

# PUBLIC WORKS

# RULES & REGULATIONS

OF THE MANAGER OF THE DEPARTMENT OF PUBLIC WORKS, CITY & COUNTY OF DENVER

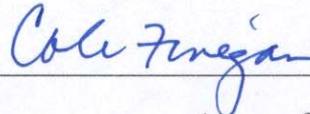
Adopted Pursuant to Article II of the Charter of the City & County of Denver and Section 2-91 et seq. of the Revised Municipal Code

The Department of Public Works  
Engineering Division,  
Development Engineering Services

Rules & Regulations for Standard Right-of-Way  
Cross Sections and Utility Locations

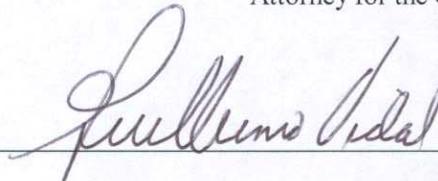
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Approved as to form



**Cole Finega**  
Attorney for the City & County of Denver

Approved & Adopted



**Guillermo V. Vidales**  
Manager of Public Works

October 1, 2005

Effective Date

## **FORWARD**

The following Rules and Regulations are issued by the Manager of Public Works of the City and County of Denver, under authority of Article A2.3 and Chapter 49 of the Denver Revised Municipal Code. Three copies of these rules and regulations are filed with the City Clerk, one copy with the Attorney for the City and County of Denver, and one copy in the office of the said Manager of Public Works.

DEPARTMENT OF PUBLIC WORKS

*RULES AND REGULATIONS PERTAINING TO THE  
STANDARD RIGHT-OF-WAY CROSS SECTIONS AND UTILITY LOCATIONS*

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## **RULES AND REGULATIONS PERTAINING TO THE STANDARD RIGHT-OF-WAY CROSS SECTIONS AND UTILITY LOCATIONS**

The purpose of these Rules and Regulations is to establish standards that entities, which design and build streets to be owned by the City and County of Denver ("City"), have the knowledge needed to perform the proper design of the right-of-way. These Rules and Regulations are issued under the authority of the Manager of Public Works as specified in the *Revised Municipal Code* of the City and County of Denver.

All previously issued policy and procedure, previous Rules and Regulations, and bulletins dealing with standard cross sections are hereby rescinded and replaced by these Department of Public Works' Right-of-Way Standard Cross Sections within the City and County of Denver effective upon promulgation.

### **I. DEFINITIONS**

**Amenity Zone** - Area along the back of the curb in a commercial streetscape that organizes trees, plantings, furnishings and lighting. It may range from 4 to 12 feet wide. Ample clear space must be provided between the amenity zone and building facades on the sidewalk for pedestrian circulation. Amenity zone may include improvements as required in other plans including, but not limited to, *Blueprint Denver*, the *Pedestrian Master Plan*, *Streetscape Design Manual* and the *Game Plan*.

**Approve or Approval** - Approved by the Manager of Public Works or his/her designee.

**Bulb Outs** - Also known as Curb Extensions, these are neckdowns at intersections that reduce roadway width curb to curb.

**City** - City and County of Denver, and its Manager of Public Works or his Designee.

**Intersection** - Includes that portion of the right-of-way that is situated no more than 50 feet from the point of tangency of the corner radius of two intersecting roadways.

**Lane** - The portion of a roadway for the movement of a single line of vehicles. Section 54-1(26) R.M.C.

**Right-Of-Way (R.O.W.)** – the strip of land over which is built a public road.

**Sidewalk** - That portion of the sidewalk area, which is paved. Section 54-1(63) R.M.C.

**Sidewalk Area** - That portion of a street between the curb lines or the lateral lines of a roadway, and the lateral property lines intended for the use of pedestrians. Section 54-1(64) R.M.C.

**Sidewalk Construction Area** – The area necessary to construct the sidewalk with no encroachment into private property.

**Street or Highway** - The entire width between the boundary lines of every way publicly maintained when any part thereof is open to the use of the public for purpose of vehicular travel or the entire width of every way declared to be a public highway by any law of this state. Section 54-1(68) R.M.C.

**Tree Lawn** - The area of lawn or planting between the curb and the detached sidewalk.

## II. EXCEPTIONS

Exceptions to the standards will be considered on a case-by-case basis. The Manager of Public Works or designee may require a Traffic Impact Study (T.I.S) with full circulation to all affected agencies and parties, and a signed approval from each before the changes to the cross sections will be approved for use. The review time may be considerably increased by the need to evaluate these nonstandard cross sections.

## III. CONSTRUCTION DETAILS

Detailed information regarding construction of public roadways can be found in the document titled *Standards and Details for Engineering Division Volume 1 – Minor Projects*, current edition. This document provides information on the permit and construction processes, details of such features as curb ramps and alleys, and presents rules and regulations associated with planning and construction within the public right-of-way.

## IV. ROADWAY SYSTEM DESIGN CONTEXT

The following guidelines were developed to assist in application of Denver's cross-sections in the appropriate locations within the roadway system. One of the primary design objectives is to achieve an overall roadway system that distributes traffic in a manner similar to the current Denver grid system. Each cross-section has its' own classification criteria (Local, Collector, Arterial) however, the following guidelines add the system context that is necessary to determine if the cross-section not only serves the land use directly adjacent to it, but also fits within a system of transportation facilities. While intended to be applied to new construction, these cross-sections also provide the priority design elements to be provided for proposed streets in existing areas of development that may contain ROW constraints. In addition, Historic Parkways are not covered by these cross-sections. This system of roadways is critical not only for vehicular traffic but also for transit, pedestrians, and bicycles.

### A. Arterial Streets:

- **6 Lane Arterial** streets will be located at one-mile intervals and serve regional traffic. 6 Lane Arterials provide connections to adjacent Cities, allow for continuous travel through Denver, accommodate longer trips, and provide connections to the highway system. Within a one-mile

section, it is desirable to have between 10 and 16 roadways that intersect the 6 Lane Arterial.

- **4 Lane Arterial** streets may be at locations other than the one-mile interval and provide intra-community circulation versus providing regional connections. The right-of-way width would be between 110' and 120' depending upon the presence of on-street parking. These Arterials would not exceed 3 miles in length. The 4 Lane Arterial would also be designed to accommodate between 10 and 16 intersecting roadways, per mile.
- Along the continuous alignment of an Arterial roadway, the cross section could vary between: **6 Lane Arterial, 4 Lane with Parking, and 4 Lane without Parking**. The cross section must be continuous for a minimum of 660 feet in length.
- Medians will only be maintained by Denver Parks & Recreation with a written approval and a Maintenance Agreement from the Manager of Parks & Recreation prior to median construction.

#### **B. Collector Streets:**

- It is desirable to have multiple **Collector** streets between Arterials. The number of Collectors is dependent upon the connectivity of the established roadway system, location of parks and open space, and the mix of land use.
- In most cases, **Collector** streets shall connect across arterials. This allows for a link between areas surrounded by arterials without forcing this traffic onto the Arterial streets. This also allows for pedestrian, bicycle and transit connections that are not forced onto Arterial roadways due to the lack of other connections.
- Any **Collector** street that intersects an Arterial at the ¼ mile (from the parallel Arterial) shall not be signalized. If the roadway system layout indicates that a signal would be necessary to serve the anticipated demand, the signal shall be located at the 1/8 mile (660 feet) spacing along the arterial. This is required to maintain efficient signal progression along Arterial streets.
- Along the continuous alignment of a Collector roadway, the cross section could vary between: **Collector, Residential Collector, and Industrial Collector**. The cross section must be continuous for a minimum of 660 feet in length.

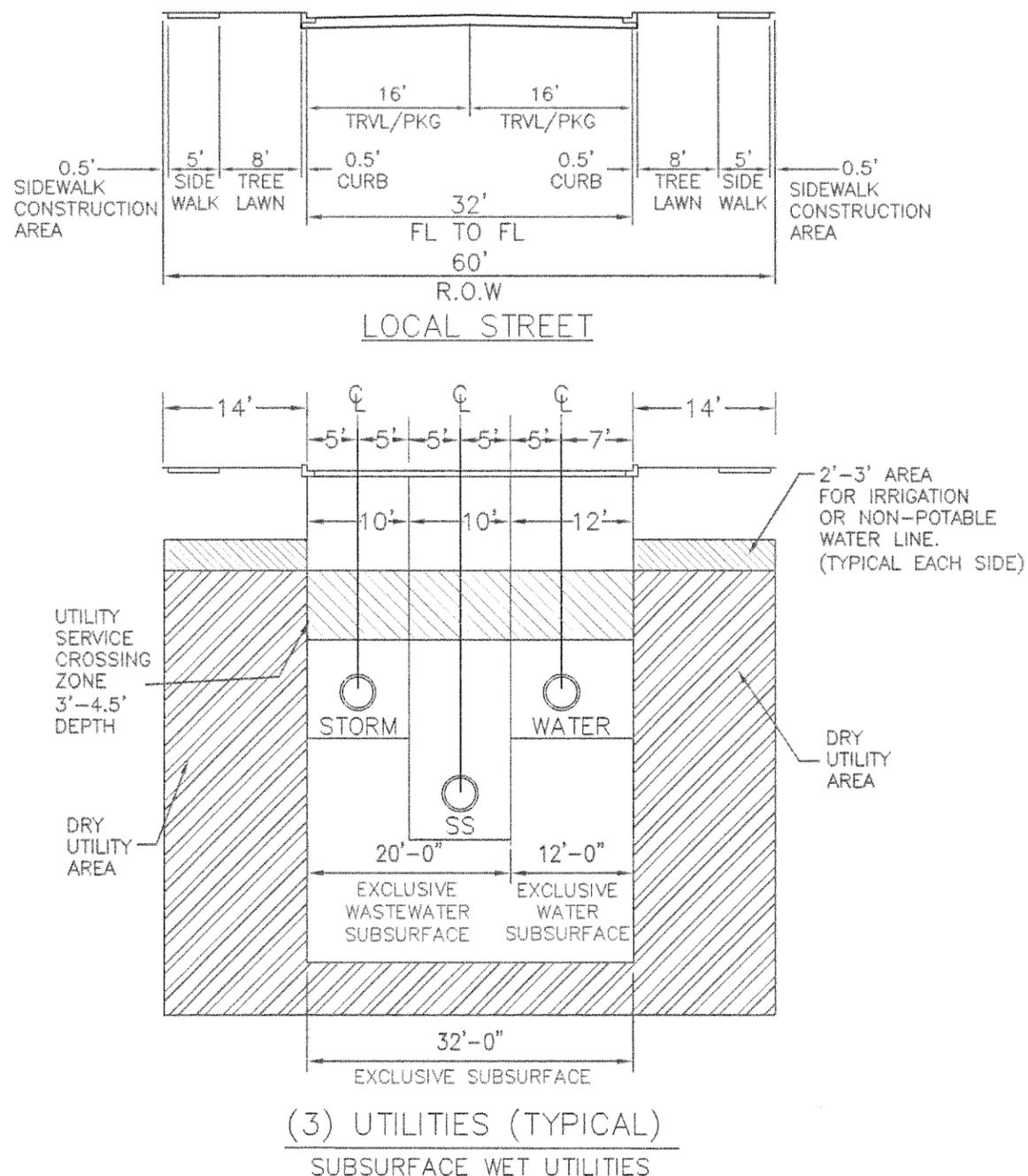
#### **C. Local Streets:**

- **Local** streets are intended to provide primarily residential uses with access to their properties, a very walkable environment for pedestrians, and use by bicycle traffic.

- It is not anticipated that transit services would be accommodated on most Local streets.
- In most cases, **Local** streets should directly intersect with Arterial streets. However, in some cases access to and from the **Local** street may be restricted.
- The spacing between **Local** streets must be from 300 to 660 feet

## V. CROSS SECTIONS

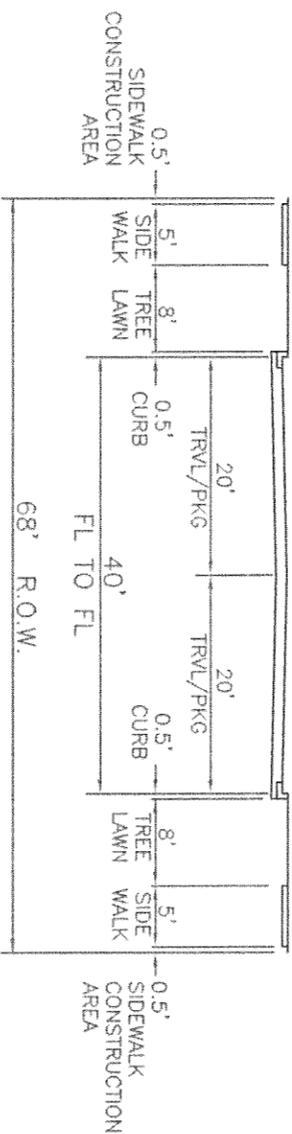
NOTES FOR: LOCAL STREET



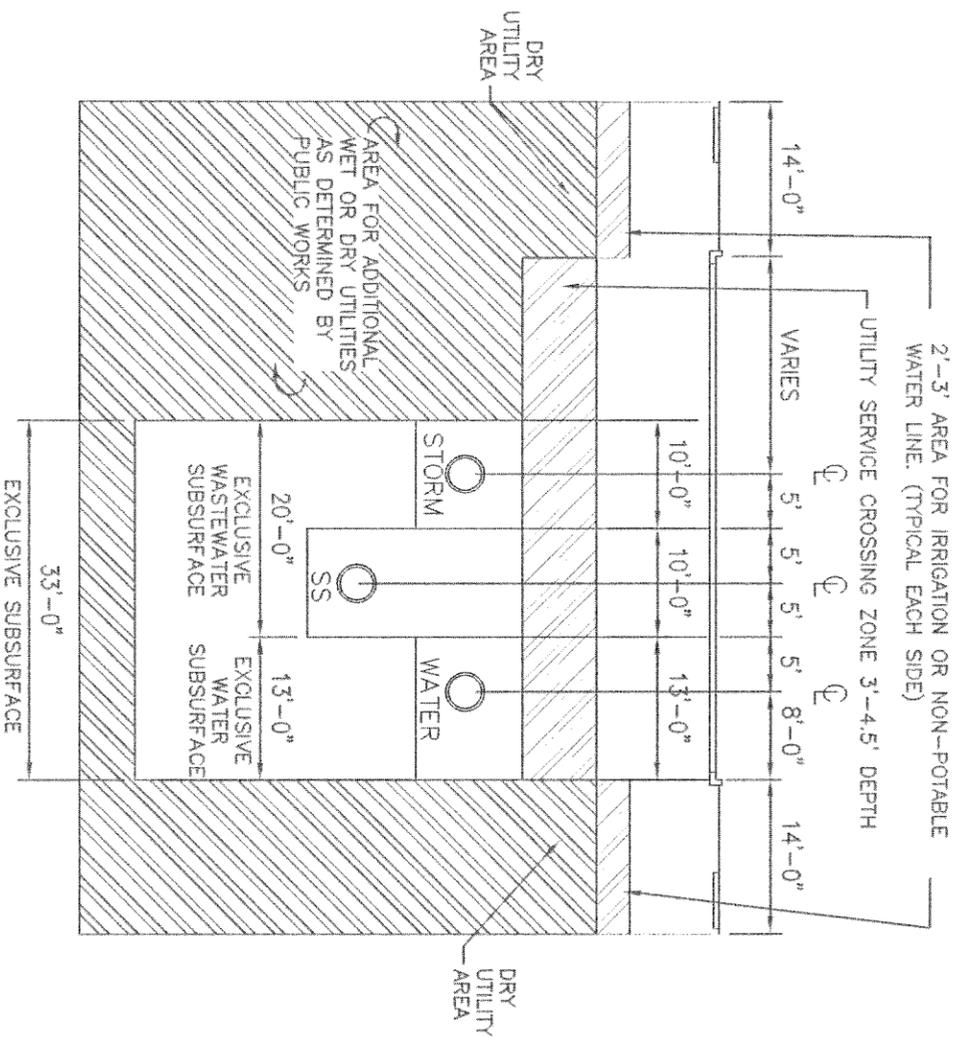
1. PARKING GENERALLY ALLOWED ON BOTH SIDES OF THE STREET.
2. RIGHT-OF-WAY MAY WIDEN TO ACCOMMODATE INTERSECTION TURN LANES AND ENHANCED PEDESTRIAN, BICYCLE, & TRANSIT FACILITIES. CROSS SECTION DEPICTS TYPICAL MID-BLOCK CONDITIONS.
3. AT INTERSECTIONS, BULB OUTS MAY BE REQUIRED TO ENHANCE PEDESTRIAN SAFETY.
4. CROSS SECTION APPLIES FOR WET UTILITIES LESS THAN 15' DEEP AND MAXIMUM PIPE INSIDE DIAMETER OF:  
STORM 36"  
SANITARY 12"  
WATER 16"
5. CROSS SECTION APPLIES TO:
  - STREETS ADJACENT TO ONE OR TWO STORY SINGLE OR MULTI-FAMILY BUILDINGS.
  - STREETS WHERE ANY MULTI-FAMILY HOUSING UNITS TOTAL 15 UNITS OR LESS PER BUILDING.
6. IF ALL OF THE FOLLOWING CONDITIONS EXIST, THE FLOWLINE TO FLOWLINE WIDTH MAY BE DECREASED TO 30':
  - ACCESS TO THE ADJACENT LAND USE IS FROM THE ALLEY ONLY.
  - ONLY NEED TO ACCOMMODATE (2) WET UTILITIES.
  - NO HORIZONTAL CURVATURE.
  - RIGHT-OF-WAY REMAINS AT 60'.
  - ADJACENT LAND USE SHALL BE SINGLE-FAMILY OR LOW-DENSITY MULTI-FAMILY RESIDENTIAL.
  - THE DECREASE IN WIDTH WILL ADEQUATELY SERVE TRANSPORTATION SYSTEM NEEDS, AS DETERMINED BY PUBLIC WORKS.
7. THE FLOWLINE WIDTH MAY BE INCREASED TO 36' AND THE RIGHT-OF-WAY MAY BE INCREASED TO 64', AS DETERMINED BY PUBLIC WORKS.
8. IF THE ADJACENT LAND USE IS ZONED INDUSTRIAL, THE FLOWLINE TO FLOWLINE WIDTH SHALL BE INCREASED TO 36'. NO ON-STREET PARKING WILL BE ALLOWED.
9. FOR LOCAL STREETS ADJACENT TO COMMUNITY FACILITIES SUCH AS SCHOOLS, RECREATION CENTERS, AND LIBRARIES, FLOWLINE WIDTH SHALL BE INCREASED TO 36'. THE RIGHT-OF-WAY SHALL BE INCREASED TO 64'. INTERSECTION BULB OUTS WILL BE REQUIRED TO ENHANCE PEDESTRIAN SAFETY.

Date: 7/2005

CITY & COUNTY OF DENVER		PUBLIC WORKS	STD. DWG NO.
LOCAL STREET			CS-1



COLLECTOR - 2 LANE



(3) UTILITIES (TYPICAL)  
SUBSURFACE WET UTILITIES

NOTES FOR: COLLECTOR

1. PARKING RESTRICTIONS MAY BE NECESSARY ON ONE OR BOTH SIDES OF THE STREET.
2. RIGHT-OF-WAY MAY WIDEN TO ACCOMMODATE INTERSECTION TURN LANES AND ENHANCED PEDESTRIAN, BICYCLE, AND TRANSIT FACILITIES. CROSS SECTION DEPICTS TYPICAL MID-BLOCK CONDITIONS.
3. AT INTERSECTIONS BULB OUTS MAY BE REQUIRED TO ENHANCE PEDESTRIAN SAFETY.
4. CROSS SECTION APPLIES FOR WET UTILITIES LESS THAN 15' DEEP AND MAXIMUM INSIDE PIPE DIAMETER OF : STORM 36"  
SANITARY 12"  
WATER 16"
5. FOR RESIDENTIAL LAND USES, IF THE FOLLOWING CONDITIONS EXIST, THE FLOWLINE TO FLOWLINE WIDTH MAY BE DECREASED TO 36' (64' R.O.W.); AS DETERMINED BY PUBLIC WORKS.
  - LAND USE ADJACENT TO STREET IS RESIDENTIAL WITH ALLEY ACCESS ONLY AND NO MID-BLOCK STREET ACCESS.
  - STREETS ADJACENT TO 1 OR 2 STORY MULTI-FAMILY BUILDINGS
  - STREETS WHERE MULTI-FAMILY HOUSING UNITS NUMBER 15 OR LESS PER BUILDING.
6. FOR MAIN STREET OR MIX-USE LAND USES, IF THE FOLLOWING CONDITIONS EXIST, THE FLOWLINE TO FLOWLINE WIDTH MAY BE DECREASED TO 36' (64' R.O.W.); AS DETERMINED BY PUBLIC WORKS.
  - COMMERCIAL COLLECTORS WHERE LOADING IS ACCOMMODATED ON-SITE OR FROM AN ALLEY.
  - 2 LANE MAIN STREET COLLECTORS WHERE LOADING IS ACCOMMODATED ON-SITE OR FROM AN ALLEY. THE AMENITY ZONE SHALL BE WIDENED TO 15.5'. THE RIGHT-OF-WAY REMAINS 68'. THE DECREASE IN WIDTH WILL ADEQUATELY SERVE TRANSPORTATION SYSTEM NEEDS, AS DETERMINED BY PUBLIC WORKS
7. IF ANY OF THE ADJACENT LANDUSE IS ZONED INDUSTRIAL, THE FLOWLINE TO FLOWLINE WIDTH SHALL BE INCREASED TO 44' (72' R.O.W.).
8. AS DETERMINED BY PUBLIC WORKS THE 3 LANE COLLECTOR MAY BE REQUIRED DUE TO FREQUENT ACCESS DRIVeways. THE 3 LANE COLLECTOR SHALL ACCOMMODATE TWO 11' TRAVEL LANES, A 10' PAINTED CENTER LEFT-TURN LANE, AND ONE 8' PARKING LANE.

CITY & COUNTY OF DENVER

COLLECTOR - 2 OR 3 LANE

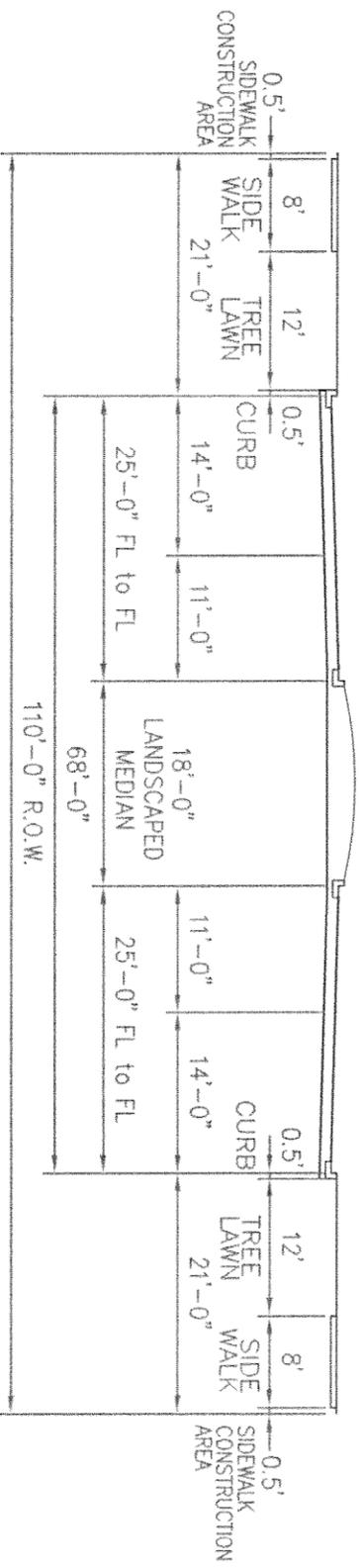
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PUBLIC WORKS

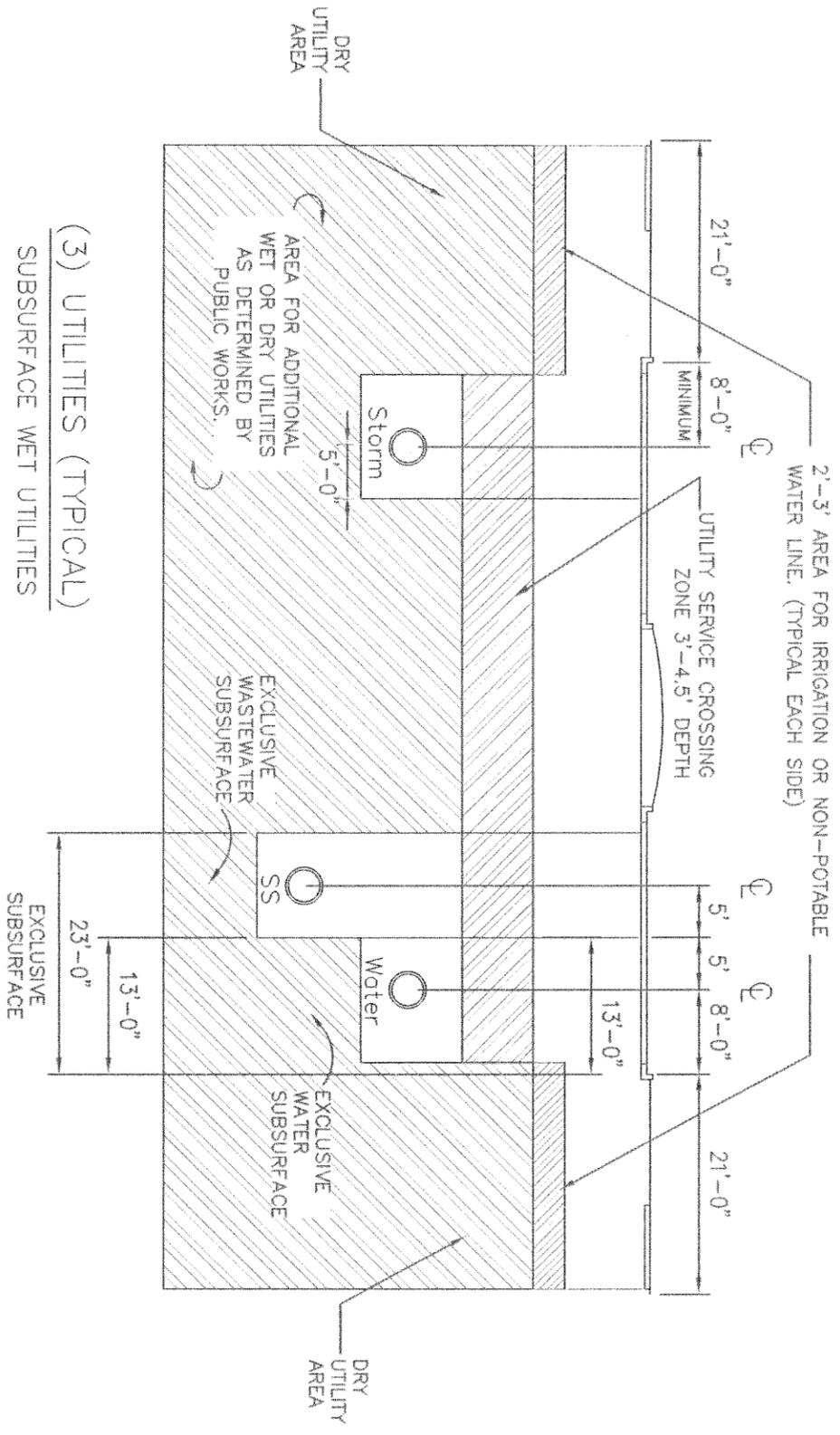
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CS-2



ARTERIAL - 4 LANE WITH MEDIAN AND NO PARKING

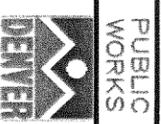


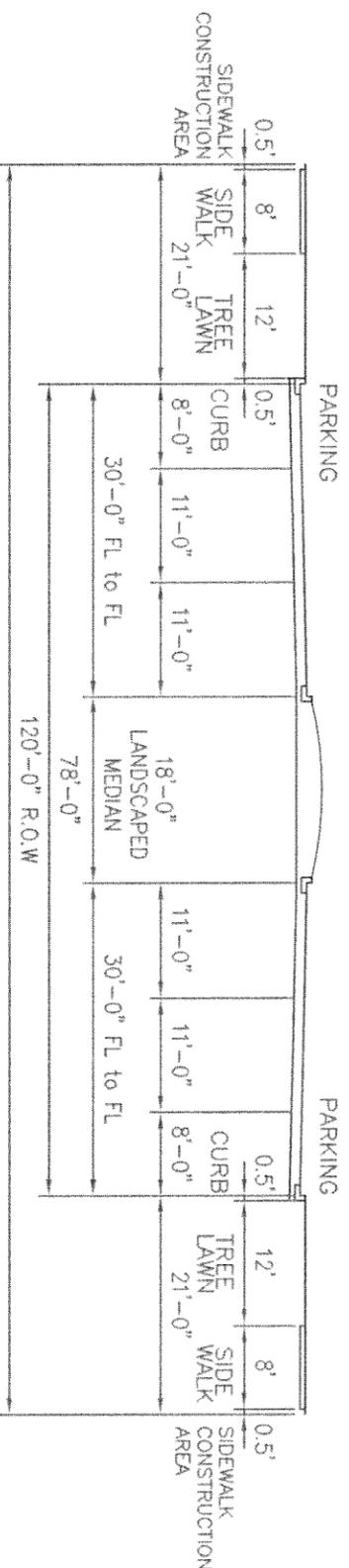
(3) UTILITIES (TYPICAL)  
SUBSURFACE WET UTILITIES

NOTES FOR: ARTERIAL - 4 LANE WITH MEDIAN AND NO PARKING

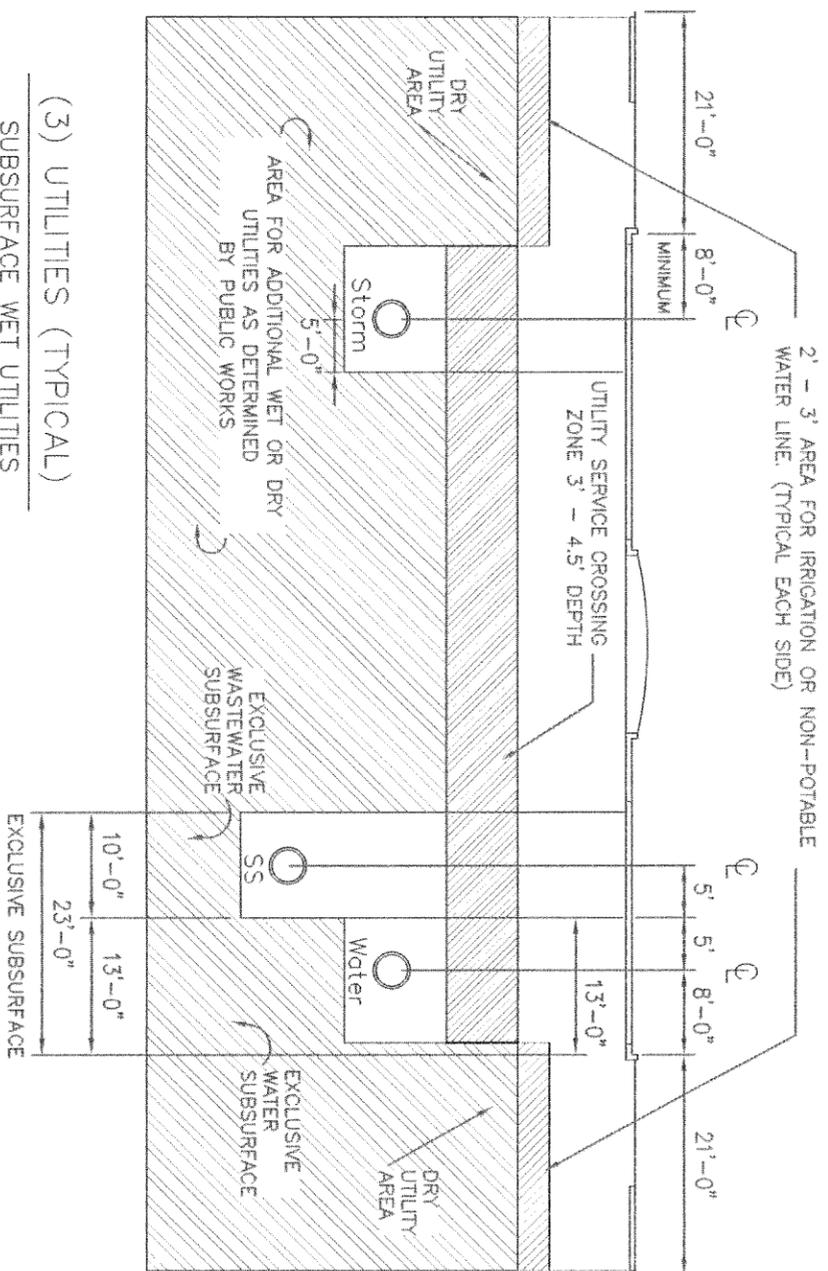
1. ADDITIONAL STREET WIDTH AND RIGHT-OF-WAY MAY BE REQUIRED FOR CERTAIN ARTERIAL CORRIDORS TO ACCOMMODATE SPECIAL TRAVEL LANES AND/OR PEDESTRIAN, BICYCLE, OR PUBLIC TRANSIT FACILITIES. CROSS SECTION DEPICTS TYPICAL MID-BLOCK CONDITIONS.
2. CROSS SECTION APPLIES FOR WET UTILITIES LESS THAN 15' DEEP AND MAXIMUM PIPE INSIDE DIAMETER OF:  
 STORM 36"  
 SANITARY 12"  
 WATER 16"
3. MEDIAN WIDTH MAY BE WIDER FOR CERTAIN STREETS AS REQUESTED BY THE DEVELOPER AND APPROVED BY DEVELOPMENT ENGINEERING SERVICES AND PARKS & RECREATION. MEDIANS WILL ONLY BE MAINTAINED BY DENVER PARKS & RECREATION WITH A WRITTEN APPROVAL AND A MAINTENANCE AGREEMENT FROM THE MANAGER OF PARKS & RECREATION PRIOR TO MEDIAN CONSTRUCTION.
4. UTILITIES MAY BE PLACED ON EITHER SIDE OF THE MEDIAN AS LONG AS THEY MEET MINIMUM WET UTILITY SPACING REQUIREMENTS.

CITY & COUNTY OF DENVER		PUBLIC WORKS
ARTERIAL - 4 LANE WITH MEDIAN AND NO PARKING		
DATE: 7/2005	STD. DWG NO.	CS-3





ARTERIAL - 4 LANE WITH MEDIAN AND PARKING



(3) UTILITIES (TYPICAL)  
SUBSURFACE WET UTILITIES

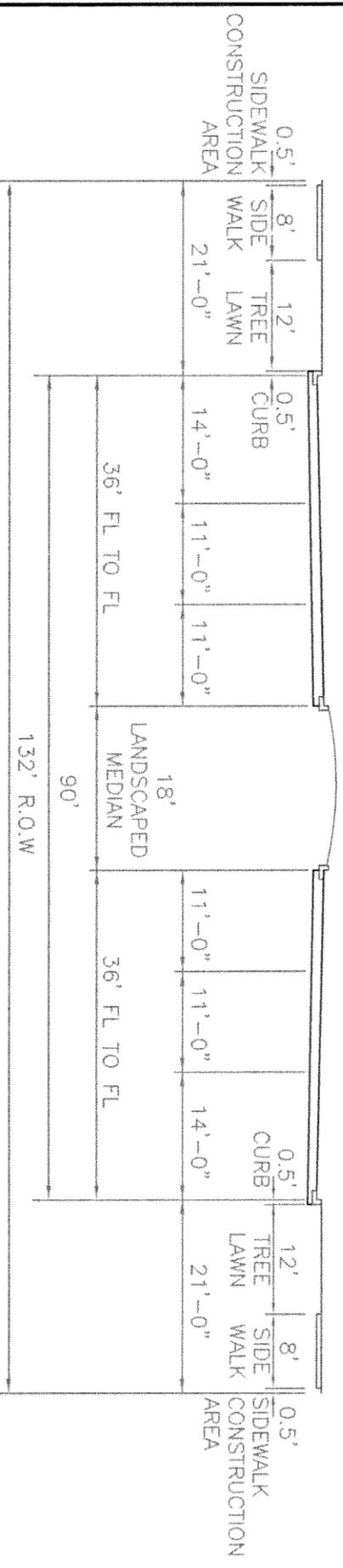
NOTES FOR: ARTERIAL - 4 LANE WITH MEDIAN AND PARKING

1. PARKING IS GENERALLY ALLOWED EXCEPT AT INTERSECTIONS OR MAJOR ACCESS POINTS WHERE ADDITIONAL TRAVEL LANES ARE NEEDED.
2. ADDITIONAL STREET WIDTH AND RIGHT-OF-WAY MAY BE REQUIRED FOR CERTAIN ARTERIAL CORRIDORS TO ACCOMMODATE SPECIAL TRAVEL LANES AND/OR PEDESTRIAN BICYCLE, OR PUBLIC TRANSIT FACILITIES. CROSS SECTION DEPICTS TYPICAL MID-BLOCK CONDITIONS.
3. AT INTERSECTIONS BULB OUTS MAY BE REQUIRED TO ENHANCE PEDESTRIAN SAFETY.
4. CROSS SECTION APPLIES FOR WET UTILITIES LESS THAN 15' DEEP AND MAXIMUM PIPE INSIDE DIAMETER OF:  
STORM 36"  
SANITARY 12"  
WATER 16"
5. MEDIAN WIDTH MAY BE WIDER FOR CERTAIN STREETS AS REQUESTED BY THE DEVELOPER AND APPROVED BY DEVELOPMENT ENGINEERING SERVICES AND PARKS & RECREATION. MEDIANS WILL ONLY BE MAINTAINED BY DENVER PARKS & RECREATION WITH WRITTEN APPROVAL AND A MAINTENANCE AGREEMENT FROM THE MANAGER OF PARKS & RECREATION PRIOR TO MEDIAN CONSTRUCTION.
6. UTILITIES MAY BE PLACED ON EITHER SIDE OF THE MEDIAN AS LONG AS THEY MEET MINIMUM WET UTILITY SPACING REQUIREMENTS.

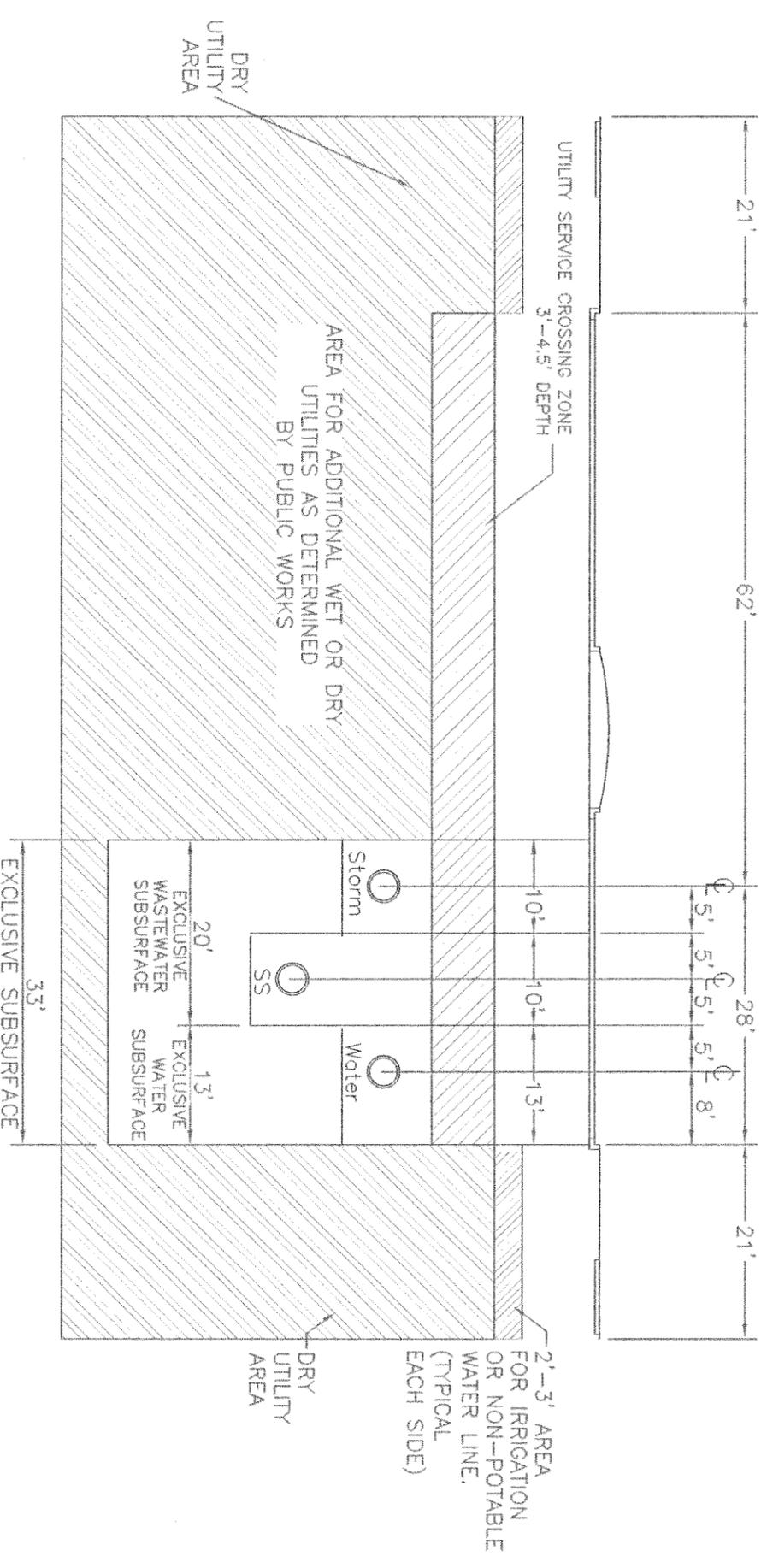
DATE: 7/2005

CITY & COUNTY OF DENVER	PUBLIC WORKS	STD. DWG NO.
ARTERIAL - 4 LANE WITH MEDIAN AND PARKING		CS-4





ARTERIAL - 6 LANE



(3) UTILITIES (TYPICAL)  
SUBSURFACE WET UTILITIES

NOTES FOR: ARTERIAL - 6 LANE

1. PARKING IS GENERALLY NOT ALLOWED ON ARTERIAL ROADWAYS.
2. RIGHT-OF-WAY MAY WIDEN TO ACCOMMODATE TURN LANES AND ENHANCED PEDESTRIAN, BICYCLE, AND TRANSIT FACILITIES. CROSS SECTION DEPICTS TYPICAL MID-BLOCK CONDITIONS.
3. CROSS SECTION APPLIES FOR WET UTILITIES LESS THAN 15' DEEP AND MAXIMUM PIPE INSIDE DIAMETER OF:  
 STORM 36"  
 SANITARY 12"  
 WATER 16"
4. MEDIAN WIDTH MAY BE WIDER FOR CERTAIN STREETS AS REQUESTED BY THE DEVELOPER AND APPROVED BY DEVELOPMENT REVIEW SERVICES AND PARKS & RECREATION. MEDIANS WILL ONLY BE MAINTAINED BY DENVER PARKS & RECREATION WITH A WRITTEN APPROVAL AND A MAINTENANCE AGREEMENT FROM THE MANAGER OF PARKS & RECREATION PRIOR TO MEDIAN CONSTRUCTION.

DATE: 7/2005