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# INTRODUCTION

# INTRODUCTION / PURPOSE

In 1992, the Cheyenne Downtown Development Authority (DDA) hired a consultant to prepare a "Streetscape" Design and Improvement Program" report to follow and comply with the directives of their adopted 1991 Master Plan for the DDA area (see maps). The purpose of this report was to develop conceptual designs and standard elements and treatments for streetscape improvements within public rights-of-way. The original report was completed in November 1992 and revised in September 1995.

Due to increased development and business interest in the downtown core area, the DDA realized the importance of establishing improvement guidelines and standards to implement the concepts and ideas behind the streetscape design and improvement program report. The purpose of these guidelines are to establish adopted and required design standards of the City and the DDA. These guidelines will be available to assist all property owners and/or anyone desiring to do improvements or repairs within the DDA streetscape area through the Capital Improvement Grant Program (CIG), both offered by the DDA.

The most important aspects for the establishment of these guidelines is to encourage uniformity and consistency in the downtown area and enhance the downtown area atmosphere. Marketability and economic stability are also key aspects for consideration.

# **DEVELOPMENT GUIDELINES**

# STANDARD SPECIFICATIONS

The standard specifications governing all work shall be the current edition of the "City of Cheyenne and Board of Public Utilities Construction Standards and Specifications", with approved amendments at the time of the contract.

It is the contractor's responsibility to keep himself current on these amendments. Copies of amendments are available in the offices of the City Engineer.

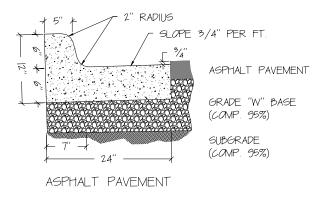
# **SPECIAL PROVISIONS**

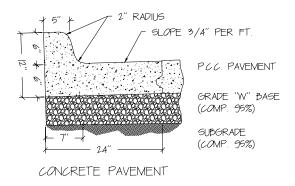
The Special Provisions will add to or revise certain sections of the current edition of the "City of Cheyenne and Board of Public Utilities Construction Standards and Specifications". Revised paragraphs and additions will correspond to the standard numerical and title designation.

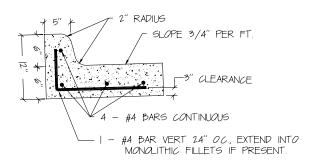
The Special Provisions may also include new sections of specifications not covered in the standard specifications and will be numerically numbered starting from Section 04000.

All work involving the construction of water and sanitary sewer and mains and appurtenances subject to the final approval and acceptance of the City of Cheyenne Board of Public Utilities shall be governed by the current edition of the "City of Cheyenne and Board of Public Utilities Construction Standards and Specifications".

All new concrete curb and gutter shall be standard 24" Type "A" as per detail below. Portland cement for curb and gutter construction shall be Class 4500 concrete per the current edition of the "City of Cheyenne and Board of Public Utilities Construction Standards and Specifications". Section 03000, "Concrete Sidewalks, Driveway Approaches, Curb Turn Fillets, Valley Gutters, and Miscellaneous New Concrete Construction" of the current edition of the "City of Cheyenne and Board of Public Utilities Construction Standards and Specifications" shall apply.







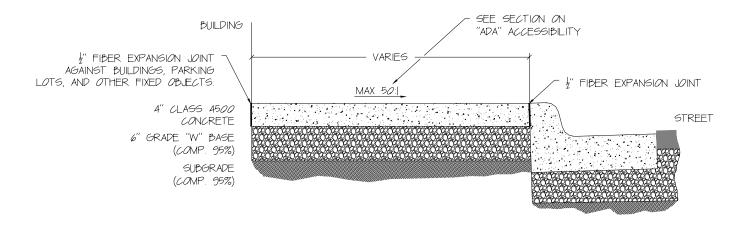
REINFORCEMENT DETAIL

NOTES

REINFORCEMENT SHALL BE USED IN BUMPOUTS FROM TANGENT TO TANGENT.
REBAR SHALL BE EPOXY COATED.

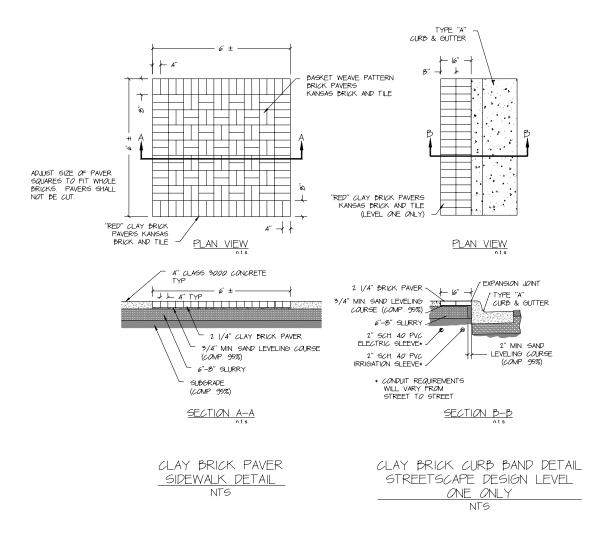
## **CONCRETE SIDEWALKS**

All new concrete sidewalks shall be constructed per detail below. Portland cement for sidewalk construction shall be Class 4500 concrete, per the current edition of the "City of Cheyenne and Board of Public Utilities Construction Standards and Specifications". Section 03000 "Concrete Sidewalks, Driveway Approaches, Curb Turn Fillets, Valley Gutters, and Miscellaneous New Concrete Construction" of the current edition of the "City of Cheyenne and Board of Public Utilities Construction Standards and Specifications" shall apply.



CONCRETE SIDEWALK n.t.s.

All new clay brick unit pavers for walkways and band behind curb shall conform to Section 02915, "Unit Pavers", and the attached Special Provisions. Clay brick pavers shall be constructed per details below. Brick selected for the streetscape shall be "Red" from Kansas Brick and Tile for curb bands. All clay pavers shall be full 4" x 8" x 2 1/4" brick.



### SECTION 02915 • UNIT PAVERS

#### PART 1 GENERAL

#### 1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division I Specification Sections, apply to this Section.

#### 1.02 SUMMARY

- A. This Section includes the following:
  - 1. Clay brick pavers set in sand setting/leveling bed over slurry subbase with sand joints.
- B. Related Sections: The following Sections contain requirements that relate to this Section:
  - 1. Division 2 Section "Earthwork" for compacted subgrade and subbase course, if any, under unit pavers.
  - 2. Division 2 Section "Portland Cement Concrete Paving" for cast-in-place concrete curbs and gutters serving as edge restraint for unit pavers.

### 1.03 SUBMITTALS

- A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections:
- B. Product data for the following:
  - 1. Clay brick pavers
- C. Samples for approval and selection purposes in the form of actual units showing full range of colors ad textures available for each type of unit paver indicated. Approved full 4" x 8" bricks are listed on page 10.
- D. Qualification data from firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include list of completed projects with project names and addresses, names and addresses of architects, engineers and owners, plus other information specified.

#### 1.04 QUALITY ASSURANCE

A. Installer Qualification: Engage an experienced installer who has completed unit paver installations similar in material, design and extent to that indicated for this project.

E. Single-source Responsibility: Obtain each color, type and variety of unit pavers, joint materials, and setting materials from a single source with resources to provide products and materials of consistent quality in appearance and physical properties without delaying progress of the Work.

### 1.05 DELIVERY, STORAGE AND HANDLING

- Protect unit pavers during storage and construction against soilage or contamination from earth or other materials.
  - 1. Wrap pavers in plastic or use other packaging materials that will prevent rust marks from steel strapping.

### 1.06 PROJECT CONDITIONS

A. Cold Weather Protection: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen subgrade or setting beds. Remove and replace unit paver work damaged by frost of freezing.

#### PART 2 PRODUCTS

#### 2.01 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the Work include, but are not limited to, the following:
  - 1. Clay Brick Pavers
    - a. Belden Brick Company
    - b. Boral Bricks, Inc.
    - c. Endicott Clay Products Company
    - d. Glen-Gery Corporation
    - e. Hastings Pavement Company, Inc.
    - f. Kansas Brick and Tile

#### 2.02 COLOR AND TEXTURES

- A. Provide materials and products that result in colors and textures of exposed unit paver surfaces and joints complying with the following requirement.
  - 1. Clay Brick Pavers: Provide City of Cheyenne selections from manufacturer's full range of colors and textures as specified.
- B. Color will be approved by DDA and City of Cheyenne.

#### 2.03 UNIT PAVERS

- A. Clay Brick Pavers: Paving brick; solid (uncored), unfrogged brick of sizes indicated, complying with ASTM C902, Weather Class SX, Application PX, with an average compressive strength of 15,000 psi, an average absorption rate of 4%, a maximum saturation coefficient of 0.85, and a modulus of rupture of 1,500 psi.
  - 1. Standard full 4" x 8" x 2 1/4" thick paver.

#### 2.04 SETTING MATERIALS

- A. Base Course: Cement treated backfill (slurry) shall be used under unit pavers and shall have a slump of 5"-8" and shall be mechanically vibrated until consolidation is complete.
- B. Sand Leveling Course: Fine, sharp, non-plastic aggregate complying with ASTM C33.
- C. Sand for Joints: Fine, sharp, masonry sand with 100% passing the No. 16 sieve and no more than 10% passing the No. 200 sieve.

### PART 3 EXECUTION

#### 3.01 EXAMINATION

A. Examine surfaces indicated to receive brick paving, with installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of clay brick pavers. Do not proceed with installation until unsatisfactory conditions have been corrected.

#### 3.02 PREPARATION

- A. Vacuum clean concrete substrates for brick pavers to remove dirt, dust, debris, and loose particles.
- B. Proof-roll prepared subgrade surface at location of concrete pavers to check for unstable areas and areas requiring additional compaction. Do not proceed with installation of unit pavers until deficient subgrades have been corrected and are ready to receive subbase for clay brick pavers.

### 3.03 INSTALLATION, GENERAL

- A. Do not use unit pavers with chips, cracks, voids, discolorations, and other defects that might be visible or cause staining in finished work.
- B. Cut unit pavers with motor-driven masonry saw equipment to provide clean, sharp, unchipped edges. Cut units to provide pattern indicated and to fit adjoining work neatly. Use full units without cutting where possible. Hammer cutting is not acceptable.
- C. Joint Pattern: As indicated on Drawings.
- D. Tolerances: Do not exceed 1/16" unit-to-unit offset from flush (lippage) nor 1/8" in 24" and ¼" in 10' from level, or indicated slope, for finished surface of paving.

#### 3.04 PAVER APPLICATIONS

- A. Clay Brick Paver Subgrade: Compact soil subgrade uniformly to at least 95% of ASTM D1557 laboratory density.
- B. Clay Brick Paver Base: Cement treated backfill (slurry) shall be used under unit pavers and shall have a slump of 5"-8" and shall be mechanically vibrated until consolidation is complete.
- C. Place sand for leveling course and screed to a thickness of 1¾" minimum, taking care that moisture content remains constant and the density is loose and constant until clay brick pavers are set and compacted.
- D. Set pavers hand tight against the concrete edges or against other pavers. Use string lines to keep straight lines where necessary.

- E. Vibrate clay brick pavers into leveling course with a low amplitude plate vibrator capable of 3500 to 5000 lbf compaction force. Perform at least 3 passes across paving with vibrator. Vibrate under the following conditions:
  - 1. After edge pavers are installed and there is a completed surface or before surface is exposed to rain.
  - 2. Before ending each day's work, fully compact installed concrete pavers within 36" of the laying face. Cover the open layers with nonstaining plastic sheets overlapped 48" on each side of laying face to protect it from rain.
- F. Spread dry sand and fill joints immediately after vibrating pavers into leveling course. Vibrate pavers and add sand until joints are completely filled, then remove excess sand. Leave a slight surplus of sand on the surface for joint filling.
- G. Do not allow traffic on installed concrete pavers until sand has been vibrated into joints.
- H. Repeat joint filling process 30 days later.

### 3.05 REPAIR, POINTING, CLEANING, AND PROTECTION

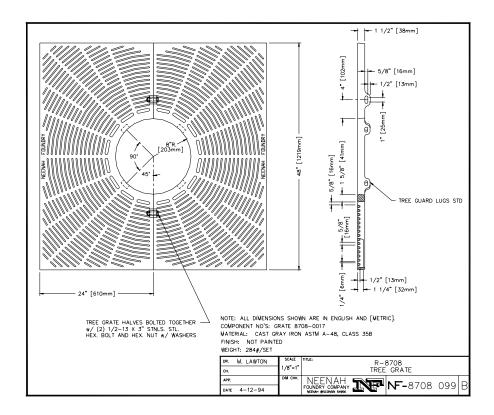
- A. Remove and replace unit pavers that are loose, chipped, broken, stained, or otherwise damaged or if units to not match adjoining units as intended. Provide new units to match adjoining units, and install in same manner as original units, with same joint treatment to eliminate evidence of replacement.
- B. Provide final protection and maintain conditions in a manner acceptable to installer that ensures that unit paver work is without damage or deterioration at the time of Substantial Completion.

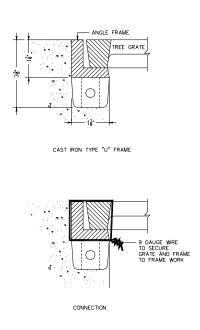
## **CONCRETE DRIVEWAY & ALLEY APPROACHES**

All new concrete driveway and alley approaches shall be constructed per detail below. Portland cement for sidewalk construction shall be Class 4500 concrete with fibermesh reinforcement, per the current edition of the "City of Cheyenne and Board of Public Utilities Construction Standards and Specifications". Section 03000, "Concrete Sidewalks, Driveway Approaches, Curb Turn Fillets, Valley Gutters, and Miscellaneous New Concrete Construction" of the current edition of the "City of Cheyenne and Board of Public Utilities Construction Standards and Specifications" shall apply.

## TREES & TREE GRATES

All new tree and tree grate installation shall be in conformance with Section 02900, "Landscaping", of the *Wyoming Public Works Standard Specifications* and the attached Special Provisions. All trees shall be planted in accordance with the City standards per the City Forester. All grates shall be installed per details below and the manufacturer's recommendations. Property owners will be responsible for maintaining and keeping grates clean in addition to watering trees on a regular basis. Any trees that die due to lack of watering will be replaced with like size and species within one (1) growing season by the responsible property owner(s).





### **SPECIAL PROVISIONS FOR**

### SECTION 02900 • LANDSCAPING

#### Add the following to Subsection 2.10 D:

1. All new trees to be installed in sidewalk tree wells shall be selected from the "suggested trees and other plants for Cheyenne" list prepared by the Cheyenne Urban Forestry Division.

All of these trees require periodic watering after establishment.

Size: 2" diameter minimum

Tree staking to be included on all trees.

- 2. Trees and grates shall be located adjacent to back of curb and spaced according to the revised "Cheyenne Downtown Streetscape Design and Improvement Program". Both level one and level two streetscapes call for four (4) trees per block face equally spaced. Spacing and number of trees shall be adjusted if existing trees are present (see detail).
- 3. All trees shall be approved by City Forestry.
- 4. Drip irrigation systems are strongly recommended.

#### Add the following to Subsection:

#### 2.01 I. TREE WELL FRAME AND GRATE

1. All tree grates and frames shall be Neenah Foundry or approved equal.

Model # R-8708 180° square

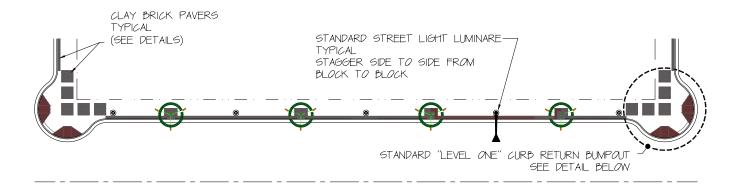
- 2. Tree grates and frames shall be installed at all tree locations as specified. See Note 2 above.
- 3. Installation procedures shall be in strict conformance with manufacturer's recommendations.

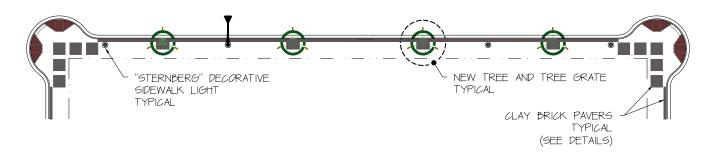
## STREET & DECORATIVE SIDEWALK LIGHTING

All street and decorative sidewalk lighting will be provided and installed by Cheyenne Light, Fuel & Power (CLF&P).

Streetlight standard luminaries will be CLF&P's 33' black steel standard pole with 10' steel arm. Each will come equipped with a 250 watt high pressure sodium bulb. A single streetlight luminaire shall be located at all intersections and all mid-block locations, staggered from block to block (see detail).

Decorative sidewalk lighting shall be "Sternberg" pole Model #4412 DFO with a single 16" opal globe. Each will come equipped with a single 100 watt metal halide lamp. A single decorative sidewalk light shall be evenly placed between new trees. Maximum number per block shall be four (4) with mid-block streetlight and five (5) on opposite side of block (see detail).





### HANDICAPPED / ADA ACCESSIBILITY

Per the City of Cheyenne, all elements of the American with Disability Act (ADA), Title II, shall be included as an amendment to the current edition of the "City of Cheyenne and Board of Public Utilities Construction Standards and Specifications", including the most current *ADA Accessibility Guidelines*, a City of Cheyenne information brochure. All City of Cheyenne public right-of-way must conform to Section 14.0, "Public Rights-of-Way of ADA, Title II" (Appendix B). In addition to Title II, some businesses may be required to conform fully to ADA Title III, which deals with:

- 1) places of public accommodation;
- 2) commercial facilities;
- 3) examinations and courses related to applications, licensing, certification, or credentialing for secondary or post-secondary education, professional, or trade purposes.

Guidelines and information regarding businesses which must conform to ADA Title III can be found in the American Disabilities Act *Title III Technical Assistance Manual*.

## **SITE FURNITURE**

Benches and trash containers shall be securely fastened and located in combination at all intersections on opposing corners, as approved by DDA and The City of Cheyenne. Materials shall meet the following criteria **or approved equal** (see attached drawings):

**Site Benches** "Victor Stanley" 6' Model #CR10

Color: Victor Stanley green factory applied finish

**Site Trash Containers** "Victor Stanley" Model #ES-135 (24 gal) with S-1 steel dome lid

Color: Victor Stanley green factory applied finish

Placement needs to be coordinated and approved by DDA and the City of Cheyenne Engineer's Office.

# **TRAFFIC SIGNS**

All new street and traffic sign materials and installation shall conform to Sections 02805 and 02806 of the current edition of the "City of Cheyenne and Board of Public Utilities Construction Standards and Specifications", and to the latest edition of the *Manual on Uniform Traffic Control Devices* (MUTCD). The City of Cheyenne Traffic Department shall be contacted prior to sign removal or replacement for review and approval.

# APPENDIX A

DEFINITIONS & ABBREVIATIONS
PUBLICATIONS
CONTACTS

# **DEFINITIONS & ABBREVIATIONS**

**ASTM** American Society of Testing and Materials

**ADA** Americans with Disability Act

CIP Capital Improvement Program

**DDA** Downtown Development Authority

**Exp. Jt.** Expansion joint

**Fibermesh** 100% virgin polypropylene fibrillated fibers specifically for

Use in concrete reinforcement

Gal gallon

Min minimum

**Sq.** square

Typ. Typical

The following is a list of pertinent design and regulatory publications available:

- 1. The current edition of the "City of Cheyenne and Board of Public Utilities Construction Standards and Specifications".
- 2. The 1994 Approved Amendments (blue sheets) to the *Wyoming Public Works Standard Specifications*.
- 3. The 1995 Approved Amendments (green sheets) to the *Wyoming Public Works Standard Specifications*.
- 4. "Water and Sanitary Sewer Construction Standards and Specifications" and Amendments to the 1993 *Wyoming Public Works Standard Specifications*, May 1995.
- 5. "Cheyenne Down Streetscape Design Improvement Program Report", November 30, 1992.
- 6. "Cheyenne Down Streetscape Design Improvement Program Report", revised September 1995.
- 7. "ADA Accessibility Guidelines", a City of Cheyenne information brochure.
- 8. The American with Disability Act 1990 Rules and Regulations.
- 9. The Americans with Disability Act Title II, Section 14.0-Public Rights-of-Way.
- 10. The Americans with Disability Act Title III and Technical Assistance Manual, covering private entities.

# **CONTACTS**

The following is a list of contacts for information or assistance with specific items:

NAME	TITLE	ORGANIZATION	PHONE*
Christian Cherek	Executive Director	Downtown Development Authority	433-9730
Doug Vetter	Assistant City Engineer	City Engineer's Office	637-6289
Dave Sports	Director, 1% Construction Dept.	City of Cheyenne	637-6263
Bruce Wilson	Chief Building Inspector	City of Cheyenne	637-6276
Bob Bradshaw	ADA Administrator	City of Cheyenne	637-6307
Bob Allen	Traffic Department-Signage	City of Cheyenne	637-6291
Lisa Olson	City Forester	City of Cheyenne	637-6428
Herman Noe	Manager of Engineering	Board of Public Utilities	637-6416
Bruce Wise	Engineering Department	Cheyenne Light, Fuel & Power	778-2154
	Technical Operations Manager	Bresnan Cable TV	632-8114
Tom DeHoff	Resident Engineer – District 1	Wyo Dept of Transportation	777-4404
Bob Bates	Qwest		432-0326
Tom Mason	MPO Director		637-6299
	Development Director		637-6305
	One Call	One Call	1-800-849-2476

<sup>\*</sup> All numbers listed are Area Code 307.