issue.

10. Cultural Resources

Elko County cultural resources and customs include all the prehistoric and historic archaeological resources and traditional cultural practices of the people of the County. For example, the California Emigrant Trail Route traverses Elko County and is a valuable asset that showcases the county's resources.

Cultural resources include, but are not limited to:

- historic roads
- trails
- two-track roads
- Pony Express Trail
- Hastings Cutoff
- railways
- highways and associated buildings
- sidings



- stations
- rock art sites
- historic townships
- mining camps and districts
- racetracks
- cemeteries and isolated gravesites
- paleoindian sites
- prehistoric villages and campsites
- rock shelters
- caves
- toolstone sources
- quarries

Less tangible resources include:

- dance forms
- customary beliefs
- material traits of a group
- integrated patterns of human behavior passed to succeeding generations by stories and traditions





California Trail Interpretive Center under construction
Mike Brown, Elko BLM Field Office

Policy 10-1:Elko County supports preservation of cultural resources (i.e., research, interpretative opportunities for the public etc.) compatible with local customs and culture. Elko County supports a balanced land management approach in consideration of cultural resources.

Policy 10-2:The County supports the preservation and inventorying of historical sites coordinated with the State Historic Preservation Office. The County supports the concept of a systematic and early planning process for management of cultural resources to avoid crisis management where possible and to ensure compliance with the National Historic Preservation Act.

Policy 10-3:Prehistoric site studies should be coordinated with local Native American communities. Cultural resource studies and activities should be documented to the extent that they are characterized for posterity. Elko County recognizes and supports protection and management of the significant cultural values in sites. Elko County encourages federal and state land managers to consider economic development in concert with cultural resources and mitigate conflicts.

Policy 10-4:Cultural resources must be managed in a way that allows for community advancements supported by the will of Elko County residents, consistent with federal and state law.

11. Forestry and Forest Products

Forest and forestry products production in Elko County is a benefit to the livelihood and well being of its citizens. Therefore, it is the policy of the County to protect forest resources and promote the continuation of a sustainable forestry products industry by providing economic opportunity, relying on self-determination and open market conditions.

Policy 11-1:Promote multiple use of public forest resources to realize sustainable and continuous provisions of timber, forage, firewood, wildlife, fisheries, recreation and water.

Policy 11-2:Support the prompt salvage of forest losses due to fire, insect infestation or



other events.

Policy 11-3:Support the management of woodlands/forest by ecological condition for a diversity of vegetation communities. Grass and shrub ecosystems with no or few invasive species are preferable to pinion/juniper monocultures.

Policy 11-4:Urge BLM and Forest Service to allow and promote thinning of wildland/urban interface. This should be done in such a manner that local entities have an opportunity to derive economic benefit from the forest.

Policy 11-5:Recognize the importance of maintaining healthy aspen communities and encourage activities that will retain and improve the vigor of these communities.

12. Water Resources

Elko County's water resources are the basis for all the resource, economic, and cultural viability enjoyed by the county residents and visitors to the County.

Policy 12-1:All activities on the County's public lands should consider the policies as adopted in the Elko County Water Resources Plan.

13. Wetlands, Riparian Habitat and Waters of the United States

Wetlands, riparian habitat and waters of the United States support the diverse populations of waterfowl, fisheries, wildlife, and plant communities prized by all public land users within the County. These policies correspond to the policies and statements contained in the Elko County Water Resources Plan.

Policy 13-1:Wetlands, riparian habitat and waters of the US should be protected from undue degradation. Undue degradation may result from over pumping of groundwater, destruction of vegetation for over-development or misplacement of recreational facilities, poorly planned land dispositions, unintentional misuse of riparian resources by public and private users, and other actions.



Policy 13-2:Wetlands, riparian habitat and waters should be managed in a responsible and balanced manner with other resources and uses.

Policy 13-3:Support a coordinated effort to protect wellhead protection areas and municipal watersheds from undue degradation through proactive zoning and development controls, pursuant to the County's Wellhead Protection ordinance.

14. Mineral Resources

The development of Nevada's mineral resources is desirable and necessary to the economy of the nation, the state and particularly to Elko County.



Courtesy Newmont Gold

Policy 14-1:Retain existing mining areas and promote the expansion of mining operations and areas not specifically withdrawn.

Policy 14-2:Elko County supports the Mining Law of 1872 and opposes any policy or regulatory revisions that may result in overregulation. Elko County encourages federal agency use of the 2007 Elko County Mining Economic Impact Study, or updated studies, in all environmental analysis on mining related decisions. Elko County requests federal agency notification of all actions regarding mining related



environmental analysis for potential request by Elko County for status as a cooperating agency in such action.

Policy 14-3:The federal government should continue to evaluate the mineral resources on lands before they are sold, exchanged, designated wilderness or special use. The federal agencies are encouraged to continue to manage the presently open, federally-owned mineral estate in Elko County as open to mineral location, sales and leases. The agencies should carefully evaluate all withdrawals and land disposal and minimize the separation of surface and mineral estates in all realty actions.

1. Federal management policies on existing split mineral estates should be developed with state and local participation and in consideration of local zoning ordinances.
2. The mineral withdrawal process may be an acceptable means of protecting fragile or "special" lands, but its use should be limited.

Policy 14-4:Federal land management agencies should continue to enforce existing reclamation standards to ensure there is no undue degradation of the public lands.

Policy 14-5:To improve the economic well-being of the County, federal land management agencies should allow the use of buildings and infrastructure on reclaimed sites for other uses. Buildings should be retained for other economic development including industry as well as uses pursuant to the Recreation and Public Purposes Act.

Policy 14-6:Mine site and exploration reclamation standards should be consistent with the best possible post mine use for each specific area. Specific reclamation standards should be developed for each property rather than using broad based universal standards. Private properties (i.e., patented claims) should be reclaimed to the standard and degree desired by their respective owners, following state law and regulations.



Policy 14-7:An annual assessment requirement for holding mining claims has led to unjustified land disturbances which did not necessarily aid in the furtherance of the property's resource development. These requirements have since been revised and provide for the claim holder to pay a \$100 fee annually to the BLM, in lieu of doing work on the ground. There is an exemption for a small miner who holds ten claims or less. If the small miner chooses the exemption, \$100 of assessment work must be expended annually to hold the claim. Elko County supports the policy of the small miner exemption if the miner is offered the opportunity to develop the property. Encourage federal agencies to use the mining claim maintenance fees collected within the state or county that they were generated, especially in the use of reclamation of abandoned mine sites.

Policy 14-8:The Secretary of Interior prohibition on issuing patents should be withdrawn. The Secretary should use all means to encourage the exploration and development of the mineral resource, including the issuance of patents, as appropriate.

Policy 14-9:Elko County suggests that all mining companies work with the county and others to facilitate smooth transition either in a mine closure, or dramatic reduction in productivity.

15. Public Access

Access to public lands is a critical component of the economic and recreational vitality of the County and multiple use access is strongly encouraged.



Public access on BLM lands.

According to NRS 405.191 and 403.410 a “public road” is defined as follows:

1. A United States highway, a State highway or a main, general or minor county road and any other way laid out or maintained by any governmental agency.
2. Any way which exists upon a right of way granted by Congress over public lands of the United States not reserved for public uses in chapter 262, section 8, 14 Statutes 253 (former 43 U.S.C. § 932, commonly referred to as R.S. 2477), and accepted by general public use and enjoyment before, on or after July 1, 1979. Each board of county commissioners may locate and determine the width of such rights of way and locate, open for public use and establish thereon county roads or highways, but public use alone has been and is sufficient to evidence an acceptance of the grant of a public user right of way pursuant to former 43 U.S.C. § 932.
3. Any way which is shown upon any plat, subdivision, addition, parcel map or record of survey of any county, city, town or portion thereof duly recorded or filed in the office of the county recorder, and which is not specifically therein designated as a private road or a nonpublic road, and any way which is described in a duly recorded



conveyance as a public road or is reserved thereby for public road purposes or which is described by words of similar import."

Policy 15-1: Federal land management agencies should recognize and honor the valid and important rights Congress gave local governments to own and manage public roads and related right-of-ways.

Policy 15-2: The State definition of a "public road" (NRS 405.191, 403.410 and 244.155) should be used consistently throughout Nevada by all federal, State and local agencies. Road mapping should be coordinated between the US Forest Service and BLM.

Policy 15-3: Utilize R.S. 2477 right-of-ways to protect historical public access to public lands across private property. Promote private access across private properties.

Policy 15-4: Supports access to mining claims by adhering to the rights claimed under R.S. 2477.

Policy 15-5: Optimize accessibility within the County and reduce the cost of movement between all communities across public lands. Public access to public lands is vital to Elko County's economic stability.

Policy 15-6: The County supports transportation of minerals and mining products over federal, state, and county roads and highways, given that appropriate safety precautions guarantee public safety.

Policy 15-7: Recognize that the Gardner Maps identify existing roads prior to 1976. Some of these roads may be RS2477 and some may be private lands.

Policy 15-8: Federal agencies should allow access across federally managed lands by right-of-ways prior to the need for access across private lands.



16. Recreation and Open Space

Elko County enjoys many natural amenities that attract local residents and visitors. These resources should be protected and developed for the public's multiple use benefit. This section represents Elko County's Open Space Element of the Master Plan and corresponds to recreation and open space policies and maps contained therein. This Open Space Element represents the qualifying plan for participation in the State of Nevada's Question 1 Program.



Thomas Creek

Policy 16-1: Conserve and protect scenic, historical, recreational and open space resources for the benefit of the present and future generations with additional consultation with local, State and federal governments and users by implementing the Elko County Open Space Plan. Elko County recognizes that recreation in all forms is consistent with multiple use of public lands. All resources utilized by the public should be conserved and Elko County reserves the right for application under the Recreation and Public Purposes Act (R&PP) for all such resources.



Policy 16-2 Encourage recreational use in Elko County by increasing marketing efforts that describe the recreational opportunities available in the County.

Policy 16-3:Promote “Eco-tour” and responsible off highway vehicle businesses in the County. The themes of the tours could vary from wildlife viewing, to visiting hot springs, historical sites, or to learn to ride motorcycles and drive four wheel vehicles. Ensure that all governmental agencies work in a cooperative effort to encourage such uses while protecting the resources from damage.

Policy 16-4:Develop a regional marketing strategy that includes the promotion of activities such as heli-ski operations, downhill skiing, cross country skiing, endurance horse events and all off-highway events on vehicles or animals.

Policy 16-5:Encourage recreation opportunities, both dispersed, and close to population centers, as a substantial economic asset to local economies and direct agencies to maintain all historic and heritage trails and ways and access on the public lands, in balance with other multiple uses.

Policy 16-6:Public lands with value for concentrated recreational use (camp grounds, historic sites, wagon trails, etc.) should be identified, protected and developed for recreational purposes. The BLM should consider withdrawing these key areas from mineral entry on a limited basis. Any proposals for mineral withdrawals should be coordinated with the Elko County Natural Resource Management Advisory Commission and or Elko County Board of Commissioners.

Policy 16-7:Recognizing that most Nevadans reside in towns, investments in open space, park and recreation facilities should be concentrated as close to residential populations as feasible. Other sites in more remote areas are encouraged where feasible.

Policy 16-8:Protect water quality and water rights for recreational fishing in the county's creeks and rivers. Recreational uses and facilities are encouraged and should be developed where appropriate.



Policy 16-9: Support hunting and fishing as recreational resources and as a multiple use of public lands. Elko County endorses the State's programs to provide sustained levels of game animals.

Policy 16-10: The establishment of new specially designated lands (i.e. National Recreation Areas, National Conservation Areas, Wildlife Refuges, wilderness, State parks, etc.) should be carefully weighed to determine overall county benefit.

Policy 16-11: Elko County fully embraces the multiple use concept of public land management and encourages federal land management agencies to maximize public usage of lands while still addressing environmental concerns.

17. Wilderness

A large number of acres within the County are designated as Wilderness or Wilderness Study Areas (de facto wilderness). Addressing evolving issues such as noxious weeds and fire on these specially designated lands is a challenge. Many years have passed since the Secretary's recommendation with no Congressional action and many of these areas were taken out of multiple use.



Ruby Mountains

Policy 17-1: Nevada's Congressional delegation should sponsor and actively pursue passage of legislation that would release lands from WSA status back



to multiple use determined by the U.S. Department of Interior and Bureau of Land Management to be unsuitable for inclusion in the National Wilderness Preservation System.

Policy 17-2:As part of any potential land act process in Elko County, the Congressional delegation should conduct public hearings that specifically address the BLM's wilderness recommendations.

Policy 17-3:Wildlife, fire control, weed management, mineral resources, visitor impacts, grazing, public access, recreation and management needs should be considered when designating areas for wilderness and in the development of wilderness area management plans. Documented mineral resources are adequate reasons for not considering the area as wilderness.

Policy 17-4:Any wilderness area management plans should be developed involving the public and governmental consultation, preferably using a coordinated resource management and planning type process. Motorized access utilizing cherry stem roads should be considered when appropriate.

Policy 17-5:Wilderness in appropriate areas is supported for its economic benefits to Elko County.

Policy 17-6:As wilderness protects scenic, recreation and ecological values important to the economic future and as well as protecting important natural resources, including clean air and water of Elko County, proper management of existing wilderness areas is supported.

Policy 17-7:Recognizing that multiple interests exist on potential wilderness areas, the County supports a balanced review and inventory of all such interests prior to any designation of new wilderness areas. Elko County does not support additional wilderness areas beyond the reconciliation of WSA's in suspension.

18. Wild Horses



Wild horses are part of the landscape. However, an overabundance of horses can be detrimental to the health of public lands. Management must carefully balance needs of wild horses against the needs of other multiple uses.

Policy 18-1: Manage wild horses to reduce detrimental impacts on other multiple uses and pursue resource enhancement where needed to correct wild horse caused damage.

Policy 18-2: Wild horse herds should be managed at reasonable levels to be determined with public involvement and managed with consideration of the needs of other wildlife species and livestock grazing. The BLM and the State should work cooperatively on wild horse management issues and ensure the management and maintenance of all federal improvements by the federal agencies. BLM should give a priority to establishing Appropriate Management Levels (AML) for the remaining horse management areas. The AML should be established at levels that do not jeopardize or interfere with the economic viability of any private enterprise within Elko County, and be coordinated with the BLM Resource Advisory Council.

Policy 18-3: Educate Congress and the public on the impacts of wild horses. Encourage legislation to allow greater flexibility for the disposal and adoption of wild horses.

Policy 18-4: Wild horse impacts on private lands and water sources should be mitigated.

Policy 18-5: Encourage the BLM to increase the potential of the adoption program for wild horses through an aggressive marketing program and strategic partnerships.

Policy 18-6: The BLM should take advantage of good forage years by emphasizing maintenance level captures on horse management areas that have established AMLs. Maintenance of established AMLs is economical if herd numbers are kept in check periodically. Once herds greatly exceed the AMLs, capture and management is very expensive.

Policy 18-7: Publicize and encourage areas where the public can view wild horses.



Policy 18-8:Elko County supports a strict policy of wild horse population control to ensure the species does not interfere with the productivity of the ranching community, wildlife and other multiple use needs.

19. Wildlife

Policy 19-1:Identify, protect and preserve wildlife species and habitats. Wildlife and fisheries' populations are recognized as a renewable resource and therefore should be managed accordingly. Coordination of federal and state wildlife and fisheries' management and enforcement is encouraged.

Policy 19-2 Hunting and fishing is an important recreational resource of multiple use of public lands. The county supports the State's programs to provide sustainable levels of game animals.

Policy 19-3:Identify habitat needs of wildlife species, such as adequate forage, water, cover, etc. and provide for those needs in time, to attain reasonable population levels compatible with other multiple uses.

1. Known critical wildlife habitats such as streams, riparian zones, wetlands etc. should receive protection where needed.
2. Wildlife habitat improvement projects such as guzzlers should be continued as appropriate. The projects should take into consideration impacts on other uses.
3. The county supports general improvements to the waterways and fisheries to enhance access for recreational activities.

Policy 19-4:Rangeland management should include adequate consideration of wildlife needs.

Policy 19-5:Adequate and sufficient habitats to support the reintroduction of big horn sheep in Elko County should be provided on public lands. The reintroduction of the bighorn sheep should be in coordination with local government officials and agencies.



Policy 19-6: The Nevada Department of Wildlife (NDOW) should give a high priority to the opinion of the County wildlife boards when setting harvest levels for wildlife.

Policy 19-7: Elko County should establish a threatened and endangered species (T&E) committee for overseeing protection and recovery of all federal and state listed threatened, endangered and sensitive species, coordinated with the local BLM Resource Advisory Council.

20. Fire Management

Elko County has and will experience devastating wild land fires that have catastrophic economic and environmental impacts.



Courtesy: Living With Fire/Nevada Fire Safe Council

Policy 20-1: Maintain and improve local coordination and collaborative efforts between BLM, US Forest Service, Nevada Division of Forestry (NDF) and local volunteer fire departments to improve fire suppression management. The federal and state agencies need to take advantage of the skills and local knowledge of local residents. This is particularly important when using out-of-state fire crews for fire fighting. Elko County will aid in any way possible in suppression of wildfires that endanger the livelihoods and personal well-being of its citizens.



Policy 20-2: Encourage the federal agencies to continue the policy of contracting with Elko County residents for privately owned equipment suitable for fire fighting. Encourage the practice of early season inspections and sign-ups well before the fire season.

Policy 20-3: Encourage the federal agencies to consider using livestock to reduce the fire hazard. There may be situations where livestock grazing can be effective in reducing the fire danger and will not result in environmental damage. This is particularly true in the wildland urban interface areas.

Policy 20-4: Implement the recommendations of the Community Wildfire Protection Plans as outlined in the Elko County Wildfire Risk/Hazard Assessment Project of 2005. The County should make every effort to work with the local volunteer fire departments, NDF, the federal land management agencies and organizations such as the Nevada Fire Safe Council to encourage these communities to take preventative actions to prevent and combat wild fires.

Policy 20-5: Fire equipment brought in from out-of-state should be cleaned to assure it is "weed-free" before being dispatched to a wildfire.

21. Military Operations

Policy 21-1: Elko County supports a collaborative dialogue with the Department of Defense on all future testing and training. Elko County supports military training on public lands and existing military-withdrawn lands because of the increased military preparedness.

Policy 21-2: Elko County opposes any further military land and airspace withdrawals.

22. Energy Production



Energy production, both renewable and non-renewable is a vital component of Elko County's economic future.

Policy 22-1:Energy production is encouraged as a vital economic component of the Elko County economy. Renewable resources should be a priority and utilized in a manner that compliments other environmental resources. All efforts should be undertaken to ensure a balance between energy development and protection of resources that make the County attractive to residents and visitors.

Policy 22-2:The development and coordinated siting of new energy generation and transmission facilities is encouraged. Coordinated planning is needed to integrate related federal, State and local planning documents and processes and expedite the permitting and evaluations needed for project approvals.

23. Habitat Conservation Planning

Habitat conservation planning is important if the County and State wish to preserve wildlife species as well as way of life. Without proper planning and protection, species could be listed under the Endangered Species Act. If this occurs, drastic measures will be required to address the listing. It is much more beneficial to proactively develop appropriate habitat conservation planning measures.

Policy 23-1:Promote proactive habitat conservation planning in conformance with the Elko County Ecosystem Conservation Strategy to improve the habitat of species at risk of being listed under the Endangered Species Act, and to help avoid the adverse impacts associated with such listings.

Policy 23-2:Habitat conservation planning should consider the economic and social consequences of the conservation efforts being considered.

Policy 23-3:Habitat conservation planning should include the use of positive incentives for private landowners to increase the likelihood the plan will succeed.

24. Off Highway Vehicles (OHVs)

The use of off-highway vehicles (OHVs) has increased significantly over the past decade.



Important to many Nevadans' lifestyles for work and play, they provide many economic benefits and many environmental impacts.

Policy 24-1: Direct OHV use to designated trails and actively discourage the pioneering of new trails and use in sensitive areas through collaborative public education efforts with the local communities and federal planning partners.

Policy 24-2: Support community efforts to expand the availability of OHV trails and resources such as the Spruce Mountain trail system, Merritt Mountain trail system, the new Silver State OHV Trail in Lincoln County, a planned state wide trail system.

Policy 24-3: Maintain support for the "Gardner Map" roads and recognize the use and access provided by these roads.

Policy 24-4: Encourage and support the development of a County OHV Management Plan by encouraging a broad based local planning group to provide input in determining and prioritizing needs for current and future OHV use and management in Elko County.

Policy 24-5: Encourage and support the development of a County OHV Management Plan and any other policy and regulation that:

1. Incorporates guidelines for any future consideration, development and management of any additional OHV trails, routes or limited off-road use areas in Elko County.
2. Promotes sensible and responsible use of OHVs through registration, licensing, education, training, advertising and other means.
3. Requires OHV users to stay on designated roads and trails or in limited off-road use areas and actively discourage the pioneering of new trails.
4. Encourages sufficient resources to be made available to local district offices to publish maps of areas and routes suitable for OHV use.
5. Effectively monitor and manage off-highway vehicles in areas where they are allowed.
6. Seasonal closures should be considered where necessary.



7. Elko County supports off-road use for federally designated permitted uses.

Policy 24-6: Encourage and support the development of policy and regulation that will:

1. Register off-highway vehicles and make them identifiable in the field.
2. Provide for the safety of OHV users and non-users.
3. Prevent the environmental degradation of public lands, air, water, wildlife and vegetation.
4. Provide for restoration of damaged lands.
5. Provide for the enforcement of such rules and regulations.
6. Provide for the recreational enjoyment of both OHV users and non-users.

Policy 24-7: Encourage and support administration of money generated through off-highway vehicle registration that will:

1. Be administered by a balanced broad based board with an emphasis on rural representation.
2. Provide public safety and enforcement.
3. Provide restoration and rehabilitation of damaged lands and trails.
4. Provide maintenance for existing trails.
5. Pay for new trail construction.



APPENDIX D

WEST WENDOVER CITY STANDARDS, MAY 2012

CITY OF WEST WENDOVER



STANDARDS AND SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION

MAY 2012

**1111 North Gene L. Jones Way
P.O. Box 2825
West Wendover, Nevada 89883
775-664-3081**

INDEX OF REVISIONS

Date	Descriptions
May 2001	Added plan numbers 505 and 506
October 2001	Plan number 102. Arterial width is now 86'. Arterial sidewalks are now 6' wide.
July 2003	Added plan number 116
June 2007	Added Chapter 10 Decorative Lighting. Revised Drawings 110 and 401. Added drawings 117, 118, 507, 508, 509, 510 and 511
October 2007	Added drawing 208
April 2008	Added plan numbers 403 and 404
April 2009	Revised plan numbers 103, 109, 502,, 503, and 511
May 2010	Revised All Technical Specifications
May 2012	Revised drawing 117. Added Drawings 512, 513, and 514

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CHAPTER 1 GENERAL REQUIREMENTS

1.1 INTRODUCTION

1.1.1 Purpose

The purpose of these Construction Standards and Specifications is to govern any work performed or improvements installed within Public rights-of-way of the City of West Wendover, Nevada (City). Developers and/or contractors should thoroughly read and understand these Construction Standards and Specifications before designing and constructing public improvements.

1.1.2 Scope

- a. The contractor shall contact Public Works/Engineering at 801 Alpine Street for all matters dealing with construction work within City rights-of-way or with any work connecting onto a City utility. **Special permits and bonding are required for all such work.** The contractor shall also conform to all applicable ordinances adopted by the City and contained in the City Code of West Wendover Nevada, latest edition, and subsequent amendments or appeals.
- b. These Construction Standards and Specifications are the minimum requirements of the City. In the event that any provision herein conflicts with the City Code of West Wendover Nevada, other requirements specified by the City, or with generally accepted standards for Public Works construction, the more stringent of the standards shall apply.

1.2 TERMS AND DEFINITIONS

1.2.1 Definition of the term “City”

The term “City”, as used herein, refers to The City of West Wendover, Nevada, and its personnel or duly authorized agents.

1.2.2 Definition of the term “Code”

The term “Code”, as used herein, refers to the City Code of West Wendover Nevada, latest edition, and subsequent amendments thereto.

1.2.3 Definition of the term “Standards”

The term “Standards”, as used herein, refers to these Construction Standards and Specifications.

1.2.4 Standard Acronyms

- a. UBC: Uniform Building Code
- b. UPC: Uniform Plumbing Code
- c. UFC: Uniform Fire Code
- d. ASTM: American Society for Testing and Materials
- e. AWWA: American Water Works Association
- g. ANSI: American National Standards Institute
- h. OSHA: Occupational Safety and Health Administration
- I ACI: American Concrete Institute

1.2.5 Standard Abbreviations

- a. DI: Ductile Iron
- b. DIP: Ductile Iron Pipe
- c. PVC: Polyvinyl Chloride
- d. PVCP: Polyvinyl Chloride Pipe
- e. CP: Non-reinforced Concrete Pipe
- f. RCP: Reinforced Concrete Pipe
- g. HDPE: High Density Polyethylene
- h. IPS: Iron Pipe Size
- i. psi: Pounds per Square-inch
- j. mgl Milligrams per Liter
- k. F Fahrenheit
- l. fps Feet per Second
- m. cu ft Cubic Feet

1.3 PERMIT, FEE, AND BONDING REQUIREMENTS

1.3.1 Building Permit

It shall be unlawful to perform any construction, excavation work on any street, curb, gutter, sidewalk, sewer line, water line, storm drain line, or other infrastructure addition or improvement in the City without an approved Building Permit as defined by the Code. Absolutely no work shall be started until a properly executed Building Permit is secured. In a case where a contract to perform work for the City has been executed, the contract shall fulfill the Building Permit requirement.

In addition to the requirements of the Code, all applications for Building Permits shall include the following:

- a. The anticipated start and completion dates of the project.
- b. The exact address or location of the work.
- c. A description of the work.
- d. A request, which shall be made at least 48 hours prior to beginning construction, to identify and locate water, sewer, and storm drain lines.
- e. A request, which shall be made at least 7 days prior to beginning construction, for all utility companies to be contacted.

The contractor shall perform all work in accordance with the terms of the Building Permit and the Standards in effect on or before the date of the permit. All work shall be done in a timely manner and time limits, which may be a condition of the permit, can be shortened because of safety concerns. Building Permits can be suspended if a contractor fails to comply with the Standards and Code.

A developer is responsible for its entire development until all construction is completed and accepted by the City.

1.3.2 Fees

Before a Building Permit is issued, a Permit Fee and an Inspection Fee shall be paid to the City. Permit and Inspection fees shall be established by City Council resolution. Fees shall be assessed on the following items or conditions:

- a. Sewer, Water, and Storm Drain Lateral Installation and Inspection.
- b. All re-inspections that are required after an inspection has been requested and performed, but the work, or a portion thereof, is found to be defective or incomplete.

- c. Barricades (provided by, or required by, the City).

1.3.3 Bonds

All public improvement projects shall have a financial guarantee for performance, pursuant to the Code, which shall be in the form of bonds or cash deposits. Each contractor doing work in the City is required to maintain a \$10,000.00 bond with the City. This bond is to guarantee the following:

- a. Construction work is completed.
- b. Final inspection is conducted.
- c. The construction of, and repairs to and/or replacement of, public improvements are finished and accepted.

A Surety shall issue bonds or, if desired, a cash bond can be paid directly to the City. The City shall approve all bonds and no bond shall be released until all improvements are completed and accepted by the City.

1.4 PRE-CONSTRUCTION APPROVALS

1.4.1 City Approval of the Contractor

The City shall approve all contractors before any work is performed. This approval is granted for a period of one (1) year upon submission of the following:

- a. A current Nevada State Contractor's License. Work will be restricted to that authorized by the license.
- b. Proof of comprehensive general liability insurance. Bodily injury insurance will be in an amount of not less than five hundred thousand dollars (\$500,000.00) for any one occurrence. Property damage insurance will be in an amount of not less than five hundred thousand dollars (\$500,000.00) for any one occurrence and shall include underground exposure. Combined liability insurance will be in an amount of not less than one million dollars (\$1,000,000.00) for any one occurrence.
- c. A ten thousand dollar (\$10,000.00) cash bond, paid to the City, that will be in effect for a period of one (1) year after the completion of all work performed by the contractor.

1.4.2 City Approval of the Construction Plans

The City, before the commencement of construction, shall approve all construction plans and cut sheets

The contractor, before the commencement of construction, shall hold a pre-construction

meeting with the City, all utility companies affected by the work, and all contractors involved with the work.

1.5 SAFETY

No contractor shall leave any work in an unsafe condition. All persons working on any street, sidewalk, sewer line, water line, storm drain line, etc. shall comply with all applicable federal, state, and local safety regulations including OSHA regulations for work in confined spaces and trenches.

1.6 INSPECTIONS

1.6.1 Mandatory Inspections

All work covered by a Building Permit shall be inspected by the City prior to the following:

- a. The commencement of backfilling and compacting operations.
- b. The placing of concrete and asphalt surfacing.
- c. The installation of any underground piping.
- d. Any connection to a City utility line.
- e. Any other work done in a public right of way.

City inspectors shall also be notified before beginning construction for any Public Works project.

1.6.2 Notification Requirements

Prior notifications for inspections by the City are required as follows:

- a. Inspections performed during regular working hours require at least four (4) hours prior notification.
- b. Inspections needed after 4:00 p.m. require notification by 1:00 p.m. on the day of the inspection.
- c. Inspections needed on the weekend require that notification be given by 1:00 p.m. on the proceeding Friday.
- d. A charge of thirty-five dollars (\$35) per hour, with a two (2) hour minimum, shall be assessed for all inspection call-backs.

1.7 TESTING

The developer/contractor is responsible for all testing required under these standards. Failure to perform sufficient tests shall be justification to delay acceptance of the work until such tests are completed by the developer/contractor.

1.8 AS-BUILT DRAWINGS

The City requires that As-built drawings for each separate development be submitted by the developer/contractor before the construction of curb, gutter, and sidewalk. Measurements should be referenced from a permanent fixture such as a fire hydrant, manhole, or survey monument located on the outside boundaries of the lots. The outside property line may be used if a permanent fixture is not available. Measurements and utilities should be clearly labeled on the As-built drawings. Utilize similar types of measurements on any valves or manholes located in the street or on the development. Measurements should also show lateral connections to main lines. All As-built drawings must be submitted as full-size drawings.

1.9 DAMAGE TO EXISTING UTILITIES

1.9.1 Developer/Contractor Responsibilities

The developer/contractor shall notify all utility companies and have them locate and mark their respective utilities prior to any construction. The developer/contractor shall notify all appropriate utility companies of its intent to begin construction. The developer/contractor shall be liable for all damage to properties that are damaged by themselves, their agents, and their employees.

1.10 DUST CONTROL AND CLEANUP

1.10.1 Dust Control

The developer/contractor shall be responsible to control dust created by its construction operations or originating from the construction site at all times

1.10.2 Cleanup of Construction Sites

The developer/contractor shall cleanup its construction site and, where applicable, restore the site its original condition. All materials shall be removed, gravel surfaces replaced, sod areas restored, asphalt replaced, and all other work necessary to leave the area in at least its pre-existing condition must be completed before final approval will be issued by the City.

CHAPTER 2 EARTHWORK

2.1 MATERIALS

2.1.1 General

- a. Fill and backfill materials may be obtained from on-site excavations, processed from on-site materials, or may be imported. Materials shall meet the gradation and composition requirements of these Standards and shall be free of large rocks, excessive organic material, asphalt, or any other deleterious material. Fill material that does not conform to these Standards shall be reworked or removed and replaced with acceptable material. The Contractor shall submit a sieve analysis of all select materials used.
- b. Fill and backfill materials shall be selected or processed clean, fine earth, rock or sand free from grass, roots, brush or other vegetation. Materials for fill, backfill and embankments that are classified under ASTM D-2487 as GC, SC, ML, MH, CL, CH, OL, OH, and PT are herein defined as unsuitable and shall not be used. Materials that cannot be compacted to achieve the required percentage of maximum density for the intended use shall not be used.

2.1.2 Testing

- a. All soils testing shall be completed by a testing laboratory of the Contractor's choice and at the Contractor's expense. Where test results show noncompliance with the required density, the Contractor shall remedy the issue as may be required to ensure compliance. Subsequent testing to show compliance shall be by the testing laboratory selected by the Owner, but at the Contractor's expense.
- b. Where soil material is required to be compacted to a percentage of maximum density, the maximum density at optimum moisture content will be determined in accordance herein. Where cohesionless free draining soil material is required to be compacted to a percentage of relative density, the calculation of relative density will be determined in accordance with ASTM D-4253 and D-4254. Field density in-place tests will be performed in accordance with ASTM D-1556 or ASTM D-2922.
- c. Particle size analysis shall be performed using ASTM D-422.
- d. The sand equivalent value shall be performed using ASTM D-2419.
- e. References in these specifications to soil classification types and standards shall be as set forth in unified soil classification system, ASTM D-2487.

2.1.3 Material Requirements

- a. Granular Base Course: At the option of the Contractor, the gradation for the one (1) inch or three-quarter (3/4) inch maximum size shall be used. The sand equivalent

value shall not be less than 22 and the material shall meet the following gradation requirements.

<u>Sieve Size</u>	<u>1" Maximum Percentage Passing</u>	<u>¾" Maximum Percentage Passing</u>
1"	100	-
¾"	-	100
½"	79-91	-
⅜"	-	69-100
No. 4	49-61	46-75
No. 16	27-35	22-44
No. 50	10-27	10-28
No. 200	7-11	4-13

The total amount of material passing the No. 200 sieve shall be determined by washing with water in accordance with ASTM C-117. Granular base course shall be placed in finished lifts not to exceed eight (8) inches and shall be compacted to ninety-five (95) percent of maximum dry density per ASTM D-1557.

- b. Drainrock: Crushed rock or gravel, durable and free from slaking or decomposition under the action of alternate wetting or drying. The material shall be uniformly graded and have a sand equivalent value not less than 75 and meet the following gradation requirements.

<u>Sieve Size</u>	<u>1" Maximum</u>
1 ½"	100
1"	95-100
½"	25-60
No. 4	0-10
No. 8	0-5
No. 50	0-3

Drainrock shall be placed in finished lifts not exceeding twelve (12) inches and shall be consolidated by vibration.

- c. Crushed Rock and Granular Slab Cushion: Crushed rock or gravel, durable and free from slaking or decomposition under action of alternate wetting or drying. The material shall be uniformly graded and meet the following gradation requirements.

<u>Sieve Size</u>	<u>1" Maximum</u>
2"	100
1 ½"	85-100
1"	25-55
¾"	0-55
No. 200	0-3

Crushed rock and granular slab cushion material shall be placed in lifts not exceeding twelve (12) inches and shall be consolidated by vibration.

- d. Select Pipe Bedding and Backfill: material shall be crushed rock or gravel, durable and free from slaking or decomposition under action or alternate wetting and drying. The material shall be uniformly graded and meet the following gradation requirements.

<u>Sieve Size</u>	<u>Percentage Passing</u>
1/2"	100
3/8"	85-100
No. 4	10-30
No. 8	0-10
No. 16	0-5

Select pipe bedding and backfill shall be placed in finished lifts not to exceed twelve (12) inches in traffic areas and eight (8) inches in non traffic areas. Compaction requirements include ninety-five (95) percent of maximum dry density per ASTM D-1557 in traffic areas and eighty-five (85) percent of maximum dry density per ASTM D-698 in non traffic areas.

- e. Sand: The material shall be uniformly graded and meet the following gradation requirements.

<u>Sieve Size</u>	<u>Percentage Passing</u>
3/8"	100
No. 4	95-100
No. 16	45-80
No. 50	10-30
No. 100	2-10
No. 200	0-2

Sand shall be placed in finished lifts not to exceed 12 inches and compacted to seventy (70) percent of relative density per ASTM D-4253 and 4254.

- f. Structural Fill: Imported granular material free from rock or gravel larger than three (3) inches in any dimension and conforming to the following gradation requirements.

<u>Sieve Size</u>	<u>1" Maximum</u>
3"	100
3/8"	40-50
No. 8	35-65
No. 50	10-30
No. 200	5-15

Structural fill shall be placed in finished lifts not to exceed six (6) inches and compacted to ninety-five (95) percent of maximum dry density per ASTM D-1557 under foundations, slabs, and roadways and ninety (90) percent of maximum dry density per ASTM D-698 in other areas.

- g. Bank-Run Fill: Imported granular material free from rock or gravel larger than six (6) inches in any dimension with less than fifteen (15) percent passing the No 200 sieve

and conforming to the following gradation requirements.

<u>Sieve Size</u>	<u>1" Maximum</u>
6"	100
3/8"	40-50
No. 8	35-65
No. 50	10-30
No. 200	5-15

Bank-run fill shall be placed in finished lifts not to exceed six (6) inches and compacted to ninety-five (95) percent of maximum dry density per ASTM-698.

- h. Flowable Fill: the following is a suggested range for proportioning mix.

<u>Material</u>	<u>Suggested Quantity</u>		
	<u>Minimum</u>	<u>Maximum</u>	
Fly Ash	300	400	lbs/cy
Portland Cement (Type I or II)	50	70	lbs/cy
Coarse and Fine Aggregate	2600	3000	lbs/cy
Water (8" to 10") Slump	350	600	lbs/cy

Fly Ash shall meet the requirements of ASTM C-618, Class F, except loss on ignition shall not exceed three (3) percent maximum and shall come from a source approved by the City.

The coarse and fine aggregates for flowable fill shall be natural sand consisting of mineral aggregated particles. The gradation of this material shall be as follows.

<u>Sieve Size</u>	<u>Percentage Passing</u>
3/4"	100
No. 200	0-10

The mix shall be so proportioned to provide a minimum unconfined compressive strength at 28 days of 70 psi.

- e. Adjacent to structures, fill shall be placed in a manner that will prevent damage to the structures and will allow the structures to gradually receive loads from the backfill. The height of fill adjacent to structures shall be increased at the same rate on all sides of the structure.

2.2 INSTALLATION

2.2.1 General

- a. Fill materials shall not be placed until the required excavation and foundation preparations have been completed and approved by the City. Fill shall not be placed upon or against any frozen surface, nor shall snow, ice, or frozen material be incorporated into the fill.

- b. The subgrade for earth fills shall be graded to remove surface irregularities and shall be scarified parallel to the axis of the fill or otherwise scored and loosened to a minimum depth of four (4) inches. The moisture content of the scarified subgrade shall be controlled as specified herein and the surface materials of the foundation shall be compacted and bonded with the first layer of earth fill.
- c. Blasting shall be permitted only by written approval and as directed by the City. The City shall approve the transportation, handling, storage, and use of explosives.
- d. The Contractor shall keep separate and stockpile from required excavations all topsoil. Topsoil is defined as loamy surface soil. Satisfactory topsoil is reasonably free of subsoil, clay lumps, stones, weeds, roots, and other objects over 2" in diameter. Strip topsoils to whatever depth encountered in a manner to prevent mixing with underlying subsoil or other objectionable material. The Contractor shall place and grade this topsoil material on areas requiring landscaping, if applicable, to the extent it remains available.
- e. Suitable materials from the excavations may be used for constructing permanent earth or rock fill embankments. The suitability of materials for specific purposes shall be determined by the City.
- f. Excavation shall be completed to the lines and grades shown in the plans or established by the Design Engineer and approved by the City. Excavation beyond specified lines and grades shall be filled and compacted in accordance with these Standards. All borrow areas shall be graded and finished to eliminate steep or unstable side slopes or other hazardous or unsightly conditions.
- g. Contractor shall remove and dispose of all surplus or unsuitable excavated material at a site selected by the City.

2.2.2 Site Safety

- a. All construction shall be performed in accordance with the provisions and regulations of the Nevada State Industrial Commission and OSHA Safety and Health Standards for Construction (29CFR1926).
- b. The City must approve plans and specifications for structures if the excavation is greater than five (5) feet. No permanent slopes steeper than three (3) horizontal to one (1) vertical shall be allowed without a retaining structure unless otherwise approved in writing by the City. The width of excavations and trenches shall be increased if necessary to provide space for sheeting, bracing, shoring and other supporting structures.
- c. Trenches shall not be left open at any time unless guarded with adequate barricades, warning lights, and signs.
- d. Any injury or damage resulting from a lack of adequate trench design or support shall be the responsibility of the developer/contractor. The developer/contractor shall, at its own expense, affect all necessary repairs or reconstruction resulting from such

damage.

2.2.3 Controlling Moisture Content

- a. All excavations shall be kept reasonably free from excess water during excavation, fine grading, pipe laying, and backfilling operations. Any water that collects in the excavation must be removed before construction proceeds.
- b. During excavation, fine grading, placement and compaction operations the moisture content of the fill and backfill materials shall be maintained in conformance with ASTM C-1557. Disking, blading, or other approved methods shall be used to obtain uniform moisture distribution prior to compaction. Excessively wet materials shall be either removed or brought to acceptable moisture content prior to compaction.
- c. If the surface of a previously placed and compacted layer of fill becomes dry and unsuitable to receive a successive layer; the surface shall be scarified and moistened to acceptable moisture content prior to the placement of additional fill.

2.2.4 Structural, Roadway, and Embankment Excavation

- a. Excavation under structures, roadways, and areas to be paved shall extend to the bottom of the aggregate base. After the required excavation has been completed the exposed surface shall be scarified and brought to optimum moisture content and compacted to obtain ninety-five (95) percent of maximum dry density per ASTM D-1557.
- b. The Contractor shall notify the City of the completion of any structural excavation and shall allow the City at least 24-hours review period before the exposed foundation is scarified and compacted or is covered with any structural backfill materials.
- c. When the excavation is made in a paved street, the asphalt surface shall be saw-cut on each side of the trench to provide a vertical joint in the surface.

2.2.5 Pipe and Utility Trench Excavation

- a. Excavation for pipelines and utilities shall be open-cut trenches. The bottom of the trench shall have a minimum width equal to the outside diameter of the pipe plus eighteen (18) inches and a maximum width equal to the outside diameter of the pipe plus twenty-four (24) inches. Trenches for pipelines smaller than eight (8) inches shall be excavated uniformly to the grade of the bottom of the pipe. Trenches for pipelines greater than eight (>8) inches shall be excavated uniformly to the depth of four (4) inches below the grade of the bottom of the pipe.
- b. The trench bottom shall be uniformly graded so that each pipe section when first laid will be continually in contact with the bedding along the entire length of the pipe.
- c. In no case shall pipe be installed directly on bedrock, hard clay, shale, or rocks with a maximum diameter larger than two (2) inches. Where such foundations are

encountered, the contractor shall over excavate below the pipe grade and place at least four (4) inches of bedding material below the pipe.

2.2.6 Backfill Around Structures

- a. Fill

2.2.7 Pipe and Utility Trench Backfill

- a. The City shall approve all backfill material. Under no circumstances shall rocks size larger than allowed under this Standard be permitted in the backfill material surrounding any pipe. When sand or gravel is used for backfill above the pipe zone, it must be pre-approved by the City. Sand or gravel should be well-graded and free from slag or pea gravel unless otherwise approved by the City.
- b. Backfill material shall not be dropped directly on the pipe or utility conduit.
- c. Backfill shall be placed under and around the pipe in horizontal layers not to exceed six (6) inches and tamped by hand or pneumatic tampers up to the lower one-sixth (1/6) of the outside diameter of the pipe. The pipe zone shall extend at least twelve (12) inches above the top of the pipe.
- d. After the pipe zone backfill has been placed and inspected by the City, the trench zone backfilling may proceed.

2.2.7 Asphalt Pavement Restoration

- a. The contractor shall perform all work and furnish all materials to restore any asphalt surface damaged or disturbed by its construction operation. Pavement restoration shall follow, as closely as possible, the installation and backfilling of pipe. The contractor shall be responsible for maintaining the road surface in sufficient condition to allow travel by the public at all times until the surface is restored.
- b. The asphalt surface shall be saw-cut on each side of the trench prior to excavation. Granular base course and asphalt shall conform to these Standards. Edges shall also be cut straight and vertical prior to the placement of asphalt if they have become irregular or damaged during pipe installation and backfill.
- c. A temporary granular base course shall be placed flush with the existing asphalt surface and maintained in a good condition until the pavement is restored. This base course shall be excavated to the bottom of the existing pavement prior to restoring the surface. An asphalt tack coat shall be placed on the edges of the cut asphalt, and new asphalt placed and compacted with a fine-ton minimum steel-wheeled roller or other approved method to attain at least ninety-five (95) percent of maximum laboratory density. The asphalt shall be placed in such a manner that the finish surface is flush with the existing surface and provides a smooth riding surface. The finished asphalt shall be at least two and one-half (2-1/2) inches thick, or as thick as the existing asphalt, whichever is greater.

**CHAPTER 3
WATER LINES AND SERVICE CONNECTIONS**

3.1 MATERIALS

3.1.1 Water Line Materials

Materials for constructing water lines shall be limited to the following

- a. Ductile Iron Pipe, pressure class or special thickness class, conforming to ANSI/AWWA C150/A21.50 and C151/A21.51. All DIP shall be protected with polyethylene encasement, at least 8 mils thick, conforming to ANSI/AWWA C105/A21.5 having a minimum thickness of 8 mils. All DIP shall be cement mortar lined in conformance with AWWA C104 and have a factory-applied coating of coal tar enamel.
- b. Polyvinyl Chloride Pipe conforming to AWWA C900 (12" diameter or less) or AWWA C905 (diameters larger than 12") with a Dimension Ratio (DR) of 18 or less.
- c. Joints and fittings shall be push-on bell and spigot type conforming to ANSI/AWWA C111/A21.11; mechanical joint type conforming to ANSI/AWWA C111/A21.11; or flanged type conforming to ANSI/AWWA C110/A21.10. All DI fittings shall be protected with polyethylene encasement, at least 8 mils thick, conforming to ANSI/AWWA C105/A21.5. All DI fittings shall be cement mortar lined in conformance with AWWA C104 and have a factory applied coating of coal tar enamel.
- d. All gate valves shall be resilient seated wedge type gate valves conforming to AWWA C509 and suitable for buried service. The valves shall be equipped with a 2" square operating nut, and furnished with a slip type valve box and all required mounting hardware.
- e. All butterfly valves shall conform to AWWA C504 Class 150B suitable for buried service. The valves shall be equipped with a 2" square operating nut, and furnished with a slip type valve box and all required mounting hardware.
- f. All fire hydrants shall conform to AWWA C502 and shall be equipped with a five and one-quarter valve opening, two hose nozzles, one pumper nozzle, and have appurtenant valve, box, fittings, and concrete footing and thrust block. Fire hydrants shall be "Traffic" type with a replaceable break-away section immediately above finish grade. All fire hydrants shall be of the "dry barrel" type and suitable for use in climates subject to freezing.
- g. Thrust Blocking shall be installed at all applicable locations to prevent the pipe from moving due to hydrostatic and hydrodynamic forces. Thrust blocks shall be constructed of concrete placed to bear against undisturbed soil. Fittings and bolts shall be covered with polyethylene to prevent their encasement in concrete. The use

of mechanical thrust restraining systems, whether in conjunction with thrust blocks or separately, must be approved by the City.

3.1.2 Water Service Materials

Materials for constructing water services shall be limited to the following:

- a. Laterals shall be IPS HDPE with a Standard Dimension Ratio (SDR) of 7. Use the same diameter and material as the existing service lateral when extending a lateral. Water service lines larger than two (2) inches shall be approved by the City on a case-by-case basis.
- b. Saddles shall be of bronze or brass construction and shall have two “U” bolts or a wide band with two bolts on each side of the saddle. The rubber gasket shall conform to the outside diameter of the main water line.
- c. Corporation Stops shall be the same size as the service lateral and shall be suitable for use with copper or HDPE service laterals, whichever is applicable.
- d. Meter Setter assemblies shall have a State approved double check valve backflow prevention device.
- e. Meter Boxes shall have a diameter of 18” and a depth of 36” and shall be constructed from either concrete or HDPE.
- f. All Meter Boxes shall be equipped with a cast iron ring and lid.

3.2 PIPE INSTALLATION

3.2.1 Care, Handling, and Inspection

- a. Special care shall be taken to prevent damage to pipe and protective coatings. Proper equipment, tools and facilities shall be provided and used for safe and controlled construction procedures. Pipe placed in trenches shall be lowered in place by means of ropes, booms or any type of power equipment sufficient to handle each piece separately. In no case shall pipe be allowed to fall freely. Pipe will not be allowed to be stored in the flow line of any gutter.
- b. All foreign matter or dirt shall be removed from the inside of the pipe before it is placed and it shall be kept clean during and after laying. Should the pipe become dirty or contaminated or flooded with trench water, it shall be cleaned in accordance with methods specified in the latest edition of AWWA C651 prior to disinfection.
- c. All pipes shall be carefully inspected by the contractor/developer prior to installation and defective pipe shall not be used.

3.2.2 Installation

- a. Installation methods shall conform to the requirements of the latest edition of AWWA C600 and best current practices. The type of bedding required shall be specified by the design, the City, or as detailed on the plans. Under no circumstances will any pipe be laid until inspection is complete and selected samples have adequately passed the requirements of the applicable specification. All pipes shall be laid true to line and grade. Cut sheets or grade stakes shall be supplied to the City for approval.
- b. Pipe shall be laid with the bell end upstream with relation to flow. A slight excavation for the bell at the joints shall maintain a suitable foundation for the barrel of the pipe. Maximum deflection shall not exceed manufacturer recommendations. Pipe shall have a minimum cover of four (4) feet to a maximum cover of five (5) feet below finish grade unless otherwise approved in writing by the City. Installation shall conform to the requirements of the applicable AWWA standards or manufacturer's recommendations whichever is most stringent.
- c. All openings in a pipeline shall be closed with watertight or rodent-proof plugs when installation is stopped at the close of work or when work is stopped for other reasons. If the trench becomes flooded, watertight plugs shall be installed, and remain in place, until the trench is dewatered.
- d. All rubber-gasket joints shall be completed in accordance with installation instructions supplied by the manufacturers of the pipe. All joints to be deflected shall be laid straight and then deflected after the joint is complete. In no case shall the deflection exceed five (5) degrees. Backfill may or may not be completed prior to placing the next section of pipe at the option of the developer/contractor, but subsequent adjustment or damage to joints shall require the pipe section to be removed, cleaned and reinstalled.
- e. All pipelines shall be marked with locator tape placed at the top of the pipe zone. Metallic locator tape shall be used for all non-metallic pipeline installations.

3.3 DISINFECTION AND TESTING

3.3.1 Field Hydrostatic Testing of Water Lines

- a. The section of line to be tested shall be isolated and slowly filled with water. Air should be expelled from the line through hydrants or taps made at the high points. The pipe shall be tested at two-hundred (200) psi or higher as determined by the City and shall be maintained at this pressure for at least two (2) hours using either pneumatic or hydraulic means. Accurate means shall be provided for measuring the quantity of water required to maintain the test pressure. This allowable leakage rate is defined by the formula:

$$L = \frac{HND(P)^{1/2}}{148,000}$$

Where: L = allowable leakage, gallons
D = diameter of pipe, inches
N = length of the pipe, feet
P = specified test pressure, psi
H = duration of the test, hours

- b. All damaged or defective pipe or fittings shall be replaced and any known leaks shall be repaired prior to field hydrostatic testing.

3.3.2 Disinfection of Water Lines

- a. Disinfection of water lines shall be performed in accordance with AWWA C651. The pipe shall be clean prior to disinfection. If, in the opinion of the City, contamination in the pipe is such that it cannot be removed by flushing, the pipe shall be cleaned by mechanical means and then swabbed with a one (1) percent hypochlorite disinfecting solution. All new lines shall be isolated from existing lines during the disinfection and testing process.
- b. The Tablet Method, as described in AWWA C651 shall consist of placing calcium hypochlorite tablets at the specified rate in the water line during construction at the upstream end of each section of pipe. The tablet shall be attached with an adhesive, such as Permatex No. 1. The line shall then be filled slowly to expel all air, and maintained full for at least twenty four (24) hours, or forty eight (48) hours when the water temperature is less than forty-one (41) degrees F. The disinfection solution shall contain at least twenty-five (25) mg/l of available chlorine after these periods.
- c. If the Continuous Feed Method, as described in AWWA C651, is used; the disinfecting solution shall contain at least twenty-five (25) mg/l of available chlorine after twenty-four (24) hours.
- d. No contractor will be allowed to flush the line until a chlorine residual test has been passed and accepted by the City.

3.3.3 Flushing and Sampling of Water Lines

- a. After disinfection is complete, the water line shall be thoroughly flushed with clean water and, if necessary, re-chlorinated until satisfactory bacteriologic tests are obtained. Flow velocities of at least 2.5 fps must be maintained throughout the flushing process. In any test fails, the contractor shall be responsible for the fees incurred for additional testing.
- b. Bacteria samples shall be obtained at the sites designated by the City for each job. There shall be a minimum of one sample obtained for waterlines up to 200 feet in length and a minimum of two samples obtained for waterlines between 200 and 600 feet in length. For water lines longer than 600 feet in length, at least one sample shall be obtained for every 600 feet.
- c. The line will be flushed and re-tested if any sample point fails on the first test. The

line will be completely re-disinfected and re-tested at all sample points if any sample point fails a second time. In addition, the line will be re-disinfected and re-tested at all sample points if any returned sample is marked “presence”, indicating the existence of coliform bacteria.

- d. Water services will not be installed until the City has approved all bacteria sample results.

**CHAPTER 4
SANITARY SEWER AND STORM DRAIN LINES AND LATERALS**

4.1 MATERIALS

4.1.1 Sanitary Sewer Line Materials

Materials for constructing sanitary sewer lines shall be limited to the following

- a. Ductile Iron Pipe, pressure class or special thickness class, conforming to ANSI/AWWA C150/A21.50 and C151/A21.51. All DIP shall be protected with polyethylene encasement, at least 8 mils thick, conforming to ANSI/AWWA C105/A21.5 having a minimum thickness of 8 mils. All DIP shall be cement mortar lined in conformance with AWWA C104 and have a factory-applied coating of coal tar enamel.
- b. Polyvinyl Chloride Pipe conforming to ASTM 3034 with a Standard Dimension Ratio (SDR) of 35 or less. PVC/P having an installation depth greater than twelve (12) feet shall require special approval by the City.
- c. Polyethylene Pipe conforming to ASTM F405 and ASTM F667.
- d. All joints shall be completed in accordance with the requirements and recommendations of the pipe manufacturer.
- e. Manhole sections shall be of precast reinforced concrete. Manhole covers and frames shall be cast in accordance with ASTM A48, Class 35, and shall be free from blow-holes and shrinkage defects. The minimum weight of the frame shall be two hundred eighty (280) pounds and the minimum weight of the cover shall be one hundred sixty (160) pounds.
- f. Bases for manholes shall be precast concrete manufactured according to the dimensions on the drawings. All manholes shall have at least a forty (40)-inch channel between the inlet and outlet pipes. The entire surface of the manhole invert, including channels and shelves, shall be made dense and smooth with a steel trowel. All inverts shall follow the grades of the pipe entering the manholes unless there is a change of direction greater than ten (10) degrees; in which case there shall be a drop of at least one-tenth (0.1) foot between the inlet and outlet pipes. When a smaller pipe joins a larger one, the invert of the larger pipe should be lowered sufficiently to maintain the same energy gradient. Precast manhole bases shall include all materials necessary for a complete installation, including rubber boots. In no case shall an incoming line be allowed to drop more than twelve (12) inches to the base. A drop manhole connection shall be used if the elevation difference is greater than twelve (12) inches.

4.1.2 Sanitary Sewer Lateral Materials

Materials for constructing sanitary sewer laterals shall be limited to the following

- a. Ductile Iron Pipe, pressure class or special thickness class, conforming to ANSI/AWWA C150/A21.50 and C151/A21.51. All DIP shall be protected with polyethylene encasement, at least 8 mils thick, conforming to ANSI/AWWA C105/A21.5 having a minimum thickness of 8 mils. All DIP shall be cement mortar lined in conformance with AWWA C104 and have a factory-applied coating of coal tar enamel.
- b. Polyvinyl Chloride Pipe conforming to ASTM 3034 with a Standard Dimension Ratio (SDR) of 35 or less. PVC/P having an installation depth greater than twelve (12) feet shall require special approval by the City.
- c. Polyethylene Pipe conforming to ASTM F405 and ASTM F667.
- d. All joints shall be completed in accordance with the requirements and recommendations of the pipe manufacturer.
- e. Sanitary sewer lateral clean-out stand pipes shall be cast iron or ABS with a cast iron or brass cap.

4.1.3 Storm Drain Line Materials

Materials for constructing storm drain lines shall be limited to the following

- a. Ductile Iron Pipe, pressure class or special thickness class, conforming to ANSI/AWWA C150/A21.50 and C151/A21.51. All DIP shall be protected with polyethylene encasement, at least 8 mils thick, conforming to ANSI/AWWA C105/A21.5 having a minimum thickness of 8 mils. All DIP shall be cement mortar lined in conformance with AWWA C104 and have a factory-applied coating of coal tar enamel.
- b. Polyvinyl Chloride Pipe conforming to ASTM 3034 with a Standard Dimension Ratio (SDR) of 35 or less. PVC/P having an installation depth greater than twelve (12) feet shall require special approval by the City.
- c. Polyethylene Pipe conforming to ASTM F405 and ASTM F667.
- d. Non-reinforced Concrete Pipe conforming to ASTM C14 providing it meets the strength requirements for the particular application.
- e. Reinforced Concrete Pipe conforming to ASTM C76.
- f. All joints shall be completed in accordance with the requirements and

recommendations of the pipe manufacturer.

- g. Manhole sections shall be of precast reinforced concrete. Manhole covers and frames shall be cast in accordance with ASTM A48, Class 35, and shall be free from blow-holes and shrinkage defects. The minimum weight of the frame shall be two hundred eighty (280) pounds and the minimum weight of the cover shall be one hundred sixty (160) pounds.
- h. Bases for manholes shall be precast concrete manufactured according to the dimensions on the drawings. All manholes shall have at least a forty (40)-inch channel between the inlet and outlet pipes. The entire surface of the manhole invert, including channels and shelves, shall be made dense and smooth with a steel trowel. All inverts shall be adjusted such that the crowns of all incoming pipes is equal and there is at least a five-hundredths (0.05)-foot drop between the crowns of the inlet pipes and the crown of the outlet pipe. All precast manhole bases shall include all materials necessary for a complete installation, including rubber boots.
- i. Catch basins shall meet the requirements as shown in the Standard Drawings section of these Standards.

4.2 PIPE INSTALLATION

4.2.1 Care, Handling, and Inspection

- a. Special care shall be taken to prevent damage to pipe and protective coatings. Proper equipment, tools and facilities shall be provided and used for safe and controlled construction procedures. Pipe placed in trenches shall be lowered in place by means of ropes, booms or any type of power equipment sufficient to handle each piece separately. In no case shall pipe be allowed to fall freely. Pipe will not be allowed to be stored in the flow line of any gutter.
- b. All foreign matter or dirt shall be removed from the inside of the pipe before it is placed and it shall be kept clean during and after laying.
- c. All pipes shall be carefully inspected by the contractor/developer prior to installation and defective pipe shall not be used.

4.2.2 Installation

- a. Installation methods shall conform to the requirements of the manufacturer. The type of bedding required shall be specified by the design, the City, or as detailed on the plans. Under no circumstances will any pipe be laid until inspection is complete and selected samples have adequately passed the requirements of the applicable specification. All pipes shall be laid true to line and grade. Cut sheets or grade stakes shall be supplied to the City for approval.

- b. A slight excavation for the bell at the joints shall maintain a suitable foundation for the barrel of the pipe. Maximum deflection shall not exceed manufacturer recommendations but in no case shall it exceed five (5) percent. The bedding condition for concrete pipe shall conform to at least a Class C condition.
- c. All openings in a pipeline shall be closed with watertight or rodent-proof plugs when installation is stopped at the close of work or when work is stopped for other reasons. If the trench becomes flooded, watertight plugs shall be installed, and remain in place, until the trench is dewatered.
- d. All rubber-gasket joints shall be completed in accordance with installation instructions supplied by the manufacturers of the pipe. Backfill may or may not be completed prior to placing the next section of pipe at the option of the developer/contractor, but subsequent adjustment or damage to joints shall require the pipe section to be removed and reinstalled.
- e. All pipelines shall be marked with locator tape placed at the top of the pipe zone. Metallic locator tape shall be used for all non-metallic pipeline installations.

4.2.3 Minimum Size and Slope Requirements

- a. In no case shall the diameter of any sanitary sewer line be less than eight (8) inches. In no case shall the diameter of any storm drain line be less than fifteen (15) inches.
- b. The minimum slopes for sanitary sewers and storm drain lines are as follows:

<u>Size, in.</u>	<u>Slope, ft/ft</u>
8	0.004
10	0.003
12	0.0022
15	0.0015
18	0.0012
21+	0.0010

- c. Whenever possible, the slope should exceed 0.006 ft/ft. The pipe should be sized to meet anticipated hydraulic loads. Increasing the pipe size to reduce the minimum slope requirement shall not be allowed unless approved by the City. Sewer slopes shall not exceed 0.10 ft/ft. Drop manholes shall be used to keep the sanitary sewer line grade flatter than this maximum allowable slope.
- d. In no case shall the diameter of any sewer lateral be less than four (4) inches. The minimum slope for sanitary sewer laterals is one-quarter (1/4) inch per foot.

4.2.4 Connection to Existing Sewer

- a. Manholes that connect a new sewer to an existing sewer shall be plumb and centered
-

on the existing pipe at the elevation designated on the drawings. Care shall be taken not to disturb the alignment of the existing sewer line.

- b. The cutting of the existing sewer line shall be in the presence of the City. The cut shall be for the full area of the new pipe and shall be finished so as to leave no projections that will restrict the flow or collect solids. Every precaution shall be taken to prevent foreign material from entering the new or existing sewer lines.
- c. Brick shall not be used to raise a manhole nor cones broken-out to lower a manhole. Sections shall be removed and grade rings used to adjust manhole lids to the required grade.

4.2.5 Lateral Connections to Sanitary Sewer Lines

- a. Connections shall conform to these Standards. If the sewer lateral is greater than one-half (1/2) the size of the main sewer line, a manhole shall be placed at the main line connection. All laterals shall extend into property line a minimum distance of ten (10) feet and the minimum length of any pipe section used shall be five (5) feet. The minimum depth of cover for sewer laterals is three and one-half (3.5) feet.
- b. There shall be a maximum distance of five (5) feet from the foundation wall to the first exterior clean-out with a maximum distance between clean-outs of seventy-five (75) feet. There shall also be a clean-out at any ninety (90) degree bend or any combination of bends in excess of ninety (90) degrees.

4.2.6 Separation

- a. Sewer laterals shall not be installed in the same trench as the water service line unless the water service line is placed on a solid shelf excavated at one side of the common trench. At all times the water service shall be separated from the sewer lateral at least eighteen (18) inches horizontally and eighteen (18) inches vertically above the sewer lateral.
- b. Water services shall separated from sewer laterals by at least five (5) feet horizontally and eighteen (18) inches vertically above the sewer lateral in public rights-of-way.

4.3 FIELD TESTING

4.3.1 Air Pressure Testing

- a. All Sanitary sewer lines and laterals shall be air pressure tested. After the first lift is placed and compacted, the section of sewer line to be tested shall be pressurized to four (4) psi. When the pressure in the line drops to three and one-half (3.5) psi, a time count shall be started. If the pressure in the line drops more than one (1) psi during the time period prescribed in ASTM C924, the line shall not be accepted.

- b. Any other method of leak testing must have the approval of the City. Storm drain lines need not be tested unless specifically required by the City.

**CHAPTER 5
CONCRETE CURB, GUTTER AND SIDEWALK**

5.1 MATERIALS

5.1.1 General

- a. All concrete shall conform to the requirements of these Standards. Under no circumstances shall the water cement ratio exceed 0.53 or six (6) gallons of water per bag of cement. The slump shall not exceed the tolerances specified in these Standards.
- b. All forms shall be made from steel except at curves with a radius smaller than 200 feet. They shall be of a size to match the sections shown on the plans. Forms shall be held firmly in place with stakes or other approved means and shall be true to line and grade. Forms for curved sections shall be so constructed and placed that the finish surface of walls and edge of sidewalks, curbs and gutters will not deviate from the arc of the curve.

5.1.2 Subgrade

- a. See Chapter 2 - Earthwork

5.2 INSTALLATION

5.2.1 Subgrade Preparation

- a. The developer/contractor shall construct subgrade to the lines and grades approved by the City. The subgrade shall be properly shaped to conform with the approved cross section and grade and placed and compacted to meet the densities specified in these Standards.
- b. Placement of concrete on unsuitable materials shall not be permitted.
- c. Subgrade preparation shall extend three (3) feet beyond back of sidewalk. The elevation of subgrade preparation shall be not lower than the bottom of the back of walk.

5.2.2 Joints

- a. Contraction joints shall be constructed at a minimum of every eight (8) feet by using steel templates one-eighth (1/8) inch in thickness. The templates shall be removed as soon as concrete has set sufficiently to hold its shape. Expansion joints shall be constructed at a minimum of forty (40) feet. Joints in the curb, gutter, and sidewalk shall coincide when the sidewalk is placed adjacent to the curb and gutter.

- b. At the end of each day's concrete placement, or when work is terminated, or when a delay of more than thirty (30) minutes occurs, the joint shall be made vertical and square ended. In no case shall the day's concrete placement be terminated at a driveway.

5.2.3 Finished Surfaces

- a. All exposed surfaces of the concrete shall be accurately screened to grade, then float finished, edged, and lightly broom finished. Finishing shall be delayed until concrete has reached its initial set and has stopped bleeding. Excessive floating or finishing of concrete surfaces shall not be permitted. The addition of dry cement or water to the newly placed concrete surface shall not be allowed.

5.2.4 Curing

- a. Immediately after final finishing, all surfaces that are exposed to the air shall be coated with curing compound. The compound used shall be a chlorinated rubber type conforming to ASTM C309, Type 1, red pigment that can be readily seen by the City. The compound shall be applied in accordance with the manufacturer's recommendations.
- b. The developer/contractor shall be responsible to bring the earth grade to within plus or minus one (1) inch of the top back of walk. This grade shall be maintained for a distance of three (3) feet from back of walk.

5.2.5 Removal or Repair of Sidewalk

When concrete is honeycombed, damaged, improperly cured or otherwise defective, the developer/contractor shall remove and replace the structure or structural member containing the defective area. A licensed and qualified contractor is required to take out a no-charge permit to replace any concrete in a City right-of-way. Any damage to adjoining walk shall also be replaced. The City will determine the required extent of removal, replacement or repair. No less than a five (5) foot section of concrete shall be replaced. Prior to starting repair work, the developer/contractor shall obtain the City's approval of its plan for the repair. The developer/contractor shall erect and maintain suitable barriers to protect the finished surface. Any section damaged from traffic or other causes occurring prior to its official acceptance, shall be repaired or replaced by the developer/contractor at its own expense in a manner satisfactory to the City. Failure to comply with specified tolerances may be cause for rejection.

5.2.6 American Disabilities Accessibility Standards in Public Street Rights-of-Way

- a. American Disabilities Accessibility Standards are to be applied during the design, construction, and alteration of street construction or public buildings. The construction of curb ramps shall conform to these Standards.

- b. Curb ramps complying with shall be provided wherever an accessible route crosses a curb. Longitudinal slopes of curb ramps shall be constructed with the least slope possible. The maximum slope of a ramp in new construction shall be one (1) horizontal to twelve (12) vertical. The maximum rise for any run shall be thirty (30) inches. Transitions from ramps to walks, gutters, or streets shall be flush and free from abrupt changes. Maximum slopes of adjoining gutters, road surface immediately adjacent to the curb ramp, or accessible route shall not exceed one (1) horizontal to twenty (20) vertical.
- c. The minimum width of a curb ramp shall be thirty-six (36) inches, exclusive of flared sides.
- d. The surface of curb ramps shall be stable, firm, and slip resistant.
- e. If a curb ramp is located where pedestrians must walk across the ramp, or where it is not protected by hand rails or guardrails, it shall have flared sides; the maximum slope of the flare shall be one (1) horizontal to twelve (12) vertical. Curb ramps with returned curbs may be used where pedestrians would not normally walk across the ramp.
- f. Built-up curb ramps shall be located so that they do not project into vehicular traffic lanes.
- g. Curb ramps shall be located or protected to prevent their obstruction by parked vehicles.
- h. Curb ramps at marked crossings shall be wholly contained within the markings, excluding any flared sides.
- i. If diagonal (corner type) curb ramps have returned curbs or other well-defined edges, such edges shall be parallel to the direction of pedestrian flow. The bottom of diagonal curb ramps shall have a minimum of forty-eight (48) inches of clear space. If diagonal curb ramps are provided at marked crossings, the forty-eight (48)-inch clear space shall be within the markings. If diagonal curb ramps have flared sides, they shall also have at least a twenty-four (24)-inch long segment of straight curb located on each side of the curb ramp and within the marked crossing.
- j. Any raised islands in crossing shall be cut through level with the street or have curb ramps at both sides of a level area forty-eight (48) inches long between the curb ramp in the part of the island intersected by the crossings.
- k. Detectable warnings shall consist of a rough-broom concrete finish. The area of the ramp and flared sides shall be a visually contrasting surface. The City will determine on a case by case basis how the surface should be contrasted.

CHAPTER 6
ASPHALT PAVING AND GRANULAR BASE COURSE

6.1 MATERIALS

6.1.1 General

- a. Use locally available materials and gradations which exhibit a satisfactory record of previous installations.

6.1.2 Base Course Aggregate

- a. Granular base for all street pavements shall consist of select materials, either natural or crushed, meeting specifications of Section 704 - Base Aggregates, State Of Nevada Specifications For Road And Bridge Construction, latest edition. The City must approve the thickness of all granular base courses.
- b. See Chapter 2 – Earthwork.

6.1.3 Surface Course Aggregate

- a. Bituminous surface course shall be in accordance with Section 402 - Bituminous Surface Course of the State Of Nevada Standards Specifications For Road And Bridge Construction, latest edition. One-half (1/2) inch maximum gradation shall be used.

6.1.4 Asphalt Cement

- a. Comply with ASTM D-3381.

6.1.5 Asphalt-Aggregate Mixtures

- a. 1/2 Inch Gradation Mix: the material shall be uniformly graded and meet the following gradation requirements.

<u>Sieve Size</u>	<u>1" Maximum</u>
1/2"	100
No. 4	55-85
No. 16	24-38
No. 50	9-21
No. 200	4-8

- b. 3/4 Inch Gradation Mix: the material shall be uniformly graded and meet the following gradation requirements.

<u>Sieve Size</u>	<u>1" Maximum</u>
3/4"	100
3/8"	69-91
No. 4	42-58
No. 16	17-31
No. 50	9-21
No. 200	4-8

- c. Aggregate shall have a percentage of wear not to exceed fifty (50) when tested in accordance with ASTM C-131. This requirement shall be used only in determining the suitability of the aggregate source and shall not be used for routine control testing.
- d. Crushed blast furnace slag, if used, shall be uniform in density and quality and have a rodded weight of not less than seventy-five (75) pounds per cubic foot when tested in accordance with ASTM C-29. Open-hearth slag will not be permitted for use as granular base course.

6.2 INSTALLATION

6.2.1 Surface Preparation

- a. Place asphalt on prepared base of compacted base course aggregate. Base shall be inspected, tested, and approved by the City prior to placing asphalt.
- b. Bituminous Seal Coat: shall conform to Section 407 - of the State Of Nevada Standard Specification For Road And Bridge Construction, latest edition. AC-10 or AC-20 bituminous material shall be used. Seal coats shall be used only if specifically called for on the plans or specified in writing by the City.
- c. Bituminous Prime and Tack Coats: shall conform to Section 405 and 406 respectively of the State Of Nevada Standard Specifications For Road And Bridge Construction, latest edition. Tack coats shall be applied to the edges of existing asphalt when new asphalt is placed adjacent to or when new asphalt is placed over old asphalt, or new concrete curb.

6.2.2 Placing Asphalt Concrete Mix

- a. A self-propelled lay down machine shall be used on all City streets. A box type lay down machine may be used on strip paving, patches, and areas where the self-propelled type lay down machine cannot be used as determined by the City.
- b. Make joints between old and new pavements or between successive days' work to ensure continuous bond between adjoining work. Construct joints to have same texture, density and smoothness. Clean contact surfaces and apply tack coat.

- c. No asphalt shall be placed when the ambient air temperature is less than forty degrees (40) F. No asphalt shall be placed when there are any frozen materials in the subgrade or the granular base course. Asphalt shall not be placed during rainy weather, when the road is wet, or during other adverse weather conditions. At the time of delivery to the site of the work, the temperature of the asphalt shall not be lower than two hundred sixty degrees (260) F. Compaction shall be complete before the temperature of the asphalt drops below one hundred eighty degrees (180) F. If the asphalt temperature drops below one hundred eighty degrees (180) F, asphalt placement shall be halted.

- d. Trenches cut during winter months or when asphalt plants are not operating shall be patched the same day of the cut with a good quality cold mix and maintained until asphalt plants open. When the asphalt plants open, the cold patch shall be removed and a new patch of hot mix asphalt shall be placed within twenty (20) days of plant opening.

6.2.3 Field Quality Control

- a. Thickness: A minimum of two and one-half (2 1/2) inches of asphalt is required unless otherwise specified by the City.

- b. Surface Smoothness: Test finished surface of each asphalt concrete course for smoothness, using 10-foot straightedge applied parallel with, and at right angles to centerline of paved area. Surfaces will not be acceptable if exceeding the tolerance of 3/8" for smoothness.

Check surface areas at intervals as directed by the City.

- c. Asphalt Content: Samples of the bituminous pavement mixture will be collected from the roadway and tested for both gradation and asphalt content. If the samples differ from the mix design submitted for approval by the OWNER and ENGINEER, the actual mix design (as determined from the sample) will be evaluated. If the in-place mix is found to be unacceptable, a plant mix seal coat will be required. The plant mix seal coat and tack coat will be installed at no additional cost to the Owner.

**CHAPTER 7
PORTLAND CEMENT CONCRETE**

7.1 MATERIALS

7.1.1 Portland Cement Concrete

- a. Portland Cement shall conform to the requirements of ASTM C-150. Type II cement shall be used unless otherwise specified.
- b. Water shall be clean and free from damaging amounts of oil, salt, acid, alkali, organic matter, or other deleterious substances and shall meet the requirements of ACI 318-77.
- c. Aggregates shall conform to the requirements of ASTM C-33 and shall be well graded and free from substances that are chemically active relative to hydrated cement.
- d. Coarse aggregate shall consist of clean, hard, and durable particles of a mixture of crushed and natural aggregate and shall be well graded to produce as dense a mixture as practical. Deleterious substances in the aggregate shall be limited as follows:

<u>Deleterious Substance</u>	<u>Percent by Weight</u>
Soft Fragments	3.0
Coal Lumps	1.0
Clay Lumps	0.5
Material passing #100 sieve	1.5
Organic Material	0.1
. Total for any or all of above	3.0

- e. Abrasion loss, as determined by the Los Angeles Abrasion Test, shall not be more than forty percent (40%) by weight.
- f. Loss on exposure to five cycles of the Sodium Sulfate Soundness Test shall not be more than eight percent by weight.
- g. The maximum size of aggregate to be used shall not exceed one and one-half (1- 1/2) inches in terms of the size definition contained in ASTM Standards, except that the maximum size shall not exceed:

- 1/5 of the narrowest dimension between the sides of forms
- 1/3 of the depth of slabs
- 3/4 of the minimum clear spacing between individual reinforcing bars, wires, bundles of bars, and pre-stressing tendons and ducts

- h. Fine aggregate shall consist of clean, hard, and durable particles of a mixture of crushed and natural aggregate and shall be well graded to produce as dense a mixture as practical. Deleterious substances in the aggregate shall be limited as follows:

<u>Deleterious Substance</u>	<u>Percent by Weight</u>
Soft Fragments	3.0
Coal	1.0
Material passing #200 sieve	3.0
Micaceous or Flaky Particles	3.0
· Total for any or all of above	5.0

- i. Performance of the Organic or Color-metric test using sodium hydroxide shall result in a color that is lighter than Number 2.
- j. Unless otherwise specified in these Standards, unreinforced concrete flat work shall have a slump range of 1 to 3 inches, reinforced concrete shall have a slump range of 2 to 4 inches unless super plasticized, and mass concrete shall have a slump range of 2 to 6 inches.

7.1.2 Additives and Admixtures

- a. Air-Entraining Admixtures shall conform to "Specifications for Chemical Admixtures to Concrete," ASTM C494. Admixtures containing chloride ions shall not be used in pre-stressed concrete or in concrete containing embedded aluminum or galvanized accessories.
- b. The City must approve any use of calcium chloride. In no case shall more than two (2) percent of calcium chloride be used. In no case shall calcium chloride be used in any reinforced slab.
- c. The City must approve any use of fly-ash or other pozzolans. Pozzolans shall conform to the requirements of ASTM C618. In no case shall more than fifteen (15) percent of the Portland Cement be replaced by an equal weight of pozzolans.
- d. Curing compounds shall meet the requirements of ASTM C309. The compound shall be applied in accordance with the manufacturer's recommendations as soon as possible after final finishing. Transparent curing compounds shall consist of a liquid that is free from suspended matter at the time of application and shall be sufficiently low in viscosity to result in an even, uniform coating when applied by spraying. The compound shall be sufficiently transparent and free from permanent color to result in no pronounced change in color from that of the natural concrete at the conclusion of the curing period. However, the compound shall contain a red pigment dye, conforming to the requirements of ASTM C309 1-0 Class B, sufficient to render the film distinctly visible on the concrete for a period of at least four (4) hours after

application.

7.1.3 Reinforcing Steel

- a. Reinforcing steel shall conform to the requirements of ASTM A615 and shall be of the sizes and grade specified on the plans. Reinforcing steel shall be clean and free from rust, scale, paint, grease or other foreign matter that might prevent or impair the formation of a bond with the concrete.
- b. Steel welded wire fabric shall conform to the requirements of ASTM A185 and shall be of the sizes and grade specified on the plans. Welded wire fabric shall be clean and free from rust, scale, paint, grease, or other foreign matter that might prevent or impair the formation of a bond with the concrete.
- c. Reinforcing steel shall be cut and bent per the requirements of ACI 315 and shall not be bent, heated or straightened in a manner that will injure the material. Reinforcing steel with kinks, cracks, or improper bends will be rejected.
- d. All epoxy coated reinforcing steel shall be coated according to ASTM A-775. Only those bars required by the approved plans shall be coated. All bent bars shall be coated after bending. Epoxy coated bars that are to be cut in the field shall be either sawed or sheared but shall not be torch-cut. The sawed or sheared end and all other damaged coating shall be repaired using a specified patching or repair material approved by the manufacturer for epoxy coating repair.

7.1.4 Accessories

- a. Preformed expansion joint filler shall conform to the requirements of ASTM D-1752 or ASTM D-994.

7.2 CONCRETE MIX DESIGN

7.2.1 Strength Requirements

- a. Unless otherwise specified, the minimum compressive strength of concrete at twenty-eight (28) days shall be as follows:

4,000 psi for all reinforced concrete

3,500 psi for all flat work, sidewalks, curbs, gutters, pavements, and unreinforced slabs and footings

2,500 psi for thrust blocks, thrust anchors, and mass concrete

- b. Rejection of concrete on the basis of strength shall be considered if the average of any three consecutive compressive strength tests is below the required value or if any

individual compressive strength test is more than 500 psi below the required value.

- c. The City shall require tests or otherwise investigate concrete that fails to meet the strength requirements and may elect to have the concrete replaced at the expense of the developer/contractor. Any investigation of reinforced concrete structures shall conform to the requirements of ACI 318-77 section 4.8.4. Load tests, if required, shall be performed at the expense of the developer/contractor.
- d. Procedures for testing concrete compressive strength shall be in accordance with the requirements of ASTM C31 Method of Making and Curing Concrete Test Specimens in the Field, ASTM C39 Method of Test for Compressive Strength of Cylindrical Concrete Specimens, and ASTM C142 Method of Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.
- e. The proportions of the aggregates shall serve to produce a concrete mixture that will work readily into the corners and angles of the forms and around reinforcement when consolidated, but will not segregate or exclude free water during consolidation.
- f. Prior to placement of concrete, the developer/contractor shall furnish the City with a statement of the proposed materials, mix proportions, and admixtures. The statement shall include evidence that the materials and the proportions will produce concrete conforming to this specification. The materials and proportions so stated shall constitute the job mix. The source and character of aggregates and the type or brand of cement or admixture shall not be changed without approval by the City.
- g. For curb, gutter, sidewalk, and other flat work the water cement ratio shall not exceed 0.53 by weight or six (6) gallons per bag of cement. Only air entraining admixtures shall be allowed for flat work exposed to freezing temperatures when wet, without written approval from the City.
- h. Materials shall be stockpiled and combined by methods that will prevent segregation or contamination of aggregates and to ensure accurate proportioning of the ingredients in the mix.
- i. Cement shall be measured by weight or in bags of 94 pounds each. When cement is measured in bags, no fraction of a bag shall be used unless weighed.
- j. Aggregates shall be measured by weight. Mix proportions shall be based on saturated, surface-dry weights. The batch of each aggregate shall be the required saturated, surface-dry weight plus the weight of the surface moisture it contains.
- k. Water shall be measured by volume or by weight, to within one percent of the total quantity of water required for the batch. No water in excess of the amount specified in the mix design for the job mix shall be added to the concrete.

- l. Admixtures shall be measured within plus or minus three (3) percent.
- m. Concrete shall be uniform and thoroughly mixed when delivered to the work site. Variations in the slump of more than 1 inch within the batch will be considered evidence of inadequate mixing and shall be corrected by increasing mixing time or by other means.
- n. For stationary mixtures, after all cement aggregate and water are in the mixer drum, the mixing time shall not be less than 1 1/2 minutes.
- o. Unless otherwise specified, volumetric batching and continuous mixing at the construction site will be permitted only when approved by the City. The batching and mixing equipment shall conform to the requirements of ASTM C685 and shall be demonstrated prior to the placement of concrete, by tests with the job mix, to produce concrete meeting the specified proportioning and uniformity requirements. Concrete made by this method shall be produced, inspected, and certified in conformance with Sections 6, 7, 8, 13 and 14 of ASTM C685.

7.3 PLACING CONCRETE

7.3.1 Forms

- a. Forms shall be of wood, plywood, steel or other approved material and shall be mortar tight. The forms and associated false work shall be substantial and unyielding and shall be constructed so that the finished concrete will conform to the specified dimensions and contours. Form surfaces shall be clean, smooth, and free from holes, dents, sags or other irregularities. Forms shall be coated with non-staining form oil before being set into place. Care shall be taken to prevent oil from getting on reinforcement or anchors. Reinforcement or anchors shall be clean before placing of concrete.
- b. Metal ties or anchors within the forms shall be equipped with cones, she-bolts, or other devices that permit their removal to a depth of at least one inch without injury to the concrete. Ties designed to break off below the surface of the concrete shall not be used without cones.
- c. All edges that will be exposed to view when the structure is completed shall be chamfered or finished with molding tools.
- d. Forms shall not vary from vertical grade by more than 0.02 feet and from horizontal alignment by more than 0.05 feet. All forms shall have smooth even lines in both the horizontal and vertical plane.

7.3.2 Conveying Concrete

- a. When the air temperature is eighty (80) degrees F or greater, a maximum time of
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45 minutes will be allowed from the time the cement mix is added to the concrete until the concrete mix is discharged from the carrier. When the temperature is less than eighty (80) degrees F, a maximum time of 90 minutes will be allowed from the time the water is added to the concrete mix until the concrete mix is discharged from the carrier. The concrete shall be conveyed from the mixer to the forms as rapidly as practicable by methods that will prevent segregation of the aggregates or loss of mortar. Concrete shall not be dropped more than five feet vertically unless suitable equipment is used to prevent segregation.

- b. Concrete shall not be placed until the subgrade, forms, and steel reinforcement have been inspected and approved by the City.
- c. The concrete shall be initially placed as closely as possible to its final position in the forms and shall be worked into the corners and angles of the forms and around all reinforcement and embedded items in a manner to prevent segregation of aggregates or excessive laitance. Unless otherwise specified, slab concrete shall be placed to the design thickness in one continuous layer. Formed concrete shall be placed in horizontal layers not more than twenty (20) inches thick. Hoppers, chutes, pipes, and concrete pumps shall be used as necessary to prevent splashing of mortar on the forms and reinforcing steel above the layer being placed.
- d. Immediately after the concrete is placed in the forms, it shall be consolidated by spading, hand tamping, or vibration as necessary to insure smooth surfaces and dense concrete. Each layer shall be consolidated to insure a monolithic bond with the preceding layer. If the surface of a layer of concrete in place sets to a degree that it will not flow and merge with the succeeding layer when spaded or vibrated, the developer/contractor shall discontinue placing concrete and shall make a construction joint.
- e. If concrete placement is discontinued before a complete horizontal layer is in place, a vertical bulkhead, at a location approved by the City, shall be used to form the unfinished end of the layer.
- f. No concrete flat work shall be placed or finished in the rain or snow.
- g. In walls and columns, as each lift is completed, the top surfaces shall be immediately and thoroughly protected from any condition that might adversely affect the hardening of the concrete.

7.3.3 Construction, Expansion, and Contraction Joints

- a. Construction joints shall be installed as shown on the drawings. If construction joints, not shown on the drawings are needed, they shall be placed in locations approved by the City.
 - b. Where a feathered edge would be produced at a construction joint, as in the top
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surface of a sloping wall, an insert form shall be used so that the resulting edge thickness on either side of the joint is not less than six (6) inches.

- c. Steel tying and form construction to be accomplished adjacent to newly placed concrete shall not be started until the concrete has cured at least 12 hours. Before new concrete is deposited on or against newly hardened concrete, the forms shall be kept moist for at least one hour prior to placement of the new concrete.
- d. Expansion and contraction joints shall be made only at the locations shown on the drawings.
- e. Exposed concrete edges at expansion and contraction joints shall be carefully tooled or chamfered, and the joints shall be free of mortar and concrete. Joint filler shall be left exposed for its full length with clean and true edges.
- f. Preformed expansion joint filler shall be held firmly in the correct position while the concrete is placed.
- g. When open joints are specified, they shall be constructed by the insertion, and subsequent removal, of a wooden strip, metal plate, or other suitable template in such a manner that the corners of the concrete will not be chipped or broken. The edges of open joints shall be finished with an edging tool prior to removal of the joint strips.

7.3.4 Waterstop

Waterstop shall be held firmly in the correct position while the concrete is placed. Joints in metal waterstop shall be soldered, brazed, or welded. Joints in rubber or plastic waterstop shall be cemented, welded, or vulcanized as recommended by the manufacturer.

7.3.5 Air Content and Consistency

- a. Concrete, that after curing, will be exposed to freezing temperatures while wet shall contain entrained air within the following limits:

<u>Normal Maximum Aggregate Size, in</u>	<u>Total Air Content, % by Volume/cu ft</u>
3/8	6 to 10
1/2	5 to 9
3/4	4 to 8
1-1 1/2	3.5 to 6.5

- b. If the content of entrained air falls below the minimum value set as determined from two or more tests in a batch, the City may reject the concrete.

7.3.6 Rejection Based on Excessive Slump

- a. If the slump measurements are inconsistent with the job mix, the City can reject the concrete if the adequacy of the batch is in question. Inconsistency shall be defined by at least two slump tests, from the same load, falling more than two (2) inches below the job mix slump.
- b. The first slump test will be taken after the first yard of concrete has been placed. If this test fails a second test will be taken immediately after.

7.3.7 Finishing Formed Surfaces

- a. All fins and irregular projections shall be removed from exposed surfaces.
- b. The holes produced by the removal of the form ties, cones, bolts, and she-bolts, shall be cleaned, wetted, and filled with a dry-pack mortar consisting of one part portland cement, three parts sand that will pass a #16 sieve, and water just sufficient to produce a consistency such that the filling is at the point of becoming rubbery when the material is solidly packed.

7.3.8 Finishing Unformed Surfaces

- a. All exposed surfaces of the concrete shall be accurately screened to grade, then float finished, and lightly broom finished, unless otherwise specified. Finishing shall be delayed until concrete has reached its initial set and stopped bleeding. Excessive floating or trowel finishing shall not be permitted.
- b. The addition of dry cement or water to the surface of the screened concrete to expedite finishing shall not be permitted.
- c. Joints and edges on unformed surfaces that will be exposed to view shall be chamfered or finished with molding tools.

7.3.9 Curing

Immediately after final finishing, surfaces that are exposed to the air shall be coated with curing compound.

7.3.10 Removal or Repair of Concrete

- a. When concrete is honeycombed, damaged, improperly cured, or otherwise defective, the developer/contractor shall remove and replace the structure or structural member containing the defective area. The City shall have cause for rejection when the requirements of these Standards are not met.

- b. The developer/contractor shall erect and maintain suitable barriers to protect the finished surface. Any section damaged by traffic or other causes occurring prior to its official acceptance by the developer/contractor at his own expense in a manner satisfactory to the City.

7.3.11 Placing Concrete in Cold Weather

- a. When the ambient temperature is expected to drop below forty (40) degrees F at the time concrete is delivered to the work site, during placement, or at any time during the curing period, the temperature of the concrete at time of placement shall not be less than fifty (50) degrees F nor more than ninety (90) degrees F. The temperature of aggregates and mixing water shall not be more than one hundred (100) degrees F just prior to mixing with the cement.
- b. Concrete structures shall be insulated or housed and heated if the daytime ambient temperature is less than forty (40) degrees F. The temperature of the concrete and air adjacent to the concrete shall be maintained at not less than fifty (50) degrees F or more than ninety (90) degrees F for the duration of the curing period.
- c. The method of insulation shall be by standard concrete insulation blankets or straw. When using straw, the contractor shall install two layers of plastic sheeting with six (6) inches of straw between them. Methods of insulating, housing and heating the structure shall conform to ACI 306 Recommended Practice for Cold Weather Concreting.
- d. When dry heat is used to protect concrete, some means of maintaining an ambient humidity of at least forty (40) percent shall be provided unless the concrete has been coated with curing compound or is covered with an approved impervious material.

7.3.12 Placing Concrete in Hot Weather

- a. When the ambient temperature is expected to rise above ninety (90) degrees F at the time concrete is delivered to the work site, during placement, or for the first twenty-four (24) hours after placement, the contractor shall maintain the temperature of the concrete below ninety (90) degrees F. The methods used shall conform to ACE 605 Recommended Practice for Hot Weather Concreting.
 - b. The concrete shall be placed immediately after mixing. Truck mixing shall be delayed until only enough time remains to finish mixing before the concrete is placed.
 - c. Exposed concrete surfaces that tend to dry or set too rapidly shall be continuously moistened by means of fog sprays or otherwise protected from drying during the time between placement and finishing and curing.
 - d. Finishing of slabs and other exposed surfaces shall be started as soon as the condition of the concrete allows, and completed without delay.
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- e. Concrete surfaces exposed to the air shall be covered as soon as the concrete has hardened sufficiently and shall be kept continuously wet for at least the first 24 hours of the curing period.
- f. Formed surfaces shall be kept completely and continuously wet for the duration of curing period or until curing compound is applied as specified in these Standards.

7.3.13 Inspection and Testing

- a. The City shall have free access to the construction site and batch plant. Proper facilities shall be provided for the City to inspect materials, equipment, and processes and to obtain samples of the concrete. Any inspections and tests performed by the City will be conducted in a manner that will minimize disruptions to the production and delivery of concrete.

CHAPTER 8 WORK SITE TRAFFIC CONTROL

8.1 GENERAL REQUIREMENTS

8.1.1 Purpose

- a. Work site traffic control shall provide for safe and expeditious movement of traffic through construction and maintenance work zones at all times. The developer/contractor and other utilities (hereinafter referred to as work agencies) shall provide and maintain all construction signs, barricades, warning lights, flagmen or uniformed law enforcement officers required for the proper protection, direction, and traffic control within the construction or maintenance work zone
- b. Traffic control devices and methods shall serve to protect the motoring public, protect the work force, provide a safe and expeditious flow of traffic, provide for efficient and safe construction and maintenance operations, and maintain good public relations.

8.1.2 Standards and Requirements

The requirements, standards, and methods of application shall conform to the Manual on Uniform Traffic Control Devices (MUTCD). Typical situations, indicating the proper application of approved devices to control traffic through construction and maintenance areas, are illustrated in the MUTCD. The application of these devices to other circumstances shall be handled in a manner consistent with the MUTCD. Reference to the MUTCD shall include the revisions adopted by the State of Nevada Department of Transportation.

8.1.3 Permission to Restrict Traffic on City Streets

- a. All work agencies and persons must obtain authorization or in some cases a permit for partial or complete closure of any public right-of-way, street, or sidewalk within the City of West Wendover. All requests to restrict right-of-way will be directed to the City. Requests that require partial or complete closure of any City street or sidewalk, detouring or rerouting of pedestrian traffic, or other similar public impacts shall include a Traffic Control Plan that must be approved by the City. The City can require a Traffic Control Plan for any project that impacts a City street, right-of-way, or sidewalk.
- b. The Traffic Control Plan (TCP) may range in complexity from, use of the typical illustrations in the MUTCD, to a detailed site plan displaying signing, barricading, material delivery areas, construction office, utility poles, staging areas, and construction phasing. In all cases the TCP must address satisfactorily all of the requirements of the MUTCD for the project. Exceptions to the requirements of the MUTCD must be requested in writing by the applicant, and be approved by the City and shall be added to the TCP.
- c. All permits and TCPs must be kept on the job site.

- d. Street closures of any type will not be permitted without advance notice, except during emergency conditions. The City reserves the right to deny any street closure permit during anytime, when in their judgment, the traffic restriction could result in unbearable congestion or unnecessary accident potential.

8.1.4 General Traffic Control Regulations

- a. The closure of traffic lanes is not permitted during the hours of 7 to 9 a.m. and 4 to 6 p.m. on weekdays.
- b. During Off-peak traffic hours when one traffic lane is restricted at signalized intersections with left-turn lanes, traffic shall be channeled to provide a through lane.
- c. A traffic lane shall not be considered as satisfactorily open to traffic unless it is at least 12 feet wide and is paved with hot mix or cold mix asphalt paving and is surrounded by or adjacent to existing pavement. Where existing pavement has been removed, a traffic lane shall not be considered as satisfactorily open to traffic unless it is graded reasonably smooth and maintained dust free. The major streets shall be patched the same day as work is done and all other streets shall be patched within forty-eight (48) hours.
- d. Local access shall be maintained to all properties on all streets whenever possible. When local access cannot be maintained, the work agency shall notify the affected property owner, resident, or tenant a minimum of twenty-four (24) hours in advance and restore access as soon as possible.
- e. Access to fire stations, police stations, hospitals and schools shall be maintained at all times. When access restrictions are necessary, the work agency shall coordinate such access restrictions with the responsible person in charge of the affected fire station, police station, hospital, or school.
- f. Vehicles that are not essential to the work shall not be permitted to park in the work area that is barricaded or otherwise marked. Vehicles required in the work area shall park down-traffic from the immediate work area. Parking of private vehicles shall be out of the work area and in conformance with parking regulations in the surrounding area. At no time shall the work agency vehicles or equipment impede the traffic lane adjacent to the work site.

CHAPTER 9

DECORATIVE LIGHTING

9.1 GENERAL REQUIREMENTS

9.1.1 Purpose

- a. This section covers the installation of decorative lighting on streets specified by the City as part of the City Center Master Plan and the full length of Wendover Boulevard or as otherwise specified by the City.

9.2 PRODUCTS

9.2.1 Fixture Requirements

The globe shall be made of high impact acrylic, refractive type, utilizing prisms formed both on the outside and inside. The decorative look of the globe shall match exactly to the drawing attached. The manufacture of the globe shall warrant the acrylic used in the globe, not to yellow for 10 years from the date of installation. The decorative top should be made of clear non-yellowing acrylic, incorporating a top specular aluminum shield which, will block all light from going upward when the lamp is lit, and redirect the light downward to the roadway surface. All exposed metal should be painted Black to match the color of the ballast housing and the pole. Standard seeded and frosted acrylic globes are not acceptable. The photometrics of the globe are to be Type 5 and designed to provide a minimum space to mounting height ratio of 12 to one. The fixture must be provided with a snap-on/snap off houseside shield, which can be field installed to customize the installation by the end-user. The fixture shall also have the ability to accept a modular cage in the future, which is a separate decorative component from the rest of the fixture. All the parts above are separate components, and can be replaced as such on a as need basis. The decorative look of the whole assembly will match the drawing attached.

9.2.2 Ballast Housing

The ballast housing shall be made of a die-cast aluminum, and painted to match the rest of the pole components. It shall house a 165 Watt Induction Generator for the upper fixture, and a 85 Watt Induction Generator for the lower fixtures on three lamp poles. Single lamp poles house a 165 Watt Induction Generator only. The housing shall incorporate a twist-off, tool-less entry tray, with electrical quick connects that has the generator, socket, and lamp mounted to it for ease of maintenance. It shall also have a push button tool-less entry side door to easily gain access to the photocell receptacle, or plug-in receptacles that may be installed inside the fixture housing. Where plug-in receptacles are to be used, the fixture door will have a notch with a brush guard for plug-in wire entry. The decorative look of the ballast housing shall match exact to the drawing attached.

9.2.3 Pole Requirements

The pole shall be of an anchor base type, with fluted tapered design. It will be made of fluted steel. The three lamp poles shall be 22 feet in height, Single lamp poles 17 feet in height, and designed to have a 15 EPA rating in a wind zone of 80 MPH with a gust factor of 1.3. Paint pole to match the other painted components on the assembly. The decorative look of the pole shall exactly match the drawing attached. Provide an accessible hand hole in the pole located six inches above the anchor base.

9.2.4 Decorative Base

The decorative look of the base will exactly match the drawings attached. It will be 24" in diameter, and 40" high. It should be made of a high density elastomer material (71 pounds per cubic foot), with a minimum thickness of at least three quarters of an inch. Bases made of ABS plastic, or Cast Aluminum will not be acceptable. Paint the base to match the rest of the assembly.

9.2.5 Plug in Receptacle (Where Specified By City)

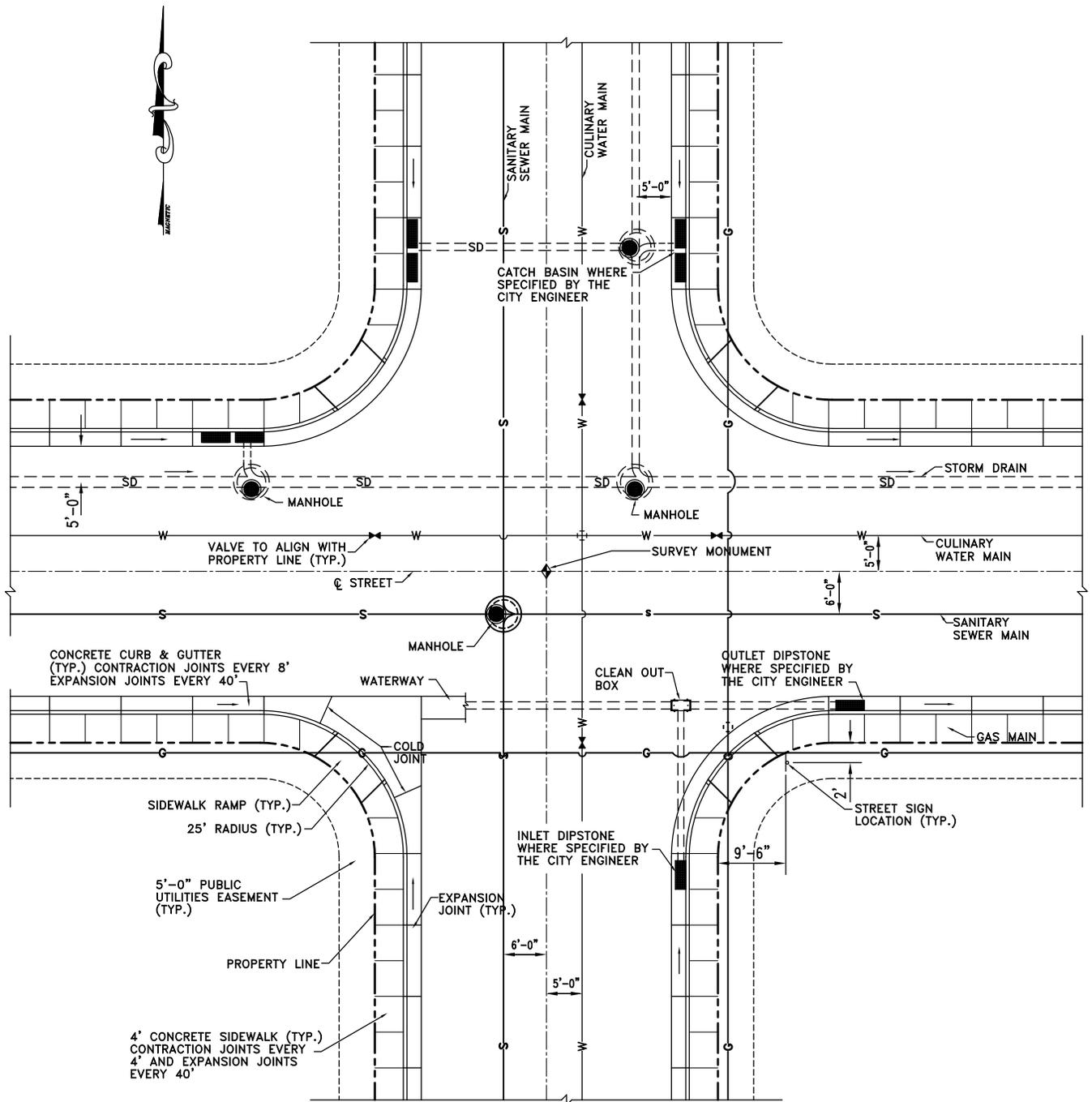
Where specified in the project scope of work provide a plug-in receptacle where noted to be located inside the fixture housing. It will be a 120 Volt duplex GFI receptacle.

9.2.6 Pole Mounting

The pole should be mounted on a concrete base as detailed in the drawings.

APPENDIX A - STANDARD DRAWINGS

PART 1 – ROADWAY



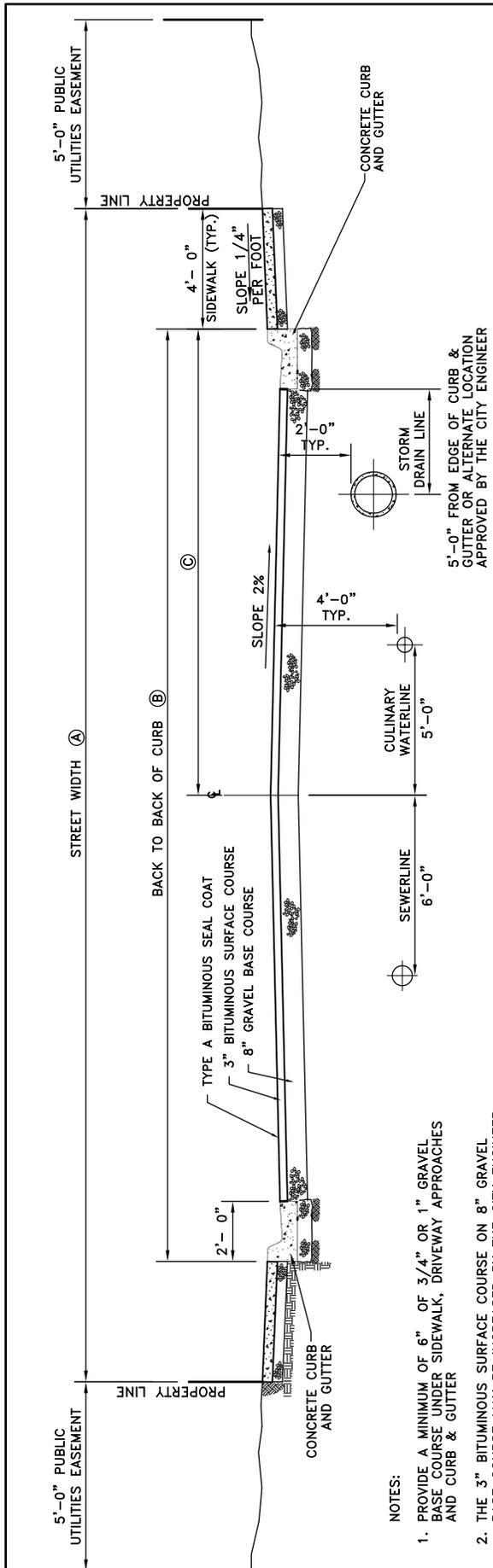
NOTE:
 WATER LINES SHALL BE LOCATED ON THE NORTH AND EAST SIDE OF
 CENTER LINE AND SEWER LINES SHALL BE LOCATED ON THE SOUTH
 AND WEST SIDE OF CENTER LINE



WEST WENDOVER
 1111 NORTH GENE L. JONES WAY
 WEST WENDOVER, NEVADA 89883

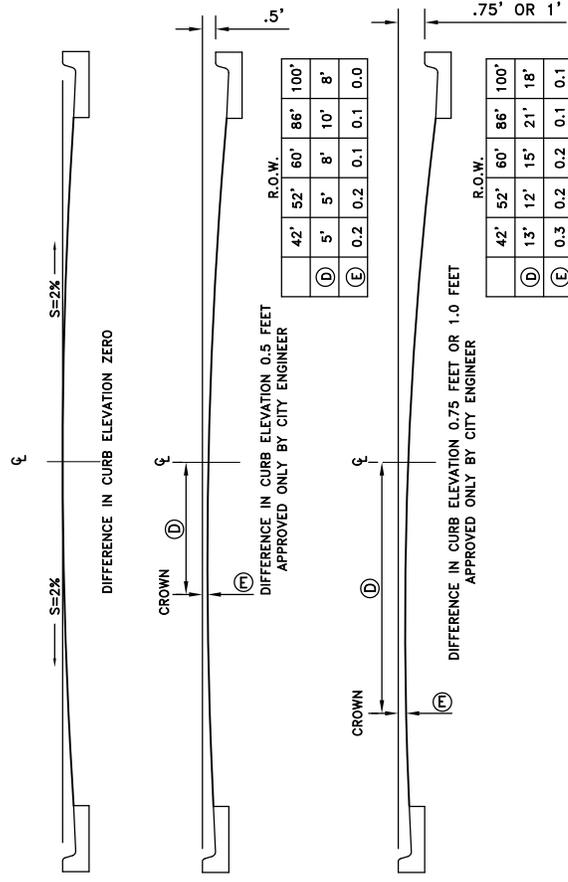
CITY OF WEST WENDOVER
 STANDARD INTERSECTION DETAIL

PLAN NO:
101
 REVISION:
 8/98



STANDARD URBAN ROADWAY SECTION

- NOTES:
1. PROVIDE A MINIMUM OF 6" OF 3/4" OR 1" GRAVEL BASE COURSE UNDER SIDEWALK, DRIVEWAY APPROACHES AND CURB & GUTTER
 2. THE 3" BITUMINOUS SURFACE COURSE ON 8" GRAVEL BASE COURSE MAY BE INCREASED BY THE CITY ENGINEER WHEN THE SUBGRADE C.B.R. IS LESS THAN 10 OR WHEN A GREATER DEPTH IS NECESSARY TO PROVIDE SUFFICIENT STABILITY. DEVELOPER MAY SUBMIT AN ALTERNATIVE PAVEMENT DESIGN BASED ON A DETAILED SOILS ANALYSIS FOR APPROVAL BY THE CITY ENGINEER.
 3. MAXIMUM DIFFERENCE IN ELEVATION BETWEEN CURB ON OPPOSITE SIDE OF STREET SHALL NOT EXCEED 1'-0".
 4. ON ARTERIAL STREETS THE CITY ENGINEER WILL PROVIDE A PAVEMENT DESIGN, LOCATION OF SIDEWALK AND CURB & GUTTER MAY VARY ON INDIVIDUAL ARTERIAL STREETS PER DIRECTION BY THE CITY ENGINEER. WALKS ARE 6' WIDE



STREET DESIGNATION	R.O.W. WIDTH (A)	T.B.C. TO T.B.C. (B)	℄ TO T.B.C. (C)
LANE	42'	34'	17'
RESIDENTIAL	52'	44'	22'
COLLECTOR	60'	52'	26'
ARTERIAL ▲	86'	74'	37'
MAJOR ARTERIAL ▲	100'	90'	45'

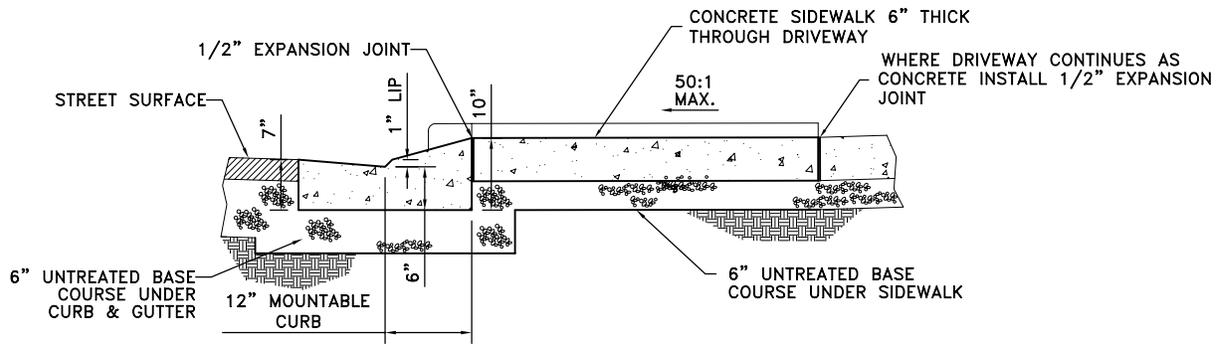
CROWN LOCATIONS FOR VARIOUS CROSS SLOPES



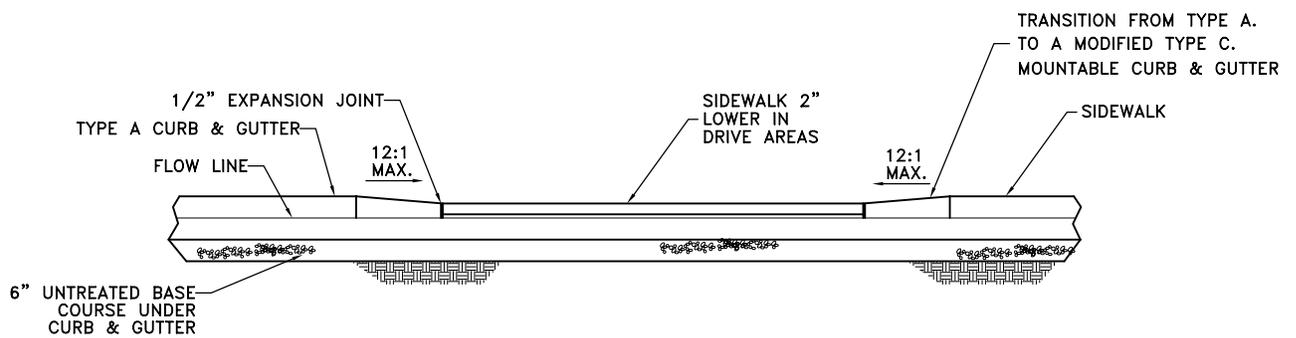
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CITY OF WEST WENDOVER
 URBAN ROADWAY DETAILS

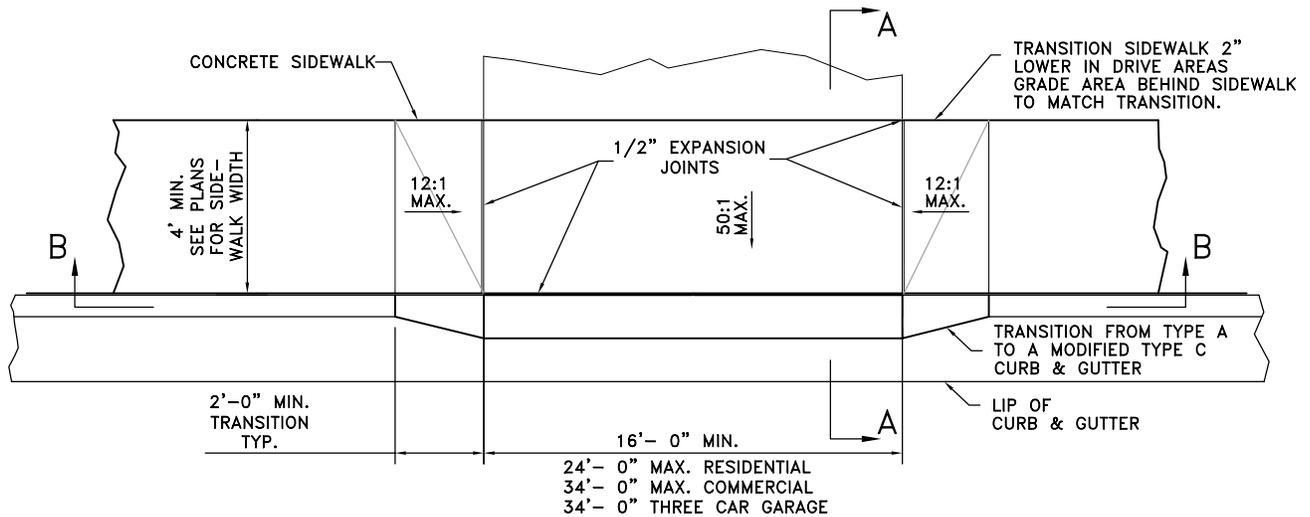
PLAN NO: **102**
 REVISION:
 10/01



SECTION A-A



SECTION B-B



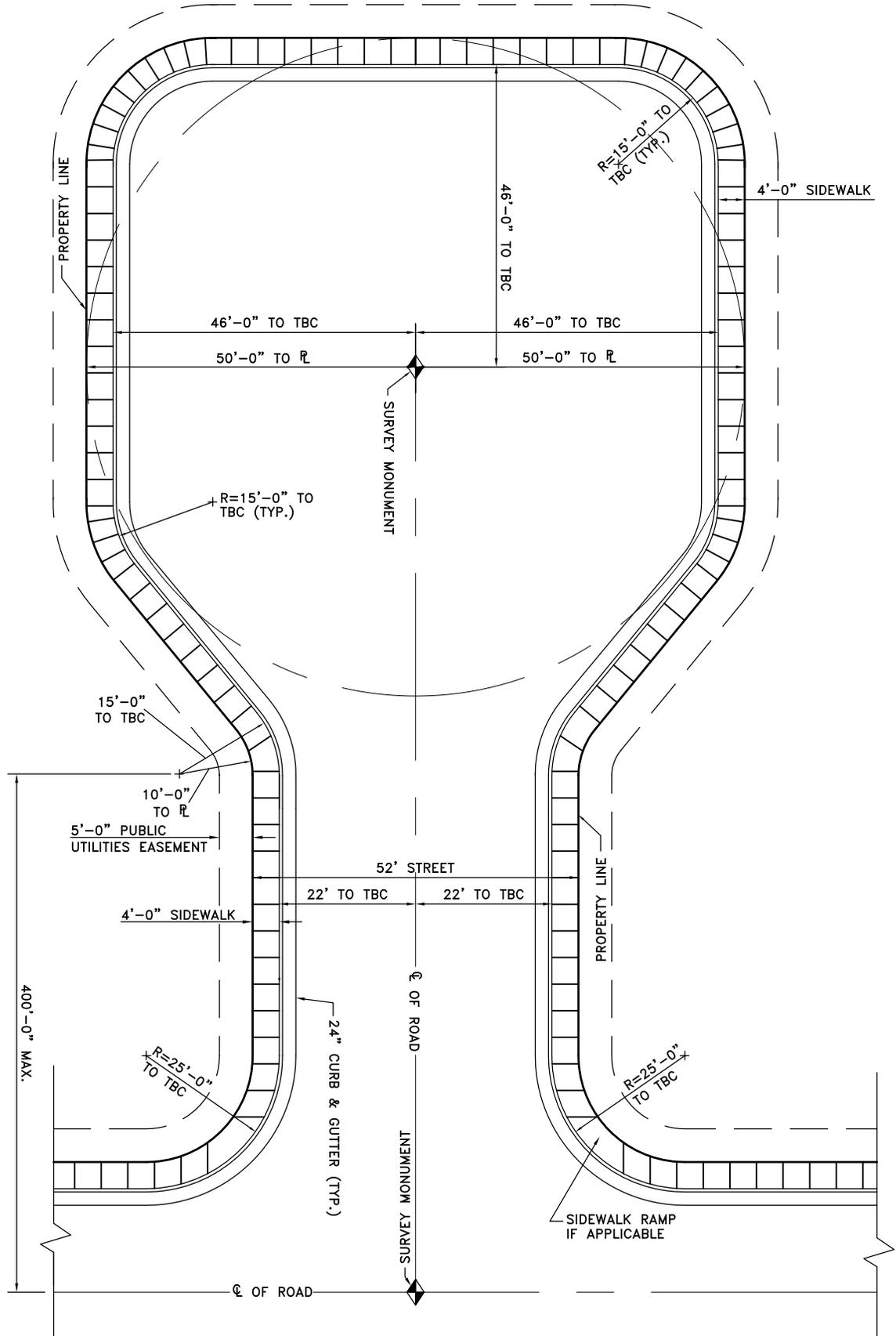
TYPE A DRIVEWAY APPROACH
DROP-DOWN STYLE
FOR MOUNTABLE CURB & GUTTER



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CITY OF WEST WENDOVER
DRIVEWAY APPROACH DETAILS

PLAN NO: **103**
REVISION:
3/09



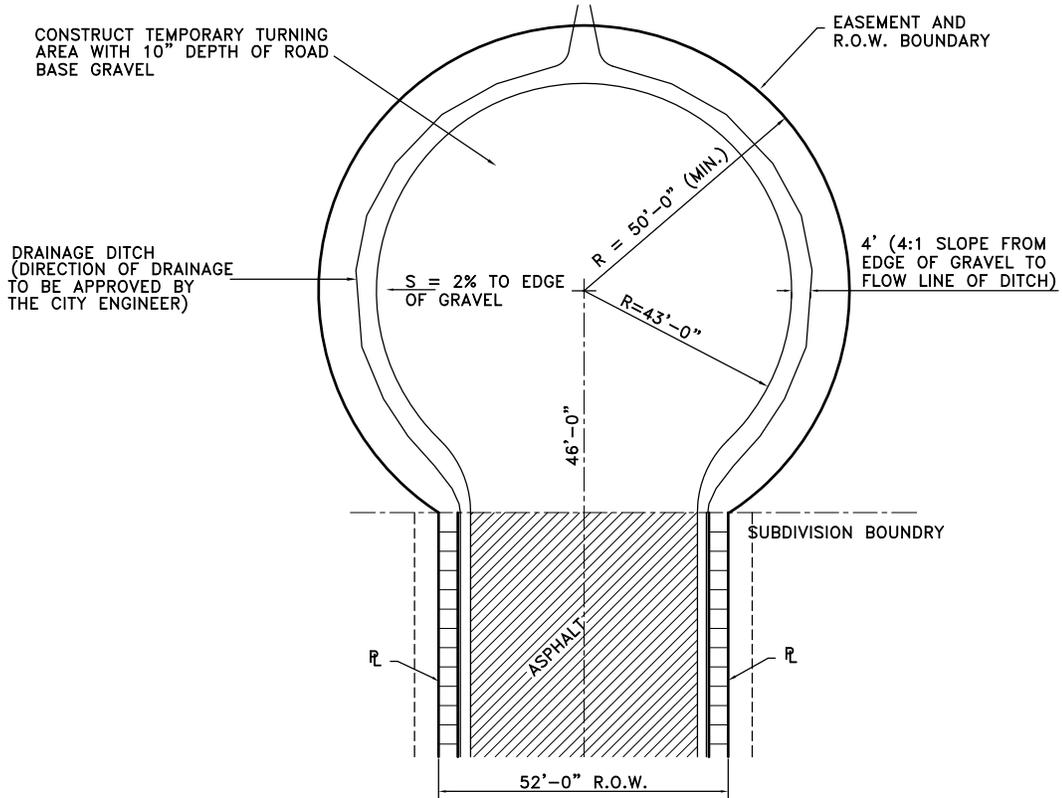
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CITY OF WEST WENDOVER

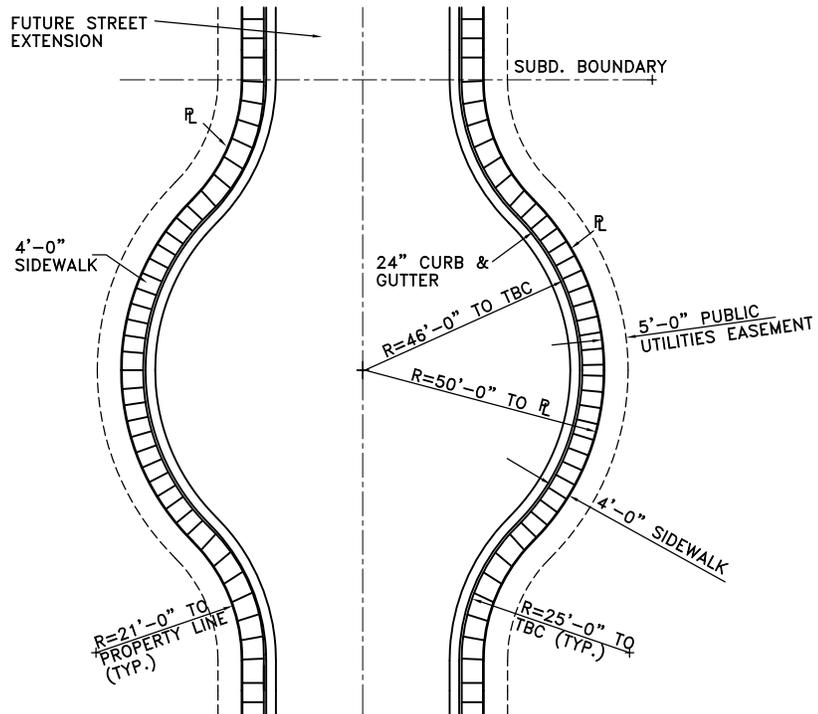
MODIFIED CUL-DE-SAC

PLAN NO: **105**

REVISION: 8/98



TEMPORARY TURNAROUND



PERMANENT STREET BUBBLE

TO BE USED AS A TURNING AREA ON TEMPORARY DEAD END STREET WHEN DISTANCE FROM NEAREST STREET INTERSECTION IS GREATER THAN 400 L.F OR WHERE A TEMPORARY TURNAROUND OUTSIDE OF SUBDIVISION IS NOT POSSIBLE.



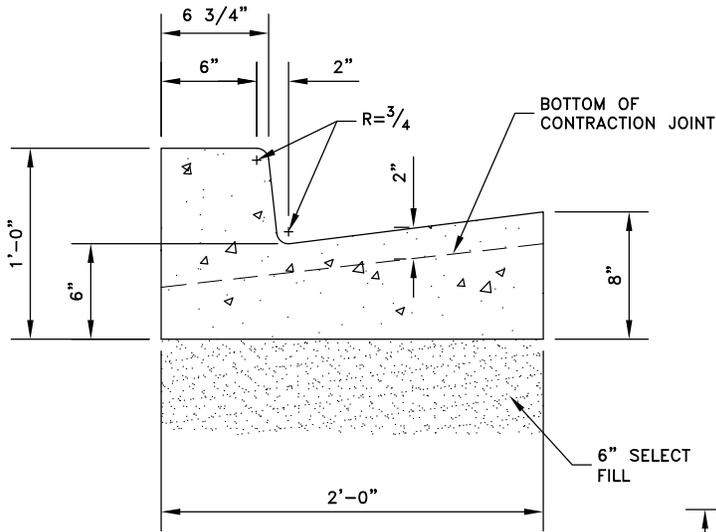
WEST WENDOVER
 1111 NORTH GENE L. JONES WAY
 WEST WENDOVER, NEVADA 89883

CITY OF WEST WENDOVER

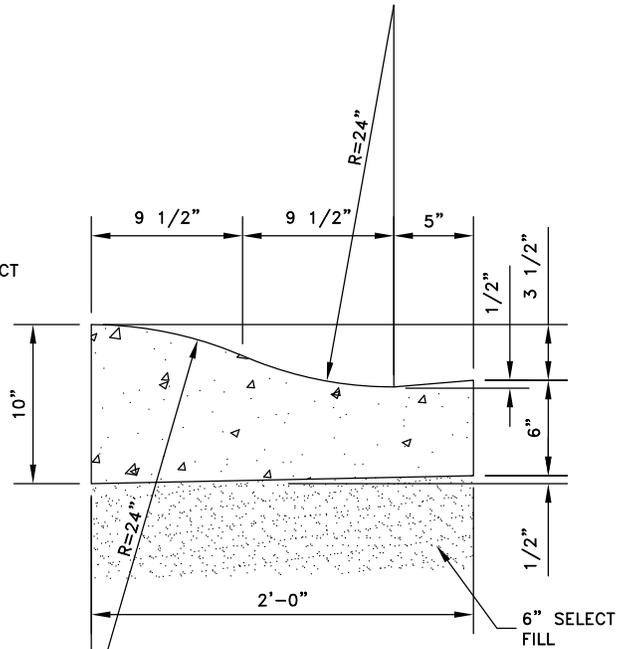
TURNING AREA DETAILS

PLAN NO:
106

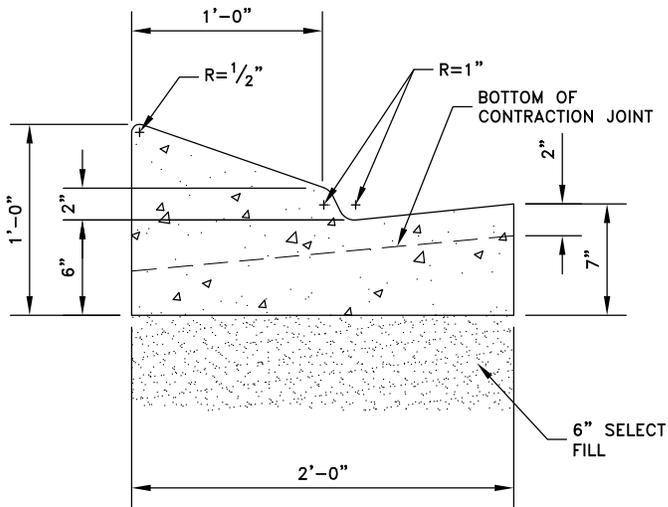
REVISION:
 8/98



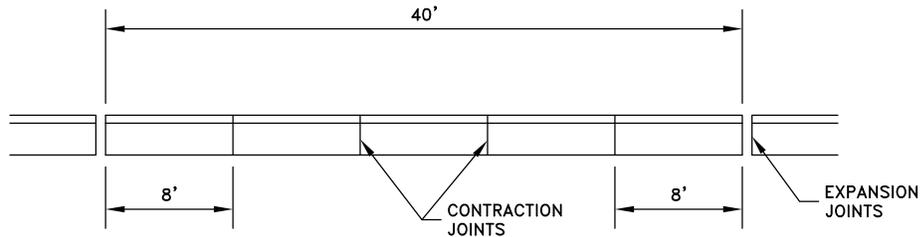
TYPE A
HIGH BACK



TYPE B
ROLL



TYPE C
ROLL



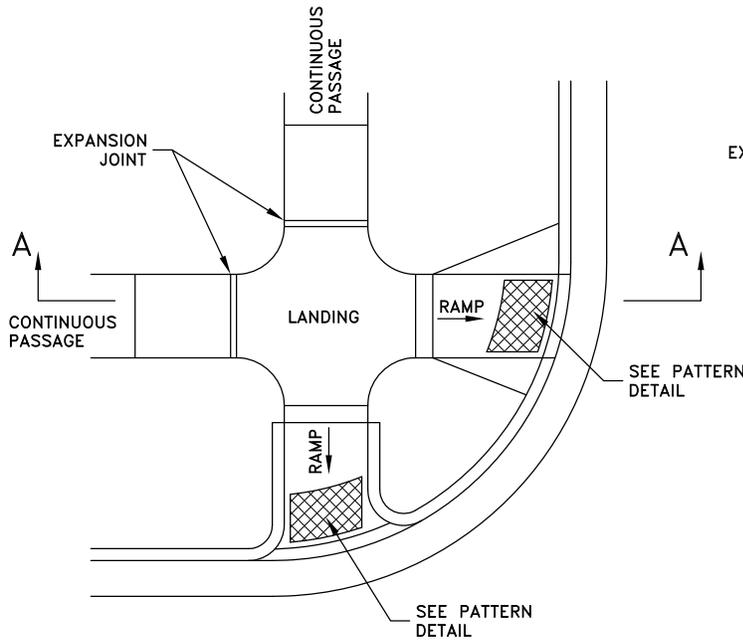
CURB AND GUTTER JOINT DETAIL



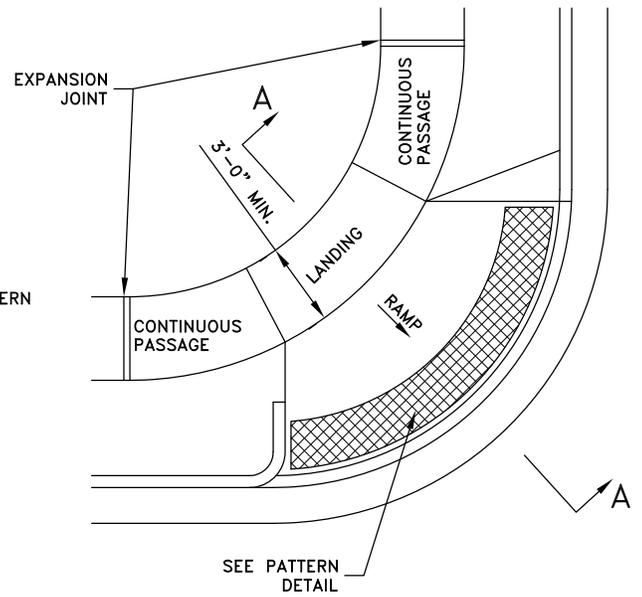
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WEST WENDOVER, NEVADA 89883

CITY OF WEST WENDOVER
CURB AND GUTTER DETAILS

PLAN NO:
107
REVISION:
5/98



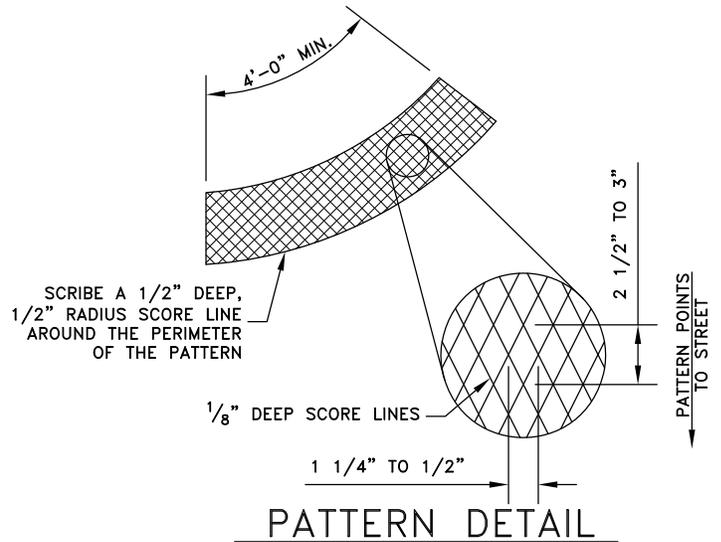
PLAN



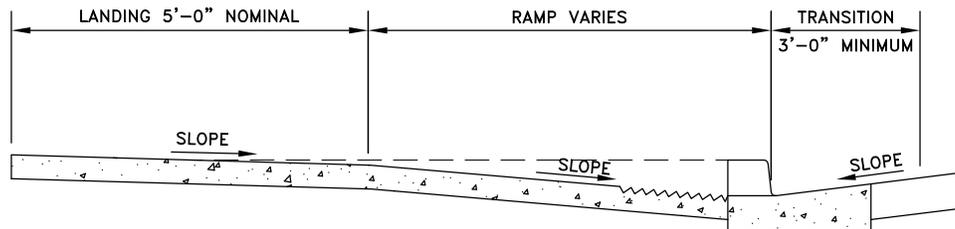
PLAN

TABLE OF MAXIMUM SLOPES		
ELEMENT OF WORK	NEW CONSTRUCTION	MODIFICATIONS
RAMP (a)	1:12 (8.33%)	1:10 (10%) (b)
LANDING	1:50 (2%)	1:25 (4%)
TRANSITION	1:20 (5%)	1:20 (5%)

(a) VARIANCES: GET WRITTEN APPROVAL FROM THE ENGINEER WHEN THE SLOPE IS GREATER THAN SPECIFIED.
 (b) RAMP LENGTH SHALL BE 10'-0" MAXIMUM WHEN THE RAMP SLOPE EXCEEDS 1:12 (8.33%)



PATTERN DETAIL



SECTION A



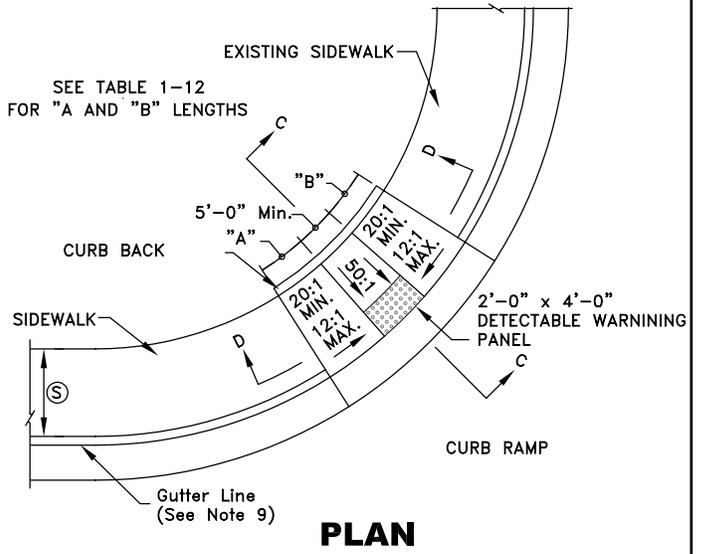
WEST WENDOVER
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 WEST WENDOVER, NEVADA 89883

CITY OF WEST WENDOVER
 SIDEWALK RAMP AT CORNER
 LANDING AT SIDEWALK LEVEL

PLAN NO:
108
 REVISION:
 8/98

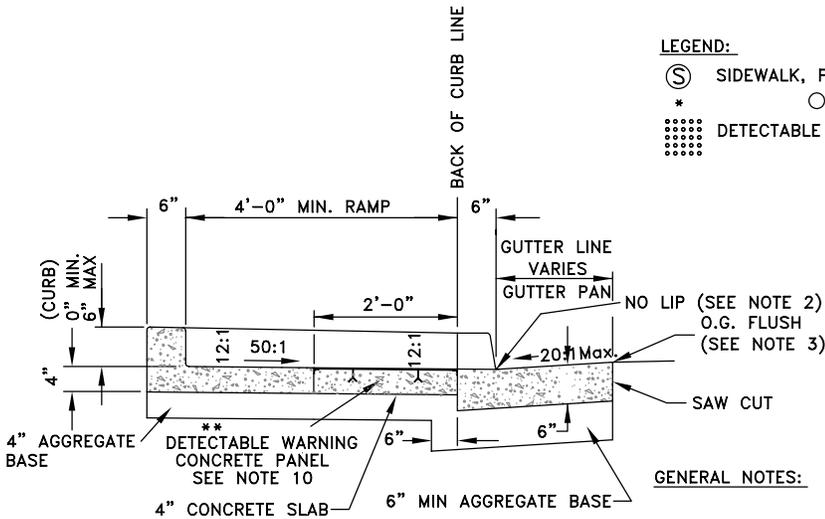
TABLE 1-12
TRANSITION LENGTHS FOR 12:1 SIDE SLOPES

"B" TO "A" GRADE, %	"A" MIN.	"B" MIN.
-6 TO -5.01	4' - 6"	21' - 6"
-5 TO -4.01	4' - 6"	15' - 6"
-4 TO -3.01	4' - 6"	12' - 6"
-3 TO -2.01	5' - 0"	9' - 6"
-2 TO -1.01	5' - 0"	8' - 6"
-1 TO 1	8' - 0"	5' - 0"
1.01 TO 2	9' - 0"	5' - 0"
2.01 TO 3	12' - 0"	4' - 6"
3.01 TO 4	15' - 0"	4' - 6"
4.01 TO 5	21' - 0"	4' - 6"
5.01 TO 6		4' - 6"



LEGEND:

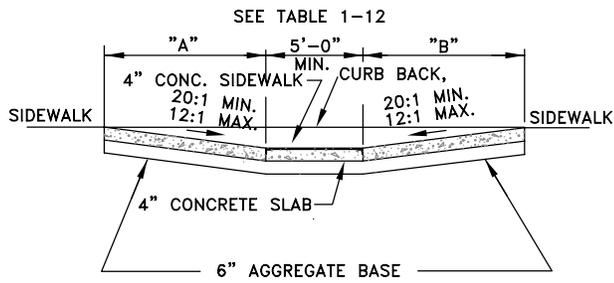
- ⊙ SIDEWALK, PER PROJECT DRAWINGS
- * ○ ○
- ⊞ DETECTABLE WARNING PANEL, SEE NOTE 10.



SECTION C-C W/ BACK CURB

GENERAL NOTES:

1. GRATINGS OR SIMILAR ACCESSES SHALL NOT BE LOCATED IN THE AREA AT THE BASE OF THE CURB RAMP OR LANDING AREA.
2. NO LIP SHALL BE PERMITTED AT THE CURB RAMP SLOPE TO GUTTER PAN. GRINDING SHALL BE 6" MINIMUM PERPENDICULAR TO FLOWLINE FOR RETROFIT.
3. PLANTMIX BITUMINOUS OPEN-GRADED SURFACE SHALL BE FLUSH WITH THE EDGE OF THE GUTTER PAN IN THE AREA OF THE CURB RAMP. GRINDING WIDTH 9" MINIMUM OR 12:1 PLANTMIX BITUMINOUS SURFACE MINIMUM FOR RETROFIT.
4. ROUGH BROOM TEXTURE ON CURB RAMPS AND WINGS. TEXTURE SHALL PROVIDE A VISUAL CONTRAST TO THE SIDEWALK.
5. ALL RAMPS SHALL BE 12:1 OR FLATTER.
6. ALL SLOPE RATES ARE RELATIVE TO LEVEL.
7. IF THERE ARE R/W RESTRICTIONS, SIDEWALK WIDTHS MAY BE REDUCED TO 4'-0" WITH PRIOR APPROVAL PROJECT ENGINEER. IN THESE INSTANCES A 5'-0" X 5'-0" PASSING ZONE IS REQUIRED EVERY 200'-0" PER ADA APPENDIX C, SECTION 4.3.4.
8. CONCRETE SHALL BE CLASS A OR AA.
9. ADJUST FLOWLINE WHEN REQUIRED TO PREVENT PONDING AT THE RAMP AND MAINTAIN POSITIVE DRAINAGE.
10. DETECTABLE WARNING PANNELS SHALL BE ARMOR CAST PRODUCTS COMPANY A6002448RADA-BRICK RED OR EQUAL. DETECTABLE WARNING PANNELS SHALL BE INSTALLED PER MANUFACTURES INSTALLATION GUIDLINES AND CONFORM TO ADAAG (4.29.2) "CONTRAST".



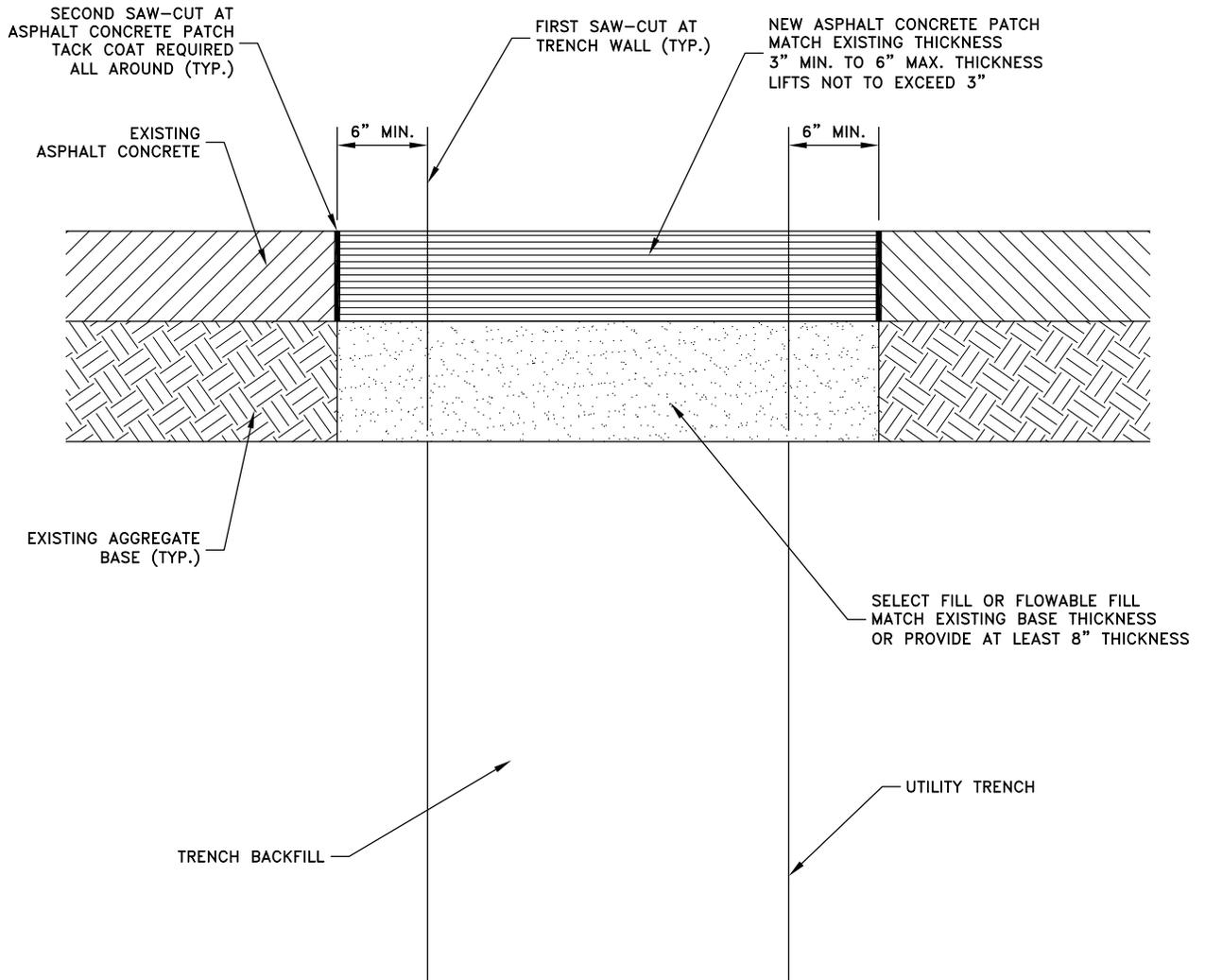
SECTION D-D



WEST WENDOVER
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CITY OF WEST WENDOVER
SIDEWALK CURB RAMP

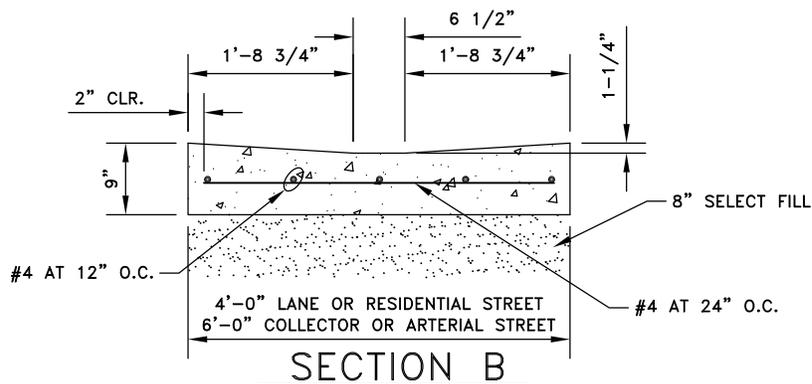
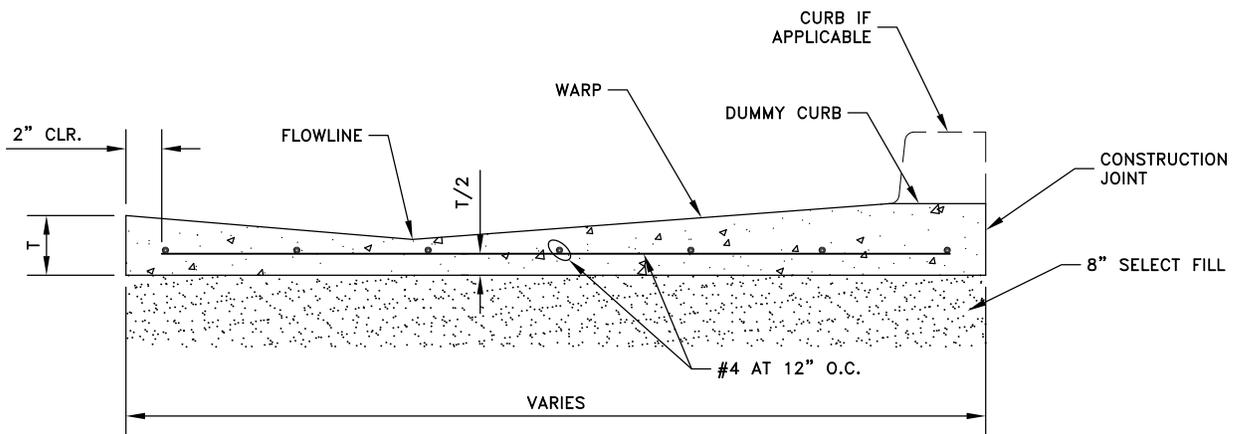
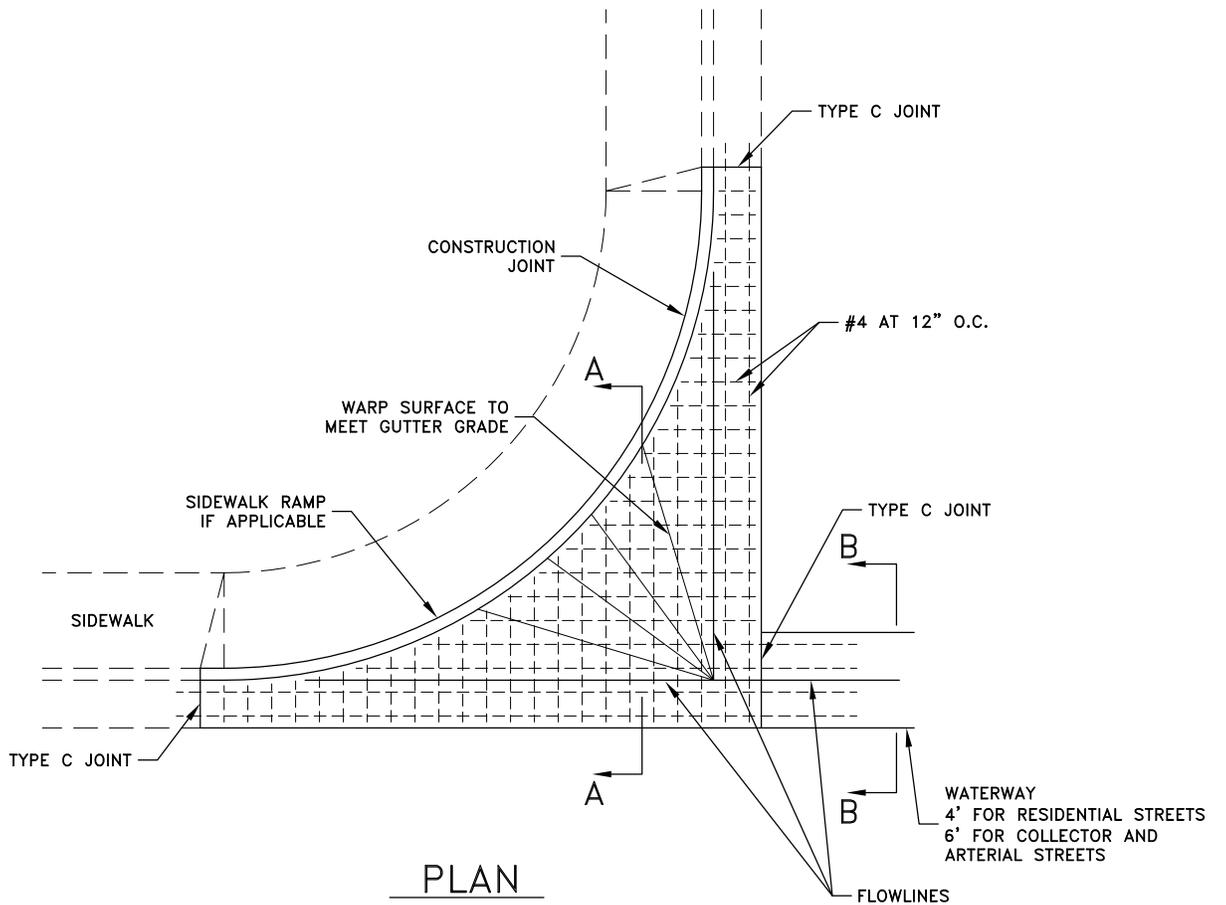
PLAN NO:
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REVISION:
4/09



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CITY OF WEST WENDOVER
 ASPHALT CONCRETE "T" PATCH

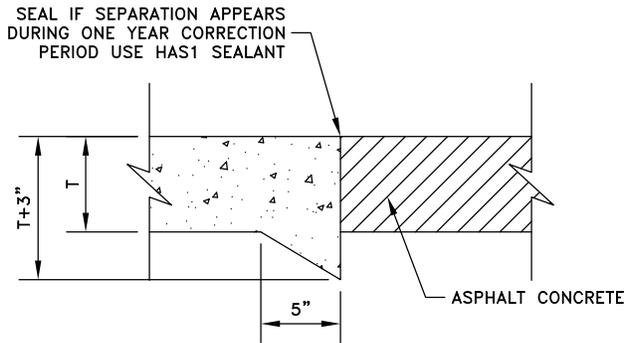
PLAN NO: **110**
 REVISION: 5/98



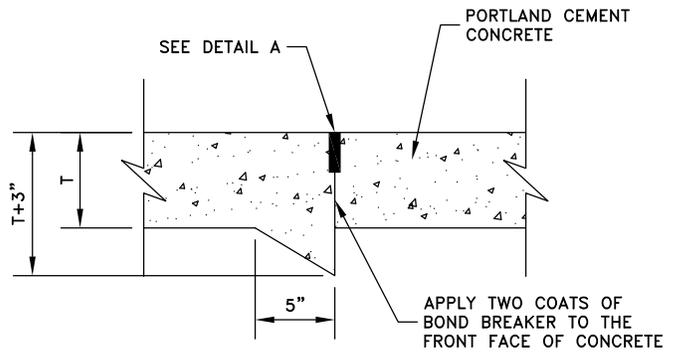
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CITY OF WEST WENDOVER
WATERWAY TRANSITION STRUCTURE

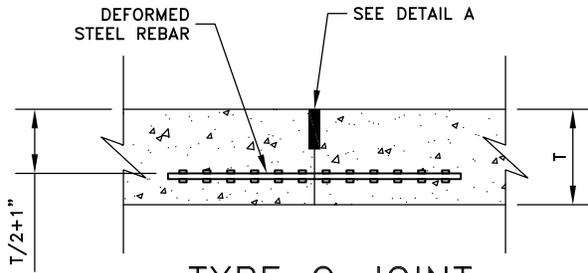
PLAN NO:
111
REVISION:
8/98



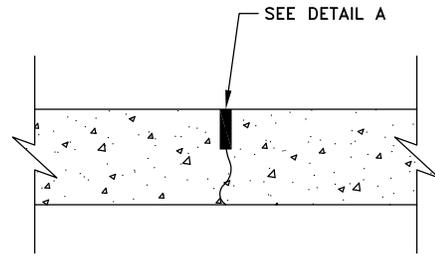
TYPE A JOINT



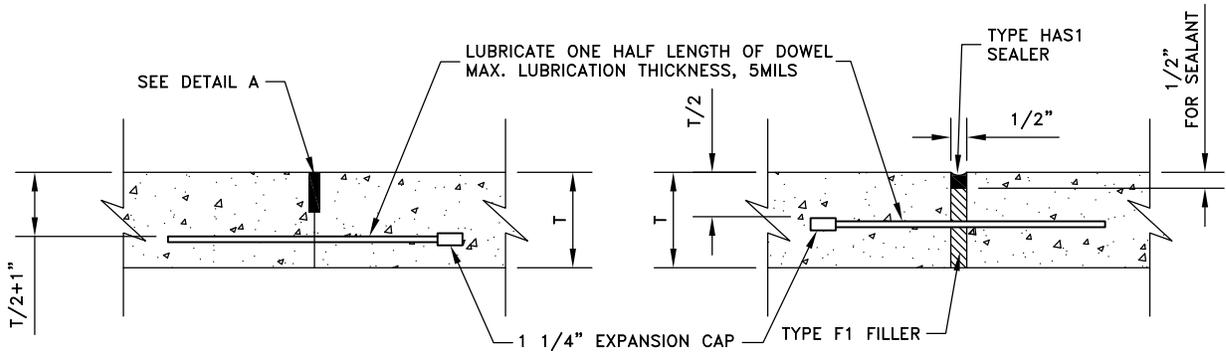
TYPE B JOINT



TYPE C JOINT



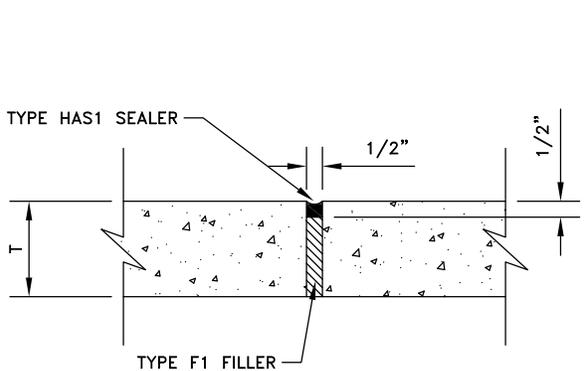
TYPE D JOINT



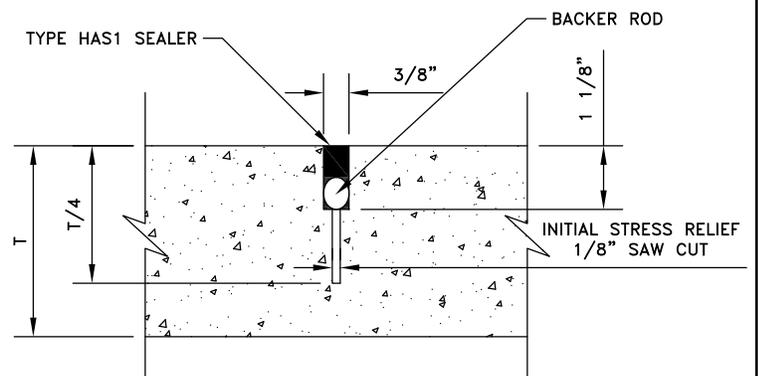
TYPE E JOINT

TYPE F JOINT

TABLE OF DIMENSIONS			
T = SLAB DEPTH IN.	DOWEL DIAMETER IN.	TOTAL DOWEL LENGTH IN.	SPACING
5-8	5/8	14	12" O.C.
9-12	1	18	12" O.C.



TYPE G JOINT



DETAIL A



WEST WENDOVER
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CITY OF WEST WENDOVER
 CONCRETE PAVEMENT JOINTS

PLAN NO:
112
 REVISION:
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1" CHAMFER AT CORNER

1/2" FILLED
EXPANSION JOINT

6"

SIDEWALK

#4 BARS CONTINUOUS
TOP AND BOTTOM

8"

4"

1'-8"

NOTE:

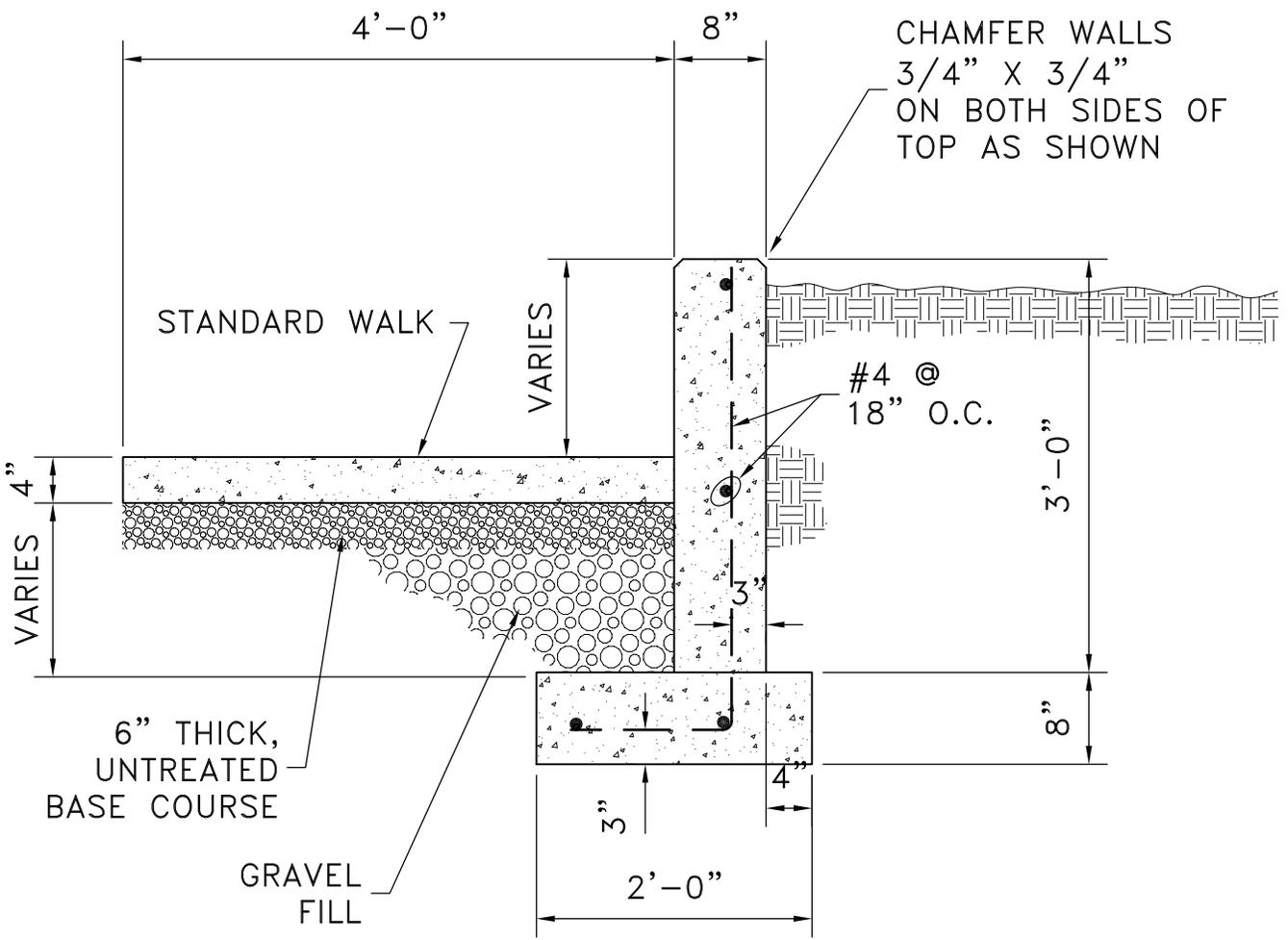
ALL EXPOSED CONCRETE SURFACE
TO HAVE RUBBED FINISH.



WEST WENDOVER
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WEST WENDOVER, NEVADA 89883

CITY OF WEST WENDOVER
REINFORCED CONCRETE CURB WALL

PLAN NO:
113
REVISION:
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CHAMFER WALLS
 3/4" X 3/4"
 ON BOTH SIDES OF
 TOP AS SHOWN

STANDARD WALK

VARIES

#4 @
 18" O.C.

VARIES
 4"

6" THICK,
 UNTREATED
 BASE COURSE

GRAVEL
 FILL

NOTES:

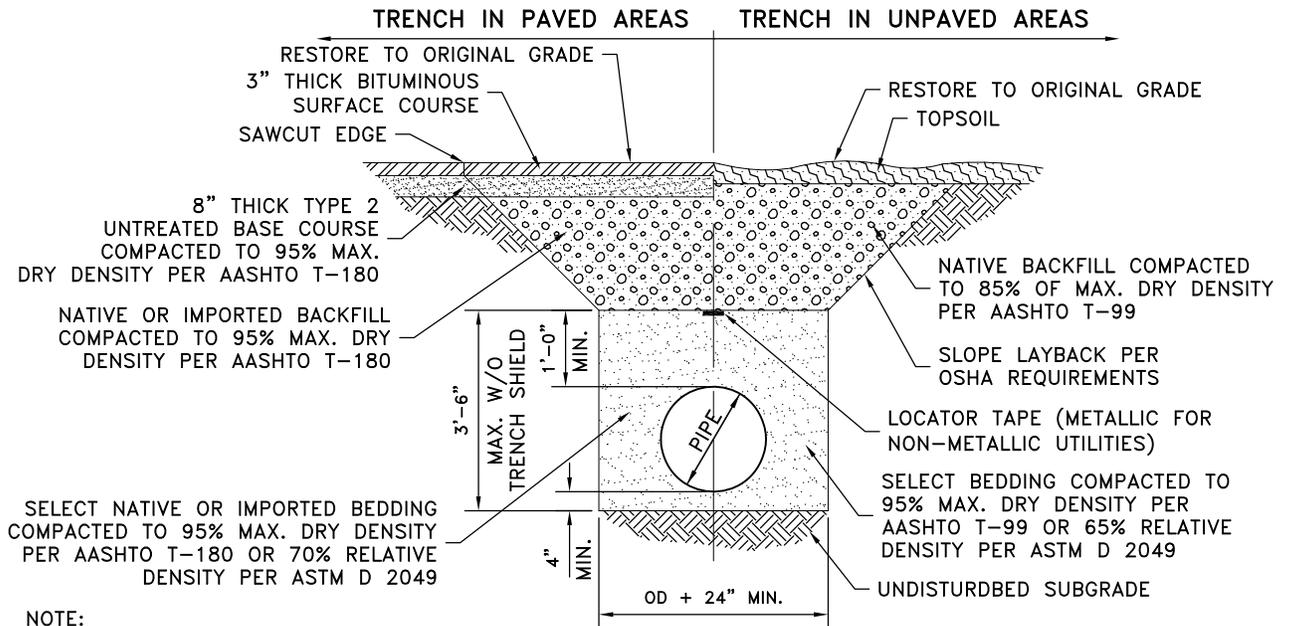
1. ALL EXPOSED CONCRETE SURFACE TO HAVE RUBBED FINISH.
2. WALL TO CONTAIN 0.125 CU. YARDS OF CONCRETE PER FOOT, 6.6 LBS. REINF. STEEL PER FOOT.



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CITY OF WEST WENDOVER
 36" CONCRETE RETAINING WALL

PLAN NO:
114
 REVISION:
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NOTE:
EDGES OF PATCH TO BE STRAIGHT, UNIFORM AND PARALLEL OR PERPENDICULAR TO THE TRENCH. EDGES TO BE SAW CUT AND A TACK COAT APPLIED PER PLAN NO. 110 ASPHALT CONCRETE "T" PATCH. ALL EXCESS EXCAVATED MATERIAL TO BE HAULED AWAY AND DISPOSED OF OFF THE HIGHWAY RIGHT-OF-WAY UNLESS OTHERWISE PERMITTED BY THE ENGINEER.

TYPICAL TRENCH SECTION



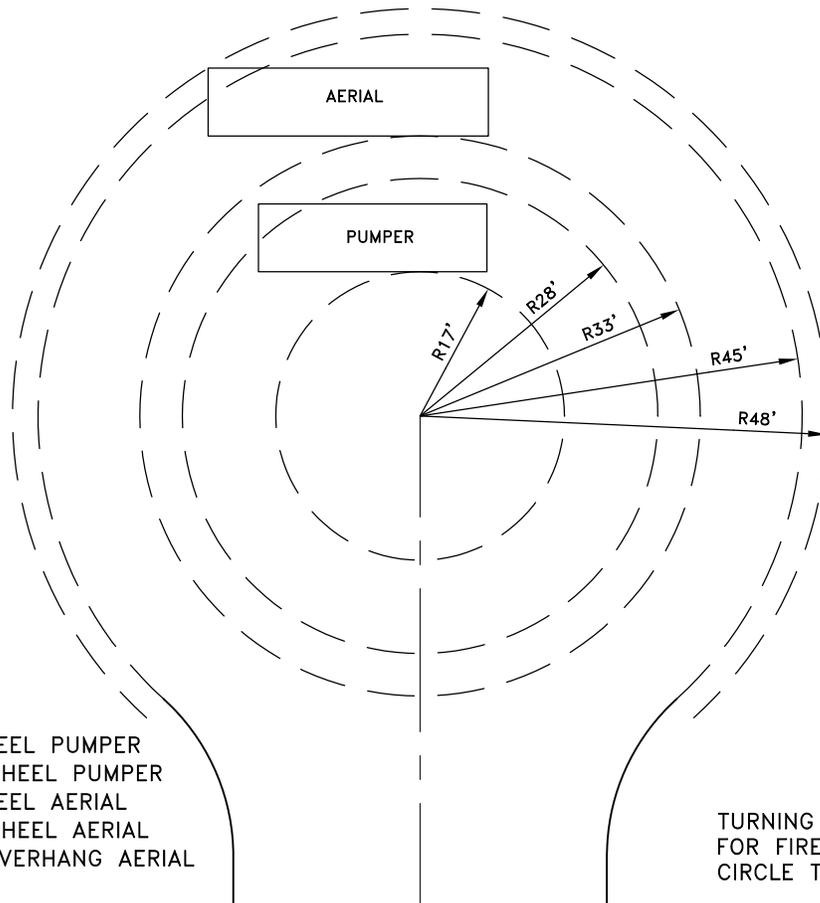
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WEST WENDOVER, NEVADA 89883

CITY OF WEST WENDOVER

TYPICAL TRENCH DETAILS

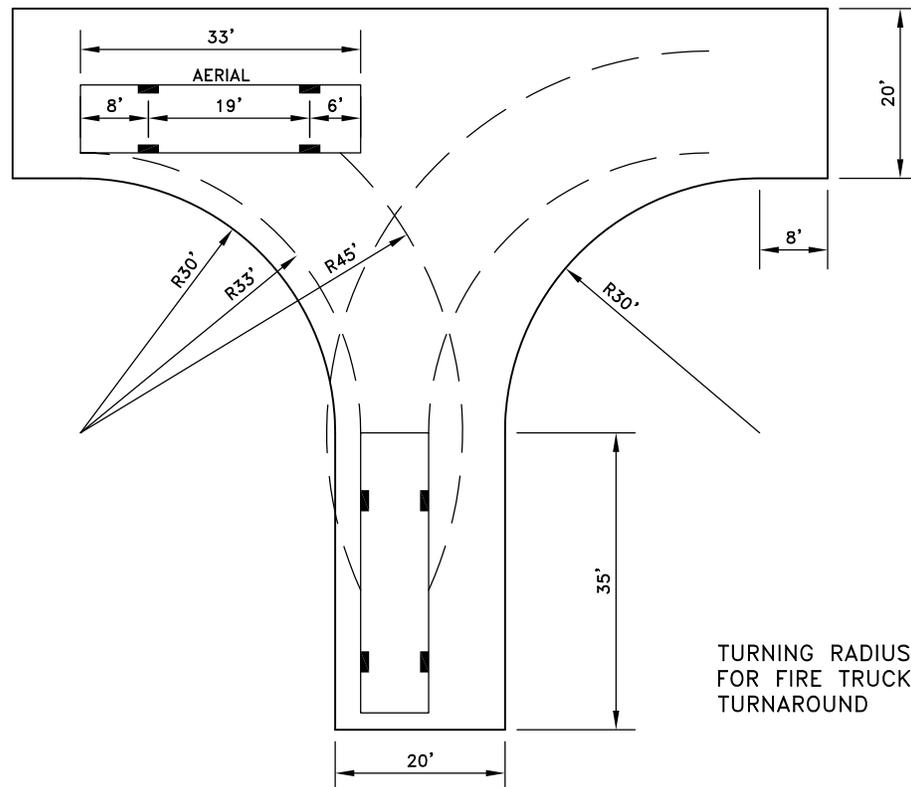
PLAN NO:
115

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- R=17' - INSIDE WHEEL PUMPER
- R=28' - OUTSIDE WHEEL PUMPER
- R=33' - INSIDE WHEEL AERIAL
- R=45' - OUTSIDE WHEEL AERIAL
- R=48' - OUTSIDE OVERHANG AERIAL

TURNING RADIUS REQUIRED FOR FIRE TRUCKS IN A CIRCLE TURNAROUND



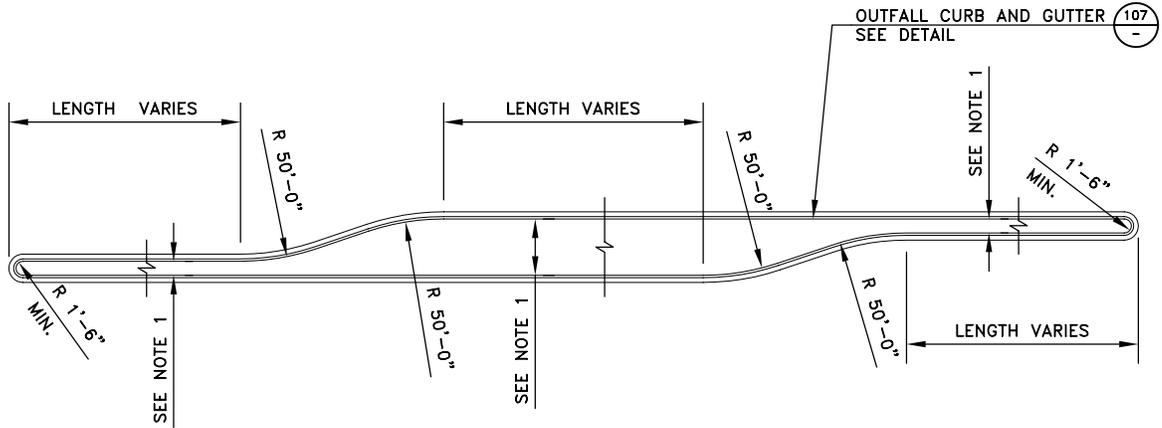
TURNING RADIUS REQUIRED FOR FIRE TRUCKS IN A TEE TURNAROUND



WEST WENDOVER
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CITY OF WEST WENDOVER
 TURNING RADIUS SPECIFICATIONS

PLAN NO: **116**
 REVISION:
 7/03

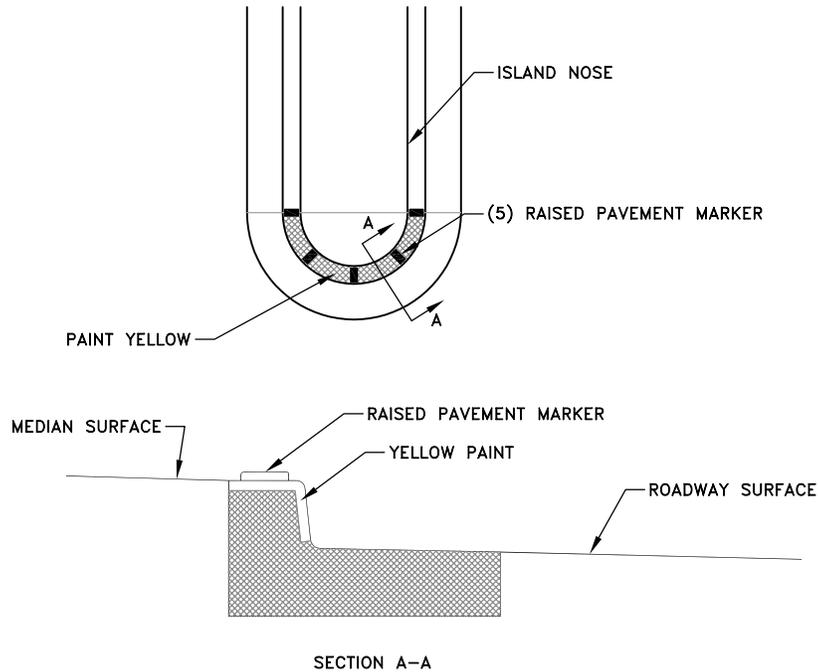


TYPICAL ISLAND DETAIL

SCALE: N.T.S.

NOTE:

1. THE CITY MAY REQUIRE ISLANDS TO BE CONSTRUCTED ON ARTERIAL AND MAJOR ARTERIAL STREETS.
2. BREAKS IN ISLANDS OR MEDIANS SHALL BE PROVIDED AT PUBLIC INTERSECTIONS. BREAKS FOR DRIVEWAYS SERVING INDIVIDUAL BUSINESSES OR RESIDENCES ARE NOT ALLOWED. BREAKS FOR DRIVEWAYS SERVING MULTIPLE BUSINESSES WILL BE CONSIDERED ON A CASE BY CASE BASIS. IN NO CASE SHALL MEDIAN BREAKS BE LOCATED AT A SPACING LESS THAN 300 FEET MEASURED BETWEEN THE CENTERS OF THE BREAKS.
3. RIGHT OF WAY WIDTH LESS THAN 100' - 12' TO 14' WIDE ISLAND W/ 3' TO 4' WIDE NOSES (PRIOR CITY APPROVAL REQ'D).
RIGHT OF WAY WIDTH MORE THAN 100' - 14' WIDE ISLAND W/ 4' WIDE NOSES.



**RAISED ISLAND STRIPING DETAIL
TYPICAL ALL ISLAND NOSES**

SCALE: N.T.S.

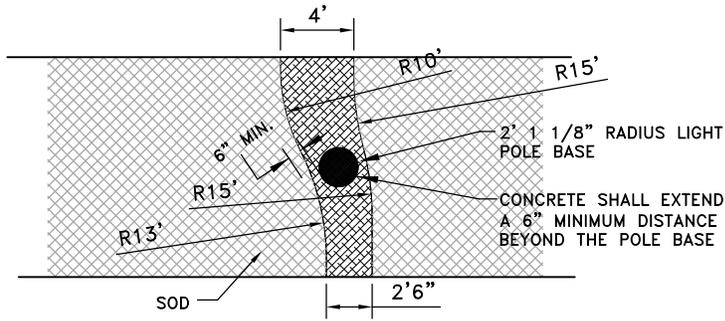


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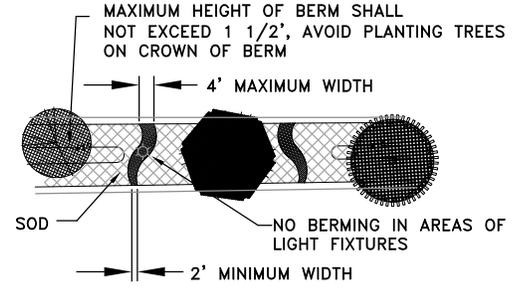
CITY OF WEST WENDOVER

TYPICAL ISLAND DETAIL

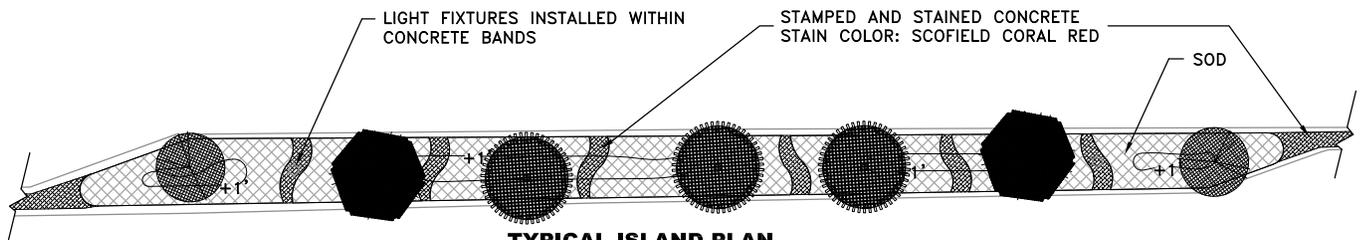
PLAN NO:	117
REVISION:	5/12



CONCRETE BAND ENLARGEMENT
SCALE: N.T.S.



TYPICAL ISLAND ENLARGEMENT
SCALE: N.T.S.



TYPICAL ISLAND PLAN
SCALE: N.T.S.



TYPICAL ISLAND ELEVATION
SCALE: N.T.S.

Botanical Name	Common Name	Size
Malus 'Prairie Fire'	Prairie Fire Crab Apple	1 3/4" Cal.
Malus 'Spring Snow'	Spring Snow Crab Apple	1 3/4" Cal.
Pinus nigra	Austrian Pine	5'-6' Ht.
90% 3 Blend (Min.) Dwarf Fescue Mix 10% Kentucky Bluegrass		
STAMPED AND STAINED CONCRETE, STAIN COLOR: SCOFIELD CORAL RED.		
○ LIGHT POLE LOCATION		

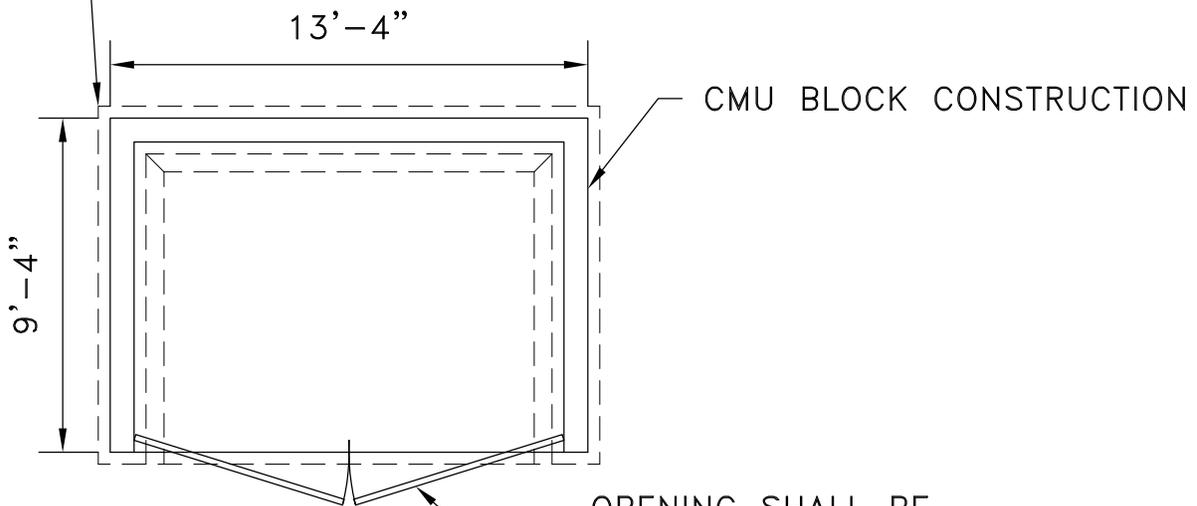


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CITY OF WEST WENDOVER
ISLAND LANDSCAPING DETAIL

PLAN NO:
118
REVISION:
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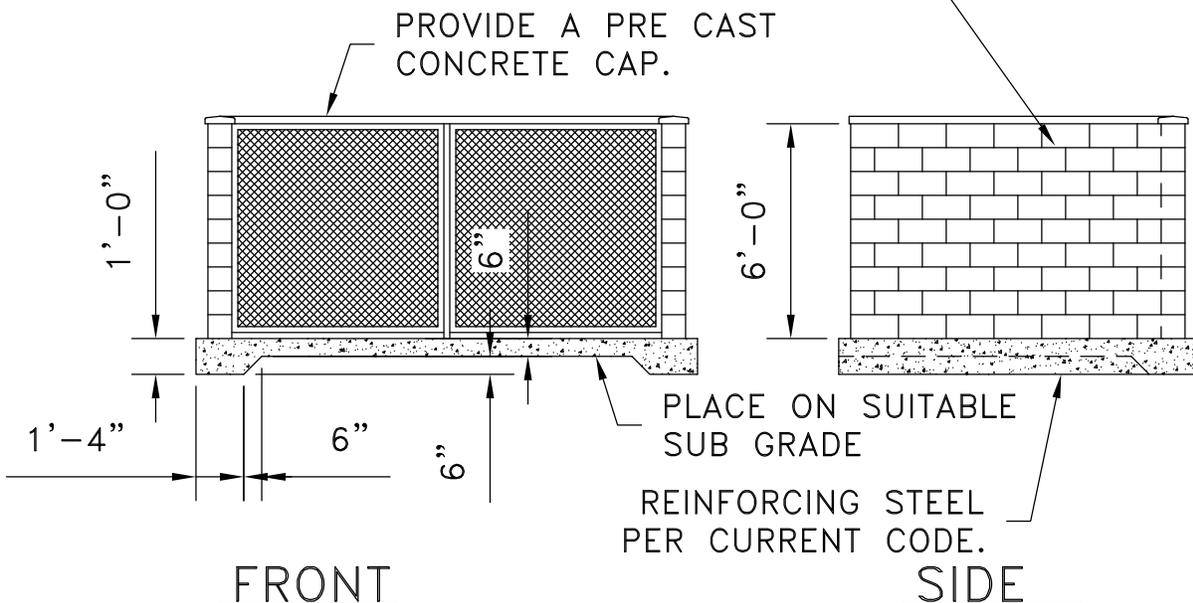
FLOOR/FOOTING SHALL EXTEND 4" BEYOND EXTERIOR FACING MATERIAL.



PLAN

OPENING SHALL BE GATED WITH A FENCING MATERIAL THAT WILL BLOCK THE VIEW OF THE INTERIOR. CHAIN LINK FENCE MAY BE USED IF SLATS ARE INSTALLED IN GATE.

ACCEPTABLE FACING MATERIALS INCLUDE SPLIT FACE BLOCK, BRICK, STUCCO, AND OTHER FACINGS THAT MATCH THE SURROUNDING ARCHITECTURE. INTERIOR OF ENCLOSURE DOES NOT NEED FACING



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CITY OF WEST WENDOVER

DUMPSTER ENCLOSURE

PLAN NO:

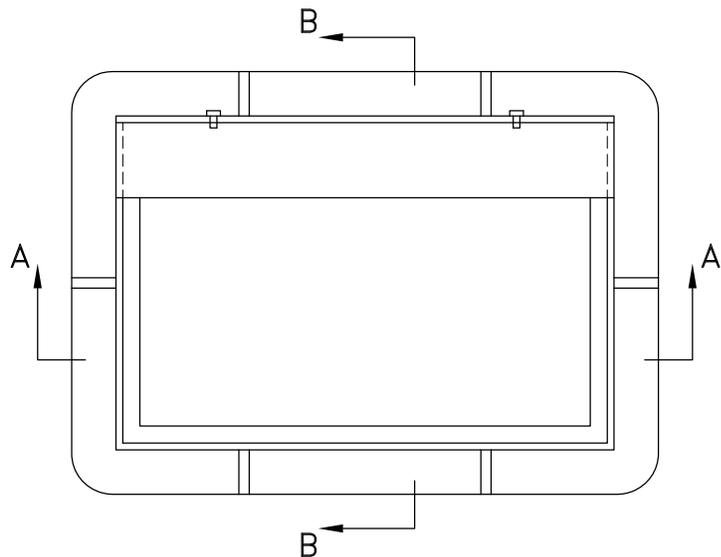
119

REVISION:

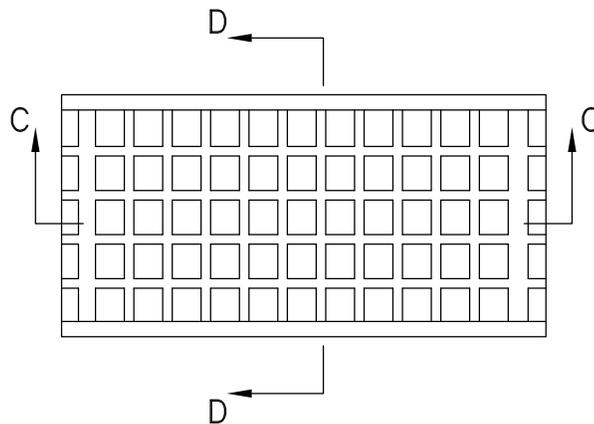
10/04

APPENDIX A - STANDARD DRAWINGS

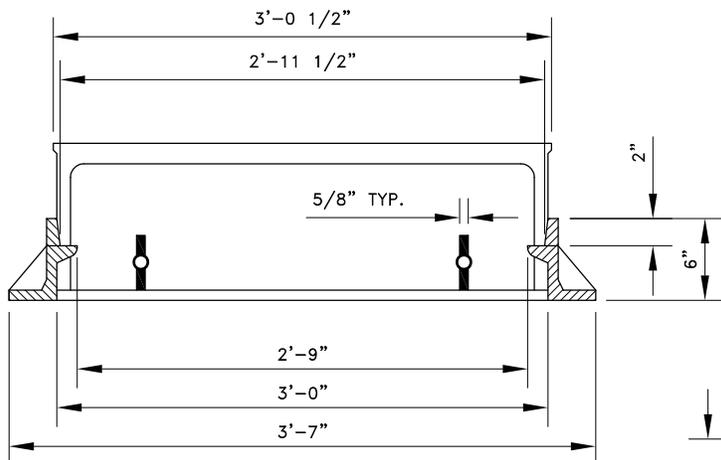
PART 2 – STORM DRAIN



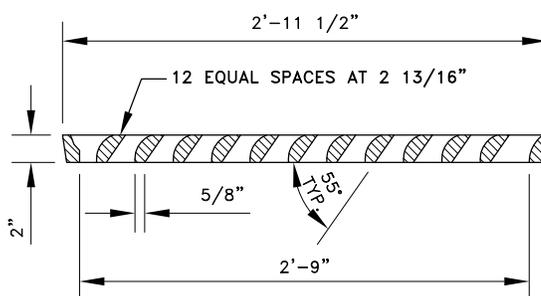
PLAN



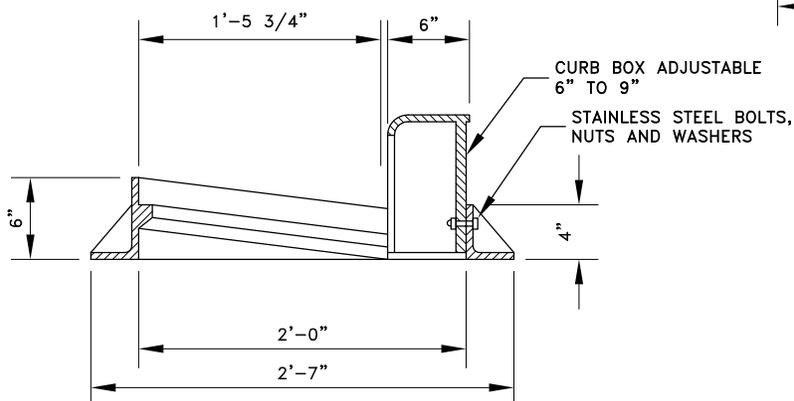
PLAN
BICYCLE SAFE GRATE



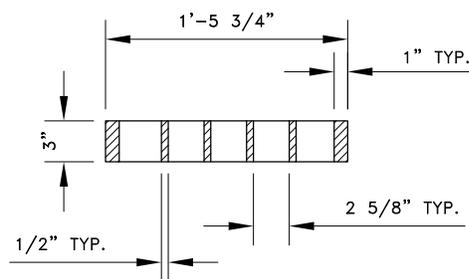
SECTION A



SECTION C



SECTION B



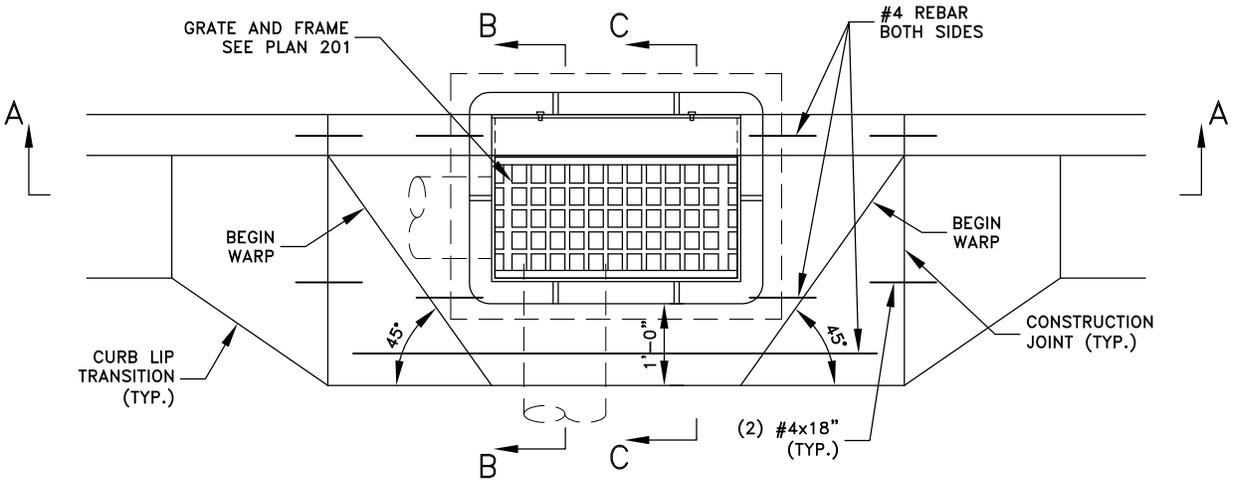
SECTION D



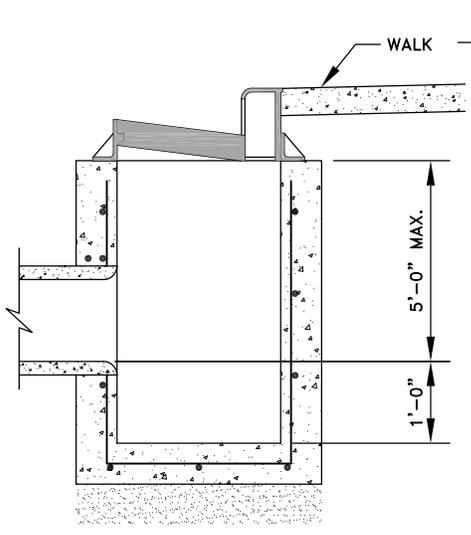
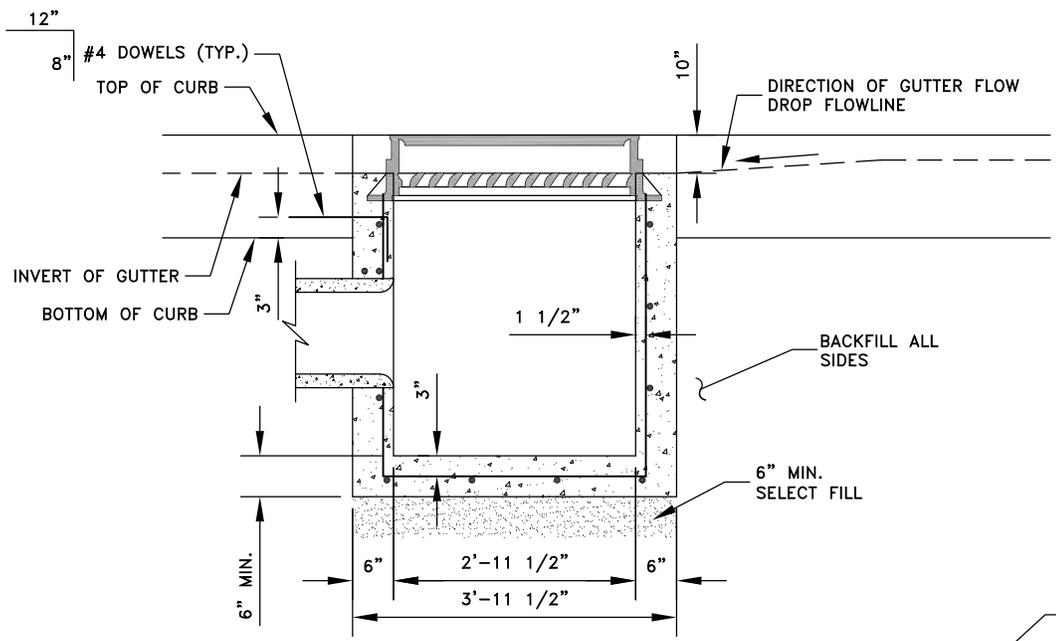
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CITY OF WEST WENDOVER
35 1/2" GRATE AND FRAME
WITH ADJUSTABLE CURB BOX

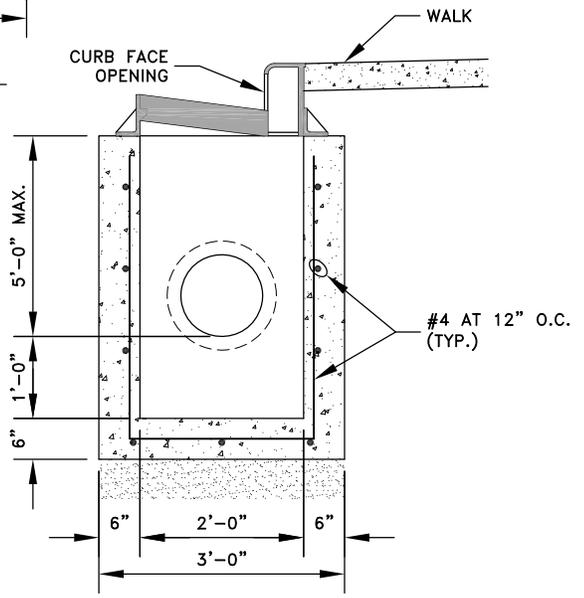
PLAN NO:
201
REVISION:
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TYPE A - CURB INLET WITH SINGLE GRATE



SECTION A



SECTION B

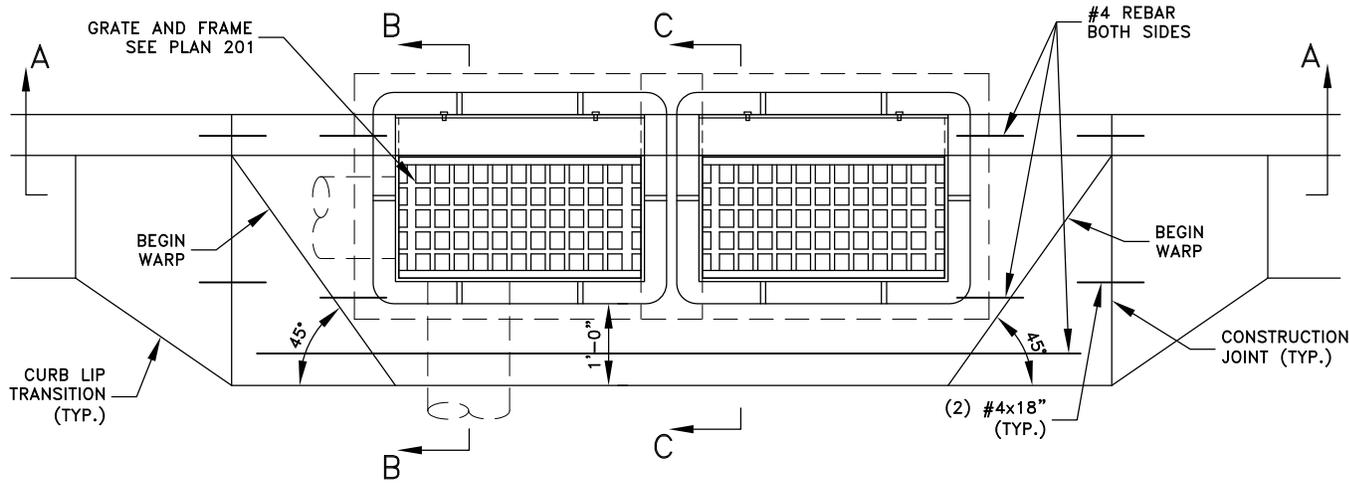
SECTION C



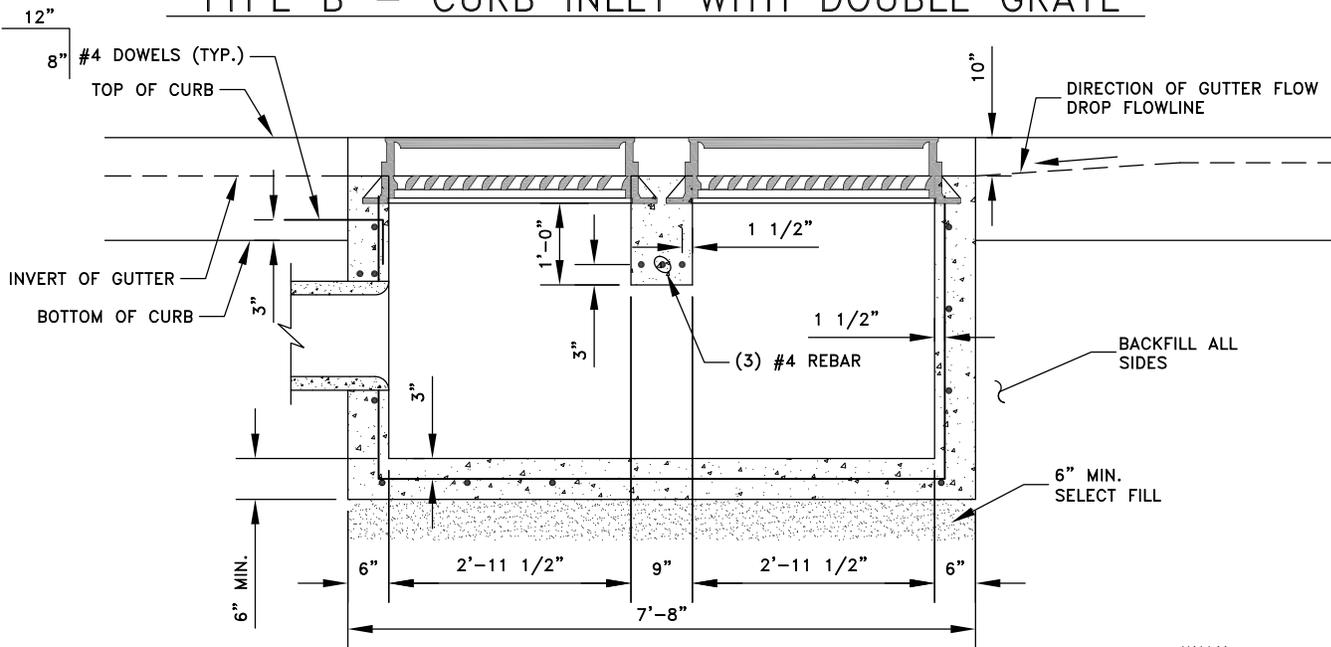
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CITY OF WEST WENDOVER
 CATCH BASIN - SINGLE GRATE
 FOR HIGH-BACK CURB AND GUTTER

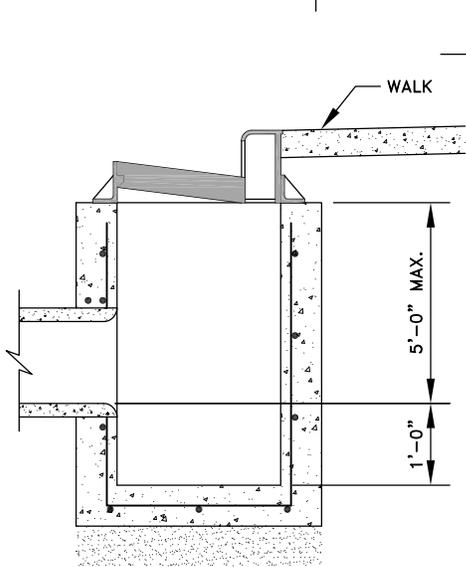
PLAN NO:
202
 REVISION:
 8/98



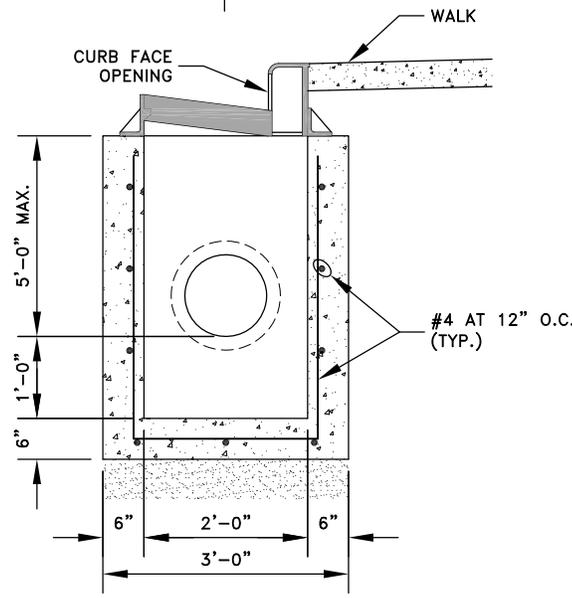
TYPE B - CURB INLET WITH DOUBLE GRATE



SECTION A



SECTION B



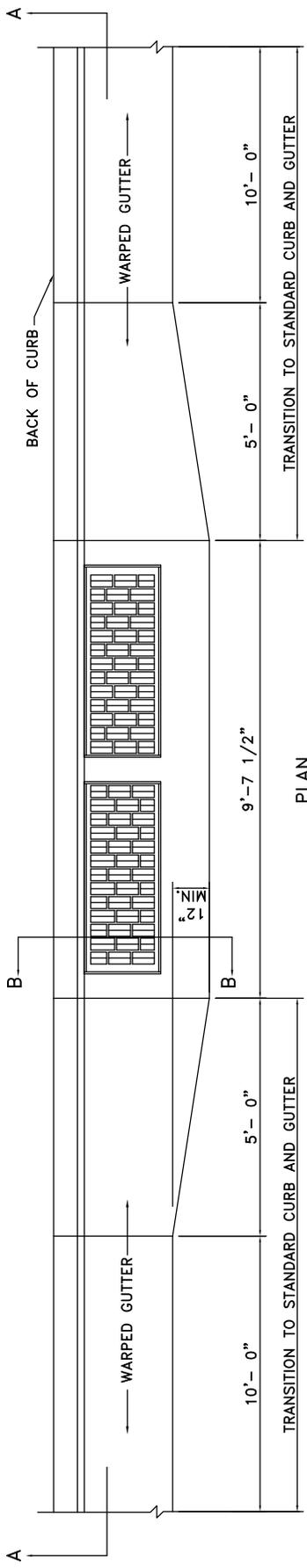
SECTION C



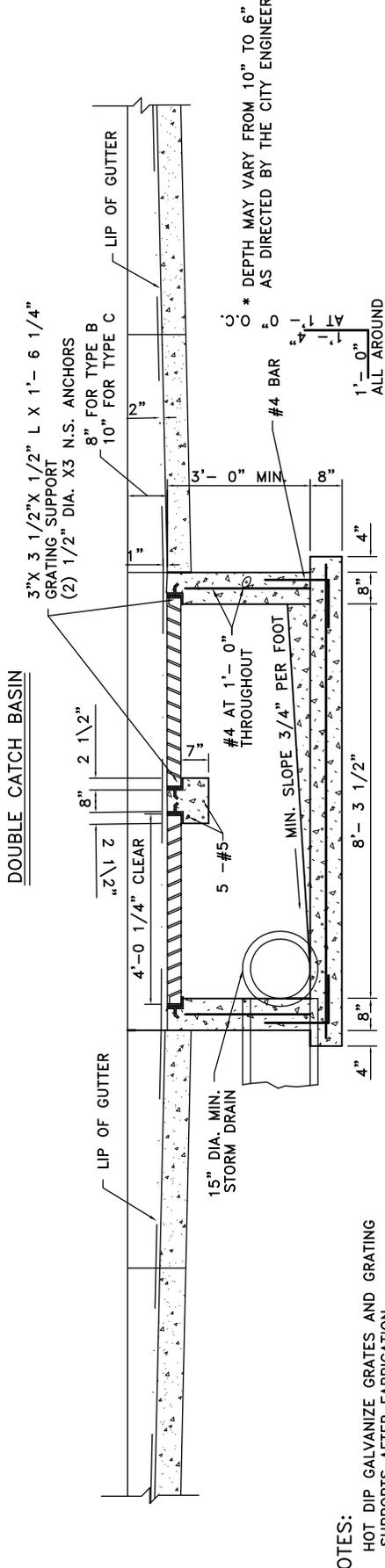
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CITY OF WEST WENDOVER
 CATCH BASIN - DOUBLE GRATE
 FOR HIGH-BACK CURB AND GUTTER

PLAN NO:
203
 REVISION:
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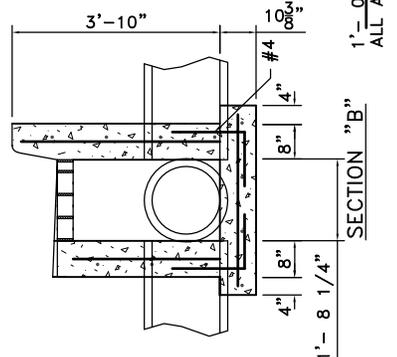
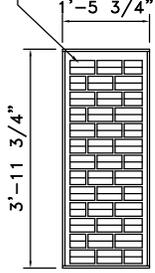
PLAN



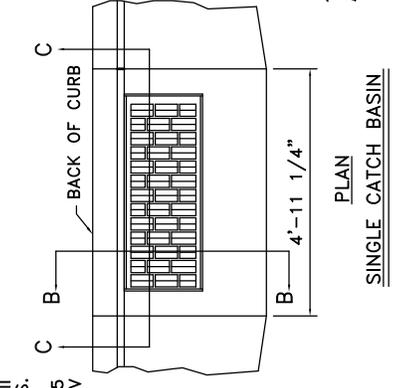
DOUBLE CATCH BASIN

SECTION "A"

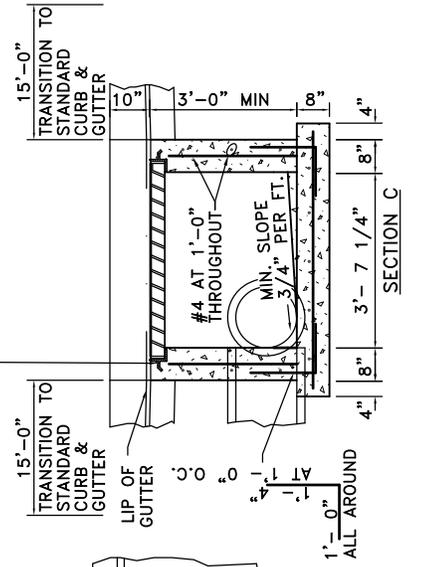
DIRECTIONAL GRATE "D&L SUPPLY" I-1803 REQUIRED ON TYPE I, II AND III CATCH BASINS. BICYCLE GRATE "D&L SUPPLY" I-1805 REQUIRED ON TYPE IV CATCH BASINS.



SECTION "B"



PLAN SINGLE CATCH BASIN



SECTION C

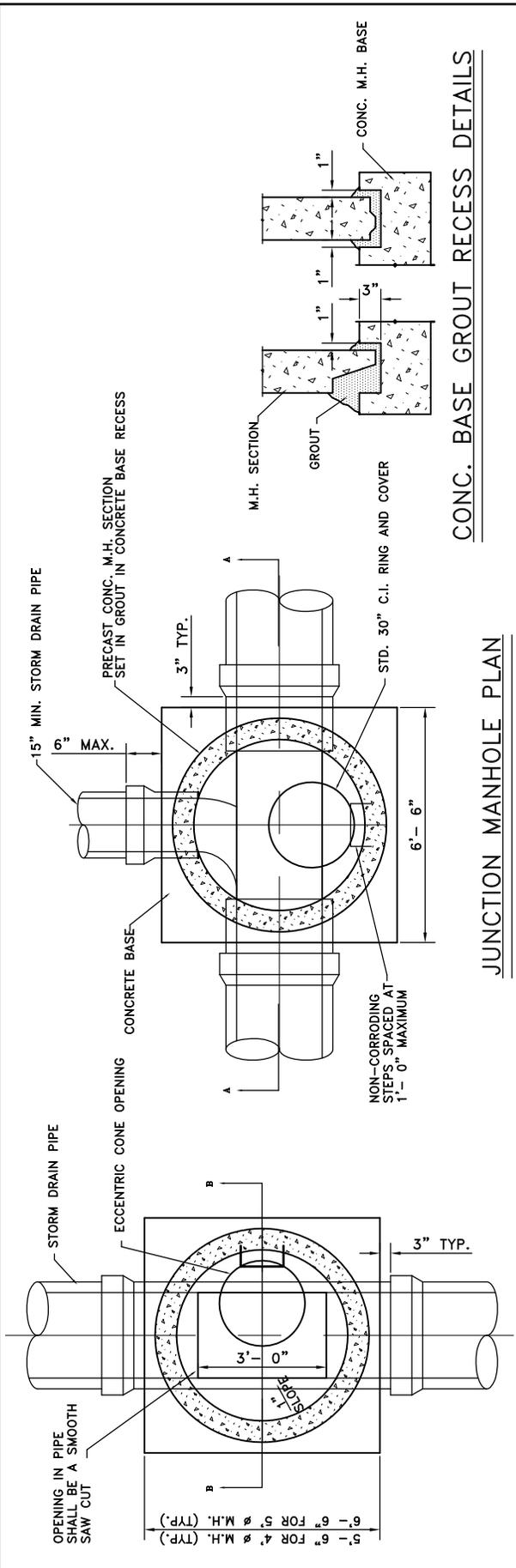
NOTES:
1. HOT DIP GALVANIZE GRATES AND GRATING SUPPORTS AFTER FABRICATION.



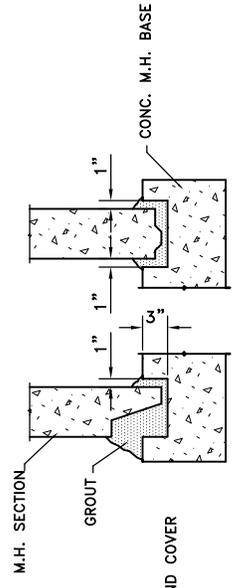
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CITY OF WEST WENDOVER
CATCH BASIN - SINGLE & DOUBLE GRATE
FOR ROLL CURB AND GUTTER

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204
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CONC. BASE GROUT RECESS DETAILS



JUNCTION MANHOLE PLAN

TYPICAL LINE MANHOLE PLAN

SECTION A-A

SECTION B-B

NOTE: 48" Ø M.H. REQUIRED WHERE LINE SIZE IS 15"
 60" Ø M.H. REQUIRED WHERE LINE SIZE IS 18" OR LARGER

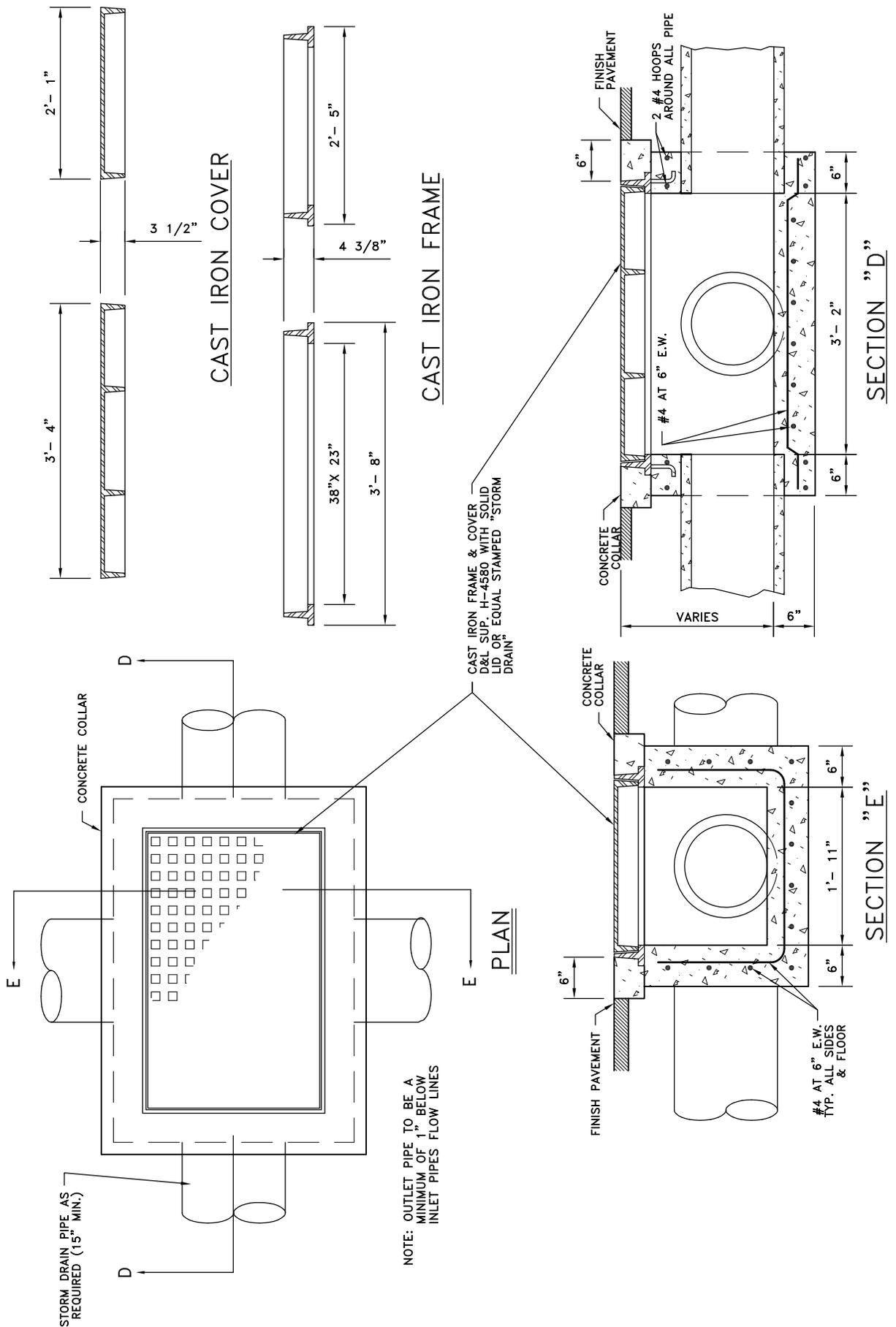
NOTE: CAST IN PLACE MANHOLE SHOWN PRECAST REINFORCED MANHOLE ACCEPTABLE



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CITY OF WEST WENDOVER
 CIRCULAR STORM DRAIN CLEANOUT

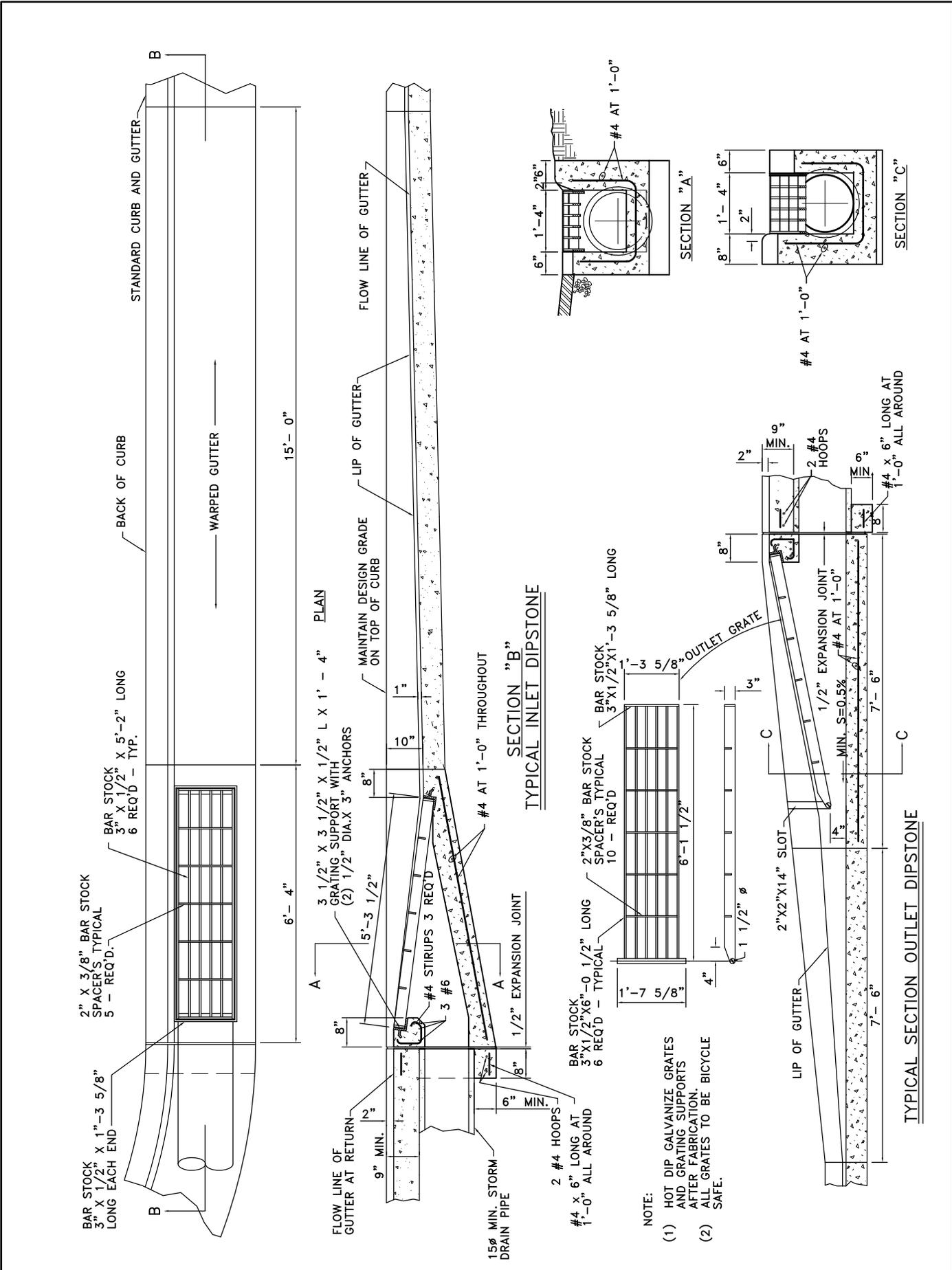
PLAN NO: **205**
 REVISION:
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CITY OF WEST WENDOVER
 RECTANGULAR STORM DRAIN CLEANOUT

PLAN NO:
206
 REVISION:
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 WEST WENDOVER, NEVADA 89883

CITY OF WEST WENDOVER

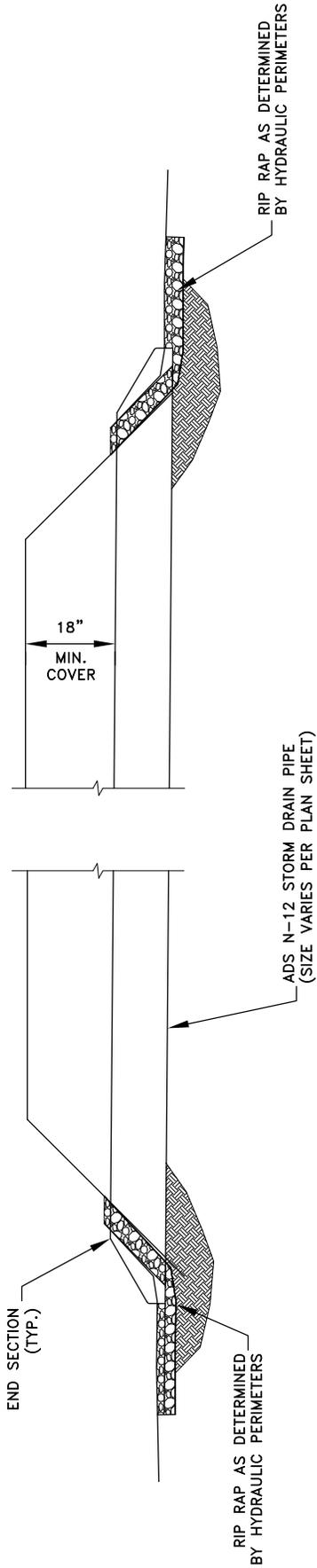
DIPSTONE

PLAN NO:

207

REVISION:

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STORM DRAIN INLET/OUTLET DETAIL



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CITY OF WEST WENDOVER
 STORM DRAIN INLET/OUTLET DETAIL

PLAN NO:
208

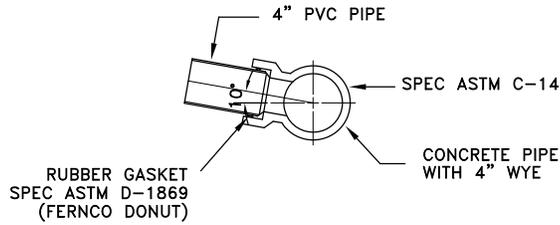
REVISION:
10/07

APPENDIX A - STANDARD DRAWINGS

PART 3 – SANITARY SEWER

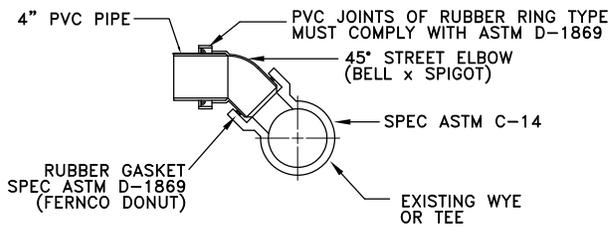
NOTE:

WHEN CONNECTION IS MADE INTO EXISTING CONCRETE WYE THE WYE MUST BE ROTATED TO A MINIMUM OF 10° AND A MAXIMUM OF 45° FROM THE HORIZONTAL AS SHOWN



CONNECTING INTO CONCRETE WYE

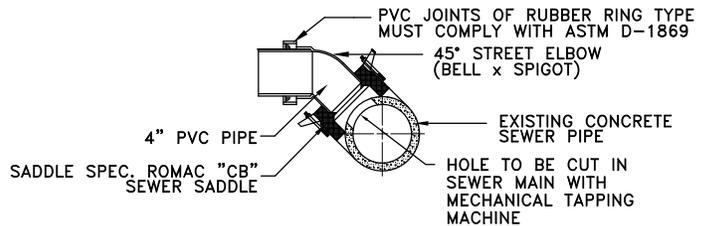
(WITHOUT 45° ELBOW)



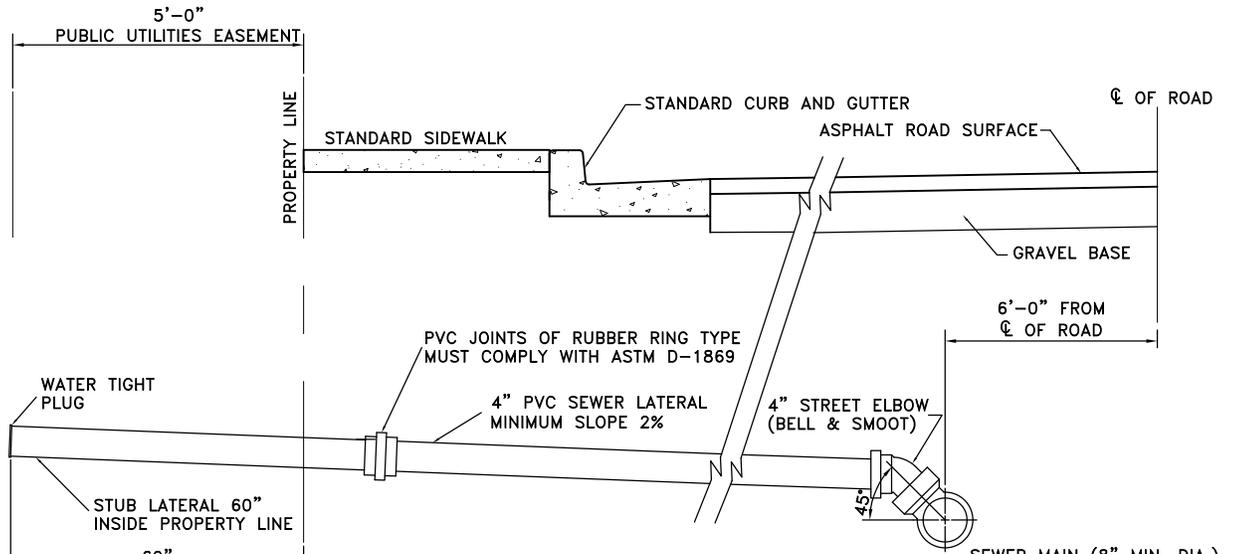
CONNECTING INTO CONCRETE WYE

(WITH 45° ELBOW)

NOTE:
PVC PIPE FITTINGS ASTM D-3034 WITH A S.D.R. 35



TAPPING INTO EXISTING CONCRETE PIPE



TYPICAL SEWER LATERALS CONNECTION

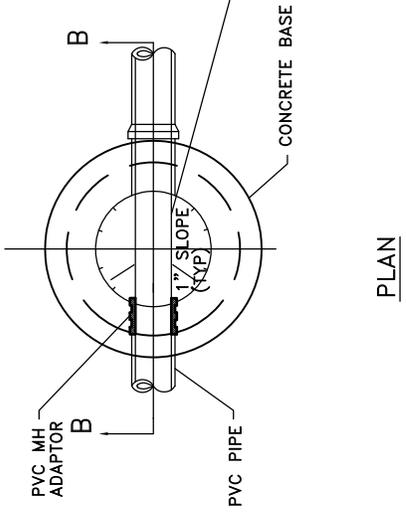
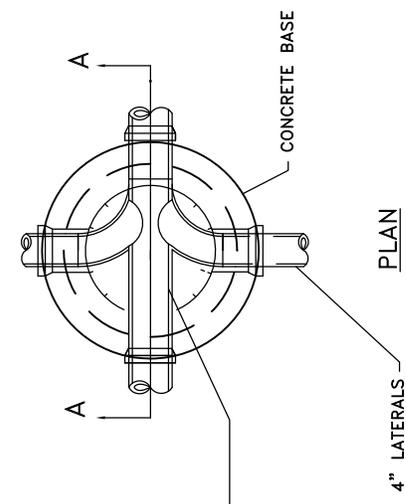
SEWER MAIN (8" MIN. DIA.)
PVC PIPE AND FITTINGS PER
ASTM D-3034 WITH A SDR
35 OR A CONCRETE PIPE
PER A.S.T.M. C-14



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CITY OF WEST WENDOVER
PIPE CONNECTION DETAILS

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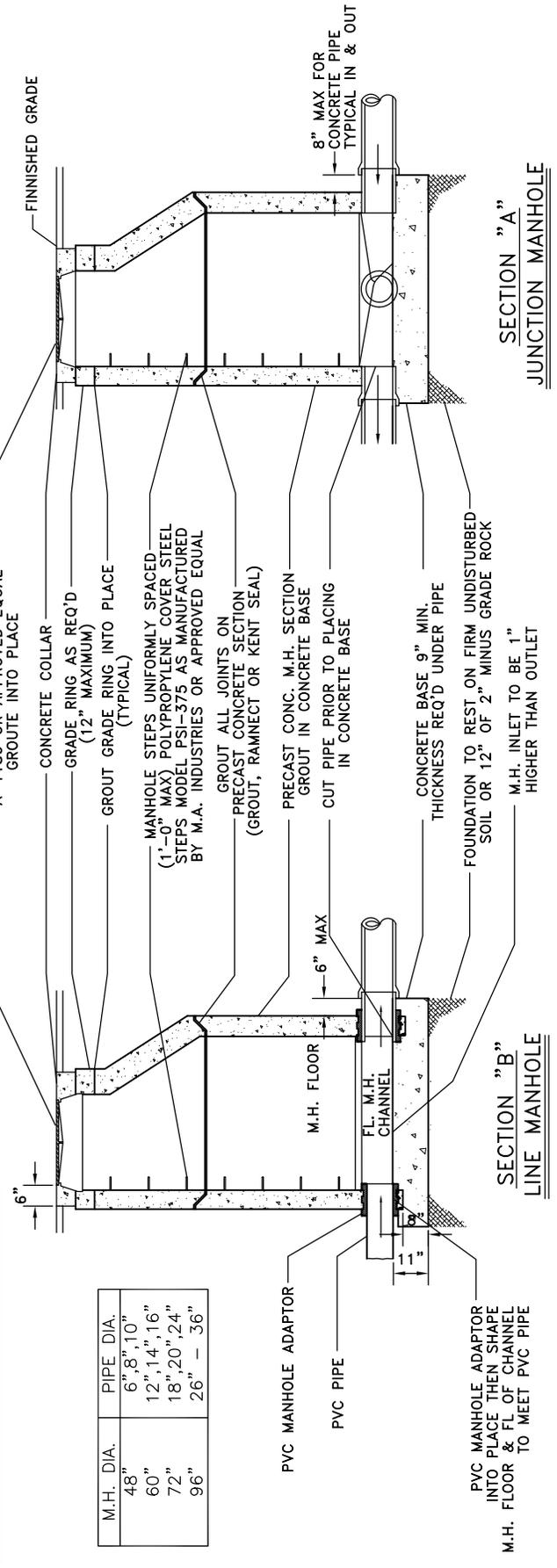
PLAN

PLAN

NOTE: CAST IN PLACE MANHOLE SHOWN PRECAST REINFORCED MANHOLE ACCEPTABLE

NOTE: RUBBER BOOT JOINTS WITH STAINLESS STEEL CONNECTION BAND ARE ACCEPTABLE SUBSTITUTES FOR STANDARD JOINTS SHOWN

M.H. DIA.	PIPE DIA.
48"	6", 8", 10"
60"	12", 14", 16"
72"	18", 20", 24"
96"	26" - 36"



SECTION "A"
JUNCTION MANHOLE

SECTION "B"
LINE MANHOLE

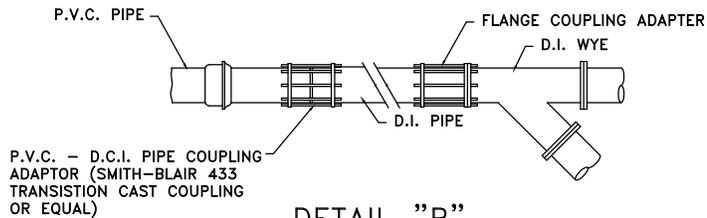


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CITY OF WEST WENDOVER
LINE AND JUNCTION MANHOLE DETAILS

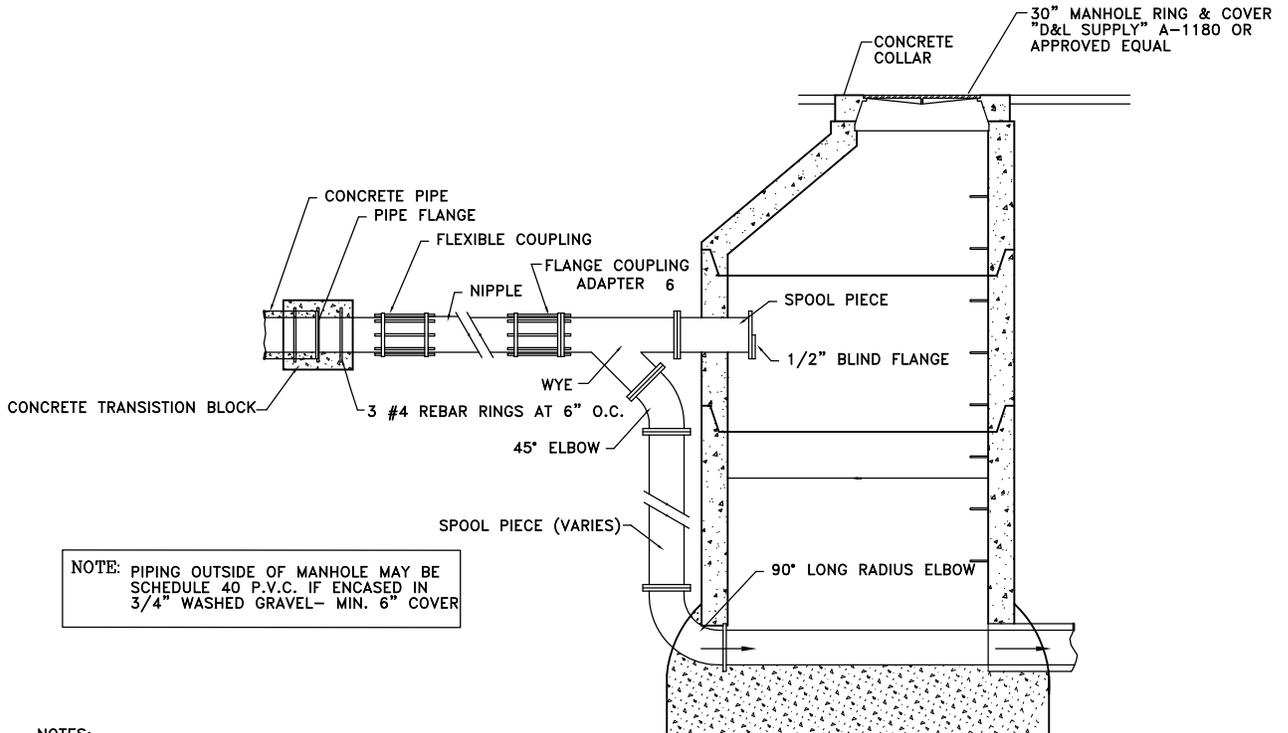
PLAN NO:
302

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DETAIL "B"

TYPICAL FOR CONNECTION D.I. PIPE TO P.V.C. PIPE



NOTE: PIPING OUTSIDE OF MANHOLE MAY BE SCHEDULE 40 P.V.C. IF ENCASED IN 3/4" WASHED GRAVEL- MIN. 6" COVER

- NOTES:
1. USE DROP MANHOLE ONLY WHEN DROP EXCEEDS 2'- 0"
 2. FOR CONSTRUCTION DIMENSION OF DROP MANHOLE SEE JUNCTION MANHOLE
 3. ALL PIPE FOR DROP MANHOLE TO BE FLANGED DUCTILE IRON PIPE OR ALTERNATE SCHEDULE 40 P.V.C. IF ENCASED IN 3/4" WASHED GRAVEL MIN. 6" COVER.

DROP MANHOLE



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CITY OF WEST WENDOVER

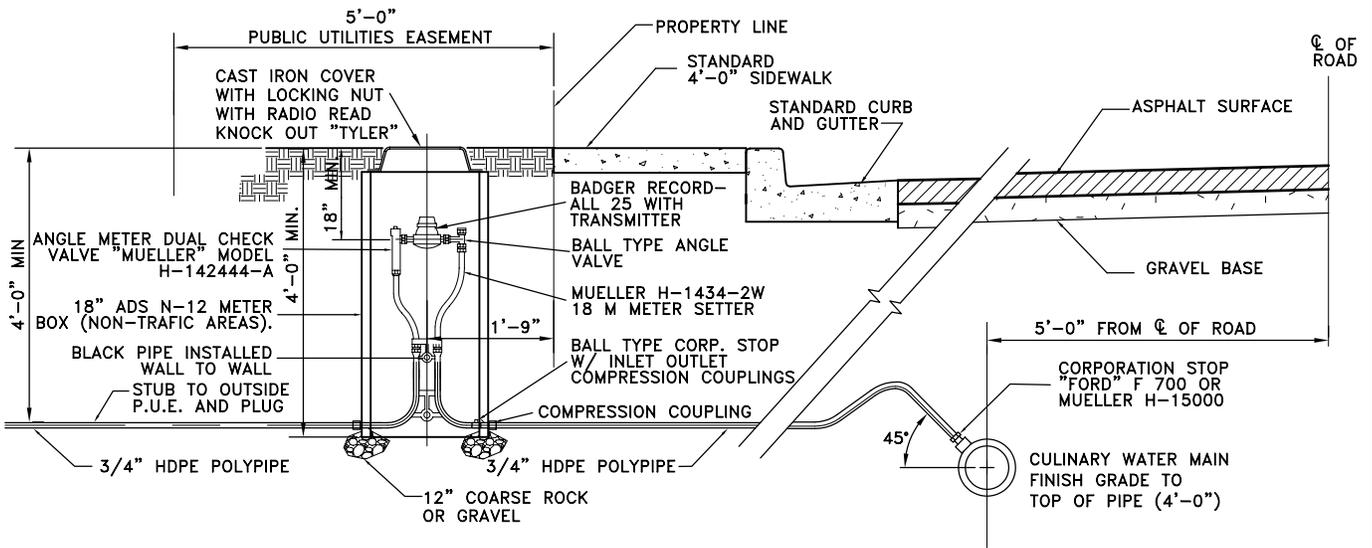
DROP MANHOLE / PIPE TRANSITION DETAILS

PLAN NO: **303**

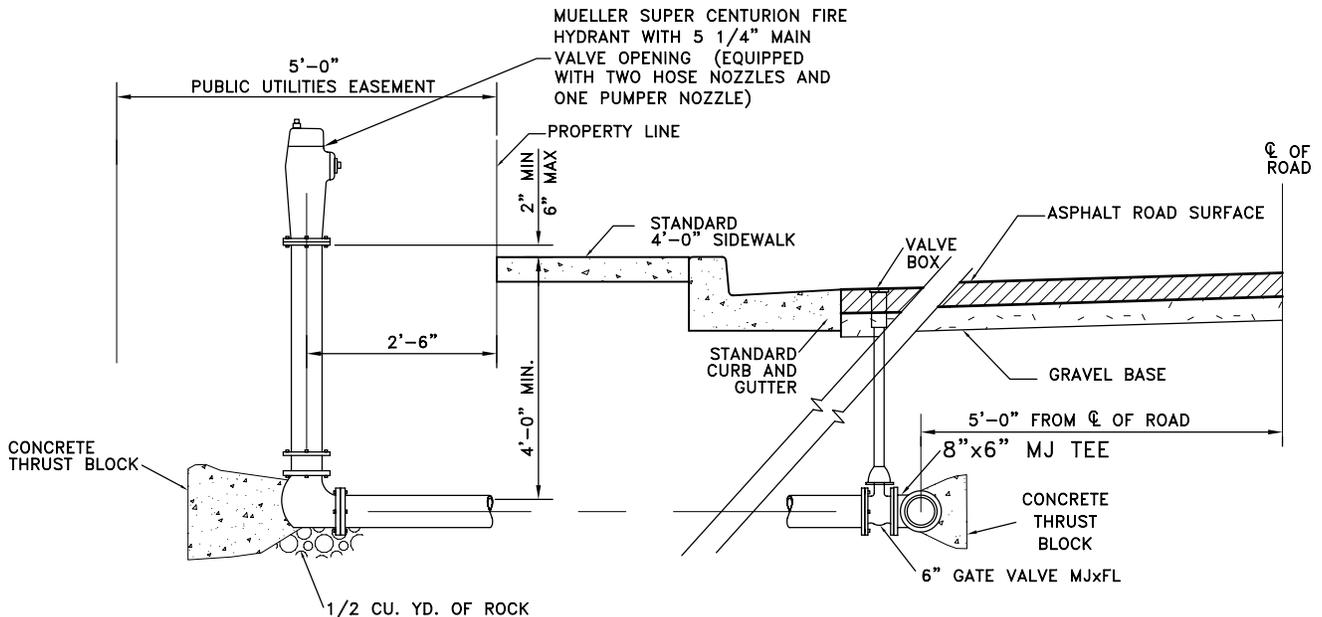
REVISION: 5/98

APPENDIX A - STANDARD DRAWINGS

PART 4 – CULINARY WATER



TYPICAL WATER SERVICE INSTALLATION



TYPICAL FIRE HYDRANT INSTALLATION

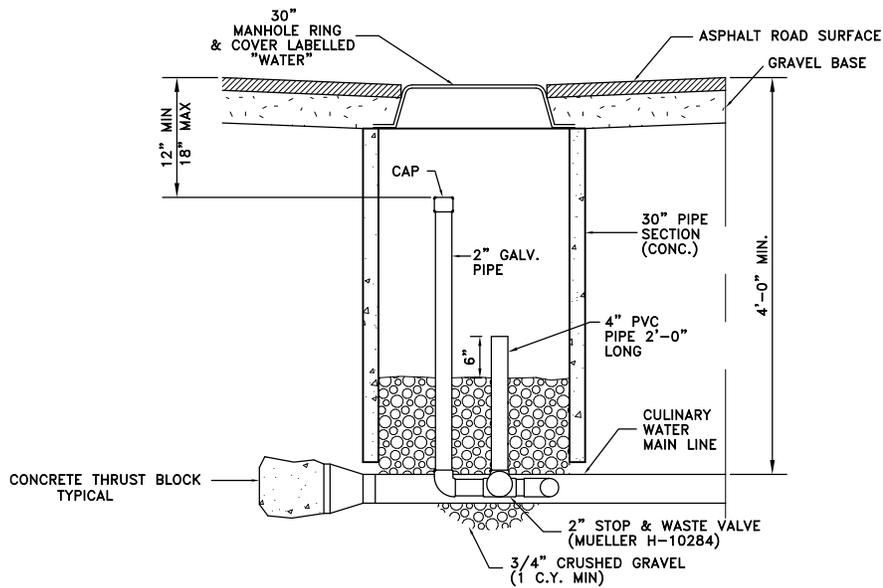


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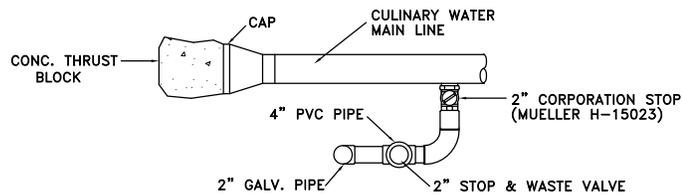
CITY OF WEST WENDOVER
WATER SERVICE AND FIRE HYDRANT
DETAILS

PLAN NO:
401

REVISION:
12/08

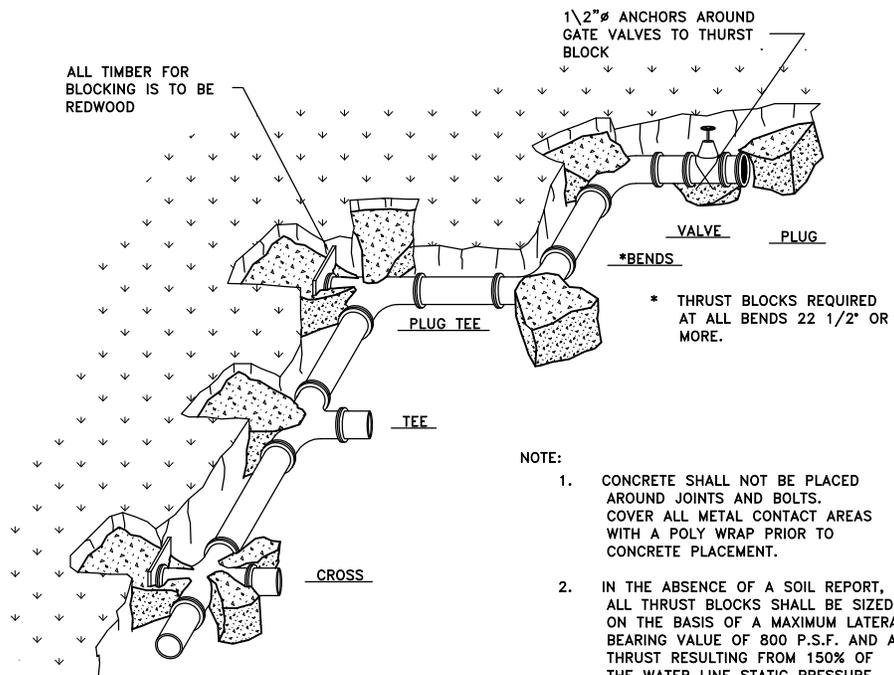


SECTION



PLAN

WATERLINE WASHOUT



THRUST BLOCKING

NOTE:

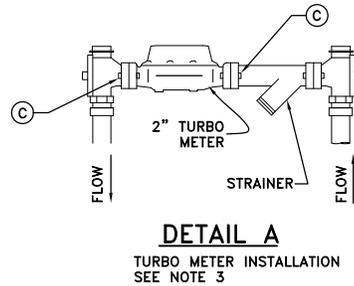
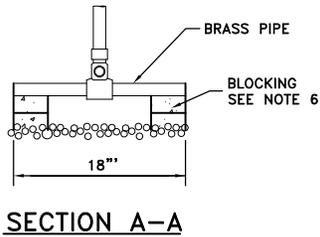
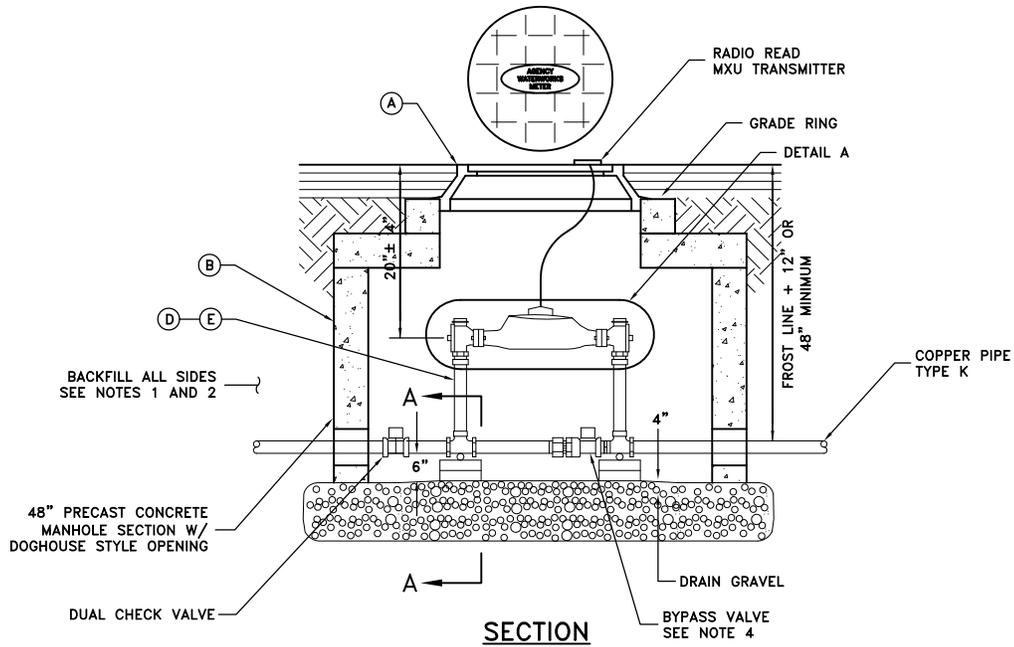
1. CONCRETE SHALL NOT BE PLACED AROUND JOINTS AND BOLTS. COVER ALL METAL CONTACT AREAS WITH A POLY WRAP PRIOR TO CONCRETE PLACEMENT.
2. IN THE ABSENCE OF A SOIL REPORT, ALL THRUST BLOCKS SHALL BE SIZED ON THE BASIS OF A MAXIMUM LATERAL BEARING VALUE OF 800 P.S.F. AND A THRUST RESULTING FROM 150% OF THE WATER LINE STATIC PRESSURE, OR 100% OF THE WATERLINE FIELD HYDROSTATIC TEST PRESSURE, WHICH EVER IS GREATER



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CITY OF WEST WENDOVER
 WASHOUT AND
 THRUST BLOCKING DETAILS

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LEGEND		
NO.	*	DESCRIPTION
(A)		27" FRAME AND COVER
(B)		CONCRETE BOX
(C)		METER BOLTS
(D)		1 1/2" CUSTOM SETTER WITH BYPASS
(E)		2" CUSTOM SETTER WITH BYPASS
* FURNISHED BY UTILITY AGENCY		

NOTES

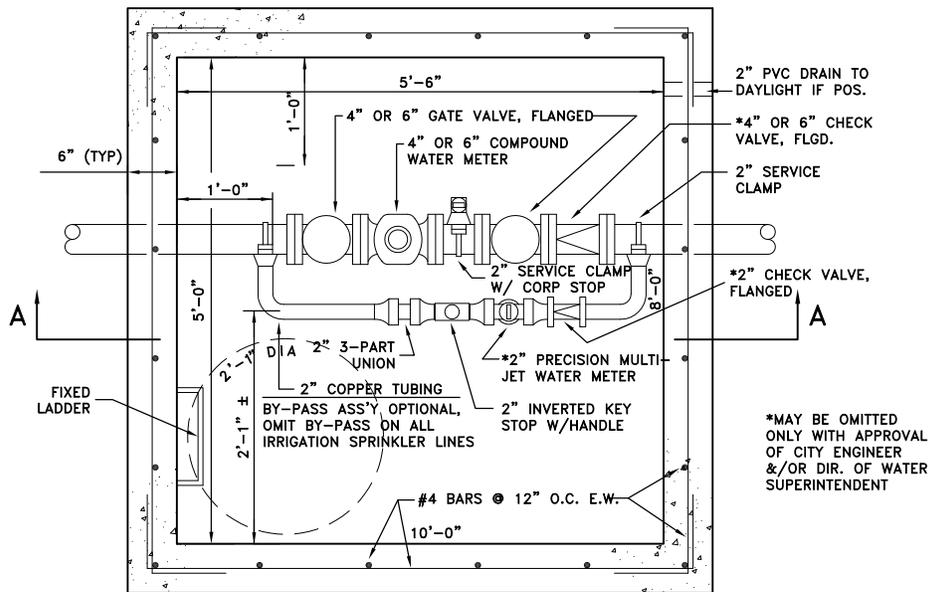
1. INSPECTION: PRIOR TO BACKFILLING AROUND THE METER BOX, SECURE INSPECTION OF INSTALLATION BY ENGINEER.
2. BACKFILL: INSTALL AND COMPACT ALL BACKFILL MATERIAL PER STANDARDS.
3. BYPASS VALVE: LOCK IN OFF POSITION.
4. CONCRETE BOX: ALLOW 1 INCH CLEARANCE AROUND WATERLINE WHERE LINE PASSES THROUGH WALL. SEAL OPENING WITH COMPRESSIBLE SEAL. CENTER FRAME AND COVER OF WATER METER.
5. BLOCKING: USE CLAY BRICK OR CONCRETE BLOCK.
6. METER: PROVIDE WATER METER UNLESS PROVIDED BY UTILITY AGENCY.
7. PIPE: INSTALL TYPE "K" COPPER PIPE TO PROPERTY LINE. COORDINATE WITH UTILITY AGENCY FOR TYPE OF PIPE TO BE USED OUTSIDE OF RIGHT-OF-WAY.
8. PLACEMENT:
 - A. DO NOT INSTALL METERS UNDER DRIVEWAY APPROACHES, SIDEWALKS, OR CURB AND GUTTER.
 - B. IN NEW CONSTRUCTION, INSTALL METER AT CENTER OF LOT OR AS DIRECTED BY ENGINEER.
 - C. ALL METERS ARE TO BE INSTALLED IN THE PARK STRIP OR WITHIN 5 FEET OF THE PROPERTY LINE (STREET SIDE).



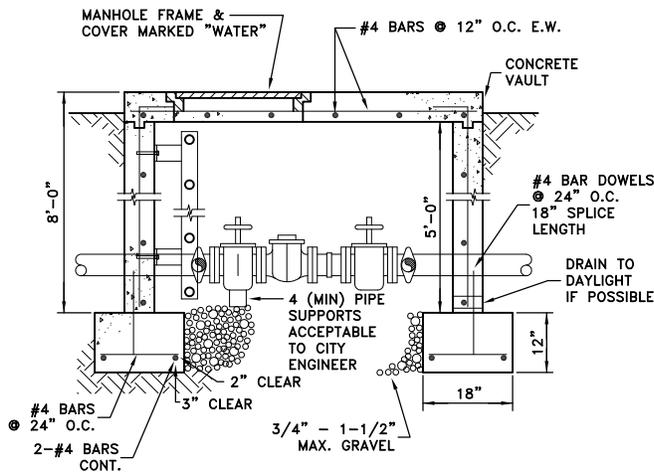
WEST WENDOVER
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 WEST WENDOVER, NEVADA 89883

CITY OF WEST WENDOVER
 METER PIT & BYPASS DETAIL
 FOR 1 1/2" AND 2" METERS ONLY

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PLAN



SECTION A-A

NOTES: FIRE LINES SHALL ALSO BE METERED UNLESS OTHERWISE APPROVED BY WATER SUPERINTENDENT. METER PROVIDED BY CITY. VAULT BY DEVELOPER. IF MULTIPLE METERS ARE USED IN ONE VAULT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING VAULT SIZE NECESSARY TO CONTAIN ALL COMPONENTS.

EIGHT-INCH OR LARGER METERS SHALL BE INSTALLED IN AN APPROPRIATELY SIZED VAULT SUBJECT TO APPROVAL OF CITY ENGINEER. AT THE EXPENSE OF DEVELOPER/OWNER, REMOTE READOUT WITH APPURTENANT WIRING MAY BE REQUIRED BY CITY ENGINEER OR PUBLIC WORKS DIRECTOR.

FIXED ALUMINUM OR STAINLESS STEEL LADDER REQ'D. IN ALL VAULTS.

TOP OF VAULT NEEDS TO BE WITHIN 1'-0" OF FINISH GRADE.



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CITY OF WEST WENDOVER
 METER VAULT & BYPASS DETAIL
 FOR 4" AND 6" METERS ONLY

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APPENDIX A - STANDARD DRAWINGS

PART 5 – MISCELLANEOUS DETAILS

West Wendover City Testing And Inspection Standards

SANITARY SEWER*	PIPELINE INSPECTION – ALIGNMENT, GRADE, AND CLASS OF PIPE LOW PRESSURE AIR TEST OR INFILTRATION TEST DISPLACEMENT TEST
STORM DRAINAGE*	PIPELINE INSPECTION – ALIGNMENT, GRADE, AND CLASS OF PIPE CATCH BASIN BOXES INSPECTION – DEPTH & REBAR
LAND DRANAGE*	PIPE LINE INSPECTION – ALIGNMENT, GRADE, CLASS OF PIPE AND BEDDING METHOD
CULINARY WATER	PIPE LINE INSPECTION – ALIGNMENT, GRADE, CLASS OF PIPE, BEDDING METHOD, SERVICES AND INSTALLTION PRESSURE TEST – MINIMUM 200 PSI FOR 2 HOUR CHLORINATION TEST – MINIMUM 30 RPM-24 HOUR CLEAR WATER TEST
ROADWAY	SUB BASE INSPECTION – DEPTH AND COMPACTION BEFORE ROAD BASE PLACEMENT ALL UTILITY LINES NEEDS TO BE INSTALLED ROAD BASE DENSITY TEST – DEPTH AND COMPACTION (CONTRACTOR RESPONSIBLE TO GIVE ROADBASE PROCTOR TO CITY) ASPHALT PLACEMENT – DEPTH AND COMPACTION
CURB, GUTTER, AND SIDEWALK	CURB, GUTTER, SIDEWALK INSPECTION – DEPTH AND COMPACTION, SLUMP, ENTRAINED AIR AND COMPRESSIVE STRENGTH

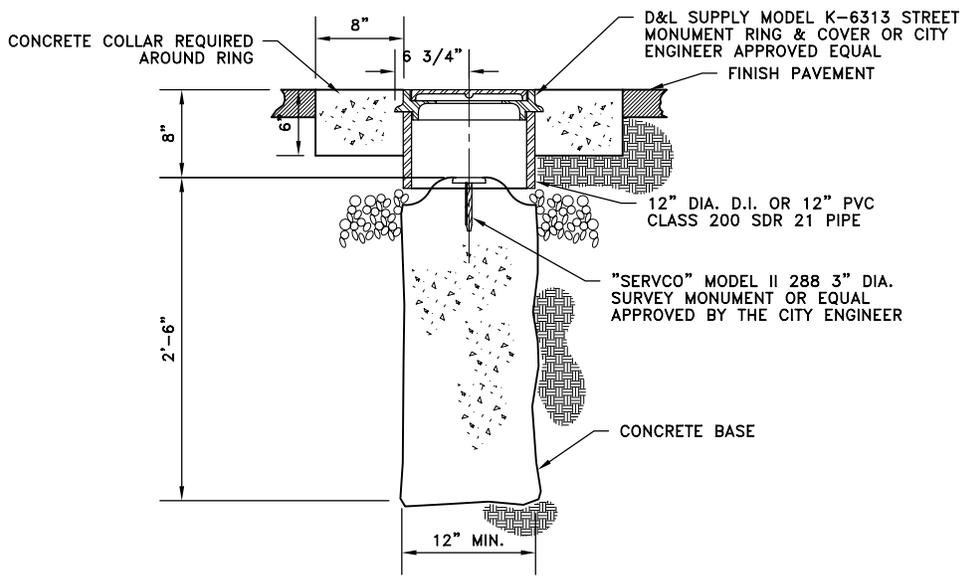
*CONTRACTOR SHALL NOT FLUSH ROCK & DEBRIS FROM NEWLY INSTALLED PIPELINES DOWN STREAM INTO EXISTING SYSTEM.



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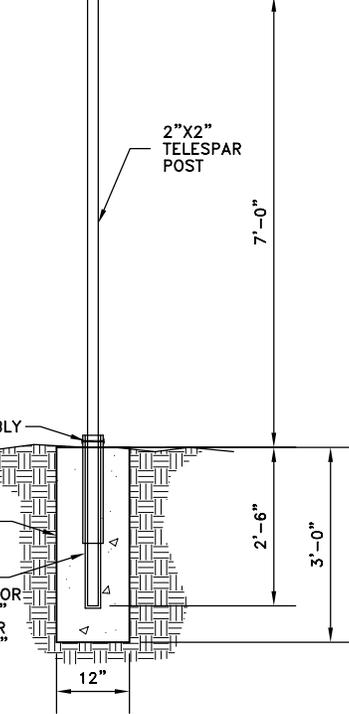
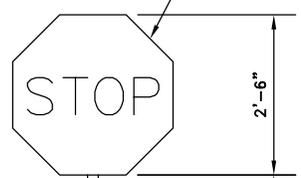
CITY OF WEST WENDOVER
TESTING AND INSPECTION STANDARDS

PLAN NO:	501
REVISION:	5/98

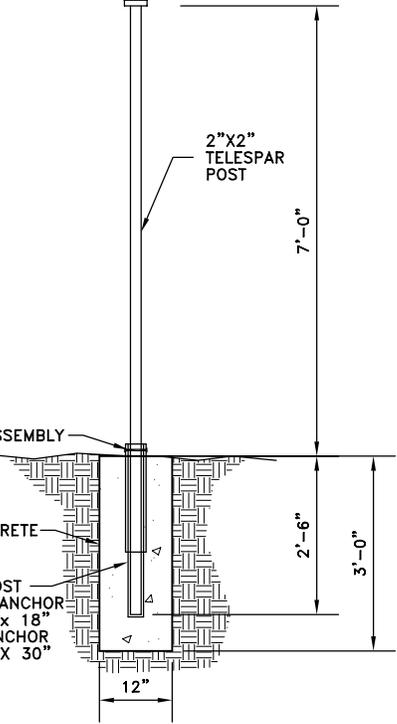


SURVEY MONUMENT SECTION

SIGNS SHALL CONFORM TO THE REQUIREMENTS OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES"



TYPICAL REGULATORY SIGN



TYPICAL STREET NUMBERING SIGN

ALUMINUM TYPE B-4P ASSEMBLY (GREEN SCOTCH LITE) OR EQUAL



WEST WENDOVER
 1111 NORTH GENE L. JONES WAY
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CITY OF WEST WENDOVER
 STREET SIGN AND MONUMENT DETAILS

PLAN NO: **502**

REVISION: 4/09

GE PHOTO CELL OR APPROVED EQUAL

200 WATT 240 VOLT LUMINAIRE
G.E. M2RR2050A2GMS

FIBER GLASS POLE
SHAKESPEARE BH35-18

NOTE:

STREET LIGHT POLES SHALL BE LOCATED AT ROADWAY INTERSECTIONS (NEAR FIRE HYDRANTS WHERE POSSIBLE) AND AT OTHER REQUIRED LOCATIONS PER CITY ENGINEER

GRADE

JUNCTION BOX
CDR SYSTEMS C857 A-8 OR EQUAL

GROUNDING ROD

10% + 2'-0"
OF POLE HEIGHT

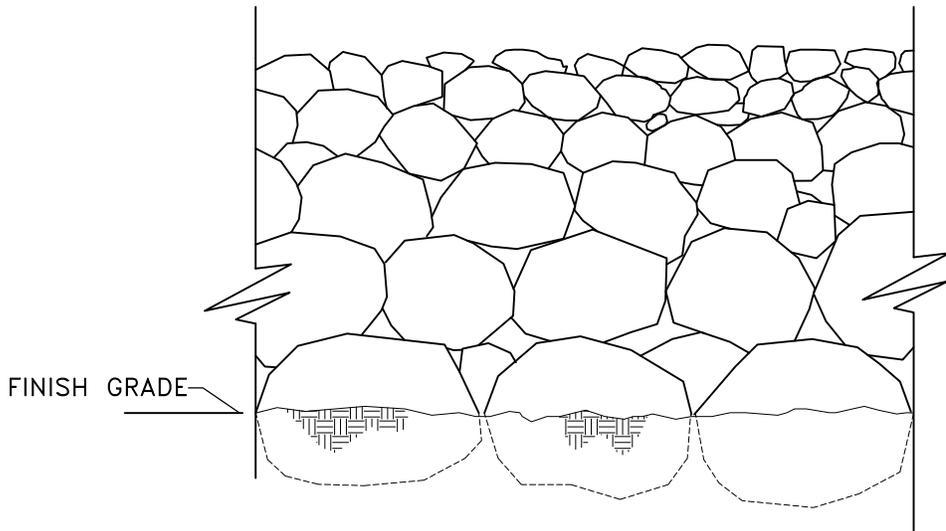


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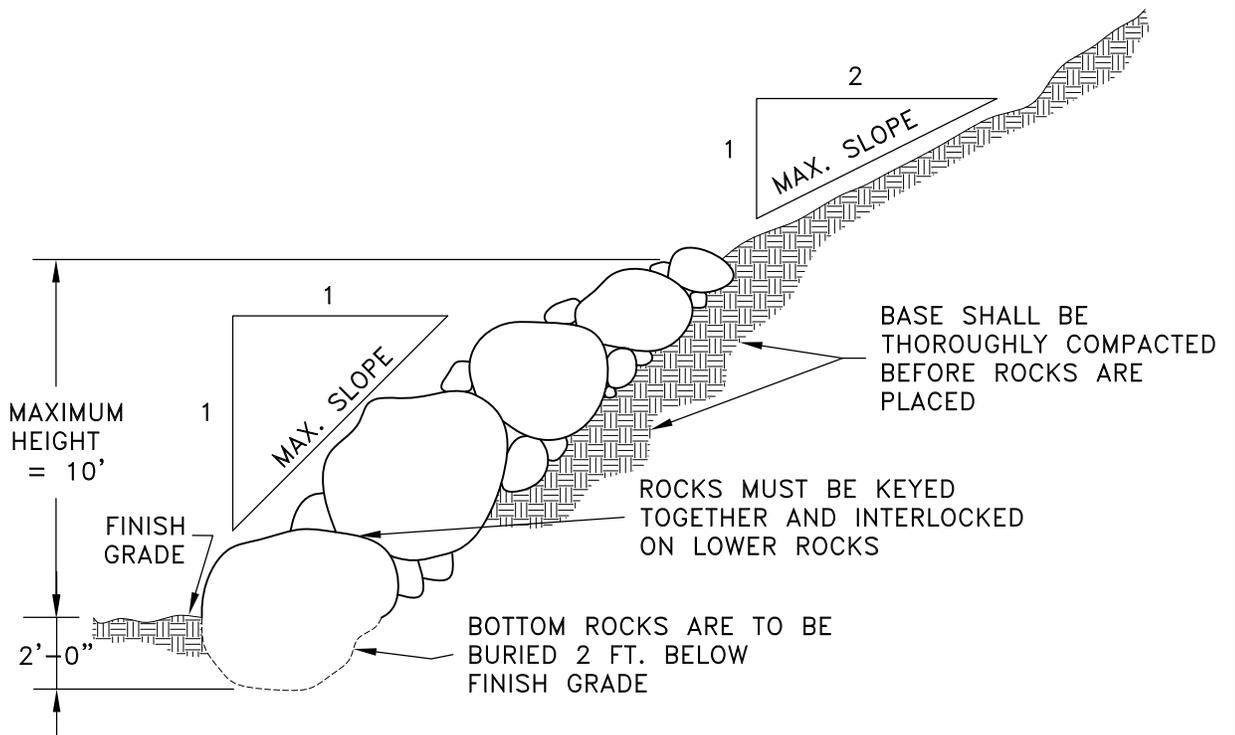
CITY OF WEST WENDOVER
STREET LIGHT POLE DETAILS

PLAN NO:
503

REVISION:
4/09



FRONT VIEW



CROSS SECTION

NOTE:

THE ROCK SHALL BE HARD, DURABLE, ANGULAR FIELD STONES AND SHALL INTERLOCK WITH ADJACENT ROCKS.
 THE ROCKS SHALL BE SET SO AS NOT TO EXCEED A 1 TO 1 SLOPE AS SHOWN.
 LARGE IRREGULARITIES BETWEEN STONES SHALL BE FILLED WITH ROCK SPALLS OF SUITABLE SIZE RAMMED TIGHTLY INTO PLACE FROM THE BOTTOM TO THE TOP.



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CITY OF WEST WENDOVER

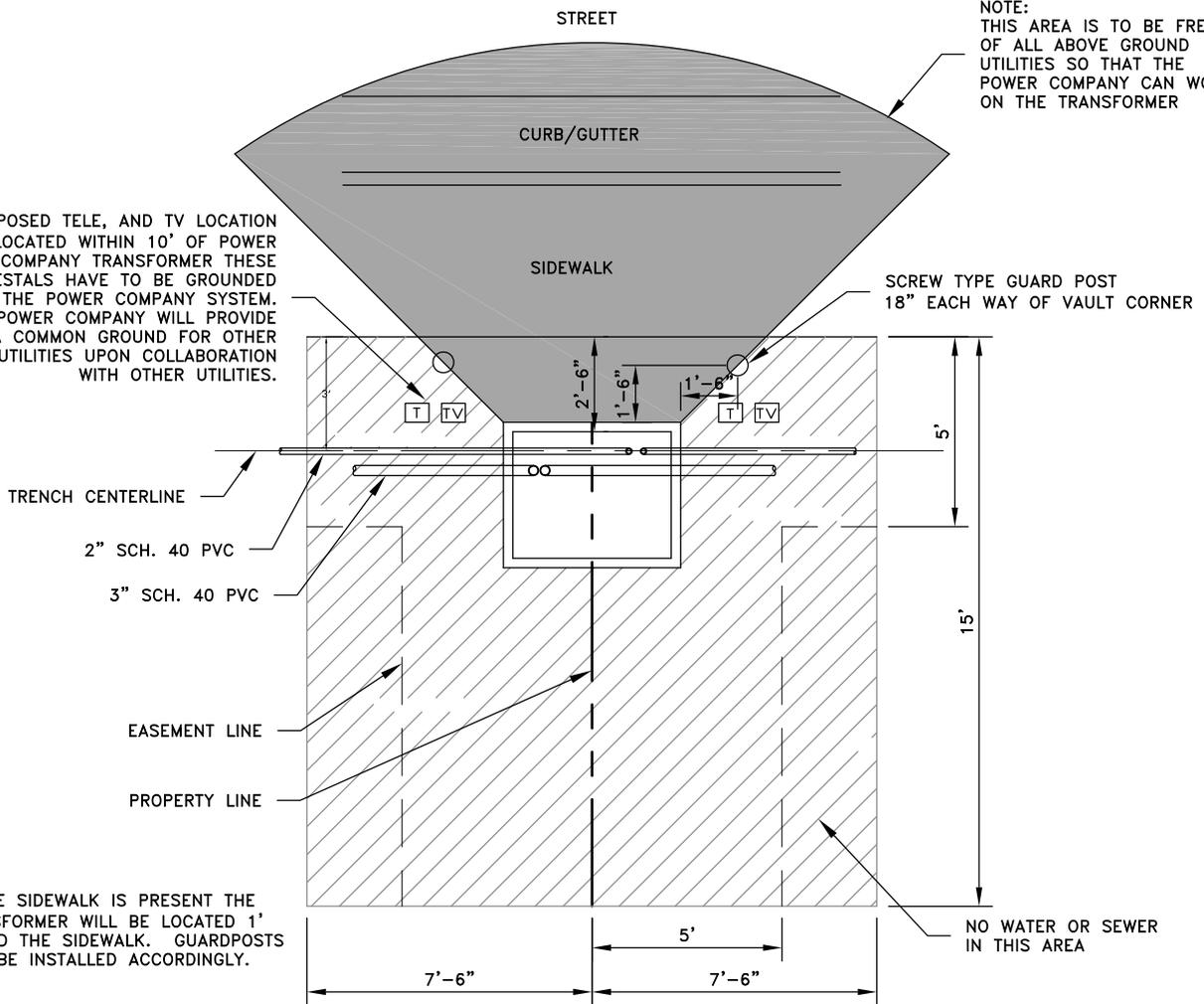
ROCK RETAINING WALL

PLAN NO:
504

REVISION:
 5/98

PROPOSED TELE, AND TV LOCATION IF LOCATED WITHIN 10' OF POWER COMPANY TRANSFORMER THESE PEDESTALS HAVE TO BE GROUNDED ON THE POWER COMPANY SYSTEM. POWER COMPANY WILL PROVIDE A COMMON GROUND FOR OTHER UTILITIES UPON COLLABORATION WITH OTHER UTILITIES.

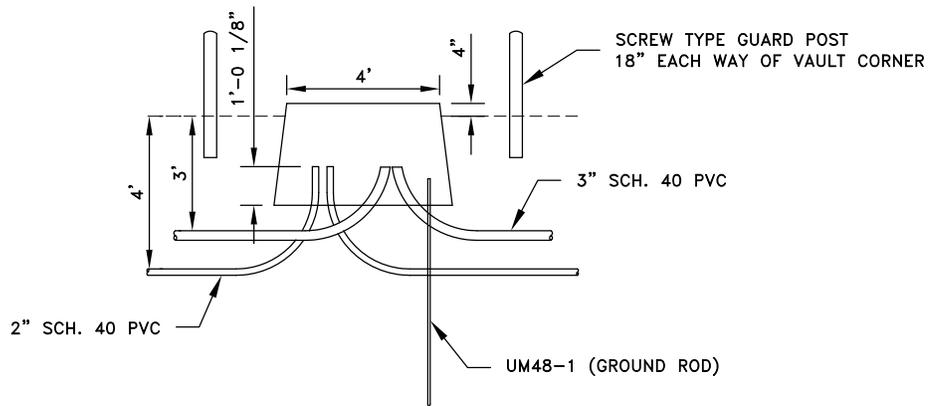
NOTE: THIS AREA IS TO BE FREE OF ALL ABOVE GROUND UTILITIES SO THAT THE POWER COMPANY CAN WORK ON THE TRANSFORMER



NOTE: WHERE SIDEWALK IS PRESENT THE TRANSFORMER WILL BE LOCATED 1' BEHIND THE SIDEWALK. GUARDPOSTS WILL BE INSTALLED ACCORDINGLY.

PLAN

N.T.S.



PROFILE

N.T.S.

TYPICAL TRANSFORMER VAULT

N.T.S.



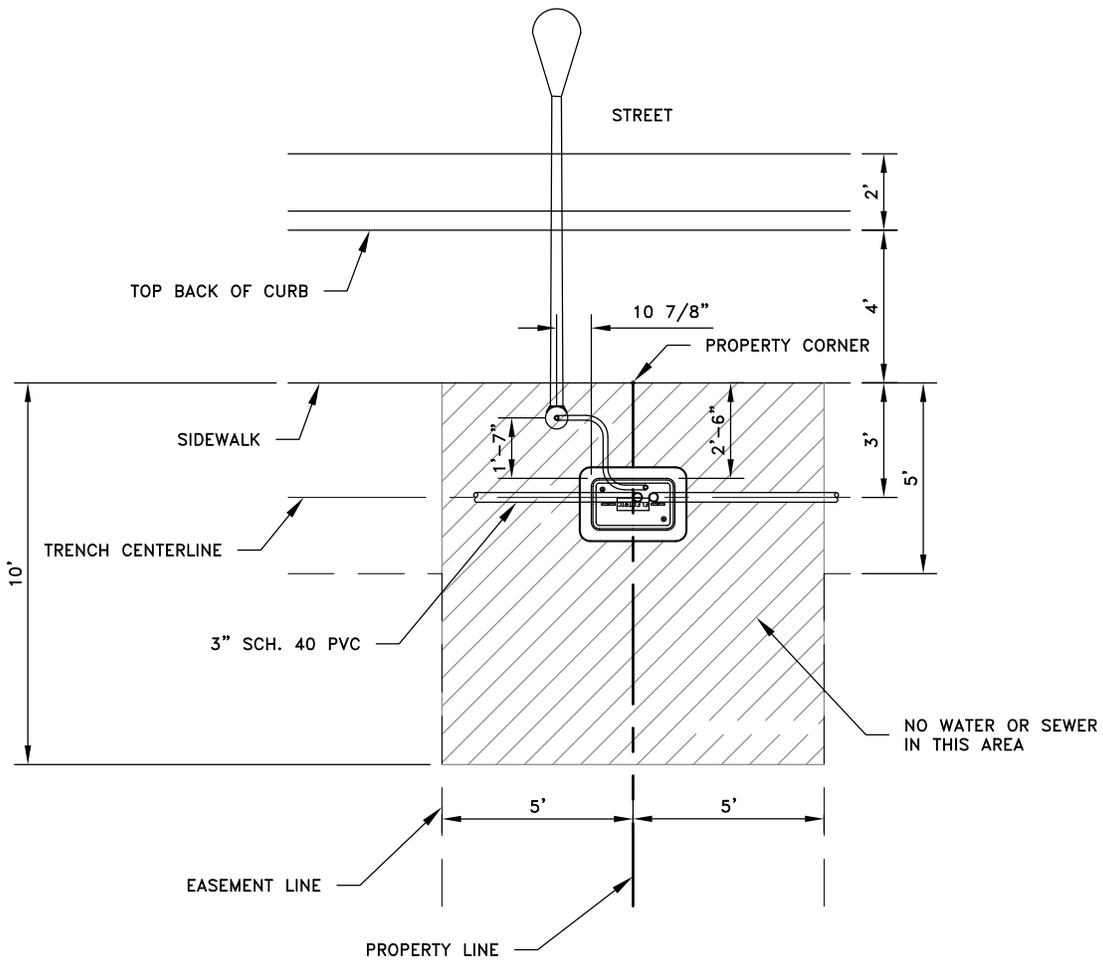
NOTE: THIS DRAWING WAS TAKEN FROM WELLS RURAL ELECTRIC COMPANY DRAWING - TRANSFORMER SITE TYPICALS AND MODIFIED TO MATCH THE DEVELOPMENT STANDARDS FORMAT.



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CITY OF WEST WENDOVER
TYPICAL TRANSFORMER SITE

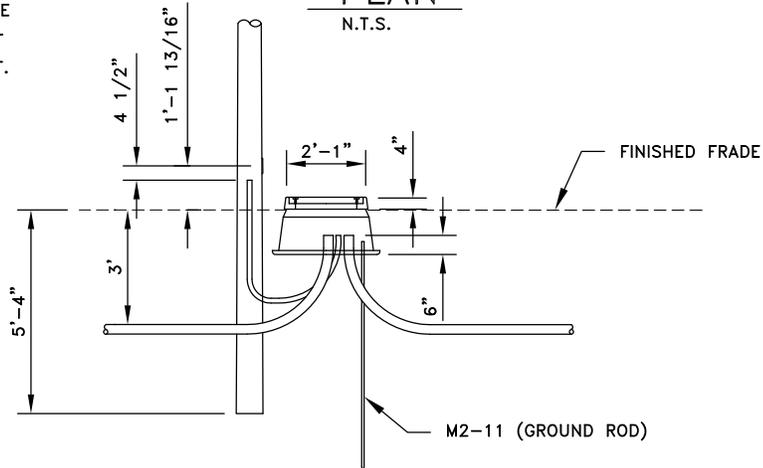
PLAN NO: **505**
REVISION:
11/00



NOTE:
 WHERE THERE IS ONLY CURB ALONG THE STREET, THE SECONDARY BOX WILL BE LOCATED 2.5' BACK OF THE CURB. THE BACK OF SIDEWALK WILL BE THE CONTROLLING ELEVATION, OR THE CURB, WHICH EVER IS CLOSEST.

PLAN

N.T.S.



(UK6)

PROFILE

N.T.S.

UK6 & M26-5S TYPICAL

N.T.S.



NOTE:
 THIS DRAWING WAS TAKEN FROM WELLS RURAL ELECTRIC COMPANY DRAWING - SECONDARY BOX SITE TYPICALS AND MODIFIED TO MATCH THE DEVELOPMENT STANDARDS FORMAT.

WELLS, NEVADA



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 WEST WENDOVER, NEVADA 89883

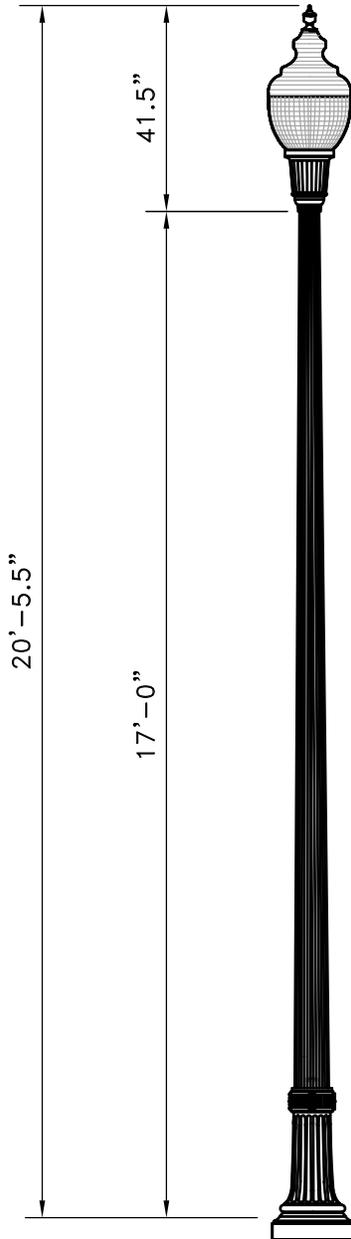
CITY OF WEST WENDOVER
 TYPICAL SECONDARY BOX SITE

PLAN NO:
506

REVISION:
 11/00

CORNER – STREET LIGHT

165 WATT INDUCTION LAMP HALIDE FIXTURE
 (TOP ONLY), PER HADCO DRAWING S775-DWGO4
 SEE SHEET 510



NOTE:
 ALL PAINTED PARTS UNLESS NOTED
 OTHERWISE TO BE PAINTED WITH EPOXY
 PRIMER, URETHANE OVERCOAT.

POLE BY MOUNTAIN STATES #17TFS-6/3-TT/4"O.D.x3"H-17MAD-BK
 17' TAPERED FLUTED STEEL 6"x3" O.D./3" O.D TENON
 PAINTED BLACK WITH FIRST 16" OF POLE & BASE PLATE TO BE
 COATED WITH COLD TAR EPOXY
 MIN EPA OF 20 IN 80 MPH ZONE(1.3 GUST FACTOR)
 BOLT CIRCLE SLOTTED HOLES 11.5-15.5 VARIABLE/
 (4) 3/4"X 30" BOLT

HIGH DENSITY ELASTOMER
 BASE PART# 20" MAD-BK
 BY MOUNTAIN STATES LIGHTING

LIGHT POLE DETAIL

SCALE: N.T.S.



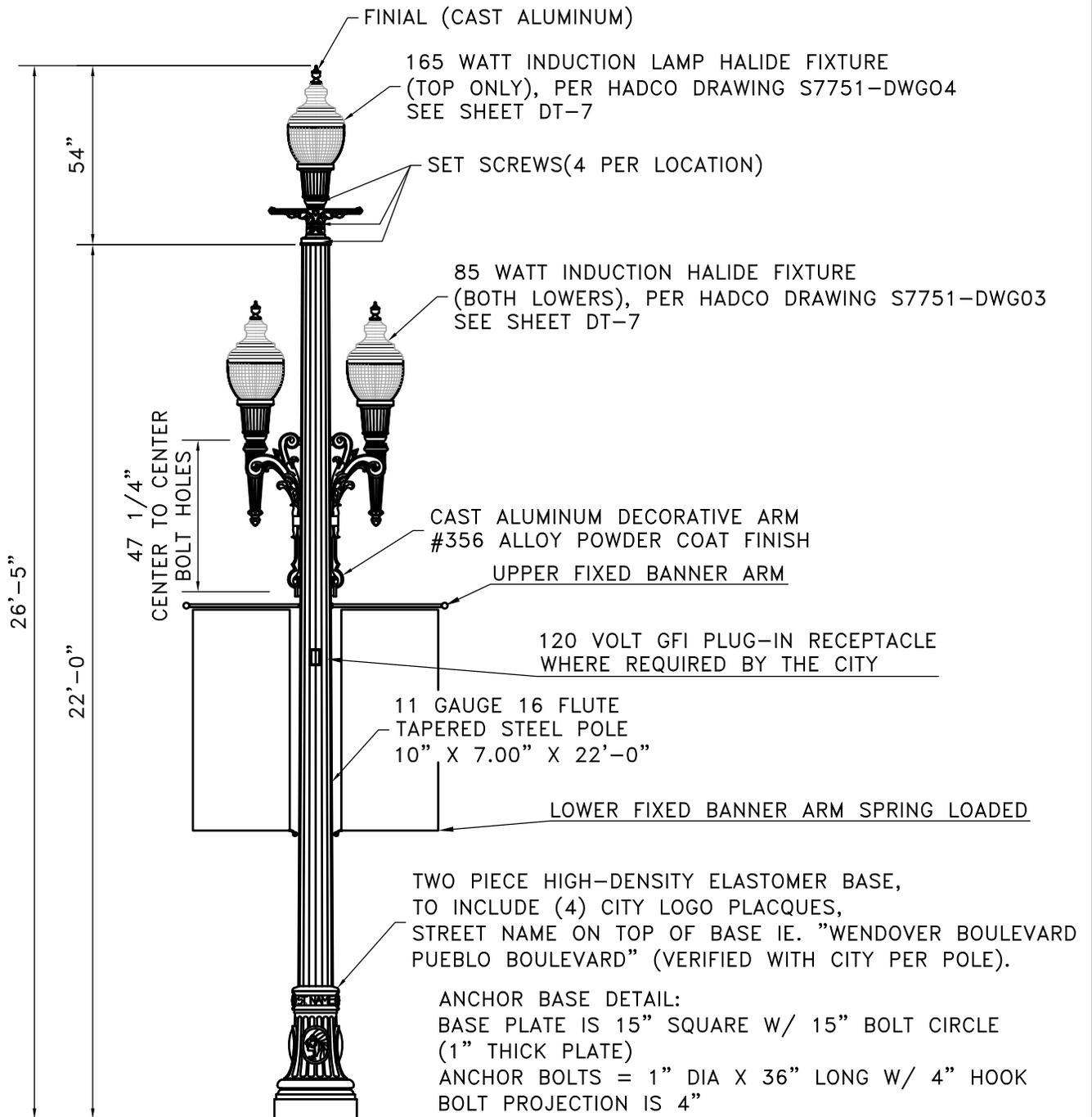
WEST WENDOVER
 1111 NORTH GENE L. JONES WAY
 WEST WENDOVER, NEVADA 89883

CITY OF WEST WENDOVER

LIGHT POLE

PLAN NO:	507
REVISION:	5/07

CACTUS - STREET LIGHT



CACTUS - STREET LIGHT

SCALE: N.T.S.



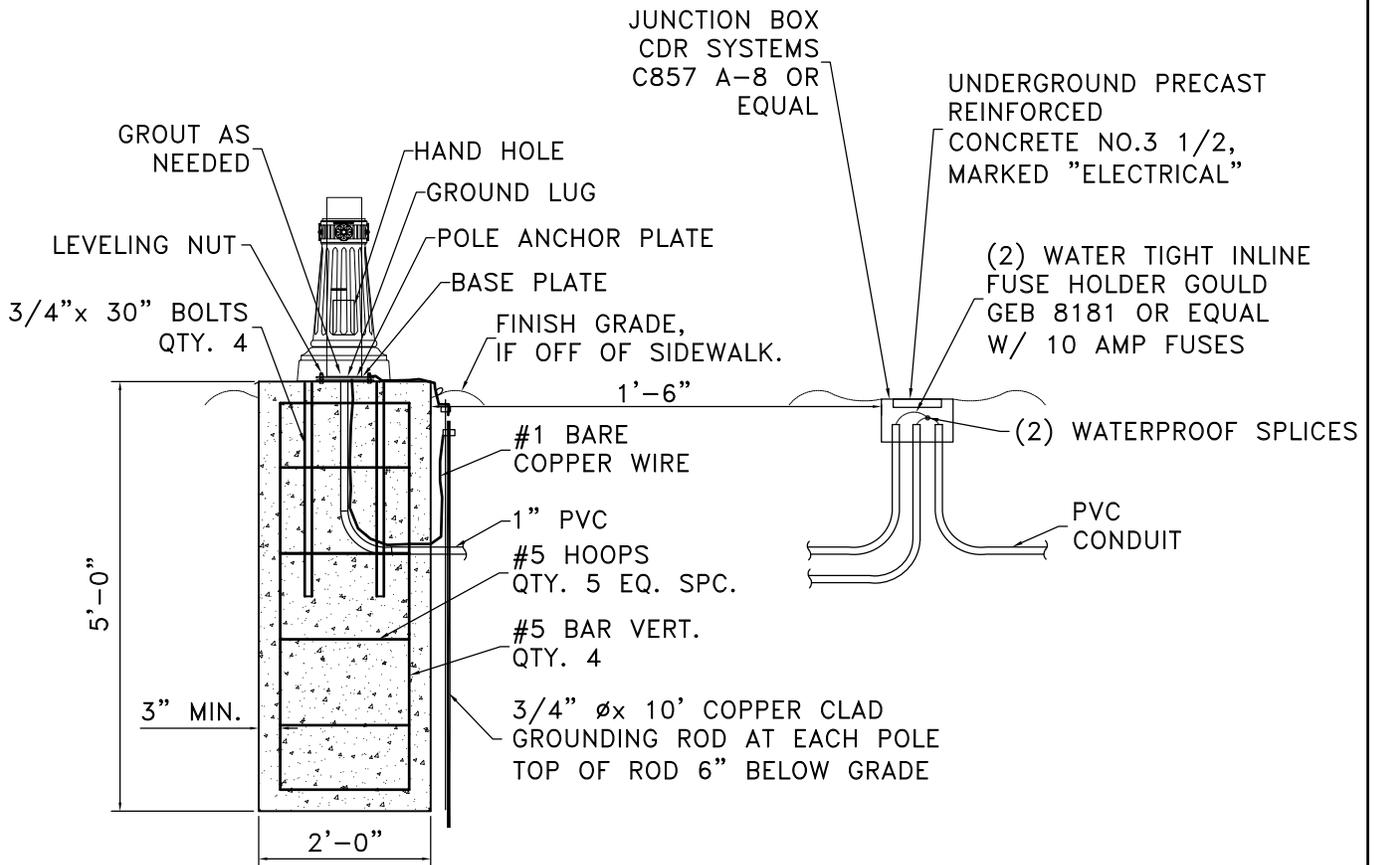
WEST WENDOVER
 1111 NORTH GENE L. JONES WAY
 WEST WENDOVER, NEVADA 89883

CITY OF WEST WENDOVER

CACTUS - STREET LIGHT

PLAN NO:
508

REVISION:
 5/07



POLE FOUNDATION INSTALLATION DETAIL

SCALE: N.T.S.



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CITY OF WEST WENDOVER

LIGHT POLE FOUNDATION

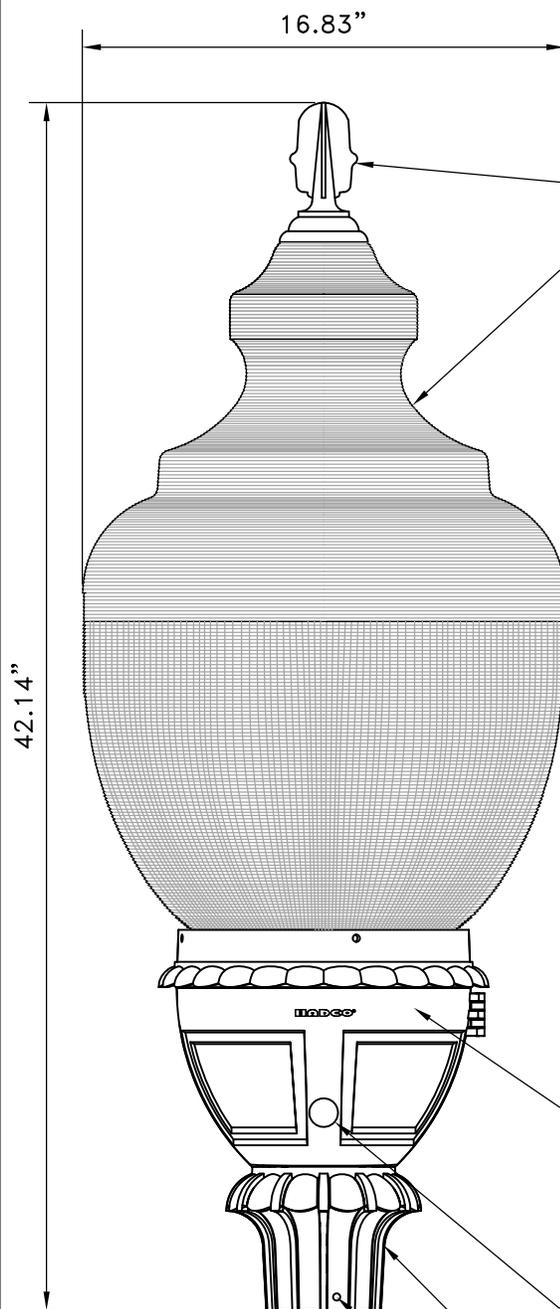
PLAN NO:

509

REVISION:

5/07

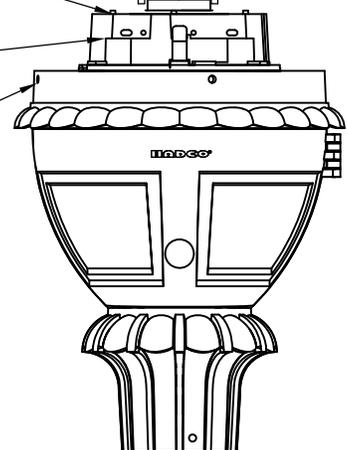
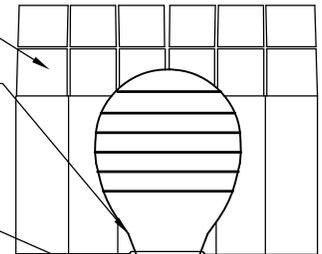
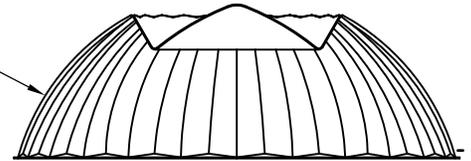
NOTICE:
THIS DRAWING IS FOR REFERENCE
ONLY. CHECK FOR LATEST REVISION
PRIOR TO ORDERING



Luminaire Specifications

- FINIAL:
CAST ALUMINUM
- REFRACTOR GLOBE:
PRISMATIC ACRYLIC
(TYPE V OPTICS TOP ONLY)
(TYPE III OPTICS BOTH LOWERS)
- REFLECTOR:
HIGHLY SPECULAR
ANAODIZED COATED
HYDROFORMED ALUMINUM
FULL TOP
- HOUSE-SIDE SHIELD:
SPECULAR ALUMINUM
SEGMENTED MOUNTED ON
SPRING CLIP
- LAMP MODULE
165 WATT INDUCTION (TOP ONLY)
BASE, ANTENNA, AND LAMP.
- SOCKET BRACKET:
GALVANIZED STEEL
(2) PC. ADJUSTABLE
- BALLAST COVER:
DIE-CAST ALUMINUM,
TOOL-LESS ENTRY
- GENERATOR:
THERMALLY TESTED
AND CERTIFIED 165 WATT
INDUCTION LAMP GENERATOR
240 VOLT.
- GLOBE HOLDER:
DIE-CAST ALUMINUM
- BALLAST ENCLOSURE:
DIE-CAST ALUMINUM
W/TOOL-LESS ENTRY
ACCESS DOOR
- TERMINAL BLOCK:
MOUNTED INSIDE POD
- PHOTO CONTROL:
TWIST-LOCK RECEPTACLE
CONTRACTOR TO PROVIDE
PHOTO CELL AS
RECOMMENDED BY LIGHTING
MANUFACTURER
- SLIP FITTER:
3" I.D.
- FASTENERS:
STAINLESS STEEL
(4) 5/16-18 @ 90°

Lamping & Reflector Detail



HADCO DRAWING S7751

SCALE: N.T.S.



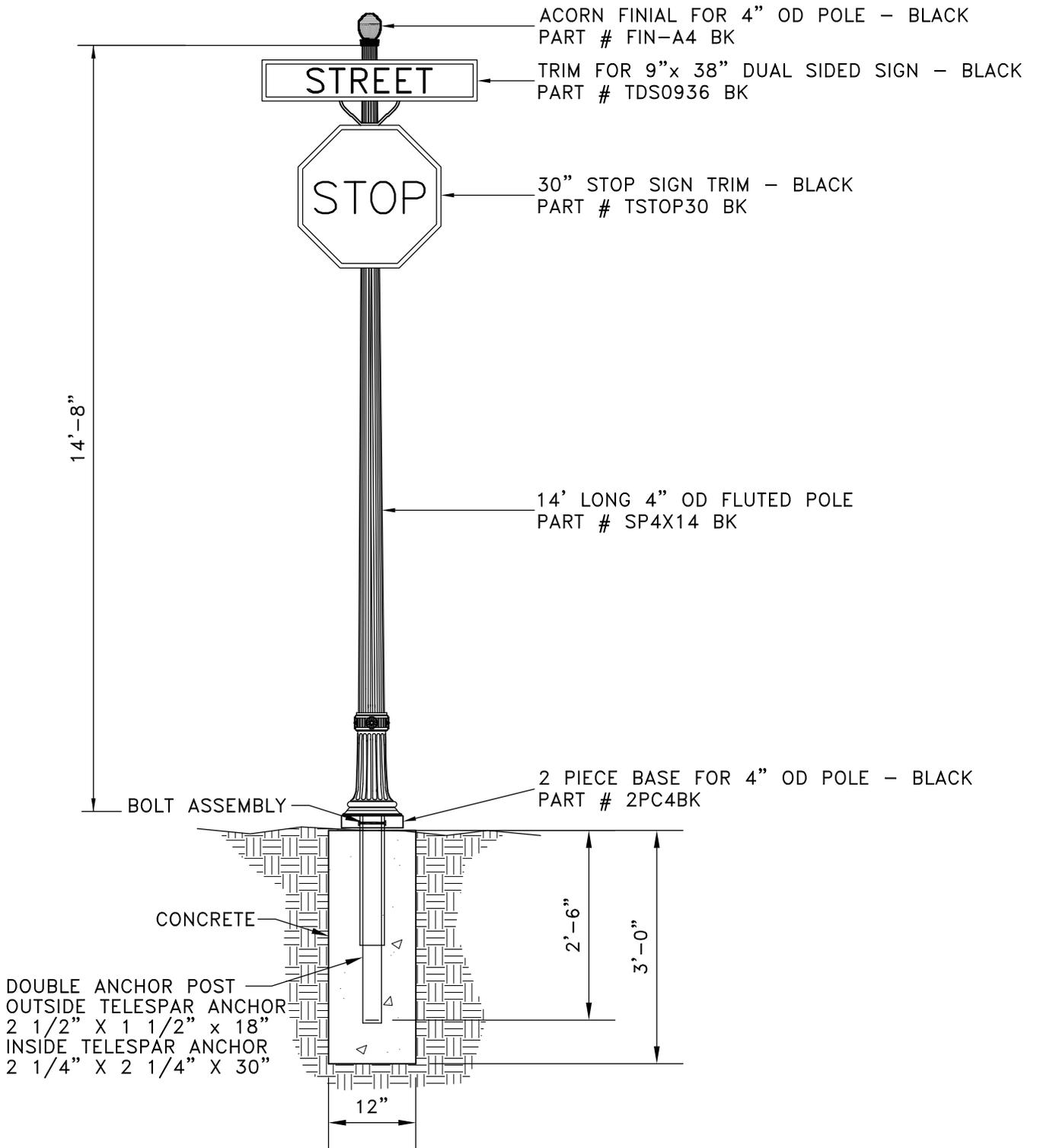
WEST WENDOVER
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CITY OF WEST WENDOVER

HADCO DRAWING S7751
DWG04 (UPPER) & DWG03 (LOWERS)

PLAN NO:
510

REVISION:
5/07



DECORATIVE STOP AND STREET SIGN POLE

SCALE: N.T.S.

SIGNS TO BE USED ON STREETS THAT UTILIZE DECORATIVE LIGHTING OR AS DIRECTED BY THE CITY.

NOTE:

PART #'S BASED ON BRANDON INDUSTRIES, INC.
1601 W. WILMETH RD.
MCKINNEY, TX 75069
(972) 542-3000 FAX (972) 542-1015



WEST WENDOVER
1111 NORTH GENE L. JONES WAY
WEST WENDOVER, NEVADA 89883

CITY OF WEST WENDOVER

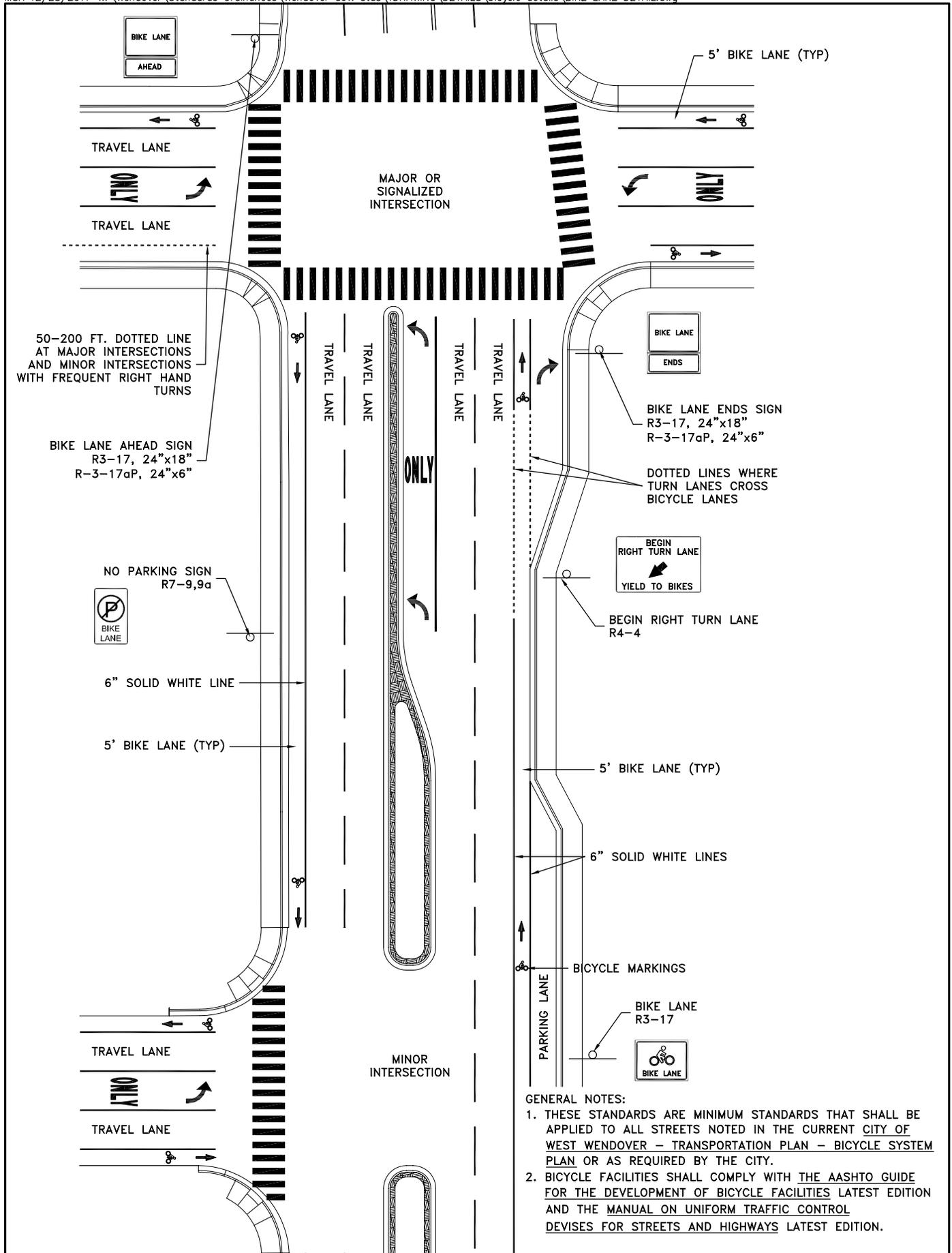
DECORATIVE STOP AND STREET SIGN POLE

PLAN NO:

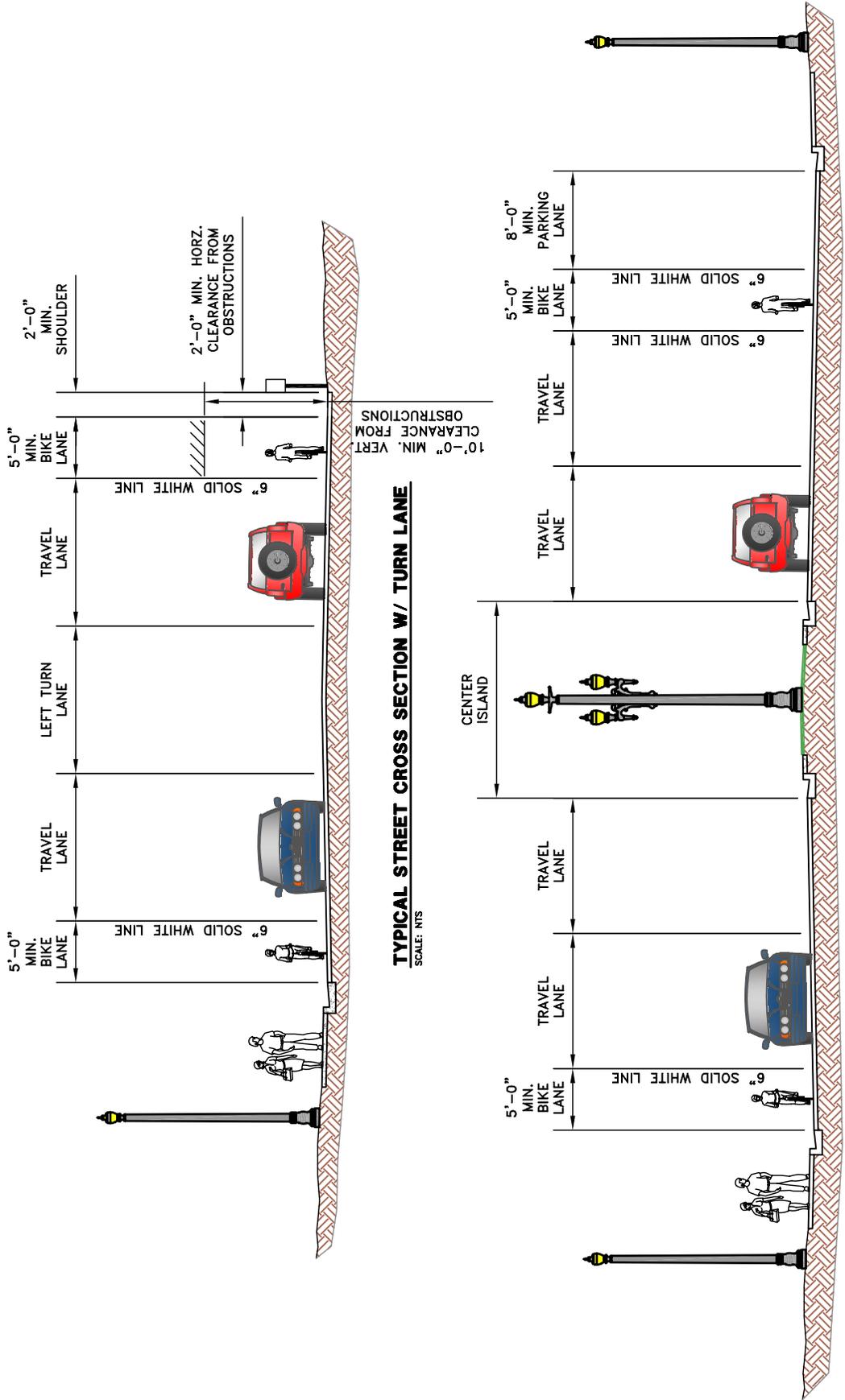
511

REVISION:

4/09



- GENERAL NOTES:**
1. THESE STANDARDS ARE MINIMUM STANDARDS THAT SHALL BE APPLIED TO ALL STREETS NOTED IN THE CURRENT CITY OF WEST WENDOVER – TRANSPORTATION PLAN – BICYCLE SYSTEM PLAN OR AS REQUIRED BY THE CITY.
 2. BICYCLE FACILITIES SHALL COMPLY WITH THE AASHTO GUIDE FOR THE DEVELOPMENT OF BICYCLE FACILITIES LATEST EDITION AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS LATEST EDITION.



TYPICAL STREET CROSS SECTION THRU ISLAND
SCALE: NTS

- GENERAL NOTES:
1. THESE STANDARDS ARE MINIMUM STANDARDS THAT SHALL BE APPLIED TO ALL STREETS NOTED IN THE CURRENT CITY OF WEST WENDOVER - TRANSPORTATION PLAN - BICYCLE SYSTEM PLAN OR AS REQUIRED BY THE CITY.
 2. BICYCLE FACILITIES SHALL COMPLY WITH THE AASHTO GUIDE FOR THE DEVELOPMENT OF BICYCLE FACILITIES LATEST EDITION AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS LATEST EDITION.

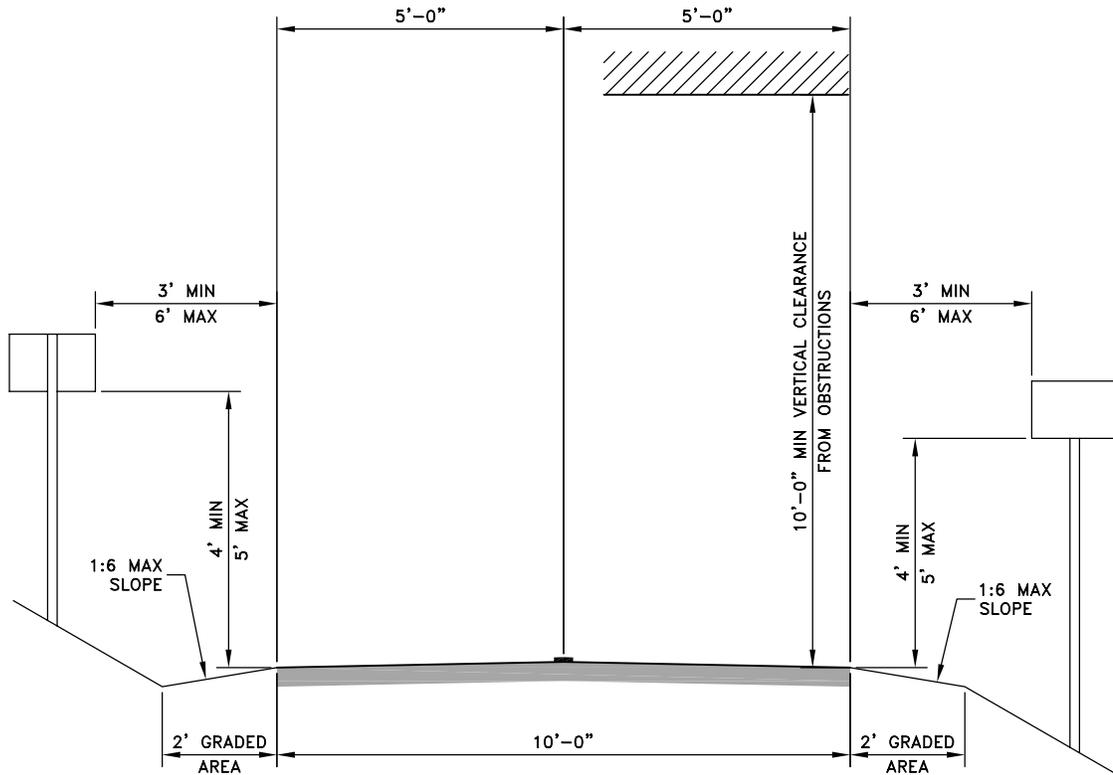


WEST WENDOVER
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CITY OF WEST WENDOVER
BICYCLE FACILITIES DETAIL

PLAN NO:
513

REVISION:
2/12



TYPICAL MULTI-USE TRAIL CROSS SECTION

SCALE: NTS

GENERAL NOTES:

1. THESE STANDARDS ARE MINIMUM STANDARDS THAT SHALL BE APPLIED TO ALL STREETS NOTED IN THE CURRENT CITY OF WEST WENDOVER – TRANSPORTATION PLAN – BICYCLE SYSTEM PLAN OR AS REQUIRED BY THE CITY.
2. BICYCLE FACILITIES SHALL COMPLY WITH THE AASHTO GUIDE FOR THE DEVELOPMENT OF BICYCLE FACILITIES LATEST EDITION AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS LATEST EDITION.



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 1111 NORTH GENE L. JONES WAY
 WEST WENDOVER, NEVADA 89883

CITY OF WEST WENDOVER
 BICYCLE FACILITIES DETAIL
 MULTI-USE TRAIL CROSS SECTION

PLAN NO:
514
 REVISION:
 2/12



APPENDIX E

ELKO COUNTY DEVELOPMENT CODE AND THE DESIGN CRITERIA AND IMPROVEMENT STANDARDS MANUAL

Chapter 4

DEVELOPMENT CRITERIA

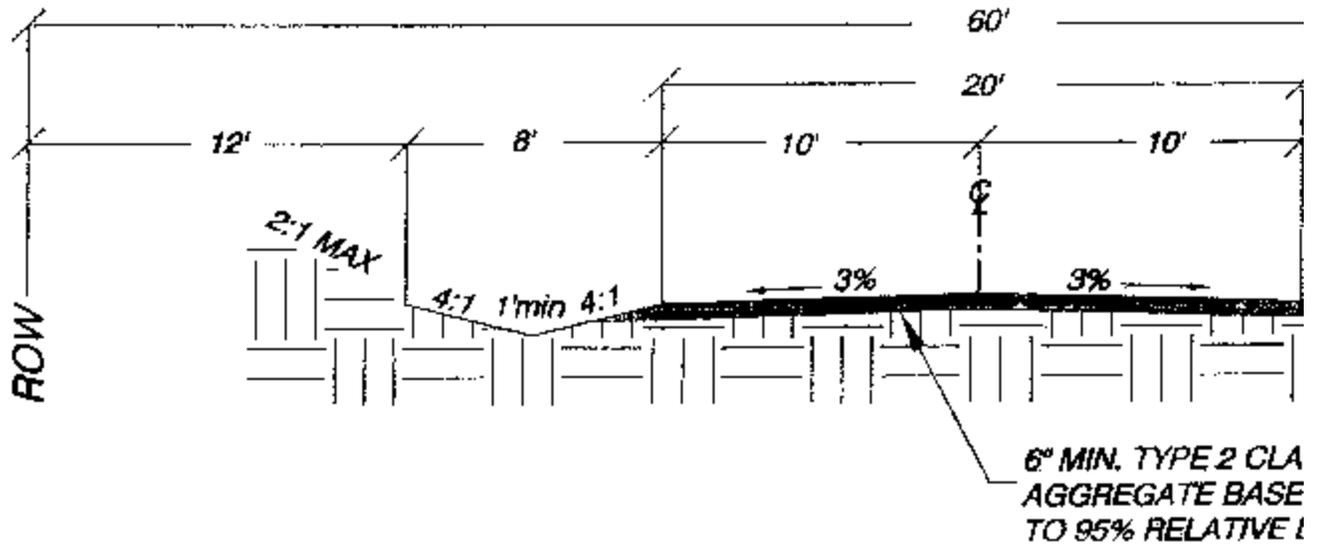
5-4-1: INTENT; ESTABLISHMENT OF STREETS, HIGHWAYS AND DEVELOPMENT STANDARDS:

The location, width and alignment of streets shall be arranged to produce the most advantageous improvement of the area in which the development lies and to preserve the natural features and enhance the overall design, layout, character, extent, width, grade and location of all proposed streets. Streets and highways shall be established with due regard for public convenience and safety, topography and other land features, the proposed uses of the land to be served by the streets and the projected traffic needs of the area. Due regard will also be given to connections with, continuation and projection of streets in the adjacent area, whether the streets are existing or proposed in another development, an area plan, the general plan or in an official map approved by the governing body. Standards for major subdivisions are hereby adopted to promote consistent and uniform development, regulate the improvement of land, further the public health, safety and general welfare in an era of growing demand for housing of all types and design, encourage adequate public services in connection with the development and provide standards for commercial and industrial development to serve the needs of the citizens of the county.

(A) Definitions: As used in this chapter, the following terms shall be deemed to have the meaning ascribed to them and to have the road construction standards and include the elements and features set forth.

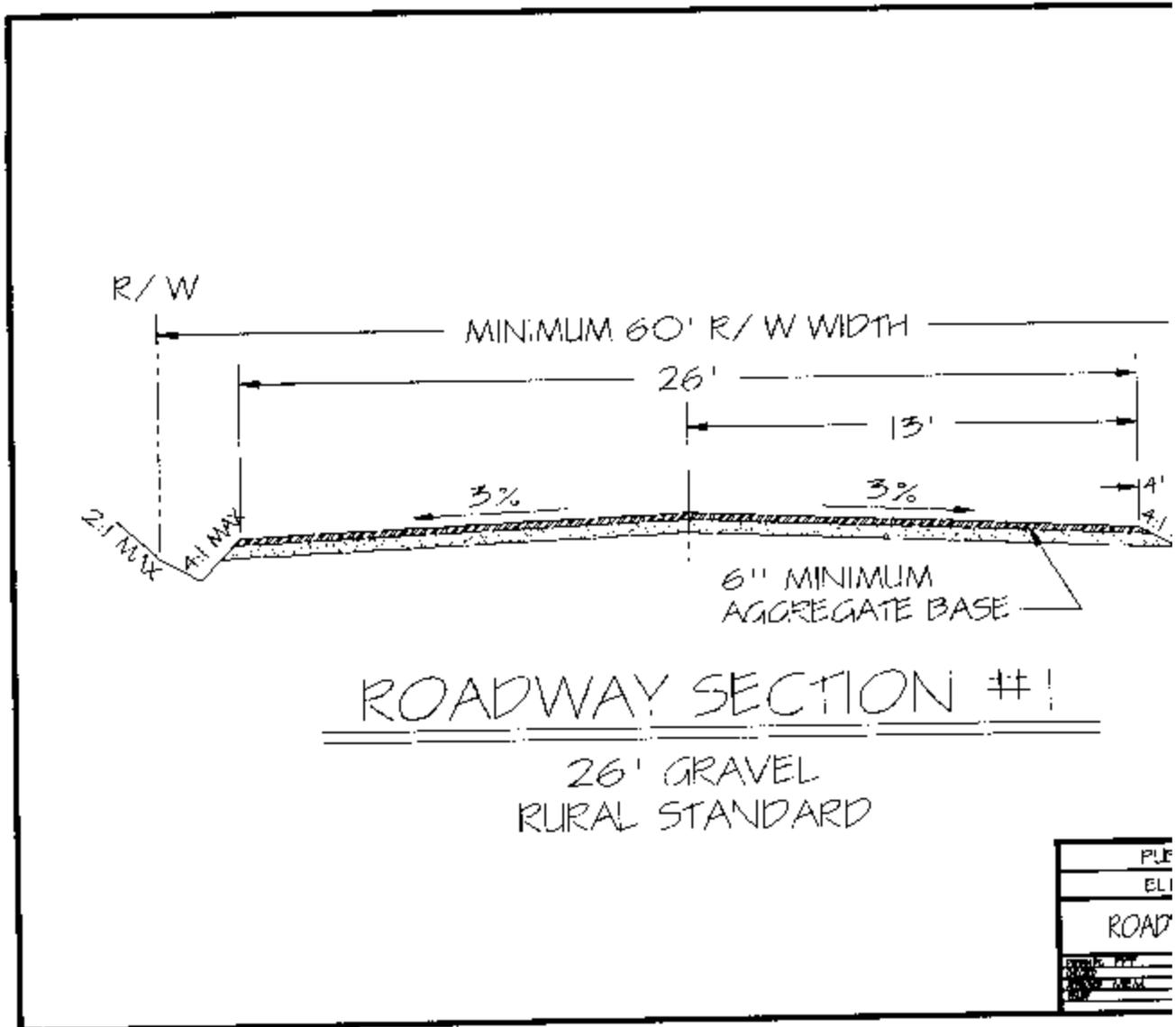
POPULATED AREA: An incorporated city or unincorporated town within the county.
(Ord. 1994-Q, 9-7-1994, eff. 10-1-1994)

20' WIDE RURAL GRAVEL SURFACE:

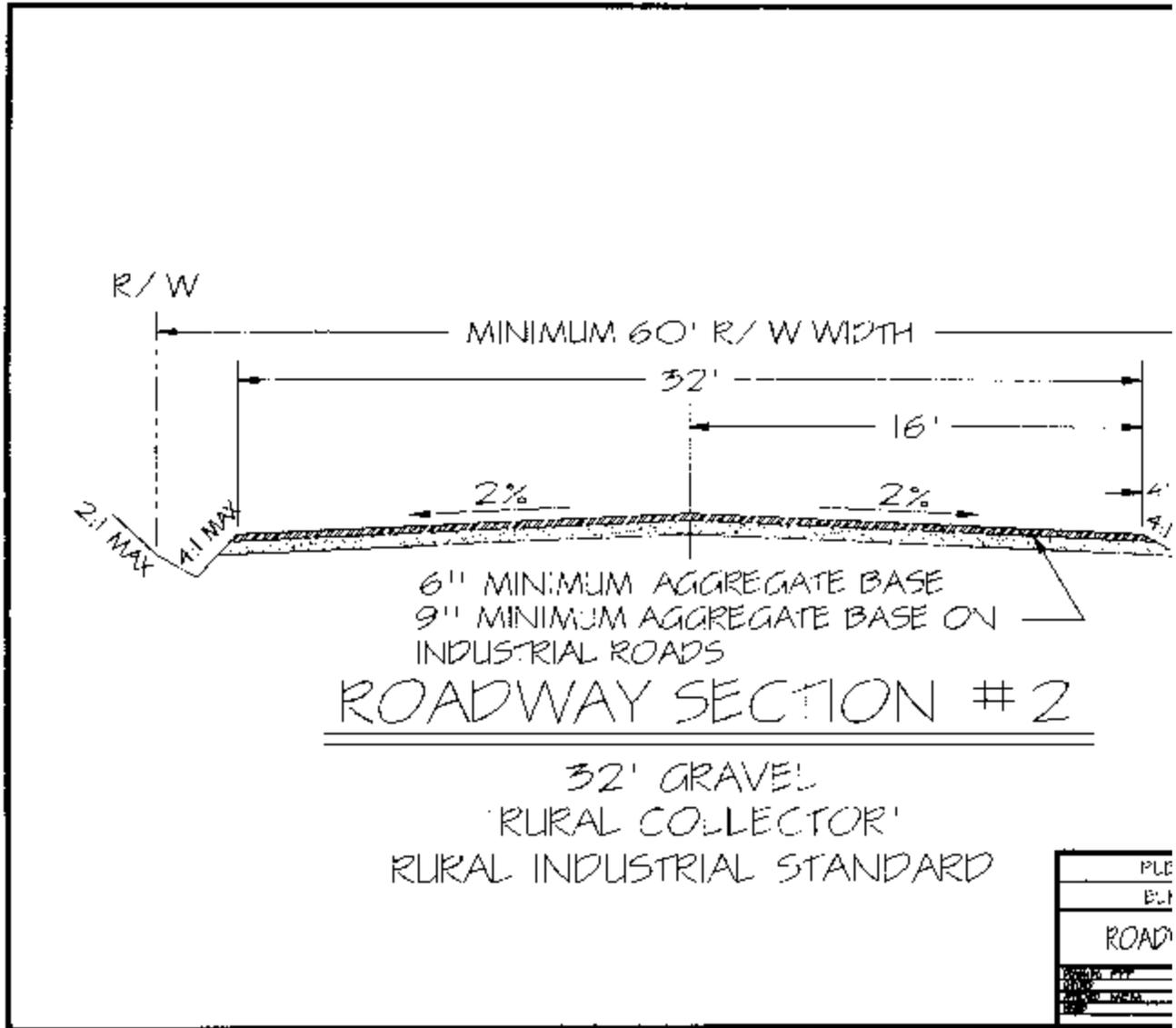


(Ord. 05-2010, 8-5-2010, eff. 9-10-2010)

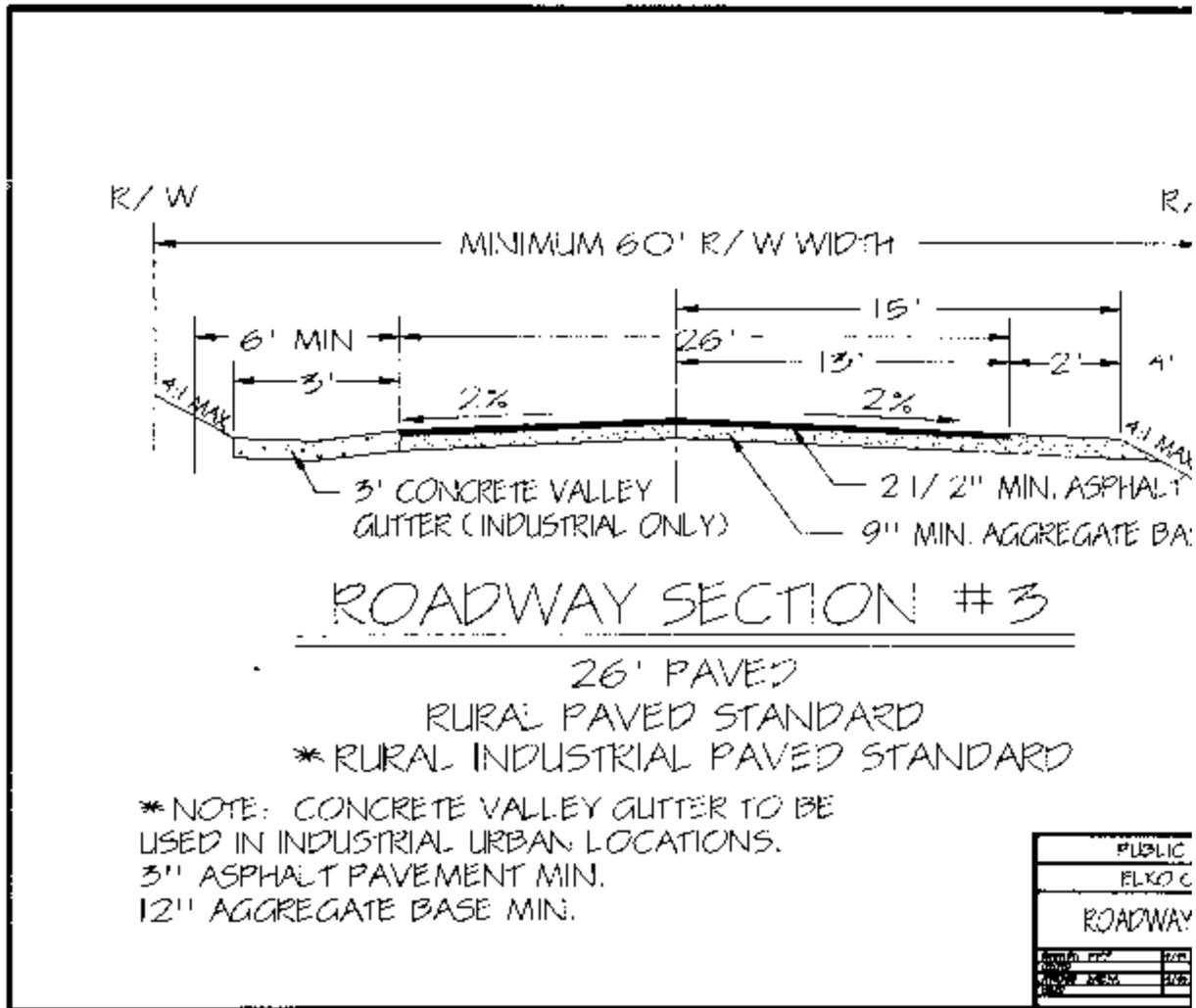
26' WIDE RURAL GRAVEL STANDARD:



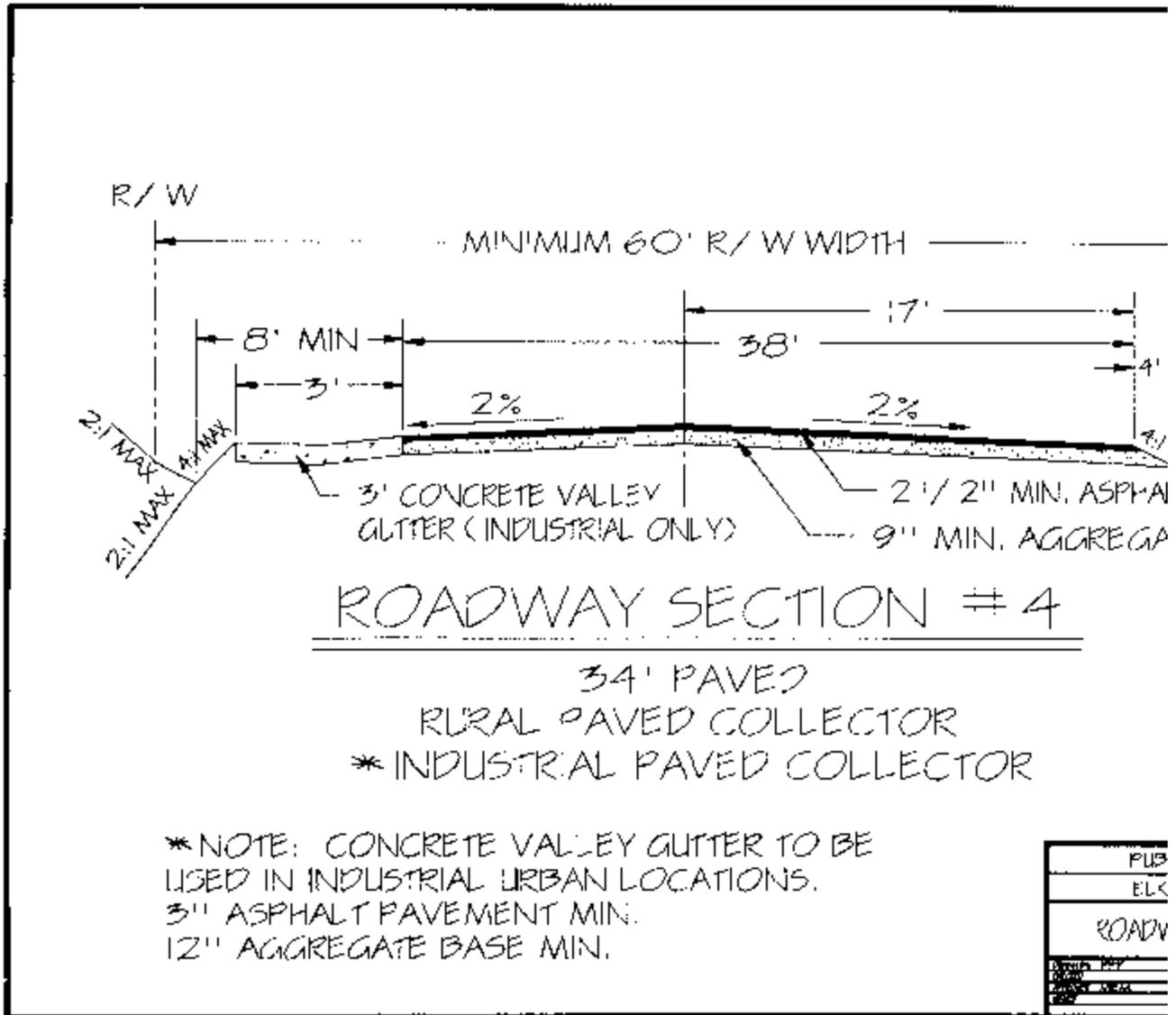
32' WIDE GRAVEL RURAL COLLECTOR STANDARD:



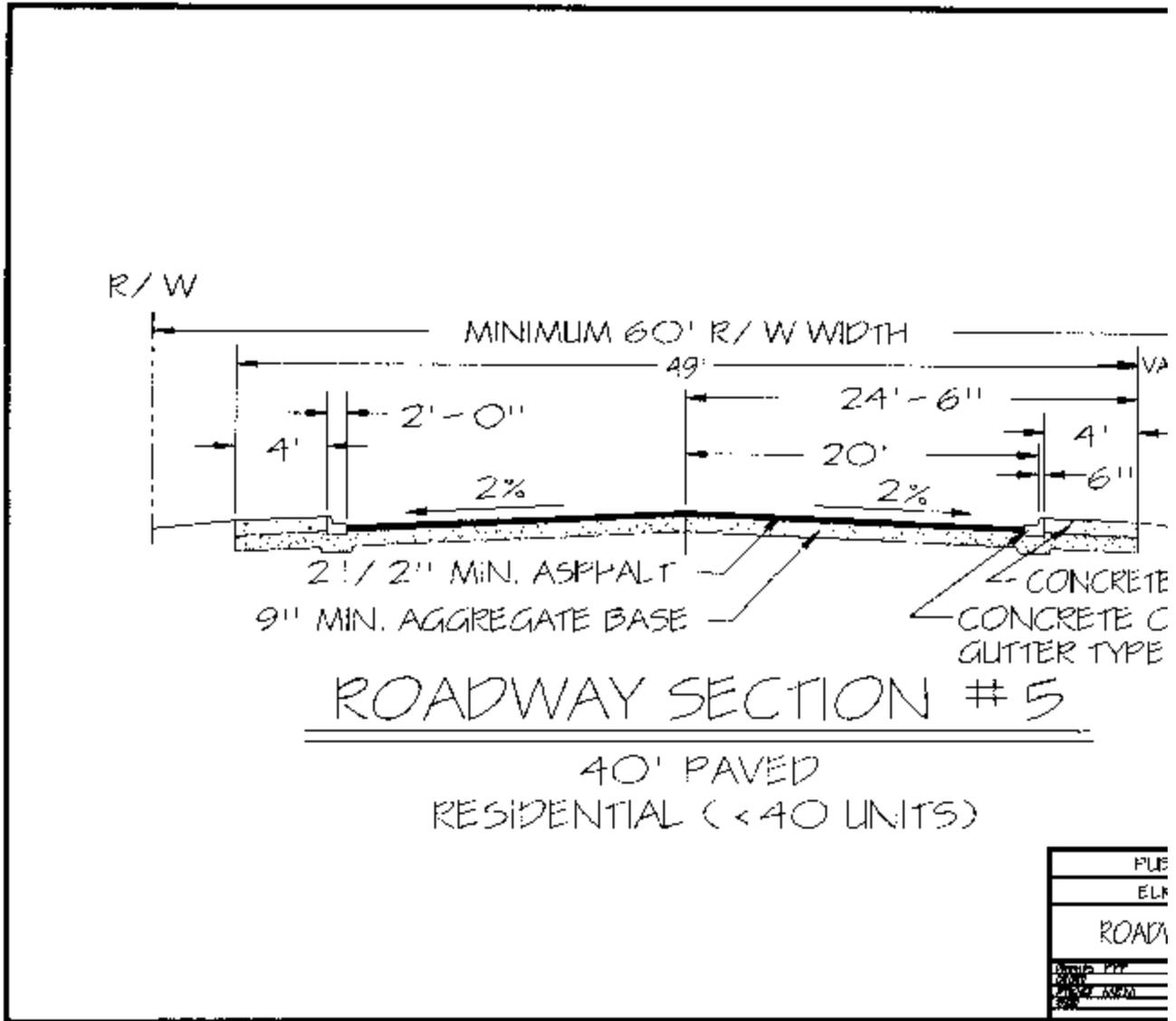
26' WIDE RURAL PAVED STANDARD:



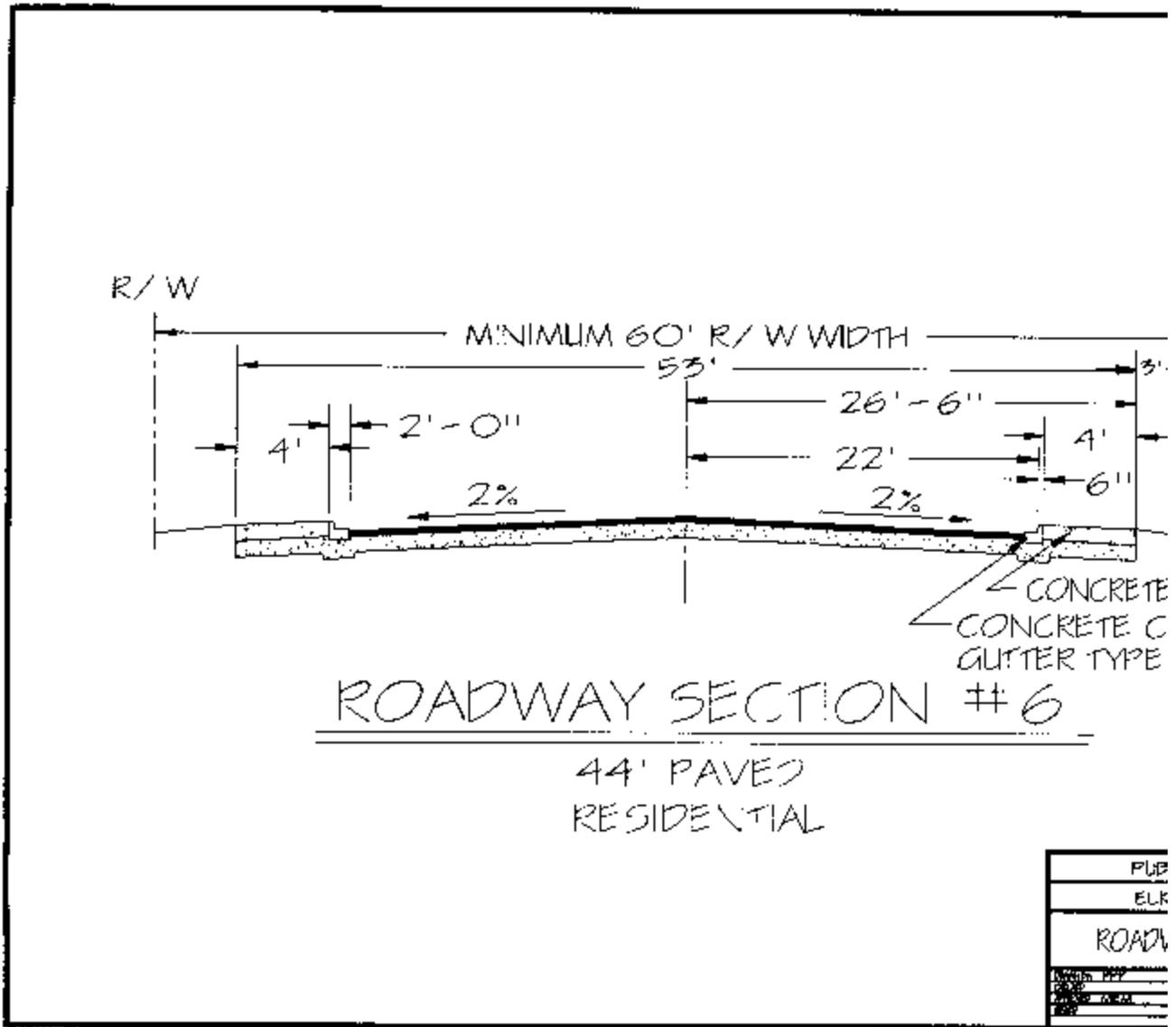
34' WIDE RURAL PAVED COLLECTOR STANDARD:



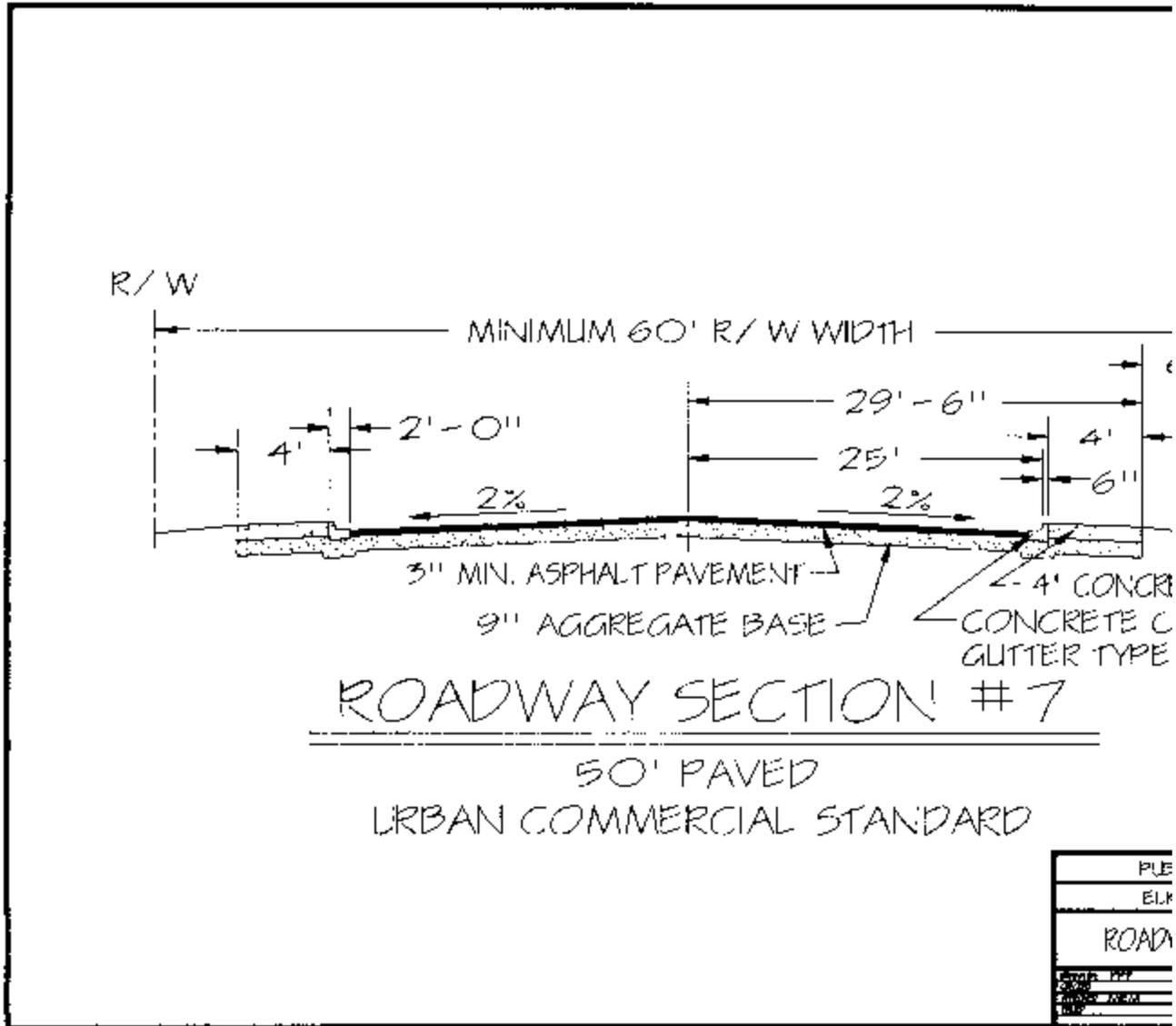
40' WIDE PAVED RESIDENTIAL STANDARD:



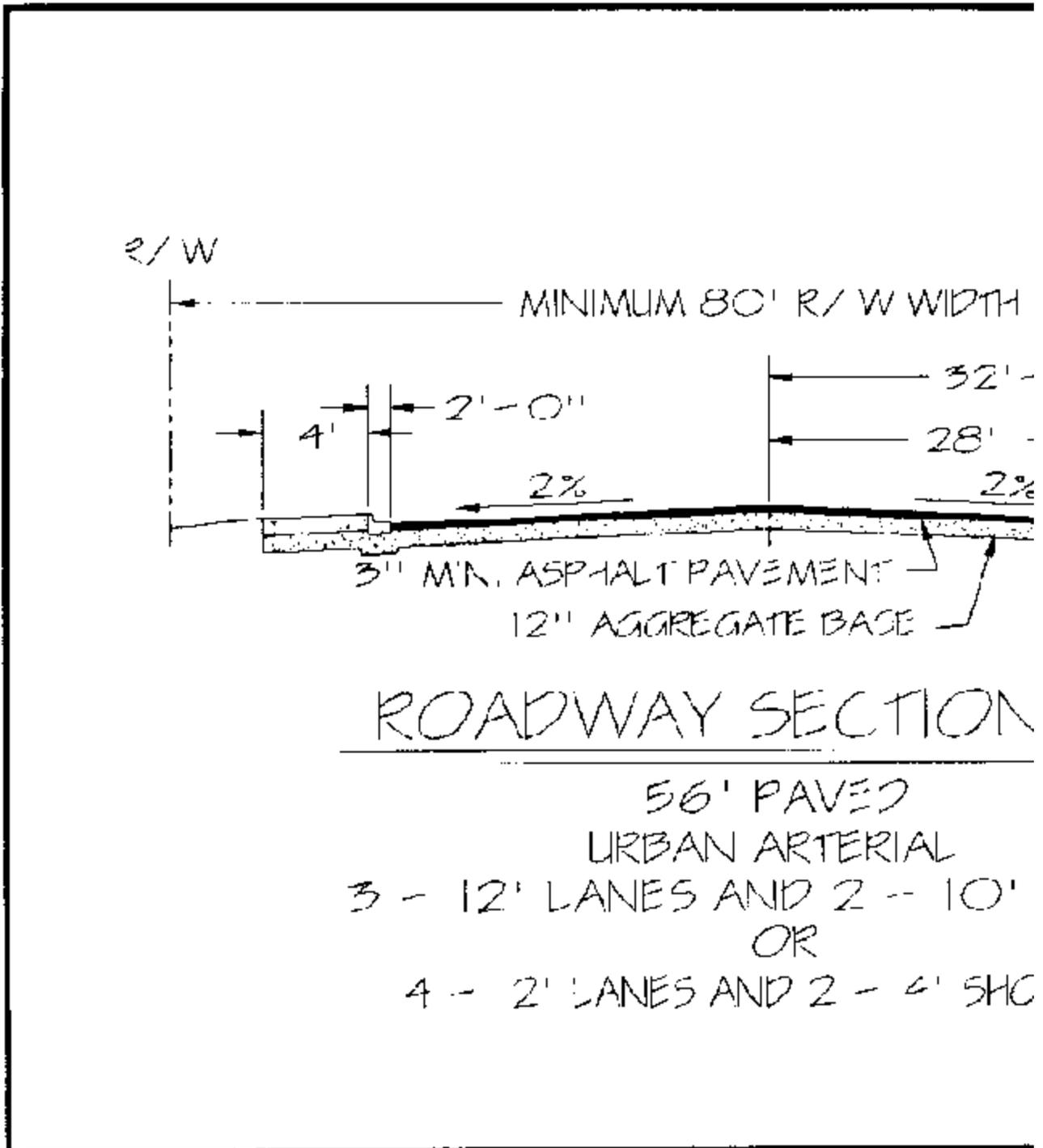
44' WIDE PAVED RESIDENTIAL STANDARD:



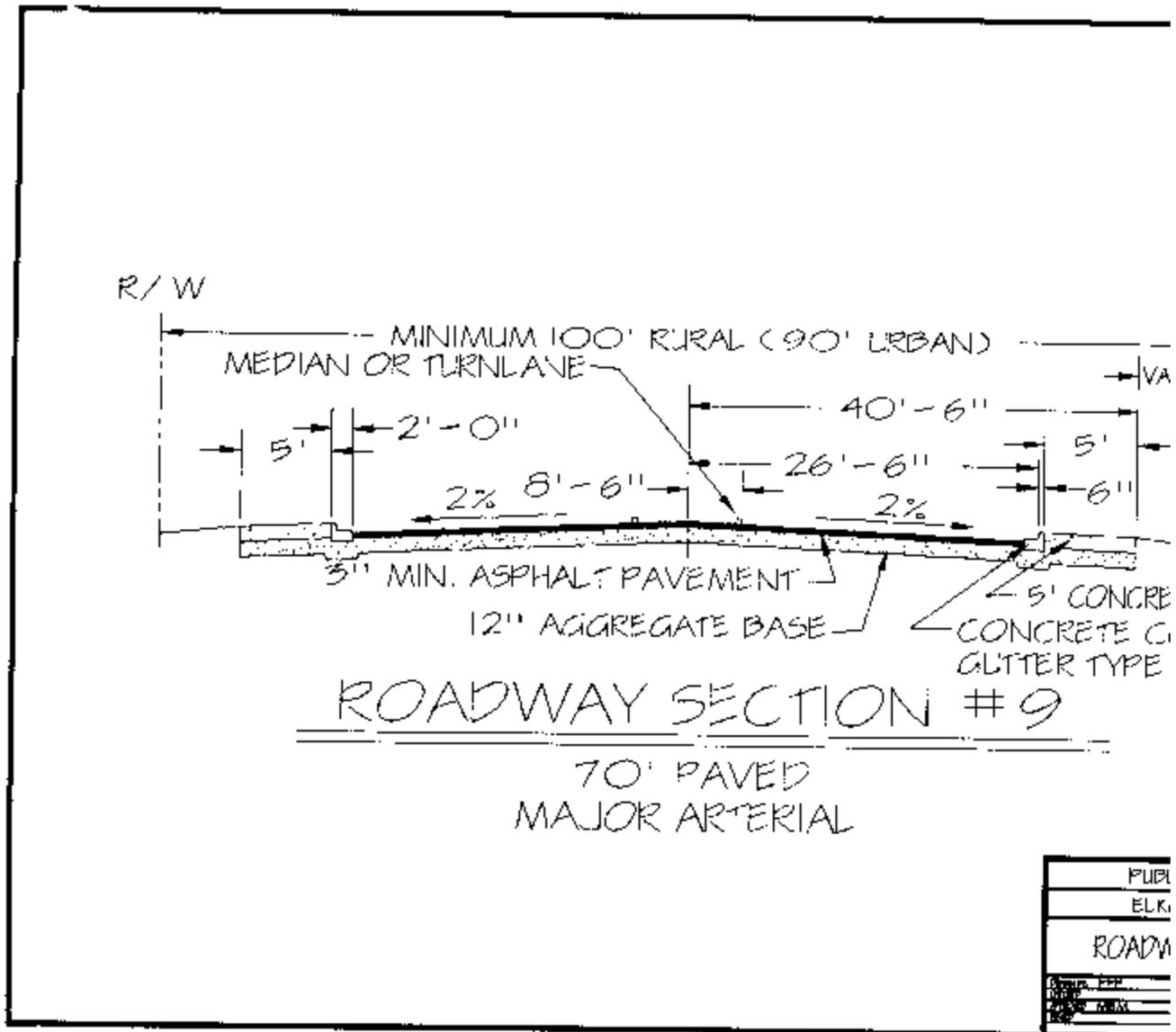
50' WIDE PAVED URBAN COMMERCIAL STANDARD:



56' PAVED URBAN ARTERIAL STANDARD:



70' PAVED MAJOR ARTERIAL STANDARD:



(B) Improvements: Improvements in a major subdivision shall conform to the following minimum standards and requirements, together with the standards, terms and conditions contained in the most recent edition of the "Standard Specifications For Public Works Construction" (commonly known and referred to as the "Orange Book" which is incorporated herein by reference), if not inconsistent with the standards set forth below.

1. Open space and special lands: (Ord. 1994-Q, 9-7-1994, eff. 10-1-1994)

(a) Interior Roads: Minimum - 20' wide rural gravel standard.

(b) Access Roads:

- (1) Minimum - 20' wide rural gravel standard. (Ord. 05-2010, 8-5-2010, eff. 9-10-2010)
 - (2) If the estimated daily traffic count exceeds 200 vehicles - 32' wide gravel rural collector standard.
 - (3) If the estimated daily traffic count exceeds 300 vehicles per day - 26' wide rural paved standard.
 - (4) If the access road lies within 1 mile of a populated area, and the estimated daily traffic count exceeds 200 vehicles per day - 26' wide rural paved standard.
 - (5) If the access road lies within 1 mile of a populated area, and the estimated daily traffic count exceeds 300 vehicles per day - 34' wide rural paved collector standard.
- (c) Rights Of Way: Minimum - 60' rights of way. The right of way shall be wide enough to accommodate cuts and fills.
- (d) Access: All major subdivisions in excess of 16 lots shall have at least 2 access routes and provide access to adjoining parcels.
- (e) Utilities: Aboveground power and telephone to service all lots.
- (f) Drainage: Standard roadside ditches and culverts for all drainages under roadways.
- (g) Solid Waste:
- (1) Shall comply with the solid waste management plan adopted by the county.
 - (2) The developer may be required to make improvements to existing facilities or construct new facilities to adequately manage the solid waste impact of the development.
- (h) Fire Protection: Minimum - Nevada division of forestry requirements (fire code rural standard).
2. Agricultural-residential (minimum parcel size - 2.50 acres): (Ord. 1994-Q, 9-7-1994, eff. 10-1-1994)
- (a) Interior Roads: Minimum - 20' wide rural gravel standard.
 - (b) Access Roads:
 - (1) Minimum - 20' wide rural paved standard. (Ord. 05-2010, 8-5-2010, eff. 9-10-2010)
 - (2) If any portion of the subdivision lies within 1 mile of a populated area - 34' wide rural paved collector standard.

- (3) If the estimated daily traffic count exceeds 200 vehicles per day - 34' wide rural paved collector standard.
 - (4) If the estimated daily traffic count exceeds 500 vehicles per day - 50' wide paved urban commercial standard.
 - (c) Rights Of Way: Minimum - 60' rights of way. The right of way shall be wide enough to accommodate cuts and fills.
 - (d) Access: All major subdivisions in excess of 16 lots shall have at least 2 access routes and provide access to adjoining parcels.
 - (e) Utilities: Aboveground power and telephone to service all lots.
 - (f) Drainage: Standard roadside ditches and culverts for all drainages under roadways.
 - (g) Solid Waste:
 - (1) Shall comply with the solid waste management plan adopted by the county.
 - (2) The developer may be required to make improvements to existing facilities or construct new facilities to adequately manage the solid waste impact of the development.
 - (h) Fire Protection: Minimum - Nevada Division of Forestry requirements (Uniform Fire Code rural standard).
3. Agricultural-Residential (Minimum parcel size 1 acre and maximum parcel size less than 2.5 acres):
- (a) Interior Roads:
 - (1) Minimum - 32' wide gravel rural collector standard.
 - (2) If the estimated daily traffic count exceeds 200 vehicles per day - 26' wide rural paved standard.
 - (3) If any portion of the subdivision lies within 1 mile of a populated area - 26' wide rural paved standard.
 - (b) Access Roads:
 - (1) Minimum - 26' wide rural paved standard.
 - (2) If the estimated daily traffic count exceeds 200 vehicles per day - 34' wide rural paved collector standard.
 - (3) If any portion of the subdivision lies within 1 mile of a populated area - 34' wide rural paved collector standard.
 - (4) If the estimated daily traffic count exceeds 500 vehicles per day - 50' wide paved urban commercial standard.

- (c) Rights of Way: Minimum-60' rights of way. The right of way shall be wide enough to accommodate cuts and fills.
- (d) Access: All subdivisions in excess of 16 lots shall have at least 2 access routes and provide access to adjoining parcels.
- (e) Utilities: Aboveground power and telephone to service all lots.
- (f) Drainage:
 - (1) Minimum - standard roadside ditches, drainage easements and culverts for all drainages under roadways.
 - (2) The developer, at developer expense, shall complete a drainage study for the area to be developed and areas that will be affected by the development, and may be required to mitigate the effects of the development upon drainage patterns.
- (g) Solid Waste:
 - (1) Shall comply with the Solid Waste Management Plan adopted by the County.
 - (2) The developer may be required to make improvements to existing facilities or construct new facilities to adequately manage the solid waste impact of the development.
- (h) Fire Protection:
 - (1) Minimum - Nevada Division of Forestry requirements.
 - (2) If any portion of the subdivision lies within 1 mile of a populated area, the fire protection system shall have a minimum fire flow of 1,000 gallons per minute for 2 hours. The maximum distance between appliances common to the area fire department shall be 1000'.
- (i) Public Property: Assignment of a parcel or parcels of land to the County for uses such as recreation, public buildings or other public facilities may be required in the approval process.

4. Residential 1 and 2:

- (a) Interior Roads:
 - (1) Minimum - 40' wide paved residential standard.
 - (2) If the daily estimated traffic count exceeds 200 vehicles per day - 44' wide paved residential standard.
 - (3) If any portion of the subdivision lies within 1 mile of a populated area, city or town standards apply if they are more stringent.
- (b) Access Roads:

- (1) Minimum - 44' wide paved residential standard.
 - A. Access roads within 1 mile of an incorporated city shall meet the city standard if more stringent.
 - B. If the daily estimated traffic count exceeds 500 vehicles per day - 50' wide paved urban commercial standard.
 - C. Based upon traffic flow projections, the County may require a 56' wide urban arterial standard or a 70' wide major arterial standard.
 - D. Additional requirements including but not limited to controlled access, intersection control devices, bike lanes, pedestrian facilities, turn lane, on-street parking may be required based upon the results of the independent traffic study or applicable master plan.
 - E. A complete independent traffic analysis of existing and estimated traffic flows and traffic impact shall be completed by the developer for all residential subdivisions at developer expense.
- (c) Rights of Way: Minimum-60' rights of way. The right of way shall be wide enough to accommodate cuts and fills. The right of way may be reduced to 50' in the case of a cul-de-sac.
- (d) Utilities: Underground utilities with service provided to all lots.
- (e) Drainage:
 - (1) Minimum - Concrete curb and gutter with a properly sized underground storm drain system.
 - (2) The developer shall complete, at developer expense, a drainage study for the area to be developed and areas that will be affected by the development, and may be required to mitigate the effects of the development upon drainage patterns.
 - (3) The development shall not increase peak flows into drainages.
- (f) Water Supply: An approved public or community water system.
- (g) Solid Waste:
 - (1) Shall comply with the Solid Waste Management Plan adopted by the County.
 - (2) The developer may be required to make improvements to existing facilities or construct new facilities to adequately manage the solid waste impact of the development.
- (h) Sewage Disposal:
 - (1) Public or community wastewater treatment system.

- (2) Parcels or lots larger than $\frac{1}{4}$ acre standard individual sewage disposal systems.
 - (3) Individual sewage disposal systems may be allowed on parcels or lots within 1 mile of an unincorporated town or incorporated city upon approval by the city or town.
 - (i) Fire Protection: Standard residential fire protection, with a 1,000 gallon per minute flow requirement, and minimum fire water storage for 2 hours. The maximum distance between fire hydrants shall be 500'.
 - (j) Public Property: Assignment of a parcel or parcels of land to the County for uses such as recreation, public buildings, or other public facilities may be required in the approval process.
5. Commercial Districts (minimum parcel size between 6,000 sq. ft. and 10,000 sq. ft.):
- (a) Interior Roads:
 - (1) Minimum - 50' wide paved urban commercial standard.
 - (2) If any portion of the subdivision lies within 1 mile of a populated area, city or town standards apply if they are more stringent.
 - (b) Access Roads:
 - (1) Minimum - 50' wide paved urban commercial standard.
 - (2) If the estimated daily traffic count exceeds the capacity of the standard section, or based upon other factors such as specific use, location, proximity to cross streets, or traffic channeling and controls, the County may require a wider road section such as a 56' paved urban arterial, 70' paved major arterial or other standard.
 - (3) Additional requirements including but not limited to controlled access, intersection control devices, bike lanes, pedestrian facilities, turn lane, on-street parking may be required based upon the results of the independent traffic study or applicable master plan.
 - (d) Rights of Way: Minimum-60' rights of way. The right of way shall be wide enough to accommodate cuts and fills.
 - (d) Utilities: Underground utilities with service provided to all lots.
 - (e) Water Supply: A community or public water system approved by the appropriate agency of the State.
 - (f) Drainage:
 - (1) Minimum - Concrete curb and gutter with a properly sized underground storm drain system.

- (2) The developer, at developer expense, shall complete a drainage study for the area to be developed and areas that will be affected by the development, and may be required to mitigate the effects of the development upon drainage patterns.

(g) Solid Waste:

- (1) Shall comply with the Solid Waste Management Plan adopted by the County.
- (2) The developer may be required to make improvements to existing facilities or construct new facilities to adequately manage the solid waste impact of the development.

(h) Sewage Disposal: Public, community or commercial wastewater treatment system. Lots or parcels within 1 mile of a populated area shall meet city or town requirements.

(i) Fire Protection: Standard commercial fire protection, with a 1,500 gallon per minute flow requirement, and minimum fire water storage for 2 hour fire fighting capability and fire hydrants spaced no more than 500' apart.

(j) Public Property: Assignment of a parcel or parcels of land to the County for uses such as recreation, public buildings or other public facilities may be required in the approval process.

6. Industrial and Light Industrial:

(a) Interior Roads:

- (1) Minimum - 32' wide gravel rural collector standard if all lots exceed 2 acres.
- (2) Lots 1 acre or smaller - 34' wide rural paved collector standard.
- (3) If any portion of the subdivision lies within 1 mile of an incorporated city - city standards apply if more stringent.

(b) Access Roads:

- (1) Minimum - 32' wide gravel rural collector standard if all lots exceed 2 acres.
- (2) If interior roads are paved - 34' wide rural paved collector standard.
- (3) If any portion of the subdivision lies within 1 mile of an incorporated city - city standards apply if more stringent.
- (4) If the estimated daily traffic count exceeds the capacity of the standard section, or based upon other factors such as specific use, location, proximity to cross streets, or traffic channeling and controls, the County may require a wider road section such as a 56' wide paved urban arterial, 70' wide paved major arterial or other standard.

- (5) Additional requirements including but not limited to controlled access, intersection control devices, bike lanes, pedestrian facilities, turn lane, on-street parking may be required based upon the results of the independent traffic study or applicable master plan.
 - (6) A complete independent traffic analysis of existing and estimated traffic flows and traffic impact shall be completed by the developer for all industrial subdivisions at developer expense.
- (c) Rights of way: Minimum-60' rights of way. The right of way shall be wide enough to accommodate cuts and fills.
- (d) Utilities:
- (1) Underground utilities with facilities extended to all lots.
 - (2) Main power distribution may be above ground.
- (e) Water Supply: Public or community water system.
- (f) Drainage:
- (1) Lots of 1 acre or less - concrete curb or valley gutter and a properly sized underground storm drain system.
 - (2) Lots larger than 1 acre - standard roadway ditches and drainage easements with culvert under the roadway.
 - (3) The developer, at developer expense, shall complete a drainage study for the area to be developed and areas that will be affected by the development, and may be required to mitigate the effects of the development upon drainage patterns.
 - (4) The development shall not increase peak flows into existing drainages.
- (g) Solid Waste:
- (1) Shall comply with the Solid Waste Management Plan adopted by the County.
 - (2) The developer may be required to make improvements to existing facilities or construct new facilities to adequately manage the solid waste impact of the development.
- (h) Fire Protection:
- (1) Standard industrial fire protection, with 1,500 gallon per minute flow and minimum fire water storage for 2 hour duration.
 - (2) On site and public access fire hydrants as required by the Uniform Fire Code, appendix III - B.

- (i) Public Property: Assignment of a parcel or parcels of land to the County for uses such as recreation, public buildings or other public facilities may be required in the approval process.

(C) Developments: Major developments shall further conform to the following specifications, requirements and procedures.

1. Street Grades: All streets and highways shall have a gradient of not more than eight percent (8%). Street and roadway widths and design in steep slope areas shall be considered individually and will be based upon the topography of the land and the density of the proposed development to be served thereby.
2. Curves: Where a deflection angle is more than ten degrees (10°) in the alignment of a street, a curve with a radius adequate to insure adequate sight distance must be made. The Department of Planning and Public Works may grant exceptions to this requirement upon good cause shown.
3. Street Extensions: The proposed street layout shall provide for the continuation or projection of existing streets unless the Department of Planning and Public Works deems such extension undesirable for specific reasons of topography or design. A proposed street may be required to extend to the boundary line of the development to provide access to adjacent properties. When more than four (4) lots derive access from such street or stub, an approved temporary turnaround easement shall be provided. The street stub so created need not be improved unless necessary for local access; otherwise, improvement shall be required of the developer of the adjacent property. The Department of Planning and Public Works may require the developer to install a barrier at the end of the street and provision made for legally restricting uses thereto.
4. Number of Intersections: The number of street intersections shall be kept to a minimum consistent with desirable block lengths and/or other design factors.
5. Development Conditions: When a development abuts or includes an existing or proposed arterial street or limited access highway, conditions may be imposed by the Planning Commission for the protection of residential properties, the separation of through and local traffic and the requirements of future highway plans. These conditions may include, but are not limited to:
 - (a) Minimal access or service streets.
 - (b) Reverse frontage with screening by wall, fence and/or planting in a nonaccess reservation along the rear property line.
 - (c) Parks or reservations of rights of way.
6. Conformity: Whenever a street or highway is proposed requiring a separation of grades or any special form of intersection design, the development shall be so designed to conform to the plan of intersection design and all lots shall, when necessary, be provided with suitable access elsewhere.

7. Retaining Walls: Retaining walls may be required whenever topographical conditions warrant, or where necessary to retain fill or cut slopes within rights of way or slope easements.
8. Centerline Curve Radius: No centerline curve radius of less than one hundred fifty feet (150') shall be provided on a collector street, or less than seventy five feet (75') on a local residential street.
9. Alleys: The Planning Commission may require alleys based upon the proposed use of the land.
10. Street Intersections: At all street intersections, the property line at each block corner shall be rounded by a curve having a radius of not less than fifteen feet (15') for right angle corners. Where streets intersect at angles of less than right angles at major intersections or where other peculiar conditions occur, the Planning Commission may require a different radius.
11. Pedestrian Ways: Pedestrian ways may be required depending upon the individual circumstances. A separated pathway system, a mall or other pedestrian system may require a specialized approach. Integral pedestrian ways and curbs may be permitted if warranted. Semi-improved trails, not less than five feet (5') wide, may be provided in lieu of pedestrian ways, if approved by the Planning Commission.
12. Structural Sections: The structural sections for all roads, whether paved or gravel, shall be determined by a comprehensive engineered soils report based upon soil "R" value and traffic index as specified in Asphalt Institute Publication MS-23.
13. Subdivision Improvements: No work on subdivision improvements shall take place without the prior approval of the Department of Planning and Public Works. Engineered improvement plans for the work shall be submitted to and approved by the Department of Planning and Public Works prior to the recording of the final subdivision map. The applicant/developer is responsible to allow adequate lead time (a minimum of 3 weeks, or longer for major developments) for the review and approval of plans.
14. Encroachment Permits: The applicant/developer must acquire all encroachment permits for work affecting any County, State or Federal route.
15. Right of Way Construction Permit: The applicant/developer must acquire a County right of way construction permit prior to commencement of an improvement in, on or under a public right of way.
16. Street Signs: The improvement plans shall include provision for the placement of street signs on all roadways in connection with the development.

(D) Alternate Compliance:

1. The Department of Planning and Public Works may modify any provisions of this Section upon application in writing where there are practical difficulties in the way of carrying out the strict requirements of this Section, provided that the following findings

are made: a) that the proposed design, use or operation satisfactorily complies with the intent of this Code; and b) that the material, method of work or operation is, for the purpose intended at least the equivalent of that provided by this Section in quality, strength, effectiveness, fire resistance, durability and safety. The Department of Planning and Public Works may require tests prepared and certified by a professional engineer licensed in the State as proof of compliance with the intent of this Section, such tests to be made the expense of the person requesting approval of the alternate material or method of construction. The particulars of such modification as granted or allowed and the decision shall be made in writing and entered upon the records of the Department of Planning and Public Works and a signed copy shall be furnished to the applicant.

2. If an applicant is dissatisfied with the decision and determination of the Department of Planning and Public Works, the decision or determination may be appealed to the County Manager by a written notice of appeal delivered to the office of the County Manager within ten (10) days of the receipt or mailing, whichever occurs first, of the notice of the adverse determination. The decision of the County Manager shall be final and binding. (Ord. 1994-Q, 9-7-94, eff. 10-1-94)

5-4-2: STREET NAMES:

Street names and suffixes shall be designated by the developer, subject to the approval of the Planning Commission and in accordance with the following general policy and shall:

- (A) Be short (under 12 letters if possible) and preferably in one word.
- (B) Have a simple spelling and easy pronunciation.
- (C) Avoid prefixes such as north and south, east and west, upper and lower, etc.
- (D) Be related to the type and importance of the street. (The suffix "boulevard" should not be attached to the name of a minor residential street.)
- (E) Avoid the use of numbers or letters as street names.

- (F) Not be incongruous, offensive or geographically misleading.
- (G) Not be repetitive or similar in sound or character.
- (H) Have a single name for a street having a continuous alignment.
- (I) When to be connected in the future into a continuous alignment or extended, bear the same name as the existing street. (Ord. 1974-E, 2-7-74)

5-4-3: BLOCKS:

The dimensions, shape and orientation of blocks within developments shall be determined with due regard to:

- (A) Provisions of building sites suitable to the use and types of buildings contemplated.
- (B) Minimum site requirements particularly as to site, slope and dimension.
- (C) Control safety and convenience of pedestrian and vehicular traffic.
- (D) Topography and other land features.
- (E) Orientation and scenic enhancement.
- (F) Lengths of blocks shall be not more than one thousand five hundred feet (1,500') unless approved by the Planning Commission.

- (G) A pedestrian way of ten feet (10') minimum width may be required through the center of any block longer than one thousand two hundred feet (1,200').
- (H) Rural developments with lots of over one acre in size and future lot splitting prohibited, may have a maximum block length of three thousand feet (3,000') and must contain a suitable building site on each lot. (Ord. 1974-E, 2-7-74)

5-4-4: BUILDING SITES:

The primary purpose of this Title is to provide desirable, accessible and advantageous building sites. To this end, the following shall apply:

- (A) The size, shape and orientation of all building sites shall be determined with regard to all natural terrain features, topography, road access, design objectives, plottage advantages and other relevant features.
- (B) All building sites shall relate usable and open areas suitable to the character and type of buildings contemplated and to the various requirements of zoning, with due regard to minimum disturbance of the natural grade.
- (C) Land subject to known hazards such as slides, avalanche, periodic or occasional inundation or otherwise unsuitable for the intended use shall be:
1. Set aside as a permanent non-use for structures; or
 2. Improved with such corrective measures, approved by the County as will be reasonably expected to limit the hazard or make the land suitable for structures.
- (D) Larger building site sizes may be required if necessary to meet the requirements of the State laws or rules and regulations of the Health Officer. Where a property is divided with one or more sites substantially larger than the minimum size required in the zoning district in which a development is located, streets and lots may be required to be laid out so as to permit possible future redivision in accordance with the standards unless the developer restricts such future redivision.

- (E) Land having an average natural cross slope over forty percent (40%) shall be preserved as open space or shall be added to a legal lot; on all steep slope situations, all construction plans and specifications are to be approved by the County, who may require such reports from specialists regarding drainage, soil mechanics, or engineering geology as necessary. (Ord. 1974-E, 2-7-74)
- (F) Reverse frontage sites may be provided when necessary for protection of residential properties from through traffic and adverse non-residential uses, for separation of through and local traffic and to overcome difficulties of topography and other special conditions. Adequate spacing, screen planting or a fence or wall of a type approved by the Planning Commission may be required along the rear property line within an area not less than ten feet (10') wide within which existing native vegetation shall be preserved and across which there shall be no right-of-way vehicular passage.
- (G) When the rear or side lines of any lot border any highway, the developer may be required to execute and deliver to the County an approved instrument, prohibiting the right of ingress and egress to such lots across the side or rear lines of any lot bordering any such highway, the developer may be required to dedicate a planting strip adjacent to the traveled way.
- (H) Reserve strips controlling access to streets or other land shall not be approved except as otherwise provided, and if ownership control of the strips is placed with the County.
- (I) No lot shall be divided by city or County boundary lines.
- (J) Wherever the development is contained within the boundaries of more than one district for which separate taxes are levied, the boundaries of such districts shall be located and shown on the final map.
- (K) A lot site may have a strip of land not less than twenty feet (20') in width connecting the lot with a street or may be situated within a common area with frontage to a public street. The area of said strip shall be excluded in computing the lot and the length of said strip shall not exceed three hundred feet (300'). (Ord. 1974-E, 2-7-74; amd. Ord. 1979-V, 10-3-79, eff. 11-1-79; Ord. 1994-Q, 9-7-94, eff. 10-1-94)

5-4-5: EASEMENTS:

- (A) The developer shall grant easements not less than a total of ten feet (10') in width for public utility, sanitary sewer and drainage, and other public purposes on yard or open areas wherever necessary. Easements of lesser widths may be allowed at the determination of the County when the purposes of same may be accomplished by lesser widths and provided further that in such determination the County shall prescribe the width of such easements.

- (B) All natural drainage ways shall be preserved with appropriate easements and/or pedestrian walkways where necessary.

- (C) A conservation easement of a width to be determined by stream flow requirements shall be provided along all live streams to contain the channel during flood stages and to maintain encroachment. This easement shall be open to public access, but no tree or bush removal, gravel excavating, filling or sidcasting of materials shall be allowed within the area and no construction of any kind shall be allowed except as required by an agency of the United States Government, by the State of Nevada or by Elko County.

- (D) Easements to accommodate snow storage will be provided in an amount and in a location as necessary to the situation.

- (E) In areas of possible fire hazards, unobstructed fire protection equipment and access easements not less than twenty feet (20') shall be dedicated from the public street to the land development boundary. Such easements shall be located, designed and graded as determined by the Planning Commission in cooperation with the local fire protection agencies. (Ord. 1974-E, 2-7-74)

5-4-6: GRADING:

- (A) If geologic problems are likely or apparent, a geologic survey report may be required prior to tentative plat approval.

- (B) All grading requirements shall be as set forth herein.

- (C) All cleared slopes, all cuts and fills and all other areas vulnerable to erosion shall be either stabilized with grass or other protective cover, or properly mulched to assure establishment, riprapped for slope control, treated with appropriate drainage benches as may be determined by the County. On steep slopes it may be required to provide controls as necessary to the circumstance. (Ord. 1974-E, 2-7-74)

5-4-7: MISCELLANEOUS PROVISIONS:

- (A) Reservation of Land: Reservation and/or dedication of land for park, recreation, school or other public purposes in amount and location consistent with the Master Plan and proposed character and location and engineering need of each development, may be required as a condition precedent to tentative and final plat approval.
- (B) Restrictions on Land Clearing: At the time of the tentative plat approval, the Planning Commission may impose as a condition of such approval, restrictions on the making of improvements consisting of the clearing of brush and trees or of the moving of earth by mechanical equipment. Such restrictions may include a provision that no such improvements may be made for a given period of time. Including the time up to the filling of section, there shall be a determination by the Planning Commission that such improvements would present a real danger.
1. Of pollution, contamination or silting of lakes, rivers, streams or domestic water supplies; or
 2. Of erosion damage; or
 3. Of alteration of natural drainage patterns in a manner likely to cause damage to the property or persons from which or to which the normal drainage is diverted.
- (C) Drainage: The developer shall design the development so that it shall be protected from inundation, flood hazard, sheet overflow, and ponding of local storm water, springs and other surface waters. The design of improvements shall be such that water occurring within the development will be carried off without injury to any improvements, building sites or residences to be installed on lots within the development or adjoining areas. Waters occurring within the development shall be carried to a storm drainage facility or to a natural watercourse by such improvements as may be required. Drainage design within the development shall accommodate reasonable anticipated future improvement within the drainage area. Any off-tract outlet drainage facility required to carry storm water from the proposed development to a defined channel or conduit shall be made adequate for the ultimate state of improvement in the drainage area. All water shall be discharged into a controlled outlet stabilized storm channel for erosion control. All such off-site drainage water shall be materially free of silt or other polluting features.

(D) Top Soil and Native Elements: Health, trees, rock outcrops and other native features shall be preserved whenever possible and must be protected during periods of construction. Clearing of top soil, trees and shrubs and other native cover prior to tentative map approval is prohibited by the Board of County Commissioners.

(E) Dedication, Reservation of Other Areas: Where deemed desirable by the Planning Commission, upon consideration of the particular type of improvement proposed in the developments and especially in large-scale neighborhood unit developments, may require dedication or reservation of common areas or sites for community purposes of a character, extent and location suitable for the needs created by such development.

(F) Additional Miscellaneous Requirements:

1. The Planning Commission may require other such measures as will preserve and enhance scenic values and natural features of the area and for conditions encouraging excellence of quality of development. Such requirement must be approved by the Board of County Commissioners.
2. Existing vegetation shall be preserved within any public way when such growths are suitably located and healthy. When required, street trees shall be planted in accordance with the requirements of the Planning Commission.
3. The developer may be required to provide to the County structures such as bridges, concrete boxes, culverts, headwalls, cattleguards, appurtenant fencing and other features as stipulated by the Planning Commission and the County. (Ord. 1974-E, 2-7-74)



APPENDIX F
NEVADA STATEWIDE BICYCLE PLAN LEGISLATION



4.3.9 *Legislation*

The Nevada Revised Statutes (NRS) contains legislation pertaining to the use of bicycles. The following is a summary of current laws.

NRS 484A.025 includes a definition of a bicycle as “a device propelled by human power upon which a person may ride, having two tandem wheels either of which is over 14 inches in diameter, or every such device generally recognized as a bicycle though equipped with two front or two rear wheels except a moped.” In addition, most legislation also pertains to the use of an electric bicycle, which has been defined in NRS 484B.017 as “a device upon which a person may ride, having two or three wheels, or every such device generally recognized as a bicycle that has fully operable pedals and is propelled by a small electric engine which produces not more than 1 gross brake horsepower and which produces not more than 750 watts final output.” NRS 408.579 includes legislation that permits electric bicycles to be used on trails and walkways that are intended for bicycles.

According to items within NRS 408 and NRS 484B, the Nevada Department of Transportation shall:

- Consider bicycle lanes and routes, facilities, signs, and turnouts into their designs (408.321);
- Develop a bicycle and pedestrian safety education program (408.228);
- Provide support services to the Nevada Bicycle and Pedestrian Safety Advisory Board (408.577); and
- Have the authority to prohibit the use of bicycles on controlled-access highways or require a permit (484B.593).



According to NRS 408.321, the Nevada Bicycle and Pedestrian Safety Advisory Board shall:

- (a) At its first meeting and annually thereafter, elect a Chair from among its members.
- (b) Meet regularly at least once each calendar quarter and may meet at other times upon the call of the Chair.
- (c) Promote programs and facilities for the safe use of bicycles and pedestrian safety in this State.
- (d) Advise appropriate agencies of the State on policies, programs and facilities for the safe use of bicycles and pedestrian safety.

Relating to the responsibilities of an individual operating a bicycle or electric bicycle, NRS has defined that users shall:

- Be subject to the duties applicable to those driving a motor vehicle, except for an individual operating while on duty, including a peace officer, firefighter, emergency medical technician, or employee of a pedestrian mall (NRS 484B.777);
- Use hand signals when appropriate (484B.769);
- Ride upon an attached seat with no more persons than intended by design (NRS 484B.770);
- Ride as near to the right side of the roadway as practical when appropriate (NRS 484B.777); and
- Utilize a headlamp and red rear reflectors when operating at night (NRS 484B.783).

In addition, an operator of a bicycle or electric bicycle shall not:

- Attach themselves to a motor vehicle (NRS 484B.773);
- Carry an article that prevents them from using at least one hand (NRS 484B.780); and
- Intentionally interfere with the movement of a motor vehicle (NRS 484.324).

Relating to the responsibilities of an individual operating a motor vehicle, NRS 484B.270 has defined that users shall:

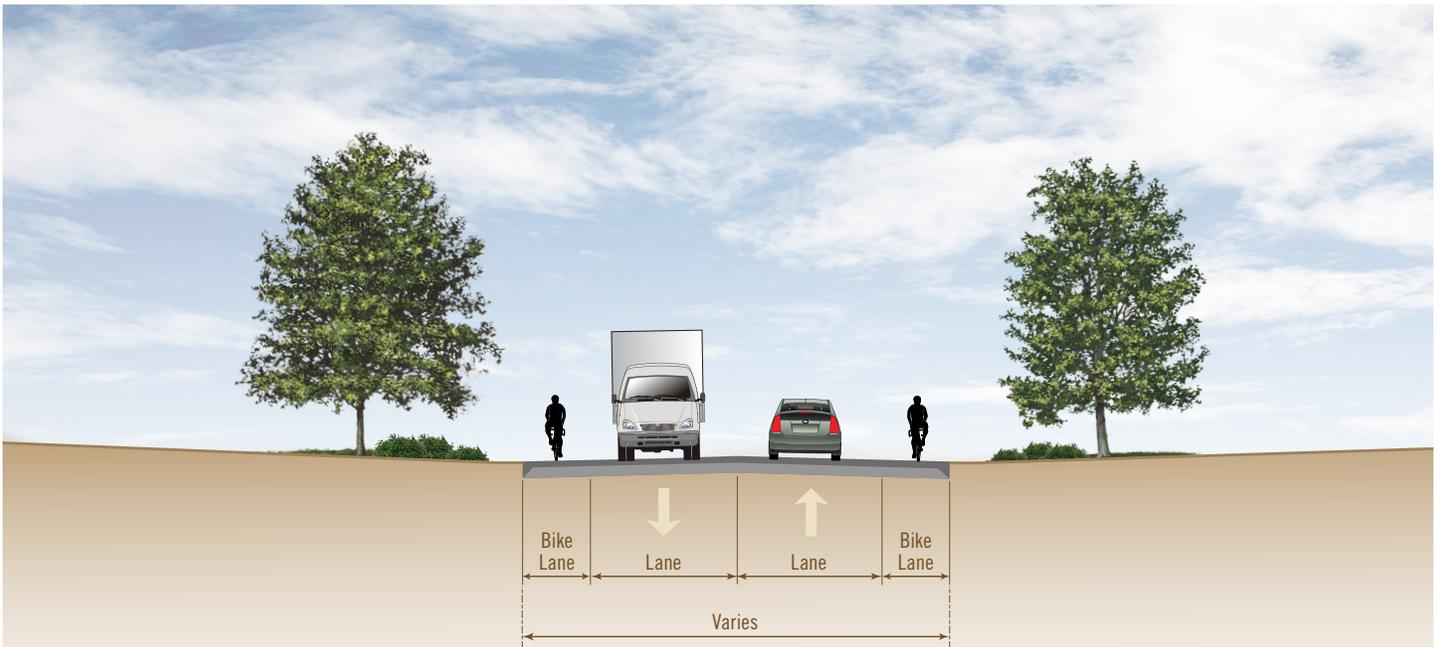
- Not intentionally interfere with an individual operating a bicycle or electric bicycle, and utilize due care. This includes moving to the lane to the immediate left if possible when passing. If this is not possible, no less than 3 feet should be provided;
- Yield to bicycles and electric bicycles riding on a pathway or lane; and
- Be subject to additional penalty if found to be at fault for a collision.

NRS 455 contains legislation relating to skate parks. Relating to bicyclists utilizing these facilities, NRS 455B.290 states that a person shall not use a skate park to ride a bicycle while under the influence of a controlled substance. In addition, NRS 205.2741 includes language making it illegal to willfully damage a bicycle, making the offense subject to a penalty no less than a misdemeanor.



APPENDIX G

ROADWAY CROSS SECTIONS

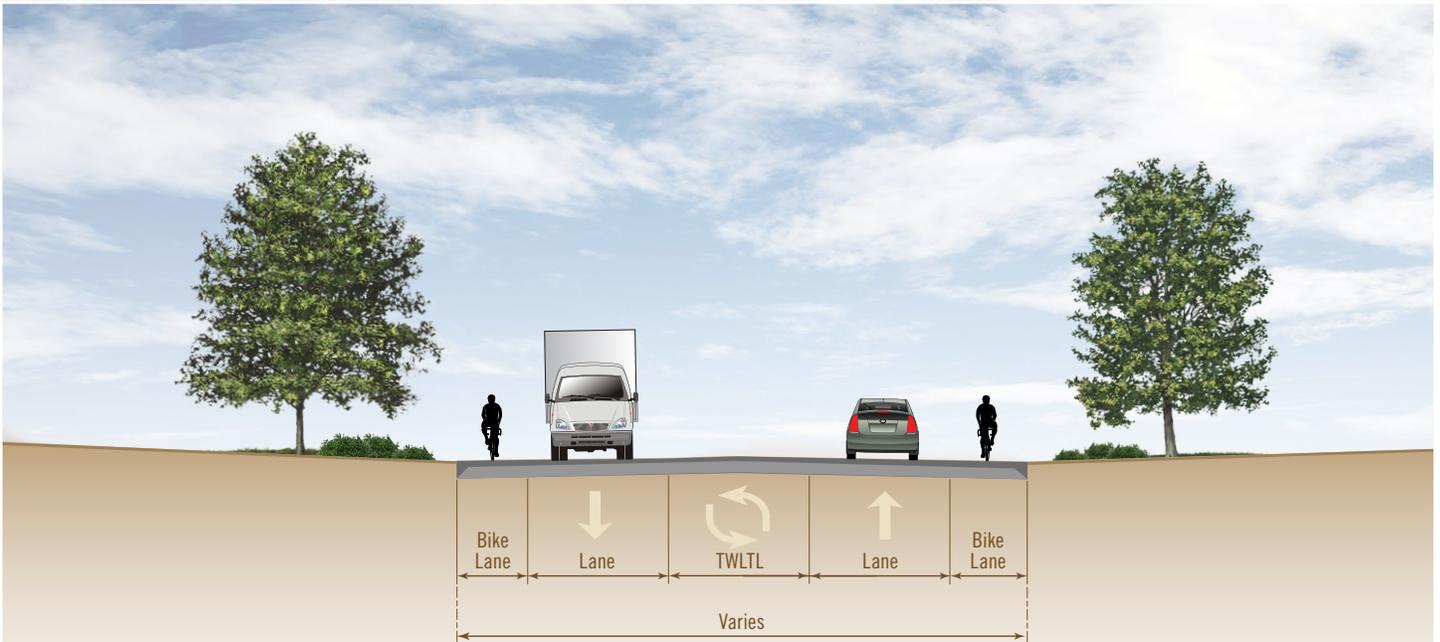


Two Lanes Each Direction with Bike Lane

Travel Lane: 10'-12'*

Bike Lane: 4'-6'* (2012 AASHTO Bike Guide Section 4.6)

*Twelve foot lanes and six foot shoulders (36' cross sections) preferred for high speed rural highways. Narrower cross section may be appropriate on lower speed and/or lower volume roadways.

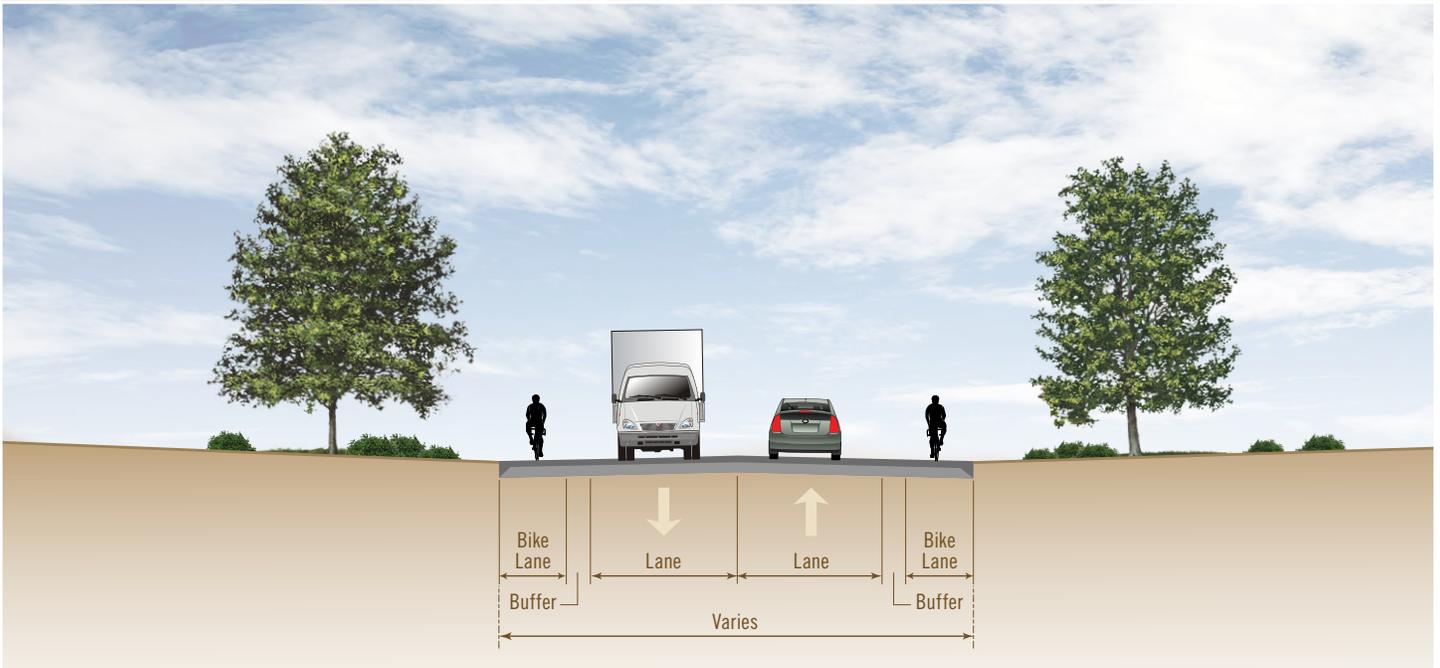


Two Lanes Each Direction with TWLTL and Bike Lane

Travel Lane: 10'-12'

TWLTL: 12'-14'

Bike Lane: 4'-6' (2012 AASHTO Bike Guide Section 4.6)

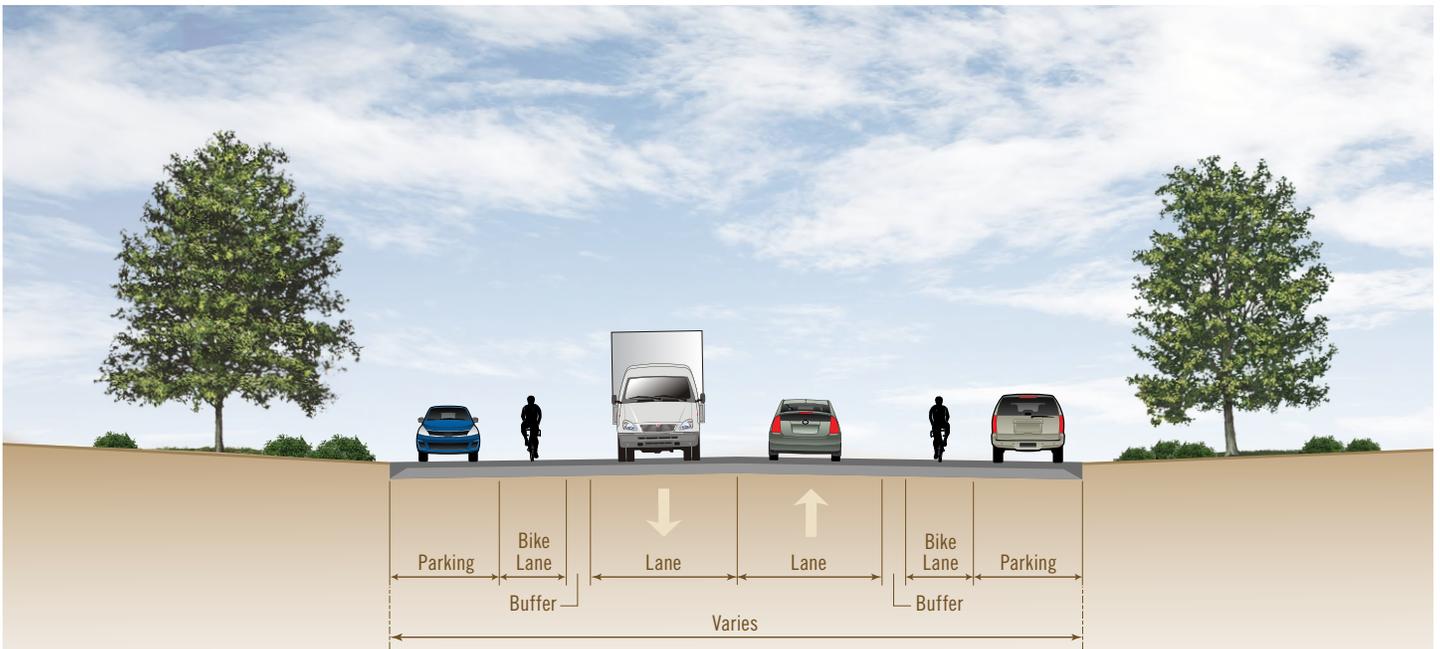


Buffered Bike Lane

Travel Lane: 10'-12'

Buffer: 2'-3' (NACTO Urban Bikeway Design Guide)

Bike Lane: 4'-6' (2012 AASHTO Bike Guide Section 4.6)



Buffered Bike Lane with Parking

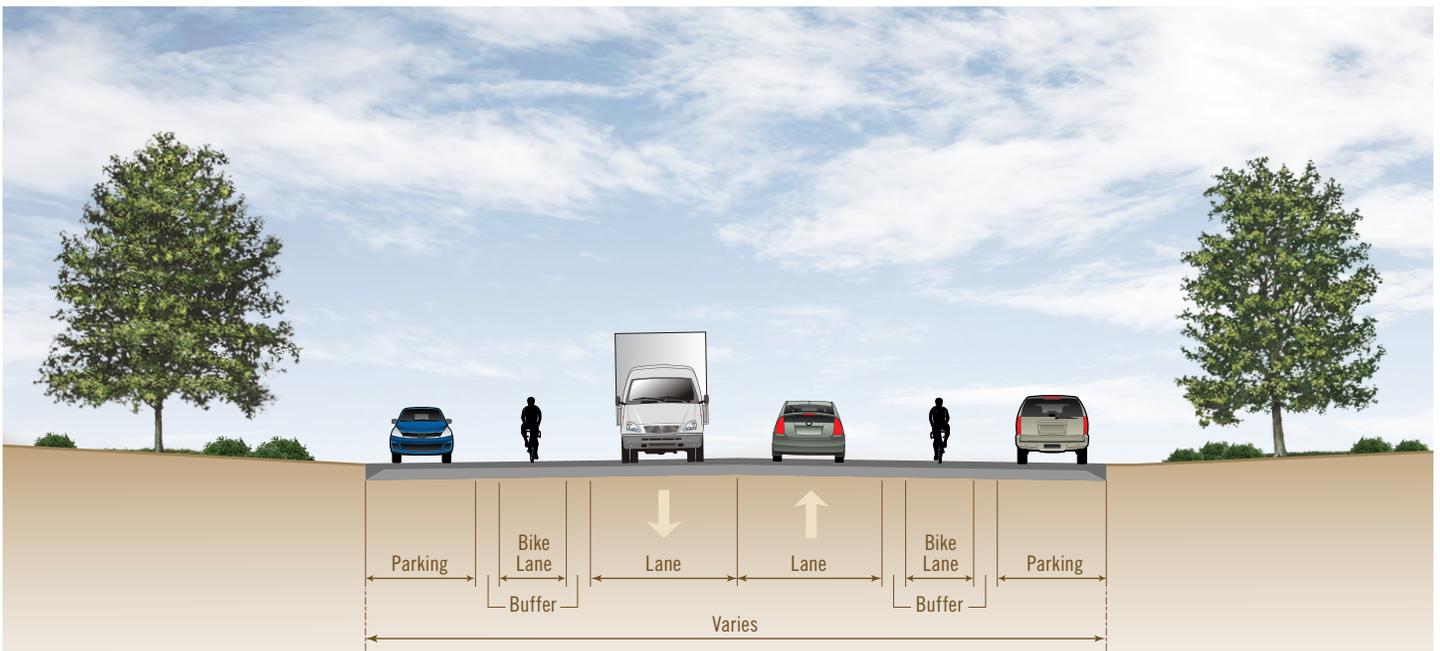
Travel Lane: 10'-12'

Buffer: 2'-3'* (NACTO Urban Bikeway Design Guide)

Bike Lane: 4'-6'* (2012 AASHTO Bike Guide Section 4.6)

Parking: 9'-12'

*When on-street parking is present a minimum of 5' is needed for a bike lane if no buffer is provided.



Double Buffered Bike Lane with Parking

Travel Lane: 10'-12'

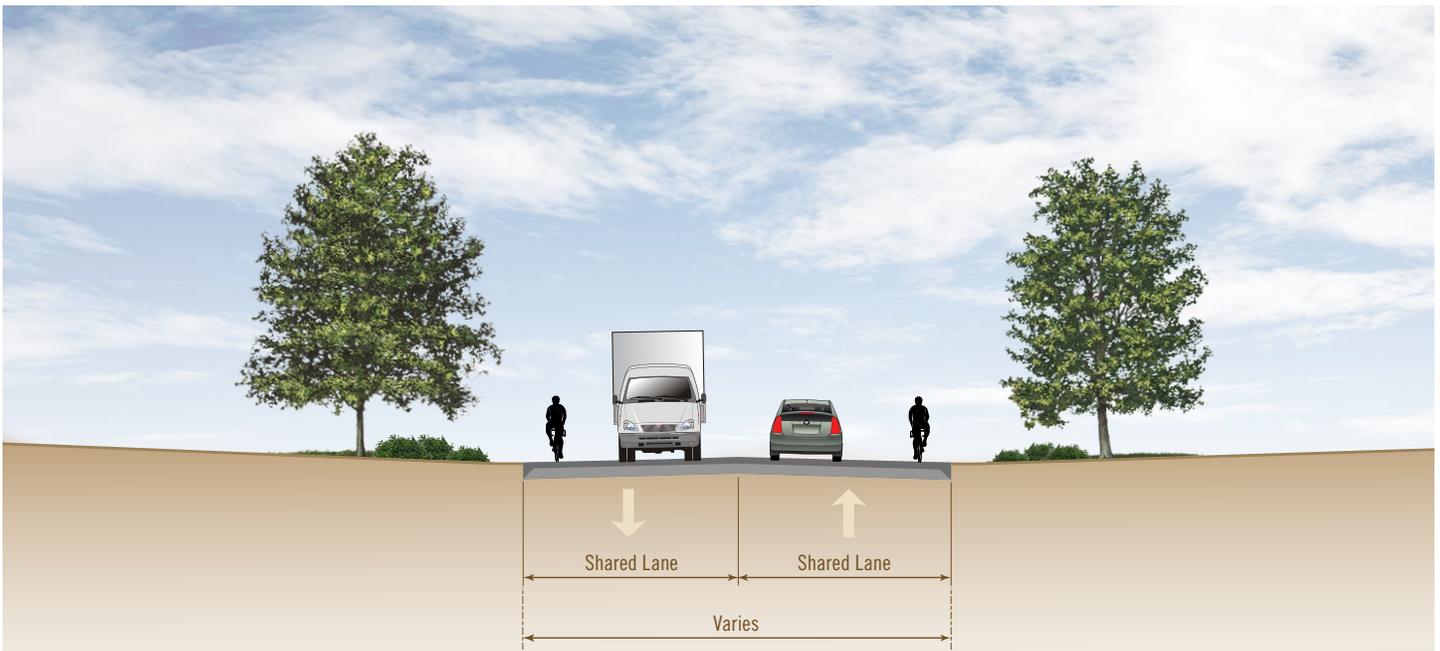
Buffer: 2'-3'* (NACTO Urban Bikeway Design Guide)

Bike Lane: 4'-6'* (2012 AASHTO Bike Guide Section 4.6)

Buffer: 2'-3'

Parking: 9'-12'

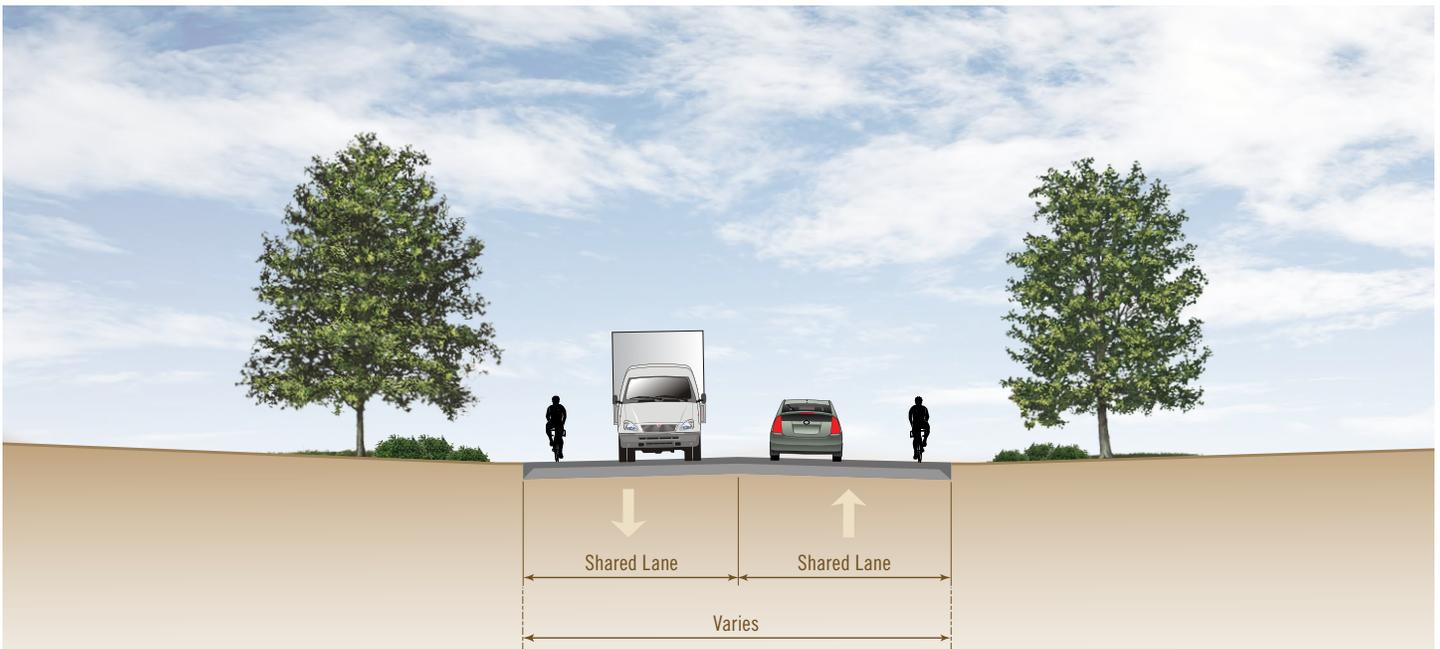
*When on-street parking is present a minimum of 5' is needed for a bike lane if no buffer is provided.



Shared Lane (14' Wide or Greater)

Shared Lane* (2012 AASHTO Bike Guide Section 4.6)

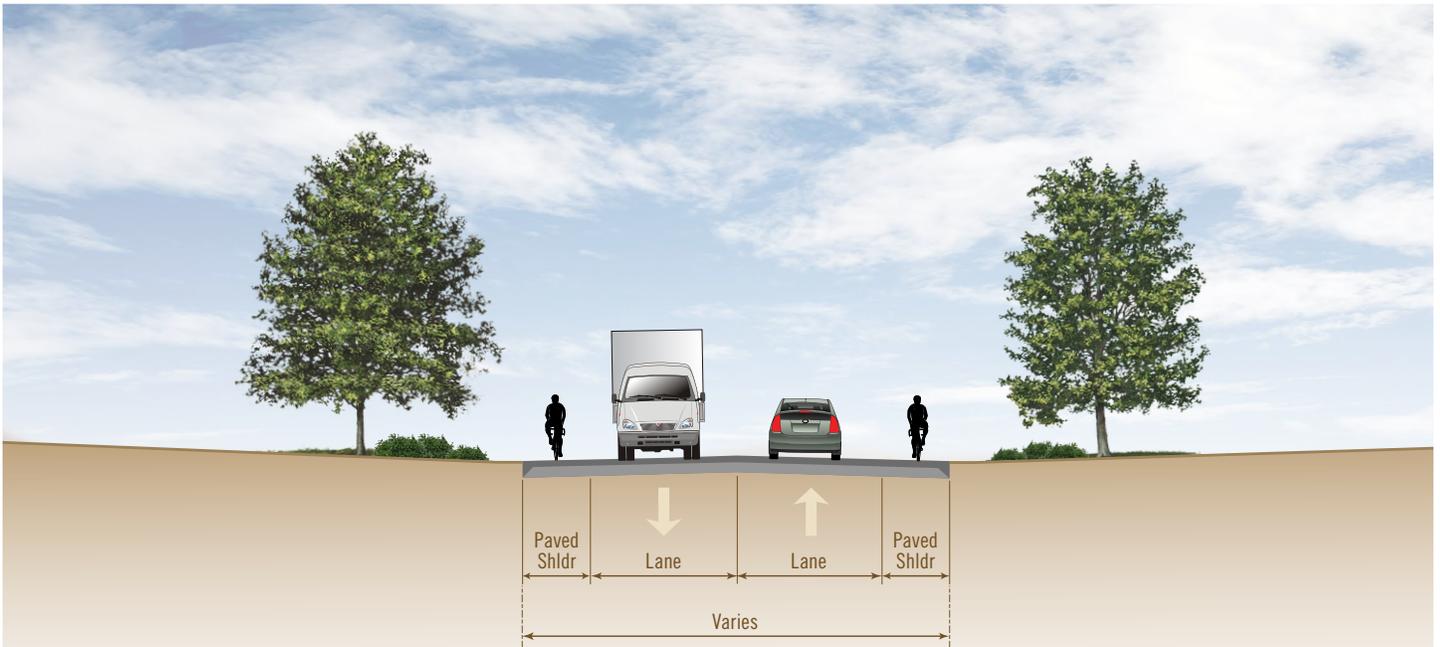
*14' minimum needed for motor vehicles to pass bicycles in the travel lane with 3' of clear. With less than 14' motor vehicles and bicycles will not be able to share the travel lane side by side.



Shared Lane (Less than 14' Wide)

Shared Lane* (2012 AASHTO Bike Guide Section 4.6)

*14 feet minimum needed for motor vehicles to pass bicycles in the travel lane with 3 feet of clear. With less than 14 feet, motor vehicles and bicycles will not be able to share the travel lane side by side. A Shared Lane less than 14 feet wide is typically appropriate for roadways with a speed limit of 25 miles per hour or less, but may be appropriate on roadways with higher speed limits if there is a low volume of motor vehicles. Shared Lane Markings should only be used on roadways with a speed limit of 35 mph or less (2009 MUTCD Section 9C.07).



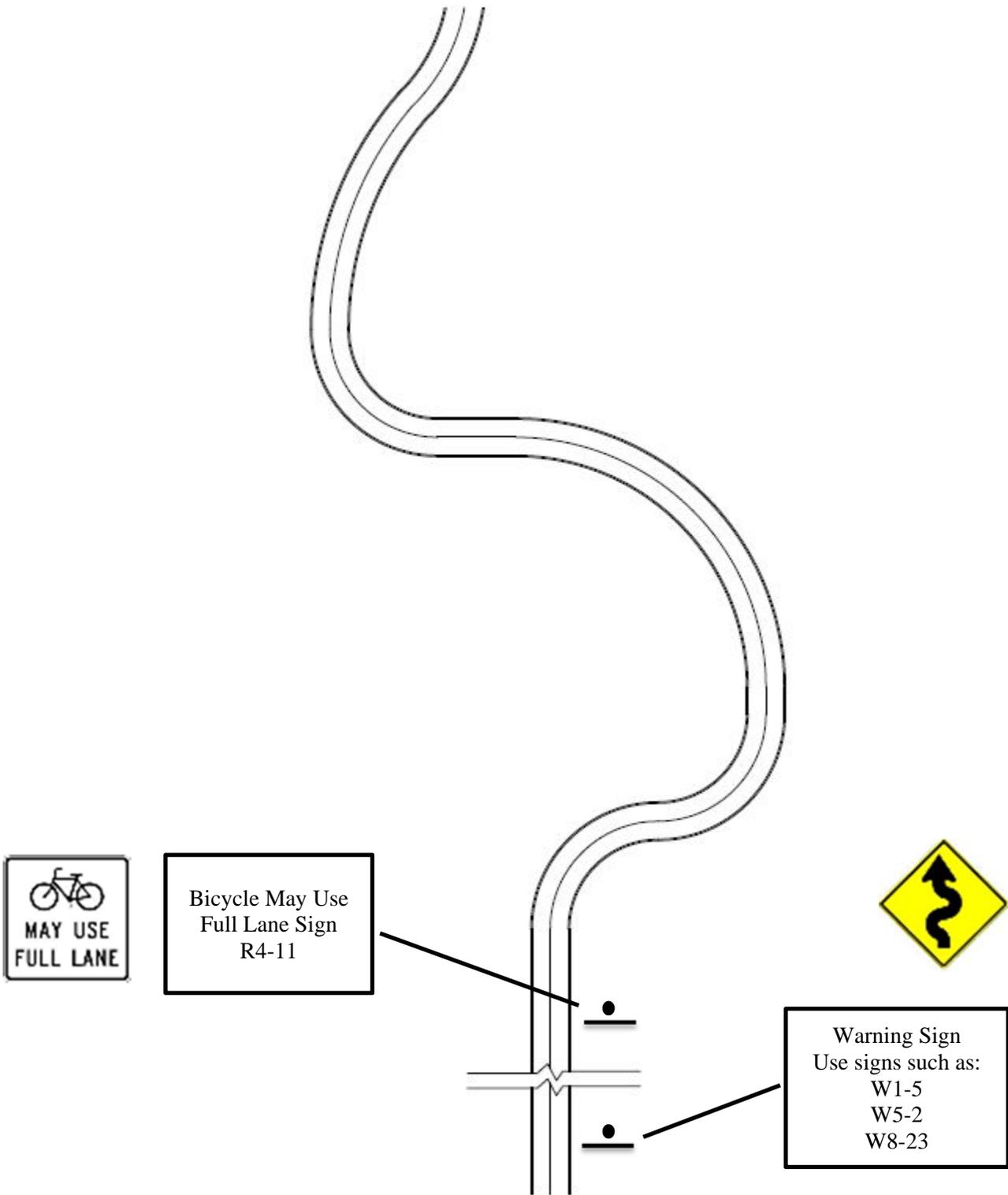
Paved Shoulder

Travel Lane: 10'-12'
Paved Shoulder: 4' minimum



APPENDIX H
BICYCLE FACILITY SIGNS

Sign Placement



Warning Sign



W1-5 – Horizontal Alignment Warning Sign



W5-3 – One Lane Bridge Sign



W5-1 – Road Narrows Sign



W8-23 – No Shoulder Sign



W5-2 – Narrow Bridge Sign



W8-25 – Shoulder Ends Sign

Regulatory Signs for Bicycle Facilities



R4-11 – Bicycle May Use Full Lane Sign

This sign should be installed after a warning sign and in advance of the area

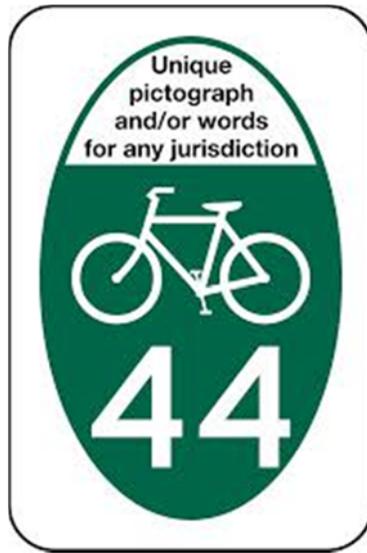
Guide Signs for Bicycle Facilities



D1-3c – Bicycle Guide Sign



M1-9 – Bicycle Route Sign (US Routes)



M1-8a – Bicycle Route Sign (Regional Routes)

*Guidance on how and when these signs are to be used can be found in the latest version of the Manual on Uniform Traffic Control Devices.