**MISCELLANEOUS TOPOGRAPHIC SYMBOLS**

- **Valve** (initials indicate ownership and/or type)
- **Street Name Sign**
- **Gas Cathode Protection Rectifier**
- **Test Hole**
- **Utility Box** (initials indicate ownership and/or type)
- **Concrete Block Wall**
- **Fire Alarm Box on Pedestal**
- **Public Service Utility Pole, Line to Show Direction of Run of Overhead Line**
- **Concrete Monument**
- **Tree** (No. indicates truck dia. in inches)
- **Pole with Guy Anchor**
- **Miscellaneous Symbol (abbreviation indicates type)**
- **Fire Hydrant**
- **Hedge** (Note size & species)
- **Fence**
- **Steps** (Note type and no. of risers)
- **Flow Line of Ditch or Channel**
- **Existing Building**
- **Existing Utility Stub-Out**
- **Existing Building Foundation**
- **Traffic Control Sign**
- **Retaining Wall** (Low side)
- **(High side)**

**Agency Approved**  

| Specification Reference | Uniform Standard Drawings  
|-------------------------|--------------------------|

**Symbols**

**Date**  | **Dwg. No.**  | **Sheet**  
----------|---------------|------------

Effective 05/21/2020 to 10/07/2020
NOTE: FUTURE CONSTRUCTION ITEMS ON PLANS SHALL BE INDICATED BY A DASHED LINE AND APPROPRIATE NOTE.
**PLAN ONLY**

WING TYPE HEADWALL

VALLEY GUTTER

**PROPOSED CONSTRUCTION**

**EXISTING**

UNDERGROUND UTILITY WITH MANHOLE AND CASING

OWNERSHIP INDICATED BY LINE LEGEND

SIZE AND TYPE OF CONDUIT SHALL BE PLACED ON CONDUIT WHEN AVAILABLE

**LEGEND**

TSI = TRAFFIC SIGNAL INTERCONNECT  SS = SANITARY SEWER
E = ELECTRIC  SD = STORM DRAIN
FA = FIRE ALARM  W = WATER
SL = STREET LIGHT  S-G = STEEL GAS
CATV = CABLE TELEVISION  PL-G = PLASTIC GAS
T = TELEPHONE

**PROFILE ONLY**

CENTERLINE GRADE

TOP OF CURB OR FLOW LINE

PIPE

OR

OR

OR

**SYMBOLS**

**SPECIFICATION REFERENCE**

AGENCY APPROVED

B  C  H  L  M  N

UNIFORM STANDARD DRAWINGS

CLARK COUNTY AREA

DATE  DWG. NO. 101  SHEET 3 OF 4
### MISCELLANEOUS ELECTRICAL SYMBOLS

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<tr>
<th>PLAN ONLY</th>
<th>EXISTING</th>
<th>PROPOSED CONSTRUCTION</th>
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<tr>
<td>TRAFFIC SIGNAL CONTROLLER</td>
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Effective 05/21/2020 to 10/07/2020
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<td>Open-Graded Pavement, Original Ground</td>
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**UNIFORM STANDARD DRAWINGS**

**CLARK COUNTY AREA**

**ABBREVIATIONS**

**SPECIFICATION REFERENCE**

**AGENCY APPROVED**

**B C H L M N**

**DATE**

**DWG. NO.** 105

**SHEET** 1 OF 2

**Effective 05/21/2020 to 10/07/2020**
ABBREVIATIONS

PP - Power Pole
P - Power
P - Property Line
Prop - Proposed
PB - Pull Box
RP - Radius Point
R - Radius
RR - Railroad
Reinf - Reinforced
RC - Reinforced Concrete
RCB - Reinforced Concrete Box
RCP - Reinforced Concrete Pipe
Reloc - Relocate
RT - Right
R/W - Right-of-way
RD - Road
SS - Sanitary Sewer
Sht - Sheet
S/o - South of
SW - Sidewalk
SQ FT, SF - Square foot
SQ YD, SY - Square yard
Sta - Station
SHP - Steel Highpressure Pipe
SD - Storm Drain
STD - Standard
Struct - Structural or Structure
Surv - Survey
SL - Streetlight
T - Telephone
Temp - Temporary
TBA - To Be Adjusted
TBR - To Be Removed
TC - Top of Curb
TP - Top of Pipe
TS - Traffic Signal
TSI - Traffic Signal Interconnect
Trans - Transition
Typ - Typical
UG - Underground
Var - Variable
Vert - Vertical
VC - Vertical Curve
VG - Valley Gutter
VCP - Vitrified Clay Pipe
W - Water
WM - Water Meter
W/o - West of
Yd - Yard

AGENCY APPROVED

PEND

B C H L M N

Effective 05/21/2020 to 10/07/2020
### Residential Pavement Design Chart

<table>
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<th>Normal Traffic (5.0)</th>
<th>Heavy Traffic (5.5)</th>
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### Notes:
1. This chart was constructed using the 1993 AASHTO Pavement Design Guide, 1996 NDOT Manual and the 2000 RTC Design Criteria, Section 401.01.02 of the standard specifications.
2. An average R-value may be used if it is representative of all project conditions.
3. Additional design compensation is required if expansive soils, hydro-collapsible soils, or soluble materials are present.
4. AC depths shown are minimums and 4" minimum Type II is required; other combinations that meet or exceed the structural number requirements are acceptable.

### Specification Reference

| 401 | Plantmix Bituminous Pavements |

### Uniform Standard Drawings

**Clark County Area**

**Pavement Structure Design Guideline Chart**

**For Minor Collector and Residential Roadways**

<table>
<thead>
<tr>
<th>AGENCY APPROVED</th>
<th>B</th>
<th>C</th>
<th>H</th>
<th>L</th>
<th>M</th>
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**Date 11-10-04 DWG. No. 200.1**
1. This chart was constructed using the 1993 AASHTO Pavement Design Guide, 1996 NDOT Manual and Section 401.01.02 of the Standard Specifications. An average R-value may be used if it is representative of all project conditions. Additional design compensation is required if expansive soils, hydro-collapsible soils, or soluble materials are present. Meant or exceed the structural number requirements are acceptable.

### Notes:
1. This chart was constructed using the 1993 AASHTO Pavement Design Guide, 1996 NDOT Manual and the 2000 RTC Design Criteria, Section 401.01.02 of the Standard Specifications.
2. A traffic study may be required if TI > 9.5.
3. An average R-value may be used if it is representative of all project conditions.
4. Additional design compensation is required if expansive soils, hydro-collapsible soils, or soluble materials are present.
5. AC depths shown are minimums and 4" minimum Type II is required; other combinations that meet or exceed the structural number requirements are acceptable.

### Specification Reference

<table>
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<td>Plantmix Bituminous Pavements</td>
<td>Pavement Structure Design Guideline Chart for Major Collector and Arterial Roadways</td>
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### Date

| Date 11-10-04 | DWG. No. 200 |
**NOTE:**

SEE STANDARD DRAWING NO. 245.1 (2 SHEETS) FOR TYPICAL LANE CONFIGURATIONS AND DIMENSIONS

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<td>ADDITIONAL RIGHT-OF-WAY REQUIRED AT MAJOR INTERSECTIONS</td>
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* AT THE INTERSECTIONS OF 80 FT. AND 100 FT. STREETS, ADDITIONAL RIGHT-OF-WAY MAY BE REQUIRED FOR THE 80 FT. STREET. TYPICALLY, THESE 80 FT. STREETS WILL BE IDENTIFIED AS ARTERIALS IN THE REGIONAL TRANSPORTATION PLAN.

54' RADIUS

100' OR MORE

RIGHT-OF-WAY (BEYOND STANDARD 100' ACQUISITION) NECESSARY FOR INTERSECTION

ADDITIONAL RIGHT-OF-WAY NECESSARY FOR EXCLUSIVE RIGHT TURN LANE AT INTERSECTION

Effective 05/21/2020 to 10/07/2020

DATE 7-10-03 DWG. NO. 201.1
INTERSECTION SIGHT VISIBILITY ZONE

THE SIGHT VISIBILITY ZONE CREATED BY "C" AND "D" IS NOT REQUIRED IF THE INTERSECTION IS CONTROLLED BY AN EXISTING TRAFFIC SIGNAL.

TYPICAL INTERSECTION CORNER

SEE SHEETS 3 THROUGH 8 FOR TYPICAL INTERSECTION SIGHT VISIBILITY ZONE LIMITS.

NOTE: FOR SIGHT ZONE DIMENSIONS, SEE SETBACK TABLE ON SHEET 2 OF THIS STANDARD DRAWING.
### General Notes

1. Each corner of every intersection shall have a sight visibility zone regardless of right-of-way width.

2. No walls, fences, shrubs, utility appurtenances or any other object, other than traffic control devices, fire hydrants, trees, and street light poles, may be constructed or installed within the sight visibility zone unless said object is maintained at least 24 inches in height, measured from top of curb, or where no curb exists, a height of 27 inches measured from the top of adjacent asphalt, gravel or pavement street surface. This restriction extends along the sight visibility line through landscaped medians.

3. At intersections where the classification of major and minor streets cannot be permanently established, each leg of the intersection must be analyzed as if the approach leg is a minor street, intersecting a major street. The portions of the sight visibility zone labeled "N/A" in the setback table are not required. At "T" intersections, the terminating leg will always be the minor street.

4. Curving roadways and roadways with intersecting angles greater than 10 degrees must be analyzed using D1, D2, the eye position, and the car position as shown in the information above.

5. Use of a sight visibility zone different than that shown here shall require a sight visibility analysis prepared and submitted for approval to the local entity engineer by a civil engineer registered in the State of Nevada.

6. The area within the limits of the arc and the chord at the curb return (offset 5' from back of curb) shall be added to the sight visibility zone at each corner of every intersection, except for 80' x 80' intersections or greater.

7. On-street parking shall be prohibited within areas designated by dimensions "A" and "D" on Sheet 1 of this drawing, subject to the approval of the traffic engineer or designated representative of the entity having jurisdiction.

8. Trees with a mature single trunk diameter less than 10-inches, a canopy height greater than 8-feet, a minimum spacing greater than one half the roadway width (back of curb to back of curb), and a minimum of 30-feet from the nearest curb return will be allowed in the sight visibility zone, subject to the approval of the entity having jurisdiction.

9. Consult the AASHTO publication a policy on geometric design of highways and streets for right-of-ways greater than 100'.

### Basis for Analysis

The following criteria was used as the basis for design of sight visibility zones:

**AASHTO Publication** A Policy on Geometric Design of Highways and Streets, 2011 Edition, Chapter IX, Using the Most Restrictive Sight Line Derived, from Each of the Three Possible Crossing Maneuvers (Stopped Condition):

- **Case B3** - Crossing Maneuver
- **Case B1** - Left Turn Maneuver Onto a Major Street
- **Case B2** - Right Turn Maneuver Onto a Major Street

The analysis used a design speed equal to the posted speed divided by 0.85 (rounded to the nearest 5 MPH increment).

Car and eye positions are as shown on Sheet 1 of this drawing.

### Setback Table

<table>
<thead>
<tr>
<th>MAJOR ROW</th>
<th>MINOR ROW</th>
<th>48'</th>
<th>51'</th>
<th>60'</th>
<th>80'</th>
<th>100'</th>
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<tr>
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<td></td>
<td>D1=605'(B3)</td>
<td>D2=726'(B3)</td>
<td>D1=605'(B3)</td>
<td>D2=726'(B3)</td>
<td>D1=605'(B3)</td>
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<th>Clark County Area</th>
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<td>SIGHT VISIBILITY ZONES AT INTERSECTIONS</td>
</tr>
<tr>
<td></td>
<td>DATE 01-09-20 DWG. NO. 201.2 SHEET 2 OF 8</td>
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</table>
TYPICAL SIGHT VISIBILITY ZONES FOR COMMERCIAL DRIVEWAY APPROACHES

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<td>CLARK COUNTY AREA</td>
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SIGHT VISIBILITY ZONES AT INTERSECTIONS

DATE 01-09-20 DWG. NO. 201.2 SHEET 3 OF 8
TYPICAL SIGHT VISIBILITY ZONES FOR 48-FT RIGHT-OF-WAY ROADWAY APPROACHES

SPECIFICATION REFERENCE

SIGHT VISIBILITY ZONES AT INTERSECTIONS

DATE 01-09-20  DWG. NO. 201.2  SHEET 4 OF 8
TYPICAL SIGHT VISIBILITY ZONES FOR 60-FT RIGHT-OF-WAY ROADWAY APPROACHES
TYPICAL SIGHT VISIBILITY ZONES FOR 80-FT RIGHT-OF-WAY ROADWAY APPROACHES

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

SIGHT VISIBILITY ZONES AT INTERSECTIONS

DATE 01-09-20 DWG. NO. 201.2 SHEET 7 OF 8
TYPICAL SIGHT VISIBILITY ZONES FOR 100-FT RIGHT-OF-WAY ROADWAY APPROACHES

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

SIGHT VISIBILITY ZONES
AT INTERSECTIONS

DATE 01-09-20  DWG. NO. 201.2  SHEET 8 OF 8
MINIMUM PROPERTY LINE AND BACK OF CURB RADII

NOTES
* A TRAFFIC CHORD EASEMENT WILL BE REQUIRED AT THIS CORNER.

RIGHT-OF-WAY LINE/PROPERTY LINE RADIUS SHOWN IN TABLE

A TRAFFIC CHORD EASEMENT AT EACH INTERSECTION WHERE REQUIRED.

BACK OF CURB RADIUS SHOWN IN TABLE

PROPERTY LINE RADII

AGENCY APPROVED

SPECIFICATION REFERENCE

CLARK COUNTY AREA

UNIFORM STANDARD DRAWINGS

SUPPLEMENTAL DRAWING

MINIMUM PROPERTY LINE AND BACK OF CURB RADII

COMPLETE STREET ALTERNATIVE

DATE 07-01-12   DWG. NO. 201.3.S1
NOTES
PROPERTY LINES SHALL BE PARALLEL AND RADIAL TO THE BACK OF CURB AT A DISTANCE CONSISTENT WITH THE STANDARD STREET SECTIONS DRAWING NUMBERS.

* PROPERTY LINE RADIUS SHALL BE A MINIMUM OF 54 FEET.
** PROPERTY LINE RADIUS SHALL BE A MINIMUM OF 40 FEET.

<table>
<thead>
<tr>
<th>&quot;B&quot;</th>
<th>60' OR LESS</th>
<th>80'</th>
<th>100' OR MORE</th>
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<tbody>
<tr>
<td>&quot;A&quot;</td>
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<tr>
<td>60' OR LESS</td>
<td>20'</td>
<td>25'</td>
<td>30'</td>
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<tr>
<td>80'</td>
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<td>**</td>
</tr>
<tr>
<td>100' OR MORE</td>
<td>30'</td>
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AGENCY APPROVED

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

MINIMUM BACK OF CURB RADIUS

DATE 11-10-04  DWG. NO. 201
NOTES

1. FINAL A.C. PAVEMENT SURFACE SHALL BE 1/2" MAXIMUM ABOVE LIP OF GUTTER AFTER COMPACTION, EXCEPT WHERE THERE IS OVERLAP WITH PEDESTRIAN ACCESS ROUTES. CONNECTIONS BETWEEN PAVEMENT SURFACES, GUTTERS, AND CURB RAMPS WITHIN PEDESTRIAN ACCESS ROUTES SHALL HAVE NO VERTICAL SURFACE DISCONTINUITIES GREATER THAN 1/4", REGARDLESS OF CONSTRUCTION TOLERANCES.

2. STRUCTURAL SECTION SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 401 AND STANDARD DRAWING 200.

3. THE FINAL A.C. PAVEMENT SURFACE MATERIAL REQUIREMENTS ARE:

<table>
<thead>
<tr>
<th>JURISDICTION</th>
<th>A.C. PAVEMENT SURFACE MATERIAL</th>
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</thead>
<tbody>
<tr>
<td>CLV, NLV</td>
<td>1-INCH UTACS</td>
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<tr>
<td>CC, MES, BC</td>
<td>FOG SEAL</td>
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<tr>
<td>HEN</td>
<td>FOG SEAL AND/OR OPEN GRADE</td>
</tr>
</tbody>
</table>

4. PRIME COAT IS NOT REQUIRED IN LAS VEGAS, HENDERSON, MESQUITE, AND BOULDER CITY WHEN A.C. THICKNESS IS ≥ 5 IN.

---

SPECIFICATION REFERENCE

| 302 | AGGREGATE BASE       |
| 401 | BITUMINOUS PAVEMENT  |
| 403 | OPEN GRADE           |
| 404 | AGGREGATE BASE       |
| 413 | BITUMINOUS GAP GRADED PAVEMENT |
| 501 | CONCRETE             |

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UNIFORM STANDARD DRAWINGS

CLARK COUNTY AREA

ARTERIAL

URBAN AREA STREET SECTIONS

DATE 01-09-20

DWG. NO. 202
1. FINAL A.C. PAVEMENT SURFACE (INCLUDING UTACS OR OPEN GRADE) SHALL BE 3/4" MAXIMUM ABOVE LIP OF GUTTER AFTER COMPACTION, EXCEPT WHERE THERE IS OVERLAP WITH PEDESTRIAN ACCESS ROUTES. CONNECTIONS BETWEEN PAVEMENT SURFACES, GUTTERS, AND CURB RAMPS WITHIN PEDESTRIAN ACCESS ROUTES SHALL HAVE NO VERTICAL SURFACE DISCONTINUITIES GREATER THAN 1/4", REGARDLESS OF CONSTRUCTION TOLERANCES. DENSE GRADE SHALL BE FLUSH WITH LIP OF GUTTER.

2. STRUCTURAL SECTION SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 401 AND STANDARD DRAWING NO. 200.

3. THIS STANDARD IS AN ALTERNATE STREET SECTION TO BE USED AT LOCATIONS DETERMINED BY EACH LOCAL JURISDICTION. NO ABOVE GROUND OBJECTS SHALL BE PLACED WITHIN THE 5 FOOT SIDEWALK.

4. UNDERGROUND DRY UTILITIES SHALL BE PLACED IN A UTILITY CORRIDOR UNDER THE SIDEWALK.

5. OVERLAY 1" UTACS UNLESS OTHERWISE REQUIRED BY THE AGENCY.

AGENCY APPROVED

<table>
<thead>
<tr>
<th>SPECIFICATION REFERENCE</th>
<th>UNIFORM STANDARD DRAWINGS</th>
<th>CLARK COUNTY AREA</th>
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<td>403 OPEN GRADE</td>
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<tr>
<td>501 CONCRETE</td>
<td></td>
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DATE 01-09-20 DWG. NO. 203.1.S1
NOTES
1. FINAL A.C. PAVEMENT SURFACE SHALL BE 1/2" MAXIMUM ABOVE LIP OF GUTTER AFTER COMPACTION, EXCEPT WHERE THERE IS OVERLAP WITH PEDESTRIAN ACCESS ROUTES. CONNECTIONS BETWEEN PAVEMENT SURFACES, GUTTERS, AND CURB RAMPS WITHIN PEDESTRIAN ACCESS ROUTES SHALL HAVE NO VERTICAL SURFACE DISCONTINUITIES GREATER THAN 1/4", REGARDLESS OF CONSTRUCTION TOLERANCES.

2. STRUCTURAL SECTION SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 401 AND STANDARD DRAWING NO. 200.

3. THE FINAL A.C. PAVEMENT SURFACE MATERIAL REQUIREMENTS ARE:

<table>
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<tr>
<th>JURISDICTION</th>
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<tr>
<td>CLV, NLV</td>
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<td>CC, MES, BC</td>
<td>FOG SEAL</td>
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<tr>
<td>HEN</td>
<td>FOG SEAL AND/OR OPEN GRADE</td>
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</table>

4. THIS STANDARD IS AN ALTERNATE STREET SECTION TO BE USED AT LOCATIONS DETERMINED BY EACH LOCAL JURISDICTION. NO ABOVE GROUND OBJECTS SHALL BE PLACED WITHIN THE 5 FOOT SIDEWALK.

5. UNDERGROUND DRY UTILITIES SHOULD BE PLACED IN A UTILITY CORRIDOR UNDER THE SIDEWALK.

6. INCREASE PAVEMENT WIDTH BY 11 FEET ON EACH SIDE OF ROADWAY FOR AN 8 LANE CROSS SECTION. PRIME COAT IS NOT REQUIRED IN LAS VEGAS, HENDERSON, MESQUITE, AND BOULDER CITY WHEN A.C. THICKNESS IS ≥5 IN.

SPECIFICATION REFERENCE

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<td>413</td>
<td>BITUMINOUS GAP GRADED PAVEMENT</td>
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<td>501</td>
<td>CONCRETE</td>
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UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

ARTERIAL ALTERNATE URBAN AREA STREET SECTIONS WITH OFFSET SIDEWALK

DATE 01-09-20  DWG. NO. 203
NOTES

1. FINAL A.C. PAVEMENT TO BE 1/2" MAXIMUM ABOVE LIP OF GUTTER AFTER COMPACTION, EXCEPT WHERE THERE IS OVERLAP WITH PEDESTRIAN ACCESS ROUTES. CONNECTIONS BETWEEN PAVEMENT SURFACES, GUTTERS, AND CURB RAMPS WITHIN PEDESTRIAN ACCESS ROUTES SHALL HAVE NO VERTICAL SURFACE DISCONTINUITIES GREATER THAN 1/4", REGARDLESS OF CONSTRUCTION TOLERANCES.

2. THE GRADE BREAK OCCURRING IN THE CROSS SECTION SHALL FALL BETWEEN DRIVING LANES.

3. STRUCTURAL SECTION SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 401 AND STANDARD DRAWING NOS. 200 AND 200.1.

4. THIS STANDARD IS AN ALTERNATE STREET SECTION TO BE USED AT LOCATIONS DETERMINED BY EACH LOCAL JURISDICTION. NO ABOVE GROUND OBJECTS SHALL BE PLACED WITHIN THE 5 FOOT SIDEWALK.

5. UNDERGROUND DRY UTILITIES SHOULD BE PLACED IN A UTILITY CORRIDOR UNDER THE SIDEWALK.

6. THE FINAL A.C. PAVEMENT SURFACE MATERIAL REQUIREMENTS ARE:

<table>
<thead>
<tr>
<th>JURISDICTION</th>
<th>A.C. PAVEMENT SURFACE MATERIAL</th>
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<tr>
<td>CLV, NLV</td>
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<td>CC, MES, BC</td>
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<tr>
<td>HEN</td>
<td>FOG SEAL AND/OR OPEN GRADE</td>
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</tbody>
</table>

7. PRIME COAT IS NOT REQUIRED IN LAS VEGAS, HENDERSON, MESQUITE, OR BOULDER CITY WHEN A.C. THICKNESS ≥5 IN.

AGENCY APPROVED: CC, MES, BC, HEN

Effective 05/21/2020 to 10/07/2020
### Notes

1. Final A.C. pavement to be 1/2" maximum above lip of gutter after compaction, except where there is overlap with pedestrian access routes. Connections between pavement surfaces, gutters, and curb ramps within pedestrian access routes shall have no vertical surface discontinuities greater than 1/4", regardless of construction tolerances.

2. The grade break occurring in the cross section shall fall between driving lanes.

3. Structural section shall be in accordance with standard specification section 401 and standard drawing nos. 200 and 200.1.

4. This standard is an alternate street section to be used at locations determined by each local jurisdiction. No above ground objects shall be placed within the 5 foot sidewalk.

5. Underground dry utilities should be placed in a utility corridor under the sidewalk.

6. Overlay 1" UTACS unless otherwise required by the agency.

### Specification Reference

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<th>Uniform Standard Drawings</th>
<th>Clark County Area</th>
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<tr>
<td>406 PRIME COAT</td>
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<td>407 FOG SEAL</td>
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<tr>
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### Date and Drawing Number

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<tr>
<th>Date</th>
<th>DWG. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>01-09-20</td>
<td>205.2.S1</td>
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</table>
NOTES
1. FINAL A.C. PAVEMENT TO BE 1/2" MAXIMUM ABOVE LIP OF GUTTER AFTER COMPACTION, EXCEPT WHERE THERE IS OVERLAP WITH PEDESTRIAN ACCESS ROUTES. CONNECTIONS BETWEEN PAVEMENT SURFACES, GUTTERS, AND CURB RAMPS WITHIN PEDESTRIAN ACCESS ROUTES SHALL HAVE NO VERTICAL SURFACE DISCONTINUITIES GREATER THAN 1/4", REGARDLESS OF CONSTRUCTION TOLERANCES.
2. THE GRADE BREAK OCCURRING IN THE CROSS SECTION SHALL FALL BETWEEN DRIVING LANES.
3. STRUCTURAL SECTION SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 401 AND STANDARD DRAWING NOS. 200 AND 200.1.
4. THIS STANDARD IS A COMPLETE STREET ALTERNATIVE STREET SECTION TO BE USED AT LOCATIONS DETERMINED BY EACH LOCAL JURISDICTION. NO ABOVE GROUND OBJECTS SHALL BE PLACED WITHIN THE 5 FOOT SIDEWALK.
5. UNDERGROUND DRY UTILITIES SHALL BE PLACED IN A UTILITY CORRIDOR UNDER THE SIDEWALK.

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<table>
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<th>SPECIFICATION REFERENCE</th>
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<td>DATE 01-09-20 DWG. NO. 205.3.S1</td>
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AGENCY APPROVED L
NOTES

1. FINAL A.C. PAVEMENT TO BE 1/2" MAXIMUM ABOVE LIP OF GUTTER AFTER COMPACTION, EXCEPT WHERE THERE IS OVERLAP WITH PEDESTRIAN ACCESS ROUTES. CONNECTIONS BETWEEN PAVEMENT SURFACES, GUTTERS, AND CURB RAMPS WITHIN PEDESTRIAN ACCESS ROUTES SHALL HAVE NO VERTICAL SURFACE DISCONTINUITIES GREATER THAN 1/4", REGARDLESS OF CONSTRUCTION TOLERANCES.

2. THE GRADE BREAK OCCURRING IN THE CROSS SECTION SHALL FALL BETWEEN DRIVING LANES.

3. STRUCTURAL SECTION SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 401 AND STANDARD DRAWING NOS. 200 AND 200.1.

4. PRIME COAT IS NOT REQUIRED IN LAS VEGAS, HENDERSON, MESQUITE OR BOULDER CITY WHEN A.C. THICKNESS ≥ 5 IN.

5. 4 INCH MINIMUM THICKNESS REQUIRED IN HENDERSON, MESQUITE AND BOULDER CITY.

6. THE FINAL A.C. PAVEMENT SURFACE MATERIAL REQUIREMENTS ARE:

<table>
<thead>
<tr>
<th>JURISDICTION</th>
<th>A.C. PAVEMENT SURFACE MATERIAL</th>
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</thead>
<tbody>
<tr>
<td>CLV, NLV</td>
<td>1-INCH UTACS (80-FT OR GREATER)</td>
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<td>CC, MES, BC</td>
<td>FOg SEAL</td>
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<tr>
<td>HEN</td>
<td>FOg SEAL AND/Or OPEN GRADE</td>
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<td>WITH CURBSIDE SIDEWALK</td>
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<td>413 BITUMINOUS GAP GRADED PAVEMENT</td>
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<td>DATE 01-09-20 DWG. NO. 205</td>
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Effective 05/21/2020 to 10/07/2020
RESIDENTIAL TWO-WAY LOCAL OR CUL-DE-SAC

(LOTS 40' WIDE OR LESS)

NOTES

1. FINAL A.C. PAVEMENT SURFACE SHALL BE 1/4" MAXIMUM ABOVE LIP OF GUTTER AFTER COMPACTION, EXCEPT WHERE THERE IS OVERLAP WITH PEDESTRIAN ACCESS ROUTES. CONNECTIONS BETWEEN PAVEMENT SURFACES, GUTTERS, AND CURB RAMPS WITHIN PEDESTRIAN ACCESS ROUTES SHALL HAVE NO VERTICAL SURFACE DISCONTINUITIES GREATER THAN 1/4", REGARDLESS OF CONSTRUCTION TOLERANCES.

2. STRUCTURAL SECTION SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 401 AND STANDARD DRAWING NO. 200.1.

3. HOMES ADJACENT TO THIS STREET SECTION MAY REQUIRE SPRINKLERS PER AGENCY FIRE CODE.

AGENCY APPROVED

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

SUPPLEMENTAL DRAWING
LOCAL RESIDENTIAL

COMPLETE STREET ALTERNATIVES

SPECIFICATION REFERENCE

<table>
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</tbody>
</table>

DATE 01-09-20

DWG. NO. 206.1.S1
RESIDENTIAL TWO-WAY LOCAL OR CUL-DE-SAC

OPTION "A"

1. FINAL A.C. PAVEMENT SURFACE SHALL BE 1/4" MAXIMUM ABOVE LIP OF GUTTER AFTER COMPACTION, EXCEPT WHERE THERE IS OVERLAP WITH PEDESTRIAN ACCESS ROUTES. CONNECTIONS BETWEEN PAVEMENT SURFACES, GUTTERS, AND CURB RAMPS WITHIN PEDESTRIAN ACCESS ROUTES SHALL HAVE NO VERTICAL SURFACE DISCONTINUITIES GREATER THAN 1/4", REGARDLESS OF CONSTRUCTION TOLERANCES.

2. STRUCTURAL SECTION SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 401 AND STANDARD DRAWING NO. 200.1.

3. RESIDENTIAL ONE-WAY STREET SHALL NOT EXCEED ONE THOUSAND FEET OR TWENTY RESIDENTIAL LOTS IN LENGTH, WHICHERER IS LESS.

SPECIFICATION REFERENCE

<table>
<thead>
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<th>BITUMINOUS PAVEMENT</th>
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UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

SUPPLEMENTAL DRAWING

LOCAL RESIDENTIAL
URBAN AREA STREET SECTIONS

DATE 01-09-20  DWG. NO. 206.S1
NOTES

1. FINAL A.C. PAVEMENT SURFACE SHALL BE 1/4" MAXIMUM ABOVE LIP OF GUTTER AFTER COMPACTION, EXCEPT WHERE THERE IS OVERLAP WITH PEDESTRIAN ACCESS ROUTES. CONNECTIONS BETWEEN PAVEMENT SURFACES, GUTTERS, AND CURB RAMPS WITHIN PEDESTRIAN ACCESS ROUTES SHALL HAVE NO VERTICAL SURFACE DISCONTINUITIES GREATER THAN 1/4", REGARDLESS OF CONSTRUCTION TOLERANCES.

2. STRUCTURAL SECTION SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 401 AND STANDARD DRAWING NO. 200.1.
### Notes

1. Final A.C. pavement surface shall be 1/4" maximum above lip of gutter after compaction, except where there is overlap with pedestrian access routes. Connections between pavement surfaces, gutters, and curb ramps within pedestrian access routes shall have no vertical surface discontinuities greater than 1/4", regardless of construction tolerances.

2. Structural section shall be in accordance with standard specification section 401 and std. dwg. no. 200.1.

3. Residential one-way street shall not exceed one thousand feet or twenty residential lots in length, whichever is less.

### Specification Reference

<table>
<thead>
<tr>
<th>Specification</th>
</tr>
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<tbody>
<tr>
<td>302</td>
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#### RESIDENTIAL TWO-WAY LOCAL, CUL-DE-SAC

**OPTION "A"**

- R/W
- 6" MIN TYPE I OR TYPE II AGGREGATE BASE UNDER CURB AND GUTTER
- "L" TYPE CURB & GUTTER PER STD DWG NO. 216
- A.C. PAVEMENT (SEE NOTE 2)
- TYPE I OR TYPE II AGGREGATE BASE (SEE NOTE 2)
- PRIME COAT
- 5" MIN TYPE II AGGREGATE BASE UNDER CURB AND GUTTER SEE STD DRAWING NO. 234

**OPTION "B"**

- R/W
- 6" MIN TYPE I OR TYPE II AGGREGATE BASE UNDER CURB AND GUTTER
- R-TYPE CURB & GUTTER PER STD DWG NO. 217.3.S1
- A.C. PAVEMENT (SEE NOTE 2)
- TYPE I OR TYPE II AGGREGATE BASE (SEE NOTE 2)
- PRIME COAT
- 5" MIN TYPE II AGGREGATE BASE UNDER CURB AND GUTTER SEE STD DRAWING NO. 234

**OPTION "C"**

- R/W
- 6" MIN TYPE I OR TYPE II AGGREGATE BASE UNDER CURB AND GUTTER
- ROLL TYPE CURB & GUTTER SEE STANDARD DRAWING NO. 217.1 OR NO. 217.2.S1
- A.C. PAVEMENT (SEE NOTE 2)
- TYPE I OR TYPE II AGGREGATE BASE (SEE NOTE 2)
- PRIME COAT
- 5" MIN TYPE II AGGREGATE BASE UNDER CURB AND GUTTER SEE STD DRAWING NO. 234

**Agency Approved:**

- C
- L

**Uniform Standard Drawings:**

CLARK COUNTY AREA

**Supplemental Drawing:**

LOCAL RESIDENTIAL
URBAN AREA STREET SECTION

**Date:** 01-09-20
**Dwg. No.:** 206.S3
NOTES:

1. A.C. PAVEMENT AND BASE THICKNESS SHALL BE IN ACCORDANCE TO STANDARD DRAWINGS NUMBER 202 THROUGH 206.S2, WHICHEVER IS APPLICABLE.

2. GREATER WIDTHS MAY BE REQUIRED IF TRAFFIC WARRANTS, AS DETERMINED BY THE ENGINEER.

AGENCY APPROVED | B | C | H | L | M | N
---|---|---|---|---|---|---

SPECIFICATION REFERENCE

| 302 | AGGREGATE BASE |
| 401 | BITUMINOUS PAVEMENT |
| 406 | PRIME COAT |
| 407 | FOG SEAL |
| 501 | CONCRETE |

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

HALF STREET CONSTRUCTION SECTIONS

DATE | DWG. NO. | 208
1. Intersections shall have 25 foot minimum edge of oil radii.

2. Compaction of aggregate base and subgrade preparation shall be in accordance with the "standard specifications".

3. Structural section shown is based on a subgrade "R" value of 20. Other structural sections may be approved if based on engineering analysis based on "R" or "CBR" values determined by soil testing. In no case shall the A.C. thickness be less than that shown, nor shall the base be less than 4".

4. Culverts may be required at driveways.

Notes:

Agency Approved | B | C | H | L | M | N
--- | --- | --- | --- | --- | --- | ---

302 Aggregates Base | 401 Bituminous Pavement | 406 Prime Coat | 407 Fog Seal

Access Roads

(for use in PM-10 compliant areas)

Effective 05/21/2020 to 10/07/2020

Date 12-14-00 Dwg. No. 209.1
NOTES:

1. INTERSECTIONS SHALL HAVE 34 FOOT MINIMUM EDGE OF A.C. RETURN RADII.

2. COMPACTION OF AGGREGATE BASE AND SUBGRADE PREPARATION SHALL BE IN ACCORDANCE WITH THE UNIFORM STANDARD SPECIFICATIONS.

3. STRUCTURAL SECTION SHOWN IS BASED ON A SUBGRADE "R" VALUE OF 20. OTHER STRUCTURAL SECTIONS MAY BE APPROVED IF BASED ON ENGINEERING ANALYSIS BASED ON "R" OR "CBR" VALUES DETERMINED BY SOIL TESTING.

4. CULVERTS MAY BE REQUIRED AT DRIVEWAYS.

5. A.C. PAVEMENT SHALL BE IN ACCORDANCE WITH SECTION 401 OF THE UNIFORM STANDARD SPECIFICATIONS. ALTERNATE PAVING MATERIALS MAY BE USED AT THE DISCRETION OF THE ENTITY.

6. PAVEMENT MARKINGS MAY BE REQUIRED AND INCLUDE DOUBLE YELLOW CENTERLINE, RAISED PAVEMENT MARKERS OR YELLOW PAINT, AND 4' OFFSET WHITE PAINTED EDGELINES.

7. PAVEMENT WIDTH AND PAVEMENT THICKNESS MAY BE REDUCED TO 28 FEET (14 FEET EACH DIRECTION) AND 2 INCHES RESPECTIVELY BASED UPON A DETERMINATION BY THE LOCAL ENTITY THAT THE REDUCED WIDTH AND THICKNESS WILL PROVIDE SATISFACTORY LIFE AND A SAFE ROADWAY.

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UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

ACCESS ROADS
(FOR USE IN HYDROGRAPHIC BASIN NO. 212)
(PM-10 NON-ATTAINMENT AREAS)

DATE 5-20-04 DWG. NO. 209
NOTES:
1. INTERSECTIONS SHALL HAVE 25 FOOT MINIMUM EDGE OF OIL RADII OR 20 FOOT MINIMUM BACK OF CURB RADII.
2. COMPACTION OF AGGREGATE BASE AND SUBGRADE PREPARATION SHALL BE IN ACCORDANCE WITH THE "STANDARD SPECIFICATION".
3. STRUCTURAL SECTION SHOWN IS BASED ON A SUBGRADE "R" VALUE OF 20. OTHER STRUCTURAL SECTIONS MAY BE APPROVED IF BASED ON ENGINEERING ANALYSIS BASED ON "R" OR "CBR" VALUES DETERMINED BY SOIL TESTING. IN NO CASE SHALL THE A.C. THICKNESS BE LESS THAN THAT SHOWN, NOR SHALL THE BASE BE LESS THAN 4" EXCEPT THAT THE BASE SHALL NOT BE LESS THAN 10" IN NORTH LAS VEGAS.
4. ALLOW IN CITY OF NORTH LAS VEGAS ONLY WITH EXPRESS WRITTEN PERMISSION FROM THE CITY ENGINEER.

SPECIFICATION REFERENCE

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<th>SPECIFICATION</th>
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UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

PRIVATE STREET SECTIONS

DATE 12-14-00 DWG. NO. 210

4" MIN. TYPE II AGGREGATE BASE OVER 6" MIN. TYPE I AGGREGATE BASE 95% COMPACTION

GRAVEL
(THIS SECTION NOT FOR USE IN PM-10 NON-ATTAINMENT AREAS)

"L" OR ROLL TYPE CURB & GUTTER.
SEE STANDARD DRAWING NO. 216 OR 217.S1.
SEE NOTE 4

6" MIN. TYPE I OR TYPE II AGGREGATE BASE UNDER CURB AND GUTTER

PAVED

2" MIN. A.C. PAVEMENT (SEE NOTE 1)

4" MIN. TYPE II ON 6" MIN. TYPE I AGGREGATE BASE (SEE NOTE 3)
NOTES

1. FINAL A.C. PAVEMENT SURFACE SHALL BE 1/4" MAXIMUM ABOVE LIP OF GUTTER AFTER COMPACTION, EXCEPT WHERE THERE IS OVERLAP WITH PEDESTRIAN ACCESS ROUTES. CONNECTIONS BETWEEN PAVEMENT SURFACES, GUTTERS, AND CURB RAMPS WITHIN PEDESTRIAN ACCESS ROUTES SHALL HAVE NO VERTICAL SURFACE DISCONTINUITIES NO GREATER THAN 1/4", REGARDLESS OF CONSTRUCTION TOLERANCES.

2. STRUCTURAL SECTION SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATION SECTION 401 AND STD. DWG. NO. 200.1.

3. RESIDENTIAL ONE-WAY STREET SHALL NOT EXCEED ONE THOUSAND FEET OR TWENTY RESIDENTIAL LOTS IN LENGTH, WHICHEVER IS LESS.
1. USE 2% SLOPE FROM INNER CURB TO CROWN LINE.
2. FROM CROWN LINE TO OUTER CURB, THE STANDARD SLOPE IS 0.90% (MIN).
3. ELEVATIONS REQUIRED ALONG CURBS (3) AND CROWN EVERY 1/4 (MIN).
4. KNUCKLES ARE ALLOWED ON RESIDENTIAL STREETS ONLY.
5. MINIMUM SLOPE ALONG THE BACK OF CURB OF CURVES (2) AND (3) SHALL BE 0.60% (MIN).
6. SPECIAL KNUCKLE DESIGNS INCLUDING LANDSCAPED MEDIAN ISLAND MAY BE PERMITTED, IF APPROVED BY THE COUNTY ENGINEER.
### NOTES

1. USE NORMAL SECTION FROM INNER CURB TO CENTER LINE.
2. FROM CROWN LINE TO OUTER CURB, THE STANDARD SLOPE IS 2%.
3. SUPERELEVATION PERCENTAGES SHOWN ARE A STRAIGHT GRADE FROM CENTER LINE TO CROWN LINE.
4. ELEVATIONS ARE REQUIRED WHERE CIRCLES (o) ARE SHOWN.
5. KNUCKLES ARE NOT ALLOWED ON MAJOR COLLECTOR OR ARTERIAL STREETS.

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### PROPERTY LINE

$\Delta_1 \geq 75^\circ$ USE $R_1 = 30'$ MIN.
65° TO 75° USE $R_1 = 35'$ MIN.
55° TO 65° USE $R_1 = 45'$ MIN.

### CURVE DATA

<table>
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<th>$\Delta_1$</th>
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<tr>
<td>$\Delta_2$</td>
<td>12'</td>
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<tr>
<td>$\Delta_3$</td>
<td>$\Delta_1 + 2 \Delta_2$</td>
</tr>
<tr>
<td>$R_2$</td>
<td>100'</td>
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<tr>
<td>$R_3$</td>
<td>$W + 10'$</td>
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### STANDARD CROSS-SECTION

- E.C.
- P.I.
- B.C.
- BACK OF CURB
- BACK OF CURB

- ELEVATIONS ARE REQUIRED WHERE CIRCLES (o) ARE SHOWN.
- KNUCKLES ARE NOT ALLOWED ON MAJOR COLLECTOR OR ARTERIAL STREETS.
NOTE: USE OF THE HAMMERHEAD WILL BE ALLOWED IN SINGLE FAMILY RESIDENTIAL DWELLING AREAS ONLY.
1. ONLY 51' R/W AND PRIVATE STREET CUL-DE-SACS WILL BE ALLOWED IN THE CITY OF LAS VEGAS.

NOTES:

1. ONLY 51' R/W AND PRIVATE STREET CUL-DE-SACS WILL BE ALLOWED IN THE CITY OF LAS VEGAS.

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<tr>
<th>R/W WIDTH</th>
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<th>R</th>
<th>R-1</th>
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<tr>
<td>48'</td>
<td>44.72'</td>
<td>44'</td>
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ALL OTHER ENTITIES (CC, CLV, HEN, BC)

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<th>R/W WIDTH</th>
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R/W WIDTH

500' MAX.

DRAINAGE MIN.
SLOPE 0.40%

SIDEWALK

END SIDEWALK HERE ON 48 FOOT R/W STREET. (OPTIONAL ONE SIDE ONLY)

CITIES OF NORTH LAS VEGAS AND MESQUITE ONLY

ALL OTHER ENTITIES (CC, CLV, HEN, BC)

AGENCY APPROVED

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

CUL-DE-SAC

DATE 6-8-00  DWG. NO. 212
SECTION A-A

6" CONCRETE (WHERE PROFILE GRADE IS 0.50% OR LESS)
2" MIN. A.C. PAVEMENT

PRIME COAT

1-1/2" INVERTED CROWN

FOG SEAL

4" TYPE II AGGREGATE BASE

6" MIN. TYPE I AGGREGATE BASE

PLAN

SECTION B-B

1/2" PREMOLD EXPANSION JOINT FILLER, JOINTS EVERY 30'

NO. 4 BARS 12" O.C. BOTH WAYS

STANDARD 1/2" GALVANIZED PIPE WITH END PLUG. GREASE REINFORCING STEEL PRIOR TO PIPE INSTALLATION.
ALLEY, CONCRETE

SECTION 1-1/2" INVERTED CROWN
8" TYPE II AGGREGATE BASE
6" CONC. PAV'T

NO. 4 BARS AT 12' O.C. BOTH WAYS

1/2" PREMOLD EXPANSION JOINT FILLER

WEAKENED PLANE JOINTS
1/4" MAX. WIDTH BY 2" DEPTH SAWCUT

BUILDING OR CURB LINE
1/2" PREMOLD EXPANSION JOINT FILLER

IF NO BUILDING OR CURB EXISTS
THICKEN EDGE TO 8" TOTAL DEPTH

SECTION B-B
1/2" PREMOLD EXPANSION JOINT FILLER, JOINTS EVERY 30'

NO. 4 BARS 12" O.C. BOTH WAYS

STANDARD 1/2" GALVANIZED PIPE WITH END PLUG. GREASE REINFORCING STEEL PRIOR TO PIPE INSTALLATION.

SECTION A-A

AGENCY APPROVED

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA
SUPPLEMENTAL DRAWING

ALLEY, CONCRETE

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"L" TYPE CURB AND GUTTER

1. 1" BATTER ON GUTTER FACE OPTIONAL.

1/2" EXPANSION JOINT AT ALL COLD JOINTS. AT BEGINNING AND END OF RETURN AND AT 300' MAX. INTERVALS FOR EXTRUDED CURB AND 30' MAX. INTERVALS FOR FORMED CURB. FOR JOINT DETAIL SEE STANDARD DRAWING NUMBER 234
NOTES:
1. 1" BATTER ON GUTTER FACE OPTIONAL.
2. WHERE LONGITUDINAL SLOPE IS LESS THAN 0.4%, THE FLOW LINE SHALL BE WATER TESTED.

1/2" EXPANSION JOINT AT ALL COLD JOINTS, AT BEGINNING AND END OF RETURN AND AT 300' MAX. INTERVALS FOR EXTRUDED CURB AND 30' MAX. INTERVALS FOR FORMED CURB.
FOR JOINT DETAIL SEE STANDARD DRAWING NUMBER 234

TYPICAL SECTION

AGENCY APPROVED

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<td>501 CONCRETE</td>
<td>&quot;L&quot; TYPE CURB AND GUTTER</td>
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DATE 12-14-00   DWG. NO. 216
NOTES:

1. USE OF ROLL CURB MAY BE RESTRICTED BY SURFACE DRAINAGE CONSIDERATIONS.
2. SIDEWALK CONSTRUCTED CONTIGUOUS TO ROLL CURB SHALL BE 5 INCHES THICK (MIN.).
3. ALL CURB FLOW LINES SHALL BE WATER TESTED. ANY CURB THAT DOES NOT FLOW SHALL BE REMOVED AND REPLACED AS DIRECTED BY THE PERMITTING AGENCY AT THE SOLE EXPENSE OF THE CONTRACTOR.
4. CONSTRUCT 1/2" EXPANSION JOINT AT ALL COLD JOINTS, AT BEGINNING AND END OF CURB RETURNS, AND AT 300 FT. MAX. INTERVALS FOR EXTRUDED CURB AND 30 FT. MAX. INTERVALS FOR FORMED CURB. WEAKENED PLANE JOINTS SHALL BE FORMED AT THE REMAINING 15 FT. INTERVALS. SEE STD. DWG. NO. 234 FOR JOINT DETAILS.
5. ONE INCH BATTER AT CURB FACE IS OPTIONAL.
6. NO UTILITY BOXES AND COVERS ADJACENT TO 30 INCH MODIFIED ROLL CURB AND GUTTER RESIDENTIAL AREA SHALL BE ALLOWED AT DRIVEWAY LOCATIONS.
7. BOULDER CITY ENGINEER APPROVAL REQUIRED FOR USE OF 30 INCH MODIFIED CURB AND GUTTER RESIDENTIAL AREA.
8. IF ROLL CURB IS APPROVED FOR OTHER LOCATIONS THAT ARE SUBJECTED TO REGULAR TRAFFIC, THEN UTILITY BOXES AND COVERS ADJACENT TO ROLL CURB SHALL MEET H20-44 FOR STEEL BOXES AND ANSI/SCTE 77-2007 (TIER-22) FOR FIBERGLASS POLYMER CONCRETE BOXES RATED "TRAFFIC BEARING" TYPE.
1. USE OF ROLL CURB MAY BE RESTRICTED BY SURFACE DRAINAGE CONSIDERATIONS.
2. SIDEWALK CONSTRUCTED CONTIGUOUS TO ROLL CURB SHALL BE 5 INCHES THICK (MIN).
3. WHERE LONGITUDINAL SLOPE IS LESS THAN 0.4% THE FLOW LINE SHALL BE WATER TESTED.
4. CONSTRUCT 1/2" EXPANSION JOINT AT ALL COLD JOINTS, AT BEGINNING AND END OF CURB RETURNS, AND AT 300 FT. MAX. INTERVALS FOR EXTRUDED CURB AND 30 FT. MAX. INTERVALS FOR FORMED CURB. WEAKENED PLANE JOINTS SHALL BE FORMED AT THE REMAINING 15 FT. INTERVALS. SEE STD. DWG. NO. 234 FOR JOINT DETAILS.
5. ONE INCH BATTER AT CURB FACE IS OPTIONAL.
6. CITY OF LAS VEGAS COUNCIL APPROVAL REQUIRED FOR USE OF 30" ROLL CURB IN THE CITY OF LAS VEGAS.
7. IN NORTH LAS VEGAS, ROLL CURBS ARE PROHIBITED IN AREAS WHERE FLOW LINE GRADIENT IS LESS THAN 0.8% UNLESS OTHERWISE APPROVED BY CITY ENGINEER.
8. NO UTILITY BOXES AND COVERS ADJACENT TO 30 INCH MODIFIED ROLL CURB AND GUTTER RESIDENTIAL AREA SHALL BE ALLOWED AT DRIVEWAY LOCATIONS.
9. IF ROLL CURB IS APPROVED FOR OTHER LOCATIONS THAT ARE SubjectED TO REGULAR TRAFFIC, THEN UTILITY BOXES AND COVERS ADJACENT TO ROLL CURB SHALL MEET H20-44 FOR STEEL BOXES AND ANSI/SCTE 77-2007 (TIER-22) FOR FIBERGLASS POLYMER CONCRETE BOXES RATED "TRAFFIC BEARING" TYPE.

NOTES:

AGENCY APPROVED  C  H  L  N

SPECIFICATION REFERENCE

| 320  | AGGREGATE BASE |
| 501  | CONCRETE      |
| 502  | CONCRETE STRUCTURES |
| 707  | JOINT MATERIAL |

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

SUPPLEMENTAL DRAWING

30 INCH ROLL CURB
RESIDENTIAL AREA

DATE 01-01-17  DWG. NO. 217.2.S1
1. WHERE LONGITUDINAL SLOPE IS LESS THAN 0.4% THE FLOW LINE SHALL BE WATER TESTED.

2. CONSTRUCT 1/2" EXPANSION JOINT AT ALL COLD JOINTS, AT BEGINNING AND END OF CURB RETURNS, AND AT 300 FT. MAX. INTERVALS FOR EXTRUDED CURB AND 30 FT. MAX. INTERVALS FOR FORMED CURB. WEAKENED PLANE JOINTS SHALL BE FORMED AT THE REMAINING 15 FT. INTERVALS. SEE STD. DWG. NO. 234 FOR JOINT DETAILS.

3. ONE INCH BATTER AT GUTTER FACE IS OPTIONAL.

4. NO UTILITY BOXES AND COVERS ADJACENT TO R-TYPE CURB SHALL BE ALLOWED AT DRIVEWAY LOCATIONS.

5. IF R-TYPE CURB IS APPROVED FOR OTHER LOCATIONS THAT ARE SUBJECTED TO REGULAR TRAFFIC, THEN UTILITY BOXES AND COVERS ADJACENT TO R-TYPE CURB SHALL MEET H20-44 FOR STEEL BOXES AND ANSI/SCTE 77-2007 (TIER-22) FOR FIBERGLASS POLYMER CONCRETE BOXES RATED "TRAFFIC BEARING" TYPE.

6. FOR NEW CONSTRUCTION ON RESIDENTIAL SUBDIVISION STREETS ONLY.
CONSTRUCT WEAKENED PLANE JOINT IN CURB AND SLAB AT SAME LOCATION EVERY 10’.

FOR JOINT DETAILS SEE STANDARD DRAWING NUMBER 234.

"L" - TYPE CURB AND GUTTER PER STANDARD DRAWING NUMBER 219 IS REQUIRED IN THE CITY OF HENDerson AND MAY BE REQUIRED FOR DRAINAGE CONSIDERATIONS.

WHEN CURB MACHINE IS USED TO PLACE CURB, A 2" MINIMUM LEVELING COURSE OF TYPE II AGGREGATE BASE IS REQUIRED.
WEAKENED PLANE JOINTS
SEE STANDARD DRAWING NUMBER 234

NOTES:
1. CONTINUOUS NO. 4 BAR REQUIRED IN NOSE OF MEDIAN ONLY.
2. 1" BATTER ON GUTTER FACE OPTIONAL.

"L" CURB SECTION

1/2" EXPANSION JOINT AT ALL COLD JOINTS, AT BEGINNING AND END OF RETURN AND AT 300' MAX. INTERVALS FOR EXTRUDED CURB AND 30' MAX. INTERVALS FOR FORMED CURB. FOR JOINT DETAIL SEE STANDARD DRAWING NUMBER 234

"A" CURB SECTION

AGENCY APPROVED

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

"A" AND "L" TYPE
ISLAND CURB

DATE 12-14-00 DWG. NO. 219
FOR EXPANSION JOINT AND WEAKENED PLANE JOINT DETAIL, SEE STANDARD DRAWING NO. 234.

NOTES:
1. FOR EXPANSION JOINT AND WEAKENED PLANE JOINT DETAIL, SEE STANDARD DRAWING NO. 234.
2. WHEN APPROVED BY THE ENGINEER/ENTITY, STRUCTURAL EPOXY ADHESIVE MAY BE USED IN LIEU OF NUMBER 4 DOWEL BAR EXCEPT AT CURB NOSE AND WITHIN 2 FEET OF ANY POINT OF CURVATURE.
NOTES:

1. FOR EXPANSION JOINT AND WEAKENED PLANE JOINT DETAIL, SEE STANDARD DRAWING NO. 234.

2. WEAKENED PLANE JOINTS EVERY 10' STAGGER WITH NO. 4 BARS.

3. ALL REINFORCING STEEL SHALL HAVE 2" CLEAR COVER UNLESS OTHERWISE SHOWN.

4. WHEN APPROVED BY THE ENGINEER/ENTITY, STRUCTURAL EPOXY ADHESIVE MAY BE USED IN LIEU OF NUMBER 4 DOWEL BAR EXCEPT AT CURB NOSE AND WITHIN 2 FEET OF ANY POINT OF CURVATURE.
PCC MEDIAN STRIP PER
STD. DWG. NO. 218
(TYP.)

4' PCC MEDIAN STRIP PER
STD. DWG. NO. 218
(TYP.)

CURVE DATA

1. R = 74.00'  T = 20.52'  L = 40.04'
2. R = 10.00'  T = 2.77'  L = 5.41'

NOTES:

1. INSTALL R5-1
2. INSTALL R3-2

3. STREETLIGHT LOCATION
   STANDARD FOR THE CITY OF
   HENDERSON OR IF SPECIFIED
   BY THE ENGINEER.

4. DETAIL MAY BE USED FOR
   INTERSECTIONS OF STREETS
   WITH R/W 60 FEET OR LESS
   IF APPROVED BY THE
   ENTITY ENGINEER. SPECIAL
   MEDIAN DESIGN IS REQUIRED
   FOR INTERSECTING STREETS
   WITH R/W GREATER THAN
   60 FEET.

14' MEDIAN WIDTH, CURB FACE TO CURB
FACE (TYP.) PER STD DWG #218
1. COMMERCIAL AND MULTI-FAMILY DRIVEWAYS SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD DRAWING NUMBERS 224, 225, 228, 235 AND 235.1.
2. LOCAL ORDINANCES AND POLICIES MAY APPLY AND SHALL HAVE PRECEDENCE. SEE NDOT ACCESS MANAGEMENT SYSTEM AND STANDARDS FOR STATE ROADWAYS.
3. THE TOTAL WIDTH "W" OF DRIVEWAY CURB OPENINGS SHALL NOT EXCEED 65% OF FRONT FOOTAGE.
4. NO DRIVEWAY SHALL BE LOCATED WITHIN 6 FEET OF A LIGHT POLE (UNLESS APPROVED BY THE ENTITY TRAFFIC ENGINEER), FIRE HYDRANT, MAIL BOX, ABOVE-GROUND ELECTRICAL TRANSFER BOX, OR BLOCK WALL HIGHER THAN 2 FEET.
5. THE CENTERLINES OF THE DRIVEWAYS ON OPPOSITE SIDES OF THE STREET AT A MEDIAN OPENING SHOULD BE WITHIN 10' FROM EACH OTHER AT THE MEDIAN OPENING.
6. GEOMETRICS APPLY TO NEW CONSTRUCTION ONLY, AND EXCEPTIONS MAY BE GRANTED BY THE APPROVAL OF THE AGENCY TRAFFIC ENGINEER BASED ON SITE CONSTRAINTS.
7. SIDEWALKS SHALL BE PROVIDED ADJACENT TO DRIVEWAYS TO THE P.C. OF THE ONSITE CURB RETURN, MINIMUM, OR AT AN ALTERNATE LOCATION.
8. WHEN A PROPERTY LINE FALLS IN A MEDIAN OPENING A JOINT DRIVEWAY AGREEMENT SHALL BE REQUIRED OR NO DRIVEWAY WILL BE ALLOWED.
9. WHERE A PEDESTRIAN ACCESS ROUTE CROSSES A DRIVEWAY, THE PEDESTRIAN ACCESS ROUTE ACROSS THE DRIVEWAY SHALL HAVE A CROSS SLOPE NO GREATER THAN 2%, REGARDLESS OF CONSTRUCTION TOLERANCES.

**NOTES:**

| SPECIFICATION REFERENCE | UNIFORM STANDARD DRAWINGS
|-------------------------|--------------------------|
|                        | CLARK COUNTY AREA

**COMMERICAL AND MULTI-FAMILY DRIVEWAY GEOMETRICS**

<table>
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<tr>
<th>DIMENSIONS</th>
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<tbody>
<tr>
<td>W. 12' MINIMUM FOR ONE-WAY DRIVEWAYS</td>
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<tr>
<td>32' MINIMUM FOR TWO-WAY DRIVEWAYS</td>
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<td>40' MAXIMUM</td>
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<td>E. 48' MINIMUM</td>
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<td>H. 8' MINIMUM &amp; 16' MAXIMUM</td>
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<tr>
<td>R1 = 15' MINIMUM &amp; 35' MAXIMUM</td>
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<td>R2 = 25' MINIMUM &amp; 35' MAXIMUM</td>
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<tr>
<td>D. THROAT DEPTH</td>
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<tr>
<td>22' MINIMUM</td>
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<tr>
<td>50' MINIMUM FOR PARKING LOTS &gt; 50 PARKING SPACES</td>
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<tr>
<td>75' MINIMUM FOR PARKING LOTS 51 TO 100 PARKING SPACES</td>
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<td>100' MINIMUM FOR PARKING LOTS 101 TO 200 PARKING SPACES</td>
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<tr>
<td>150' MINIMUM FOR PARKING LOTS &gt; 201 PARKING SPACES</td>
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**Street Throat Depth**

- 25' MINIMUM
- 50' MINIMUM FOR PARKING LOTS > 50 PARKING SPACES
- 75' MINIMUM FOR PARKING LOTS 51 TO 100 PARKING SPACES
- 100' MINIMUM FOR PARKING LOTS 101 TO 200 PARKING SPACES
- 150' MINIMUM FOR PARKING LOTS > 201 PARKING SPACES

**Utility See Note 4**

**Sidewalk See Note 7 (Typ.)**
J. THROAT DEPTH FOR SECURITY GATE
50' MINIMUM FOR 1 TO 49 HOMES OR APT. UNITS TO VISITOR CALL BOX.
100' MINIMUM FOR 50 TO 100 HOMES OR APT. UNITS TO VISITOR CALL BOX.
GREATER THAN 100 HOMES OR APT. UNITS REQUIRE TRAFFIC STUDY

DIMENSIONS FOR SECURITY GATE
CONTROLLED DRIVEWAY DETAIL

- D. ISLAND: LENGTH-20' MINIMUM
  WIDTH- 4' MINIMUM
- G. 15' MINIMUM
- E. 48' MINIMUM
- H. 8' MINIMUM & 15' MAXIMUM

DETAIL FOR SECURITY GATE
CONTROLLED DRIVEWAYS

FLOW DIRECTION

LOOP DETECTOR

CALL BOX
RESIDENTIAL DRIVEWAY GEOMETRICS

NOTES

1. ALL RESIDENTIAL PROPERTIES MAY HAVE ONLY ONE CURB CUT EXCEPT CIRCULAR DRIVEWAYS AS SHOWN.
2. LOCAL ORDINANCES MAY APPLY AND SHALL HAVE PREFERENCE.
3. NO DRIVEWAY SHALL BE LOCATED WHOLLY OR PARTIALLY, ON OR OVER A UTILITY EASEMENT WHICH RUNS PERPENDICULAR TO THE CURB LINE.
4. NO DRIVEWAY SHALL BE LOCATED WITHIN 6 FEET OF A LIGHT POLE (UNLESS ACCEPTED BY THE ENTITY TRAFFIC ENGINEER), FIRE HYDRANT, MAIL BOX, ABOVE-GROUND ELECTRICAL TRANSFER BOX, BLOCK WALL HIGHER THAN 2 FEET, OR THE CURB RETURN AT A STREET INTERSECTION OR ALLEY.
5. COMMON DRIVEWAY CONSTRUCTION MAY BE PERMITTED AT ANY TWO RESIDENTIAL PROPERTIES OF 60 FEET IN WIDTH OR LESS. THE WIDTH OF THE JOINT DRIVEWAY SHALL BE A MAXIMUM OF 24 FEET. A JOINT DRIVEWAY AGREEMENT SHALL BE REQUIRED. (EXCEPT CLARK COUNTY)
6. GEOMETRICS APPLY TO NEW CONSTRUCTION ONLY, AND MAY VARY IN EXISTING SUBDIVISIONS SUBJECT TO APPROVAL OF THE ENGINEER.
7. MULTI-FAMILY RESIDENTIAL AND ALL NON-RESIDENTIAL DRIVEWAYS SHALL CONFORM TO THE COMMERCIAL DRIVEWAY STANDARDS.
8. ALL DRIVEWAY LOCATIONS SHALL BE SUBJECT TO REVIEW AND APPROVAL BY THE ENGINEER.
9. FOR CURB DEPRESSION AND DRIVEWAY APRON DETAIL, SEE STD. DWG. NO. 223.
NOTES:

1. WHEN CONSTRUCTING DRIVEWAY WHERE CURB AND GUTTER EXISTS, COMPLETELY REMOVE INTERFERING PORTIONS OF EXISTING CURB AND GUTTER. DRIVEWAYS MAY BE MONOLITHIC TO A.C. LINE.

2. WEAKENED PLANE JOINTS SHALL BE UNIFORMLY PLACED BETWEEN 5' AND 7' INTERVALS, SEE STANDARD DRAWING 234.

3. WHERE A PEDESTRIAN ACCESS ROUTE CROSSES A DRIVEWAY, THE PEDESTRIAN ACCESS ROUTE ACROSS THE DRIVEWAY SHALL HAVE A CROSS SLOPE NO GREATER THAN 2%, REGARDLESS OF CONSTRUCTION TOLERANCES.

4. MINIMUM SIDEWALK WIDTH OF 4' ALLOWED IN CLARK COUNTY ONLY. WHERE THE CLEAR WIDTH OF A PEDESTRIAN ACCESS ROUTE IS LESS THAN 5', PASSING SPACES OF 5' MINIMUM BY 5' MINIMUM SHALL BE PROVIDED AT INTERVALS OF 200' MAXIMUM.

SPECIFICATION REFERENCE

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DATE 05-21-20  DWG. NO. 223
**PLAN VIEW**

**SECTION A-A**

**NOTES**

1. NO. 4 BARS AT 16" O.C. BOTH WAYS EXTENDING INTO GUTTER. NO. 4 BARS SHALL BE PLACED 3" ABOVE BOTTOM OF CONCRETE SUPPORTED BY NON-FERROUS CHAIRS APPROVED BY THE ENGINEER.
2. WHEN CONSTRUCTING DRIVEWAY WHERE CURB AND GUTTER EXISTS, COMPLETELY REMOVE INTERFERING PORTIONS OF EXISTING CURB AND GUTTER. DRIVEWAY SHALL BE MONOLITHIC TO A.C. LINE.
3. DRIVEWAY THICKNESS FOR INDUSTRIAL USE SHALL BE 8" MIN.
4. WEAKENED PLANE JOINTS SHALL BE EQUALLY SPACED AT 15' MAX. INTERVALS, SEE STANDARD DRAWING NO. 234.
5. NO UTILITY BOXES AND COVERS ADJACENT TO R-TYPE CURB SHALL BE ALLOWED AT DRIVEWAY LOCATIONS.
6. PEDESTRIAN ACCESS ROUTE SHALL HAVE A CROSS SLOPE NO GREATER THAN 2%, REGARDLESS OF CONSTRUCTION TOLERANCES.

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NOTES

1. SEPARATION OF PEDESTRIAN AND VEHICLE TRAFFIC MUST BE MAINTAINED ON SITE.

2. FOR GRADE CHANGES GREATER THAN 3%, VERTICAL CURVES OF AT LEAST 10 FEET MUST BE USED.

3. CURB RAMPS SHALL BE CONSTRUCTED IN THE CURB RETURN IN ACCORDANCE WITH STANDARD DRAWING NO. 235.

4. WHERE A PEDESTRIAN ACCESS ROUTE CROSSES A DRIVEWAY, THE PEDESTRIAN ACCESS ROUTE ACROSS THE DRIVEWAY SHALL HAVE A CROSS SLOPE NO GREATER THAN 2%, REGARDLESS OF CONSTRUCTION TOLERANCES.

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

COMMERCIAL AND INDUSTRIAL DRIVEWAY
(OPTION B)

DATE 05-21-20   DWG. NO. 225
NOTES
1. NO. 4 BARS AT 16" O.C. BOTH WAYS CONTINUOUS THROUGH GUTTER. NO. 4 BARS SHALL BE PLACED 3" ABOVE BOTTOM OF CONCRETE.
2. WHEN CONSTRUCTING DRIVEWAY WHERE CURB AND GUTTER EXISTS, COMPLETELY REMOVE INTERFERING PORTIONS OF EXISTING CURB AND GUTTER. DRIVEWAY SHALL BE MONOLITHIC TO A.C. LINE.
3. DRIVEWAY THICKNESS SHALL BE 8" MIN.
4. PEDESTRIAN ACCESS ROUTES SHALL HAVE A CROSS SLOPE NO GREATER THAN 2%, REGARDLESS OF CONSTRUCTION TOLERANCES.
5. THE RUNNING SLOPE AND LENGTH OF TRANSITION WITHIN THE PEDESTRIAN ACCESS ROUTE SHALL BE MAXIMUM DIMENSIONS, REGARDLESS OF CONSTRUCTION TOLERANCES.
NOTES:
1. FINISHED ASPHALT CONCRETE SURFACE TO BE FLUSH WITH CROSS GUTTER LIP.
2. CONSTRUCTION OF CROSS GUTTER IS NOT ALLOWED ACROSS MAJOR COLLECTOR OR ARTERIAL STREETS.
3. ADJACENT SPANDREL SHALL BE 9" THICK P.C.C.
FOR DETAIL CONSTRUCTION SEE CROSS GUTTER STANDARD DRAWING NO. 228

A.C. PAVEMENT, TYPE I & TYPE II AGGREGATE BASE TO CONFORM TO HALF STREET CONSTRUCTION

10" TYPE I OR II AGGREGATE BASE

9" CONCRETE

1/2" EXPANSION JOINT WITH SILICONE SEALANT SEE STANDARD DRAWING NO. 233

WHEN SECOND HALF OF CROSS GUTTER CONSTRUCTED, DRILL EXISTING CONCRETE AND EPOXY FIVE EQUALLY SPACED 1/2" MIN. DIAMETER CORROSION RESISTANT RODS (EPOXY OR GALVANIZED).

DETAIL FOR FUTURE CONSTRUCTION

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UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

HALF STREET CROSS GUTTER
NOTES:
1. CONCRETE SHALL BE PLACED MONOLITHICALLY FOR EACH FOUR QUADRANTS OF THE INTERSECTION.
2. LONGITUDINAL AND TRANSVERSE WEAKENED PLANE JOINTS SHALL BE TYPE "C".
3. LONGITUDINAL AND TRANSVERSE CONSTRUCTION JOINTS SHALL BE TYPE "B".
4. FOR JOINT DETAILS SEE STANDARD DRAWING NO. 233.
5. ALL MANHOLES AND WATER VALVES SHALL BE BOXED OUT. SEE DETAIL ON STANDARD DRAWING NO. 232.
6. LONGITUDINAL AND TRANSVERSE JOINTS SHALL BE TIED INTO THE CORNERS OF ALL BOXOUTS. THIS WILL REQUIRE THE ENGINEER TO SHOW ALL UTILITY BOXOUTS ON THE PLANS, AND THE JOINT LAYOUT PATTERNS THAT TIE INTO THEM. WHENEVER POSSIBLE, INTERSECTION OF JOINTS SHALL BE AT 90°, BUT NOT LESS THAN 60° OR GREATER THAN 140°.
7. CONCRETE PAVEMENT PLACED ALONG EXISTING CURB AND GUTTER SHALL HAVE A THICKENED EDGE. SEE STANDARD DRAWING NO. 232.
8. CONCRETE PAVEMENT PLACED ALONG PROPOSED CURB AND GUTTER SHALL BE CONSTRUCTED WITH TYPE "B" JOINT. SEE DETAIL ON STANDARD DRAWING NO. 232.
9. LOCATION OF JOINTS FOR PROPOSED CURB & GUTTER SHALL COINCIDE WITH JOINTS IN CONCRETE PAVEMENT.
10. LANE MARKERS SHALL NOT BE PLACED ON TOP OF ANY JOINT.
NOTE:
CONCRETE AND BASE THICKNESS TO BE DETERMINED BY ENGINEERING ANALYSIS BASED ON TRAFFIC CONDITIONS, SUBGRADE STRENGTH, QUALITY OF BASE, AND FLEXURAL STRENGTH OF CONCRETE.

Effective 05/21/2020 to 10/07/2020
SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

CONCRETE PAVEMENT CONSTRUCTION DETAILS

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**TYPE “A” EXPANSION JOINT DETAIL**

**BOXOUT**

- 1/8" RADIUS
- SILICONE JOINT SEALANT
- BOND BREAKER MATERIAL (OR) 1" BACKING ROD

**EXPANSION JOINT SEAL DETAIL**

- SILICONE JOINT SEALANT (SEE CONSTRUCTION JOINT SEAL DETAIL)

**TYPE “B” CONSTRUCTION JOINT DETAIL**

**KEYWAY**

- 1/4" DEFORMED TIE BARS NO. 4 x 30" @ 24" O.C.
- SILICONE JOINT SEALANT (SEE CONSTRUCTION JOINT SEAL DETAIL)

**CONSTRUCTION JOINT SEAL DETAIL**

- SEE TYPE “B” CONSTRUCTION JOINT DETAIL FOR KEYWAY DIMENSIONS

**TYPE “C” WEAKENED PLANE JOINT DETAIL**

**SINGLE SAW-CUT**

- 1/8"
- 3/4" EXPANSION JOINT FILLER
- 3/8" BACKING ROD

**TYPE “C” WEAKENED PLANE JOINT DETAIL**

**DOUBLE SAW-CUT**

- 1/8"
- 3/4" EXPANSION JOINT FILLER
- 3/8" BACKING ROD

**TYPE “D” TIED CONSTRUCTION JOINT DETAIL**

- DEFORMED TIE BARS NO. 4 x 30" @ 24" O.C.
- SILICONE JOINT SEALANT (SEE CONSTRUCTION JOINT SEAL DETAIL)

**CONSTRUCTION JOINT SEAL DETAIL**

- SEE TYPE “B” CONSTRUCTION JOINT DETAIL FOR KEYWAY DIMENSIONS

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**UNIFORM STANDARD DRAWINGS**

**CLARK COUNTY AREA**

**CONCRETE PAVEMENT JOINT DETAILS**

**DATE**

**DWG. NO.** 233
1. CONCRETE BUS PAD SHALL BE MONOLITHIC. TRANSVERSE WEAKENED PLANE JOINTS SHALL BE INSTALLED AT 10' INTERVALS AND AS DETAILED IN STANDARD DRAWING NO. 233, TYPE "C".

2. A MINIMUM OF ONE SET OF PAVEMENT MARKINGS CONTAINING THE "BUSES ONLY" SYMBOL SHALL BE PLACED IN THE TURN-OUT AREA. EXACT LOCATION TO BE DETERMINED BY THE ENGINEER.

3. ADDITIONAL STORAGE AREA WILL BE REQUIRED WHEN MORE THAN ONE BUS IS EXPECTED TO OCCUPY THE TURN-OUT AT THE SAME TIME.

4. ALTERNATE CONCRETE AND BASE THICKNESS MAY BE SUBSTITUTED, BUT MUST BE SUPPORTED BY ENGINEERING ANALYSIS AND APPROVED BY THE ENGINEER.

5. TURN-OUT SURFACE SHALL BE TEXTURED IN ACCORDANCE WITH UNIFORM STANDARD SPECIFICATION NO. 409.03.08. FLOW LINE SHALL NOT BE TEXTURED, BUT SHALL BE A TROWELED SURFACE.
NOTES

1. SIDEWALK MAY BE REQUIRED TO BE CONSTRUCTED IN THOSE LOCATIONS WHERE THE BUS STOP WOULD OTHERWISE BE INACCESSIBLE AS DEFINED BY THE AMERICANS WITH DISABILITIES ACT. SEE DRAWING NO. 235, SHEET 4 OF 4 FOR SIDEWALK RAMP DETAILS.

2. ADDITIONAL RIGHT-OF-WAY OR EASEMENT IS REQUIRED FOR BUS SHELTER PAD AND VARIABLE HEIGHT CURB AT BACK OF SIDEWALK RAMP AND SHALL BE DEDICATED TO THE LOCAL ENTITY.

3. BUS SHELTER PAD CONNECTION TO DETACHED SIDEWALK CONDITION SHALL BE DETERMINED BY THE ENTITIES.

4. "A" = 10', "B" = 15' UNLESS BUS TURNOUT IS CONSTRUCTED PER STANDARD DRAWINGS 234.1 OR 234.4, THEN "A" = 5', "B" = 10'.

5. A 5' x 25' BUS SHELTER PAD BEHIND THE SIDEWALK WHERE NECESSARY MAY BE ALLOWED AS APPROVED BY THE RTC.

6. PEDESTRIAN ACCESS ROUTE SHALL HAVE A CROSS SLOPE OF NO GREATER THAN 2%, REGARDLESS OF CONSTRUCTION TOLERANCES.


Effective 05/21/2020 to 10/07/2020

AGENCY APPROVED B C H L M N R

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UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

TYPICAL BUS STOP PASSENGER LOADING WITH SHELTER PADS

DATE 01-09-20   DWG. NO. 234.2
2% MAX.

ADDITIONAL AREA REQUIRED BEHIND TYPICAL 5 FT. SIDEWALK FOR 5' TYP. SIDEWALK

(50' MIN.)

ADDITIONAL 25 FEET MAY BE REQUIRED BY RTC.

ADDITIONAL 25 FEET MAY BE REQUIRED BY RTC.

NOTES

1. SIDEWALK MAY BE REQUIRED TO BE CONSTRUCTED IN THOSE LOCATIONS WHERE THE BUS STOP WOULD OTHERWISE BE INACCESSIBLE AS DEFINED BY THE AMERICANS WITH DISABILITIES ACT. SEE DRAWING NO. 235, SHEET 4 OF 4 FOR SIDEWALK RAMP DETAILS.

2. ADDITIONAL RIGHT-OF-WAY OR EASEMENT IS REQUIRED FOR BUS SHELTER PAD AND VARIABLE HEIGHT CURB AT BACK OF SIDEWALK RAMP AND SHALL BE DEDICATED TO THE LOCAL ENTITY.

3. BUS SHELTER PAD CONNECTION TO DETACHED SIDEWALK CONDITION SHALL BE DETERMINED BY THE ENTITIES.

4. "A" = 10', "B" = 15' UNLESS BUS TURNOUT IS CONSTRUCTED PER STANDARD DRAWINGS 234.1 OR 234.4, THEN "A" = 5', "B" = 10'.

5. A 5' x 50' BUS SHELTER PAD BEHIND THE SIDEWALK WHERE NECESSARY MAY BE ALLOWED AS APPROVED BY THE RTC.

6. PEDESTRIAN ACCESS ROUTE SHALL HAVE A CROSS SLOPE OF NO GREATER THAN 2%, REGARDLESS OF CONSTRUCTION TOLERANCES.


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TYPICAL DOUBLE BUS STOP PASSENGER LOADING WITH SHELTER PADS

DATE 01-09-20  DWG. NO. 234.3
1. If articulated buses are expected to service bus stop, distance from end of entry taper to the end of the bus stop loading pad shall be increased to 70 ft. min. and the right turn storage lane length shall be increased to 120 ft. min.

2. Where additional motorist guidance is deemed necessary by the engineer, install arrow and "only" symbol pavement markings for the length of the storage line. Symbols shall be approved type II pavement marking film, or if approved by the engineer, raised pavement markers may be used.

3. Storage lane line shall be approved type I pavement marking film, or if approved by the engineer, raised pavement markers may be used.

4. Reverse curve transition may be used subject to the approval of the engineer.

5. See note 1

6. See note 3

7. BCR

8. 8" storage lane line

9. 30' typ. 10' min.

10. 60' typ.

11. 6:1 (typ.) transition

12. T = 2.07'

13. L = 4.13'

14. R = 25.00'

15. 09 27' 44"

16. =

17. BUSES EXEMPT

18. BUS STOP SIGN BY OTHERS

19. INSTALL RTC

20. BUS SHELTER PAD

21. SEE STANDARD DRAWING NO. 234.5

22. AGENCY APPROVED

23. B C H L M N

24. SPECIFICATION REFERENCE

25. UNIFORM STANDARD DRAWINGS CLARK COUNTY AREA

26. BUS STOP PLACEMENT WITHIN EXCLUSIVE RIGHT TURN LANE FOR COMMERCIAL PROPERTIES

27. DATE 07-01-16 DWG. NO. 234.4
1. MINIMUM 28 DAY CONCRETE STRENGTH = 4500 PSI.

2. LAP SPLICES OF REINFORCING STEEL SHALL BE 24". STAGGER LAP SPLICES A MINIMUM OF ONE LAP LENGTH.

3. L, W, H, AND C PER PLAN.

1. ON ALL CURB RETURNS A 1/2" EXPANSION JOINT SHALL BE CONSTRUCTED BETWEEN THE BACK OF CURB AND THE SIDEWALK FOR THE ENTIRE LENGTH OF THE RETURN.

2. THE TYPE II AGGREGATE BASE THICKNESS IS SHOWN ON THE TYPICAL SECTION DRAWINGS 202 - 207.

3. LONGITUDINAL WEAKENED PLANE JOINT REQUIRED AT MIDPOINT OF SIDEWALK 10' OR WIDER.

4. WHEN INSTALLED WITHIN THE ROW, SIDEWALK GRADE IS PERMITTED TO EQUAL THE GENERAL GRADE ESTABLISHED FOR THE ADJACENT STREET OR HIGHWAY.

5. OBJECTS WITH LEADING EDGES MORE THAN 2.25 FT. AND NOT MORE THAN 6.7 FT. ABOVE FINISH SURFACE SHALL PROTRUDE 4 IN. MAXIMUM HORIZONTALLY INTO PEDESTRIAN CIRCULATION PATH. THE MINIMUM HEIGHT, MEASURED VERTICALLY FROM THE BOTTOM OF THE SIGN TO THE TOP OF SIDEWALK, OF SIGNS INSTALLED ABOVE SIDEWALKS, SHALL BE 7 FT.

6. PEDESTRIAN ACCESS ROUTE SHALL HAVE A CROSS SLOPE OF NO GREATER THAN 2%, REGARDLESS OF CONSTRUCTION TOLERANCES.

<table>
<thead>
<tr>
<th>SPECIFICATION REFERENCE</th>
<th>UNIFORM STANDARD DRAWINGS</th>
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<tbody>
<tr>
<td>302 AGGREGATE BASE</td>
<td>CLARK COUNTY AREA</td>
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<tr>
<td>501 CONCRETE</td>
<td>SIDEWALK</td>
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<tr>
<td>502 CONCRETE STRUCTURES</td>
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<tr>
<td>707 JOINT MATERIAL</td>
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AGENCY APPROVED: B C H L M N R

DATE 01-09-20 DWG. NO. 234
NOTES:

1. THE TYPICAL LOCATIONS OF SIDEWALK RAMPS SHOWN ABOVE ARE INTENDED TO MEET THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT (ADA). AT LEAST ONE SIDEWALK RAMPS SHALL BE CONSTRUCTED OPPOSITE THE INTERSECTING ROADWAY. ADDITIONAL SIDEWALK RAMPS MAY BE REQUIRED BY THE ENGINEER TO PROVIDE A CONTINUOUS UNOBSCTRADED PEDESTRIAN CIRCULATION PATH AS DEFINED BY THE ADA.

2. SIDEWALK RAMP LOCATIONS SHOWN ARE FOR INTERSECTIONS WITH UNMARKED CROSSWALKS. IF A PEDESTRIAN CROSSING AREA IS MARKED, SIDEWALK RAMPS SHALL BE LOCATED WITHIN THE MARKED CROSSWALKS AS APPROVED BY THE ENGINEER.
"A" and "B" are equal to 8' when flow line grade is between -2% and +2%. For "A" and "B" at other flow line grades, see Table 1 Sheet 4 this drawing no.

1. Sidewalk ramps outside of the curb return shall be located adjacent to the return unless otherwise approved.
2. Ramps shall be constructed with a rough broom finish transverse to the slope of the ramp.
3. When constructing ramp where curb & gutter exists, completely remove interfering portions of existing curb & gutter.
4. Detectable warning consisting of raised truncated domes which comply with details on Sheet 4 of this drawing no. and contrasting visually with adjoining surfaces shall be placed on bottom portion of ramp extending the full width of the ramp and to a minimum depth of 24 inches. Paver blocks permitted only in the City of Boulder City for detectable warning areas.
5. Curb may be placed and is preferred behind back of walk if sufficient right-of-way or easements exist and as approved by the Engineer.

Notes:

- 2% slope
- 5' typical
- 0' curb face
- No lip
- 3/4' max.
- 4" concrete aggregate base

Profile

- 1:12 max.
- 1' min.
- 1' min.
- TOP of curb at back of walk
- 3/4' max.
- Gutter transition
- Flowline
- Edge of gutter

Paired ramp in curb return

30' or more radius
Back of curb

Ramp in curb return

Ramp outside curb return

Section C-C

Notes:

- SEE NOTE 2
- SEE NOTE 4

Specifications reference

- 302 Aggregate base
- 501 Concrete
- 502 Concrete structures

B L M N

Agency approved

Uniform standard drawings

Clark County area

Sidewalk ramp

Case I
RAMP IN CURB RETURN
(NO BACK OF WALK DEPRESSION)

SECTION C-C

NOTES:
1. SIDEWALK RAMP WITHIN CURB RETURN SHALL BE LOCATED AT THE MIDPOINT OF CURB RETURN UNLESS OTHERWISE APPROVED.
2. RAMPS SHALL BE CONSTRUCTED WITH A ROUGH BROOM FINISH TRANSVERSE TO THE SLOPE OF THE RAMP.
3. WHEN CONSTRUCTING RAMP WHERE CURB & GUTTER EXISTS, COMPLETELY REMOVE INTERFERING PORTIONS OF EXISTING CURB & GUTTER.
4. DETECTABLE WARNING CONSISTING OF RAISED TRUNCATED DOMES WHICH COMPLY WITH DETAILS ON SHEET 4 OF THIS DRAWING NO. AND CONTRASTING VISUALLY WITH ADJOINING SURFACES SHALL BE PLACED ON BOTTOM PORTION OF RAMP EXTENDING THE FULL WIDTH OF THE RAMP AND TO A MINIMUM DEPTH OF 24 INCHES. PAVER BLOCKS PERMITTED ONLY IN THE CITY OF BOULDER CITY FOR DETECTABLE WARNING AREAS.

CASE II SHALL BE USED WHERE R/W AND FIELD CONDITIONS PERMIT.

SPECIFICATION REFERENCE

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AGENCY APPROVED

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

SIDEWALK RAMP
CASE II

DATE 11-10-04 DWG. NO. 235 SHEET 2 OF 4
RAMP IN CURB RETURN

RAMP OUTSIDE CURB RETURN

NOTES:
1. SIDEWALK RAMP WITHIN CURB RETURN SHALL BE LOCATED AT THE MIDPOINT OF CURB RETURN UNLESS OTHERWISE APPROVED.
2. SIDEWALK RAMPS OUTSIDE OF THE CURB RETURN SHALL BE LOCATED ADJACENT TO THE RETURN UNLESS OTHERWISE APPROVED.
3. RAMPS SHALL BE CONSTRUCTED WITH A ROUGH BROOM FINISH TRANSVERSE TO THE SLOPE OF THE RAMP.
4. WHEN CONSTRUCTING RAMP WHERE CURB & GUTTER EXISTS, COMPLETELY REMOVE INTERFERING PORTIONS OF EXISTING CURB & GUTTER.
5. DETECTABLE WARNING CONSISTING OF RAISED TRUNCATED DOMES WHICH COMPLY WITH DETAILS ON SHEET 4 OF THIS DRAWING NO. AND CONTRASTING VISUALLY WITH ADJOINING SURFACES SHALL BE PLACED ON BOTTOM PORTION OF RAMP EXTENDING THE FULL WIDTH OF THE RAMP AND TO A MINIMUM DEPTH OF 24 INCHES. PAVER BLOCKS PERMITTED ONLY IN THE CITY OF BOULDER CITY FOR DETECTABLE WARNING AREAS.

PROFILE

CASE III TO BE USED FOR AREAS WHERE OBSTRUCTION (I.E. BLOCK WALL) EXISTS AT BACK OF WALK ONLY WHEN APPROVED BY THE ENGINEER.

SPECIFICATION REFERENCE

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<th>B</th>
<th>C</th>
<th>H</th>
<th>L</th>
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UNIFORM STANDARD DRAWINGS

CLARK COUNTY AREA

SIDEWALK RAMP
CASE III

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Effective 05/21/2020 to 10/07/2020
**SPECIFICATION REFERENCE**

**UNIFORM STANDARD DRAWINGS**

**CLARK COUNTY AREA**

**SIDEWALK RAMP DETAILS**

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### TABLE 1. Transition Lengths for 1:12 Side Slopes

<table>
<thead>
<tr>
<th>Grade (%) &quot;B&quot; TO &quot;A&quot;</th>
<th>&quot;A&quot; (FT) MIN.</th>
<th>&quot;B&quot; (FT) MIN.</th>
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<td>-6 TO -5.01</td>
<td>4.5</td>
<td>21.5</td>
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<tr>
<td>-5 TO -4.01</td>
<td>4.5</td>
<td>15.0</td>
</tr>
<tr>
<td>-4 TO -3.01</td>
<td>4.5</td>
<td>12.0</td>
</tr>
<tr>
<td>-3 TO -2.01</td>
<td>4.5</td>
<td>9.5</td>
</tr>
<tr>
<td>-2 TO 2</td>
<td>8.0</td>
<td>8.0</td>
</tr>
<tr>
<td>2.01 TO 3</td>
<td>9.5</td>
<td>4.5</td>
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<tr>
<td>3.01 TO 4</td>
<td>12.0</td>
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<td>4.01 TO 5</td>
<td>15.0</td>
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<tr>
<td>5.01 TO 6</td>
<td>21.5</td>
<td>4.5</td>
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### TABLE 2. Transition Lengths for 1:10 Side Slopes

<table>
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<tr>
<th>Grade (%) &quot;B&quot; TO &quot;A&quot;</th>
<th>&quot;A&quot; (FT) MIN.</th>
<th>&quot;B&quot; (FT) MIN.</th>
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<td>4.0</td>
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<td>-2 TO 2</td>
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<td>2.01 TO 3</td>
<td>7.5</td>
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<td>3.01 TO 4</td>
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<td>4.0</td>
</tr>
<tr>
<td>4.01 TO 5</td>
<td>10.0</td>
<td>4.0</td>
</tr>
<tr>
<td>5.01 TO 6</td>
<td>12.5</td>
<td>4.0</td>
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</table>

**NOTE:**

Charts apply to curb with 6" curb face. If curb has greater than a 6" curb face, a special design is required.

---

**Agency Approved**

Effective 05/21/2020 to 10/07/2020
4 TACK WELDS EQUALLY SPACED

S.W.

2'

C&G

3"

3"

LIP OF GUTTER

24"

TACK WELDS

4 TACK WELDS EQUALLY SPACED

S.W.

3/8"

2-1/4"

3/8" BAR (CONT.)

1/8"

5/8" BAR (CONT.)

3"x3"x1/4" ANGLE (CONT.)

1/2" x 3" STEEL ANCHOR 12" O.C.

B

A

LIP OF GUTTER

STEEL FLOOR PLATE

4" S.W.

6"

8" 12" 10-1/2" 12" 8"

FLOWLINE OF GUTTER

SECTION A-A

SECTION B-B

NOTES

1. IF WIDTH OF PLATE IS GREATER THAN 24", A SPECIAL DESIGN IS REQUIRED.

2. ALL EXPOSED METAL PARTS SHALL BE GALVANIZED, AND ALL GALVANIZING DAMAGED BY
   FABRICATION OR INSTALLATION SHALL RECEIVE TWO COATS OF ALUMINUM PAINT
   (GALVONOX OR EQUAL). EXPOSED METAL PARTS IN THE PEDESTRIAN ACCESS ROUTE
   SHALL BE FIRM, STABLE, AND SLIP-RESISTANT.

3. TACK WELDS BETWEEN SIDEWALK AND STEEL PLATE FLOOR WITHIN PEDESTRIAN ACCESS
   ROUTES SHALL HAVE NO VERTICAL SURFACE DISCONTINUITIES GREATER THAN 1/4",
   REGARDLESS OF CONSTRUCTION TOLERANCES.

AGENCY APPROVED

UNIFORM STANDARD DRAWINGS

CLARK COUNTY AREA

SIDEWALK DRAIN

SPECIFICATION REFERENCE

302 BASE AGGREGATES
501 CONCRETE
710 STRUCTURAL STEEL

DATE 03-12-20

DWG. NO. 236
NO. 4 REINFORCING BARS CONTINUOUS

LEAVE SURFACE ROUGH IF Poured SEPARATELY

JOINT SEALER

PAVEMENT

BARRIER END ANCHOR

1"x8" STEEL DOWEL AT 2'-0" CENTER (IF NEEDED) (SEE NOTE 2)

TYPE A

CONCRETE BARRIER RAIL

FLARE RATES

<table>
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<tr>
<th>OPERATING SPEED</th>
<th>FLARE RATE</th>
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<tbody>
<tr>
<td>60</td>
<td>17:1 MAX</td>
</tr>
<tr>
<td>50</td>
<td>14:1</td>
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<tr>
<td>40</td>
<td>11:1</td>
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</table>

1. TRANSVERSE JOINTS WITH 1" PREMOLDED EXPANSION JOINT FILLER OR 1" OPEN TRANSVERSE JOINTS SHALL BE PLACED AT STRUCTURES. JOINTS IN BARRIER RAIL OVER A STRUCTURE SHALL BE AT THE SAME LOCATION AND OF THE SAME DIMENSION AS THOSE IN THE STRUCTURE.

2. BITUMINOUS PAVING REQUIRED: PAVING SHALL BUTT AGAINST THE BARRIER RAIL END ANCHOR SECTION AND SHALL EXTEND FULL WIDTH UNDER THE NORMAL BARRIER RAIL SECTION PLUS 6" MINIMUM 6-INCH DEEP BARRIER. END ANCHORS SHALL BE CONSTRUCTED IN THE FIRST AND LAST 10 LINEAR FEET OF THE FULL HEIGHT BARRIER RAIL RUN. IF TRANSITIONS ARE USED, THE ANCHOR SHALL BE EXTENDED UNDER THE TRANSITION.

TRANSITION OF END OF BARRIER

TO BE USED ONLY IF END IS FLARED

NOTES:

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<tr>
<td>502 CONCRETE STRUCTURES</td>
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CONCRETE BARRIER RAIL

DATE 12-14-00 DWG. NO. 237
NOTES:
1. PRECAST BUMPER BLOCK TO BE USED IN PARKING LOTS ONLY.
2. GROUT HOLE BEFORE DRIVING SPIKE. AFTER DRIVING SPIKE, FILL HOLE WITH CONCRETE MORTAR AND FINISH FLUSH WITH TOP.
TYPE I MONUMENT

NOTE:
TYPE I MONUMENTS TO BE SET AT ALL SECTION CORNERS AND 1/4 SECTION CORNERS WHICH FALL WITHIN IMPROVED STREET SECTIONS, AND MARKED IN ACCORDANCE WITH THE 1973 B.L.M. MANUAL OF SURVEYING INSTRUCTIONS.
NOTES:
1. TYPE II-A MONUMENTS TO BE SET AT ALL SECTION CORNERS, 1/4 SECTION CORNERS AND 1/16 SECTION CORNERS WHICH FALL WITHIN UNIMPROVED STREET SECTIONS.
2. TYPE II-B MONUMENTS TO BE SET AT ALL 1/16 SECTION CORNERS WHICH FALL WITHIN IMPROVED STREET SECTIONS.
3. ALL TYPE II MONUMENTS ARE TO BE MARKED IN ACCORDANCE WITH THE 1973 B.L.M. MANUAL OF SURVEYING INSTRUCTIONS.
4. 6" x 6" SQUARE MONUMENTS ARE ALSO ACCEPTABLE.
5. IF MONUMENTS ARE TO BE "PRECAST" THEY ARE TO BE EMBEDDED IN FRESH CONCRETE TO PREVENT MOVEMENT.
6. THE COUNTY/CITY SURVEYOR MAY REQUIRE TYPE II MONUMENTS IN ADDITIONAL LOCATIONS.

SECTION A-A

TYPE II-A

UNPAVED STREET

SECTION A-A

TYPE II-B

PAVED STREET

SURFACE OF UNPAVED STREET

6" MIN.
18" MAX.

12" MIN.

BRONZE OR BRASS CAP
(SEE DETAIL STANDARD DRAWING NO. 242, NOT TO BE MARKED BY CONTRACTOR).

5/8" MIN. DIA. REBAR
SET A MIN. OF 4" BELOW TOP OF CONCRETE AT APPROXIMATE CENTER.

CONCRETE

PUNCH MARK

A.C. PAVEMENT

TYPE II AGGREGATE BASE

TYPE I AGGREGATE BASE

A.G. PAVEMENT

TYPE II MONUMENT

SPECIFICATION REFERENCE

501 CONCRETE
621 MONUMENTS

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

TYPE II MONUMENT

AGENCY APPROVED

B C H L M N

DATE 12-14-00 DWG. NO. 240
NOTES:

1. TYPE III MONUMENTS TO BE SET AT ALL CENTERLINE CONTROL POINTS NOT OTHERWISE IDENTIFIED BY A TYPE I OR TYPE II MONUMENT, INCLUDING STREET INTERSECTIONS, POINTS OF CURVATURE, POINTS OF TANGENCY, POINTS OF INTERSECTION AND CENTERS OF HAMMERHEAD TURNAROUNDS OR CIRCULAR CUL-DE-SACS.

2. THE REGISTERED LAND SURVEYOR’S NUMBER, AND A PUNCH MARK ARE TO APPEAR ON THE SURFACE OF THE CAP.

CAP TO BE SECURED WITH PLASTIC INSERT OR EPOXY CONFORMING TO A.S.T.M. C881-78 SPECIFICATIONS.

5/8" MIN. DIA. REBAR OF SUFFICIENT LENGTH TO RESIST REMOVAL

NOTE:

( MINIMUM 1" DIA. NON-FERROUS CAP TO BE SET BY REGISTERED LAND SURVEYOR )

---

TYPE III MONUMENT

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<table>
<thead>
<tr>
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<th>CLARK COUNTY AREA</th>
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<tbody>
<tr>
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<td>241 DWG. NO.</td>
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NOTES:

1. FOUR (4) TYPE IV REFERENCE MONUMENTS TO BE SET WITHIN A RADIUS OF TWENTY (20) TO ONE HUNDRED (100) FEET FROM ALL TYPE I, II, AND III MONUMENTS.

2. THE TIE DISTANCE AND THE INITIALS R.M. ARE TO BE STAMPED ON THE CAP, FOR TYPE IV MONUMENTS.

3. NON-FERROUS CAP TO BE MADE FROM CAST VIRGIN METAL IN ONE PIECE, FREE FROM CASTING IMPERFECTIONS, WITH CORRUGATED SHAFT.

4. TYPE III AND TYPE IV MONUMENT CAP DIAMETER MAY BE REDUCED TO 1".

MINIMUM 5/8" DIA. REBAR SET A MINIMUM OF 4" BELOW TOP OF CONCRETE AT APPROX. CENTER.

NON-FERROUS CAP (SEE DETAIL) INSET IN TOP OF CURB, BONDED SECURELY WITH EPOXY. (A.S.T.M. C881 - 78 SPECS.)

CONCRETE 12" MIN.

TYPE IV-A MONUMENT
EXISTING CURB & GUTTER
TYPICAL MONUMENT LOCATION

LEGEND

- P.C. - POINT OF CURVE
- P.R.C. - POINT OF REVERSE CURVE
- P.T. - POINT OF TANGENCY
- C. - CENTERLINE
- B.C. - BACK OF CURB
- P.I. - POINT OF INTERSECTION
- R/W - RIGHT-OF-WAY
- * - TYPE I, II, OR III MONUMENT
- O - TYPE III MONUMENT
- O - TYPE IV A OR IV B REFERENCE MONUMENT

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

TYPICAL MONUMENT LOCATION

AGENCY APPROVED

B C H L M N

DATE DWG. NO. 243
SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

TYPICAL LANE LINE

(DIVIDED, UNDIVIDED OR ONE-WAY ROADWAY)

TYPE 4 LANE LINE

10' 30' 40'

3'-4"

633 PAVEMENT MARKERS

DATE 4-8-99   DWG. NO. 244.1
NOTES:

1. LANE LINE DELINEATION SHALL COMPLY WITH STANDARD DRAWING NOS. 244 & 244.1.
2. IN SOME CASES, A MEDIAN WILL EXIST INSTEAD OF TWO-WAY LEFT TURN LANE.
3. BIKE LINES MUST BE A MINIMUM OF 4 FT. AND NO GREATER THAN 8 FT. WIDE; HOWEVER, A WIDTH OF 5 FT. IS PREFERRED.
4. WHERE 6 FT. SIDEWALK EXISTS, WIDTH OF MEDIAN MAY BE REDUCED BY 2 FT. OR TRAVEL LANES MAY BE REDUCED TO 11 FT.
5. ALL CURB LANES ARE MEASURED TO LIP OF GUTTER OR EDGE OF PAVEMENT IF CURB AND GUTTER DO NOT EXIST.

AGENCY APPROVED

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

TYPICAL DELINEATION FOR ROADWAYS
100 FT. OR GREATER RIGHT-OF-WAY WITH CURBSIDE SIDEWALK

DATE 7-10-03  DWG. NO. 244.2
NOTES:
1. LANE LINE DELINEATION SHALL COMPLY WITH STANDARD DRAWING NO. 244 & 244.1.
2. BIKE LANES TO BE PROVIDED IF SEGMENT CONNECTS TO OTHER BIKE LANES OR IF ROADWAY SEGMENT IS 1 MILE OR GREATER. IF BIKE LANE IS NOT PROVIDED, TRAVEL LANES SHOULD REMAIN AT DIMENSIONS SHOWN SO A BICYCLE LANE COULD BE PROVIDED IN THE FUTURE. SEE DRAWING NUMBER 246.1 FOR BIKE LANE SIGNING AND STRIPING DETAILS.
3. ALL CURB LANES ARE MEASURED TO LIP OF GUTTER OR EDGE OF PAVEMENT IF CURB AND GUTTER DO NOT EXIST.
4. CONTACT THE LOCAL JURISDICTIONAL FOR DEVELOPMENT REQUIREMENTS FOR THE AREA BETWEEN THE CURB AND SIDEWALK.
1. LANE LINE DELINEATION SHALL COMPLY WITH STANDARD DRAWING NOS. 244 & 244.1.
2. IN SOME CASES, A MEDIAN WILL EXIST INSTEAD OF TWO-WAY LEFT TURN LANE.
3. BIKE LANE MUST BE A MINIMUM OF 4 FT. AND NO GREATER THAN 8 FT. WIDE; HOWEVER, A WIDTH OF 5 FT. IS PREFERRED.
4. WHERE 6 FT. SIDEWALK EXISTS, WIDTH OF MEDIAN MAY BE REDUCED BY 2 FT. OR TRAVEL LANES MAY BE REDUCED TO 11 FT.
5. ALL CURB LANES ARE MEASURED TO LIP OF GUTTER OR EDGE OF PAVEMENT IF CURB AND GUTTER DO NOT EXIST.

* THE WIDTH OF TRAVEL LANES ADJACENT TO BIKE LANES MAY VARY FROM 12 FT. TO 16 FT.
WIDTHS OF INTERIOR TRAVEL LANES MAY VARY FROM 11 FT. TO 13 FT.

**NOTES:**

- LANE LINE DELINEATION SHALL COMPLY WITH STANDARD DRAWING NOS. 244 & 244.1.
- IN SOME CASES, A MEDIAN WILL EXIST INSTEAD OF TWO-WAY LEFT TURN LANE.
- BIKE LANE MUST BE A MINIMUM OF 4 FT. AND NO GREATER THAN 8 FT. WIDE; HOWEVER, A WIDTH OF 5 FT. IS PREFERRED.
- WHERE 6 FT. SIDEWALK EXISTS, WIDTH OF MEDIAN MAY BE REDUCED BY 2 FT. OR TRAVEL LANES MAY BE REDUCED TO 11 FT.
- ALL CURB LANES ARE MEASURED TO LIP OF GUTTER OR EDGE OF PAVEMENT IF CURB AND GUTTER DO NOT EXIST.

**SPECIFICATION REFERENCE**

- 628 PAINTING TRAFFIC STRIPING
- 401 PAVEMENT MARKERS

**UNIFORM STANDARD DRAWINGS**

**CLARK COUNTY AREA**

**TYPICAL DELINEATION FOR ROADWAYS**

100 FT. RIGHT-OF-WAY

WITH CURBSIDE SIDEWALK

**DATE 3-9-06**

**DWG. NO.** 244.4
1. LANE LINE DELINEATION SHALL COMPLY WITH STANDARD DRAWING NOS. 244 & 244.1.
2. BIKE LANES MUST BE A MINIMUM OF 4 FT. AND NO GREATER THAN 8 FT. WIDE; HOWEVER, A WIDTH OF 5 FT. IS PREFERRED.
3. WHERE 6 FT. SIDEWALK EXISTS, WIDTH OF MEDIAN MAY BE REDUCED BY 2 FT. OR TRAVEL LANES MAY BE REDUCED TO 11 FT.
4. ALL CURB LANES ARE MEASURED TO LIP OF GUTTER OR EDGE OF PAVEMENT IF CURB AND GUTTER DO NOT EXIST.

NOTES:

* THE WIDTH OF TRAVEL LANE MAY VARY FROM 11 FT. TO 13 FT.
NOTES:
1. LANE LINE DELINEATION SHALL COMPLY WITH STANDARD DRAWING NO. 244 & 244.1.
2. BIKE LANES MUST BE A MINIMUM OF 4 FT. AND NO GREATER THAN 8 FT. WIDE; HOWEVER, A WIDTH OF 5 FT. IS PREFERRED.
3. WHERE 6 FT. SIDEWALK EXISTS, WIDTH OF MEDIAN MAY BE REDUCED BY 2 FT. OR TRAVEL LANES MAY BE REDUCED TO 11 FT.
4. ALL CURB LANES ARE MEASURED TO LIP OF GUTTER OR EDGE OF PAVEMENT IF CURB AND GUTTER DO NOT EXIST.
1. LANE LINE DELINEATION SHALL COMPLY WITH STANDARD DRAWING NO. 244 & 244.1.
2. BIKE LANES TO BE PROVIDED IF SEGMENT CONNECTS TO OTHER BIKE LANES OR IF ROADWAY SEGMENT IS 1 MILE OR GREATER. IF BIKE LANE IS NOT PROVIDED, TRAVEL LANES SHOULD REMAIN AT DIMENSIONS SHOWN SO A BICYCLE LANE COULD BE PROVIDED IN THE FUTURE. SEE DRAWING NUMBER 246.1 FOR BIKE LANE SIGNING AND STRIPING DETAILS.
3. ALL CURB LANES ARE MEASURED TO LIP OF GUTTER OR EDGE OF PAVEMENT IF CURB AND GUTTER DO NOT EXIST.
4. CONTACT THE LOCAL JURISDICTIONAL FOR DEVELOPMENT REQUIREMENTS FOR THE AREA BETWEEN THE CURB AND SIDEWALK.
**NOTES:**

1. LANE LINE DELINEATION SHALL COMPLY WITH STANDARD DRAWING NO. 244 & 244.1.
2. BIKE LANES MUST BE A MINIMUM OF 4 FT. AND NO GREATER THAN 8 FT. WIDE; HOWEVER, A WIDTH OF 5 FT. IS PREFERRED.
3. ALL CURB LANES ARE MEASURED TO LIP OF GUTTER OR EDGE OF PAVEMENT IF CURB AND GUTTER DO NOT EXIST.

**SPECIFICATION REFERENCE**

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**TYPICAL DELINEATION FOR BIKE FACILITIES**

60 FT. RIGHT-OF-WAY

(PARKING ON BOTH SIDES)

**AGENCY APPROVED**

B C H L M N

**DATE** 6-8-95  **DWG. NO.** 244.7
LANE LINE DELINEATION SHALL COMPLY WITH STANDARD DRAWING NO. 244 & 244.1.

BIKE LANES MUST BE A MINIMUM OF 5 FEET WHERE ADJACENT TO A PARKING LANE, 4 FEET MINIMUM IN OTHER CASES AND NO GREATER THAN 8 FEET WIDE.

ALL CURB LANES ARE MEASURED TO THE EDGE OF PAVEMENT. THE TOP OF PAVEMENT SHALL BE FLUSH WITH GUTTER.

BICYCLE LANE SHALL BE ON RIGHT SIDE OF ONE-WAY ROADWAYS, EXCEPT IN LIMITED SITUATIONS, SUCH AS WHEN THERE ARE SIGNIFICANTLY LESS POTENTIAL CONFLICTS ALONG THE LEFT SIDE OF THE ROADWAY OR WHEN SIGNIFICANT BICYCLE TRIP GENERATION ARE ALONG THE LEFT SIDE OF THE ROADWAY.

5. SEE DRAWING NO. 244.9 FOR BIKE LANE SIGNAGE DETAILS.
BIKE LANE DELINEATION AND LEGEND

NOTES
1. BIKE LANE LEGENDS SHALL BE APPROVED TYPE I PAVEMENT MARKING FILM AND SHALL BE SLIP RESISTANT.
2. BIKE LANE LINES SHALL BE APPROVED TYPE II PAVEMENT MARKING FILM AND SHALL BE SLIP RESISTANT.
3. BIKE LANES MUST BE A MINIMUM OF 5 FEET WHEN ADJACENT TO A PARKING LANE, 4 FEET MINIMUM IN OTHER CASES AND NO GREATER THAN 8 FT WIDE; HOWEVER A WIDTH OF 5 FEET IS PREFERRED.
4. BICYCLE LANE DELINEATION, LEGEND, AND SIGNING SHALL CONFORM TO THE MUTCD, LATEST EDITION.
5. SIGN SIZE AND PLACEMENT SHALL CONFORM TO THE REQUIREMENTS OF THE MUTCD, LATEST EDITION.
6. THE BIKE LANE SIGNAGE SHALL BE TYPE XI SHEETING.
7. SIGN PLACEMENT SHALL CONFORM WITH STANDARD DRAWING NO. 249.
BIKE LANE DELINEATION AND LEGEND

NOTES:
1. BIKE LANE LEGENDS SHALL BE APPROVED TYPE I PAVEMENT MARKING FILM AND SHALL BE SLIP RESISTANT.
2. BIKE LANE LINES SHALL BE APPROVED TYPE II PAVEMENT MARKING FILM AND SHALL BE SLIP RESISTANT.
3. BIKE LANES MUST BE A MINIMUM OF 5 FEET WHEN ADJACENT TO A PARKING LANE, 4 FEET MINIMUM IN OTHER CASES AND NO GREATER THAN 8 FT WIDE; HOWEVER A WIDTH OF 5 FEET IS PREFERRED.
4. BICYCLE LANE DELINEATION, LEGEND, AND SIGNING SHALL CONFORM TO THE MUTCD LATEST EDITION.
5. SIGN SIZE AND PLACEMENT SHALL CONFORM TO THE REQUIREMENTS OF THE MUTCD, LATEST EDITION.
6. THE BIKE LANE SIGNAGE SHALL BE TYPE XI SHEETING.
7. A CONTINUOUS 6" WHITE LINE SHALL EXTEND 20' ON EACH SIDE OF THE DROP INLET.
8. INSTALL "DO NOT RIDE IN GUTTER" SIGN IN THE CITY OF LAS VEGAS, SIGN WIDTH TO MATCH R3-17.
9. THE WIDTH OF THE BICYCLE LANE SHALL EXCLUDE THE GUTTER PAN.

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

SUPPLEMENTAL DRAWING

BICYCLE LANE DELINEATION,
LEGEND, AND SIGNAGE

DATE 01-01-16  DWG. NO. 244.9.S1
TYPICAL CONFIGURATION FOR
RURAL ROADWAYS 60 FT. RIGHT-OF-WAY
NOTES

1. DRAWING IS ONLY APPLICABLE TO THE CITY OF LAS VEGAS AND UNINCORPORATED AREA OF CLARK COUNTY, IN THE AREA BOUNDED BY CLARK COUNTY 215 BRUCE WOODBURY BELTWAY ON THE WEST AND NORTH, ALEXANDER ROAD ON THE SOUTH AND DURANGO DRIVE ON THE EAST, OR IN OTHER AREAS APPROVED BY THE AGENCY.

2. MINIMUM PAVEMENT STRUCTURE AND DESIGN SHALL CONFORM WITH STANDARD DRAWING 200.1.

3. TREATMENT SHALL CONFORM WITH CLARK COUNTY DEPARTMENT OF AIR QUALITY AND NEVADA DIVISION OF ENVIRONMENTAL PROTECTION REGULATIONS.

4. THE CONCRETE SWALE SHALL BE 6' WIDE AND 6" THICK WITH MINIMAL STEEL REQUIRED PER ACI. WHEN VEHICULAR TRAFFIC IS REQUIRED TO CROSS THE SWALE, IT SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD DRAWING 228.

5. THE STREET SECTION IS NOT ANTICIPATED TO MEET CCRFCD DRAINAGE REQUIREMENTS AND MAY REQUIRE A STORM DRAINAGE SYSTEM AS DETERMINED BY THE APPROVED TECHNICAL DRAINAGE STUDY.

6. IT IS RECOMMENDED THAT THE EQUESTRIAN TRAIL BE LOCATED ON THE NORTH SIDE OF EAST-WEST ROADWAYS OR THE WEST SIDE OF NORTH-SOUTH ROADWAYS.

7. STREET LIGHTS REQUIRED ONLY AT INTERSECTIONS.

8. UTILITY PLACEMENT MUST BE APPROVED BY THE APPROVING AGENCY.
NOTES
1. DRAWING IS ONLY APPLICABLE TO THE CITY OF LAS VEGAS AND UNINCORPORATED AREA OF CLARK COUNTY, IN THE AREA BOUNDED BY CLARK COUNTY 215 BRUCE WOODBURY BELTWAY ON THE WEST AND NORTH, ALEXANDER ROAD ON THE SOUTH, AND DURANGO DRIVE ON THE EAST, OR IN OTHER AREAS APPROVED BY THE AGENCY.
2. LANE LINE DELINEATION SHALL COMPLY WITH STANDARD DRAWINGS 244 AND 244.1.
3. MINIMUM PAVEMENT STRUCTURE AND DESIGN SHALL CONFORM WITH STANDARD DRAWING 200.
4. TREATMENT SHALL CONFORM WITH CLARK COUNTY DEPARTMENT OF AIR QUALITY AND NEVADA DIVISION OF ENVIRONMENTAL PROTECTION REGULATIONS.
5. THE CONCRETE SWALE SHALL BE 6' WIDE AND 6" THICK WITH MINIMAL STEEL REQUIRED PER ACI. WHEN VEHICULAR TRAFFIC IS REQUIRED TO CROSS THE SWALE, IT SHALL BE CONSTRUCTED IN ACCORDANCE WITH STANDARD DRAWING 228.
6. THE STREET SECTION IS NOT ANTICIPATED TO MEET CCRFCD DRAINAGE REQUIREMENTS AND MAY REQUIRE A STORM DRAINAGE SYSTEM AS DETERMINED BY THE APPROVED TECHNICAL DRAINAGE STUDY.
7. RAISED LANDSCAPE MEDIAN MAY BE REQUIRED BY CLARK COUNTY.
8. IT IS RECOMMENDED THAT THE EQUESTRIAN TRAIL BE LOCATED ON THE NORTH SIDE OF EAST-WEST ROADWAYS OR THE WEST SIDE OF NORTH-SOUTH ROADWAYS.
9. STREET LIGHTS REQUIRED ON ONE SIDE OF THE STREET AND AT INTERSECTIONS.
10. UTILITY PLACEMENT MUST BE APPROVED BY THE APPROVING AGENCY.

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<td>CLARK COUNTY AREA</td>
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<td></td>
<td>TYPICAL TWO LANE CONFIGURATION FOR RURAL ROADWAYS 80 FT. RIGHT-OF-WAY</td>
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AGENCY APPROVED C (L)
NOTES:

1. DRAWING IS ONLY APPLICABLE TO THE UNINCORPORATED AREA OF CLARK COUNTY, IN THE AREA BOUNDED BY CLARK COUNTY 215 BRUCE WOODBURY BELTWAY ON THE WEST AND NORTH, ALEXANDER ROAD ON THE SOUTH, AND DURANGO DRIVE ON THE EAST.

2. LANE LINE DELINEATION SHALL COMPLY WITH STANDARD DRAWINGS 244 AND 244.1.

3. MINIMUM PAVEMENT STRUCTURE AND DESIGN SHALL CONFORM WITH STANDARD DRAWING 200.

4. RAISED LANDSCAPE MEDIAN MAY BE REQUIRED BY CLARK COUNTY.

5. TREATMENT SHALL CONFORM WITH CLARK COUNTY DEPARTMENT OF AIR QUALITY AND NEVADA DIVISION OF ENVIRONMENTAL PROTECTION REGULATIONS.

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SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

TYPICAL CONFIGURATION FOR
RURAL ROADWAYS 100 FT. RIGHT-OF-WAY

DATE 09-12-19  DWG. NO. 244.12
**Type 1 Centerline**

- 20' TYP.
- 5' TYP.
- TYPE B
- TYPE C

**Type 2 Centerline**

- 20' TYP.
- 5' TYP.
- TYPE B
- TYPE C

- NO PASSING SIDE
- PASSING SIDE

**Type 3 Centerline**

- 40'
- 10'
- 15'
- 15'
- 3'-4" TYP.

**Agency Approved**

- Effective 05/21/2020 to 10/07/2020

**Specification Reference**

- 633 PAVEMENT MARKERS

**Uniform Standard Drawings**

- Clark County Area

**Typical Centerline Delineation**

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<tr>
<td>6-11-93</td>
<td>244</td>
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TYPICAL LANE CONFIGURATION FOR MAJOR STREET INTERSECTIONS

STORAGE 300' TYP.

TAPER 115.37' TYP.

TAPER 99.5' TYP.

TRANSITION 225' TYP.

200' RADIUS

62.45' TYP. FOR REVERSE CURVE TAPER

EXCLUSIVE RIGHT TURN LANE

ADDITIONAL 10' RIGHT-OF-WAY DEDICATION REQUIRED FOR EXCLUSIVE RIGHT TURN LANE

** SYMMETRICAL REVERSE CURVE (STRAIGHT LINE TAPER MAY BE SUBSTITUTED AS APPROVED BY ENGINEER)

3' OFFSET

FOR ROADWAYS WITH DEDICATED BIKE LANE, REDUCE MEDIAN WIDTH TO 2 FT. AND OUTSIDE TRAVEL LANES TO 11 FT.

AGENCY APPROVED

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

TYPICAL LANE CONFIGURATION FOR MAJOR STREET INTERSECTIONS AND MEDIAN DETAIL
CASE I - WITH CURBSIDE SIDEWALK

DATE 7-10-03 DWG. NO. 245.1 SHEET 1 OF 2

Dwg. No.

SHEET 1 OF 2
TYPICAL LANE CONFIGURATION FOR MAJOR STREET INTERSECTIONS AND MEDIAN DETAIL

CASE II - WITH CURBSIDE SIDEWALK

---

STORAGE VARI

---

ENGINEER) REQUIRED FOR EXCLUSIVE RIGHT TURN LANE ADDITIONAL 10' RIGHT-OF-WAY DEDICATION FOR EXCLUSIVE RIGHT TURN LANE

---

* SYMMETRICAL REVERSE CURVE (STRAIGHT LINE TAPER MAY BE SUBSTITUTED AS APPROVED BY ENGINEER)

---

FOR ROADWAYS WITH DEDICATED BIKE LANE, REDUCE TWO-WAY LEFT LANE TO 12 FT., MEDIAN ISLAND TO 2 FT. AND OUTSIDE TRAVEL LANES TO 11 FT.
TYPICAL LANE CONFIGURATION FOR MAJOR STREET INTERSECTIONS AND MEDIAN DETAIL

CASE I - WITH OFFSET SIDEWALK

STORAGE 300' TYP.

TAPER 115.37' TYP.

TAPER 99.5' TYP.

TRANSITION 225' TYP.

605' RADIUS

250' SYMMETRICAL RADIUS

REVERSE CURVES

660' C TO C

225' TYP. TRANSITION

45:1

3' OFFSET

BIKE LANE

SIDEWALK

BUFFER

SIDEWALK SHOULD BE OFFSET THROUGH THE INTERSECTION WITH A CURB RAMP CONNECTING THE SIDEWALK TO THE CROSSWALK. NO ABOVE GROUND OBJECTS SHALL BE PLACED WITHIN THE SIDEWALK. FOR DEVELOPMENT REQUIREMENTS FOR THE AREA BETWEEN THE CURB AND SIDEWALK.

NOTES:

1. SYMMETRICAL REVERSE CURVE (STRAIGHT LINE TAPER MAY BE SUBSTITUTED AS APPROVED BY ENGINEER)

* TAPER

SIDEWALK

EXCLUSIVE RIGHT TURN LANE

ADDITIONAL 10' RIGHT-OF-WAY DEDICATION REQUIRED FOR EXCLUSIVE RIGHT TURN LANE

REQUIRED FOR EXCLUSIVE RIGHT TURN LANE

ADDITIONAL 10' RIGHT-OF-WAY DEDICATION

REVERSE CURVE TAPER (150' MIN.)

STORAGE VARIES

ENGINEER)

MAY BE SUBSTITUTED AS APPROVED BY

SYMMETRICAL REVERSE CURVE

AGENCY APPROVED

CLARK COUNTY AREA

UNIFORM STANDARD DRAWINGS

SPECIFICATION REFERENCE

TYPICAL LANE CONFIGURATION FOR MAJOR STREET INTERSECTIONS AND MEDIAN DETAIL

CASE I - WITH OFFSET SIDEWALK

DATE 7-10-03 DWG. NO. 245.2 SHEET 1 OF 2
TYPICAL LANE CONFIGURATION FOR
MAJOR STREET INTERSECTIONS
AND MEDIAN DETAIL
CASE II - WITH OFFSET SIDEWALK

STORAGE (150' MIN.)

EXCLUSIVE RIGHT TURN
LANE
ADDITIONAL 10' RIGHT-OF-WAY DEDICATION
REQUIRED FOR EXCLUSIVE RIGHT TURN LANE

* SYMMETRICAL REVERSE CURVE
(STRAIGHT LINE TAPER
MAY BE SUBSTITUTED
AS APPROVED BY
ENGINEER)

NOTES:
1. SIDEWALK SHOULD BE OFFSET THROUGH THE INTERSECTION WITH A CURB RAMP CONNECTING THE SIDEWALK TO THE CROSSWALK. NO ABOVE GROUND OBJECTS SHALL BE PLACED WITHIN THE SIDEWALK. CONTACT THE LOCAL JURISDICTION FOR DEVELOPMENT REQUIREMENTS FOR THE AREA BETWEEN THE CURB AND SIDEWALK.
FORM ENTIRE ISLAND USING RAISED PAVEMENT MARKER PATTERN FOR TRANSITION AREA

T OR L = \( \frac{(W \text{ OR } X)S^2}{60} \) (DESIGN SPEED 40 MPH OR LESS)

= \( (W \text{ OR } X)S \) (DESIGN SPEED 45 MPH OR GREATER)

NOTE:
SEE SHEET 3 THIS DRAWING NUMBER IF PATTERN IS TO BE USED AT A GORE POINT TO DIVIDE TRAFFIC MOVING IN SAME DIRECTION.
DETAIL "A"

NOTE:
PAINT MAY BE USED IN LIEU OF TAPE AND/OR RAISED PAVEMENT MARKERS
AT THE DISCRETION OF THE ENGINEER.
SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

TYPICAL LANE DELINEATION IN TRANSITION SECTIONS WHERE TRAFFIC FLOW IN SAME DIRECTION

DATE 6-11-93  DWG. NO. 245  SHEET 3 OF 3
1. STORAGE LENGTH TO BE DETERMINED BY TRAFFIC ENGINEER.
2. SEE DRAWING NO. 244.9 FOR BIKE LANE LEGEND AND SIGNAGE.
3. WHERE ADDITIONAL MOTORIST GUIDANCE IS DEEMED NECESSARY BY THE TRAFFIC ENGINEER, INSTALL R3-7R SIGN AND ARROW SYMBOL. PAVEMENT MARKINGS FOR THE LENGTH OF THE STORAGE LINE. APPROVED TYPE II PAVEMENT MARKING FILM SHALL BE USED FOR SYMBOL MARKINGS.
4. SEE DRAWING NO. 246 NOTE 1 FOR STANDARD PAVEMENT MARKERS ADDED TURN LANE.
BICYCLE LANE TRANSITION TO SHARED LANE AT INTERSECTION

6" SOLID WHITE LINE (SEE NOTE 2)

TURN LANE LEGENDS (TYP.)

NOTE 4

6" SOLID WHITE LINE (SEE NOTE 2)

R3-7R (SEE NOTE 3)

R3-7R (SEE NOTE 3)

SIDEWALK

UTILITY (ABOVE GROUND) CORRIDOR (IF APPLICABLE)

R3-16a, (OPTIONAL)

R3-16a, (OPTIONAL)

TRAVEL LANES

TRAVEL LANES

WITH EXCLUSIVE RIGHT-TURN LANE

WITHOUT EXCLUSIVE RIGHT-TURN LANE

NOTES:

1. STORAGE LENGTH TO BE DETERMINED BY TRAFFIC ENGINEER.

2. SEE DRAWING NUMBER 244.9 FOR BIKE LANE LEGEND AND SIGNAGE.

3. WHERE ADDITIONAL MOTORIST GUIDANCE IS DEEMED NECESSARY BY THE ENGINEER, INSTALL R3-7R SIGN AND ARROW SYMBOL PAVEMENT MARKINGS FOR THE LENGTH OF THE STORAGE LINE. APPROVED TYPE II PAVEMENT MARKING FILM SHALL BE USED FOR SYMBOL MARKINGS.

4. SEE DWG. 246 NOTE 1 FOR STANDARD PAVEMENT MARKERS ADDED TURN LANE.

5. THE ABOVE DETAIL SHOULD BE FOLLOWED IN SITUATIONS WHERE THERE IS NOT ADEQUATE SPACE TO PROVIDE A SEPARATE BICYCLE LANE.

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AGENCY APPROVED B C H L M N

DATE 06-09-11 DWG. NO. 246.2
NOTES:
1. FORCED RIGHT-TURN LANES AND LONG RIGHT TURN POCKETS ARE NOT DESIRABLE FOR BICYCLISTS AND SHOULD BE AVOIDED WHEN POSSIBLE.
2. SEE DRAWING NO. 244.9 FOR BIKE LANE DELINEATION, LEGEND, AND SIGNAGE DETAILS.
3. SEE DRAWING NO. 246.6 FOR DETAILS ON THE FORCED TURN LANE.

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NOTES:

1. A SOLID BICYCLE LANE STRIPE SHOULD CONTINUE ACROSS DRIVEWAY ACCESS POINTS.
2. SEE DRAWING NO. 244.9 FOR BIKE LANE LEGEND AND SIGNAGE DETAILS.
NOTES:
1. SEE DRAWING NUMBER 244.9 FOR BIKE LANE LEGEND AND SIGNAGE DETAILS.
2. USE 2 FOOT LONG SKIP LINE, 8 FEET ON CENTER, FOR LOCATIONS WITH BUS STOPS. FOR TYPICAL BUS STOP, TRANSITION FROM SOLID LINE TO SKIP LINE FOR 150 FEET CENTERED ON BUS STOP.
**NOTES:**

1. THE MINIMUM LENGTH OF STORAGE LINE IS 250 FT. ON ARTERIALS AND 150 FT. ON ALL OTHERS.
2. A MINIMUM OF 2@ R3-7R OR R3-7L SIGNS SHALL BE INSTALLED IN ADVANCE OF THE INTERSECTION AT DISTANCES APPROVED BY THE ENGINEER. RECOMMENDED LOCATIONS ARE SHOWN ABOVE.
3. ONE SET OF PAVEMENT MARKINGS CONTAINING ONE ARROW SYMBOL AND ONE "ONLY" SYMBOL SHALL BE PLACED AT THE BEGINNING OF THE DROP LANE.
4. WHERE ADDITIONAL MOTORIST GUIDANCE IS DEEMED NECESSARY BY THE ENGINEER, ADDITIONAL ARROW AND "ONLY" SYMBOL PAVEMENT MARKINGS AND OVERHEAD MOUNTED R3-5 SIGNS MAY BE INSTALLED. SYMBOLS SHALL BE APPROVED TYPE II PAVEMENT MARKING FILM.
5. APPROVED TYPE I PAVEMENT MARKING FILM OR RAISED PAVEMENT MARKERS MAY BE USED FOR ADDITIONAL GUIDANCE AT THE DISCRETION OF THE ENGINEER.
6. STORAGE LANE LINE AND SKIP LINES SHALL BE APPROVED TYPE I PAVEMENT MARKING FILM OR IF APPROVED BY THE ENGINEER, RAISED PAVEMENT MARKERS MAY BE USED.

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**FORCED LEFT TURN LANE**

**FORCED RIGHT TURN LANE**

**SPECIFICATION REFERENCE**

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**STANDARD PAVEMENT MARKERS**

**FORCED TURN LANE**

**DATE 07-01-16** **DWG. NO. 246.6**
1. LENGTH OF STORAGE LANE LINE IS TWO THIRDS OF THE TURN LANE STORAGE LENGTH.
2. WHERE ADDITIONAL MOTORIST GUIDANCE IS DEEMED NECESSARY BY THE ENGINEER, INSTALL ARROW SYMBOL PAVEMENT MARKINGS FOR THE LENGTH OF THE STORAGE LINE.
3. PAVEMENT MARKINGS SHALL BE TYPE I TAPE OR PAINT AS DIRECTED BY THE ENGINEER.
4. INSTALL "NO PARKING" SIGNS FOR ENTIRE LENGTH OF TURN LANE. WHERE ADDITIONAL MOTORIST GUIDANCE IS DEEMED NECESSARY BY THE ENGINEER, INSTALL R3-7R SIGNS.
NOTES:

1. THE MINIMUM LENGTH OF DOTTED LINES IS 150' FT. ON MAJOR/MAJOR INTERSECTION.

2. A MINIMUM OF 1@ R3-7R AND R3-BE; 1 @ USD 246.10 SIGNS SHALL BE INSTALLED IN ADVANCE OF THE INTERSECTION AT DISTANCES APPROVED BY THE ENGINEER. RECOMMENDED LOCATIONS ARE SHOWN ABOVE.

3. DOTTED WHITE LINES SHALL NOT BE RAISED PAVEMENT MARKERS.

Effective 05/21/2020 to 10/07/2020
NOTES:

1. THE MINIMUM LENGTH OF DOTTED LINES TO BE 100 FT.

2. A MINIMUM OF 1 @ R3-7R AND R3-BE; 1 @ USD 246.10 SIGNS SHALL BE INSTALLED IN ADVANCE OF THE INTERSECTION AT DISTANCES APPROVED BY THE ENGINEER. RECOMMENDED LOCATIONS ARE SHOWN.

3. DOTTED WHITE LINES SHALL NOT BE RAISED PAVEMENT MARKERS.
SIGN NUMBER: SP-1
WIDTH: 30"
HEIGHT: 42"
BORDER WIDTH: 0.75"
BORDER RADII: 1.875"
BACKGROUND COLOR: WHITE
LEGEND & BORDER COLOR: BLACK

Effective 05/21/2020 to 10/07/2020
NOTES:
1. LENGTH OF STORAGE LINE IS TWO THIRDS OF THE ADDED TURN BAY. (MIN. 100')
2. WHERE ADDITIONAL MOTORIST GUIDANCE IS DEEMED NECESSARY BY THE ENGINEER, INSTALL R3-7R SIGN AND ARROW SYMBOL PAVEMENT MARKINGS FOR THE LENGTH OF THE STORAGE LINE. SYMBOLS SHALL BE APPROVED TYPE II PAVEMENT MARKING FILM.
3. APPROVED TYPE II PAVEMENT MARKING FILM OR RAISED PAVEMENT MARKERS MAY BE USED FOR ADDITIONAL GUIDANCE AT THE DISCRETION OF THE ENGINEER.
4. STORAGE LANE LINE SHALL BE APPROVED TYPE I PAVEMENT MARKING FILM OR IF APPROVED BY THE ENGINEER, RAISED PAVEMENT MARKERS MAY BE USED.
**Lane Marker Schedule**

<table>
<thead>
<tr>
<th>Type</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type A</td>
<td>Circular White Ceramic Marker</td>
</tr>
<tr>
<td>Type B</td>
<td>Circular Yellow Ceramic Marker</td>
</tr>
<tr>
<td>Type C</td>
<td>Two Way Yellow Reflector</td>
</tr>
<tr>
<td>Type D</td>
<td>One Way Yellow Reflector, Yellow toward oncoming traffic</td>
</tr>
<tr>
<td>Type E</td>
<td>One Way White Reflector, White toward oncoming traffic</td>
</tr>
<tr>
<td>Type F</td>
<td>Two Way White and Red Reflector, White toward oncoming traffic</td>
</tr>
</tbody>
</table>

**Agency Approved**

Effective 05/21/2020 to 10/07/2020
**SPACING TABLE**

<table>
<thead>
<tr>
<th>&quot;W&quot;</th>
<th>NUMBER OR REFLECTORS PER MEDIAN NOSE *</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0' TO 2.0'</td>
<td>3</td>
</tr>
<tr>
<td>2.0' TO 3.0'</td>
<td>4</td>
</tr>
<tr>
<td>3.0' TO 4.0'</td>
<td>5</td>
</tr>
<tr>
<td>4.0' &amp; GREATER</td>
<td>1 EACH FOR EVERY 1.0' OF CURB LENGTH</td>
</tr>
</tbody>
</table>


**NOTES:**

1. ENTIRE MEDIAN SHALL BE PAINTED WITH REFLECTIVE PAINT, OF SAME COLOR AS REFLECTIVE MARKERS, FROM THE MEDIAN NOSE BACK 5 FEET OR TO THE P.C., WHICHERVER IS GREATER.
2. REFLECTIVE PAVEMENT MARKERS USED ON MEDIAN SHALL CONFORM TO STANDARD DRAWING NO. 247.
3. ORIENTATION OF THE REFLECTIVE MARKERS FACES SHALL BE MADE IN THE FIELD TO ENSURE THAT MARKERS ARE AIMED AT APPROACHING VEHICLES TO BEST ADVANTAGE, ESPECIALLY IN HORIZONTALLY CURVED ROAD SECTIONS.
1. All components shall be minimum 12 GA. square post with 7/16" punched thru holes @ 1" on center, on all four sides. Anchors shall be two piece breakaway anchors.

2. Attach anchor and sleeve together prior to driving into ground. Leave at least two holes, but no more than three holes above ground or above sidewalk.

3. For sidewalk installation, drill sidewalk and concrete pad installation, drill a 3" to 4" dia. hole (dependent upon anchor size), the center to be 6" from the back of sidewalk.

4. Attach post to anchoring system by using at least two 3/8" dia. drive rivets.

5. Provide 4" minimum lap between bottom of post and the bottom of the anchor/sleeve assembly.

6. Signs larger than 24"x30" require 3/8" x 1-1/2" fender washers under drive rivets.

7. "U-channel" posts are not acceptable.

8. Bolts in lieu of drive rivets are not acceptable.

9. All urban sign installations are to be installed in a concrete sidewalk, or in a concrete pad (24"x24"x4") when no sidewalk exists.

10. Installation of signs shall meet latest ADA requirements.

11. Signs shall have a sticker at the back with the name of the contractor and the date of installation.
NOTES:

1. ALL COMPONENTS SHALL BE SQUARE POST, PERFORATED ON ALL FOUR SIDES.

2. ATTACH ANCHOR AND SLEEVE TOGETHER PRIOR TO DRIVING INTO GROUND. LEAVE AT LEAST ONE HOLE, BUT NO MORE THAN TWO, ABOVE GROUND OR ABOVE SIDEWALK.

3. FOR SIDEWALK INSTALLATION, DRILL SIDEWALK WITH A 3" HOLE, THE CENTER TO BE 6" FROM BACK OF SIDEWALK.

4. ATTACH POST TO ANCHORING SYSTEM BY USING AT LEAST TWO 3/8" DIA. DRIVE RIVETS.

5. PROVIDE 4" MINIMUM LAP BETWEEN POST AND THE ANCHOR/SLEEVE ASSEMBLY.

6. ALL STREET NAME SIGNS SHALL BE 9 INCH STANDARD IN THE CITY OF MESQUITE ONLY.

Effective 05/21/2020 to 10/07/2020
12" (MAJOR STREETS)

9" (MINOR STREETS)

NOTES:
1. SIGN SHALL BE WHITE LETTERS AND NUMBERS ON GREEN BACKGROUND. (THE CITY OF NORTH LAS VEGAS BACKGROUND IS BLUE.) CUT-OUT LETTERS AND NUMBERS ARE NOT ACCEPTABLE (EXCEPT FOR THE BLOCK NUMBER).
2. REFLECTIVE SHEETING MATERIAL SHALL BE TYPE XI.
3. PRIMARY COPY FOR 9" AND 12" SIGNS SHALL BE 6" SERIES 'C' UPPERCASE WITH 4 1/2" SERIES 'C' LOWERCASE; HOWEVER, WHEN DESCENDERS ARE REQUIRED ON 9" SIGNS, PRIMARY COPY SHALL BE 5 1/2". ORDINAL, SUFFIX AND BLOCK NUMBER SHALL BE 3" SERIES 'C' UPPERCASE. (ORDINAL MAY BE OMITTED FROM 12" SIGNS, EXCEPT IN CLARK COUNTY.) SPACING BETWEEN LETTERS SHALL BE AS ON SHEET 2 OF THIS DRAWING.
4. THE SIGN SHALL HAVE A MINIMUM LENGTH OF 30". WHERE EXTRA LENGTH IS REQUIRED, IT SHALL BE PROVIDED IN 6" INCREMENTS. GROUND MOUNTED SIGNS SHALL HAVE A MAXIMUM LENGTH OF 42".
5. BOTH SIGNS PLACED ON MAJOR STREETS WITH RIGHTS-OF-WAY 80' OR GREATER SHALL HAVE A HEIGHT OF 12"; SIGNS PLACED ON MINOR STREETS WITH RIGHTS-OF-WAY OF LESS THAN 80' SHALL HAVE A HEIGHT OF 9".
6. 12" SIGNS SHALL HAVE A 1/2" WHITE BORDER AT THE EDGE.
7. SIGN BLANKS SHALL HAVE ROUNDED CORNERS.

<table>
<thead>
<tr>
<th>SPECIFICATION REFERENCE</th>
<th>STREET NAME SIGNS</th>
</tr>
</thead>
<tbody>
<tr>
<td>631</td>
<td></td>
</tr>
<tr>
<td>716</td>
<td>SIGN MATERIALS</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>AGENCY APPROVED</th>
<th>B</th>
<th>C</th>
<th>H</th>
<th>L</th>
<th>M</th>
<th>N</th>
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<table>
<thead>
<tr>
<th>UNIFORM STANDARD DRAWINGS</th>
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<tr>
<td>CLARK COUNTY AREA</td>
</tr>
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<table>
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<tr>
<th>STREET NAME SIGNS</th>
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<tbody>
<tr>
<td>FACE COPY</td>
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<table>
<thead>
<tr>
<th>DATE</th>
<th>DWG. NO.</th>
<th>SHEET</th>
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<tbody>
<tr>
<td>07/01/12</td>
<td>250</td>
<td>1 OF 2</td>
</tr>
</tbody>
</table>
### SPACING OF STREET NAME SIGN LEGENDS

Spacing for street name sign legends shall be obtained by modification to the requirements of the FHWA standard spacing chart for 6" uppercase letters. The following steps shall be used to determine required spacing:

1. **Sign layout computer software shall be evaluated to determine the "correction factor" necessary for layout software letter spacing to be approximately equal to the FHWA standard spacing for uppercase letters.**
2. **Correction factor shall be used to adjust the spacing for the lowercase letters.**
3. **Spacing for street name sign legends shall be equal to 110% of the "corrected" layout software letter spacing.**

(Same steps are to be followed when font size of legend is reduced in order not to exceed the maximum length limitations.)

If legend spaced according to recommended procedure above exceeds the maximum allowable sign length (42" for ground-mounted), the following actions, listed in priority order, shall be taken to reduce length of the signblank:

A. **Reduce the font to 5 1/2" Series 'C'.**
B. **Reduce the spacing to 100% of the "Federal Standard".**
C. **Reduce the font to 5 1/2" Series "B".**
D. **Consider abbreviating any legend words which are extremely common (i.e., "MTN" for "MOUNTAIN") such abbreviations must be approved by the traffic engineer and the fire department.**
E. **Reduce the leading and trailing blank green space by 50%.**
F. **Construct the sign according to the standard spacing which will be greater than 42" in length, and mount on a streetlight pole or other elevated mount as approved by the traffic engineer with appropriate sign bracing and mounting hardware.**

<table>
<thead>
<tr>
<th>SPECIFICATION REFERENCE</th>
<th>UNIFORM STANDARD DRAWINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>631 STREET NAME SIGNS</td>
<td>CLARK COUNTY AREA</td>
</tr>
<tr>
<td>716 SIGN MATERIALS</td>
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</tr>
</tbody>
</table>

**Agency Approved**

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<tr>
<th>B</th>
<th>C</th>
<th>H</th>
<th>L</th>
<th>M</th>
<th>N</th>
</tr>
</thead>
</table>

**Effective 05/21/2020 to 10/07/2020**

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 dated **6-12-97**

**DWG. NO. 250**

**Sheet 2 of 2**
STREET NAME SIGNS

SIGN MATERIALS

5052-H38 OR 6061-T6, HEAT-TREATED, HIGH TENSILE, DEGREASED AND ALODINE 1200 FINISH. THICKNESS TO BE 0.080" FOR SIGNS LESS THAN 36" AND LONGER, 0.100" FOR SIGNS 36" AND LONGER.

NOTE:

1. FOR SIGN FACE SPECIFICATIONS SEE STANDARD DRAWING NO. 250.

AGENCY APPROVED

Effective 05/21/2020 to 10/07/2020

STREET NAME SIGN BLANKS

<table>
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</thead>
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<td>CLARK COUNTY AREA</td>
</tr>
<tr>
<td>716 SIGN MATERIALS</td>
<td></td>
</tr>
</tbody>
</table>

DATE 6-8-06 DWG. NO. 251
1. FENCING SHALL BE CHAIN LINK AND SHALL CONSIST OF GALVANIZED CHAIN LINK FABRIC ON STEEL POSTS.
   (A) ALL POSTS TOPS SHALL BE FITTED WITH SUITABLE FINIALS.
   (B) BRACES SHALL BE SPACED APPROXIMATELY 12" BELOW TOP OF TERMINAL POSTS AND SHALL EXTEND FROM END, GATE, OR CORNER POSTS TO FIRST ADJACENT LINE POST.
   (C) ALL FITTINGS SHALL BE HOT-DIPPED GALVANIZED MALLEABLE, CAST IRON, OR PRESS STEEL.
   (D) TOP AND BOTTOM SELVAGES OF THE FENCE SHALL HAVE A TWISTED AND BARBED FINISH.

2. BARBED WIRE, EXTENSION ARMS, AND TOP HORIZONTAL RAILS SHALL BE INSTALLED ONLY WHEN SHOWN ON THE PLANS AND/OR CALLED FOR IN THE SPECIAL PROVISIONS.

### TABLE I

FOR CHAIN LINK FENCE 72" AND LESS

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>MIN. SIZE</th>
<th>MIN. WEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>END, CORNER &amp; PULL</td>
<td>2.351 O.D.</td>
<td>3.10</td>
</tr>
<tr>
<td>LINE</td>
<td>2.00 O.D.</td>
<td>2.72</td>
</tr>
<tr>
<td>BRACES</td>
<td>1.630 O.D.</td>
<td>2.27</td>
</tr>
<tr>
<td>TOP RAIL</td>
<td>1.630 O.D.</td>
<td>2.27</td>
</tr>
</tbody>
</table>

### NOTES:

- POST TOP 10' MAX.
- POST TOP CORNER OR END POST 10' MAX.
- REINFORCING TENSION WIRE (TOP RAIL OPTIONAL)
- HORIZONAL BRACE
- FITTING
- CONCRETE GROUND LINE CROWN FOR DRAINAGE
- FENCE DIA. 9" REV. 4'-6" 4'-0" 3'-0" 2'-0"
- GALV. CHAIN LINK, 2" MESH 11 GA.
- STRETCHER BAR FASTENER
- REINFORCING TENSION WIRE (72 INCH HIGH OR LESS)
- BARB WIRE (IF SPECIFIED) 2 STRAND, 12 GA., 4 PT.
- EXTENSION ARM & BARBED WIRE

---

Effective 05/21/2020 to 10/07/2020
**CHAIN LINK GATES**

**SINGLE GATE**

- Gate Swing Post Dia.
- Frame Members Typical (2" O.D. @ 2.72 # / ft.)
- Concrete Max. 10'
- Steel Drop Bar (1/2"")
- Chain Link Fabric
- Fabric Band

**DOUBLE SWING GATE**

- Gate Swing Post Dia.
- Top Hinge (90° Swing)
- Bottom Hinge (90° Swing)
- Concrete Max. 3' - 0"
- Chain Link Fabric
- Fabric Band

**GATE SWING POST DIA.**

<table>
<thead>
<tr>
<th>GATE SIZE</th>
<th>PIPE DIA.</th>
</tr>
</thead>
<tbody>
<tr>
<td>6' AND LESS</td>
<td>3&quot; O.D. - 5.79 lbs./ft.</td>
</tr>
<tr>
<td>6' - 10'</td>
<td>4&quot; O.D. - 9.10 lbs./ft.</td>
</tr>
</tbody>
</table>

**AGENCY APPROVED**

<table>
<thead>
<tr>
<th>AGENCY APPROVED</th>
<th>B</th>
<th>C</th>
<th>H</th>
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<th>M</th>
<th>N</th>
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**SPECIFICATION REFERENCE**

<table>
<thead>
<tr>
<th>501</th>
<th>CONCRETE</th>
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<tbody>
<tr>
<td>616</td>
<td>FENCING</td>
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**UNIFORM STANDARD DRAWINGS**

**CLARK COUNTY AREA**

**DATE 12-14-00**

**DWG. NO. 253**
TYPICAL MARKING
CURB RAMP IN
MIDDLE OF
CURB RETURN

48" MIN.

3' MIN.

CURB LINE
PROJECTED (TYP.)

NOTE:
USE MARKING PER
OPTIONAL DETAIL IF
NECESSARY TO OBTAIN
3' MINIMUM CLEARANCE
BETWEEN CROSSWALK
AND CURB LINE
PROJECTED.

TYPICAL MARKING
CURB RAMP
ADJOINING
CURB RETURN

48" MIN.
TYPICAL CROSSWALK

STRIPING DETAIL

<table>
<thead>
<tr>
<th>MEDIAN ISLAND (AS APPLICABLE)</th>
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</thead>
<tbody>
<tr>
<td>2' TYP</td>
</tr>
<tr>
<td>5' TYP</td>
</tr>
<tr>
<td>3' MIN</td>
</tr>
</tbody>
</table>

| LANE LINES                    |
| 4' MIN                        |
| 2' TYP                        |

| 2' WIDE BARS TO BE CENTERED BETWEEN LANE LINES AND ON LANE LINES (TYP) |

<table>
<thead>
<tr>
<th>SPECIFICATION REFERENCE</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>UNIFORM STANDARD DRAWINGS</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>CLARK COUNTY AREA</th>
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</table>

| CROSSWALK MARKINGS - TYPE I |

<table>
<thead>
<tr>
<th>AGENCY APPROVED</th>
<th>B</th>
<th>C</th>
<th>H</th>
<th>L</th>
<th>M</th>
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<tbody>
<tr>
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<table>
<thead>
<tr>
<th>DATE</th>
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<tr>
<td>11-12-09</td>
<td>254</td>
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<th>EFFECTIVE DATES</th>
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<tbody>
<tr>
<td>05/21/2020 TO 10/07/2020</td>
</tr>
</tbody>
</table>
SHARED USE PATH
7-10-03

NOTES:
1. 12 FOOT WIDTH IS RECOMMENDED. 10 FOOT WIDTH IS ALLOWABLE ALONG A PATH PARALLEL TO A ROADWAY OR WHERE SPACE IS LIMITED. PAVEMENT AND BASE DEPTH WILL VARY BASED ON SOIL CONDITIONS. PORTLAND CEMENT CONCRETE (PCC) MAY BE USED INSTEAD OF ASPHALT AND PCC MAY BE REQUIRED BY THE LOCAL JURISDICTION.
2. SEE DRAWING NUMBER 255 FOR SHARED USE PATH NOT ALONG A ROADWAY.
3. SEE THE GUIDE FOR THE DEVELOPMENT OF BICYCLE FACILITIES, ASSHTO 1999, AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR ADDITIONAL GUIDELINES AND STANDARDS.
4. SEE LOCAL JURISDICTIONS FOR LANDSCAPING REQUIREMENTS.
5. 3 FOOT LATERAL CLEARANCE RECOMMENDED BETWEEN EDGE OF PATH AND A FIXED OBJECT, 2 FOOT MINIMUM.
6. IF 16 FEET IS NOT AVAILABLE FROM THE BACK OF CURB TO THE RIGHT-OF-WAY LINE, A BICYCLE LANE/ROUTE AND THE SIDEWALK WILL SUBSTITUTE FOR THE PATH. PLACE A PATH ENDS SIGN (W9) 25 FEET IN ADVANCE OF THE PATH ENDING.

AGENCY APPROVED

<table>
<thead>
<tr>
<th>SPECIFICATION REFERENCE</th>
<th>UNIFORM STANDARD DRAWINGS</th>
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<tbody>
<tr>
<td>628 PAINTING TRAFFIC STRIPING</td>
<td>CLARK COUNTY AREA</td>
</tr>
<tr>
<td>633 PAVEMENT MARKERS</td>
<td></td>
</tr>
</tbody>
</table>

SHARED USE PATH
ALONG A ROADWAY

DATE 7-10-03 DWG. NO. 255.1
NOTES:
1. USE ENGINEERING JUDGEMENT TO APPLY THIS DETAIL TO SIMILAR SCENARIOS.
2. SEE DRAWING NO. 235, CASE III, FOR SIDEWALK RAMP DETAILS.
## SIGN SIZES FOR SHARED-USE PATHS

<table>
<thead>
<tr>
<th>MUTCD CODE</th>
<th>SIGN</th>
<th>MINIMUM SIGN SIZE (IN)</th>
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<tbody>
<tr>
<td>R1-1</td>
<td>STOP</td>
<td>18 X 18</td>
</tr>
<tr>
<td>R1-2</td>
<td>YIELD</td>
<td>24 X 24 X 24</td>
</tr>
<tr>
<td>R3-16, 16A, 17, 17A</td>
<td>BICYCLE LANE</td>
<td>24 X 30</td>
</tr>
<tr>
<td>R4-1, 2, 3, 7</td>
<td>MOVEMENT RESTRICTION</td>
<td>12 X 18</td>
</tr>
<tr>
<td>R4-4</td>
<td>BEGIN RIGHT TURN LANE YIELD TO BIKES</td>
<td>36 X 30</td>
</tr>
<tr>
<td>R5-3</td>
<td>NO MOTOR VEHICLES</td>
<td>24 X 24</td>
</tr>
<tr>
<td>R5-6</td>
<td>BICYCLE PROHIBITION</td>
<td>24 X 24</td>
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<tr>
<td>R7-9, 9A</td>
<td>NO PARKING BIKE LANE</td>
<td>12 X 18</td>
</tr>
<tr>
<td>R9-3A</td>
<td>PEDESTRIANS PROHIBITED</td>
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<td>R9-5, 6</td>
<td>BICYCLE REGULATORY</td>
<td>12 X 18</td>
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<td>R9-7</td>
<td>SHARED-USE PATH RESTRICTION</td>
<td>12 X 18</td>
</tr>
<tr>
<td>R15-1</td>
<td>RAILROAD CROSSBUCK</td>
<td>24 X 4.5</td>
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<tr>
<td>W1-1, 2, 3, 4, 5</td>
<td>TURN AND CURVE WARNING</td>
<td>18 X 18</td>
</tr>
<tr>
<td>W1-6, 7</td>
<td>ARROW WARNING</td>
<td>24 X 12</td>
</tr>
<tr>
<td>W2-1, 2, 3, 4, 5</td>
<td>INTERSECTION WARNING</td>
<td>18 X 18</td>
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<tr>
<td>W3-1A, 2A, 3</td>
<td>STOP, YIELD, SIGNAL AHEAD</td>
<td>18 X 18</td>
</tr>
<tr>
<td>W5-2A</td>
<td>ROAD NARROWS</td>
<td>18 X 18</td>
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<td>W5-4</td>
<td>BIKEWAY NARROWS</td>
<td>18 X 18</td>
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<tr>
<td>W7-5</td>
<td>HILL SIGN</td>
<td>18 X 18</td>
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<tr>
<td>W8-1, 2</td>
<td>BUMP OR DIP</td>
<td>18 X 18</td>
</tr>
<tr>
<td>W8-10</td>
<td>BICYCLE SURFACE CONDITION</td>
<td>18 X 18</td>
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<tr>
<td>W10-1</td>
<td>ADVANCE GRADE CROSSING</td>
<td>18 DIA</td>
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<tr>
<td>W11-1</td>
<td>BICYCLE CROSSING</td>
<td>18 X 18</td>
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<td>W12-2</td>
<td>LOW CLEARANCE</td>
<td>18 X 18</td>
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<tr>
<td>W16-1</td>
<td>SHARE THE ROAD PLAQUE</td>
<td>24 X 30</td>
</tr>
<tr>
<td>D1-1</td>
<td>SUPPLEMENTAL BIKE ROUTE PLAQUE</td>
<td>24 X 6</td>
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<tr>
<td>D4-3</td>
<td>BICYCLE PARKING</td>
<td>12 X 18</td>
</tr>
<tr>
<td>D11-1</td>
<td>BIKE ROUTE</td>
<td>24 X 18</td>
</tr>
<tr>
<td>M1-8</td>
<td>BIKE ROUTE MARKER</td>
<td>12 X 18</td>
</tr>
<tr>
<td>M1-9</td>
<td>BIKE ROUTE MARKER</td>
<td>18 X 24</td>
</tr>
<tr>
<td>M4-11, 12, 13</td>
<td>SUPPLEMENTAL BICYCLE ROUTE GUIDE</td>
<td>12 X 4</td>
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<tr>
<td>M7-1, 2, 3, 4, 5, 6, 7</td>
<td>ROUTE MARKER SUPPLEMENTAL PLAQUES</td>
<td>12 X 9</td>
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</tbody>
</table>

**NOTES:**
1. SIGN TABLE INSERTED FROM MUTCD FOR REFERENCE. SEE CURRENT MUTCD FOR UPDATED INFORMATION.
2. SIGNS R3-16(A), R3-17(A), R4-4, W5-2A, AND W16-1 NOT USED FOR SHARED USE PATHS.

<table>
<thead>
<tr>
<th>AGENCY APPROVED</th>
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<th>M</th>
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<tr>
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<tr>
<td>628 PAINTING TRAFFIC STRIPING</td>
<td>SIGN SIZES FOR SHARED USE PATH</td>
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</tr>
<tr>
<td>633 PAVEMENT MARKERS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**DATE 7-10-03**  **DWG. NO. 255.3**
**NOTES**

1. USE BOLLARDS ONLY AT LOCATIONS WHERE UNAUTHORIZED ACCESS IS ANTICIPATED. INSTALL EITHER 1 OR 3 (5 FT. SPACING DESIRABLE, 4 FT. CLEAR SPACING MINIMUM) SIX-INCH DIAMETER BY 3 FT. TALL REFLECTORIZED BOLLARDS WHEN NECESSARY. CENTERLINE DELINEATION SHOULD BE PROVIDED AT APPROACH TO INTERSECTION EVEN WHEN BOLLARD IS NOT PROVIDED.

2. ANY OBSTRUCTION IN PATH SHOULD BE REMOVED. IF OBSTRUCTION CANNOT BE REMOVED, OBSTRUCTION MUST BE REFLECTORIZED.

3. USE CENTERLINE DELINEATION AT APPROACHES TO INTERSECTIONS AND AROUND OBSTRUCTIONS IN ALL CASES. ONLY USE CENTERLINE DELINEATION IN OTHER CASES WHERE CONFLICTS BETWEEN USERS TRAVELING IN OPPOSITE DIRECTIONS ARE ANTICIPATED.

<table>
<thead>
<tr>
<th>SPECIFICATION REFERENCE</th>
<th>UNIFORM STANDARD DRAWINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>628 TRAFFIC STRIPING</td>
<td>CLARK COUNTY AREA</td>
</tr>
<tr>
<td>633 PAVEMENT MARKERS</td>
<td>DELINEATION AND BOLLARD USAGE</td>
</tr>
<tr>
<td></td>
<td>ON SHARED USE PATH</td>
</tr>
</tbody>
</table>

**DATE 03-12-20**

**DWG. NO. 255.4**
NOTES:
1. 12 FOOT WIDTH IS RECOMMENDED. 10 FOOT WIDTH IS ALLOWABLE ALONG A PATH PARALLEL TO A ROADWAY OR WHERE SPACE IS LIMITED. PAVEMENT AND BASE DEPTH WILL VARY BASED ON SOIL CONDITIONS. PORTLAND CEMENT CONCRETE MAY BE USED INSTEAD OF ASPHALT.
2. SEE DRAWING NUMBER 255.1 FOR SHARED USE PATH ALONG A ROADWAY.
3. SEE THE GUIDE FOR THE DEVELOPMENT OF BICYCLE FACILITIES, AASHTO 1999, AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR ADDITIONAL GUIDELINES AND STANDARDS.
4. SEE LOCAL JURISDICTIONS FOR LANDSCAPING REQUIREMENTS.
NOTES:

1. USE ENGINEERING JUDGEMENT TO APPLY THIS DETAIL TO SIMILAR SCENARIOS.
2. CONTACT AGENCY’S TRAFFIC ENGINEER TO VERIFY IF AGENCY PREFERS TO USE A W11-1 (BICYCLE) SIGN IN PLACE OF THE W11-2 SIGN.

SPECIFICATION REFERENCE

<table>
<thead>
<tr>
<th>SPECIFICATION REFERENCE</th>
<th>UNIFORM STANDARD DRAWINGS</th>
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</thead>
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<tr>
<td>628 PAINTING TRAFFIC STRIPING</td>
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</tr>
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</table>

AGENCY APPROVED | B | C | H | L | M | N

DATE 7-10-03 | DWG. NO. 256

Effective 05/21/2020 to 10/07/2020
1. INSTALL STREETLIGHT STANDARDS AT INTERSECTIONS INCLUDING "L" AND "T" TYPES, PER STANDARD DRAWINGS 301 THROUGH 310 IN ACCORDANCE WITH THE APPROPRIATE RIGHT-OF-WAY.

2. STREET CLASSIFICATION AND STREETLIGHT STANDARD APPLICATION SHALL BE AS LISTED IN TABLE 1 BELOW. ACTUAL LUMINAIRE WATTAGE AND/OR STREETLIGHT STANDARD SPACING MAY BE VARIED BY THE ENGINEER, WHEN SUPPORTED BY AN APPROVED LIGHTING STUDY IN ACCORDANCE WITH THE IES RECOMMENDED PRACTICE FOR ROADWAY LIGHTING IN ORDER TO MEET CURRENT AND FUTURE TRAFFIC CONTROL NEEDS AND APPROVED BY THE RESPECTIVE AGENCY. AVERAGE LEVELS ARE MAINTAINED LEVELS AT A 0.8 MAINTENANCE FACTOR (0.82 FOR CLARK COUNTY) IN FOOTCANDLES MEASURED HORIZONTALLY AT THE SURFACE.

<table>
<thead>
<tr>
<th>CLASSIFICATION</th>
<th>R/W</th>
<th>LUMINAIRE (H.P.S.)</th>
<th>AVG. IES LIGHTING LEVEL</th>
<th>IES UNIFORMITY AVG/MIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARTERIAL</td>
<td>100' OR MORE</td>
<td>250W</td>
<td>1.58 FC</td>
<td>3:1</td>
</tr>
<tr>
<td>MAJOR COLLECTOR</td>
<td>80'</td>
<td>150W 250W (CC)</td>
<td>0.84 FC</td>
<td>4:1</td>
</tr>
<tr>
<td>MINOR COLLECTOR</td>
<td>60'</td>
<td>150W 100W (CC)</td>
<td>0.38 FC</td>
<td>6:1</td>
</tr>
<tr>
<td>RESIDENTIAL</td>
<td>51' OR LESS</td>
<td>100W</td>
<td>0.38 FC</td>
<td>6:1</td>
</tr>
</tbody>
</table>

3. NEW STREETLIGHT STANDARDS INSTALLED ADJACENT TO OR OPPOSITE FROM EXISTING STREETLIGHTS SHALL MATCH THE EXISTING LOCATION, SPACING, POLE AND LUMINAIRE TYPES UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

4. STREETLIGHT STANDARDS INSTALLED ON 60' OR LESS RIGHT-OF-WAYS MAY BE INSTALLED ON EITHER SIDE OF ROADWAY AS DIRECTED BY THE ENGINEER.

5. TRAFFIC SIGNAL FOUNDATIONS AND ADAPTOR PLATES MAY BE REQUIRED AT INTERSECTIONS AS DIRECTED BY THE ENGINEER.

6. AT LEAST ONE STREETLIGHT SHALL BE REQUIRED IN THE BULB SECTION OF A CUL-DE-SAC OR HAMMERHEAD. LOCATION SHALL BE AS REQUIRED BY THE ENGINEER.
1. INSTALL STREETLIGHT STANDARDS AT INTERSECTIONS INCLUDING "L" AND "T" TYPES, PER STANDARD DRAWINGS 301 THROUGH 310 IN ACCORDANCE WITH THE APPROPRIATE RIGHT-OF-WAY.

2. STREET CLASSIFICATION AND STREETLIGHT STANDARD APPLICATION SHALL BE AS LISTED IN TABLE 1 BELOW. ACTUAL LUMINAIRE WATTAGE AND/OR STREETLIGHT STANDARD SPACING MAY BE VARIED BY THE ENGINEER, WHEN SUPPORTED BY AN APPROVED LIGHTING STUDY IN ACCORDANCE WITH THE IES RECOMMENDED PRACTICE FOR ROADWAY LIGHTING IN ORDER TO MEET CURRENT AND FUTURE TRAFFIC CONTROL NEEDS AND APPROVED BY THE RESPECTIVE AGENCY. AVERAGE LEVELS ARE MAINTAINED LEVELS AT A 0.8 MAINTENANCE FACTOR IN FOOTCANDLES MEASURED HORIZONTALLY AT THE SURFACE.

<table>
<thead>
<tr>
<th>CLASSIFICATION</th>
<th>RW</th>
<th>LUMINAIRE (INDUCTION)</th>
<th>AVG PHOTOPI ILLUMINANCE</th>
<th>UNIFORMITY AVG/MIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIGNALIZED INTERSECTIONS</td>
<td>ALL</td>
<td>250W 5000K CCT</td>
<td>1.80 FC</td>
<td>3:1</td>
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<tr>
<td>ARTERIAL</td>
<td>100' OR MORE</td>
<td>150W 5000K CCT</td>
<td>1.24 FC</td>
<td>3:1</td>
</tr>
<tr>
<td>MAJOR COLLECTOR</td>
<td>80'</td>
<td>150W 5000K CCT</td>
<td>0.49 FC</td>
<td>4:1</td>
</tr>
<tr>
<td>MINOR COLLECTOR</td>
<td>60'</td>
<td>55W 850K CCT</td>
<td>0.17 FC</td>
<td>6:1</td>
</tr>
<tr>
<td>RESIDENTIAL</td>
<td>51' OR LESS</td>
<td>55W 850K CCT</td>
<td>0.17 FC</td>
<td>6:1</td>
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</tbody>
</table>

3. NEW STREETLIGHT STANDARDS INSTALLED ADJACENT TO OR OPPOSITE FROM EXISTING STREETLIGHTS SHALL MATCH THE EXISTING LOCATION, SPACING, POLE AND LUMINAIRE TYPES UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

4. STREETLIGHT STANDARDS INSTALLED ON 60' OR LESS RIGHT-OF-WAYS MAY BE INSTALLED ON EITHER SIDE OF ROADWAY AS DIRECTED BY THE ENGINEER.

5. TRAFFIC SIGNAL FOUNDATIONS AND ADAPTOR PLATES MAY BE REQUIRED AT INTERSECTIONS AS DIRECTED BY THE ENGINEER.

6. AT LEAST ONE STREETLIGHT SHALL BE REQUIRED IN THE BULB SECTION OF A CUL-DE-SAC OR HAMMERHEAD. LOCATION SHALL BE AS REQUIRED BY THE ENGINEER.

7. LUMINARE SPECIFICATIONS (MINIMUM VALUES)
   - 80% LIGHT OUTPUT @ 80,000 HR LIFE
   - SCOTOPIC/PHOTOPIC RATIO OF LIGHT SOURCE 1.8
   - HIGH COLOR RENDITIONS 80 CRI
   - 10 YEAR WARRANTY ON LUMINAIRE AND BALLAST

<table>
<thead>
<tr>
<th>SPECIFICATION REFERENCE</th>
<th>UNIFORM STANDARD DRAWINGS CLARK COUNTY AREA</th>
<th>SUPPLEMENTAL DRAWING</th>
</tr>
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<tr>
<td>623</td>
<td>TRAFFIC SIGNALS &amp; STREETLIGHTING</td>
<td>STREETLIGHT LOCATION</td>
</tr>
<tr>
<td></td>
<td></td>
<td>INDUCTION LIGHTING STANDARDS AND GENERAL NOTES</td>
</tr>
<tr>
<td></td>
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<table>
<thead>
<tr>
<th>AGENCY APPROVED</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>07/01/13</td>
<td>300.S2</td>
</tr>
</tbody>
</table>
1. INSTALL STREETLIGHT STANDARDS AT INTERSECTIONS INCLUDING "L" AND "T" TYPES, PER STANDARD DRAWINGS 301 THROUGH 310 IN ACCORDANCE WITH THE APPROPRIATE RIGHT-OF-WAY.

2. STREET CLASSIFICATION, THE RESPECTIVE LIGHTING LEVELS, AND STREETLIGHT STANDARD APPLICATION IS LISTED IN TABLE 1 BELOW. ACTUAL LUMINAIRE WATTAGE AND/OR STREETLIGHT STANDARD SPACING MAY BE VARY BY THE ENGINEER, WHEN SUPPORTED BY AN APPROVED LIGHTING STUDY IN ACCORDANCE WITH THE IES RECOMMENDED PRACTICE FOR ROADWAY LIGHTING IN ORDER TO MEET CURRENT AND FUTURE TRAFFIC CONTROL NEEDS AND APPROVED BY THE RESPECTIVE AGENCY. FOR LED FIXTURES, E AVERAGE LEVELS ARE MAINTAINED LEVELS AT A 0.92 MAINTENANCE FACTOR IN FOOTCANDLES MEASURED HORIZONTALLY AT GROUND LEVEL.

3. NEW STREETLIGHT STANDARDS INSTALLED ADJACENT TO OR OPPOSITE FROM EXISTING STREETLIGHTS SHALL MATCH THE EXISTING LOCATION, SPACING, POLE AND LUMINAIRE TYPES UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

4. STREETLIGHT STANDARDS INSTALLED ON 60' OR LESS RIGHT-OF-WAYS MAY BE INSTALLED ON EITHER SIDE OF ROADWAY AS DIRECTED BY THE ENGINEER.

5. TRAFFIC SIGNAL FOUNDATIONS AND ADAPTOR PLATES MAY BE REQUIRED AT INTERSECTIONS AS DIRECTED BY ENGINEER.

6. AT LEAST ONE STREETLIGHT SHALL BE REQUIRED IN THE BULB SECTION OF A CUL-DE-SAC OR HAMMERHEAD. LOCATION SHALL BE AS REQUIRED BY THE ENGINEER.

7. FOR A SPECIFIC FIXTURE TO BE APPROVED, AN INDEPENDENT EVALUATION WITH THE AGI32 LIGHTING MODELING SOFTWARE PROGRAM (OR OTHER SOFTWARE APPROVED BY THE AGENCY) SHALL BE SUBMITTED FOR REVIEW BY THE AGENCY. THE IES PHOTOMETRIC FILE SHALL BE LOADED INTO THE MODEL AND ALL REQUISITE INPUTS SHALL CONFORM TO THE LOCATION, HEIGHT, AND OTHER ASSOCIATED FACTORS DESIGNATED IN DRAWINGS 301 THROUGH 310 IN ACCORDANCE WITH THE APPROPRIATE RIGHT-OF-WAY.

---

**TABLE 1**

**REQUIRED ILLUMINANCE VALUES FOR ROADWAYS**

<table>
<thead>
<tr>
<th>ROADWAY CLASS</th>
<th>R.O.W. WIDTHS</th>
<th>ROADWAY LIGHTING ILLUMINANCE LEVELS</th>
<th>SIDEWALK / WALKWAY ILLUMINANCE LIGHTING LEVELS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>MIN. AVG.</td>
<td>UNIFORMITY AVG./MIN.</td>
</tr>
<tr>
<td>ARTERIAL</td>
<td>100' OR GREATER</td>
<td>1.58 FC</td>
<td>3:1</td>
</tr>
<tr>
<td>MAJOR COLLECTOR</td>
<td>80' TO 99'</td>
<td>0.84 FC</td>
<td>4:1</td>
</tr>
<tr>
<td>MINOR COLLECTOR</td>
<td>60' TO 79'</td>
<td>0.38 FC</td>
<td>6:1</td>
</tr>
<tr>
<td>RESIDENTIAL</td>
<td>51' OR LESS</td>
<td>0.38 FC</td>
<td>6:1</td>
</tr>
</tbody>
</table>

---

AGENCY APPROVED

<table>
<thead>
<tr>
<th>SPECIFICATION REFERENCE</th>
<th>UNIFORM STANDARD DRAWINGS</th>
<th>CLARK COUNTY AREA</th>
</tr>
</thead>
<tbody>
<tr>
<td>623</td>
<td>TRAFFIC SIGNALS &amp; STREETLIGHTING</td>
<td></td>
</tr>
</tbody>
</table>

SUPPLEMENTAL DRAWING

<table>
<thead>
<tr>
<th>STREETLIGHT LOCATION</th>
<th>L.E.D. LIGHTING STANDARDS AND GENERAL NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>DATE 07-01-14</td>
<td>DWG. NO. 300.S3</td>
</tr>
</tbody>
</table>
8. For each fixture assessed, upon demonstration of the adequate illumination capability through the computer model on the specific roadway type, the vendor shall deliver the requested number of luminaires of that type for further agency evaluation. They will be evaluated on the criteria noted in the following section, though the agency may include additional requirements. Final approval and acceptance of the respective luminaires for a specific application shall be at the sole discretion of the purchasing agency.

9. The following list represents the criteria upon which each luminaire shall be evaluated. The agency may include additional items for evaluation at its sole discretion.

- Color rendering index
- Energy efficiency
- Aesthetics
- Quality of construction
- Weatherproofing
- IP65 rating
- Durability
- Ease of maintenance
- Ease of installation
- Weight
- Power consumption
- Color temperature (CCT)
- Life of fixture and individual components
- Length of warranty luminaire fixture, LED's, and ballast
- Initial cost
- Life cycle cost
- LM 79, LM 80
- Bug rating (backlighting, uplighting, glare)
- Transient voltage surge suppression - SPD (surge protection device)

### Table 2

#### Required Illuminance Values for Signalized Intersections

<table>
<thead>
<tr>
<th>Roadway Class</th>
<th>R.O.W. Widths</th>
<th>Min. Ave. Illuminance</th>
<th>Sidewalk/Walkway Lighting Levels</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>High</td>
<td>Medium</td>
</tr>
<tr>
<td>Arterial / Arterial</td>
<td>100' or greater by 100' or greater by</td>
<td>3.4 FC</td>
<td>2.6 FC</td>
</tr>
<tr>
<td>Arterial / Major Collector</td>
<td>100' or greater by 80' or greater by</td>
<td>2.9 FC</td>
<td>2.2 FC</td>
</tr>
<tr>
<td>Arterial / Minor Collector - Residential</td>
<td>100' or greater by 79' or less</td>
<td>2.6 FC</td>
<td>2.0 FC</td>
</tr>
<tr>
<td>Major Collector / Major Collector</td>
<td>80' - 99' by 80' - 99'</td>
<td>2.4 FC</td>
<td>1.8 FC</td>
</tr>
<tr>
<td>Major Collector / Residential</td>
<td>80' - 99' by 79' or less</td>
<td>2.1 FC</td>
<td>1.6 FC</td>
</tr>
</tbody>
</table>

### Uniform Standard Drawings

**Clark County Area**

**Supplemental Drawing**

**Streetlight Location**

**L.E.D. Lighting Standards**

**And General Notes**

SPECIFICATION REFERENCE

623  TRAFFIC SIGNALS & STREETLIGHTING

Effective 05/21/2020 to 10/07/2020
NOTES:
1. SEE GENERAL NOTES STANDARD DRAWING NO. 300.
2. AN APPROVED LIGHTING STUDY PER NOTE 2, STANDARD DRAWING NO. 300, IS REQUIRED FOR RIGHT-OF-WAY GREATER THAN 100 FEET.
3. CITY OF HENDERSON AND BOULDER CITY REQUIRE STREETLIGHTING IN THE MEDIAN FOR RIGHTS-OF-WAY 100 FEET OR GREATER. SEE STANDARD DRAWING NO. 312.S2. IN THE ABSENCE OF A MEDIAN, STREETLIGHT LOCATION SHALL BE THE SAME AS THE OTHER ENTITIES.

<table>
<thead>
<tr>
<th>POLE LOCATION TABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>KEYED NOTE</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>INTERSECTION LUMINAIRE TYPE</td>
</tr>
</tbody>
</table>

SPECIFICATION REFERENCE
623 TRAFFIC SIGNALS & STREETLIGHTING

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

SUPPLEMENTAL DRAWING
STREETLIGHT LOCATIONS AT INTERSECTIONS 100’ OR GREATER/100’ OR GREATER RIGHT-OF-WAY

DATE 07-01-13 DWG. NO. 301.S1 PAGE NO.
NOTES:
1. SEE GENERAL NOTES STANDARD DRAWING NO. 300.
2. AN APPROVED LIGHTING STUDY PER NOTE 2, STANDARD DRAWING NO. 300, IS REQUIRED FOR RIGHT-OF-WAY GREATER THAN 100 FEET.
3. WITH THE ENGINEER'S APPROVAL, A SECOND LUMINAIRE MOUNTING PLATE MAY BE FIELD WELDED BY A CERTIFIED WELDER.
4. ALL LUMINAIRE MAST ARMS FOR 400W FIXTURES SHALL BE 15 FT. LONG AND INSTALLED PER STANDARD DRAWING NO. 808 UNLESS OTHERWISE SPECIFIED BY THE ENGINEER.

<table>
<thead>
<tr>
<th>POLE LOCATION TABLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>KEYED NOTE</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
</tbody>
</table>

PROFESSIONAL ELECTRICAL ENGINEER STAMP ON FILE

AGENCY APPROVED

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

SUPPLEMENTAL DRAWING

STREETLIGHT LOCATIONS AT INTERSECTIONS
100 FT. OR GREATER/100 FT. OR GREATER RIGHT-OF-WAY

DATE 07-01-13  DWG. NO. 301.S2
### NOTES:
1. SEE GENERAL NOTES STANDARD DRAWING NO. 300.
2. AN APPROVED LIGHTING STUDY PER NOTE 2, STANDARD DRAWING NO. 300, IS REQUIRED FOR RIGHT-OF-WAY GREATER THAN 100 FEET.
3. CITY OF HENDERSON AND BOULDER CITY REQUIRE STREETLIGHTING IN THE MEDIAN FOR RIGHTS-OF-WAY 100 FEET OR GREATER. SEE STANDARD DRAWING NO. 312. IN THE ABSENCE OF A MEDIAN, STREETLIGHT LOCATION SHALL BE THE SAME AS THE OTHER ENTITIES.

### POLE LOCATION TABLE

<table>
<thead>
<tr>
<th>KEYED NOTE</th>
<th>ENTITY</th>
<th>CLV</th>
<th>NLV</th>
<th>MES</th>
<th>BC</th>
<th>HND</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>160'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>140'</td>
</tr>
<tr>
<td>2</td>
<td>80'</td>
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<td></td>
<td></td>
<td>70'</td>
</tr>
<tr>
<td>3</td>
<td>(SEE DRAWING NO. 320)</td>
<td>(SEE DRAWING NO. 320)</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>4</td>
<td>170'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>140'</td>
</tr>
<tr>
<td>5</td>
<td>85'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>70'</td>
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</tbody>
</table>

INTERSECTION LUMINAIRE TYPE
400W HPS 150W IND

---

**SPECIFICATION REFERENCE**

| 623 | TRAFFIC SIGNALS & STREETLIGHTING |

**UNIFORM STANDARD DRAWINGS**

**CLARK COUNTY AREA**

**SUPPLEMENTAL DRAWING**

**STREETLIGHT LOCATIONS AT INTERSECTIONS**

100' OR GREATER/80' RIGHT-OF-WAY

**AGENCY APPROVED**

Effective 05/21/2020 to 10/07/2020
NOTES:
1. SEE GENERAL NOTES STANDARD DRAWING NO. 300.
2. AN APPROVED LIGHTING STUDY PER NOTE 2, STANDARD DRAWING NO. 300, IS REQUIRED FOR RIGHT-OF-WAY GREATER THAN 100 FEET.
3. ALL LUMINAIRE MAST ARMS FOR 400W FIXTURES SHALL BE 15 FT. LONG AND INSTALLED PER STANDARD DRAWING NO. 808 UNLESS OTHERWISE APPROVED BY THE ENGINEER.

POLE LOCATION TABLE

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<tr>
<th>KEYED NOTE</th>
<th>ENTITY</th>
<th>DISTANCE</th>
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</tr>
<tr>
<td>2</td>
<td>60'</td>
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</tr>
<tr>
<td>3</td>
<td>(SEE DRAWING NO. 320)</td>
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</tr>
<tr>
<td>4</td>
<td>170'</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>85'</td>
<td></td>
</tr>
</tbody>
</table>

AGENCY APPROVED: [Signature]

SPECIFICATION REFERENCE

623 TRAFFIC SIGNALS & STREETLIGHTING

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

SUPPLEMENTAL DRAWING

STREETLIGHT LOCATIONS AT INTERSECTIONS
100' OR GREATER/80' RIGHT-OF-WAY

DATE 07-01-13  DWG. NO. 302.S2  PAGE NO.
NOTES:
1. SEE GENERAL NOTES STANDARD DRAWING NO. 300.

2. AN APPROVED LIGHTING STUDY PER NOTE 2, STANDARD DRAWING NO. 300 IS REQUIRED FOR RIGHT-OF-WAY GREATER THAN 100 FEET.

3. CITY OF HENDERSON AND BOULDER CITY REQUIRE STREETLIGHTING IN THE MEDIAN IN THE ABSENCE OF A MEDIAN, STREETLIGHT LOCATION SHALL BE THE SAME AS THE OTHER ENTITIES.

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

SPECIFICATION REFERENCE
623 TRAFFIC SIGNALS & STREETLIGHTING

AGENCY APPROVED

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

SUPPLEMENTAL DRAWING

STREETLIGHT LOCATIONS AT INTERSECTIONS 100' OR GREATER/60' RIGHT-OF-WAY

DATE 07-01-13  DWG. NO. 303.S1

POLE LOCATION TABLE

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<tr>
<th>KEYED NOTE</th>
<th>ENTITY</th>
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<th>B/C</th>
<th>HND</th>
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<td>140'</td>
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<tr>
<td>2</td>
<td>80'</td>
<td>70'</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td>12'</td>
<td>12'</td>
<td></td>
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<td>90'</td>
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</table>

INTERSECTION LUMINAIRE TYPE

| 250W HPS | 150W IND |
NOTES:
1. SEE GENERAL NOTES STANDARD DRAWING NO. 300.
2. AN APPROVED LIGHTING STUDY PER NOTE 2, STANDARD DRAWING NO. 300 IS REQUIRED FOR RIGHT-OF-WAY GREATER THAN 100 FEET.
3. IF INTERSECTION IS SIGNALIZED, 400 WATT LUMINAIRES SHALL BE INSTALLED ON ALL CORNERS AND DUAL ARM CONFIGURATION SHALL BE USED FOR 100 FT. RIGHT-OF-WAY SIMILAR TO STANDARD DRAWING NO. 302.S2.

POLE LOCATION TABLE

<table>
<thead>
<tr>
<th>KEYED NOTE</th>
<th>ENTRY</th>
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</table>
NOTES:
1. SEE GENERAL NOTES STANDARD DRAWING NO. 300.
2. AN APPROVED LIGHTING STUDY PER NOTE 2, STANDARD DRAWING NO. 300 IS REQUIRED FOR RIGHT-OF-WAY GREATER THAN 100 FEET. ADEQUATE INTERSECTION LIGHTING SHALL ALSO BE ADDRESSED IN THE LIGHTING STUDY.
3. CITY OF HENDERSON AND BOULDER CITY REQUIRE STREETLIGHTING IN THE MEDIAN FOR RIGHTS-OF-WAY 100 FEET OR GREATER. SEE STANDARD DRAWING NO. 312.S2. IN THE ABSENCE OF A MEDIAN, STREETLIGHT LOCATION SHALL BE THE SAME AS THE OTHER ENTITIES.

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<tr>
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<th>NLV</th>
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INTERSECTION LUMINAIRE TYPE
250W HPS
150W IND

SPECIFICATION REFERENCE
623 TRAFFIC SIGNALS & STREETLIGHTING

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

SUPPLEMENTAL DRAWING

STREETLIGHT LOCATIONS AT INTERSECTIONS
100' OR GREATER/51' OR LESS
RIGHT-OF-WAY

DATE 07-01-13  DWG. NO. 304.S1
NOTES:
1. SEE GENERAL NOTES STANDARD DRAWING NO. 300.
2. AN APPROVED LIGHTING STUDY PER NOTE 2, STANDARD DRAWING NO. 300 IS REQUIRED FOR RIGHT-OF-WAY GREATER THAN 100 FEET. ADEQUATE INTERSECTION LIGHTING SHALL ALSO BE ADDRESSED IN THE LIGHTING STUDY.
3. IF INTERSECTION IS SIGNALIZED, 400 WATT LUMINAIRES SHALL BE INSTALLED ON ALL CORNERS AND DUAL ARM CONFIGURATION SHALL BE USED FOR 100 FT. RIGHT-OF-WAY SIMILAR TO STANDARD DRAWING NO. 302.S2.

POLE LOCATION TABLE

<table>
<thead>
<tr>
<th>KEYED NOTE</th>
<th>ENTITY</th>
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AGENCY APPROVED

SPECIFICATION REFERENCE

623 TRAFFIC SIGNALS & STREETLIGHTING

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

SUPPLEMENTAL DRAWING

STREETLIGHT LOCATIONS AT INTERSECTIONS
100' OR GREATER/51' OR LESS
RIGHT-OF-WAY

DATE 07-01-13 DWG. NO. 304.S2
NOTE:
SEE GENERAL NOTES STANDARD DRAWING NO. 300.

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INTERSECTION LUMINAIRE TYPE
250W HPS
150W IND

AGENCY APPROVED

SPECIFICATION REFERENCE
623 TRAFFIC SIGNALS & STREETLIGHTING

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

SUPPLEMENTAL DRAWING

STREETLIGHT LOCATIONS AT INTERSECTIONS
80'/80' RIGHT-OF-WAY

DATE 07-01-13

Effective 05/21/2020 to 10/07/2020
POLE LOCATION TABLE

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NOTE:
SEE GENERAL NOTES STANDARD DRAWING NO. 300.
NOTE:
SEE GENERAL NOTES STANDARD DRAWING NO. 300.

POLE LOCATION TABLE

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INTERSECTION LUMINAIRE TYPE
150W HPS
150W IND

AGENCY APPROVED

SPECIFICATION REFERENCE
623 TRAFFIC SIGNALS & STREETLIGHTING

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

SUPPLEMENTAL DRAWING

STREETLIGHT LOCATIONS AT INTERSECTIONS
80'/60' RIGHT-OF-WAY

DATE 07-01-13
DWG. NO. 306.S1
NOTE:
1. SEE GENERAL NOTES STANDARD DRAWING NO. 300.
2. IF THE INTERSECTION IS SIGNALIZED, 400 WATT LUMINAIRE SHALL BE INSTALLED ON ALL CORNERS.

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NOTE:
SEE GENERAL NOTES STANDARD DRAWING NO. 300.

POLE LOCATION TABLE

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INTERSECTION LUMINAIRE TYPE
150W HPS
150W IND

AGENCY APPROVED
B H L M N

SPECIFICATION REFERENCE
623 TRAFFIC SIGNALS & STREETLIGHTING

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

SUPPLEMENTAL DRAWING

STREETLIGHT LOCATIONS AT INTERSECTIONS
80'/51' OR LESS RIGHT-OF-WAY

DATE 07-01-13 DWG. NO. 307.S1
NOTE:
1. SEE GENERAL NOTES STANDARD DRAWING NO. 300.
2. IF INTERSECTION IS SIGNALIZED, 400 WATT LUMINAIRES SHALL BE INSTALLED ON ALL CORNERS.
NOTE:

SEE STANDARD DRAWING NO. 300 FOR LUMINAIRE TYPE.

**POLE LOCATION TABLE**

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### POLE LOCATION TABLE

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**NOTE:**
SEE STANDARD DRAWING NO. 300 FOR LUMINAIRE TYPE.
NOTE:
SEE GENERAL NOTES STANDARD DRAWING NO. 300.

POLE LOCATION TABLE

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NOTES:
1. SEE STANDARD DRAWING NO. 300 FOR LUMINAIRE TYPE.
NOTES:
1. SEE STANDARD DRAWING NO. 300 FOR LUMINAIRE TYPE.
2. AN APPROVED LIGHTING STUDY PER NOTE 2, STANDARD DRAWING NO. 300, IS REQUIRED FOR RIGHT-OF-WAY GREATER THAN 100 FEET.

<table>
<thead>
<tr>
<th>KEYED NOTE</th>
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SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

STREETLIGHT STANDARDS
(MAXIMUM SPACING
(80 FT. OR GREATER RIGHT-OF-WAY))
NOTES:
1. SEE STANDARD DRAWING NO. 300 FOR LUMINAIRE TYPE.
2. AN APPROVED LIGHTING STUDY PER NOTE 2, STANDARD DRAWING NO. 300, IS REQUIRED FOR RIGHT-OF-WAY GREATER THAN 100 FEET.

* DISTANCE LISTED INDICATES MAXIMUM SPACING. LIGHTING STANDARDS SHALL BE EQUIDISTANT AFTER LOCATING THE END OF ISLAND POLES.

<table>
<thead>
<tr>
<th>KEYED NOTE</th>
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<th>BC</th>
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POLE LOCATION TABLE

SUPPLEMENTAL DRAWING

STREETLIGHT LOCATIONS ON TRAFFIC ISLANDS
100' OR GREATER RIGHT-OF-WAY
NOTES:
1. SEE STANDARD DRAWING NO. 300 FOR LUMINAIRE TYPE.
2. AN APPROVED LIGHTING STUDY PER NOTE 2, STANDARD DRAWING NO. 300, IS REQUIRED FOR RIGHT-OF-WAY GREATER THAN 100 FEET.
3. STREET LIGHTING IN THE MEDIAN IS ALLOWED FOR MEDIAN WIDTHS OF 10 FEET OR GREATER.

* DISTANCE LISTED INDICATES MAXIMUM SPACING. LIGHTING STANDARDS SHALL BE EQUIDISTANT AFTER LOCATING THE END OF ISLAND POLES.

### POLE LOCATION TABLE

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**Effective 05/21/2020 to 10/07/2020**
1. ALL STREETLIGHT STANDARDS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE PROVISIONS OF THE STANDARD SPECIFICATIONS AND AS INDICATED ON THESE DRAWINGS.

2. ALL COMPONENTS OF THE STREETLIGHT STANDARD INCLUDING THE POLE, ARM, HANDHOLE COVER, BASE COVER AND THE POLE CAP SHALL BE FERROUS METAL AND HOT-DIP GALVANIZED AFTER CONSTRUCTION IN ACCORDANCE WITH ASTM A123; ALUMINUM OR ALUMINUM ALLOY IS NOT ACCEPTABLE. FLAWS IN THE APPEARANCE OF THESE GALVANIZED COMPONENTS (i.e. "TIGER-STRIPED," "ZEBRA-STRIPED"), SHALL BE CAUSE FOR REJECTION. NON-METALLIC TYPE BASE COVERS MAY BE ACCEPTABLE AND SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. CONCRETE POLES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

3. ALL FASTENING HARDWARE SHALL BE NON-CORROSIVE, CADMIUM-PLATED, OR EQUAL, APPROVED BY THE ENGINEER. FASTENERS SHALL BE OF THE SIZE AND CONFIGURATION NOTED ON THE DRAWINGS.

4. CONCRETE POLE FOUNDATIONS SHOULD BE POURED AGAINST UNDISTURBED, NATURAL SOIL OR IF FORMING MATERIAL IS USED IT SHALL BE STRIPPED AWAY FROM THE FOUNDATION AT LEAST ONE (1) FOOT BELOW FINISHED GRADE.

5. POLES SHALL BE INSTALLED ON CONCRETE FOUNDATIONS WITH ANCHOR BOLTS. EACH BOLT SHALL BE INSTALLED WITH TWO (2) HEX NUTS AND TWO (2) FLAT WASHERS. EXCEPT FOR "H" AND "L" FOUNDATIONS, THE ANCHOR BOLTS SHALL BE 1" X 36" X 4" FOR ELEVEN (11) GAGE POLES AND 1 1/8" X 40" X 4" FOR SEVEN (7) GAGE POLES. THE ANCHOR BOLTS, NUTS AND WASHERS SHALL BE HOT-DIP GALVANIZED. THE POLE SHALL BE PLUMBED PRIOR TO PLACING THE GROUT OR CONCRETE CAP. USE OF GROUT OR CONCRETE FOR CAP SHALL BE DESIGNATED BY ENTITY ENGINEER. SHIMS OR WEDGES OF ANY KIND ARE NOT ACCEPTABLE TO PLUMB THE POLE AFTER THE CAP HAS BEEN PLACED.

6. ALL UNDERGROUND CONDUIT INSTALLED SHALL HAVE RED, CONTINUOUS MARKING TAPE INSTALLED IN THE TRENCH AT 12" BELOW FINISHED GRADE.

7. WHERE SIGNALS AND STANDARDS ARE INSTALLED UNDER OVERHEAD POWER LINES, CLEARANCES SHALL BE PER NATIONAL ELECTRICAL SAFETY CODE SECTION 234 REQUIREMENTS. INSTALL STRAIGHT ARM STREETLIGHT ASSEMBLIES WHERE ADDITIONAL CLEARANCE IS REQUIRED.
NOTES:
1. SEE GENERAL NOTES STANDARD DRAWING NO. 313.
2. SEE STANDARD DRAWING NO. 319 FOR DETAIL OF POLE BASE.
3. SEE STANDARD DRAWING NO. 318 FOR DETAIL OF POLE CAP.

AGENCY APPROVED

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<tr>
<td>623</td>
<td>STREETLIGHT STANDARD</td>
</tr>
<tr>
<td>715</td>
<td>WITH 2 INCH PIPE ARM</td>
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</tbody>
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</table>

R 15" CAP

SIMPLEX POLE

PIPE ARM

5' x 2" PIPE TENON

31'-9" LUMINAIRE MOUNTING HEIGHT

11 GA. MIN. TYP.

30'-0" ROUND TAPERED STEEL SHAFT PER UNIFORM STANDARD SPECS.

15"

POLE IDENTIFICATION

BASE COVER

HANDBOle
1. SEE GENERAL NOTES STANDARD DRAWING NO. 313.

NOTES:

STEEL STRUCTURES

GALVANIZING

TRAFFIC SIGNALS & STREETLIGHTING

2. SEE STANDARD DRAWING NO. 319 FOR DETAIL OF POLE BASE.

3. SEE STANDARD DRAWING NO. 318 FOR DETAIL OF POLE CAP.

SPECIFICATION REFERENCE

| 506 | STEEL STRUCTURES |
| 623 | TRAFFIC SIGNALS & STREETLIGHTING |
| 715 | GALVANIZING |

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

STREETLIGHT STANDARD
WITH DOUBLE 2 INCH PIPE ARM

AGENCY APPROVED

DATE 12-12-96

DWG. NO. 315
1. SEE GENERAL NOTES STANDARD DRAWING NO. 313.

NOTE:
STEEL STRUCTURES
GALVANIZING
TRAFFIC SIGNALS & STREETLIGHTING

2. SEE STANDARD DRAWING NO. 319 FOR DETAIL OF POLE BASE.

3. SEE STANDARD DRAWING NO. 318 FOR DETAIL OF POLE CAP.

POLE/ARM SCHEDULE

<table>
<thead>
<tr>
<th>POLE GA.</th>
<th>SINGLE ARM</th>
<th>DOUBLE ARM</th>
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<tbody>
<tr>
<td>11 11</td>
<td>8'-0&quot;</td>
<td>32'-0&quot;</td>
</tr>
<tr>
<td>11 11</td>
<td>10'-0&quot;</td>
<td>32'-10&quot;</td>
</tr>
<tr>
<td>11 11</td>
<td>12'-0&quot;</td>
<td>33'-9&quot;</td>
</tr>
<tr>
<td>11 7</td>
<td>15'-0&quot;</td>
<td>34'-3&quot;</td>
</tr>
<tr>
<td>7 7</td>
<td>18'-0&quot;</td>
<td>35'-3&quot;</td>
</tr>
</tbody>
</table>

NOTES:
1. SEE GENERAL NOTES STANDARD DRAWING NO. 313.
2. SEE STANDARD DRAWING NO. 319 FOR DETAIL OF POLE BASE.
3. SEE STANDARD DRAWING NO. 318 FOR DETAIL OF POLE CAP.

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<tr>
<td>715 GALVANIZING</td>
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UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

STREETLIGHT STANDARD
WITH TAPERED MAST ARM

DATE 12-12-96  DWG. NO. 316
1. See General Notes Standard Drawing No. 313.

2. See Standard Drawing No. 319 for detail of pole base.

### General Notes

- **Note:** See general notes, standard drawing no. 313.

### Pole Top and Arm Mounting Details

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<tr>
<th>MAST ARM</th>
<th>A</th>
<th>B</th>
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<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
<tbody>
<tr>
<td>8'-15' INCL.</td>
<td>7-1/2&quot;</td>
<td>5-3/4&quot;</td>
<td>6-3/8&quot;</td>
<td>4-5/8&quot;</td>
<td>7/8&quot;</td>
<td>5&quot;</td>
<td>3-3/8&quot;</td>
</tr>
<tr>
<td>15'-18' INCL.</td>
<td>9&quot;</td>
<td>7&quot;</td>
<td>8&quot;</td>
<td>6&quot;</td>
<td>1&quot;</td>
<td>6&quot;</td>
<td>4&quot;</td>
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</tbody>
</table>

### Pole Arm Details

- **NOTE:**
  - 1/4" Side Gussets
  - 2" Standard Weight, Continuous Radius Pipe Arm
  - Arm Bolt, Beveled Shoulder
  - Pipe Arm

### Tenon Detail

- **NOTE:**
  - Tenon detail
  - MAST ARM AND DETAILS
  - Pipe Arm

### Table of Dimensions

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<th>MAST ARM</th>
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<td>6&quot;</td>
<td>1&quot;</td>
<td>6&quot;</td>
<td>4&quot;</td>
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### Uniform Standard Drawings

- **Agency Approved:** Effective 05/21/2020 to 10/07/2020

### Specification Reference

- **506** STEEL STRUCTURES
- **623** TRAFFIC SIGNALS & STREETLIGHTING
- **715** GALVANIZING

### POLE TOP AND ARM MOUNTING DETAILS

| DATE 12-12-96 | DWG. NO. | 318 |
1. See General Notes Standard Drawing No. 313
2. Handhole shall face away from oncoming traffic.
3. Handhole size for CC and CLV for street light poles shall be 4" x 6" I.D.

**Notes:**

- **Effective 05/21/2020 to 10/07/2020**

---

**Specifications Reference**

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<td>Galvanizing</td>
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**Uniform Standard Drawings**

**Clark County Area**

**Lower Pole Details**

For Pipe and Mast Arm Poles

**Agency Approved**

<table>
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**Date 07-01-17**

**Drawing No. 319**
LIGHTING STANDARD SETBACK FROM BLOCK WALL

ELEVATION

PLAN

Note:
POLE BASE COVERS SHALL BE FURNISHED AND INSTALLED FOR ALL POLES PER THE STANDARD SPECIFICATIONS AND DRAWINGS.

Agency Approved

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DATE 5-13-99 DWG. NO. 320.1
BEHIND CURBSIDE SIDEWALK

BACK PORTION OF CURBSIDE SIDEWALK (NOT FOR NEW CONSTRUCTION)

OPEN AREA OR BETWEEN CURB AND SIDEWALK

NOTES
1. FOUNDATIONS SHALL BE LOCATED OUTSIDE OF THE SIDEWALK WHENEVER FEASIBLE. A CLEARANCE OF 48" SHALL BE MAINTAINED ON PEDESTRIAN ACCESS ROUTE.
2. FOUNDATION CAP SHALL BE CONCRETE OR GROUT AS DESIGNATED BY THE ENTITY ENGINEER.
3. REFER TO STANDARD DRAWING NO. 321 FOR FOUNDATION DETAIL.

SPECIFICATION REFERENCE

501 PORTLAND CEMENT CONCRETE
623 TRAFFIC SIGNALS & STREETLIGHTING

LIGHTING STANDARD SETBACK

DATE 03-12-20 DWG. NO. 320
NOTES
1. SEE GENERAL NOTES STANDARD DRAWING NO. 313.
2. CONTINUOUS BARE COPPER GROUNDING CONDUCTOR SHALL BE LOOPED AROUND ANCHOR BOLTS ONE TIME AND CONNECTED TO EACH ANCHOR BOLT BEFORE CONTINUING DOWN TO THE POLE GROUNDING PLATE.
3. FOUNDATION CAP SHALL BE CONCRETE OR GROUT AS DESIGNATED BY THE ENTITY ENGINEER.

---

PLANNING

1-1/4" PVC CONDUIT

CONCRETE CAP

ANCHOR BASE

1-1/4" PVC CONDUIT

---

SPECIFICATION REFERENCE

| 501 | PORTLAND CEMENT CONCRETE |
| 623 | TRAFFIC SIGNALS & STREETLIGHTING |

LIGHTING STANDARD FOUNDATION

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

DATE 01-09-20  DWG. NO. 321  SHEET 1 OF 2

AGENCY APPROVED

B  C  H  L  M  N  R

Effective 05/21/2020 to 10/07/2020
FOUNDATION DEPTH
11 GA. POLE: 4'-0"
7 GA. POLE: 5'-0"

TOP OF CURB ELEVATION
24" MIN
36" MAX

FOUNDATION 24" SQUARE

TOP OF ANCHOR BOLTS
6 ± 1/2" IN SIDEWALK
7 ± 1/2" IN OPEN AREA

1" TYP. 1" MIN.
2" MIN. TO OPEN AREA GRADE
TAPER CONCRETE CAP TO FINISHED GRADE ALL AROUND

4" MIN. - 6" MAX. CONCRETE CAP
FINISHED GRADE

ANCHOR BASE
BRONZE ANCHOR BOLT GROUNDING CONNECTORS, UL LISTED FOR UNDERGROUND USE (ONE PER BOLT)
SEE NOTE 2

HOT-DIP GALVANIZED ANCHOR BOLT, TYP.

#4 AWG SINGLE-STRAND BARE COPPER GROUNDING CONDUCTOR

(2) 1-1/4" PVC CONDUIT, TYP. (4 TOTAL)

CONCRETE FOUNDATION

15# FELT (2 LAYERS)

POLE GROUNDING PLATE PER NEC 250-83

F4o45 TIES AT 6" SPACING

SECTION
BASE ADAPTOR PLATE
FOR 19 INCH BOLT CIRCLE FOUNDATION

2" HOT-DIP GALV. ANCHOR BOLTS WITH TWO HOT-DIP GALV.
HEX. HD. NUTS & WASHERS PER BOLT (4 REQD.).

1/4" X 4" GUSSETS - 4 REQUIRED

1-1/8" R
2" R
1-3/16" HOLE, 4 REQD.

4.506" + .003" HOLE DIA.

1/4" X 4" GUSSETS

1/4" X 4" GUSSETS

4.496 + .003
PIPE O.D.

1/4" X 4" GUSSETS

1/4" X 4" GUSSETS

1/4" X 4" GUSSETS

1/4" X 4" GUSSETS

1/4" X 4" GUSSETS

2" HOT-DIP GALV. ANCHOR BOLTS WITH TWO HOT-DIP GALV.
HEX. HD. NUTS & WASHERS PER BOLT (4 REQD.).
BASE ADAPTOR PLATE
FOR 16-1/2 INCH BOLT CIRCLE FOUNDATION

**SPECIFICATION REFERENCE**

**UNIFORM STANDARD DRAWINGS**
**CLARK COUNTY AREA**

**BASE ADAPTOR PLATE**

**DATE** 12-12-96  **DWG. NO.** 322

**PIPE O.D.** 1 1/2"  1 1/2"  1 3/16"  4 REQUIRED

**1 3/16" HOLE, 4 REQD.**

**5 3/4"**

**7 3/4"**

**4.496 +/- .003**

**1/4" X 4" GUSSETS - 4 REQUIRED**

**1 3/4" HOT-DIP GALV. ANCHOR BOLTS WITH TWO HOT-DIP GALV. HEX. HD. NUTS & WASHERS PER BOLT (4 REQD.).**

**2 1/2"**

**45°**

**90°**

**4.506 +/- .003 HOLE DIA.**

**2"R**

**3 7/8"**

**5 7/8"**

**8"**

**1 15/16"**

**25/32"**

**5 7/8"**

**8 1/2"**

**1 7/16"**
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<td><strong>TRAFFIC SIGNALS &amp; STREETLIGHTING</strong></td>
<td><strong>BYPASS SWITCH BRACKET FOR POLE MOUNTED STREET LIGHTING SERVICE</strong></td>
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NOTES

1. COVERS INSTALLED IN TRAFFIC AND OPEN AREAS ACCESSIBLE TO TRAFFIC SHALL BE PER STANDARD DRAWING NO. 327.

2. SEE STANDARD DRAWING NO. 323 FOR COVER GROUNDING.

3. TOP OF UTILITY BOXES INSTALLED IN SIDEWALK SHALL HAVE NO VERTICAL SURFACE DISCONTINUITIES GREATER THAN 1/4" WITH ADJACENT SIDEWALK, HAVE NO GAPS GREATER THAN 1/2" REGARDLESS OF CONSTRUCTION TOLERANCES, AND BE FIRM, STABLE, AND SLIP RESISTANT.

SPECIFICATION REFERENCE

503 PRECAST PRESTRESSED CONCRETE MEMBERS

623 TRAFFIC SIGNALS & STREETLIGHTING

PRECAST REINFORCED CONCRETE PULL BOX

DATE 01-09-20 DWG. NO. 326
1. COVER USED IN TRAFFIC AND OPEN AREAS ACCESSIBLE TO TRAFFIC ONLY.
2. TYPICAL NO. 7 PULL BOX COVER SHOWN. SUBMIT OTHERS TO THE ENGINEER FOR APPROVAL.
3. ALL TRAFFIC AND OPEN AREA COVERS SHALL BE H 20 RATED.

NOTES:

- STEEL FLOOR PLATE, 3/8" THICK, ROUND CORNERS TO MATCH EDGES OF PULL BOX
- ACCESS HOLE TO PULL BOX "L" BOLTS
- BEAD WELD INSCRIPTION
- MOUNTING BRACKET, WELDED TO COVER, TYP. LOCATE TO MATCH PULL BOX "L" BOLTS
- 3/8" x 16 COARSE THREAD TAP, CENTERED BETWEEN RIBS. FOR COVER GROUND CONNECTION SEE STANDARD DRAWING NO. 323
NOTES

1. PROVIDE A MINIMUM OF 8” AROUND ALL BOXES. ANY BOX SHALL NOT BE PLACED WITHIN 3'-3" OF FIRE HYDRANTS IN DRIVEWAYS OR DRIVEWAY APRONS. THIS DRAWING IS NOT INTENDED TO LIMIT THE NUMBER OF BOXES BETWEEN DRIVEWAYS TO TWO.

2. FOR WATER SERVICE BOXES, REFER TO UDACS PLATE 1-7.

3. WHEN INSTALLED WITHIN PEDESTRIAN ACCESS ROUTES, TOP OF MANHOLE COVERS SHALL HAVE NO VERTICAL SURFACE DISCONTINUITIES GREATER THAN 1/4” WITH ADJACENT SURFACE, HAVE NO GAPS GREATER THAN 1/2” REGARDLESS OF CONSTRUCTION TOLERANCES, AND BE FIRM, STABLE, AND SLIP RESISTANT.
CONCRETE AROUND PULL BOXES
IN UNDEVELOPED AREAS

AGENCY APPROVED

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

501  PORTLAND CEMENT CONCRETE
505  REINFORCING STEEL
623  TRAFFIC SIGNALS & STREETLIGHTING

CONCRETE COLLAR

#4 REBAR, 2" MIN. 4" MAX FROM EDGE OF BOX

LAP TIED 12" MIN.

CURB

8" MIN. ALL AROUND

GUTTER

GRADE

VARIES

VARIES

UTILITY BOX

CURB

BOX

UTILITY

FROM EDGE OF BOX

8" MIN.

12" MIN.

LAP TIED

#4 REBAR

3"

6"

1"

3"

GRADE

CURB

TYPICAL SECTION

DATE 12-12-96  DWG. NO. 329
NOTE: SURFACE TREATMENT ADJACENT TO FRONT OF PEDESTAL TO BE DETERMINED BY AGENCY.

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</tbody>
</table>

SERVICE PEDESTAL SETBACK AND ORIENTATION

DATE 08-08-19 DWG. NO. 331
NOTES
1. BARE COPPER GROUNDING CONDUCTOR SHALL BE LOOPED AROUND ANCHOR BOLTS ONE TIME AND CONNECTED TO EACH ANCHOR BOLT BEFORE CONTINUING DOWN TO THE GROUNDING PLATE.
2. IN AREAS WHERE R/W PERMITS, THE CONCRETE BASE SHALL BE PLACED AT THE BACK EDGE OF THE SIDEWALK.
3. REFER TO STD. DWG. 331 FOR SERVICE PEDESTAL SETBACK AND ORIENTATION.
4. WIRE SIZES ARE BASED ON UNDERGROUND FEED.
5. WIRE SIZES SHALL BE INCREASED FOR VOLTAGE DROP LIMITATION WHEN RUN IS LONG.
6. PULLBOX LOCATION TO BE DETERMINED BY THE ENGINEER.
7. WHERE FOUNDATION IS INSTALLED IN SIDEWALK, A CLEAR WIDTH OF 48" MIN. SHALL BE MAINTAINED ON SIDEWALK.

AGENCY APPROVED

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

SERVICE PEDESTAL FOUNDATION
STREET LIGHTING AND/OR TRAFFIC SIGNAL

DATE 03-12-20   DWG. NO. 332   SHEET 1 OF 2
PORTLAND CEMENT CONCRETE

TRAFFIC SIGNALS & STREET LIGHTING

SERVICE PEDESTAL FOUNDATION
STREET LIGHTING AND/OR TRAFFIC SIGNAL

PROFESSIONAL ELECTRICAL ENGINEER STAMP ON FILE
TRAFFIC SIGNALS & STREETLIGHTING

623

UL LISTED

PHOTO CONTROL

LIGHTING CONTACTOR 60 AMP., 240 VOLT, 2 POLE WITH 120 VOLT CONTROL

"UL LISTED" NIPPLE OR CHASE NIPPLE WITH LOCK RING AND GROUNDING BUSHING

STAINLESS STEEL BANDING AND BUCKLES

NIPPLE

"UL LISTED" NIPPLE OR CHASE NIPPLE WITH LOCK RING AND GROUNDING BUSHING

POLE GROUNDING POINT

FINISHED GRADE

NOTE:
RECOMMEND LOCATING SERVICE POINT AS CLOSE TO THE CENTER OF THE STREETLIGHTING CIRCUIT AS POSSIBLE.

PROFESSIONAL ELECTRICAL ENGINEER STAMP ON FILE

AGENCY APPROVED

M

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

SUPPLEMENTAL DRAWING

STREET LIGHTING SERVICE POINT LOCATED ON STREETLIGHT STANDARD

DATE 4-13-00  DWG. NO. 333.S1
SERVICE ENTRANCE WEATHERHEAD

2" RIGID GALVANIZED STEEL CONDUIT

2-HOLE PIPE STRAPS SPACED 5 FEET APART

METER SOCKET (PER UTILITY'S REQUIREMENTS) FACE METER AWAY FROM TRAFFIC.

SINGLE PHASE, 3 WIRE, 120/240 VAC CIRCUIT BREAKER LOAD CENTER, MAIN LUGS ONLY, NEMA 3R (RAIN-TIGHT) ENCLOSURE WITH PADLOCKING PROVISIONS, AND A MINIMUM OF EIGHT (8) SINGLE SPACES. BUSSING SHALL BE COPPER. FOR LOAD MAINS AMPERE RATING, AND/OR CIRCUIT BREAKER RATINGS, NUMBER OF POLES AND QUANTITY, SEE PLANS.

NO. 4 AWG GROUNDING CONDUCTOR ENCASED IN 1/2" E.M.T.

EQUIPMENT GROUNDING: MINIMUM OF 20 FEET OF SOLID NO. 4 AWG BARE COPPER WIRE, SPIRAL WRAPPED AROUND POLE WITH A 1/2 INCH PITCH. SEE NOTE 2.

RIGID GALVANIZED STEEL CONDUIT

2-HOLE PIPE STRAPS

2' PVC CONDUIT TO FIRST STREETLIGHT SEE NOTE 1

43" MIN.

PVC TO STEEL CONDUIT ADAPTOR

125 AMP SERVICE: 2" CONDUIT, 2 #1/0 THW AND 1 #4 WHITE THW
200 AMP SERVICE: 2" CONDUIT, 2 250 KCMIL THW AND 1 #1/0 WHITE THW (0.82 DERATE HAS BEEN APPLIED FOR AMBIENT TEMPERATURE)

NOTES:
1. ALL WIRES TO BE COPPER; SEE PLANS FOR QUANTITY AND GAGES.
2. WITH ENGINEER'S APPROVAL, AN 8 FT. BY 5/8 IN. COPPER-CLAD GROUNDING ROD MAY BE USED.
3. ALL CONDUIT FITTINGS TO BE WATER-TIGHT.

Effective 05/21/2020 to 10/07/2020
See Standard Drawing Nos. 336 and 337.

Grounding and bonding conductors omitted for clarity.

200 Amp Service: 2" conduit, 2 #3/0 THW and 1 #2 WHITE THW

125 Amp Service: 2" conduit, 2 #1 THW and 1 #6 WHITE THW

For pole service, wire sizes shall be temperature derated.

Grounding and bonding conductors omitted for clarity, see standard drawing nos. 336 and 337.

Single pole, single throw, on-off, 10 Amp, 125 Vac switch, sealed, with 5 in. leads.
FOR CONDUIT SIZE AND WIRING REQUIREMENTS FOR STREETLIGHT SERVICE, SEE STANDARD DRAWING NO. 332.S2.

GROUNDING AND BONDING CONDUCTORS OMITTED FOR CLARITY, SEE STANDARD DRAWINGS NOS. 336 AND 337.

SINGLE POLE, SINGLE THROW, ON-OFF, 15 AMP, 125 VAC SWITCH, SEALED, WITH 5 IN. LEADS

NOTE:

SERVICE PEDESTAL ASSEMBLY SHALL BE FACTORY ASSEMBLED OR BUILT BY UL LISTED VENDOR.
FOR CONDUIT SIZE AND WIRING REQUIREMENTS FOR STREET LIGHT SERVICE, SEE STANDARD DRAWING NO. 332.S2 FOR LAS VEGAS AND CLARK COUNTY ONLY AND 332.S1 FOR ALL OTHER ENTITIES.

PROFESSIONAL ELECTRICAL ENGINEER STAMP ON FILE

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UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

SYSTEM GROUNDING PLAN
WITH PEDESTAL SERVICE

DATE 2-10-00 DWG. NO. 336
STEEL POLE WITH SERVICE

LIGHTING CONTACTOR

METER SOCKET

LOAD CENTER

NEUTRAL BUS

#4 AWG SINGLE-STRAND BARE COPPER GROUNDING CONDUCTOR, UNBROKEN

BRONZE SPLIT-BOLT CONNECTOR, TYP.

POLE GROUNDING POINT, TYP. SEE STANDARD DRAWING NO. 338

ANCHOR BOLTS (4)

BRONZE GROUNDING CONNECTORS (4) SEE STANDARD DRAWING NO. 321 OR 333.S1

#4 BARE COPPER

GROUNDING PLATE

125 AMP SERVICE: 1 #4 WHITE THW
200 AMP SERVICE: 1 #1/0 WHITE THW

#8 GREEN THWN

#8 GREEN THWN

#8 GREEN THWN

#10 BARE COPPER (PART OF UF CABLE)

METALLIC PULL BOX COVER

EXOTHERMIC WELD OR BOLTED CONNECTION SEE STANDARD DRAWING NO. 323

TO NEXT STANDARD

PROFESSIONAL ELECTRICAL ENGINEER STAMP ON FILE

AGENCY APPROVED

UNIFORM STANDARD DRAWINGS

CLARK COUNTY AREA

SYSTEM GROUNDING PLAN
WITH POLE MOUNTED SERVICE

DATE 8-12-99  DWG. NO. 337
10/2 UF WITH GROUND

#10 BARE COPPER

LOAD SIDE

DOUBLE POLE WATERPROOF FUSE HOLDER ASSEMBLY

LINE SIDE

#10 THW STRANDED

2 #4 THW AND 1 #8 GREEN THWN

POLE SHAFT

1-1/4" PVC CONDUIT

PROFESSIONAL ELECTRICAL ENGINEER STAMP ON FILE

AGENCY APPROVED

B C H L M N

SPECIFICATION REFERENCE

623 TRAFFIC SIGNALS & STREETLIGHTING

UNIFORM STANDARD DRAWINGS

CLARK COUNTY AREA

LIGHTING STANDARD WIRING DIAGRAM, 240 VOLT, TWO WIRE

DATE 12-12-96 DWG. NO. 338
**Traffic Signals & Streetlighting**

- 1-1/4" PVC Conduit
- 1 #8 Green THWN
- 2 #4 THW and 1 #8 Green THWN
- 10/2 UF with Ground, TYP.
- #10 Bare Copper, TYP.
- Load Side, TYP.
- Double Pole Waterproof Fuse Holder Assembly, TYP.
- Line Side, TYP.
- #10 THW Stranded, TYP.
- 2 #4 THW and 1 #8 Green THWN
- Pole Grounding Point
- Pole Shaft
- 1-1/4" PVC Conduit
- 3"

**Specifications**

- Bronze Split-Bolt Connector or Approved Equal Insulated Per Standard Specifications
- #4 AWG Single-Strand Bare Copper Grounding Conductor
- Hex Head Non-Corrosive Cap Screw with Flat Washer
- Bronze Anchor Bolt Grounding Connector UL Listed for Underground Use
- Handhole, Provide Slack in Wires to Extract Fuse Holders and Connections, 18" Min.
- Bare Copper Grounding Conductor

**Uniform Standard Drawings**

- Clark County Area

**Twin Lighting Standard Wiring Diagram, 240 Volt, Two Wire**

**Professional Electrical Engineer Stamp on File**

**Agency Approved**

<table>
<thead>
<tr>
<th>B</th>
<th>C</th>
<th>H</th>
<th>L</th>
<th>M</th>
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**Specification Reference**

623  Traffic Signals & Streetlighting

**Date** 12-12-96  **DWG. No.** 339

Effective 05/21/2020 to 10/07/2020
NOTES
1. ADDITIONAL SPECIFICATIONS PER POLE MANUFACTURER.
2. 8' ARMS SHALL BE USED FOR ROADSIDE INSTALLATIONS ON STREETS WITH LESS THAN 100' RIGHT-OF-WAY, UNLESS OTHERWISE DIRECTED.
3. 10' ARMS SHALL BE USED FOR MEDIAN INSTALLATIONS AND ON ROADSIDES WITH 100' OR GREATER RIGHT-OF-WAY, UNLESS OTHERWISE DIRECTED.
4. PAINT ARMS AND ATTACHMENT HARDWARE SEMIGLOSS BLACK.
5. BANNER ARMS ONLY WHEN SPECIFIED ON THE PLANS.
6. CONSTRUCT FOUNDATION PER US2 343.
7. DESIGN PROFESSIONAL AND CONTRACTOR SHALL VERIFY CITY'S LATEST LED FIXTURE SPECIFICATIONS AND APPROVED FIXTURES PER CLV WEBSITE, PRIOR TO ORDERING MATERIALS. APPROVED FIXTURE LIST IS LOCATED ON CLV WEBSITE, UNDER BUILDING AND SAFETY FORMS.
8. CITY ENGINEER MAY APPROVE EQUAL FIXTURES THAT MEET AESTHETIC AND LIGHT LEVEL REQUIREMENT PER US$ 300.53. LIGHTING STUDY REQUIRED.

CONCRETE POLE (AMERON 681-26 OR STRESSCRETE KM5166/G/E/I-11-FBP-AG). SEE NOTES PER 342.1. (OR APPROVED EQUAL MANUFACTURED PER ASTM C-1088-97 SPECIFICATIONS)
POLE SHALL BE BLACK, EXPOSED AGGREGATE FINISH WITH FULL LENGTH ANTI-GRAFFITI COATING.

HANDHOLE OPENING W/ GROUNDED ALUMINUM COVER PAINTED BLACK SEMIGLOSS (4" X 5-3/8" X 10-1/2" FOR STRESSCRETE POLES; 3-1/2" X 6" X 9-1/2" FOR AMERON POLES). COVERS MUST FACE STREET OR SIDEWALK AND MUST BE (2) SCREW TYPE; (4) SCREW TYPE COVERS WILL NOT BE ACCEPTED.
AMERON NOTES AND SPECIFICATIONS:

<table>
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<tr>
<th>POLE DESIGNATION</th>
<th>POLE HEIGHT ABOVE GRADE</th>
<th>OVERALL POLE LENGTH</th>
<th>BOLT CIRCLE</th>
<th>BASE (O.D.)</th>
<th>ULTIMATE E.I.MOMENT</th>
<th>POLE DIAMETER</th>
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<tr>
<td>681215</td>
<td>101-3/4&quot;</td>
<td>211-1/4&quot;</td>
<td>21&quot;</td>
<td>18&quot;</td>
<td>18,400</td>
<td>1,285</td>
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(*) POLES REQUIRED WHEN WITH 6 & 8" DOUBLE ALUMINUM LAM

SINGLE BELL RECEPTACLE (5/4" T.B.) & TAMPER

PROOF WRENCH (20'-16'-1/8"

NOTES:

1. MIX (1235): BLACK, EXPOSED AGGREGATE FINISH WITH AMERON-HBLED ANTITRAFFIC COATING.

2. FG @ 28 DAYS = 6,000 PSI USING SPUN CYLINDER TEST.

3. FG @ 28 DAYS = 5,000 PSI USING ASTM C-31 CYLINDER TEST.

4. POLES MANUFACTURED PER ASTM C-168-56 SPECIFICATIONS.

5. BASEPLATE ASTM A-36 FULLY PRESTRESSED WITH (8) 1/4" DW, A-416 WIRES (7-STRAND CABLED).

6. PROTECTIVE COAT EXPOSED P.C. WIRES AT POLE ENDS.

7. LAM IS DESIGNED TO ROTATE TO ANY OCTAGONAL PLATS PER CUSTOMERS REQUIREMENTS.

8. POLE SHOWN IS SUITABLE FOR CAPPED BASE PLATE (ENCASED IN CONCRETE), OTHERWISE, OTHER NON-CAPPED INSTALLATION REQUIRED A GALVANIZED BASE PLATE.

9. THE 6 DOUBLE TOP MOUNT ALUMINUM DECORATIVE 5-ARM LIGHT LAM ASSAMBLY (NOT TO EXCEED UP TO 1,740 SQ. FT. EVA, 12 LBS. PER SIDE) DEPICTED ON THIS DRAWING IS DESIGNED TO WITHSTAND THE LOADS IMPARTED BY THE 3G DECAPSULAR LIGHT LUMINARIES (NOT TO EXCEED 1,400 SQ. FT. EVA, 12 LBS. EACH, ONE PER SIDE). THE POLICE IS DESIGNED TO WITHSTAND THE LOADS IMPARTED BY THE TOPO MOUNT LAM, THE (2) LUMINARIES & (2) 18" X 50" SHAVER CENTERED NO HIGHER THAN 1/2" ABOVE GRADE AS DESIGNED PER THE 2009 ASHTE LT-5 IN A 30MPH WIND ZONE (3-SECOND GUSTS). PLEASE ADVISE IF THE INTENDED LOADS EXCEEDS THESE VALUES.

STRESSCRETE NOTES AND SPECIFICATIONS:

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<th>POLE SPECIFICATIONS:</th>
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<tr>
<td>CATALOGUE NO.: KMH24-C-11-FBP C/W 140-25/55</td>
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<tr>
<td>SECTION: OCTAGONAL</td>
</tr>
<tr>
<td>COLOUR: ALUMINUM</td>
</tr>
<tr>
<td>FINISH: ETCHED</td>
</tr>
<tr>
<td>POLE LENGTH: 211-1/4&quot;</td>
</tr>
<tr>
<td>POLE TOP: 7 3/16&quot; FLRL</td>
</tr>
<tr>
<td>POLE BUTT: 18&quot; FLRL</td>
</tr>
<tr>
<td>APPROX. WGT.: 7,000</td>
</tr>
<tr>
<td>QUANTITY: 1</td>
</tr>
<tr>
<td>MIN. RACENRAY: 1.18&quot;</td>
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</table>

ARM SPECIFICATIONS:

| CATALOGUE NO.: KPA33-T-FB15-02 |
| QUANTITY: 1 |
| MATERIAL: ALUMINUM |
| PAINT: SEMIGLOSS BLACK |
| COATINGS REQUIRED: |
| #1 COAT ANTIAGRAFFITI |

FULL LENGTH

AGENCY APPROVED

SPECIFICATION REFERENCE

501 PORTLAND CEMENT CONCRETE

623 TRAFFIC SIGNALS & STREET LIGHTING

CITY OF LAS VEGAS

STREET LIGHT NOTES AND SPECIFICATIONS

(AMERON AND STRESSCRETE)
Effective 05/21/2020 to 10/07/2020

OPTION A: 8' + 8' ARMS (FOR 15'x SIDEWALKS OR FOR MEANDERING SIDEWALKS)

OPTION B: 6' + 8' ARMS (FOR 15'x SIDEWALKS, INCLUDING AMENITY ZONE)

OPTION C: 4' + 8' ARMS (FOR 10'x SIDEWALKS, INCLUDING AMENITY ZONE)

OPTION D: SINGLE 8' ARM (FOR OBSTRUCTED SIDEWALKS)

125V, 15A DUAL-PURPOSE GFI RECEPTACLE ON PEDESTRIAN SIDE, WIRED TO THE 120 VAC CIRCUIT WITH DIE-CAST ALUMINUM WEATHERPROOF COVER PAINTED SEMIGLOSS BLACK (INTERMATIC W*P010M/XD COVER OR APPROVED EQUIVALENT).

FOR STRESCRETE POLES, RECEPTACLE INSET SHALL BE FORMED DURING POLE MANUFACTURE.

FOR AMERON POLES, JUNCTION BOX TO BE MOUNTED AFTER POLE MANUFACTURE (DRILL 1-1/4" HOLE INTO POLE AND INSTALL WEATHER PROOF DEVICE BOX (RED DOT H3-2-LM OR APPROVED EQUIVALENT). CONCRETE POLE (AMERON BB1-21 OR STRESCRETE KMH21-G-411-FSP-AQ), SEE NOTE PER 342.1. (OR APPROVED EQUAL MANUFACTURER PER ASTM C-1088-47 SPECIFICATIONS)

POLE SHALL BE BLACK, EXPOSED AGGREGATE FINISH WITH FULL LENGTH ANTI-GRAFFITI COATING.

HANDHOLE OPENING WITH GROUNDED ALUMINUM COVER PAINTED BLACK SEMIGLOSS (4" X 5-1/8" X 10-3/8" FOR STRESCRETE POLES; 3-1/2" X 5" X 10-1/2" FOR AMERON POLES) COVERS MUST FACE STREET OR SIDEWALK AND MUST BE (2) SCREW TYPE, (4) SCREW TYPE COVERS WILL NOT BE ACCEPTED.

NOTES:
1. ADDITIONAL SPECIFICATIONS PER POLE MANUFACTURER.
2. CONSTRUCT FOUNDATION PER USD 343.
3. BANNER ARMS ONLY WHEN SPECIFIED ON THE PLANS.
4. DESIGN PROFESSIONAL AND CONTRACTOR SHALL VERIFY CITY'S CURRENT LED FIXTURE SPECIFICATIONS AND APPROVED FIXTURES PER CLV WEBSITE PRIOR TO ORDERING MATERIALS. APPROVED FIXTURE LIST IS LOCATED ON CLV WEBSITE, UNDER BUILDING AND SAFETY FORMS.
5. CITY ENGINEER MAY APPROVE EQUAL FIXTURES THAT MEET AESTHETIC AND LIGHT LEVEL REQUIREMENT PER USD 300.53, LIGHTING STUDY REQUIRED.

AGENCY APPROVED

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

CITY OF LAS VEGAS
21' STREET LIGHT POLE
FOR DOWNTOWN CENTENNIAL POLE AREA

DATE 08-09-18    DWG. NO. 342

SPECIFICATION REFERENCE

623 TRAFFIC SIGNALS & STREET LIGHTING
### Foundation Depth

<table>
<thead>
<tr>
<th>Pole &amp; Arm Configuration</th>
<th>Soil Type</th>
<th>Foundation Depth</th>
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</thead>
<tbody>
<tr>
<td>21&quot; Tall with 1 or 2 arms up to 10' each</td>
<td>Sand/Gravel (6-30&quot;, γ = 110pcf)</td>
<td>5'-3&quot;</td>
</tr>
<tr>
<td></td>
<td>Stiff Clay (C = 1.0)</td>
<td>6'-6&quot;</td>
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<tr>
<td></td>
<td>Medium Clay (C = 0.60)</td>
<td>7'-4&quot;</td>
</tr>
<tr>
<td></td>
<td>Soft Clay (C = 0.25)</td>
<td>9'-6&quot;</td>
</tr>
<tr>
<td>26&quot; Tall with 1 arm up to 12' each</td>
<td>Sand/Gravel (6-30&quot;, γ = 110pcf)</td>
<td>5'-9&quot;</td>
</tr>
<tr>
<td></td>
<td>Stiff Clay (C = 1.0)</td>
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<tr>
<td></td>
<td>Medium Clay (C = 0.60)</td>
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<td></td>
<td>Soft Clay (C = 0.25)</td>
<td>8'-6&quot;</td>
</tr>
<tr>
<td>26&quot; Tall with 2 arms up to 12' each</td>
<td>Sand/Gravel (6-30&quot;, γ = 110pcf)</td>
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<td>Medium Clay (C = 0.60)</td>
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<tr>
<td></td>
<td>Soft Clay (C = 0.25)</td>
<td>10'-0&quot;</td>
</tr>
</tbody>
</table>

**Notes:**
1. C = Cohesion measured in kips per square foot.
2. Contractor shall determine soil type by taking undisturbed samples as required by the City Engineer.
3. Analysis by professional structural engineer on file with City Engineer.

### Specification Reference

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>501</td>
<td>Portland Cement Concrete</td>
</tr>
<tr>
<td>623</td>
<td>Traffic Signals &amp; Street Lighting</td>
</tr>
</tbody>
</table>

**Agency Approved**

**Unifom Standard Drawings Clark County Area**

**City of Las Vegas Street Light Pole Foundation for Downtown Centennial and Town Center Areas**

**Date 08-09-18**

**Dwg. No. 343**
MANHOLE NOTES:

1. MANHOLE MATERIALS AND CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF SECTION 609, "CATCH BASINS, MANHOLES AND INLETS" OF THE "STANDARD SPECIFICATIONS".

2. REINFORCING STEEL SHALL BE AS SHOWN, WIRED TIGHTLY AT ALL INTERSECTIONS AND EMBEDDED AT LEAST ONE (1) INCH CLEAR UNLESS OTHERWISE NOTED.

3. EXCAVATION SHALL BE AS NEARLY VERTICAL AS POSSIBLE (SHEET AND SHORE, IF SOIL CONDITIONS REQUIRE), IN EXISTING STREET SECTIONS, ALLEY SECTIONS AND CONFINED AREAS SUCH AS LIMITED EASEMENTS OR ADJACENT TO STRUCTURES. NATURAL ANGLE OF REPOSE WILL ALLOW IN ALL OTHER AREAS.

4. MANHOLE DESIGN FOR PIPE LARGER THAN SIXTY (60) INCHES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

5. MANHOLE DESIGN FOR DEPTHS EXCEEDING EIGHTEEN (18) FEET SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

6. TYPE AND SIZE OF MANHOLE TO BE CONSTRUCTED IN A PARTICULAR LOCATION SHALL BE DETERMINED BY THE PIPE SIZE, ALIGNMENT AND GRADE AS FOLLOWS:

   TYPE I
   
   FORTY-EIGHT (48) INCH SIZE
   A. ALL CASES FOR PIPE EIGHTEEN (18) INCHES AND SMALLER.
   B. TWENTY-FOUR (24) INCHES AND SMALLER PIPE ON TANGENT LINE AND GRADE.
   
   SIXTY (60) INCH SIZE
   A. TWENTY-SEVEN (27) INCH THROUGH THIRTY-SIX (36) INCH PIPE ON TANGENT LINE AND GRADE.
   B. TWENTY-ONE (21) INCH THROUGH TWENTY-SEVEN (27) INCH PIPE AT ANGLE POINTS AND CHANGES IN GRADE OR PIPE SIZE.

   TYPE I-A
   
   USED IN PLACE OF TYPE I WHEN COVER ABOVE CONDUIT IS LIMITED, AND WHEN APPROVED BY THE ENGINEER.

   TYPE II
   
   FORTY-EIGHT (48) INCH SIZE
   A. THIRTY (30) INCH THROUGH SIXTY (60) INCH PIPE ON TANGENT LINE WITH A CHANGE IN GRADE OR PIPE SIZE.
MANHOLE NOTES (CONTINUED):

TYPE III

TANGENT
SIXTY (60) INCH SIZE
A. THIRTY- Nine (39) INCH THROUGH SIXTY (60) INCH PIPE ON TANGENT LINE AND GRADE WITH NO CHANGE IN PIPE SIZE.

ANGLE POINT
SIXTY (60) INCH SIZE
A. THIRTY (30) INCH THROUGH SIXTY (60) INCH PIPE AT THE ANGLE POINT IN LINE.

7. PRECAST MANHOLE COMPONENTS SHALL CONFORM TO ASTM C-478.

8. DISTANCE BETWEEN THE TOP OF MANHOLE AND FIRST STEP SHALL BE A MAXIMUM OF SIXTEEN (16) INCHES. MANHOLE STEPS SHALL BE GROUTED IN PLACE.

9. (CLARK COUNTY ONLY) DISTANCE BETWEEN MANHOLES SHALL BE A MAXIMUM OF FOUR HUNDRED (400) FEET.

10. MANHOLE SPACING SHALL BE REFERRED TO THE WASTE WATER COLLECTION STANDARDS.
DROP INLET NOTES

1. ALL DROP INLETS, REGARDLESS OF TYPE, SHALL BE LOCATED SUCH THAT THE CURB OPENING (OR GRATE) IS A MINIMUM OF TEN (10) FEET FROM THE NEAREST P.C. OR P.T. OF THE CURRENT OR FUTURE CURB RETURN.


3. IF DRIVEWAYS OR UTILITIES EXIST, THE ENTITY ENGINEER SHALL APPROVE THE LOCATION OF THE DROP INLET.

4. WHEN INSTALLED WITHIN PEDESTRIAN ACCESS ROUTES, TOP OF MANHOLE COVERS SHALL HAVE NO VERTICAL SURFACE DISCONTINUITIES GREATER THAN 1/4” WITH ADJACENT SURFACE, HAVE NO GAPS GREATER THAN 1/2” REGARDLESS OF CONSTRUCTION TOLERANCES, AND BE FIRM, STABLE, AND SLIP RESISTANT.
NOTES
1. IN UNIMPROVED NON-TRAFFIC AREAS, TOP OF MANHOLE SHALL BE 6" TO 9" ABOVE GRADE.
2. PIPES SHALL NOT PROTRUDE MORE THAN 3" INSIDE OF MANHOLE SECTION. CONSTRUCT WATER TIGHT CONNECTION TO MANHOLE.
3. PIPE SECTION LENGTHS ARRANGED TO FIT DEPTH.
4. AN OPTIONAL TWO PIECE 30" TO 48" AND 48" TO 60" CONE MAY BE USED.
5. THE USE OF A 30" RING AND COVER SHALL BE APPROVED BY THE ENTITY ENGINEER.
6. WHEN INSTALLED WITHIN PEDESTRIAN ACCESS ROUTES, TOP OF MANHOLE COVERS SHALL HAVE NO VERTICAL SURFACE DISCONTINUITIES GREATER THAN 1/4" WITH ADJACENT SURFACE, HAVE NO GAPS GREATER THAN 1/2" REGARDLESS OF CONSTRUCTION TOLERANCES, AND BE FIRM, STABLE, AND SLIP RESISTANT.

AGENCY APPROVED

SPECIFICATION REFERENCE
501 CONCRETE & MORTAR
609 CATCH BASINS, MANHOLES & INLETS

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

DATE 01-09-20  DWG. NO. 403.1
EXPLODED VIEW

NOTES
1. IN UNIMPROVED NON-TRAFFIC AREAS, TOP OF MANHOLE SHALL BE 6" TO 9" ABOVE GRADE.
2. PIPES SHALL NOT PROTRUDE MORE THAN 3" INSIDE OF MANHOLE SECTION. CONSTRUCT WATER TIGHT CONNECTION TO MANHOLE.
3. PIPE SECTION LENGTHS ARRANGED TO FIT DEPTH.
4. AN OPTIONAL TWO PIECE 24" TO 48" AND 48" TO 60" CONE MAY BE USED.
5. WHEN INSTALLED WITHIN PEDESTRIAN ACCESS ROUTES, TOP OF MANHOLE COVERS SHALL HAVE NO VERTICAL SURFACE DISCONTINUITIES GREATER THAN 1/4" WITH ADJACENT SURFACE, HAVE NO GAPS GREATER THAN 1/2" REGARDLESS OF CONSTRUCTION TOLERANCES, AND BE FIRM, STABLE, AND SLIP RESISTANT.

CONCRETE COLLAR
SEE STANDARD DWG. NO. 408

STREET ELEV.
16" MINIMUM, 22" MAXIMUM

TONGUE & GROOVE JOINTS
FULL MORTARED JOINTS
(CLASS "B" MORTAR)

BROOM FINISH
SMOOTH FINISH

FORM SMOOTH CURVE IN MANHOLE BASE FORPIPE JUNCTION

ISOMETRIC VIEW

SYMBOLS

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<tr>
<th>SYM.</th>
<th>ITEM</th>
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<tbody>
<tr>
<td>A</td>
<td>RING &amp; COVER</td>
</tr>
<tr>
<td>B</td>
<td>GRADE ADJUSTING RING</td>
</tr>
<tr>
<td>C</td>
<td>1' SECTION REIN. CONC. PIPE</td>
</tr>
<tr>
<td>D</td>
<td>2' SECTION REIN. CONC. PIPE</td>
</tr>
<tr>
<td>E</td>
<td>3' SECTION REIN. CONC. PIPE</td>
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TAPER HEIGHT

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<tr>
<td>60&quot;</td>
<td>58&quot;</td>
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<tr>
<td>24&quot; TO 48&quot;</td>
<td>36&quot;</td>
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<td>48&quot; TO 60&quot;</td>
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FORM SMOOTH CURVE IN MANHOLE BASE FOR PIPE JUNCTION

PIPE JUNCTION

TAPER & COVER
GRADE ADJUSTING RING
1' SECTION REIN. CONC. PIPE
2' SECTION REIN. CONC. PIPE
3' SECTION REIN. CONC. PIPE

BASE

SMOOTH FINISH

AGENCY APPROVED

CLARK COUNTY AREA

TYPE I MANHOLE

SPECIFICATION REFERENCE

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<td>609</td>
<td>CATCH BASINS, MANHOLES &amp; INLETS</td>
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UNIFORM STANDARD DRAWINGS

DATE 01-09-20  DWG. NO. 403
NOTE:
1. PIPE SECTION LENGTHS ARRANGED TO FIT DEPTH.
2. THE USE OF A 30" RING AND COVER SHALL BE APPROVED BY THE ENTITY ENGINEER.

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<tr>
<td>C</td>
<td>1' SECTION REIN. CONC. PIPE</td>
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<td>D</td>
<td>2' SECTION REIN. CONC. PIPE</td>
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<tr>
<td>E</td>
<td>3' SECTION REIN. CONC. PIPE</td>
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<td>TYPE IA MANHOLE 30 INCH RING AND COVER</td>
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DATE 11-10-05

DWG. NO. 404.1
NOTE:
1. PIPE SECTION LENGTHS ARRANGED TO FIT DEPTH.

**SYM.** | **ITEM**
---|---
A | RING & COVER
B | GRADE ADJUSTING RING
C | 1' SECTION REIN. CONC. PIPE
D | 2' SECTION REIN. CONC. PIPE
E | 3' SECTION REIN. CONC. PIPE
F | BASE

**CONCRETE COLLAR**
SEE STANDARD DWG. NO. 408

**FULL MORTARED JOINTS** (CLASS "B" MORTAR)

**TONGUE AND GROOVE JOINTS**

**8" FLAT SLAB**

**STREET ELEV.**

**24"**

**48" or 60"**

**6"**

**Effective 05/21/2020 to 10/07/2020**

**UNIFORM STANDARD DRAWINGS**

CLARK COUNTY AREA

**TYPE IA MANHOLE**
NOTES:

1. STEPS SHALL BE INSTALLED ON THE SIDE WALL OF THE MANHOLE.
2. W = I.D. + 12-INCHES MIN. BUT IN NO CASE SHALL W BE LESS THAN 60-INCHES.
3. THE USE OF A 30" RING AND COVER SHALL BE APPROVED BY THE ENTITY ENGINEER.

SECTION A-A

SEE TYPE I MANHOLE 30" RING AND COVER FOR DIMENSIONS AND DETAILS

OPTIONAL CONSTRUCTION JOINT

SECTION B-B

SEE TYPE I MANHOLE 30" RING AND COVER FOR DIMENSIONS AND DETAILS
MANHOLE STEPS

SECTION E-E

SECTION D-D

NOTES:
1. ALL BARS SHALL BE DEFORMED BARS CONFORMING TO ASTM A706 GRADE 60.

2. CONCRETE SHALL BE MADE WITH TYPE V CEMENT IN ACCORDANCE WITH ASTM C-150. MINIMUM COMpressive 28 DAY STRENGTH = 4000 psi, MAX. SLUMP = 4".

3. CLEARANCE TO REINFORCING BARS TO BE 2 1/2" UNLESS NOTED OTHERWISE.

4. FOR PRECAST RCB, THE REINFORCING SHALL BE IN ACCORDANCE WITH MANUFACTURER DESIGN, AS APPROVED BY THE ENGINEER.

TYPE II-SD MANHOLE - RCB

PLAN - MANHOLE - RCB

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

TYPE II-SD MANHOLE

DATE 07-01-14 DWG. NO. 405.2 SHEET 1 OF 3
PLAN - NO SIDE DRAIN
POSITION MANHOLE ON EITHER SIDE

PLAN - SINGLE SIDE DRAIN
POSITION MANHOLE ON OPPOSITE SIDE FROM THE SIDE DRAIN

TYPE II-SD MANHOLE - PIPE

NOTES:
1. ALL BARS SHALL BE DEFORMED BARS CONFORMING TO ASTM-A706 GRADE 60,
2. CONCRETE SHALL BE MADE WITH TYPE V CEMENT IN ACCORDANCE WITH ASTM C-150,
MINIMUM COMPRESSIVE 28 DAY STRENGTH = 4000 psi, MAX. SLUMP = 4"
3. CLEARANCE TO REINFORCING BARS TO BE 2 1/2" UNLESS NOTED OTHERWISE.
4. THIS DESIGN IS FOR PIPE SIZES 36-INCH TO 72-INCH. LARGER PIPE SIZES REQUIRES SPECIAL DESIGN,
NOTES:

1. STEPS SHALL BE INSTALLED ON THE UPSTREAM WALL OF THE MANHOLE.
2. W = I.D. + 12-INCHES MIN. BUT IN NO CASE SHALL W BE LESS THAN 60-INCHES.
NOTE:

1. STEPS SHALL BE INSTALLED ON THE UPSTREAM WALL OF THE MANHOLE.
2. THE USE OF A 30" RING AND COVER SHALL BE APPROVED BY THE ENTITY ENGINEER.

SECTION A-A
TANGENT

SECTION B-B
ANGLE POINT

1. STEPS SHALL BE INSTALLED ON THE UPSTREAM WALL OF THE MANHOLE.
2. THE USE OF A 30" RING AND COVER SHALL BE APPROVED BY THE ENTITY ENGINEER.

NOTE:

1. STEPS SHALL BE INSTALLED ON THE UPSTREAM WALL OF THE MANHOLE.
2. THE USE OF A 30" RING AND COVER SHALL BE APPROVED BY THE ENTITY ENGINEER.
1. STEPS SHALL BE INSTALLED ON THE UPSTREAM WALL OF THE MANHOLE.
NOTE:
1. THE USE OF A 30" RING AND COVER SHALL BE APPROVED BY THE ENTITY ENGINEER.
SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

PRECAST MANHOLE TEES

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<td>501 CONCRETE</td>
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<tr>
<td>609 CATCH BASINS, MANHOLES &amp; INLETS</td>
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Effective 05/21/2020 to 10/07/2020
SECTION A-A

NOTES:
1. CONCRETE COLLAR TO BE CONSTRUCTED 1/8" BELOW SURFACE OF DENSE GRADE WHERE OPEN GRADE IS NOT USED.
2. CONCRETE COLLAR NOT REQUIRED IN UNINCORPORATED CLARK COUNTY RESIDENTIAL STREETS LESS THAN 80' R/W WIDTH.
3. THE USE OF 30" RING AND COVER SHALL BE APPROVED BY THE ENTITY ENGINEER.
4. WHEN INSTALLED WITHIN PEDESTRIAN ACCESS ROUTES, TOP OF MANHOLE COVERS SHALL HAVE NO VERTICAL SURFACE DISCONTINUITIES GREATER THAN 1/4" WITH ADJACENT SURFACE, HAVE NO GAPS GREATER THAN 1/2" REGARDLESS OF CONSTRUCTION TOLERANCES, AND BE FIRM, STABLE, AND SLIP RESISTANT.

SPECIFICATION REFERENCE

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UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

CONCRETE COLLAR AROUND MANHOLE
30 INCH RING AND COVER

DATE 01-09-20 DWG. NO. 408.1
NOTES
1. CONCRETE COLLAR, FRAME, AND COVER SHALL BE CONSTRUCTED 1/8" BELOW THE ADJACENT SURFACE, ±1/16".
2. CONCRETE COLLAR NOT REQUIRED IN UNINCORPORATED CLARK COUNTY RESIDENTIAL STREETS LESS THAN 80' R/W WIDTH.
3. IF MANHOLE IS MORE THAN 1-1/2" ABOVE OR BELOW THE ADJACENT ROADWAY SURFACE, MANHOLE SHALL BE ADJUSTED TO GRADE BY UTILITY OWNER.
4. IF MANHOLE IS MORE THAN 1/4" ABOVE OR BELOW THE ADJACENT ROADWAY SURFACE IN A BICYCLE LANE, MANHOLE SHALL BE ADJUSTED TO GRADE BY UTILITY OWNER.
5. THE USE OF 30" RING AND COVER SHALL BE APPROVED BY THE ENTITY ENGINEER.
6. WHEN INSTALLED WITHIN PEDESTRIAN ACCESS ROUTES, TOP OF MANHOLE COVERS SHALL HAVE NO VERTICAL SURFACE DISCONTINUITIES GREATER THAN 1/4" WITH ADJACENT SURFACE, HAVE NO GAPS GREATER THAN 1/2" REGARDLESS OF CONSTRUCTION TOLERANCES, AND BE FIRM, STABLE, AND SLIP RESISTANT.
NOTES

1. CONCRETE COLLAR TO BE CONSTRUCTED 1/8" BELOW SURFACE OF DENSE GRADE WHERE OPEN GRADE IS NOT USED.

2. CONCRETE COLLAR NOT REQUIRED IN UNINCORPORATED CLARK COUNTY RESIDENTIAL STREETS LESS THAN 80' R/W WIDTH.

3. WHEN INSTALLED WITHIN PEDESTRIAN ACCESS ROUTES, TOP OF MANHOLE COVERS SHALL HAVE NO VERTICAL SURFACE DISCONTINUITIES GREATER THAN 1/4" WITH ADJACENT SURFACE, HAVE NO GAPS GREATER THAN 1/2" REGARDLESS OF CONSTRUCTION TOLERANCES, AND BE FIRM, STABLE, AND SLIP RESISTANT.

SPECIFICATION REFERENCE

501 CONCRETE
505 REINFORCING STEEL

AGENCY APPROVED

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

CONCRETE COLLAR AROUND MANHOLES

DATE 01-09-20 DWG. NO. 408
1. CONCRETE COLLAR, FRAME, AND COVER SHALL BE CONSTRUCTED 1/8" BELOW THE ADJACENT SURFACE, ±1/16".
2. CONCRETE COLLAR NOT REQUIRED IN UNINCORPORATED CLARK COUNTY RESIDENTIAL STREETS LESS THAN 80' R/W WIDTH.
3. IF MANHOLE IS MORE THAN 1-1/2" ABOVE OR BELOW THE ADJACENT ROADWAY SURFACE, MANHOLE SHALL BE ADJUSTED TO GRADE BY UTILITY OWNER.
4. IF MANHOLE IS MORE THAN 1/4" ABOVE OR BELOW THE ADJACENT ROADWAY SURFACE IN A BICYCLE LANE, MANHOLE SHALL BE ADJUSTED TO GRADE BY UTILITY OWNER.
5. WHEN INSTALLED WITHIN PEDESTRIAN ACCESS ROUTES, TOP OF MANHOLE COVERS SHALL HAVE NO VERTICAL SURFACE DISCONTINUITIES GREATER THAN 1/4" WITH ADJACENT SURFACE, HAVE NO GAPS GREATER THAN 1/2" REGARDLESS OF CONSTRUCTION TOLERANCES, AND BE FIRM, STABLE, AND SLIP RESISTANT.
1. FRAME AND COVER TO BE ALHAMBRA FOUNDRY COMPANY TYPE A1310 IN ACCORDANCE WITH ASTM A-48, CLASS 30, OR APPROVED EQUAL.
2. CAST IRON SHALL HAVE MINIMUM TENSILE STRENGTH OF 30,000 P.S.I.
3. FRAME AND COVER MACHINED TO FIT.
4. WEIGHT OF FRAME AND COVER 330 LBS. MINIMUM.
5. THE USE OF A 30" RING AND COVER SHALL BE APPROVED BY THE ENTITY ENGINEER.
NOTES:
1. FRAME AND COVER TO BE ALHAMBRA FOUNDRY COMPANY TYPE A1310 IN ACCORDANCE WITH ASTM A-48, CLASS 30, OR APPROVED EQUAL.
2. CAST IRON SHALL HAVE MINIMUM TENSILE STRENGTH OF 30,000 P.S.I.
3. FRAME AND COVER MACHINED TO FIT.
4. WEIGHT OF FRAME AND COVER 330 LBS. MINIMUM.
NOTES:

1. MANHOLE STEP SHALL CONFORM TO A.S.T.M. C-478 AND C-497.

2. ALUMINUM STEPS SHALL BE SOLID, MADE FROM MATERIAL IN CONFORMANCE WITH A.S.T.M. B221 (ALLOY 6005-TS).

3. REINFORCED PLASTIC STEPS SHALL BE POLYPROPYLENE PLASTIC, WITH NO. 3 (MIN.) DEFORMED STEEL ROD (GRADE 60/A.S.T.M. A-615).

4. STEPS SHALL BE EVENLY SPACED FROM 12" TO 16".

5. ALL STEPS MUST BE EPOXIED IN PLACE DURING THE INSTALLATION PROCESS.

MANHOLE STEPS
SPECIFICATION REFERENCE

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UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

MODIFIED TYPE "A"
DROP INLET

AGENCY APPROVED

B C H L M N

DATE 9-14-06  DWG. NO. 411.1
**Notes:**

1. Depth "D" to be shown on plans.
2. Outlet pipe size to be shown on plans.
3. Outlet pipe shall be trimmed flush with inside face of inlet.
4. Section B-B is optional for inlets where L = 7'-0" or greater, and D = 5'-0" or greater, see standard drawing No. 415.

---

**Specifications:**

- **Type "A"**
- **Plate & Protection Bar**
- **Steel Plate**
- **Curb Face**
- **Outlet Pipe**
- **Cold Joint**
- **Expansion Joint**
- **Straight Grade**
- **COLD JOINT**
- **Plate Anchor 1/2" Std. Rod**
- **Back of Curb**
- **PROTECTION BAR**
- **3'-0" Min.**
- **1-1/2" Clear**
- **1/4" Per Foot**
- **Slope to Drain All Directions**
- **1-1/2" Clear (TYP.)**
- **EXTEND NO. 4 BARS 12" INTO APRON**
- **NO. 4 BARS @ 3" O.C.**
- **"L" (4' MIN.)**
- **ALL VERTICAL REINFORCEMENT NO. 4 BARS AT 12" O.C. MAX.**
- **ALL HORIZONTAL REINFORCEMENT NO. 4 BARS AT 12" O.C. MAX.**
- **ALHAMBRA FOUNDRY TYPE A1530 FRAME AND COVER (WITH 22" DIAMETER CLEAR OPENING) IN ACCORDANCE WITH ASTM A-48, CLASS 30, OR APPROVED EQUAL. COVER TO BE SECURED WITH 2-5/8" DIAMETER STAINLESS STEEL BOLTS.**

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**Agency Approved**

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**Uniform Standard Drawings**

**Clark County Area**

**Drop Inlet**

**Type "A"**

---

**Specifications Reference**

- **501** CONCRETE
- **502** CONCRETE STRUCTURES
- **505** REINFORCING STEEL
- **713** STEEL

---

**Date** 4-11-02  **Dwg. No.** 411
NOTES:
1. DEPTH "D" TO BE SHOWN ON PLANS.
2. OUTLET PIPE SIZE TO BE SHOWN ON PLANS.
3. CONCRETE SHALL BE CLASS "D" OR "DA".
4. OUTLET PIPE SHALL BE TRIMMED FLUSH WITH INSIDE FACE OF INLET.
5. FOR GRATE DETAIL SEE STANDARD DRAWING NO. 417.

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UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

DROP INLET
TYPE "B"

DATE 4-11-02 DWG. NO. 412
NOTES:

1. DEPTH 'D' TO BE SHOWN ON PLANS.
2. OUTLET PIPE SIZE TO BE SHOWN ON PLANS.
3. WHEN LENGTH 'L' EXCEEDS 4'-0" SUPPORT BOLTS REQUIRED, SEE STANDARD DRAWING NO. 418.
4. FOR GRATE DETAIL SEE STANDARD DRAWING NO. 417.
5. SECTION B-B IS OPTIONAL FOR INLETS WHERE L > 7'-0" AND D > 5'-0", SEE STANDARD DRAWING NO. 415.
1. DROP INLET TYPE "D" TO BE USED WHEN CONFLICTING UTILITIES ARE LOCATED IN THE SIDEWALK AREA.
2. DEPTH "D" AND DISTANCE "Y" TO BE SHOWN ON PLANS.
3. OUTLET PIPE SIZE TO BE SHOWN ON PLANS.
4. WHEN LENGTH "L" EXCEEDS 4'-0" SUPPORT BOLTS REQUIRED, SEE STANDARD DRAWING NO. 418.
5. FOR GRATE DETAIL SEE STANDARD DRAWING NO. 417.
6. SECTION B-B IS OPTIONAL FOR INLETS WHERE L > 7'-0" AND D > 5'-0", SEE STANDARD DRAWING NO. 415.

**NOTES:**

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| DROP INLET TYPE "D" |

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SECTION B-B

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NOTES:

1. DEPTH "D" TO BE SHOWN ON PLANS.
2. OUTLET PIPE SIZE TO BE SHOWN ON PLANS.
3. SECTION APPEARS AS SECTION B-B FOR DROP INLET TYPE "A", STANDARD DRAWING NO. 411 AND FOR DROP INLET TYPE "C" STANDARD DRAWING NO. 413.
BEEHIVE DROP INLETS SHALL BE USED AT LOCATIONS APPROVED BY THE ENGINEER.

NOTE:
BEEHIVE DROP INLETS SHALL BE USED AT LOCATIONS APPROVED BY THE ENGINEER.
PLAN

1/4" FILLET WELD
BAR ANCHOR

SECTION E-E

1/2" FRAME BAR WELDED TO FRAME ANGLE
3-1/2" x 3" x 3/8" FRAME ANGLE WELDED TO LONGITUDINAL FRAME
3-1/2" x 3" x 1/2" FRAME ANGLE

SECTION D-D

3" X 3/8" FRAME BAR
1" X 1/4" x 4" BAR WELDED TO FRAME ANGLE
1" X 3/8" SPACER BARS @ 4-1/4" O.C.
3" x 3/8" MAIN BARS
2'-6"

FRAME & GRATE INSTALLATION

ASPHALT PAVEMENT TO EDGE OF GRATE
LONGITUDINAL FRAME
BAR ANCHOR 3/8"

NOTES
1. ALL EXPOSED METAL PARTS SHALL BE GALVANIZED AND ALL GALVANIZING DAMAGED BY FABRICATION OR INSTALLATION SHALL RECEIVE TWO COATS OF ALUMINUM PAINT (GALVONOX OR EQUAL).
2. GRATES SHALL NOT BE INSTALLED IN PEDESTRIAN ACCESS ROUTES.
3. GRATES MUST BE BICYCLE SAFE.

APPROXIMATE WEIGHT

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<td>78 LBS.</td>
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UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

DROP INLET
FRAME AND GRATE

DATE 01-09-20     DWG. NO. 417
NOTE:

FOR STEEL PLATE AND PROTECTION BAR DETAILS, SEE STANDARD DRAWING NO. 419.
NOTES:
1. PROTECTION BAR SHALL BE REQUIRED ON ALL INLETS AND SHALL BE PLACED PARALLEL TO THE STEEL FACE PLATE.
2. SUPPORT BOLTS SHALL BE EQUALLY SPACED AT NOT MORE THAN 2'-0" O.C. AND NOT LESS THAN 1'-6" O.C.
3. ALL EXPOSED METAL PARTS SHALL BE GALVANIZED AND GALVANIZING DAMAGED BY FABRICATION OR INSTALLATION SHALL RECEIVE TWO COATS OF ALUMINUM PAINT (GALVONOX OR EQUAL).
4. FOR STEEL PLATE ANCHORAGE, SEE STANDARD DRAWING NO. 418.
5. #4 BARS x (L+6") SHALL BE IN ADDITION TO REINFORCING STEEL PER APPLICABLE DROP INLET STANDARD PLAN.
NOTES:

1. CONSTRUCT 14-FOOT WIDE CHAIN LINK GATE AT ALL STREET ACCESS POINTS, FOR ACCESS ONTO 12-FOOT ACCESS ROADS.

2. CONSTRUCT 3-FOOT WIDE CHAIN LINK GATE AT ALL STREET ACCESS POINTS FOR ACCESS ON THE 5-FOOT WIDTH ACCESS SIDE.

3. CONSTRUCT SECOND ACCESS ROAD (12-FOOT MINIMUM WIDTH WITH 6-INCH MIN. TYPE II AGGREGATE BASE) IF B EXCEEDS 30'.

4. FOR UNLINED CHANNELS H 2. ▶

5. "V" DITCH SHALL BE CONSTRUCTED TO PREVENT OVERLAND RUNOFF FROM ERODING SIDES OF BANK. AN ADEQUATE NUMBER OF INLETS ALONG THE "V" DITCH SHALL BE DESIGNED WITH A MINIMUM 12-INCH CMP LATERAL DISCHARGING INTO THE CHANNEL. APPROPRIATE BANK PROTECTION FOR LATERAL PIPE DISCHARGE SHALL BE PROVIDED. OTHER METHODS OF OVERLAND RUNOFF CONTROL MAY BE ACCEPTABLE IF APPROVED BY THE ENGINEER.
1. MESSAGE OR SYMBOL SHALL BE AS SHOWN ON THE DRAWING OR ON THE VERTICAL CURB NEXT TO THE DROP INLET OR AS APPROVED BY THE APPROPRIATE CITY OR COUNTY ENGINEER.

2. LETTERS SHALL BE 1-7/16" IN HEIGHT. THE MESSAGE SHALL BE CENTERED ON THE BACK OF THE INLET OR ON THE TOP OF CURB.

3. CONCRETE SHALL BE STAMPED IN SUCH A WAY AS TO PROVIDE FOR A CLEAR AND LEGIBLE IMAGE. (APPROXIMATE DEPTH OF 1/4").

4. ALL STAMPS SHALL BE APPROVED BY THE CITY OR COUNTY ENGINEER BEFORE BEING USED.

5. STAMP MAY BE PERMANENTLY CAST INTO CAST IRON FRAME OR PRE-CAST CONCRETE PORTIONS OF INLET.

6. WHERE RETROFITTING IS REQUIRED, AN EPOXIED PLACARD BEARING THE MESSAGE AND SYMBOL APPROVED BY THE APPROPRIATE CITY OR COUNTY ENGINEER SHALL BE PERMANENTLY AFFIXED ON THE TOP OF THE ADJACENT CURB.

7. THIS STANDARD IS REQUIRED IN THE LAS VEGAS VALLEY IN WHICH AREA WATER DRAINS TO LAKE MEAD.
NOTES:

1. MESSAGE OR SYMBOL SHALL BE AS SHOWN ON THE DRAWING OR ON THE VERTICAL CURB NEXT TO THE DROP INLET OR AS APPROVED BY THE APPROPRIATE CITY OR COUNTY ENGINEER.

2. LETTERS SHALL BE 1-7/16" IN HEIGHT. THE MESSAGE SHALL BE CENTERED ON THE BACK OF THE INLET OR ON THE TOP OF CURB.

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7. THIS STANDARD IS REQUIRED IN THE LAS VEGAS VALLEY IN WHICH AREA WATER DRAINS TO LAKE MEAD.
STAMP MESSAGES AND SYMBOLS

DON'T POLLUTE!

DRAINS

TO LAKE MEAD!

16.5" MAXIMUM

5" MAX.
4" PLACARD - COLORS = BLUE AND GREEN

THIS EPOXY PLACARD MESSAGE AND SYMBOL HAS BEEN APPROVED BY THE APPROPRIATE CITY OR COUNTY ENGINEER. ANY OTHER EQUIVALENT MESSAGE AND SYMBOL DESIGNS WILL REQUIRE PRIOR APPROVAL OF THE APPROPRIATE CITY OR COUNTY BEFORE INSTALLATION. THE PLACARD MATERIAL SHALL BE EITHER POLYCARBONATE OR METAL AND THE FINISH SHALL BE UV AND ABRASION RESISTANT.

STORM DRAIN MARKER

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DATE 12-09-10  DWG. NO. 421  SHEET 3 OF 3
1. ALL EXPOSED METALS SHALL BE HOT DIP GALVANIZED AFTER FABRICATION.
2. PROVIDE 1/2" (MIN.) CLEARANCE ALL AROUND THE STEEL BEAM, DRY PACK AFTER INSTALLATION.
3. WHEN REQUIRED BY LENGTH OF OPENING, PLATE ANGLE MAY BE DELIVERED IN SECTIONS AND BUTT WELDED IN PLACE.
4. ALL GALVANIZED DAMAGED BY WELDING SHALL RECEIVE TWO COATS OF GALVALLOY OR EQUAL.
5. CONCRETE SHALL BE MODIFIED CLASS DA 4000 PSI, SEE SPECIAL PROVISIONS.
6. ANGLE ANCHORS SHALL BE EMBEDDED MIDPOINT IN EACH ENDWALL AND EVENLY SPACED. (MAXIMUM SPACING OF 2').
7. THE GAP BETWEEN THE GRATES MUST BE 1/2-INCH OR LESS.
INTERIOR STREETS

EXTERIOR STREETS

FLOW LINE
FENCE

SIDEWALK DRAIN
FENCE (PER SHEET 3 OF 3)

ONE PERCENT MINIMUM SLOPE THROUGH DRAINAGE SLAB IS REQUIRED. WHERE A STORM DRAIN LINE IS AVAILABLE IN THE EXTERIOR STREET, A STORM DRAIN INLET AT THE BEGINNING OF THE EASEMENT AND AN 18-INCH MINIMUM STORM DRAIN PIPE IS REQUIRED TO CONVEY NUISANCE WATER THROUGH THE EASEMENT.

NOTE #1: 20' STANDARD WIDTH, DIFFERENT WIDTHS TO BE DESIGNED ACCORDINGLY AND IN CONFORMITY WITH THE CLARK COUNTY REGIONAL FLOOD CONTROL DISTRICT HYDROLOGIC CRITERIA AND DRAINAGE DESIGN MANUAL.

NOTE #2: NO SURFACE UTILITY FIXTURES ALLOWED

NOTE #3: SEE NOTE #3

GENERAL NOTE: GATE AND FENCE CONSTRUCTION IS INTENDED TO PREVENT STORAGE OF MATERIILS AND VEHICLES WITHIN CHANNEL. PREVENTION OF PEDESTRIAN USE MAY BE IMPAIRED, BUT THE DESIGN IS NOT INTENDED TO PREVENT PEDESTRIAN TRAFFIC.

BOLLARDS MAY BE USED IN LIEU OF GATE IF PEDESTRIAN ACCESS IS DESIRED.

PLAN VIEW

SECTION A-A'

6" CONCRETE SLAB W/ #4 REBAR @ 12" O.C. EACH WAY.

CONSTRUCT EXPANSION JOINT AROUND THE CONCRETE SLAB AND SEAL WITH ELASTOMERIC JOINT SEALANT.

CONSTRUCT TRANSVERSE WEAKENED PLANE JOINTS @ 10' O.C.

(SEE NOTE #1)

PLAN VIEW

1% MINIMUM SLOPE

(SEE NOTE #2)

(SEE NOTE #3)

NOTE #2: OWNED AND MAINTAINED.

NO SURFACE UTILITY FIXTURES ALLOWED

NOTE #3: SEE NOTE #3

GENERAL NOTE: GATE AND FENCE CONSTRUCTION IS INTENDED TO PREVENT STORAGE OF MATERIILS AND VEHICLES WITHIN CHANNEL. PREVENTION OF PEDESTRIAN USE MAY BE IMPAIRED, BUT THE DESIGN IS NOT INTENDED TO PREVENT PEDESTRIAN TRAFFIC.

BOLLARDS MAY BE USED IN LIEU OF GATE IF PEDESTRIAN ACCESS IS DESIRED.

PLAN VIEW

SECTION A-A'

6" CONCRETE SLAB W/ #4 REBAR @ 12" O.C. EACH WAY.

CONSTRUCT EXPANSION JOINT AROUND THE CONCRETE SLAB AND SEAL WITH ELASTOMERIC JOINT SEALANT.

CONSTRUCT TRANSVERSE WEAKENED PLANE JOINTS @ 10' O.C.

(SEE NOTE #1)

NOTE #2: OWNED AND MAINTAINED.

NO SURFACE UTILITY FIXTURES ALLOWED

NOTE #3: SEE NOTE #3

GENERAL NOTE: GATE AND FENCE CONSTRUCTION IS INTENDED TO PREVENT STORAGE OF MATERIILS AND VEHICLES WITHIN CHANNEL. PREVENTION OF PEDESTRIAN USE MAY BE IMPAIRED, BUT THE DESIGN IS NOT INTENDED TO PREVENT PEDESTRIAN TRAFFIC.

BOLLARDS MAY BE USED IN LIEU OF GATE IF PEDESTRIAN ACCESS IS DESIRED.

PLAN VIEW

SECTION A-A'

6" CONCRETE SLAB W/ #4 REBAR @ 12" O.C. EACH WAY.

CONSTRUCT EXPANSION JOINT AROUND THE CONCRETE SLAB AND SEAL WITH ELASTOMERIC JOINT SEALANT.

CONSTRUCT TRANSVERSE WEAKENED PLANE JOINTS @ 10' O.C.

(SEE NOTE #1)
ONE PERCENT MINIMUM SLOPE THROUGH DRAINAGE SLAB IS REQUIRED. WHERE A STORM DRAIN LINE IS AVAILABLE IN THE EXTERIOR STREET, A STORM DRAIN INLET AT THE BEGINNING OF THE EASEMENT AND AN 1\frac{1}{2}-INCH MINIMUM STORM DRAIN PIPE IS REQUIRED TO CONVEY NUISANCE WATER THROUGH THE EASEMENT.

**NOTE #1:** 20' STANDARD WIDTH, DIFFERENT WIDTHS TO BE DESIGNED ACCORDINGLY.

GENERAL NOTE: GATE AND FENCE CONSTRUCTION IS INTENDED TO PREVENT STORAGE OF MATERIALS AND VEHICLES WITHIN CHANNEL. PREVENTION OF PEDESTRIAN USE MAY BE IMPAIRED, BUT THE DESIGN IS NOT INTENDED TO PREVENT PEDESTRIAN TRAFFIC. BOLLARDS MAY BE USED IN LIEU OF GATE IF PEDESTRIAN ACCESS IS DESIRED.

**PLAN VIEW**

**SECTION A-A'**

**NOT FOR USE IN EMERGENCY ACCESS**

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**SPECIFICATION REFERENCE**

**UNIFORM STANDARD DRAWINGS**

CLARK COUNTY AREA

**SUPPLEMENTAL DRAWING**

**THROUGH-LOT DRAIN**

DATE 07-01-14  DWG. NO. 425.S1  SHEET 2 OF 3
### Exterior Streets

**Curb Painted Red**

**Fence**

**Sidewalk Drain** (Per USD 236)

---

**General Note:** Gate and fence construction is intended to prevent storage of materials and vehicles within channel. Prevention of pedestrian use may be impaired, but the design is not intended to prevent pedestrian traffic. Billboards may be used in lieu of gate if pedestrian access is desired.

---

**Plan View**

**Note #1:** 20' standard width, different widths to be designed accordingly.

**Section A-A**

- **Post Footer**
- **Channel Floor**

---

**Detail 1** (Hinge)
- **TYP:** 1/8" 3" x 3" (STANLEY 12-836)
- **Weld to provide a minimum return of 1" on gate frame and fence post.

**Detail 2** (Chain Latch)
- **1/8" high-Test Chain**

**Detail 3** (Anchor Rod)
- **1/8" Anchored Steel Sleeve**

**Detail 4** (Sleeve)
- **1" Embedded Galvanized Steel Sleeve**

---

**Not for Use in Emergency Access**

---

**Agency Approved**

---

**Specification Reference**

---

**Uniform Standard Drawings**

**Clark County Area**

---

**Supplemental Drawing**

**Through-Lot Drain**

---

**Date:** 07-01-14  **Dwg. No.:** 425.S1  **Sheet:** 3 of 3

---

Effective 05/21/2020 to 10/07/2020
LONGITUDINAL CUT RESTORATION

MILL AND OVERLAY 1" UTACS UNLESS OTHERWISE REQUIRED BY THE ENTITY. REMOVE AND REPLACE ASPHALT PAVEMENT IF EXISTING ASPHALT PAVEMENT IS 2" THICK OR LESS.

ASPHALT PATCH TO MATCH CONTIGUOUS SECTION AND SHALL BE NO LESS THAN 2"

MIN. RESTORATION LIMITS UNLESS OTHERWISE DETERMINED BY ENTITY PLAN CHECK, WITH FINAL LIMITS SET BY FIELD INSPECTOR.

SEE DWG. 500.1 SHEET 2 OF 2
LONGITUDINAL CUT RESTORATION

NOTES:

EX. C & G

302 AGGREGATE BASE

401 BITUMINOUS PAVEMENT

406 PRIME COAT

407 FOG SEAL

501 CONCRETE

MIN. RESTORATION LIMITS UNLESS OTHERWISE DETERMINED BY ENTITY PLAN CHECK, WITH FINAL LIMITS SET BY FIELD INSPECTOR.

CLARK COUNTY AREA

UNIFORM STANDARD DRAWINGS

0 TO 5 YEARS
PAVEMENT RESTORATION
LONGITUDINAL CUT

DATE 6-12-08  DWG. NO. 500.1  SHEET 1 OF 2

AGENCY APPROVED  B  C  H  L  M  N

SPECIFICATION REFERENCE

302  AGGREGATE BASE
401  BITUMINOUS PAVEMENT
406  PRIME COAT
407  FOG SEAL
501  CONCRETE

05/21/2020 to 10/07/2020

SEE DWG. 500.1 SHEET 2 OF 2

ASPHALT PATCH TO MATCH CONTIGUOUS SECTION AND SHALL BE NO LESS THAN 2"
1. IF THERE IS A MEDIAN, RESTORATION MAY BE LIMITED TO THE AREA BETWEEN C & G AND THE MEDIAN CURB.
2. WHEN EXISTING PAVEMENT IS 2" THICK OR LESS, PAVEMENT WITHIN THE RESTORATION AREA SHALL BE REMOVED AND REPLACED IN KIND AS REQUIRED BY THE ENTITY.
3. IF SAWCUT LINE IS WITHIN FIVE FEET OF EDGE OF EXISTING ASPHALT CONCRETE SURFACE OR EXISTING SAWCUT LINE, MILL AND OVERLAY OR REPLACE TO THAT EDGE.
4. PAVEMENT RESTORATION AREA SAWCUT LINES SHALL NOT FALL WITHIN STREET INTERSECTION.
5. IF CUT IS WITHIN A LANE, PAVEMENT RESTORATION MUST EXTEND TO THE NEXT LANE LINE.
6. THE ENTITY'S REQUIREMENTS TAKE PRECEDENCE OVER ANY MINIMUM REQUIREMENTS SHOWN HEREON.
1. IF THERE IS MEDIAN, RESTORATION MAY BE LIMITED TO THE AREA BETWEEN C&G TO CURB OF MEDIAN.
2. IF SAWCUT LINE IS WITHIN FIVE FEET OF EDGE OF EXISTING ASPHALT CONCRETE SURFACE OR EXISTING SAWCUT LINE, MILL AND OVERLAY OR REPLACE TO THAT EDGE.
3. WHEN EXISTING PAVEMENT IS LESS 2" THICK OR LESS, PAVEMENT WITHIN THE RESTORATION AREA SHALL BE REMOVED AND REPLACED IN KIND AS REQUIRED BY THE ENTITY.
4. PAVEMENT RESTORATION AREA SAWCUT LINES SHALL NOT FALL WITHIN STREET INTERSECTION.
5. IF CUT IS WITHIN A LANE, PAVEMENT RESTORATION MUST EXTEND TO THE NEXT LANE LINE.
6. THE ENTITY'S REQUIREMENTS TAKE PRECEDENCE OVER ANY MINIMUM REQUIREMENTS SHOWN HEREON.

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<td>FOG SEAL</td>
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DATE 6-12-08 DWG. NO. 500.2
NOTES:

1. IF CUT IS WITHIN A LANE, PAVEMENT RESTORATION MUST EXTEND TO THE NEXT LANE LINE.
2. THE ENTITY'S REQUIREMENTS TAKE PRECEDENCE OVER ANY MINIMUM REQUIREMENTS SHOWN HEREON.
LONGITUDINAL CUT RESTORATION

IF TRENCH EDGE IS 5-FT OR LESS FROM LIP OF GUTTER, THEN REPLACE 8-FT (MIN.) OF ASPHALT.

IF TRENCH EDGE IS BETWEEN 5-FT & 9-FT FROM LIP OF GUTTER, THEN REPLACE 11-FT (MIN.) OF ASPHALT.

EXCEPTION: FOR RESIDENTIAL STREETS 51-FT OR LESS, REPLACE HALF STREET.

IF TRENCH EDGE IS BETWEEN 10-FT & 14-FT FROM CENTERLINE, THEN REPLACE 16-FT (MIN.) OF ASPHALT.

EXCEPTION: FOR RESIDENTIAL STREETS 51-FT OR LESS, REPLACE HALF STREET.

IF TRENCH EDGE IS BETWEEN 2-FT & 10-FT FROM CENTERLINE, THEN REPLACE 12-FT (MIN.) OF ASPHALT.

NOTES:
1. IF CUT IS WITHIN A MARKED LANE, PAVEMENT RESTORATION MUST EXTEND TO THE MARKED LANE LINE.
2. THE ENTITY'S REQUIREMENTS TAKE PRECEDENCE OVER ANY MINIMUM REQUIREMENTS SHOWN HEREON.
3. MINIMUM ASPHALT REPLACEMENT WIDTH SHALL NOT BE LESS THAN THE LIMITS OF THE PAVING MACHINERY USED.

PLAN VIEW
NOTES:

1. IF CUT IS WITHIN A LANE, PAVEMENT RESTORATION MUST EXTEND TO THE NEXT LANE LINE.

2. THE ENTITY’S REQUIREMENTS TAKE PRECEDENCE OVER ANY MINIMUM REQUIREMENTS SHOWN HEREON.
STORM/SANITARY SEWER
SEE NOTE

STORM/SANITARY SEWER

WATER

STORM/SANITARY SEWER

GAS

SEE NOTE

NOTE:

STORM/SANITARY SEWER AND GAS
MAY BE INSTALLED ON THE OTHER SIDE OF CENTERLINE AS TERRAIN AND OR SEPARATIONS DICTATES.

A. STREETLIGHT CONDUIT
B. POWER COMPANY SECONDARY
C. POWER COMPANY PRIMARY
D. TELEPHONE CONDUITS
E. CABLE T.V. CONDUIT
F. TRAFFIC SIGNAL CONDUIT
G. OTHER COMMUNICATIONS CONDUIT
H. FAST ITS COMMUNICATIONS CONDUIT

42" MIN. COVER FOR PIPE 8" DIA. AND SMALLER
48" MIN. COVER FOR PIPE GREATER THAN 8" DIA., LESS THAN 24" DIA.
60" MIN. COVER FOR PIPE 24" AND GREATER.

2'-6" MIN.

12" MIN. CLR.

4'-0"

3'-0" MIN. CLR.

7'-0"

10'-0" MIN. CLR.

14 '-0" MIN. CLR.

OR AS APPROVED BY THE ENGINEER

NOTE:

STORM/SANITARY SEWER AND GAS MAY BE INSTALLED ON THE OTHER SIDE OF CENTERLINE AS TERRAIN AND OR SEPARATIONS DICTATES.

3'-0"

12" MIN. CLR.

4'-0"

3'-0" MIN. CLR.

7'-0"

10'-0" MIN. CLR.

14 '-0" MIN. CLR.

OR AS APPROVED BY THE ENGINEER

NOTE:

STORM/SANITARY SEWER AND GAS MAY BE INSTALLED ON THE OTHER SIDE OF CENTERLINE AS TERRAIN AND OR SEPARATIONS DICTATES.
1. STREETLIGHT CONDUIT

2. POWER COMPANY SECONDARY

3. POWER COMPANY PRIMARY

4. TELEPHONE CONDUITS

5. CABLE T.V. CONDUIT

6. TRAFFIC SIGNAL CONDUIT

7. OTHER COMMUNICATIONS CONDUIT

8. POWER MARKING TAPE

9. TELEPHONE MARKING TAPE

A. STREETLIGHT CONDUIT

B. POWER COMPANY SECONDARY

C. POWER COMPANY PRIMARY

D. TELEPHONE CONDUITS

E. CABLE T.V. CONDUIT

F. TRAFFIC SIGNAL CONDUIT

G. OTHER COMMUNICATIONS CONDUIT

H. POWER MARKING TAPE

I. TELEPHONE MARKING TAPE

1. STORM/SANITARY SEWER AND GAS MAY BE LOCATED ON OTHER SIDE OF CENTERLINE AS TERRAIN AND/OR SEPARATIONS DICTATES.

2. STREETLIGHT FOUNDATIONS SHALL BE LOCATED BEHIND SIDEWALK FOR SEE NOTE 3 BY THE GOVERNING AGENCY FOR SEWER AND WATER FACILITIES.

3. SEPARATION DISTANCE SHALL CONFORM TO UTILITY STANDARDS ADOPTED OR AS APPROVED BY THE ENGINEER.

4. STREET CONSTRUCTION SHALL CONFORM TO THE DESIGNED PLANS.

5. UTILITY CONSTRUCTION BACKFILL SHALL CONFORM TO SECTION 208.

6. UTILITY LINES SHALL BE RE-ROUTED IF DROP INLET IS IN CONFLICT.

7. WATER TRANSMISSION MAIN SEPARATION SHALL BE REFERRED TO WATER PURVEYOR GUIDELINES.

10'-0" MIN. CLR.

7'-0"

3'-0" MIN.

OR AS APPROVED

WATER

SEWER

SIDEWALK WIDTHS LESS THAN 5 FEET PER STANDARD DRAWING NO. 320.

2. STREETLIGHT FOUNDATIONS SHALL BE LOCATED BEHIND SIDEWALK FOR SEE NOTE 3

BY THE GOVERNING AGENCY FOR SEWER AND WATER FACILITIES.

3. SEPARATION DISTANCE SHALL CONFORM TO UTILITY STANDARDS ADOPTED OR AS APPROVED BY THE ENGINEER.

4. STREET CONSTRUCTION SHALL CONFORM TO THE DESIGNED PLANS.

5. UTILITY CONSTRUCTION BACKFILL SHALL CONFORM TO SECTION 208.

6. UTILITY LINES SHALL BE RE-ROUTED IF DROP INLET IS IN CONFLICT.

7. WATER TRANSMISSION MAIN SEPARATION SHALL BE REFERRED TO WATER PURVEYOR GUIDELINES.

10'-0" MIN. CLR.

7'-0"

3'-0" MIN.

OR AS APPROVED

WATER

SEWER

SIDEWALK WIDTHS LESS THAN 5 FEET PER STANDARD DRAWING NO. 320.
Effective 05/21/2020 to 10/07/2020

MILL AND OVERLAY RESTORATION LIMITS TO BE DETERMINED BY ENTITY PLAN CHECK, WITH FINAL LIMITS SET BY FIELD INSPECTOR. REFER TO DRAWINGS 500 SERIES.

EXISTING AGGREGATE BASE

2 MIN.

INSTALLATION REQUIREMENTS INCLUDING CONTRACTOR TESTING AND FILL LIFTS SEE SECTION 208 - TRENCH EXCAVATION AND BACKFILL

MINIMUM TRENCH WIDTH IS RELATED TO DESIGN REQUIREMENTS AND SHALL BE INDICATED ON THE PLAN DRAWINGS. SEE SECTION 208 - TRENCH EXCAVATION AND BACKFILL

GRANULAR BACKFILL OR SELECT BACKFILL OR BACKFILL WITH CONTROLLED LOW STRENGTH MATERIAL (CLSM) OR AS APPROVED BY THE ENGINEER SEE NOTE 1

DEPTH OF COVER IS RELATED TO DESIGN REQUIREMENTS AND SHALL BE INDICATED ON THE PLAN DRAWINGS, SEE SECTION 208 - TRENCH EXCAVATION AND BACKFILL

PIPE ZONE

PIPE BEDDING SEE NOTE 3

NOTES:
1. NO STONES OR LUMPS GREATER THAN 3" PERMITTED IN TRENCH 2' OR LESS IN WIDTH.
2. TRENCH WIDTH, BEDDING, SUBGRADE AND PIPE ZONE REQUIREMENTS FOR UTILITY INSTALLATIONS SHALL CONFORM TO THE RESPECTIVE ENTITY REQUIREMENTS.
3. CRUSHED ROCK MAY BE USED FOR PIPE BEDDING ONLY IF MATERIAL USE HAS BEEN SPECIFICALLY APPROVED BY THE GOVERNING AGENCY. SEE STANDARD DRAWING NO. 505 FOR PIPE BEDDING METHODS.
4. LAS VEGAS VALLEY WATER DISTRICT REQUIRES PIPE BEDDING AND BACKFILL WITHIN THE PIPE ZONE TO BE OF THE SAME MATERIAL.

AGENCY APPROVED

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UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

METHOD A FOR FLEXIBLE PIPE TRENCH BACKFILL - PAVED AREAS

SPECIFICATION REFERENCE

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<td>302 AGGREGATE BASE COURSES</td>
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DATE 01-01-12 DWG. NO. 503.1
MILL AND OVERLAY RESTORATION LIMITS TO BE DETERMINED BY ENTITY PLAN CHECK, WITH FINAL LIMITS SET BY FIELD INSPECTOR, REFER TO DRAWINGS 500 SERIES.

EXISTING AGGREGATE BASE

INSTALLATION REQUIREMENTS INCLUDING CONTRACTOR TESTING AND FILL LIFTS SEE SECTION 208-TRENCH EXCAVATION AND BACKFILL

MINIMUM TRENCH WIDTH IS RELATED TO DESIGN REQUIREMENTS AND SHALL BE INDICATED ON THE PLAN DRAWINGS, SEE SECTION 208-TRENCH EXCAVATION AND BACKFILL

GRANULAR BACKFILL OR SELECT BACKFILL OR BACKFILL WITH CONTROLLED LOW STRENGTH MATERIAL (CLSM) OR AS APPROVED BY THE ENGINEER SEE NOTE 1

DEPTH OF COVER IS RELATED TO DESIGN REQUIREMENTS AND SHALL BE INDICATED ON THE PLAN DRAWINGS, SEE SECTION 208-TRENCH EXCAVATION AND BACKFILL

PIPE ZONE

PIPE BEDDING SEE NOTE 3

NOTES:
1. NO STONES OR LUMPS GREATER THAN 3" PERMITTED IN TRENCH 2' OR LESS IN WIDTH.
2. TRENCH WIDTH, BEDDING, SUBGRADE AND PIPE ZONE REQUIREMENTS FOR UTILITY INSTALLATIONS SHALL CONFORM TO THE RESPECTIVE ENTITY REQUIREMENTS.
3. CRUSHED ROCK MAY BE USED FOR PIPE BEDDING ONLY IF MATERIAL USE HAS BEEN SPECIFICALLY APPROVED BY THE GOVERNING AGENCY. SEE STANDARD DRAWING NO. 505 FOR PIPE BEDDING METHODS.
4. LAS VEGAS VALLEY WATER DISTRICT REQUIRES PIPE BEDDING AND BACKFILL WITHIN THE PIPE ZONE TO BE OF THE SAME MATERIAL.

PRIME COAT PER SECTION 408-PRIME COAT

CLSM MINIMUM DEPTH* 12" FOR MINOR COLLECTOR ROADWAYS (>OR=60', <80')
24" FOR COLLECTOR AND ARTERIAL ROADWAYS (>OR=80') (NOT REQUIRED FOR TRENCH WIDTHS GREATER THAN 3-FT.)**

* CLSM NOT REQUIRED FOR RESIDENTIAL STREETS.

** FOR RESIDENTIAL STREETS AND TRENCH WIDTHS GREATER THAN 3-FT (CLSM NOT REQUIRED), THE TRENCH BACKFILL SHALL EXTEND TO THE TOP OF SUBGRADE MINUS 1-INCH, AND THE DEPTH OF AGGREGATE BASE SHALL MATCH EXISTING BASE DEPTH (AT 95% COMPACTION).

COMPACTION PERCENTAGE PER GEOTECH ENG REQUIREMENTS OR MINIMUM OF 90%

REFER TO SECTION 208 REQUIREMENTS

SEE SUBSECTION 208.03.14 FOR DEPTH OF PIPE COVER

90% MIN. COMPACTION IN PIPE ZONE, TYPE II OR TYPE III AGGREGATE BASE, OR BACKFILL WITH CONTROLLED LOW STRENGTH MATERIAL (CLSM) SEE NOTE 2

BACKFILL WITH CONTROLLED LOW STRENGTH MATERIAL (CLSM) INSTALL AS PER SECTION 208 SEE NOTE 2

STABLE SUBGRADE

AGENCY APPROVED | B | C | H | L | M | N
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SPECIFICATION REFERENCE
208 TRENCH EXCAVATION & BACKFILL
302 AGGREGATE BASE COURSES

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

METHOD A FOR RIGID PIPE TRENCH BACKFILL - PAVED AREAS

DATE 01-01-12 | DWG. NO. 503.2
MILL AND OVERLAY RESTORATION LIMITS TO BE DETERMINED BY ENTITY PLAN CHECK, WITH FINAL LIMITS SET BY FIELD INSPECTOR. REFER TO DRAWINGS 500 SERIES.

EXISTING AGGREGATE BASE

2' MIN.

2' MIN.

INSTALLATION REQUIREMENTS INCLUDING CONTRACTOR TESTING AND FILL LIFTS; SEE SECTION 208-TRENCH EXCAVATION AND BACKFILL

MINIMUM TRENCH WIDTH IS RELATED TO DESIGN REQUIREMENTS AND SHALL BE INDICATED ON THE PLAN DRAWINGS. SEE SECTION 208-TRENCH EXCAVATION AND BACKFILL

GRANULAR BACKFILL OR SELECT BACKFILL OR BACKFILL WITH CONTROLLED LOW STRENGTH MATERIAL (CLSM) OR AS APPROVED BY THE ENGINEER; SEE NOTE 1

DEPTH OF COVER IS RELATED TO DESIGN REQUIREMENTS AND SHALL BE INDICATED ON THE PLAN DRAWINGS. SEE SECTION 208-TRENCH EXCAVATION AND BACKFILL

PIECE ZONE

O.D. PIPE

PIPE BEDDING SEE NOTE 3

STABLE SUBGRADE

NOTES:
1. NO STONES OR LUMPS GREATER THAN 3" PERMITTED IN TRENCH 2" OR LESS IN WIDTH.
2. TRENCH WIDTH, BEDDING, SUBGRADE AND PIPE ZONE REQUIREMENTS FOR UTILITY INSTALLATIONS SHALL CONFORM TO THE RESPECTIVE ENTITY REQUIREMENTS.
3. CRUSHED ROCK MAY BE USED FOR PIPE BEDDING ONLY IF MATERIAL USE HAS BEEN SPECIFICALLY APPROVED BY THE GOVERNING AGENCY. SEE STANDARD DRAWING NO. 505 FOR PIPE BEDDING METHODS.
4. LAS VEGAS VALLEY WATER DISTRICT REQUIRES PIPE BEDDING AND BACKFILL WITHIN THE PIPE ZONE TO BE OF THE SAME MATERIAL.

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<td>METHOD B FOR RIGID AND FLEXIBLE PIPE TRENCH BACKFILL - PAVED AREAS</td>
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PIPE BEDDING TO BE COMPACTED TO AT LEAST 90% OF MAXIMUM DENSITY.

INDICATED THICKNESS OF BEDDING MATERIAL TO BE Constructed UNDER THE BARREL.

SUBGRADE SHALL CONFORM TO RESPECTIVE ENTITY REQUIREMENTS.

CRUSHED ROCK MAY BE USED FOR PIPE BEDDING ONLY IF MATERIAL USE HAS BEEN SPECIFICALLY APPROVED BY THE GOVERNING AGENCY.

1. PIPE BEDDING TO BE COMPACTED TO AT LEAST 90% OF MAXIMUM DENSITY. SUBGRADE SHALL CONFORM TO RESPECTIVE ENTITY REQUIREMENTS.
2. INDICATED THICKNESS OF BEDDING MATERIAL TO BE CONSTRUCTED UNDER THE BARREL. SUBGRADE TO BE EXCAVATED TO PROVIDE 2" CLEARANCE UNDER THE BELL.
3. OTHER BEDDING METHODS MAY BE SPECIFIED OR APPROVED.
4. CRUSHED ROCK MAY BE USED FOR PIPE BEDDING ONLY IF MATERIAL USE HAS BEEN SPECIFICALLY APPROVED BY THE GOVERNING AGENCY.

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Effective 05/21/2020 to 10/07/2020

TYPE B - KEYHOLE REPAIR
REQUIRED FOR ROW WIDTH GREATER THAN 60'
OPTIONAL FOR ROW WIDTH 60' OR LESS

NOTES:
1. CUT AND REMOVE PAVEMENT PLUG WITH AN APPROVED KEYHOLE CORING DEVICE. PAVEMENT TO BE CORED SHALL CONTAIN NO CRACKS AND SHALL BE AT LEAST 4' THICK. IF PLUG IS DAMAGED OR IS LESS THAN 4' THICK, REPLACE PLUG WITH A "FARMED" ASPHALT PLUG FROM AN APPROVED SITE. FARmed
PLUGS SHALL BE AT LEAST 4' THICK AND AT LEAST ONE INCH THICKER THAN EXISTING ASPHALT.

2. BONDING MATERIAL SHALL BE A SINGLE COMPONENT CEMENTITIOUS RAPID HARDENING, HIGH STRENGTH, WATERPROOF BONDING AGENT THAT ALLOWS THE CORE TO SUPPORT AT LEAST THREE TIMES AASHTO H-25 LOADING WITHIN 30 MINUTES OF APPLICATION. BOND AGENT MUST SHOW A MINIMUM 20 PSI BOND STRENGTH (ASTM C882) AND A MINIMUM 200 PSI COMPRESSIVE STRENGTH (ASTM C109) IN 30 MINUTES.

3. AGENCY-APPROVED BACKFILL BELOW REPAIR SHALL BE PER SECTION 215.

4. FILL KEYHOLE WITH BONDING MATERIAL DURING REPAIR.

5. PRIOR AGENCY APPROVAL IS REQUIRED FOR MULTIPLE KEYHOLE REPAIRS WITHIN A GIVEN ROADWAY SEGMENT.

6. A 5 YEAR WARRANTY IS REQUIRED ON ALL REPAIRS.

TYPE A - CUT & PATCH REPAIR
OPTIONAL FOR ROW WIDTH 60' OR LESS

NOTE: EDGES SHALL BE CUT TO A NEAT VERTICAL FACE.

AGENCY APPROVED ASPHALT CONCRETE PLACED IN 2" LIFTS. 6" MIN. THICKNESS OR MATCH EXISTING.
CALL AND SCHEDULE INSPECTION TO OBSERVE CONCRETE PLUG AFTER PLACEMENT.

PERMIT TYPICALLY VALID FOR 30 DAYS - EXTENSION OF PERMIT IS REQUIRED PRIOR TO EXPIRATION IF WORK IS NOT COMPLETE.

FOR BORINGS GREATER THAN 12-INCHES IN DIAMETER, SUBMIT PERMANENT PATCHING PLAN WITH PERMIT APPLICATION.

IF GROUNDWATER IS ENCOUNTERED FOLLOW APPROPRIATE AGENCY REQUIREMENTS.

THE CONNECTION OF THE PIPE AND FLAT PLATE SHALL BE CONTINUOUSLY WELDED ALL OF THE WAY AROUND. THE SIZE OF THE WIRE SHALL BE 0.35 WIRE (ER70S-6) OR 7018 ROD, AND THE WELDER SHALL HAVE A W.S. CERTIFICATION IN FLAT PLACE.

NOTES:

1. CALL AND SCHEDULE INSPECTION TO OBSERVE CONCRETE PLUG AFTER PLACEMENT.

2. PERMIT TYPICALLY VALID FOR 30 DAYS - EXTENSION OF PERMIT IS REQUIRED PRIOR TO EXPIRATION IF WORK IS NOT COMPLETE.

3. FOR BORINGS GREATER THAN 12-INCHES IN DIAMETER, SUBMIT PERMANENT PATCHING PLAN WITH PERMIT APPLICATION.

4. IF GROUNDWATER IS ENCOUNTERED FOLLOW APPROPRIATE AGENCY REQUIREMENTS.

5. THE CONNECTION OF THE PIPE AND FLAT PLATE SHALL BE CONTINUOUSLY WELDED ALL OF THE WAY AROUND. THE SIZE OF THE WIRE SHALL BE 0.35 WIRE (ER70S-6) OR 7018 ROD, AND THE WELDER SHALL HAVE A W.S. CERTIFICATION IN FLAT PLACE.

---

**SPECIFICATION REFERENCE**

**UNIFORM STANDARD DRAWINGS**

**CLARK COUNTY AREA**

**SUPPLEMENTAL DRAWING**

METHOD FOR GEOTECHNICAL BORING AND MONITORING WELL BACKFILL AND PATCH FOR BORINGS 12-INCHES OR LESS IN DIAMETER

<table>
<thead>
<tr>
<th>DATE</th>
<th>DWG. NO.</th>
</tr>
</thead>
<tbody>
<tr>
<td>07-01-14</td>
<td>507.S1</td>
</tr>
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</table>

Effective 05/21/2020 to 10/07/2020
TRENCH EXCAVATION & BACKFILL

AGGREGATE BASE COURSES

ROADWAY WITH DESIGNATED BICYCLE LANE

PERMANENT PAVEMENT PATCH DETAIL

Roadway with designated bicycle lane and parking lane

PERMANENT PAVEMENT PATCH DETAIL

Supplemental Drawing

BICYCLE LANE PERMANENT PAVEMENT PATCH

Effective 05/21/2020 to 10/07/2020
GENERAL NOTES:

1. LONGITUDINAL JOINTS ARE NOT ALLOWED WITHIN A BICYCLE LANE/AREA.
2. PAVEMENT PATCHES WITHIN A BICYCLE LANE SHALL NOT BE WITHIN 100' OF ANOTHER PAVEMENT PATCH (EXISTING OR PROPOSED). IF A PAVEMENT PATCH IS WITHIN 100', THE PAVEMENT BETWEEN PATCHES SHALL BE REMOVED AND REPLACED WITH ONE CONTINUOUS PATCH.
3. NO PATCHES WITHIN A BICYCLE LANE/AREA SHALL BE LESS THAN 10' IN LENGTH.
4. TEMPORARY PATCHES SHALL BE ASPHALT.
5. THE CONTRACTORS NAME AND DATE OF CONSTRUCTION SHALL BE SPRAY PAINTED ON THE TEMPORARY PATCH BY THE CONTRACTOR.
6. TEMPORARY PATCHES SHALL BE COMPACTED, MAINTAINED, AND FLUSH WITH THE ADJACENT PAVEMENT AT ALL TIMES.
7. TEMPORARY PATCHES SHALL BE REMOVED AND REPLACED WITHIN 60 CALENDAR DAYS.
8. A RING TOP DELINEATOR POST SHALL BE PLACED WITHIN THE GUTTER TO ALERT BICYCLISTS OF THE TEMPORARY PATCH CONDITION IF THE BICYCLE LANE IS ADJACENT TO CURB AND GUTTER OR EDGE OF PAVEMENT.
9. CONTRACTOR SHALL INSTALL ROUGH ROAD WARNING SIGNS TO WARN BICYCLISTS OF THE TEMPORARY PATCH CONDITION.
10. ASPHALT DESIGN GRADATION SHALL BE CONTINUOUS WITH ADJACENT ROADWAY.
11. SEE 500 SERIES STANDARD DRAWINGS FOR BACKFILL REQUIREMENTS.
12. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES DUE TO NON-COMPLIANCE WITH THESE REQUIREMENTS AND ALL APPLICABLE CODES AND REGULATIONS.
13. CONTRACTOR SHALL HAVE PERMIT ON-SITE WHEN PRESENT. CONTRACTOR WILL BE ASSESSED A $300 FINE IF PERMIT IS NOT ON-SITE.
14. ALL PATCHES SHALL BE MACHINE LAID.
SECTION 509
PRECAST REINFORCED CONCRETE BOX CULVERTS

DESCRIPTION

509.01.01 GENERAL
A. This work shall consist of furnishing and placing Precast Reinforced Concrete Box (RCB) Culvert of the size and dimensions and at locations shown on the plans.
B. The precast RCB culvert shall be constructed to the lines and grades given by the Engineer and in accordance with the design shown on the plans.
C. Precast RCB culvert sections shall be monolithic.
D. Square or rectangular precast RCB sections shall be designed and constructed conforming to ASTM C1577, as controlled by the height of cover shown on the plans and specified herein. The design cover and loading calculations shall be included in the working drawing submittal.
E. Design calculations and working drawings shall be submitted for precast RCB sections for review and approval according to Subsection 105.02 "Plans and Working Drawings". Working drawings shall include the contract number, the jobsite name of the structure as shown on the plans, bridge number (if applicable), material designations, bill of materials, complete fabrication details, and guidelines for handling and assembly. Calculations and working drawings shall be prepared and stamped by a Nevada Registered Professional Civil Engineer.

MATERIALS

509.02.01 GENERAL
A. The materials used shall conform to the requirements in the following subsections:

<table>
<thead>
<tr>
<th>Materials</th>
<th>Section/Subsection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structure Excavation</td>
<td>206</td>
</tr>
<tr>
<td>Structure Backfill</td>
<td>207</td>
</tr>
<tr>
<td>Trench Excavation and Backfill</td>
<td>208</td>
</tr>
<tr>
<td>Selected Material Subbase</td>
<td>301</td>
</tr>
<tr>
<td>Portland Cement Concrete</td>
<td>501</td>
</tr>
<tr>
<td>Reinforcing Steel</td>
<td>505</td>
</tr>
<tr>
<td>Hydraulic Cement</td>
<td>701</td>
</tr>
<tr>
<td>Concrete Curing Materials and Admixtures</td>
<td>702</td>
</tr>
<tr>
<td>Grout and Mortar Sand</td>
<td>706.03.04</td>
</tr>
<tr>
<td>Joint Material</td>
<td>707</td>
</tr>
</tbody>
</table>

B. Manufacturer Certification and Qualification. The manufacturer of the precast RCB shall
submit for approval, substantial evidence of qualification to produce the product. Such evidence of qualification shall include the following:

1. Plant produced concrete products proposed for use will require either National Precast Concrete Association (NPCA) or American Concrete Pipe Association (ACPA) certification.

2. Written evidence of successful completion of at least three (3) projects of size and scope similar to the project for which the manufacturer wishes to be pre-qualified. The projects shall have been performed within the previous three (3) years. Such evidence shall include references for said work.

3. A written document detailing the manufacturer’s Quality Control Program that demonstrates conformance to the requirements of these specifications.

C. Concrete. Concrete shall be as specified in Section 501, "Portland Cement Concrete". A copy of the concrete mix design which will be used in the manufacture of the precast RCB shall be submitted for review and approval. The mix design shall identify the type of casting process (wet or dry casting), in addition to the requirements of Section 501.

1. When a wet cast manufacturing process is used, concrete shall be Class A Modified or Class AA Modified. A wet cast manufacturing process is defined as one in which forms are removed after 6 hours or more.

2. When a dry cast manufacturing process is used, concrete shall be Class A Modified. A dry cast manufacturing process is defined as one in which the concrete is densified by continuous vibration, and forms are removed immediately. If approved, alternative aggregate gradations from those specified in Section 501 and Section 706 may be allowed.

D. Product Certification. A certificate of compliance issued by the manufacturer of the precast RCB shall be submitted at the time of shipment. The certificate shall include the following:

1. The specification under which the box sections were manufactured.

2. All project identification information as noted for working drawings above.

3. The number of box sections of each size which are being shipped.

4. A statement that the construction of the box sections, and all materials used therein, are in compliance with the requirements of the applicable ASTM or AASHTO specifications.

5. Copies of the Quality Control test results, and compressive strength for that lot shall be kept at the plant and available for review.

E. The Engineer may, at their option, inspect the precast facility operations including, but not limited to, the reinforcing assembly, forming equipment, concrete batching equipment; placement, curing, and handling equipment; and testing and inspection equipment and procedures.

F. The manufacturer of the precast RCB shall maintain, for a period of seven (7) years following shipment, a copy of the appropriate test reports and other documentation, including compressive strength tests, necessary to support the certificates of compliance.

G. If the RCB culverts have not been cast prior to the notice to proceed date, written notification shall be given two (2) weeks in advance of performing casting operations for the project.

H. All materials will be subject to inspection for acceptance as to condition at the latest practicable time the Engineer has the opportunity to check for compliance prior to or during incorporation of materials in the work.

I. Reinforcement shall conform to the requirements of Section 505, "Reinforcing Steel".

J. All joints of the precast boxes shall be sealed with a flexible, butyl-blend, watertight, preformed joint material with a minimum cross-section width of 1 ¼ square inches, installed according to the manufacturer’s recommendations. Joint material shall conform to ASTM C990.

1. Joint surfaces of the precast box shall be clean, dry and free of any foreign material, including mud, aggregate base, and leveling course. Apply primer in accordance with manufacturer’s recommendations. Install sealant to form a continuous seal around the perimeter of the joint. The sealant may be placed on the lower portion of the groove of the downstream box and upper portion of the tongue of the upstream box, provided there are three (3) inches of overlap of the sealant on each side of the box.

CONSTRUCTION

509.03.01 EARTHWORK

A. Excavation and backfill shall conform to the requirements of Section 206, "Structure Excavation," and Section 207, "Structure Backfill," or Section 208, "Trench Excavation and Backfill," when the precast RCB is constructed in a trench.

1. The precast RCB shall be bedded as shown in the plans or as specified in the Special Provisions.

2. When no bedding class is specified, the requirements for normal bedding as shown in the Uniform Standard Drawings 503 or 503.2 shall apply.

3. The lines and grades shall be established by the Engineer or as designated in the contract documents.

B. Where precast RCB sections are to be installed in new embankments on a steep slope or in a difficult location, the height of new embankments may be varied as directed by the Engineer.

C. When headwalls are not required and granular materials are used for backfilling, the fill at the ends of the structure shall be sealed against the infiltration of water by bedding the ends of the structure using Class II CLSM or concrete.

D. Subgrade preparation shall conform to the requirements of Section 301, "Selected Material Subbase".

509.03.02 HEADWALLS

A. Where shown on the plans, inlet and outlet headwalls shall be constructed or installed in connection with precast box sections.

B. Where headwalls are constructed or installed, the ends of precast RCB sections shall be placed flush or cut off flush with the headwall face, unless otherwise permitted by the Engineer.

C. Headwalls shall be constructed to conform to Section 501, "Portland Cement Concrete" and Section 502, "Concrete Structures."

509.03.03 LAYING PRECAST REINFORCED CONCRETE BOX CULVERTS

A. Construction installation shall comply with AASHTO LRFD Bridge Design Specifications, most current edition, Section 208, "Trench Excavation and Backfill", and these specifications.

B. Inspection of precast RCBs prior to laying:
1. Written notification shall be given twenty-eight (28) days in advance of performing casting operations.

2. No precast box shall be laid which is excessively cracked per Subsection 509.03.04, (i.e., cracked, spalled, or damaged) and shall be removed from the work. Precast RCB culverts which show defects due to handling will be rejected at the site of installation regardless of prior acceptance.

3. Fine cracks and checks on the surface of the member which do not extend to the plane of the nearest reinforcement will not be cause for rejection unless they are numerous and extensive. Cracks which extend into the plane of the reinforcing steel shall be repaired in an approved manner.

4. Small damaged or honeycombed areas which are purely surface defects in nature shall be repaired in an approved manner. Excessive damage, honeycomb, or cracking will be subject to structural review at the Contractor's expense. All repairs shall be made sound, properly finished, and cured according to the pertinent specifications. When fine cracks or hair checks on the surface indicate poor curing practices, the production of precast boxes shall be discontinued until corrections are made and proper curing is provided.

C. All precast boxes shall be carefully handled during loading, unloading, transporting, and laying.

D. Precast box laying shall begin at the downstream end of the box except for extensions of existing boxes. Place the bottom of the box in contact with the bedding throughout its full length. The first section of box to be laid shall be firmly placed to the designated line and grade at the outlet end with the groove end pointing upstream. Construction loads shall be considered by the design engineer. Design loads shall not be exceeded at any time. Boxes shall be inspected before any backfill is placed. Contractor shall ensure that no rocks greater than three (3) inches or other rigid or jagged material is present in the bedding material where box will be laid directly on the material.

E. The box segments shall be joined in such a manner that the ends are fully entered and the inner surfaces are flush and even. The maximum tolerable nominal horizontal gap between joints is 0.75 inch, or the manufacturer's maximum joint gap tolerance, whichever is less. This gap shall be checked immediately after laying each section. Any annular space existing in the interior portion of the joint shall be filled with an approved mortar and finished flush with the interior surfaces of the box units. If the inner surfaces are not flush or there is an adverse slope, a procedure to repair the vertical gap must be submitted to the Engineer for approval.

F. After laying, the box culvert segments shall be checked for alignment and grade. The culvert shall be installed within the tolerances for horizontal and vertical location and gradient as follows:

   1. Horizontal location within 0.05 feet of location shown on plans.
   2. Vertical location within 0.05 feet of elevation shown on plans.
   3. Gradient shall not vary by more than ten percent (10%) of slope shown on plans.

G. The Contractor shall remove and relay or replace box that is out of alignment, damaged, or has unduly settled at no cost to the Contracting Agency.

H. The interior of the precast box sections shall be kept free of dirt and other foreign material as the box laying progresses and be left clean at the completion of the work. Boxes which are not in true alignment, which show any undue settlement, or are damaged shall be taken up and re-laid at the Contractor's expense. The bottom of the trench shall be graded and prepared to provide a firm and uniform bearing throughout the entire length of the box for the leveling course to be placed on. Blocking shall not be used to bring the box to grade.
Box sections shall be checked for alignment and grade at the time of joining the sections.

I. The box culverts shall be laid with nominal three (3) inch space between multiple box culverts. The annular space shall be grouted. The grout shall be a workable mix suitable for pumping without segregation and shall conform to the requirements of Section 706.03.04, "Grout and Mortar Sand." The grout shall be placed by pumping or an approved alternate method and consolidated by mechanical vibration or rodding during placement. The grouting shall be performed by a continuous placement in lifts not exceeding six (6) feet. Vertical grout barriers may be used to control the flow of grout horizontally. The grout shall attain a minimum compressive strength of 2,500 psi in 28 days when tested according to ASTM C39.

J. The backfill material shall comply with the requirements of Section 208. If the Contractor cannot fit compaction equipment between the box and the trench wall, or the conditions are unsafe for compaction and/or testing, CLSM must be used.

K. The Contractor shall provide box culverts with beveled ends where the radius of the center line alignment exceeds the manufacturer’s minimum radius of curvature allowed using pulled joints. The maximum bevel angle shall not exceed 5 degrees. The Contractor may provide elbows, with a maximum deflection angle of 22 ½ degrees, where the radius of the center line alignments is less than the manufacturer’s minimum radius of curvature for a 5-degree bevel.

509.03.04 INSPECTION

A. All precast RCB joints and lengths shall be 100 percent inspected.

B. Inspection and Testing shall be performed by the contractor during and after installation to ensure proper performance.

C. Installation of bedding and backfill materials, as well as their placement and compaction, shall adhere to the requirements of this section and other applicable sections.

D. Errors in line and grade, as well as any improper placement or backfill techniques, shall be corrected prior to placing significant backfill or trench fill.

E. Joints shall be properly assembled to prevent the infiltration of soil fines. Flexible joint material shall be properly placed to prevent groundwater infiltration and shall be uniformly oriented around the precast RCB.

F. Shallow cover installations shall be checked to ensure the minimum cover level is provided.

G. The Contractor shall complete an internal quality inspection a minimum of thirty (30) days after final backfill has been placed and prior to final acceptance by the Contracting Agency. The culvert shall be cleaned and inspected for cracks and joint gaps using visual physical measurement or other devices, including but not limited to calibrated television or video cameras, subject to approval by the Engineer.

H. Cracks in precast RCB culverts (both longitudinal and circumferential) that are less than 0.10 inch in width are generally considered non-structural flaws and need not be repaired. Cracks that are equal to or exceed 0.10 inch in width shall require an evaluation by a Nevada licensed professional engineer. The Contractor’s engineer shall provide a recommendation regarding removal or repair in accordance with ASTM C1577 standards and subject to approval by the Contracting Agency.

I. Precast RCB joints and lengths that do not meet the specification shall be repaired or replaced at the Contractor’s expense. Any replacement precast RCB shall also be subject to the same testing.
J. All inspection and testing results shall be submitted and approved by the Contracting Agency before final payment. The Agency Engineer shall be allowed access to randomly inspect at least 10 percent of the total number of precast RCB runs.

509.03.05 BACKFILL
A. Precast RCB culvert section backfill shall conform to the requirements of Section 207, "Structure Backfill", unless otherwise noted.
B. Prior to placing backfill material, all handing holes in RCB culverts shall be completely filled with grout or other acceptable methods.

509.03.06 EXTENDING EXISTING CULVERTS
A. Where shown on the plans or directed by the Engineer, existing culverts shall be extended in accordance with the provisions for installing new culverts and the following additional provisions.
B. Existing headwalls shall be demolished, removed, and disposed of per Section 202, "Removal of Structures and Obstructions", or moved to the extended location as indicated on the plans or ordered by the Engineer.
C. A headwall that is not to be reset shall be demolished without injury to the existing culvert and removed and disposed of in accordance with the provisions of Section 202, "Removal of Structures and Obstructions." If shown on the plans or ordered by the Engineer, a new concrete headwall shall be constructed in accordance with the provisions of Section 501, "Portland Cement Concrete," of these specifications or a flared end section shall be attached thereto.

METHOD OF MEASUREMENT

509.04.01 MEASUREMENT
A. The materials to be paid for under these specifications will be listed in the contract items by size, class, type, gauge, or whatever information is necessary for identification.
B. The quantity of precast RCB culvert to be measured for payment will be the actual number of linear feet of culvert, complete and in place.
C. Precast RCB culvert bends, wyes, tees, and other branches will be measured and paid for by the linear foot for the sizes of culvert involved. Wyes, tees, and other branches will be measured along centerlines to the point of intersection.
D. All measurements will be made in accordance with Subsection 109.01, "Measurement of Quantities."

BASIS OF PAYMENT

509.05.01 PAYMENT
A. The accepted quantities of precast RCB culvert measured as specified in Subsection 509.04.01, "Measurement", will be listed under the respective sections of precast RCB.
B. The accepted quantity of [X]-FT X [X]-FT precast RCB culvert will be paid for at the contract unit price per linear foot shall include all labor, equipment and materials necessary to complete the work.
C. Full compensation for furnishing precast RCB culvert with end finish, including distortion if required, will be considered as included in the price paid per linear foot for the precast RCB involved and no additional compensation will be allowed therefor. Full
compensation for bedding will be considered included in the price paid per cubic yard for backfill or granular backfill as the case may be and such payment shall include compensation for all the materials, labor, tools, and incidentals necessary to complete the work.

D. All payments will be made in accordance with Subsection 109.02, "Scope of Payment."

<table>
<thead>
<tr>
<th>PAY ITEM</th>
<th>PAY UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Size) Precast Reinforced Concrete Box Culvert</td>
<td>Linear Foot</td>
</tr>
</tbody>
</table>
TYPICAL APPLICATION FOR BARRICADES & FLAGGER TRAFFIC CONTROL SIGN STANDARD DESIGNS

DATE 1-9-97 DWG. NO. 601

SPECIFICATION REFERENCE
TRAFFIC CONTROL PLAN FOR HIGHWAY WORK ZONE

UNIFORM STANDARD DRAWINGS CLARK COUNTY AREA

Effective 05/21/2020 to 10/07/2020
TRAFFIC CONTROL PLAN
IN FIGURES A & B OR TABLES 1, 2 & 3 (BELOW) WARRANTING A BARRIER

FIGURE A. WARRANTS FOR FILL SECTION EMBANKMENTS

PORTABLE CONCRETE BARRIER RAIL SHALL BE USED TO PROTECT ANY WORK AREA IN WHICH IS ESTABLISHED A CONDITION SHOWN UNDER 750 DESIGN A.D.T.

FIGURE B. CLEAR ZONE DISTANCE CURVES

TABLE 1. CLEAR ZONE DISTANCES (IN FEET FROM EDGE OF DRIVING LANE)

<table>
<thead>
<tr>
<th>DESIGN SPEED</th>
<th>CLEAR ZONE DISTANCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>45 MPH OR LESS</td>
<td>12' 15' 30' 45'</td>
</tr>
<tr>
<td>60 MPH</td>
<td>18' 24' 36' 48'</td>
</tr>
<tr>
<td>70 MPH</td>
<td>24' 32' 48' 60'</td>
</tr>
</tbody>
</table>

TABLE 2. TYPICAL WARRANTS FOR NONTRAVERSABLE AND FIXED OBJECT HAZARDS

TABLE 3. HORIZONTAL CURVE ADJUSTMENTS

Kc (CURVE CORRECTION FACTOR)
A. For any operation that encroaches in the area between the centerline and a line 2 ft. outside the edge of the pavement for a period of less than 15 minutes.

B. For any operation that encroaches in the area between the centerline and a line 2 ft. outside the edge of the pavement for a period in excess of 15 minutes but less than 60 minutes.

C. For any operation that is more than 2 ft. outside the edge of the pavement for a period of less than 60 minutes.

GENERAL NOTES

1. Construction operations shall be confined to one traffic lane. On two-lane roads, at least 500 ft. of both traffic lanes shall be available for traffic movement at intervals not greater than 1,000 ft. and complete traffic control plans must be provided for any project expected to exceed 1,000 ft. in length.

2. The flaggers shall be in sight of each other or in direct communication at all times.

3. All signs are to be removed at completion of each operation.

4. For these lane roadways, theagger shall be shown for traffic approaching from the opposite direction. The flagger may be utilized if one lane is maintained in each direction, as directed by the traffic engineer.

5. Longitudinal dimensions may be adjusted to fit field conditions by the traffic engineer. The lateral placement of the flaggers may be varied from that shown.

6. All vehicles, equipment, workers (except flaggers) and their activities are restricted at all times to one side of the pavement unless otherwise authorized by the traffic engineer.

7. All warning signs shall have black legend and border on an orange background. All signs having an orange color shall be made of materials conforming to Section 7.03.01 of the Uniform Standard Specifications.

8. If working at or near a traffic signal, contact LVACTS at 229-6611 or 350-3300 at least 3 normal working days prior to beginning work.

9. If the work place is in the median of a divided highway, an advance warning sign should also be placed on the left side of the directional roadway.

10. Access for CAT transit service, pedestrians and bicycles shall be maintained throughout duration of construction. If relocating of access is necessary, the contractor shall provide the entity’s traffic engineer with a map showing the proposed re-routes for approval.

11. Floodlights should be provided to mark flagger stations at night as needed.

12. Type “B” high intensity flashing warning lights may be installed above each work zone, construction for use during hours of darkness.

SYMBOLS

- Work Area
- Sign on Portable or Permanent Support
- Flagger with Traffic Control Sign
- Traffic Cones
- Traffic Direction

AGENCY APPROVED

TYPICAL APPLICATION FOR

Short Time, Day or Night Operations

UNIFORM STANDARD DRAWINGS

CLARK COUNTY AREA

DATE

1-9-97

DWG NO.

603
1. Minimum distance is 200 ft. Maximum distance to be determined by the traffic engineer but should not exceed 1/2 the length required for one normal working day's operation in situations where multiple work locations in a limited distance make it impracticable to place stationary signs. The maximum spacing for the advance warning sign is 5 miles in advance of the work.

2. If the work operation does not exceed 60 minutes, traffic control may be in conformance with standard drawing No. 903.

3. All signs are to be removed at completion of the day's operation.

4. For divided roadways the required advance warning signs shall be posted on both the right and median side of the affected approach.

5. For multilane roadways the advance warning signs may be required for traffic approaching from the opposite direction.

6. Worker signs are to be removed when no work is being performed. Any unattended obstacle or excavation in the work area, which in the opinion of the traffic engineer constitutes a hazard, shall be guarded by barricades with burning lights or equivalent devices operating as a temporary extension of the work zone. Burning lights shall be used for delineation and long line guidance. Barricades shall be placed according to maximum spacing values listed in the table below.

7. If the work operation requires any work vehicle to enter or leave the through traffic lanes, a flagger shall be provided and the flagger sign shall be substituted for the worker sign. A 200 ft. cone taper shall be provided prior to station to protect the flagger. Flagger is not required for 25 MPH or less residential streets.

8. Additional dimensions may be adjusted to fit field conditions by the traffic engineer.

9. All vehicles, equipment, workers and their activities are restricted at all times to one side of the pavement unless otherwise authorized by the traffic engineer.

10. All warning signs shall have black legend and border on an orange background. All signs having an orange color shall be made of materials conforming to section 716.03.01 of the Uniform Standard Specifications.

11. Table for spacing of advance warning signs:

<table>
<thead>
<tr>
<th>ROAD TYPE</th>
<th>ADVANCE WARNING SIGN</th>
<th>ROAD TYPE</th>
<th>ADVANCE WARNING SIGN</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXPRESSIONWAY</td>
<td>200 ft.</td>
<td>FREEWAY/FREESTATE</td>
<td>500 ft.</td>
</tr>
<tr>
<td>EXPRESSWAY/BORROWBANK</td>
<td>1000 ft.</td>
<td>INTERSTATE</td>
<td>3000 ft.</td>
</tr>
</tbody>
</table>

12. If working at or near a traffic signal, contact LAS-6311 and local entity at appropriate numbers listed below at least two working days prior to beginning work:

- Boulder City: 263-9300
- Mesquite: 346-5305
- Clark County: 684-2462
- Henderson: 684-2462
- North Las Vegas: 684-2462
- Las Vegas: 229-6311

13. Access for CAT transit service, pedestrians and bicycles shall be maintained throughout duration of construction. If re-routing of access is necessary, the contractor shall provide the entity's traffic engineer with a map showing the proposed re-routing for approval. If construction operations affect CAT bus stops or facilities, the contractor shall notify the regional transportation commission at 455-4601 at least 3 normal working days prior to beginning such operations.
TYPICAL APPLICATION FOR ROAD WORK

1. Construction operations shall be confined to one traffic lane, leaving the opposite lane open to traffic. At least 500 ft. of both traffic lanes shall be available for traffic movement at intervals not greater than 1,000 ft. A special traffic control detail must be approved for any project expected to exceed 1,000 ft. in length.

2. The flaggers shall be in sight of each other or in direct communication at all time.

3. Maximum distance to be determined by the traffic engineer, but should not exceed 1/2 the length required for one normal working day's operation or 1,000 ft., whichever is less.

4. If the work operation does not exceed 60 minutes, traffic control will be in conformance with Standard Drawing No. 803.

5. All signs shall be removed at completion of the day's operations.

6. For divided roadways the required advance warning signs shall be posted on both the right and left side of the affected approach.

7. For multilane roadways, the flagger and the advance warning signs shown may be required for traffic approaching from the opposite direction. "Right lane closed ahead" signs shall be substituted for "one lane road ahead" signs.

8. This case also applies when work is being performed in lanes adjacent to the centerline of an undivided multilane highway or adjacent to the median on a divided highway. Under these conditions, "left lane closed ahead" signs shall be substituted for "right lane closed ahead" signs.

9. This case does not apply when work is being performed in the middle lanes of a six or more lane highway. Special traffic control details approved by the traffic engineer will be required.

10. "One lane road ahead" and flagger signs shall be removed or covered when no work is being performed.

11. Longitudinal dimensions may be adjusted to fit field conditions by the traffic engineer. The lateral placement of the flaggers may be varied from that shown. If a curved section of roadway is involved flagger should be placed at the beginning of curve (F.C.).

12. All vehicles, equipment, workers (except flaggers) and their activities are restricted at all times to one side of the pavement unless otherwise authorized by the traffic engineer.

13. All warning signs shall have black legend and border on an orange background. All signs having an orange color shall be made of materials conforming to Section 716.03.01 of the Uniform Standard specifications.

14. In multilane situations, the flagger and flagger warning signs on the side opposite to the work area are required only when traffic in any direction is made to cross the road centerline.

15. Table for spacing of advance warning signs

<table>
<thead>
<tr>
<th>Road Type</th>
<th>Distance Between Signs (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXPRESSWAY/FREeway</td>
<td>350 350 350</td>
</tr>
<tr>
<td>URBAN (35 MPH OR GREATER)</td>
<td>350 350 350</td>
</tr>
<tr>
<td>URBAN (55 MPH OR GREATER)</td>
<td>350 350 350</td>
</tr>
<tr>
<td>URBAN (70 MPH OR GREATER)</td>
<td>350 350 350</td>
</tr>
<tr>
<td>URBAN (70 MPH OR GREATER)</td>
<td>350 350 350</td>
</tr>
</tbody>
</table>

16. If working at or near a traffic signal, contact LVACTS at 229-6611 and local entity at appropriate numbers listed below at least two working days prior to beginning work.

<table>
<thead>
<tr>
<th>City</th>
<th>Phone Number</th>
<th>Area</th>
<th>Zip Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boulder City</td>
<td>262-9200</td>
<td>Las Vegas</td>
<td>89101</td>
</tr>
<tr>
<td>Clark County</td>
<td>454-4100</td>
<td>Mesquite</td>
<td>89432</td>
</tr>
<tr>
<td>Henderson</td>
<td>565-2140</td>
<td>North Las Vegas</td>
<td>89106</td>
</tr>
</tbody>
</table>

17. Access for CAT transit service, pedestrians and bicycles shall be maintained throughout duration of construction. If re-routing of access is necessary, the contractor shall provide the entity's traffic engineer with a map showing the proposed re-routes for approval. If construction operations affect CAT bus stops or facilities, the contractor shall coordinate with CAT at 642-4481 at least 2 normal working days prior to beginning such operations.

SYMBOLS

- Work area
- Flagger with traffic control sign
- Traffic cone
- Traffic direction

GENERAL NOTES

1. Traffic control details approved by the traffic engineer shall notify the Regional Transportation Commission and local entity at appropriate numbers listed above at least two working days prior to beginning work.

2. Traffic control details approved by the traffic engineer will be required.
GENERAL NOTES

1. NO SPECIAL SIGNING IS REQUIRED.

2. IF THE WORK OPERATION REQUIRES ANY WORK VEHICLES TO CROSS THE 15 FT. CLEAR ZONE, TRAFFIC CONTROL SHALL CONFORM WITH STANDARD DRAWING NO. 607.

3. IF WORKING AT OR NEAR A TRAFFIC SIGNAL, CONTACT LVACTS AT 229-6511 AND LOCAL ENTITY AT APPROPRIATE NUMBERS LISTED BELOW AT LEAST TWO WORKING DAYS PRIOR TO BEGINNING WORK.

   - BOULDER CITY: 293-4300
   - MESQUITE: 344-2205
   - CLARK COUNTY: 455-6100
   - NORTH LAS VEGAS: 642-2462
   - HENDERSON: 303-2140
   - LAS VEGAS: 229-6331

4. TYPE "B" HIGH INTENSITY FLASHING WARNING LIGHTS MAY BE INSTALLED ABOVE EACH WORK ZONE CONSTRUCTION SIGN FOR USE DURING HOURS OF DARKNESS.

TYPICAL APPLICATIONS

- LANDSCAPING WORK
- UTILITY WORK
- FENCING CONTRACTS AND MAINTENANCE
- CLEANING CULVERTS

SYMBOLS

- SIGN ON PORTABLE OR PERMANENT SUPPORT
- TRAFFIC DIRECTION

<table>
<thead>
<tr>
<th>ROAD TYPE</th>
<th>LOW SPEED ROAD (35 MPH OR LESS)</th>
<th>EXPRESSWAY/INTERSTATE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>LOW SPEED</td>
<td>250</td>
<td>200</td>
</tr>
<tr>
<td>EXPRESS</td>
<td>1000</td>
<td>1000</td>
</tr>
<tr>
<td></td>
<td>1000</td>
<td>1000</td>
</tr>
<tr>
<td></td>
<td>1000</td>
<td>1000</td>
</tr>
</tbody>
</table>

TABLE FOR SPACING OF ADVANCE WARNING SIGNS

TRAFFIC CONTROL PLAN FOR HIGHWAY WORK ZONE

15' MIN. EDGE OF PAVEMENT

ROAD WORK AHEAD

TRAFFIC DIRECTION

AHEAD ROAD WORK (OPTIONAL)
TRAFFIC CONTROL PLAN FOR HIGHWAY WORK ZONE

SPECIFICATION REFERENCE

TYPICAL APPLICATION FOR
TWO-LANE, TWO-WAY, RURAL DAY OR NIGHT OPERATIONS WHERE ACTIVITIES WILL ENCROACH BETWEEN 15 FT. & 2 FT. OUTSIDE OF PAVEMENT EDGE

UNIFORM STANDARD DRAWINGS CLARK COUNTY AREA

DATE 1-9-97 DWG NO. 607

GENERAL NOTES

1. IF THE WORK OPERATION DOES NOT EXCEED 60 MINUTES, TRAFFIC CONTROL MAY BE IN CONFORMANCE WITH STANDARD DRAWING NO. 603.

2. WORKER SIGNS ARE TO BE REMOVED WHEN NO WORK IS BEING PERFORMED. ANY UNATTENDED OBSTACLE OR EXCAVATION IN THE WORK AREA WHICH IN THE OPINION OF THE TRAFFIC ENGINEER CONSTITUTES A HAZARD SHALL BE PROTECTED BY BARRICADES WITH FLASHING LIGHTS AT NIGHT AT THE POINTS OF HAZARD. STEADY BURNING LIGHTS SHALL BE USED FOR DELINEATION AND LONG LINE GUIDANCE. BARRICADES SHALL BE PLACED ACCORDING TO MAXIMUM DISTANCE LISTED IN THE TABLE BELOW.

3. TYPE "B" HIGH INTENSITY FLASHING WARNING LIGHTS MAY BE INSTALLED ABOVE EACH WORK ZONE CONSTRUCTION SIGN FOR USE DURING HOURS OF DARKNESS.

4. IF THE WORK OPERATION REQUIRES ANY WORK VEHICLES TO ENTER OR LEAVE THROUGH TRAFFIC LINES, A FLAGGER SHALL BE PROVIDED AND A FLAGGER SIGN SHALL BE SUBSTITUTED FOR THE WORKER SIGN. A 100 FT. CONE TAPER SHALL BE PROVIDED PRIOR TO STATION TO PROTECT THE FLAGGER. FLAGGER IS NOT REQUIRED FOR 25 MPH OR LESS RESIDENTIAL STREETS.

5. LONGITUDINAL DIMENSIONS MAY BE ADJUSTED TO FIT FIELD CONDITIONS BY THE TRAFFIC ENGINEERS.

6. ALL VEHICLES, EQUIPMENT, WORKERS AND THEIR ACTIVITIES ARE RESTRICTED AT ALL TIMES TO ONE SIDE OF THE PAVEMENT UNLESS OTHERWISE AUTHORIZED BY THE TRAFFIC ENGINEER.

7. ALL WARNING SIGNS SHALL HAVE BLACK LEGEND AND BORDER ON AN ORANGE BACKGROUND. ALL SIGNS HAVING AN ORANGE COLOR SHALL BE MADE OF MATERIALS CONFORMING TO SECTION 716.03.01 OF THE UNIFORM STANDARD SPECIFICATIONS.

8. TABLE FOR SPACING OF ADVANCE WARNING SIGNS

<table>
<thead>
<tr>
<th>ROAD TYPE</th>
<th>DISTANCE BETWEEN SIGNS (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RURAL</td>
<td>200</td>
</tr>
<tr>
<td>URBAN (LESS THAN 35 MPH)</td>
<td>350</td>
</tr>
<tr>
<td>EXPRESSWAY/FREEWAY</td>
<td>500</td>
</tr>
<tr>
<td>URBAN (35 MPH OR GREATER)</td>
<td>700</td>
</tr>
</tbody>
</table>

9. IF WORKING AT OR NEAR A TRAFFIC SIGNAL, CONTACT LVACTS AT 229-6611 AND LOCAL ENTITY AT APPROPRIATE NUMBERS LISTED BELOW AT LEAST TWO WORKING DAYS PRIOR TO BEGINNING WORK.

Boulder City: 250-8200
Las Vegas: 229-6201
Clark County: 455-6100
Mesquite: 702-346-5295
Henderson: 455-2140
North Las Vegas: 642-2462

10. FLOODLIGHTS SHOULD BE PROVIDED TO MARK FLAGGER STATIONS AT NIGHT AS NEEDED.

11. IF WORKSPACE IS IN THE MEDIAN OF A DIVIDED HIGHWAY, AN ADVANCE WARNING SIGN SHOULD ALSO BE PLACED ON THE LEFT SIDE OF THE DIRECTIONAL ROADWAY.

12. ACCESS FOR CAT TRANSIT SERVICE, PEDESTRIANS AND BICYCLES SHALL BE MAINTAINED THROUGHOUT. NOTIFICATION OF CONSTRUCTION: IF RE-ROUTING OF ACCESS IS NECESSARY, THE CONTRACTOR SHALL PROVIDE THE ENTITY’S TRAFFIC ENGINEER WITH A MAP SHOWING THE PROPOSED RE-ROUTED PATHS FOR APPROVAL. IF CONSTRUCTION OPERATIONS AFFECT CAT BUS STOPS OR FACILITIES, THE CONTRACTOR SHALL NOTIFY THE REGIONAL TRANSPORTATION COMMISSION AT 455-4481 AT LEAST 3 NORMAL WORKING DAYS PRIOR TO BEGINNING SUCH OPERATIONS.

SYMBOLS

Work Area

Sign On Portable Or Permanent Support

Traffic Direction

TYPICAL APPLICATIONS

Utilility Operations

Culvert Extensions

Guard Rail Installation And Maintenance

Delinuator Installation And Maintenance

Landscaping Operations

Cleaning Ditches And Drainage Structures

Sign/Installation And Maintenance

Shoulder Repair

TRAFFIC DIRECTION

ROAD WORK AHEAD

W21-1

W21-1A

R HOH WORKING

W21-1A

OR

MAX WORKING

W21-1

TABLE FOR SPACING OF ADVANCE WARNING SIGNS

<table>
<thead>
<tr>
<th>ROAD TYPE</th>
<th>DISTANCE BETWEEN SIGNS (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RURAL</td>
<td>200</td>
</tr>
<tr>
<td>URBAN (LESS</td>
<td>350</td>
</tr>
<tr>
<td>THAN 35 MPH)</td>
<td>500</td>
</tr>
<tr>
<td>EXPRESSWAY/FREE</td>
<td>700</td>
</tr>
<tr>
<td>URBAN (35 MPH</td>
<td>715</td>
</tr>
<tr>
<td>OR GREATER)</td>
<td>840</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ROAD TYPE</th>
<th>DISTANCE BETWEEN SIGNS (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RURAL</td>
<td>200</td>
</tr>
<tr>
<td>URBAN (LESS</td>
<td>350</td>
</tr>
<tr>
<td>THAN 35 MPH)</td>
<td>500</td>
</tr>
<tr>
<td>EXPRESSWAY/FREE</td>
<td>700</td>
</tr>
<tr>
<td>URBAN (35 MPH</td>
<td>715</td>
</tr>
<tr>
<td>OR GREATER)</td>
<td>840</td>
</tr>
</tbody>
</table>

Effective 05/21/2020 to 10/07/2020
General Notes

1. Construction operations shall be confined to one traffic lane. Leaving the opposite lane open to traffic at least 50 ft. of both traffic lanes shall be available for traffic movement at intervals not greater than 100 ft.

2. The flaggers shall be in sight of each other or in direct communication at all times.

3. When no work is being performed, the flaggers will not be required. If the flaggers are not present, the flagger signs shall be removed or covered.

4. The flagger signs shall be removed or covered.

5. All signs, cones, barricades, and drums shall be removed at completion of operations during daylight and the work area open to traffic.

6. All signs, cones, barricades, and drums shall be removed at completion of operations during daylight and the work area open to traffic.

7. All signs, cones, barricades, and drums shall be removed at completion of operations during daylight and the work area open to traffic.

8. The longitudinal buffer space may be adjusted to fit field conditions by the traffic engineer. The lateral placement of the flagger may be varied from shown.

9. The longitudinal buffer space may be adjusted to fit field conditions by the traffic engineer. The lateral placement of the flagger may be varied from shown.

10. All working signs shall have black legend and border on an orange background. All signs having an orange color shall be made of materials conforming to Section 716.03.01 of the Uniform Standard Specifications.

Table for Spacing of Advance Warning Signs

<table>
<thead>
<tr>
<th>Road Type</th>
<th>City</th>
<th>Contact</th>
<th>Hours</th>
<th>Miles</th>
<th>Per Hour</th>
<th>Weekly</th>
<th>Monthly</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban (35 Mile or Greater)</td>
<td>Las Vegas</td>
<td>346-5295</td>
<td>300</td>
<td>200</td>
<td>500</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>Urban (Less Than 35 MPH)</td>
<td>Henderson</td>
<td>702-455-7007</td>
<td>300</td>
<td>200</td>
<td>500</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>Rural</td>
<td>Boulder City</td>
<td>702-293-9400</td>
<td>300</td>
<td>200</td>
<td>500</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>Rural (35 MPH or Greater)</td>
<td>Mesquite</td>
<td>702-345-5555</td>
<td>300</td>
<td>200</td>
<td>500</td>
<td>500</td>
<td>500</td>
</tr>
<tr>
<td>Rural (Less Than 35 MPH)</td>
<td>North Las Vegas</td>
<td>702-323-2939</td>
<td>300</td>
<td>200</td>
<td>500</td>
<td>500</td>
<td>500</td>
</tr>
</tbody>
</table>

When change of elevation occurs, a 6:1 transitional section shall be placed.

Typical Applications

1. Utility operations - pavement patch

2. Traffic control plan for highway work zone

3. Traffic control plan for rural, day operations where activities will encroach between centerline and 2 ft. outside of pavement edge

4. Typical application for two-lane, two-way, rural day operations where activities will encroach between centerline and 2 ft. outside of pavement edge
1. Typical Application for Agency Approved
Effective 05/21/2020 to 10/07/2020

Utility Operations
Installation of Drainage Structure
Traffic Control Plan
Traffic Cone
Flagger with Traffic Control Sign
Traffic Direction
Barricade or Drum with Steady Burning Light

general notes
3. All devices establishing a taper or tangent line shall be of one type; devices shall not be mixed by type.
4. The flaggers shall be in sight of each other or in direct communication at all times.
5. Flaggers shall be required at all entry points into the work area.
6. All signs shall be ground-mounted if the closure time exceeds four days as required by Section 620 of the Uniform Standard Specifications.
7. Type "G" high intensity flashing warning lights may be installed above each work zone construction sign for use during hours of darkness.
8. Longitudinal dimensions may be adjusted to fit field conditions by the traffic engineer. The lateral placement of the flaggers may be varied from that shown.
9. All vehicles, equipment, workers (except flaggers) and their activities are restricted at all times to one side of the roadway. No other traffic is allowed otherwise authorized by the traffic engineer.
10. All barricade lights shall be bidirectional. Except lights on taper barricades, which shall be monodirectional.
11. All warning signs shall have black legend on a white background. All signs having an orange color shall be made of materials conforming to Section 716.03.2 of the Uniform Standard Specifications.

Note: The use of the following materials conforms to Section 716.03.2 of the Uniform Standard Specifications.

1.Galvanized Steel
2. Aluminum
3. Nylon
4. High Intensity Flashing

Table for Spacing of Advance Warning Signs

<table>
<thead>
<tr>
<th>Distance (M)</th>
<th>Type A</th>
<th>Type B</th>
<th>Type C</th>
<th>Type D</th>
</tr>
</thead>
<tbody>
<tr>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>300</td>
<td>300</td>
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<td>300</td>
<td>300</td>
</tr>
<tr>
<td>350</td>
<td>350</td>
<td>350</td>
<td>350</td>
<td>350</td>
</tr>
<tr>
<td>400</td>
<td>400</td>
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<tr>
<td>450</td>
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<td>650</td>
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<td>650</td>
<td>650</td>
<td>650</td>
</tr>
<tr>
<td>700</td>
<td>700</td>
<td>700</td>
<td>700</td>
<td>700</td>
</tr>
</tbody>
</table>

If working at or near a traffic signal, contact LVACTS at 229-4611 and local entity at appropriate numbers listed below at least two working days prior to beginning work.

Boulder City: 665-2804
Mesquite: 340-2305
Clark County: 455-6100
Nelson: 455-6105
North Las Vegas: 455-2492
Las Vegas: 229-4631

12. Access for Cat Transit Service, Pedestrians and Bicycles shall be maintained throughout duration of construction. If re-routing of access is necessary, the Contractor shall provide temporary re-routing proposals to the appropriate agencies at least three working days prior to implementing those changes.
13. Floodlights should be provided to mark flagger stations at night as needed.
14. A lateral buffer space may be required to separate work space from traffic space. The width shall be determined by the traffic engineer.

Uniform Standard Drawings
Clark County Area

Date: 1/3/97

A A

Typical Application for Two-Lane, Two-Way, Rural Night Operations Where Activities Will Encroach Between Centerline & 2 Ft. Outside of Pavement Edge

Traffic Control Plan
For
Highway Work Zone

Specification Reference

Agency Approved

B C H L M N
Providing no other construction or maintenance operation within 4 miles

1. Where the distance between paving and excavating operations is less than 2,000 ft. The entire operation may be considered as one work area for signing purposes. When the distance between operations exceeds 2,000 ft, additional warning signs may be required at 200 ft centers. Such additional devices may also be required for distances less than 2,000 ft, at the discretion of the traffic engineer.

2. One flagger shall be required for each separate construction operation. For residential (25 MPH or less), flaggers shall be in sight of each other or in direct communication at all times.

3. No paving or excavating operations shall be performed at night unless authorized by the traffic engineer.

4. Maximum distance to be determined by the traffic engineer but in no case to exceed the length of 1/2 day’s normal operation.

5. All signs shall be ground-mounted if the working time exceeds four days and as required by Section 625 of the Uniform Standard Specifications.

6. Signs shall be in sight of each other or in direct communication at all times.

7. See note 11.

8. Longitudinal dimensions may be adjusted to fit field conditions by the traffic engineer. The lateral placement of the flaggers may be varied from that shown.

9. All vehicles, equipment, workers, flaggers and their activities are restricted at all times to one side of the roadway unless otherwise authorized by the traffic engineer.

10. All warning signs shall have black legend and border on an orange background. All signs having an orange color shall be made of materials conforming to Section 716.03.01 of the Uniform Standard Specifications.

11. All devices establishing a taper or tangent line shall be of one type; devices shall not be mixed by type.

12. If working at or near a traffic signal, contact LVCAT at 323-6221 and local entity at the appropriate numbers listed below at least two working days prior to beginning work.

13. Floodlights should be provided to mark flagger stations at night as needed.

14. Access for CAT Transit Service, pedestrians and bicycles shall be maintained throughout duration of construction. If breaching of right of way is required, a Lighting Drawing shall be provided to the Traffic Engineer with a map showing the proposed seed routes for approval. If construction operations affect Cat Bus stops or facilities, the contractor shall notify the Regional Transportation Commission at 425-4481 at least 3 normal working days prior to beginning such operations.

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### General Notes

1. Where the distance between paving and excavating operations is less than 2,000 ft. The entire operation may be considered as one work area for signing purposes. When the distance between operations exceeds 2,000 ft, additional warning signs may be required at 200 ft centers. Such additional devices may also be required for distances less than 2,000 ft, at the discretion of the traffic engineer.

2. One flagger shall be required for each separate construction operation. For residential (25 MPH or less), flaggers shall be in sight of each other or in direct communication at all times.

3. No paving or excavating operations shall be performed at night unless authorized by the traffic engineer.

4. Maximum distance to be determined by the traffic engineer but in no case to exceed the length of 1/2 day’s normal operation.

5. All signs shall be ground-mounted if the working time exceeds four days and as required by Section 625 of the Uniform Standard Specifications.

6. Signs shall be in sight of each other or in direct communication at all times.

7. Type "B" high intensity flashing warning lights may be installed above each work zone construction sign for use during hours of darkness.

8. Longitudinal dimensions may be adjusted to fit field conditions by the traffic engineer. The lateral placement of the flaggers may be varied from that shown.

9. All vehicles, equipment, workers, flaggers and their activities are restricted at all times to one side of the roadway unless otherwise authorized by the traffic engineer.

10. All warning signs shall have black legend and border on an orange background. All signs having an orange color shall be made of materials conforming to Section 716.03.01 of the Uniform Standard Specifications.

11. All devices establishing a taper or tangent line shall be of one type; devices shall not be mixed by type.

12. If working at or near a traffic signal, contact LVCAT at 323-6221 and local entity at the appropriate numbers listed below at least two working days prior to beginning work.

13. Floodlights should be provided to mark flagger stations at night as needed.

14. Access for CAT Transit Service, pedestrians and bicycles shall be maintained throughout duration of construction. If breaching of right of way is required, a Lighting Drawing shall be provided to the Traffic Engineer with a map showing the proposed seed routes for approval. If construction operations affect Cat Bus stops or facilities, the contractor shall notify the Regional Transportation Commission at 425-4481 at least 3 normal working days prior to beginning such operations.
**Geometrics Provided By**

**Engineered Design**

**TYPICAL APPLICATION FOR**

HAGENCY APPROVED

**Effective 05/21/2020 to 10/07/2020**

**TRAFFIC CONTROL PLAN**

**TRAFFIC DIRECTION**

**BARRIQUADE OR DRUM WITH STEADY BURNING LIGHT**

**SIGN ON PORTABLE OR PERMANENT SUPPORT**

**VERTICAL PANELS AT 20 FT. CENTER**

(SEE NOTE 14)

**ROAD CLOSED**

**VERTICAL PANELS AT 20 FT. CENTER**

(SEE NOTE 3)

**BARRIQUADES AT 20 FT. CENTER**

**DOUBLE YELLOW REFLECTORIZED PAVEMENT MARKING**

**4" MIN. WHITE REFLECTORIZED PAVEMENT MARKINGS**

**GENERAL NOTES**

1. ALL TEMPORARY BYPASSES SHOULD BE PLACED WHEN DURATION EXCEEDS TIME LIMITS ESTABLISHED BY THE ENTITY. GRADED & COMPACTED GRAVEL ACCEPTABLE FOR DURATIONS ESTABLISHED BY THE ENTITY. SEE SHEET 2 OF THIS DRAWING FOR UNFINISHED TEMPORARY BYPASS.

3. CONVEY DRAINED REFLECTIVE EDGE LINES AND A CENTER LINE REFLECTORIZED: REMOVABLE, NON-FOIL PAVEMENT MARKING TAPE SHALL BE USED FOR MARKING THE EDGE LINES AND CENTER LINE ON EXISTING PAVEMENT. (REFLECTORIZED PAVEMENT MARKING TAPE MAY BE USED FOR MARKINGS ON THE PAVEMENT BYPASSES.) RAISED REFLECTIVE PAVEMENT MARKERS CONFORMING TO CLAIM COUNTY STANDARDS MAY BE USED IN LIEU OF TAPE OR PAINT WHERE THE PAVEMENT MARKING IS TO BE PLACED ADJACENT TO BARRIQUADES OR VERTICAL PANELS. ALL EXISTING PAVEMENT MARKING WHICH CONFLICTS WITH THE REVISED TRAFFIC PATTERN SHALL BE REMOVED. IF STRIPING IS TO BE PLACED ON FINAL PARTITION, THEN REMOVABLE, NON-FOIL TAPE SHOULD BE USED. EDGE LINE MARKINGS SHALL BE A MINIMUM OF 6 IN. WIDE.

4. WHEN (T) IS GREATER THAN 850 FEET, 4 FT OF LENGTHS OF SINGLE YELLOW REFLECTORIZED: REMOVABLE, NON-FOIL PAVEMENT MARKING TAPE AT 4 FT CENTERS MAY BE USED WITHIN THE TANGENT SECTION ONLY. IF PASSING ZONES CAN BE SAFELY ALLOWED IN ACCORDANCE WITH MUTCD SECT. B-3B THRU. B-36 (A).

4. A CURVE SIGN WILL BE REQUIRED AT EXIT END OF THE BYPASS IF (T) IS EQUAL TO OR GREATER THAN 1,000 FEET.

5. THE ADVISORY SAFE SPEED TO BE SHOWN BELOW THE REVERSE CURVE (TURN) SIGN SHALL BE DETERMINED AT THE SITE AND APPROVED BY THE TRAFFIC ENGINEER.

6. STEADY BURNING LIGHTS WILL NOT BE REQUIRED ON BARRIQUADES FOR DAY OPERATIONS.

7. CONES MAY BE SUBSTITUTED FOR BARRIQUADES AT HALF THE SPACING DURING DAY OPERATIONS.

8. ALL SIGNS SHALL BE GROUND-MOUNTED IF THE CLOSURE TIME EXCEEDS 14 DAYS AND AS REQUIRED BY SECTION 624 OF THE UNIFORM STANDARD SPECIFICATIONS.

9. TYPE "F" HIGH INTENSITY FLASHING WARNING LIGHTS MAY BE INSTALLED ABOVE EACH WORK ZONE CONSTRUCTION SIGN FOR USE DURING HOURS OF DARKNESS.

10. LONGITUDINAL DIMENSIONS MAY BE ADJUSTED TO FIT FIELD CONDITIONS BY THE TRAFFIC ENGINEER.

11. ALL BARRIQUADE LIGHTS SHALL BE BIDIRECTIONAL.

12. ALL WARNING SIGNS SHALL HAVE BLACK LEGEND AND BORDER ON AN ORANGE BACKGROUND. ALL SIGNS HAVING AN ORANGE COLOR SHALL BE MADE OF MATERIALS CONFORMING TO SECTION 178.03.01 OF THE UNIFORM STANDARD SPECIFICATIONS.

13. TABLE FOR SPACING OF ADVANCE WARNING SIGNS

<table>
<thead>
<tr>
<th>STREET TYPE</th>
<th>UNPAVED ACCESS ROAD</th>
<th>PAVED INTERSTATE</th>
<th>EXP.WAY/FREEWAY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(ABOVE BARRICADE)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(ABOVE BARRICADE)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

14. ALL DEVICES INDICATED SHALL BE OF ONE TYPE; DEVICES SHALL NOT BE MIXED.

15. IF WORKING AT OR NEAR A TRAFFIC SIGNAL, CONTACT LVACTS AT 229-6331 AND LOCAL ENTITY AT APPROPRIATE NUMBERS LISTED BELOW AT LEAST TWO WORKING DAYS PRIOR TO BEGINNING WORK.


17. ACCESS FOR CAR TRANSIT SERVICE, PEDESTRIANS AND BICYCLES SHALL BE MAINTAINED THROUGHOUT DURATION OF CONSTRUCTION. IF REMOVAL OF ACCESS IS NECESSARY, THE CONTRACTOR SHALL PROVIDE THE ENTITY'S TRAFFIC ENGINEER WITH A MAP SHOWING THE PROPOSED REMOVALS FOR APPROVAL. IF CONSTRUCTION OPERATIONS AFFECT CAT BUS STOPS OR FACILITIES, THE CONTRACTOR SHALL NOTIFY THE REGIONAL TRANSPORTATION COMMISSION AT 455-4481 AT LEAST 2 NORMAL WORKING DAYS PRIOR TO BEGINNING SUCH OPERATIONS.

18. IF THE DETOUR IS SHORT AND HAS SHARP CURVES (30 MPH OR LESS), REVERSE, TURN, OR KEY SIGN SHOULDS BE USED.

19. PAVEMENT MARKINGS THAT ARE NO LONGER APPLICABLE SHALL BE MASKED WITH APPROVED BLACKOUT TAPE OR OBLITERATED AS APPROVED BY THE TRAFFIC ENGINEER.
TYPICAL APPLICATIONS

BRIDGE CONSTRUCTION
CULVERT CONSTRUCTION

SYMBOLS

WORK AREA
SIGN ON PORTABLE OR PERMANENT SUPPORT
BARRICADE OR DRUM WITH STEADY BURNING LIGHT
VERTICAL PANEL
(SEE STANDARD DRAWING NO. 601 SHEET 1)
TYPE III BARRICADE
TRAFFIC DIRECTION
TRAFFIC CONE OR VERTICAL PANEL (SEE NOTE 2)

GENERAL NOTES

1. TEMPORARY UNPAVED BYPASSES SHALL BE GRADED AND COMPACTED GRAVEL AND BE ACCEPTABLE FOR TIME LIMITS ESTABLISHED BY THE ENTITY.

2. REFLECTORIZED 28 IN. MIN. TRAFFIC CONES OR VERTICAL PANELS SHALL BE USED FOR CENTERLINE DELINEATION FOR SHORT-TERM PROJECTS PERFORMED AT NIGHT. VERTICAL PANELS MAY BE USED FOR WORK AREAS OR MORE AND PROJECTS PERFORMED AT DAYTIME, VERTICAL PANELS SHALL BE USED. SEE STANDARD DRAWING 601 SHEET 1 FOR DETAILS OF CONES AND PANELS.

3. A CURVE SIGN SHALL BE REQUIRED AT EXIT END OF THE BYPASS IF CURVE DISTANCE IS EQUAL TO OR GREATER THAN 1,000 FEET.

4. THE ADVISORY SAFE SPEED TO BE SHOWN BELOW THE REVERSE CURVE (TURN) SIGN SHALL BE DETERMINED AT THE SITE AND APPROVED BY THE TRAFFIC ENGINEER.

5. STEADY BURNING LIGHTS WILL NOT BE REQUIRED ON BARRICADES FOR DAY OPERATIONS.

6. CONES MAY BE SUBSTITUTED FOR BARRICADES AT HALF THE SPACING DURING DAY OPERATIONS.

7. ALL SIGNS SHALL BE GROUND-MAINTAINED IF THE CLOSURE TIME EXCEEDS FOUR DAYS AND AS REQUIRED BY SECTION 625.3 OF THE UNIFORM STANDARD SPECIFICATIONS.

8. TYPE "E" HIGH-INTENSITY FLASHING WARNING LIGHTS MAY BE INSTALLED ABOVE EACH WORK ZONE CONSTRUCTION SIGN FOR USE DURING HOURS OF DARKNESS.

9. LONGITUDINAL DIMENSIONS MAY BE ADJUSTED TO FIT FIELD CONDITIONS BY THE TRAFFIC ENGINEER.

10. ALL BARRICADE LIGHTS SHALL BE BI-DIRECTIONAL.

11. ALL WARNING SIGNS SHALL HAVE BLACK LEGEND AND BORDER ON AN ORANGE BACKGROUND. ALL SIGNS HAVING AN ORANGE COLOR SHALL BE MASKED WITH APPROPRIATE BLACKOUT TAPE OR OBLITERATED AS APPROVED BY THE TRAFFIC ENGINEER.

12. LONGITUDINAL DIMENSIONS MAY BE ADJUSTED TO FIT FIELD CONDITIONS BY THE TRAFFIC ENGINEER.

13. ALL DEVICES INDICATED SHALL BE OF ONE TYPE; DEVICES SHALL NOT BE MIXED.

14. IF WORKING AT OR NEAR A TRAFFIC SIGNAL, CONTACT LVACTS AT 229-6611 AND LOCAL ENTITY AT APPROPRIATE NUMBERS LISTED BELOW AT LEAST TWO WORKING DAYS PRIOR TO BEGINNING WORK. PAVEMENT MARKINGS THAT ARE NO LONGER APPLICABLE SHALL BE MASKED WITH APPROVED BLACKOUT TAPE OR OBLITERATED AS APPROVED BY THE TRAFFIC ENGINEER.

15. ACCESS FOR CAT TRANSIT SERVICE, PEDESTRIANS AND BICYCLES SHALL BE MAINTAINED THROUGHOUT DURATION OF CONSTRUCTION. IF RE-ROUTING OF ACCESS IS NECESSARY, THE CONTRACTOR SHALL PROVIDE THE ENTITY’S TRAFFIC ENGINEER WITH A MAP SHOWING THE PROPOSED RE-ROUTING FOR APPROVAL. IF CONSTRUCTION OPERATIONS ARE INSUFFICIENT, THE CONTRACTOR SHALL NOTIFY THE REGIONAL TRANSPORTATION COMMISSION AT 455-6100 AT LEAST 2 NORMAL WORKING DAYS PRIOR TO BEGINNING SUCH OPERATIONS.

16. IF THE DETOUR IS SHORT AND HAS SHARP CURVES (30 MPH OR LESS), REVERSE TURN (W1-3) SIGN SHOULD BE USED.

17. PAVEMENT WARNINGS THAT ARE NO LONGER APPLICABLE SHALL BE MASKED WITH APPROVED BLACKOUT TAPE OR OBLITERATED AS APPROVED BY THE TRAFFIC ENGINEER.
TYPICAL APPLICATIONS

BARRICADE OR DRUM WITH STEADY BURNING LIGHT

1. All signs shall be 12 inch nominal diameter. The right signal head shall be aimed so the centers of the left beams of the reflection signals are directed toward a point in the center of the work zone. The left signal indication shall be aimed at a point in the center of an approach lane 200 feet in advance of the stop line.

2. One signal shall be used to allow for flashing.

3. Flagger signs are used instead of traffic signals. The traffic control devices shall conform to standard drawing No. 681, Appendix C. Cones shall be provided prior to flagger signs to protect the flagger.

4. During daytime operations cones may be substituted for barricades with steady burning lights at half the traffic control device spacing.

5. Steady burning lights will not be required for day operations.

GENERAL NOTES

1. The traffic engineer must be notified at least 72 hours prior to placing the temporary signal in operation so that arrangements can be made to protect the installation and set the timing of the signals.

2. At any time that the signals are not operating the signal head shall be hoisted and the signal head sign covered or removed.

3. The left signal head shall normally be mounted at a height of 10 feet above the road surface measured to the bottom of the signal head. The right signal head shall normally be mounted 12 feet above the road surface measured to the bottom of the signal head. The signal head shall be hoisted to the height and back plates will be required on all signals. A mast arm signal shall be used on the right side when possible.

4. All lenses shall be 12 inch nominal diameter. The right signal head shall be aimed so the centers of the light beams of the reflection signals are directed toward a point in the center of the work zone. The left signal indication shall be aimed at a point in the center of an approach lane 200 feet in advance of the stop line.

5. All vehicles, equipment, workers and their activities are restricted at all times to the lane side of the pavement unless otherwise authorized by the traffic engineer.

6. Flagger signs are used instead of traffic signals. The traffic control devices shall conform to standard drawing No. 681, Appendix C. Cones shall be provided prior to flagger signs to protect the flagger.

7. During daytime operations cones may be substituted for barricades with steady burning lights at half the traffic control device spacing.

8. Steady burning lights will not be required for day operations.

9. All signs shall be ground mounted if the closure time exceeds four days as required by section 605 of the Uniform Standard Specifications.

10. Type "W" high intensity flashing warning lights may be installed above each work zone construction sign for use during hours of darkness.

11. Longitudinal dimensions may be adjusted to fit field conditions by the traffic engineer.

12. All signs shall have black legend and border on an orange background. All signs having an orange color shall be made of materials conforming to Section 716.03.01 of the Uniform Standard Specifications.

13. All warning signs shall have black legend and border on an orange background. All signs having an orange color shall be made of materials conforming to Section 716.03.01 of the Uniform Standard Specifications.

14. All signs shall be ground mounted if the closure time exceeds four days as required by section 605 of the Uniform Standard Specifications.

15. Type "W" high intensity flashing warning lights may be installed above each work zone construction sign for use during hours of darkness.

16. All devices establishing a taper or tangent line shall be of one type. Devices shall not be mixed by type.

17. All devices establishing a taper or tangent line shall be of one type. Devices shall not be mixed by type.

18. A ladder buffer space may be required to separate work space from traffic space. The width shall be determined by the traffic engineer.

19. Access for cat transit service, pedestrians and bicyclists shall be maintained throughout duration of construction. If routing of access is necessary, the contractor shall provide the entity's traffic engineer with a map showing the proposed access routes. All signs having an orange color shall be made of materials conforming to Section 716.03.01 of the Uniform Standard Specifications.

20. Edge line shall be a minimum of 6 in. wide and should be installed from the start of the taper to a point beyond the work zone, extending the permanent edge line.

21. For long term projects of 72 continuous hours or more, conflicting pavement markings between activity area and stop line shall be removed.
**GENERAL NOTES**

1. NO SPECIAL SIGNING IS REQUIRED.
2. IF THE WORK OPERATION REQUIRES TWO OR MORE WORK VEHICLES CROSS THE 15 FT. CLEAR ZONE IN ANY ONE HOUR TRAFFIC CONTROL WILL BE IN CONFORMANCE WITH STANDARD DRAWING NO. 615.
3. THIS CASE ALSO APPLIES TO WORK PERFORMED IN THE MEDIAN MORE THAN 15 FT FROM EITHER PAVEMENT.
4. IF WORKING AT OR NEAR A TRAFFIC SIGNAL, CONTACT LVACTS AT 229-6611 AND LOCAL ENTITY AT APPROPRIATE NUMBERS LISTED BELOW AT LEAST TWO WORKING DAYS PRIOR TO BEGINNING WORK.
   - Boulder City: 303-920
   - Mesquite: 349-936
   - Clark County: 450-6106
   - Henderson: 565-2140
   - North Las Vegas: 443-2462
   - Las Vegas: 329-5301
5. TYPE "B" HIGH INTENSITY FLASHING WARNING LIGHTS MAY BE INSTALLED ABOVE EACH WORK ZONE CONSTRUCTION SIGN FOR USE DURING HOURS OF DARKNESS.

**SYMBOLS**

- 💡 SIGN ON PORTABLE OR PERMANENT SUPPORT
- ⚫ TRAFFIC DIRECTION

**TYPICAL APPLICATIONS**

- Landscaping Work
- Utility Work
- Fencing Contracts and Maintenance
- Cleaning Culverts

**ROAD WORK AHEAD**

12 MIN. EDGE OF PAVEMENT

**TABLE FOR SPACING OF ADVANCE WARNING SIGNS**

<table>
<thead>
<tr>
<th>ROAD TYPE</th>
<th>URBAN (35 MPH OR GREATER)</th>
<th>URBAN (LESS THAN 35 MPH)</th>
<th>EXPRESSWAY/FREEWAY</th>
<th>RURAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1500</td>
<td>500</td>
<td>350</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td>2500</td>
<td>500</td>
<td>350</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td>3500</td>
<td>500</td>
<td>350</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td>4500</td>
<td>500</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
1. Worker signs are to be removed when no work is being performed. Any unattended obstacle or excavation in the working area that in the opinion of the traffic engineer constitutes a hazard shall be protected by barricades with flashing lights at night at the points of hazard. Steady burning lights shall be used for delineation and long-line guidance. Barricade shall be placed according to maximum permissible travel speed.

2. If the work operation requires that four or more vehicles enter through traffic lanes in a one hour period, a flagger shall be substituted for the worker sign.

3. This case also applies when work is being performed on a multilane undivided highway. Under these conditions the signs normally mounted in the median shall be omitted.

4. Longitudinal dimensions may be adjusted to fit field conditions.

5. All vehicles, equipment, workers and their activities are restricted at all times to one side of the pavement unless otherwise authorized by the traffic engineer.

8. Required protection for open excavations during non-working hours: open trenches shall be completely fenced; all fences to be every four foot high non-climbable fence. Backfilled or plated in any area of the city of Las Vegas that are within 200 ft. of any building or roadway. After working hours beyond 300’ trench may be protected by a three (3) foot mound of earth completely around the trench and type I barricades with flashers spotted around the top after working hours.

9. If working at or near a traffic signal, contact LVACTS at 229-6611 and local entity at appropriate numbers listed below at least two working days prior to beginning work.

10. If the work space is in the median of a divided highway, an advance warning sign should also be placed on the left side of the directional roadway.

11. Access for Cat transit service, pedestrians and

**TABLE FOR SPACING OF ADVANCE WARNING SIGNS**

<table>
<thead>
<tr>
<th>ROAD TYPE</th>
<th>MAXIMUM TAPER (FT)</th>
<th>MAXIMUM SPACING (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXPRESSWAY/FREEWAY</td>
<td>165</td>
<td>270</td>
</tr>
<tr>
<td>URBAN (LESS THAN 35 MPH)</td>
<td>225</td>
<td>205</td>
</tr>
<tr>
<td>URBAN (35 MPH OR GREATER)</td>
<td>295</td>
<td>150</td>
</tr>
<tr>
<td>RURAL</td>
<td>495</td>
<td>105</td>
</tr>
<tr>
<td>MEDIAN</td>
<td>550</td>
<td>70</td>
</tr>
<tr>
<td>TYPICAL APPLICATIONS</td>
<td>605</td>
<td>115</td>
</tr>
<tr>
<td>GUARD RAIL INSTALLATION AND MAINTENANCE</td>
<td>660</td>
<td>80</td>
</tr>
<tr>
<td>DRAINAGE TRENCHES</td>
<td>540</td>
<td>125</td>
</tr>
</tbody>
</table>

**TYPICAL APPLICATIONS**

- Utility Operations
- Culvert Extensions
- Shoulder Repair
- Sign Installation and Maintenance
- Landscaping Operations
- Guard Rail Installation and Maintenance
- Median Maintenance
- Pole Careers
- Stakes and Equipment
- Delineator Maintenance
- Ditch Ditching
- Trench Excavation

**GENERAL NOTES**

- Worker lane dimensions are to be observed when no work is being performed. Any unattended obstacle or excavation in the working area that in the opinion of the traffic engineer constitutes a hazard shall be protected by barricades with flashing lights at night at the points of hazard. Steady burning lights shall be used for delineation and long-line guidance. Barricade shall be placed according to maximum permissible travel speed.

- If the work operation requires that four or more vehicles enter through traffic lanes in a one hour period, a flagger shall be substituted for the worker sign.

- This case also applies when work is being performed on a multilane undivided highway. Under these conditions the signs normally mounted in the median shall be omitted.

- Longitudinal dimensions may be adjusted to fit field conditions.

- All vehicles, equipment, workers and their activities are restricted at all times to one side of the pavement unless otherwise authorized by the traffic engineer.

- Required protection for open excavations during non-working hours: open trenches shall be completely fenced; all fences to be every four foot high non-climbable fence. Backfilled or plated in any area of the city of Las Vegas that are within 200 ft. of any building or roadway. After working hours beyond 300’ trench may be protected by a three (3) foot mound of earth completely around the trench and type I barricades with flashers spotted around the top after working hours.

- If working at or near a traffic signal, contact LVACTS at 229-6611 and local entity at appropriate numbers listed below at least two working days prior to beginning work.

- If the work space is in the median of a divided highway, an advance warning sign should also be placed on the left side of the directional roadway.

- Access for Cat transit service, pedestrians and
HIGHWAY, THE PROTECTION VEHICLE SHALL FOLLOW ON THE LEFT SHOULDER AND THE BOTTOM LINE SHALL READ "USE RIGHT LANE".

2. IF WORK IS BEING PERFORMED ON THE CENTER LANE OF THE ROADWAY, TRAFFIC SHALL BE DIVERTED TO EITHER LEFT OR RIGHT LANE. AT NO TIME IS TRAFFIC PERMITTED TO PASS ON BOTH SIDES OF MOVING OPERATION. CENTER LANE OPERATIONS SHALL NOT BE PERFORMED DURING PEAK TRAVEL TIMES.

3. THE LIGHTS ON THE TRAILER SHALL FLASH IN PARNS ALTERNATING BETWEEN THE TWO OUTSIDE LIGHTS AND THE TWO INSIDE LIGHTS OR SEQUENTIAL FLASHING.

4. ALL STRIPING SHALL HAVE ALTERNATING WHITE AND ORANGE STRIPES AT 4" FROM THE VERTICAL. ALL STRIPES SHALL BE 6" IN WIDTH.

5. THE SIGN PANELS SHALL HAVE THE MINIMUM DIMENSIONS SHOWN AND HAVE BLACK LEGEND ON AN ORANGE REFLECTORIZED BACKGROUND CONFORMING TO SECTION 716.03.01 OF THE UNIFORM STANDARD SPECIFICATIONS.

6. PAVEMENT STRIPING AND CONE PICKUP WILL BE CONSIDERED AS TWO SEPARATE OPERATIONS.

7. THE LIGHTS ON THE TRAILER SHALL FLASH IN PARNS ALTERNATING BETWEEN THE TWO OUTSIDE LIGHTS AND THE TWO INSIDE LIGHTS OR SEQUENTIAL FLASHING.

8. ALL STRIPING SHALL HAVE ALTERNATING WHITE AND ORANGE STRIPES AT 4" FROM THE VERTICAL. ALL STRIPES SHALL BE 6" IN WIDTH.

9. ALL WARNING SIGNS HAVE BLACK LEGEND AND BORDER ON AN ORANGE BACKGROUND. ALL SIGNS HAVING AN ORANGE COLOR SHALL BE MADE OF MATERIALS CONFORMING TO SECTION 716.03.01 OF THE UNIFORM STANDARD SPECIFICATIONS.

10. ACCESS FOR CAT TRANSIT SERVICE, PEDESTRIANS AND BICYCLES SHALL BE MAINTAINED THROUGHOUT DURATION OF CONSTRUCTION. IF RE-ROUTING OF ACCESS IS NECESSARY, THE CONTRACTOR SHALL PROVIDE TO THE TRAFFIC ENGINEER WITH A MAP SHOWING THE PROPOSED RE-ROUTING FOR APPROVAL. IF CONSTRUCTION OPERATIONS AFFECT CAT BUS STOPS OR FACILITIES, THE CONTRACTOR SHALL NOTIFY THE REGIONAL TRANSPORTATION COMMISSION AND ITS APPROPRIATE MEMBERS. RE-ROUTING MUST BEGIN AT LEAST TWO WORKING DAYS PRIOR TO BEGINNING SUCH OPERATIONS.

11. ALL WARNING SIGNS HAVE BLACK LEGEND AND BORDER ON AN ORANGE BACKGROUND. ALL SIGNS HAVING AN ORANGE COLOR SHALL BE MADE OF MATERIALS CONFORMING TO SECTION 716.03.01 OF THE UNIFORM STANDARD SPECIFICATIONS.
FORMULAS FOR TAPER LENGTH

1. THE "L" DISTANCE EQUALS:

   \[ S = \text{POSTED SPEED, OR OFF-PEAK 85TH PERCENTILE SPEED} \]
   \[ W = \text{WIDTH OF LANE OR OFFSET} \]
   \[ L = \text{TAPER LENGTH} \]

2. WHEN EQUIPMENT ENTERS OR EXITS THE WORK AREA DIRECTLY FROM THE ADJOINING LANE CARRYING TRAFFIC, A FLAGGER WILL BE REQUIRED. IF THE FLAGGER IS PRESENT, THE FLAGGER SIGN SHALL BE PLACED AT DISTANCE "A" PRIOR TO THE FLAGGER AND TIMING TO STOP SIGNS IF IT SHALL BE PLACED AT DISTANCE "B" PRIOR TO THE SPEED LIMIT SIGNS. IF THERE IS NO FLAGGER, TAPERING SHALL NOT BE REQUIRED FOR SPEEDS OF 20 MPH OR LESS. A 100 FT. CONE TAPER SHALL BE PROVIDED PRIOR TO FLAGGER STATION TO PROTECT THE FLAGGER. FLOODLIGHTS SHOULD BE PROVIDED TO MARK THE TAPERING AT NIGHT AS NEEDED.

3. THIS CASE ALSO APPLIES WHEN WORK IS BEING PERFORMED IN THE CENTERLINE THROUGHOUT THE TAPER AND WORK AREA.

4. ALL SIGNS, CONES, BARRIERS AND SIGNS ARE TO BE REMOVED AT COMPLETION OF THE DAYS OPERATIONS AND THE WORK AREA ORDERED "CLEAR" OR "DEEDS CLEAR" PRIOR TO THE END OF THE WORKING HOUR.

5. THE CASE DOES NOT APPLY WHEN WORK IS BEING PERFORMED IN THE MEDIAN (LANE) OF A SIX OR MORE LANE HIGHWAY. SPECIAL PLANS APPROVED BY THE TRAFFIC ENGINEER WILL BE REQUIRED.

6. CONES SHALL BE A MINIMUM OF 28 IN. IN HEIGHT.

7. LATERAL DIMENSIONS MAY BE ADJUSTED TO FIT FIELD CONDITIONS AS DETERMINED BY THE TRAFFIC ENGINEER. THE LATERAL PLACEMENT OF THE Flaggers, IF NECESSARY, MAY BE VARIED.

8. ALL VEHICLES, EQUIPMENT, WORKERS (EXCEPT FLAGGERS) AND THEIR ACTIVITIES ARE RESTRICTED AT ALL TIMES TO ONE SIDE OF THE PAVEMENT UNLESS OTHERWISE AUTHORIZED BY THE TRAFFIC ENGINEER.

9. ALL WORKING SIGNS SHALL HAVE BLACK LEGEND AND BORDER ON AN ORANGE BACKGROUND. ALL SIGNS THAT ARE ORANGE color SHALL BE MADE OF MATERIALS CONFORMING TO SECTION 718 OF THE UNIFORM STANDARD SPECIFICATIONS.

10. ALL DEVICES ESTABLISHING A TAPER OR TANGENT LINE SHALL BE OF ONE TYPE; DEVICES SHALL NOT BE MIXED BY TYPE.

11. TABLE FOR SPACING OF ADVANCE WARNING SIGNS

<table>
<thead>
<tr>
<th>ROAD TYPE</th>
<th>MESSAGE SPECIFICATIONS</th>
<th>AHEAD OF TAPER</th>
<th>AT TAPER</th>
<th>BEHIND TAPER</th>
</tr>
</thead>
<tbody>
<tr>
<td>URBAN 35 MPH OR GREATER</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td></td>
</tr>
<tr>
<td>INTERIM WHITE EDGE LINE</td>
<td>250</td>
<td>250</td>
<td>250</td>
<td></td>
</tr>
</tbody>
</table>

12. ARROWBOARD PANELS SHALL BE USED ON HIGH SPEED ROADWAYS WITH SPEED LIMITS OVER 35 MPH OR AS DIRECTED BY THE TRAFFIC ENGINEER. ARROWBOARD SHOULD BE PLACED AS CLOSE TO THE BEGINNING OF THE TAPER AS POSSIBLE, AS SOON AS THERE IS ADEQUATE SPACE.

13. IF WORKING AT OR NEAR A TRAFFIC SIGNAL CONTACT LOCATIONS AT 2264811 AND LOCAL ENTITY AT APPROPRIATE NUMBERS LISTED BELOW AT LEAST TWO WORKING DAYS PRIOR TO BEGINNING WORK.

BOULDER CITY: 203-2020
LAS VEGAS: 220-6331
CLARK COUNTY: 246-5268
HENDERSON: 246-2042

14. BUFFER SPACE SHALL BE:

15. WHEN A SIDE ROAD INTERSECTS THE HIGHWAY WITHIN THE TEMPORARY TRAFFIC CONTROL ZONE, ADDITIONAL TRAFFIC CONTROL DEVICES SHALL BE ERECTED, AS NEEDED.

16. A LATERAL BUFFER SPACE MAY BE REQUIRED TO SEPARATE WORK SPACE FROM TRAFFIC SPACE. THE WIDTH SHALL BE DETERMINED BY THE TRAFFIC ENGINEER.

17. FOR LONG TERM PROJECTS OF 72 CONTINUOUS HOURS OR MORE, A 6 IN. WIDE INTERIM WHITE EDGE LINE SHOULD BE INSTALLED FROM THE MIDDLE LANE CARRYING TRAFFIC TO THE WORK AREA IN ORDER TO SHOW A CLEAR BOUNDARY BETWEEN THE WORK AREA AND THE MIDDLE LANE CARRYING TRAFFIC. THE LATERAL EDGE OF THE INTERIM WHITE EDGE LINE SHALL BE BRIGHTLY COLORED OR PAINTED WITH ONE OR TWO STRIPES OF THE SAME COLOR. A 6 IN. WIDE INTERIM WHITE EDGE LINE SHOULD BE Installed FROM THE MIDDLE LANE CARRYING TRAFFIC TO THE WORK AREA IN ORDER TO SHOW A CLEAR BOUNDARY BETWEEN THE WORK AREA AND THE MIDDLE LANE CARRYING TRAFFIC. THE LATERAL EDGE OF THE INTERIM WHITE EDGE LINE SHALL BE BRIGHTLY COLORED OR PAINTED WITH ONE OR TWO STRIPES OF THE SAME COLOR.


AGENCY APPROVED: B C H L M N

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

DATE: 1-9-97
DWG. NO.: 617
TYPICAL APPLICATION FOR

B

AGENCY APPROVED

Effective 05/21/2020 to 10/07/2020

TRAFFIC CONTROL PLAN

FOR

HIGHWAY WORK ZONE

GENERAL NOTES

1. TAPER FORMULA:

\[ L = \frac{S \times W}{5 \times 2} \]

WHERE: \( L \) = MINIMUM LENGTH OF TAPER

\( S \) = POSTED SPEED, WITH PERCENTILE SPEED PRIOR TO WORK STARTING OR ANTICIPATED OPERATING SPEED

\( W \) = WIDTH OF OFFSET

2. THE MAXIMUM SPACING BETWEEN CHANNELIZING DEVICES IN A TAPER SHALL BE AS SPECIFIED IN TABLE 4.

3. TYPE "B" HIGH INTENSITY FLASHING WARNING LIGHTS MAY BE INSTALLED ABOVE EACH WORK ZONE CONSTRUCTION SIGN FOR USE DURING HOURS OF DARKNESS.

4. ALL WARNING SIGNS SHALL HAVE BLACK LETTERING AND BORDER ON AN ORANGE BACKGROUND. ALL SIGNS HAVING AN ORANGE COLOR SHALL BE MADE OF MATERIALS CONFORMING TO SECTION 716.03.01 OF THE UNIFORM STANDARD SPECIFICATIONS.

5. A BUFFER SPACE SHOULD BE REQUIRED AS FOLLOWS:

<table>
<thead>
<tr>
<th>ROAD WORK Type</th>
<th>ROAD WORK AHEAD Type</th>
<th>NOTE 1</th>
<th>NOTE 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>G20-2A (OPTIONAL)</td>
<td>END ROAD WORK</td>
<td>SEE NOTE 10</td>
<td></td>
</tr>
<tr>
<td>W13-1</td>
<td>LEFT LANE CLOSED</td>
<td>SEE NOTE 7</td>
<td></td>
</tr>
</tbody>
</table>
| PERIOD | WORK AHEAD | ALL WARNING SIGNS SHALL BE USED ON HIGH SPEED ROADWAYS WITH SPEED LIMITS OVER 35 MPH OR AS DIRECTED BY THE TRAFFIC ENGINEER.

6. TABLE FOR SPACING OF ADVANCE WARNING SIGNS

<table>
<thead>
<tr>
<th>SPEED LIMIT</th>
<th>SPACING (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>55 MPH</td>
<td>200</td>
</tr>
<tr>
<td>60 MPH</td>
<td>220</td>
</tr>
<tr>
<td>65 MPH</td>
<td>240</td>
</tr>
<tr>
<td>70 MPH</td>
<td>280</td>
</tr>
<tr>
<td>75 MPH</td>
<td>320</td>
</tr>
<tr>
<td>80 MPH</td>
<td>360</td>
</tr>
<tr>
<td>85 MPH</td>
<td>400</td>
</tr>
<tr>
<td>90 MPH</td>
<td>450</td>
</tr>
</tbody>
</table>

7. ALL DEVICES ESTABLISHING A TAPER OR TANGENT LINE SHALL BE OF ONE TYPE; DEVICES SHALL NOT BE MIXED BY TYPE.

8. IF WORKING AT OR NEAR A TRAFFIC SIGNAL, CONTACT LVACTS AT 229-6611 AND LOCAL ENTITY AT APPROPRIATE NUMBERS LISTED BELOW AT LEAST TWO WORKING DAYS PRIOR TO BEGINNING WORK.

- BOULDER CITY: 293-8390
- MESQUITE: 346-6295
- CLARK COUNTY: 455-5100
- NORTH LAS VEGAS: 642-3962
- HENDERSON: 200-1400
- LAS VEGAS: 229-6231

9. ACCESS FOR CAT TRANSIT SERVICE, PEDESTRIANS AND BICYCLES SHALL BE MAINTAINED THROUGHOUT SUBURBAN OR CONSTRUCTION. IF REASONS THAT ACCESS IS NEEDED, THE CONTRACTOR SHALL PROVIDE THE ENTITY'S TRAFFIC ENGINEER WITH A REQUEST FOR CONSTRUCTION OR RE-ROUTING. THIS REQUEST ALSO MUST BE LISTED WAS PERMITTED AND IMPLEMENTED. IF REASONS THAT ACCESS IS NEEDED, THE CONTRACTOR SHALL PROVIDE THE ENTITY'S TRAFFIC ENGINEER WITH A REQUEST FOR CONSTRUCTION OR RE-ROUTING. THIS REQUEST MUST BE LISTED PERMITTED AND IMPLEMENTED.

10. DURING HOURS OF DARKNESS, STEADY BURNING WARNING LIGHTS SHALL BE USED ON ALL CHANNELIZING DEVICES.

SYMBOLS

- ABRIDGE PANEL
- FLASHING VEHICLE LIGHT
- ARROW PANEL
- SIGNAL ON PORTABLE OR PERMANENT SUPPORT
- TRAFFIC DIRECTION
- WORK AREA

TYPICAL APPLICATION FOR

MULTILINE, UNDIVIDED, RURAL OR SUBURBAN, DAY OR NIGHT OPERATIONS WITH A WORK AREA IN THE LEFT LANE, ALLOWING WORK ACCESS FROM ADJACENT LANE

UNIFORM STANDARD DRAWINGS

CLARK COUNTY AREA

DATE: 1-9-97

Dwg No. 619
### 1. Taper Formula

<table>
<thead>
<tr>
<th>Speed (M.P.H.)</th>
<th>Taper Length (Feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>35</td>
<td>350</td>
</tr>
<tr>
<td>40</td>
<td>400</td>
</tr>
<tr>
<td>45</td>
<td>450</td>
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<td>50</td>
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<td>60</td>
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<tr>
<td>65</td>
<td>650</td>
</tr>
<tr>
<td>70</td>
<td>700</td>
</tr>
<tr>
<td>75</td>
<td>750</td>
</tr>
</tbody>
</table>

L = \frac{S \times W}{1000} \text{ for speeds of 45 M.P.H. or more}

L = \frac{S}{10} \text{ for speeds of 40 M.P.H. or less}

**WHERE:**
- \( L \) = Minimum length of taper
- \( S \) = Posted speed, 85th percentile speed prior to work starting or anticipated operating speed
- \( W \) = Width of offset

### 2. The maximum spacing between channelizing devices in a taper shall be as specified in the table in Note 1.

### 3. Type "B" High Intensity Flashing Warning Lights may be installed above each work zone construction sign for use during hours of darkness.

### 4. All warning signs shall have black legend and border on an orange background. All signs having an orange color shall be made of materials conforming to Section 716.03.01 of the Uniform Standard Specifications.

### 5. A buffer space should be required as follows:

<table>
<thead>
<tr>
<th>Buffer Space</th>
<th>Distance Between Signs (Feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>15</td>
<td>15</td>
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<tr>
<td>20</td>
<td>20</td>
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<td>25</td>
<td>25</td>
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<tr>
<td>70</td>
<td>70</td>
</tr>
<tr>
<td>75</td>
<td>75</td>
</tr>
</tbody>
</table>

### 6. During hours of darkness, steady burning warning lights shall be required on all channelizing devices.

### 7. All devices establishing a taper or tangent line shall be of one type; devices shall not be mixed by type.

### 8. Table for spacing of advance warning signs

<table>
<thead>
<tr>
<th>Speed (M.P.H.)</th>
<th>Advance Warning Signs</th>
</tr>
</thead>
<tbody>
<tr>
<td>35</td>
<td>350</td>
</tr>
<tr>
<td>40</td>
<td>400</td>
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<tr>
<td>45</td>
<td>450</td>
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<tr>
<td>70</td>
<td>700</td>
</tr>
<tr>
<td>75</td>
<td>750</td>
</tr>
</tbody>
</table>

### 9. If working at or near a traffic signal, contact LVACTS at 229-6611 and local entity at appropriate numbers listed below at least two working days prior to beginning work.

### 10. For Case 1, a buffer space should be used at the upstream end of the closed interior lane. For long-term projects of 72 or more continuous hours, a barrier should be used to protect the operation in the closed interior lane.

### 11. When a side road intersects the highway within the temporary traffic control zone, additional traffic control devices shall be directed, as needed.

### 12. Access for CAT transit service, pedestrains, and bicycles shall be maintained throughout duration of construction. If restricting of access is required, S.F. for CAT shall contact entity. BAR shall also contact entity for any required re-route for pedestrian. If construction operations affect CAT bus stops or facilities, the contractor shall notify the Regional Transportation Commission at least 3 days prior to initiating operations.

### 13. Intermediate warning signs shall be reflectorized, removable, non-foul tape and a minimum of 6-in wide and should be required for operations of 72 continuous hours or more.

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**Symbols:**
- **A:** Road Work Ahead
- **B:** Work Area
- **C:** Highway Work Zone
- **D:** Road Work Ahead
- **E:** Traffic Control Plan
- **F:** Working Days
- **G:** Briarcliff Boulevard
- **H:** Main Street
- **I:** Work Zone

**Traffic Control Plan for Highway Work Zone**

**Typical Application for Multilane, One-Way or Divided, Rural or Suburban, Day or Night Operations Where Center Lane(s) Are Closed**

**Uniform Standard Drawings**

**Clark County Area**

**Agency Approved:**

**Date:** 1-9-97

**DWG No.:** 620
TRAFFIC CONTROL PLAN
HIGHWAY WORK ZONE

1. THE "L" DISTANCE EQUALS:
   L = WS /60 FORMULA
   WHERE:
   MILES PER HOUR
   WS = LANE WIDTH IN FEET

2. TWO WAY TRAFFIC SIGNS SHALL BE REPEATED EVERY ONE-QUARTER MILE OR CROSSROADS THROUGH THE TAPER DISTANCE.

3. WHEN (T) IS GREATER THAN 300 FT, 4-FOOT LENGTHS OF DOUBLE YELLOW REFLECTORIZED REMOVABLE NON-FOIL PAINTING MARKING TAPE AT 40-FOOT CENTERS MAY BE USED.

4. A CURVE SIGN SHALL BE REQUIRED AT THE EXIT END OF THE BYPASS IF (T) IS EQUAL TO OR GREATER THAN 1,000 FEET.

5. ON-FRAID CROSSOVERS, REFLECTIVE EDGE LINES AND A CENTRELINE SHALL BE USED WHEN THE CLOSURE TIME IS 72 CONTINUOUS HOURS OR MORE OR WHEN THE NORMAL POSTED SPEED OUTSIDE THE AREA OF OPERATIONS IS 55 MPH OR LESS. REMOVABLE NON-FOIL PAINTING MARKING TAPE SHALL BE USED FOR MARKING THE EDGE LINES AND CENTER LINE ON THE EXTRADIRECTIONAL LANE. REFLECTORIZED PAINTING MARKING TAPE MAY BE USED FOR BARRIERS ON FRIED CROSSOVERS. BASED REFLECTORIZED PAINT MARKINGS CONFORMING TO UNIFORM STANDARD SPECIFICATIONS IN PLACE AT THE DATE OF THE APPLICATION SHALL BE USED. THE USE OF RIBBON OR FLASHING DEVICES FOR THE WORK ZONE CONSTRUCTION SIGN FOR USE DURING HOURS OF DARKNESS.

6. CONES MAY BE SUBSTITUTED FOR BARRICADES AT HALF THE SPACING DURING DAY OPERATIONS. CONES SHALL BE A MINIMUM OF 36 IN. IN HEIGHT.

7. STEADY BURNING LIGHTS WILL NOT BE REQUIRED ON BARRICADES FOR DAY OPERATIONS.

8. ALL SIGNS SHALL BE GROUND MOUNTED IF THE CLOSURE TIME EXCEEDS FOUR DAYS AND AS REQUIRED BY SECTION 625 OF THE UNIFORM STANDARD SPECIFICATIONS.

9. TYPE "B" HIGH INTENSITY FLASHING WARNING LIGHTS MAY BE INSTALLED ABOVE EACH WORK ZONE CONSTRUCTION SIGN FOR USE DURING HOURS OF DARKNESS.

10. LONGITUDINAL DIMENSIONS MAY BE ADJUSTED SLIGHTLY TO FIT FIELD CONDITIONS BY THE TRAFFIC ENGINEER.

11. ALL BARRICADE LIGHTS SHALL BE MONOPHASIC.

12. PORTABLE CONCRETE BARRIER RAIL SHALL BE REQUIRED FOR LONG-TERM PROJECTS OF 72 CONTINUOUS HOURS OR MORE. SUCH BACKGROUND SHALL COMPLY WITH STANDARD DRAWING NO. 660, AND BE USED WHEN CALLED UPON THEREIN. WHEN PORTABLE CONCRETE BARRIER RAIL IS REQUIRED, THE 2"X4" SIGN MAY BE OBTAINED THROUGH THE TANGENT DISTANCE (T).

13. ALL WARNING SIGNS SHALL HAVE BLACK LEGEND AND BORDER ON AN ORANGE BACKGROUND. ALL SIGNS HAVING AN ORANGE COLOR SHALL BE MADE OF MATERIALS CONFORMING TO SECTION 7603.01 OF THE UNIFORM STANDARD SPECIFICATIONS.

14. ALL DEVICES ESTABLISHING A TAPER OR TANGENT LINE SHALL BE OF ONE TYPE. DEVICES SHALL NOT BE MIXED BY TYPE.

15. TABLE FOR SPACING OF ADVANCE WARNING SIGNS

<table>
<thead>
<tr>
<th>ROAD TYPE</th>
<th>REFERENCE DISTANCES (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>..........</td>
<td>200</td>
</tr>
<tr>
<td>..........</td>
<td>300</td>
</tr>
<tr>
<td>..........</td>
<td>400</td>
</tr>
<tr>
<td>..........</td>
<td>500</td>
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<tr>
<td>..........</td>
<td>600</td>
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<tr>
<td>..........</td>
<td>700</td>
</tr>
<tr>
<td>..........</td>
<td>800</td>
</tr>
<tr>
<td>..........</td>
<td>900</td>
</tr>
<tr>
<td>..........</td>
<td>1000</td>
</tr>
</tbody>
</table>

16. ENGINEERED GEOMETRIC DESIGN TO BE PROVIDED BY ENGINEER.

17. ARROW BOARD SHOULD BE PLACED AS CLOSE TO THE BEGINNING OF THE TAPER AS POSSIBLE, AS SOON AS THERE IS ADEQUATE SPACE.

18. IF WORKING AT OR NEAR A TRAFFIC SIGNAL, CONTACT LVCD AT 229-8611 AND LOCAL ENTITY AT APPROPRIATE NUMBERS LISTED BELOW AT LEAST TWO WORKING DAYS PRIOR TO BEGINNING WORK.

19. WHEN A SIDE ROAD INTERSECTS THE HIGHWAY WITHIN THE TEMPORARY TRAFFIC CONTROL ZONE, ADDITIONAL TRAFFIC CONTROL DEVICES SHALL BE ERECTED, AS NEEDED.

20. ACCESS FOR CAT TRANSIT SERVICE, PEDESTRIANS AND BICYCLES SHALL BE MAINTAINED THROUGHOUT. VEHICLES CONSTRUCTING THE PROJECT, OR PROVIDING MATERIALS AND SERVICES TO THE CONTRACTOR, OR SUCH CONTRACTOR'S EMPLOYEES OR SUBCONTRACTORS, OR ANY COUNTY, MUNICIPAL, STATE, FEDERAL, OR OTHER GOVERNMENTAL ENTITIES IN A SATELLITE OR SUPPORT ROLE, SHALL BE ERECTED, AS NEEDED.

21. DRAWINGS TO BE SHOWN IN THE PROPOSED RE-ROUTES FOR APPROVAL.

22. IF CONSTRUCTION OPERATIONS AFFECT CAT BUS STOPS OR FACILITIES, THE CONTRACTOR SHALL PROVIDE THE ENTITY'S TRAFFIC ENGINEER WITH A MAP SHOWING THE PROPOSED RE-ROUTES FOR APPROVAL. IF CONSTRUCTION OPERATIONS AFFECT CAT BUS STOPS OR FACILITIES, THE CONTRACTOR SHALL NOTIFY THE REGIONAL TRAFFIC ENGINEER AT LEAST 30 DAYS PRIOR TO BEGINNING SUCH WORK.

23. IF CONSTRUCTION OPERATIONS AFFECT CAT BUS STOPS OR FACILITIES, THE CONTRACTOR SHALL NOTIFY THE REGIONAL TRANSPORTATION COMMISSION AT LEAST 30 DAYS PRIOR TO BEGINNING SUCH WORK.

24. ** SEE NOTE 17

25. PROVIDING NO OTHER CONSTRUCTION OR MAINTENANCE OPERATIONS WITHIN 2 MILES

GENERAL NOTES

TRAFFIC CONTROL PLAN FOR HIGHWAY WORK ZONE

TYPICAL APPLICATION FOR
MULTILANE, DIVIDED, RURAL OR SUBURBAN, DAY OR NIGHT OPERATIONS WHERE ACTIVITIES REQUIRE CLOSING TWO ADJACENT LANES & AN OPPOSING LANE IS USED FOR A TEMPORARY CROSSOVER

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

DATE 1-9-97

DWG NO. 621

AGENCY APPROVED
B C H L M N

SPECIFICATION REFERENCE

TRAFFIC CONTROL PLAN FOR HIGHWAY WORK ZONE

TYPICAL APPLICATION FOR
MULTILANE, DIVIDED, RURAL OR SUBURBAN, DAY OR NIGHT OPERATIONS WHERE ACTIVITIES REQUIRE CLOSING TWO ADJACENT LANES & AN OPPOSING LANE IS USED FOR A TEMPORARY CROSSOVER

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

DATE 1-9-97

DWG NO. 621

AGENCY APPROVED
B C H L M N

SPECIFICATION REFERENCE
1. Formulas for Taper Length

- **Formula A**: \( L = \frac{W^2}{60} \)
  - **40 M.P.H. or Under**
  - **41-50 M.P.H. or Over**

2. Additional advance warning may be necessary.
3. Prohibit turns as required by traffic conditions.

### General Notes

- **Access for C.A.T. Transit Service, Pedestrians and Bicycles shall be maintained throughout duration of work:**
  - The construction contractor shall provide the entity's traffic engineer with a map showing the proposed detour route. The map shall be reviewed and approved by the traffic engineer. The contractor shall notify the traffic engineer if the detour route is not suitable for the public;
  - **If median exists**, place "Road Work Ahead" signs in the median at adequate distance.

### Work Area Near an Intersection, Allowing Right Turns

- **If median exists**, place "Road Work Ahead" signs in the median at adequate distance.
- **Flash warning lights and/or flags may be used to call attention to the advance warning signs.**
- **Traffic signals, turn signals, and traffic light controllers must be shut off.**
- **Access for C.A.T. transit service, pedestrians, and bicycles shall be maintained throughout duration of work:**
  - The construction contractor shall provide the entity's traffic engineer with a map showing the proposed detour route. The map shall be reviewed and approved by the traffic engineer. The contractor shall notify the traffic engineer if the detour route is not suitable for the public.

### Work Area Near an Intersection, Providing Access to Left-Turn Lane

- **If median exists**, place "Road Work Ahead" signs in the median at adequate distance.
- **Flash warning lights and/or flags may be used to call attention to the advance warning signs.**
- **Traffic signals, turn signals, and traffic light controllers must be shut off.**
- **Access for C.A.T. transit service, pedestrians, and bicycles shall be maintained throughout duration of work:**
  - The construction contractor shall provide the entity's traffic engineer with a map showing the proposed detour route. The map shall be reviewed and approved by the traffic engineer. The contractor shall notify the traffic engineer if the detour route is not suitable for the public.

### Traffic Control Plan for Highway Work Zone

- **Traffic control devices shall be placed in accordance with Uniform Standard Drawings U.S. 76 and 1-9-97.**
- **Temporary markings to be placed as needed.**
- **Black out tape optional or obliterated as more. Paint not allowed. Mask with approved temporary markings to be placed as needed.**
- **Type III barricade work area.**
- **Traffic direction.**
- **Access for Cat Transit service, pedestrians and bicycles shall be maintained throughout duration of work.**

### Table for Spacing of Advance Warning Signs

<table>
<thead>
<tr>
<th>ROAD TYPE</th>
<th>STARTING WORK OR ANTICIPATED OPERATING SPEED</th>
<th>MAX. SPACING OF ADVANCE WARNING SIGNS</th>
<th>DISTANCE BETWEEN SIGNS (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 M.P.H.</td>
<td>100</td>
<td>50</td>
<td>25</td>
</tr>
<tr>
<td>41-50 M.P.H.</td>
<td>50</td>
<td>25</td>
<td>10</td>
</tr>
<tr>
<td>51-60 M.P.H.</td>
<td>25</td>
<td>10</td>
<td>5</td>
</tr>
<tr>
<td>61-70 M.P.H.</td>
<td>10</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>71-80 M.P.H.</td>
<td>5</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>81-90 M.P.H.</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>91-100 M.P.H.</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>101-110 M.P.H.</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

### Formulas for Taper Length

- **Formula A**: \( L = \frac{W^2}{60} \)
  - **40 M.P.H. or Under**
  - **41-50 M.P.H. or Over**

### Notes

- **If median exists**, place "Road Work Ahead" signs in the median at adequate distance.
- **Flash warning lights and/or flags may be used to call attention to the advance warning signs.**
- **Traffic signals, turn signals, and traffic light controllers must be shut off.**
- **Access for Cat Transit service, pedestrians, and bicycles shall be maintained throughout duration of work:**
  - The construction contractor shall provide the entity's traffic engineer with a map showing the proposed detour route. The map shall be reviewed and approved by the traffic engineer. The contractor shall notify the traffic engineer if the detour route is not suitable for the public.
1. Any road closure must be expressly permitted in writing by the administering entity's traffic management division manager or the director of its public works department.

2. All warning signs shall have black legend and border on an orange background. All signs having an orange color shall be made of materials conforming to Section 716.03.01 of the Uniform Standard Specifications.

3. Regulatory traffic control devices to be modified as needed for the duration of the detour.

4. Warning lights may be used to mark barricades at night as needed.

5. Street names may be used when desirable for directing traffic. Letters used for street names shall be made of materials conforming to Section 716.03.01 of the Uniform Standard Specifications.

6. If working at or near a traffic signal, contact LVACTS at 229-6611 and local entity at appropriate numbers listed below at least two working days prior to beginning work.

7. Type "B" high intensity flashing warning lights may be installed above each work zone construction sign for use during hours of darkness.

8. M4-9 detour signs may be located on the far side of the intersection.

9. Table for spacing of advance warning signs:

<table>
<thead>
<tr>
<th>ROAD TYPE</th>
<th>DISTANCE BETWEEN SIGNS (FT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CB</td>
<td>260 200 100 50 25 12 20</td>
</tr>
<tr>
<td>A</td>
<td>260 200 100 50 25 12 20</td>
</tr>
<tr>
<td>A (TYP.)</td>
<td>260 200 100 50 25 12 20</td>
</tr>
<tr>
<td>B (TYP.)</td>
<td>260 200 100 50 25 12 20</td>
</tr>
</tbody>
</table>

10. Access for CAT transit service, pedestrians and bicycles shall be maintained throughout duration of construction. If re-routing of access is necessary, the contractor shall provide traffic engineer with a map showing the proposed re-routes for approval. If construction operations result in possible disruption of service or re-routing of traffic, the contractor shall notify the regional transportation commission at least 7 normal working days prior to beginning such operations.
This crosswalk shall not be obstructed at same time as one opposite.

General Notes:
1. Additional advance warning may be necessary.
2. Controls for pedestrians only shown. Vehicular traffic controls shall comply with appropriate standard drawings.
3. Street lighting should be considered.
4. Warning lights may be used on barricades.
5. If there exist any source of pedestrian movements in this area, such that the pedestrian approaching the work area could not see the R9-3c sign, then Alternates must be used to insure that this is visible.
6. Concrete barrier rail shall conform to standard drawing no. 602. When pedestrian route is diverted to travel lane to avoid work area and/or high speeds are anticipated, barrier rail shall be used to separate temporary walkway from traffic.
7. If working at or near a traffic signal, contact LVACTS at 229-6611 and local entity at appropriate number listed below at least two working days prior to beginning work.
8. Pedestrians should be diverted to a safe area. Diversions shall be an accessible route as defined by the Americans With Disabilities Act (ADA).
9. For night-time closures, type A flashing lights may be used on barricades supporting signs and closing walkways. Type C steady-burn lights shall be used on channelizing devices separating the temporary walkway from vehicular traffic.
10. Access for CAT transit service, pedestrians and bicycles shall be maintained throughout duration of construction. If re-routing of access is necessary, the contractor shall notify the Regional Transportation Commission at least 3 normal working days prior to beginning such operations.

Agency Approved

Effective 05/21/2020 to 10/07/2020
STANDARD PROCEDURE & CONDITIONS WHICH, WHEN MET, ELIMINATE
THE NEED FOR INDIVIDUAL TRAFFIC CONTROL PLAN AND/OR PERMIT

<table>
<thead>
<tr>
<th>DEVICE OR PARAMETER</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. MINIMUM 60 IN. WIDE FLASHER BAR ATOP VEHICLE, WITH GREATER THAN 4 LIGHT</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>ELEMENTS VISIBLE TO APPROACHING TRAFFIC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. CONES SET OUT BEHIND VEHICLE</td>
<td>3, ACROSS BLOCKED LANE</td>
<td>3, ACROSS BLOCKED LANE</td>
<td>5, ACROSS BLOCKED LANE</td>
<td>NONE</td>
</tr>
<tr>
<td>C. TURN ON VEHICLE'S EMERGENCY HAZARD FLASHERS</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>NOT REQUIRED</td>
</tr>
<tr>
<td>D. ALL PERSONNEL WEAR ORANGE VESTS OR Shirts WHEN OUTSIDE OF VEHICLE</td>
<td>ALWAYS</td>
<td>ALWAYS</td>
<td>ALWAYS</td>
<td>ALWAYS</td>
</tr>
<tr>
<td>E. O.K. FOR NIGHTTIME DEPLOYMENT?</td>
<td>NO</td>
<td>ONLY WHEN SPEED LIMIT ≤ 35 MPH</td>
<td>O.K., BUT USE REFLECTIVE VESTS</td>
<td>O.K., BUT USE REFLECTIVE VESTS</td>
</tr>
<tr>
<td>F. WATER-FILLED CRASH CUSHION, OR EQUIVALENT, TRUNK OR TRAILER-MOUNTED</td>
<td>RECOMMENDED, BUT MANDATORY WHEN SPEED LIMIT EXCEEDS 45 MPH</td>
<td>NO</td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>IMPACT ATTENUATORS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G. NO STOPPING UNLESS STOPPED VEHICLE IS VISIBLE TO APPROACHING TRAFFIC GREATER</td>
<td>YES, APPLY THIS RULE</td>
<td>N/A - ON STRAIGHT-AWAY</td>
<td>NOT REQUIRED</td>
<td>DESIRED, BUT NOT REQUIRED</td>
</tr>
<tr>
<td>THAN 10 SECONDS AT SPEED LIMIT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H. O.K. TO SET UP DURING PEAK TRAVEL HOURS: 7-9 AM, 4-6 PM</td>
<td>YES, BUT ONLY FOR EMERGENCY-TYPE REPAIR ACTIVITIES</td>
<td>O.K.</td>
<td>NOT RECOMMENDED</td>
<td></td>
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<tr>
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<td></td>
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</tr>
</tbody>
</table>

NOTE: TYPICAL APPLICATION IS FOR LANDSCAPE OR UTILITY ACTIVITIES.
1. SPECIAL "NO PARKING" SIGN SHALL BE PLACED ON FIRST BARRICADE AND ON EVERY OTHER BARRICADE THEREAFTER.

2. BARRICADES SHALL NOT BLOCK DRIVEWAYS OR ACCESS PRIOR TO MAINTENANCE OPERATION. SPECIAL "NO PARKING" SIGN SHALL BE PLACED ON FIRST BARRICADE FOLLOWING SPACE PROVIDED FOR ACCESS.

3. BARRICADES MAY BE PLACED ON PAVEMENT OR ON SIDEWALK AT THE DISCRETION OF THE ENGINEER. "NO PARKING" SIGNS PLACED ON SIDEWALKS SHALL NOT BE SET AT AN ANGLE NO GREATER THAN 30 DEGREES WITH THE LINE OF TRAFFIC FLOW TO BE VISIBLE TO APPROACHING TRAFFIC. A MINIMUM OF 36" CLEAR SPACE ON SIDEWALK SHALL BE MAINTAINED IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT WHEN BARRICADES ARE PLACED ON SIDEWALKS.

4. "NO PARKING" SIGNS AND BARRICADES SHOULD BE PLACED IN AREA OF REHABILITATION AT LEAST 72 HOURS IN ADVANCE OF WORK BEGINNING. NOTIFICATION OF PERSONS AFFECTED BY STREET WORK SHALL BE PERFORMED AS REQUIRED BY RESPECTIVE ENTITY AND NEVADA REVISED STATUTES.

5. ALL BARRICADES AND "NO PARKING" SIGNS SHALL BE REMOVED AS SOON AS IMPROVED SURFACE IS READY FOR TRAFFIC AS DETERMINED BY THE ENGINEER.
GENERAL NOTES:

1. RETRO-REFLECTIVE SIGN SHEETING SHALL CONFORM TO SECTION 716, LATEST REVISION, OF THE UNIFORM STANDARD SPECIFICATIONS.
2. SIGN LEGENDS AND RATINGS SHALL COMPLY WITH THE REQUIREMENTS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION.
3. SIGNS SHALL BE MOUNTED IN CONFORMANCE WITH PART 6, MUTCD, LATEST EDITION.
4. THE "DOUBLE PENALTIES IN WORK ZONE" SIGN SHOULD BE MOUNTED WITH THE FIRST SIGN IN THE ADVANCE WARNING SIGN SERIES, TYPICALLY THE "ROAD WORK AHEAD" SIGN.
5. "END WORK ZONE" SIGN SHALL BE MOUNTED AT THE END OF THE WORK ZONE WITH THE "END DOUBLE PENALTIES" SIGN, IF APPLICABLE, ON THE SAME DEVICE OR POST.
6. THE DESIGNATION OF WORK ZONE, INCLUDING MARKING OF THE DOUBLE PENALTIES, SHALL NOT BE REQUIRED ON STREETS POSTED AT 25 MILES PER HOUR OR LESS AND ARE THE ACCESS TO OR APPURTENANT TO A RESIDENTIAL AREA.

TYPICAL SIGN PLACEMENT NOTES:

1. FOR DIMENSIONS "A", "B", AND "C", SEE THE CURRENT MUTCD TABLE 6C-1 "Recommended Advance Warning Sign Minimum Spacing."
2. FOR DIMENSION "1", SEE THE CURRENT MUTCD TABLE 6C-3 & 6C-4.
3. SIGNS MAY BE OMITTED IN THE DIRECTION WORK IS NOT BEING CONDUCTED IF THE ROADWAY IS PHYSICALLY SEPARATED BY A RAISED MEDIAN OR BARRIER WALL THROUGH THE COMPLETE WORK ZONE.

TYPICAL SIGN AND LETTERING SIZE TABLE

<table>
<thead>
<tr>
<th>SPEED LIMIT</th>
<th>&quot;DOUBLE PENALTIES IN WORK ZONE&quot; SIGN</th>
<th>&quot;BEGIN WORK ZONE&quot; SIGN</th>
<th>&quot;END WORK ZONE&quot; SIGN</th>
<th>&quot;END DOUBLE PENALTIES&quot; SIGN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>&quot;9&quot; (IN.)</td>
<td>&quot;W&quot; (IN.)</td>
<td>&quot;H&quot; (IN.)</td>
<td>&quot;W&quot; (IN.)</td>
</tr>
<tr>
<td>LESS THAN 45 MPH</td>
<td>24</td>
<td>24</td>
<td>4 INCH SERIES &quot;C&quot;</td>
<td>18</td>
</tr>
<tr>
<td>45 MPH OR GREATER OR IF MULTILANE</td>
<td>36</td>
<td>36</td>
<td>6 INCH SERIES &quot;C&quot;</td>
<td>30</td>
</tr>
</tbody>
</table>

SEE THE CURRENT EDITION OF THE "STANDARD HIGHWAY SIGNS" MANUAL FOR SERIES "C" AND "D" LETTERING DIMENSIONS.

TYPICAL SIGN MATERIALS:

SIGN SHEETING SHALL CONFORM TO SECTION 716, LATEST REVISION, OF THE UNIFORM STANDARD SPECIFICATIONS.

SIGN LEGENDS AND Borders SHALL COMPLY WITH THE REQUIREMENTS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), LATEST EDITION.

SIGNS SHALL BE MOUNTED IN CONFORMANCE WITH PART 6, MUTCD, LATEST EDITION.

THE DESIGNATION OF WORK ZONE, INCLUDING MARKING OF THE DOUBLE PENALTIES, SHALL NOT BE REQUIRED ON STREETS POSTED AT 25 MILES PER HOUR OR LESS AND ARE THE ACCESS TO OR APPURTENANT TO A RESIDENTIAL AREA.
PROPOSED EXISTING

- PROPOSED EXISTING
- PULL BOX

- SIGNAL LUMINAIRE POLE, POST

- UTILITY POLE

- CONTROL CABINET

- CONDUIT RUN

- AERIAL CABLE

- DETECTOR LOOP

- PADMOUNT, ELECTRICAL SERVICE OR SPLICE BOX

- FLUORESCENT LUMINAIRE

- HIGH PRESSURE SODIUM LUMINAIRE - 400 WATT

- HIGH PRESSURE SODIUM LUMINAIRE - 750 WATT

- TRAFFIC SIGNAL INDICATION WITH DIRECTIONAL ARROW AND BACKPLATE

- TRAFFIC SIGNAL INDICATION WITH BACKPLATE

- PEDESTRIAN INDICATION AND DIRECTION

- HAZARD BEACON, ONE WAY

<table>
<thead>
<tr>
<th>AGENCY APPROVED</th>
<th>B</th>
<th>C</th>
<th>H</th>
<th>L</th>
<th>M</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECIFICATION REFERENCE</td>
<td>UNIFORM STANDARD DRAWINGS</td>
<td>CLARK COUNTY AREA</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STANDARD SYMBOLS FOR TRAFFIC SIGNAL DRAWINGS</td>
<td>DATE 12-12-96</td>
<td>DWG. NO. 701</td>
<td>SHEET 1 OF 2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**PROPOSED**

- STREET NAME SIGN
- CURB FLASHER
- VEHICLE MOVEMENT (STOPPED)
- VEHICLE MOVEMENT (MOVING)
- CONDUIT RUN NUMBER
- PEDESTRIAN MOVEMENT
- TRAFFIC SIGNAL ON MAST ARM
- TRAFFIC SIGNAL AND LUMINAIRE ON MAST ARMS
- PEDESTRIAN PUSH BUTTON INDICATING DIRECTION OF CONTROL
- TRAFFIC SIGNAL WITH ALL COLORS LOUVERED
- SCHOOL FLASHER
- 5 SECTION SIGNAL HEAD WITH DIRECTIONAL ARROW AND BACKPLATE
- PRIORITY VEHICLE PREEMPTION OPTICAL DETECTOR (OPTICOM OR APPROVED EQUAL)

**EXISTING**

- STREET NAME SIGN
- CURB FLASHER
- VEHICLE MOVEMENT (STOPPED)
- VEHICLE MOVEMENT (MOVING)
- CONDUIT RUN NUMBER
- PEDESTRIAN MOVEMENT
- TRAFFIC SIGNAL ON MAST ARM
- TRAFFIC SIGNAL AND LUMINAIRE ON MAST ARMS
- PEDESTRIAN PUSH BUTTON INDICATING DIRECTION OF CONTROL
- TRAFFIC SIGNAL WITH ALL COLORS LOUVERED
- SCHOOL FLASHER
- 5 SECTION SIGNAL HEAD WITH DIRECTIONAL ARROW AND BACKPLATE
- PRIORITY VEHICLE PREEMPTION OPTICAL DETECTOR (OPTICOM OR APPROVED EQUAL)
QUADRANT
ARM OR SIGNAL LOCATION
(TOP VIEW)

NOTE: QUADRANT IS IN RELATION WITH SHEET - NOT WITH NORTH ARROW

AGENCY APPROVED

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

QUADRANT DETAIL

DATE

DWG. NO.
702
SECTION 704

BASE AGGREGATES

SCOPE

704.01.01 MATERIALS COVERED
A. This specification covers the quality and size of mineral materials used in base courses, trench backfill, or other construction locations.
B. The term Source shall mean any of the following:
   1. A permanent commercial location.
   2. Contractor manufactured material either commercial or on-site.

704.01.02 REFERENCE CODES AND STANDARDS:
A. Related Interagency Quality Assurance Committee (IQAC) procedures at:
   (IQAC website)

REQUIREMENTS

704.02.01 GENERAL
A. The mineral aggregate shall be the crushed and screened product from approved aggregate deposits, except that Type I aggregate base need not be crushed. The Engineer reserves the right to prohibit the use of aggregates from any source when:
   1. The character of the material is such, in the opinion of the Engineer, as to make improbable the furnishing of aggregates conforming to the requirements of these specifications.
   2. The character of the material is such, in the opinion of the Engineer, that undue additional costs may be accrued by the Contracting Agency.
B. The mineral aggregate shall be clean, hard, durable, free from any frozen lumps, deleterious matter, and harmful adherent coatings. Crushed Portland cement concrete and asphaltic concrete pavement will be permitted, subject to the requirements of these specifications. No materials subject to regulation as hazardous wastes as defined in the Nevada Administrative Code 444.8565 shall be allowed.
C. The mineral aggregate used in the production of aggregate base shall be from a known in situ aggregate deposit located at the production location or at a designated source site.

704.02.02 IQAC SOURCE QUALIFICATION
A. For expediting of material source and type approvals, a listing of qualified materials has been provided on the IQAC website.
B. Any listed material is considered qualified for use without a material testing submittal. However, this does not relieve the Contractor of project testing of the material as required in these specifications.
C. The IQAC posted materials indicated in Table 1 are subject to reapproval annually or as specified in Table 1 for continued posting on the IQAC website. The procedure is annotated in Subsection 704.04.02, "IQAC Annual Material Prequalification."

Table 1 – IQAC Materials Qualification Periods

<table>
<thead>
<tr>
<th>Type II Aggregate Base</th>
<th>1 Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type II Controlled Low Strength Material (CLSM)</td>
<td>1 Year</td>
</tr>
<tr>
<td>Type II w/ 30% Recycled Asphalt</td>
<td>6 Months</td>
</tr>
<tr>
<td>Type II w/ 50% Recycled Concrete</td>
<td>6 Months</td>
</tr>
<tr>
<td>Type II w/ 100% Recycled Materials*</td>
<td>3 Months</td>
</tr>
</tbody>
</table>

*This includes materials made with imported native materials

704.02.03 DEFICIENCIES

A. If the product of a deposit is deficient in material passing the No. 16 sieve, filler from other approved deposits may be added at the crushing and screening plants. This is not to be construed as a waiver of any of the requirements contained herein.

PHYSICAL PROPERTIES AND TESTS

704.03.01 PLASTIC LIMITS

A. When specified, aggregates shall conform to the applicable requirements of the following table:

Table 3 – Plastic Limits

<table>
<thead>
<tr>
<th>Percentage by Weight Passing 200 Sieve</th>
<th>Plasticity Index Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1 to 3.0</td>
<td>15</td>
</tr>
<tr>
<td>3.1 to 4.0</td>
<td>12</td>
</tr>
<tr>
<td>4.1 to 5.0</td>
<td>9</td>
</tr>
<tr>
<td>5.1 to 8.0</td>
<td>6</td>
</tr>
<tr>
<td>8.1 to 11.0</td>
<td>4</td>
</tr>
<tr>
<td>11.1 to 15.0</td>
<td>3</td>
</tr>
</tbody>
</table>

704.03.02 DRAIN BACKFILL

A. This aggregate shall conform to the following requirements:

Table 4 – Drain Rock Gradation Acceptance Limits

<table>
<thead>
<tr>
<th>Sieve Sizes</th>
<th>Percentage by Dry Weight Passing Sieve</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3-Inch Size</td>
</tr>
<tr>
<td>3-Inch</td>
<td>100</td>
</tr>
<tr>
<td>2-Inch</td>
<td>90-100</td>
</tr>
<tr>
<td>1-1/2-Inch</td>
<td>70-100</td>
</tr>
<tr>
<td>3/4-Inch</td>
<td>0-50</td>
</tr>
<tr>
<td>1/2-Inch</td>
<td>--</td>
</tr>
<tr>
<td>3/8-Inch</td>
<td>0-10</td>
</tr>
<tr>
<td>No. 4</td>
<td>--</td>
</tr>
<tr>
<td>No. 8</td>
<td>0-5</td>
</tr>
<tr>
<td>No. 200</td>
<td>0-3</td>
</tr>
</tbody>
</table>
B. Unless otherwise specified in the contract documents, the Contractor may use any of the sizes.

<table>
<thead>
<tr>
<th>Table 5 – Drain Backfill Durability Acceptance Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source Requirement Test</td>
</tr>
<tr>
<td>-------------------------</td>
</tr>
<tr>
<td>Percentage of Wear (500 Rev.)</td>
</tr>
</tbody>
</table>

704.03.03 TYPE I AGGREGATE BASE

A. This aggregate shall conform to the following requirements:

<table>
<thead>
<tr>
<th>Table 6 – Type I Gradation Acceptance Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sieve Sizes</td>
</tr>
<tr>
<td>--------------</td>
</tr>
<tr>
<td>3-Inch Size</td>
</tr>
<tr>
<td>---------------</td>
</tr>
<tr>
<td>3-Inch</td>
</tr>
<tr>
<td>2-Inch</td>
</tr>
<tr>
<td>1-1/2-Inch</td>
</tr>
<tr>
<td>1-Inch</td>
</tr>
<tr>
<td>No. 4</td>
</tr>
<tr>
<td>No. 16</td>
</tr>
<tr>
<td>No. 200</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 7 – Type I Acceptance Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Control Test</td>
</tr>
<tr>
<td>----------------------</td>
</tr>
<tr>
<td>Sieve Analysis</td>
</tr>
<tr>
<td>Sampling Aggregate from Calibrated Conveyor stream or belt cut</td>
</tr>
<tr>
<td>Plasticity Index</td>
</tr>
<tr>
<td>Liquid Limit</td>
</tr>
<tr>
<td>Resistance (R Value)</td>
</tr>
<tr>
<td>Percentage of Wear (500 Rev.)</td>
</tr>
</tbody>
</table>

704.03.04 TYPE II AGGREGATE BASE

A. This aggregate shall conform to the following requirements:

<table>
<thead>
<tr>
<th>Table 8 – Type II Gradation Acceptance Limits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sieve Sizes</td>
</tr>
<tr>
<td>--------------</td>
</tr>
<tr>
<td>1-Inch</td>
</tr>
<tr>
<td>3/4-Inch</td>
</tr>
<tr>
<td>No. 4</td>
</tr>
<tr>
<td>No. 16</td>
</tr>
<tr>
<td>No. 200</td>
</tr>
</tbody>
</table>

1. Sampling from a stockpile permitted only after approval of the Engineer; the conveyor device shall be calibrated every 3 months and record attached to sample document.

2. Test specimens shall be prepared following the dry preparation procedure AASHTO T87.
### Table 9 – Type II Acceptance Limits

<table>
<thead>
<tr>
<th>Quality Control Test</th>
<th>Test Method</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sieve Analysis</td>
<td>AASHTO T27</td>
<td>Table 8</td>
</tr>
<tr>
<td>Sampling Aggregate from Calibrated</td>
<td>AASHTO T2</td>
<td>--</td>
</tr>
<tr>
<td>Conveyor stream or belt cut&lt;sup&gt;3&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fractured Faces</td>
<td>Nev. T230</td>
<td>70% Minimum</td>
</tr>
<tr>
<td>Plasticity Index</td>
<td>AASHTO T90&lt;sup&gt;4&lt;/sup&gt;</td>
<td>Table 3</td>
</tr>
<tr>
<td>Liquid Limit</td>
<td>AASHTO T89</td>
<td>35 Maximum</td>
</tr>
<tr>
<td>Resistance (R Value) or Resilient Modulus</td>
<td>ASTM D2844</td>
<td>78 Minimum for road base</td>
</tr>
<tr>
<td>Liquid Limit</td>
<td>AASHTO T307</td>
<td>35,000 psi minimum for road base</td>
</tr>
<tr>
<td>Total Available Water Soluble Sulfates&lt;sup&gt;5&lt;/sup&gt;</td>
<td>ASTM D2791 AWWA 4550 E</td>
<td>Less than 0.3% by dry weight of soil.</td>
</tr>
</tbody>
</table>

B. Type II Plantmix Aggregate as specified in **Subsection 705.03.01**, "Plantmix and Roadmix Bituminous Base and Surface Aggregate, Types Two Fine and Coarse and Three," may be used in lieu of Type II Base Aggregate as specified above.

### 704.03.05 TYPE III AGGREGATE

A. The soluble sulfate content shall not exceed 0.3 percent by dry weight of soil. The mineral shall be clean, hard, durable, free from any frozen lumps, deleterious matter, and harmful coatings. In addition thereto, the material shall conform to the gradation requirements of Type II aggregate base in accordance with **Subsection 704.03.04**, "Type II Aggregate Base," with the following property testing:

### Table 10 – Type III Acceptance Limits

<table>
<thead>
<tr>
<th>Quality Control Test</th>
<th>Test Method</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sieve Analysis</td>
<td>AASHTO T27</td>
<td>Table 8</td>
</tr>
<tr>
<td>Sampling Aggregate from Calibrated</td>
<td>AASHTO T2</td>
<td>--</td>
</tr>
<tr>
<td>Conveyor stream of belt cut&lt;sup&gt;6&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plasticity Index</td>
<td>AASHTO T 90&lt;sup&gt;7&lt;/sup&gt;</td>
<td>Table 3</td>
</tr>
<tr>
<td>Liquid Limit</td>
<td>AASHTO T 89</td>
<td>35 Maximum</td>
</tr>
<tr>
<td>No. 200 Sieve</td>
<td>AASHTO T 27</td>
<td>2-15%</td>
</tr>
<tr>
<td>Total Available Water Soluble Sulfates&lt;sup&gt;8&lt;/sup&gt;</td>
<td>AWWA 3500-NaD AWWA 4550 E</td>
<td>Less than 0.3% by dry weight of soil.</td>
</tr>
</tbody>
</table>

### 704.03.06 CRUSHED ROCK

A. Crushed rock shall be the product from approved aggregate deposits and shall only be used as directed by the Contracting Agency. The mineral aggregate shall be clean, hard,

---

<sup>3</sup> Sampling from a stockpile permitted only after approval of the Engineer; the conveyor device shall be calibrated every 3 months and record attached to sample document.

<sup>4</sup> Test specimens shall be prepared following the dry preparation procedure AASHTO T87.

<sup>5</sup> Required only for placement around waterline pipe.

<sup>6</sup> Sampling from a stockpile permitted only after approval of the Engineer.

<sup>7</sup> Test specimens shall be prepared following the dry preparation procedure AASHTO T87.

<sup>8</sup> Required only for placement around waterline pipe.
durable, free from any frozen lumps, deleterious matter, and harmful coatings. In addition thereto, the material shall conform to the following gradation requirements:

<table>
<thead>
<tr>
<th>Sieve Sizes</th>
<th>Percentage of Weight Passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/8-Inch</td>
<td>100</td>
</tr>
<tr>
<td>No. 4</td>
<td>20-80</td>
</tr>
<tr>
<td>No. 200</td>
<td>0-15</td>
</tr>
</tbody>
</table>

Table 12 – Crushed Rock Acceptance Limits

<table>
<thead>
<tr>
<th>Quality Control Test</th>
<th>Test Method</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sieve Analysis</td>
<td>AASHTO T 27</td>
<td>Table 11</td>
</tr>
<tr>
<td>Sampling Aggregate From Calibrated</td>
<td>AASHTO T 2</td>
<td>---------</td>
</tr>
<tr>
<td>Conveyor stream of belt cut9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fractured Faces</td>
<td>Nev. T 230</td>
<td>90% Minimum</td>
</tr>
<tr>
<td>Plasticity Index</td>
<td>AASHTO T 9010</td>
<td>Table 3</td>
</tr>
<tr>
<td>Liquid Limit</td>
<td>AASHTO T 89</td>
<td>35 Maximum</td>
</tr>
<tr>
<td>Percentage of Wear (500 Rev.)</td>
<td>AASHTO T 96</td>
<td>45% Maximum</td>
</tr>
<tr>
<td>Total Available Water Soluble Sulfates11</td>
<td>AWWA 3500-NaD</td>
<td>Less than 0.3% by dry weight of soil</td>
</tr>
</tbody>
</table>

704.03.07 CONTROLLED LOW STRENGTH MATERIAL (CLSM)

A. CLSM shall consist of a low-strength, self-leveling concrete material composed of various combinations of cement, fly ash, aggregate, water, and chemical admixtures. CLSM shall have a design compressive strength at an age of 28 days within the ranges required below for the specified class:

1. Class I - (50 to 150 psi): Specified where the maximum strength is of primary concern due to the desire to have material that can be excavated in the future with relative ease.

2. Class II – (100 to 300 psi): Specified where the minimum strength is of primary concern for pipe support.

3. Class Special (as shown in project specifications or drawings): Specified where project unique criteria, such as erosion control, are the primary concern.

4. Class I and Class II CLSM:
   a. The mix shall result in a product having a slump in the range of 6 to 10 inches at the time of placement in the pipe zone. Above the pipe zone, a lesser slump is acceptable.
   b. The Source of Contractor shall submit a mix design for approval by the Engineer prior to placement.

9 Sampling from a stockpile permitted only after approval of the Engineer; the conveyor device shall be calibrated every 3 months and record attached to sample document.
10 Test specimens shall be prepared following the dry preparation procedure AASHTO T87.
11 Required only for placement around waterline pipe.
c. The mix design shall be supported by laboratory test data verifying the potential of the mix to comply with the requirements for these specifications.

5. **Class III – Bonded Aggregate Fill (BAF) (50 to 150 psi):** Specified where the maximum strength is of primary concern due to the desire to have material that can be excavated in the future with relative ease, and where reduced concrete cure time is desired.

**B. CLSM Class I and Class II shall be proportioned in general compliance with the methods outlined in ACI 211.1-91, “Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete.” The product shall be proportioned and mixed in a central plant or mobile mixer. The following materials shall be used:**

1. Cement shall meet the requirements of **Section 701, "Hydraulic Cement."** Type V cement shall be used unless otherwise specified.

2. Fly ash shall meet the requirements of **Section 729, "Fly Ash."** Fly ash not meeting the requirements of **Section 729, "Fly Ash,"** may be used if prior testing indicates to the satisfaction of the Engineer the ability of the CLSM with this fly ash to meet these specifications.

3. Water shall meet the requirements of **Section 722, "Water."**

4. Aggregates shall have 100 percent by total weight passing the 1 inch screen and no less than 6 percent passing the No. 200 sieve. The aggregate shall have a maximum Plastic Index of 6.

5. Chemical admixtures shall meet the requirements of **Subsection 702.03.02, "Air-Entraining Admixtures," and Subsection 702.03.03, "Admixtures Other Than Air-Entraining."**
   a. Other admixtures specifically approved for CLSM may be used.
   b. All materials proportions shall be measured and the CLSM mixed in accordance with **Section 501, "Portland Cement Concrete."**
   c. Other proportion measuring and CLSM mixing systems are acceptable, if control can be demonstrated to be satisfactory to the Engineer.
   d. These other methods include continuous feed, volumetric measurement of proportions, and pug mill and continuous mixing plants.

**C. If the CLSM Class I and Class II mixes do not produce a flowable consistency or exhibits excessive bleeding, the mix shall be adjusted.**

1. Excessive bleeding is considered to occur when water flows from the CLSM in a manner that causes disturbance or displacement of the exposed surface of the CLSM.

2. Mix adjustments shall include, but not be limited to: aggregate gradation, cementitious material content, admixtures, water content, or a combination of adjustments.

**D. The testing procedures of CLSM Class I, Class II, and Class III (BAF) for acceptance testing and mix design approval by the IQAC, or if required in the contract special provisions shall be as follows:**

1. The material Source, which may be the Contractor, shall be sampled for acceptance or compliance testing in accordance with the requirements of ASTM D5971. Specimen molds shall be cast using ASTM D4832 “Standard Test Method for
Preparation and Testing of Controlled Low Strength Material (CLSM Test Cylinders).”

Modify ASTM D4832 as described below:

a. Section 6.0 (Apparatus) of ASTM D4832 as follows:
   1) Section 6.1 – Test cylinders shall be constructed in molds made of masonry molds (single use) with three cells in each mold. Each cell should be approximately 4–inches in diameter and approximately 7-½ inches tall.
   2) Section 6.1.1 – Take care when extracting the test cylinders from the molds. To aid in extracting undamaged test cylinders, wrap the masonry mold in duct tape and gently crack the mold vertically along each cell prior to casting. This should allow for an undamaged specimen when the duct tape is removed, as the mold should fall away from the specimens.
   3) Section 6.3 – Storage Container - Protect test cylinders from direct sunlight and freezing temperatures. Samples are to be left in field for 4 days before transporting to the laboratory.
   4) Replace section 6.6 – Curing Environment - Store test cylinders in an air bath between 60° to 80°F. Generally, laboratory room temperature will be sufficient for this requirement.

b. Modify Section 9.0 (CLSM Cylinder Molding and Curing) of ASTM D4832 as follows:
   1) Delete Section 9.2.2.1.
   2) Change 9.3.2 to: Store test cylinders in conditions replicating, as closely as possible, the conditions of the construction. However, continue to protect cylinders from direct sunlight and freezing.
   3) Change 9.3.3 to: On the fourth day, carefully transport test cylinders to the laboratory. Place them in the curing environment.
   4) Change 9.3.4 to: If test cylinders cannot be moved on the fourth day, they shall remain in their original location until such time as they can be moved, but, in no case longer than 13 days from date of cast.

c. Replace Section 10 (Capping the Cylinders) of ASTM D4832 with the following:
   1) Capping shall be gypsum plaster in accordance with ASTM C617. The use of elastomeric pads will not be accepted.
   2) For each set of three test cylinders, test one 14-day and two 28-day for compressive strength.

d. Add the following to Section 11 of ASTM D4832 (Compressive Strength Testing):
   1) Compression testing should be performed on a load frame rather than a concrete compression test apparatus.
   2) Report the compressive strength to the nearest 5 psi.
3) Correct the strength when the Length to Diameter ratio is equal to 1.74 or less by applying the corrections found in ASTM C39 or ASTM C42. Do not correct the strength if correction is less than 5 psi.

2. The cast specimens shall cure in an air bath between 60° and 80° degrees F. Generally, laboratory room temperature will be sufficient for this requirement.

3. Compressive strength testing shall be performed in accordance with ASTM D4832 with samples from each set at the ages of 14 and 28 days.

4. A report of the results shall be submitted to the Engineer.

E. Class Special: The compressive strength testing procedures shall be as specified in the project specifications or on the project drawings.

F. Class III - Bonded Aggregate Fill (BAF):

1. The material Source shall have it designed under the responsible charge of a Nevada PE, and the mix shall consist of a gap-graded 1/2-inch maximum size crushed gravel. The cementitious material shall be Type V cement and/or fly ash and water for a flowable type consistency.

2. The material shall be plant mixed and placed from a truck or may be placed directly from a continuous feed mobile mixer approved by the Engineer.

3. Due to the gap-graded nature of the material, it shall not be used where groundwater is present unless wrapped in an approved geotechnical filter fabric, and in all trench installations shall conform to Subsection 208.03.16, "Drain Backfill."

4. Prepare and test concrete cylinders to evaluate the compressive strength of the BAF as described in Item D of this subsection. In addition, BAF requires a visual inspection that shall be documented in a report to the Engineer summarizing the inspection to be performed as follows:
   a. After the first batch is placed and initially cured, excavate to the bottom of the pipe or structure.
   b. If a self-supporting vertical face is maintained, the material is functioning properly.

704.03.08 AGGREGATE FOR PORTLAND CEMENT TREATED BASE

A. This aggregate shall conform to the following requirements:

<table>
<thead>
<tr>
<th>Sieve Sizes</th>
<th>Percentage by Dry Weight Passing Sieve</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-Inch</td>
<td>100</td>
</tr>
<tr>
<td>2-Inch</td>
<td>90-100</td>
</tr>
<tr>
<td>No. 4</td>
<td>35-75</td>
</tr>
<tr>
<td>No. 200</td>
<td>20</td>
</tr>
</tbody>
</table>
Table 14 – Portland Cement Treated Base Acceptance Limits

<table>
<thead>
<tr>
<th>Test</th>
<th>Test Method</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sieve Analysis</td>
<td>AASHTO T27</td>
<td>Table 13</td>
</tr>
<tr>
<td>Sampling Aggregate from Calibrated Conveyor stream or belt cut</td>
<td>AASHTO T2</td>
<td>1/1000 Tons per day or portion thereof</td>
</tr>
<tr>
<td>Percentage of Wear (500 Rev.)</td>
<td>AASHTO T96</td>
<td>45% Maximum</td>
</tr>
</tbody>
</table>

B. Aggregate for cement or lime treated bases will be sampled as follows:
1. Where the material is being mixed at a stationary plant, samples will be taken from the conveyors just prior to delivery to the mixer and prior to adding lime or cement.
2. Where material is being mixed on the roadbed, samples will be taken after the material has been placed on the roadbed and processed and prior to adding cement or lime.

704.03.09 SHOULDERING MATERIAL
A. This aggregate shall conform to the following requirements:

| Table 15 – Shouldering Material Acceptance Limits |
|----------------|----------------|
| Sieve Sizes | Percentage by Dry Weight Passing Sieve |
| 1-Inch | 100 |
| 3/4-Inch | 90-100 |
| No. 4 | 35-65 |
| No. 16 | 15-40 |
| No. 200 | 2-6 |

704.03.10 AGGREGATE BASE MATERIAL WITH RECYCLED ASPHALT PAVEMENT (RAP) AND CONCRETE
A. The use of recycled asphalt pavement or recycled concrete for Type II Aggregate Base is permitted with the following requirements:
1. The material must conform to the requirements of Subsection 704.03.04 “Type II Aggregate Base”
2. The maximum ratio of crushed concrete to Type II Aggregate Base is 50%. Recycled materials must be substantially free of foreign matter including but not limited to asphalt, base, dirt, reinforcing steel, and have at most 1.5% deleterious material.
3. The maximum ratio of the crushed recycled asphalt concrete pavement (RAP) to Type II Aggregate Base is 30%. The mean oil content shall be 1.2% with a +0.3% tolerance. The Total Oil Content of the blended material (virgin aggregate and RAP) shall not exceed 1.5%.

B. The maximum qualification period is six (6) months for aggregate base materials blended with recycled aggregates. The entire qualification process must be completed prior to the first day of April and the first day of October of each calendar year. The report format, as outlined in Subsection 704.04.06 “Report Format” shall include the sieve analysis for

12 Sampling from a stockpile permitted only after approval of the Engineer. The conveyor device shall be calibrated every 3 months and record attached to sample document.
RAP or recycled concrete stockpile, Blended aggregated, the RAP binder content and blended binder content.

704.03.11 100% RECYCLED AGGREGATE BASE MATERIAL

A. 100% Recycled Aggregate Base shall be composed of a combination of imported materials including native soil and rock, concrete, RAP. The individual components of the aggregate base shall comply with the following percentages:
1. Minimum of 50% imported native soil and/or rock
2. Maximum of 50% recycled concrete
3. Maximum of 30% RAP
4. Maximum of 5% Recycled concrete roof tiles and CMU blocks.

B. The use of recycled asphalt pavement and/or recycled concrete components for 100% Recycled Aggregate Base shall comply with the following requirements:
1. The maximum ratio of crushed concrete must be substantially free of foreign matter including but not limited to asphalt, base, dirt, reinforcing steel, and have at most 1.5% deleterious material.
2. The total oil content of type II produced with recycled asphalt concrete shall not exceed 1.5% oil by weight.

C. Import sources shall be identified for individual stockpiles of 100% Recycled Aggregate Base. They shall comply with the following requirements.
1. For individual stockpiles of 100% Recycled Aggregate Base, the native source(s) shall have consistent gradations, chemical properties, physical properties, and shall be of a similar soil classification.

D. The maximum qualification period is three (3) months for 100% Recycled Aggregate Base. The entire qualification process must be completed prior to the first day of February, April, July, and October of each calendar year. The report format, as outlined in Subsection 704.04.06 “Report Format”, shall include the sieve analysis for RAP or recycled concrete stockpile, blended aggregated, the RAP binder content and blended binder content. The report will need to identify the source(s) of the native soil and/or rock. Sites are allowed 1 to 4 different stock piles of recycled material. Each individual stockpile will require its own listing on the IQAC website.

SOURCE QUALITY CONTROL TESTING

704.04.01 GENERAL

A. There are 3 testing aspects to Source material acceptance and quality control.
1. Testing by the Source for submittal posting on the IQAC website of qualified materials.
2. Source Quality Control Testing required to ensure consistent material production.
3. Contractor project quality control Source testing for non-qualified materials.

B. The acceptance of the Source material shall be at the production plant while the acceptance of the Contractor-placed material is at the project site.
C. Any laboratory submitting to an agency shall be R-18 AASHTO accredited in the appropriate test method in accordance with Table 16, "Source Quality Control Testing Requirements," where applicable and testing reviewed and stamped by a Nevada professional engineer who has responsible charge of the work. The use of a professional engineer by the Source could be the Source staff engineer or third party, but the professional engineer must have responsible charge of the testing and/or inspection.

### 704.04.02 IQAC ANNUAL MATERIAL PREQUALIFICATION

A. Each individual location or "pit" shall be referred to as a "Source." The responsibility for testing and inspection is the material Source. Material shall be tested, inspected, and certified in accordance with Table 16 "Source Quality Control Testing Requirements." The Source shall submit to the IQAC agency engineer assigned for that Source. The reviewing agency is listed on the IQAC website page next to the Source material.

B. Test data shall be included with the certifying document.

C. The maximum qualification period is 1 year for 100% native material, 6 months for virgin aggregate blended with crushed concrete or RAP, or 3 months for 100% recycled aggregate base. The entire qualification process shall be completed in accordance with the sections above prior to the first day of April, or for virgin aggregates blended with crushed concrete or RAP, the first day of April and the first day of October of each year and in the case of 100% recycled aggregate base, prior to the first day of February, April, July, and October of each calendar year. This includes, but is not limited to, submittal, agency review, all required retesting, and qualification from the IQAC member.

### 704.04.03 MATERIAL TOLERANCES AND PROHIBITED MATERIALS

A. Materials shall comply with the following tolerances and import sources shall be free of any contaminants as listed below.

1. The allowed variance in the material proctor value and optimum moisture content, is ±3 PCF and ±2% respectively

2. Unsuitable import materials/contaminants
   a. Gypsum
   b. Lightweight Concrete
   c. Plastics
   d. Organic materials
   e. Building materials including: clay roof tiles, shingles, pipe, electrical wire, or other materials that would be detrimental to the durability of the aggregate base.

### 704.04.04 NON-PREQUALIFIED MATERIALS

A. If the material is not posted on the IQAC web page, the Source may elect to submit non-prequalified material to the Engineer for approval prior to use that complies with the above noted specification and shall have been tested within 60 days of the intended use.

### 704.04.05 SUBMITTAL

A. All tests specified in this section shall be performed.
1. The report(s) shall include any graphical representation of plotted data such as the R-value and the Proctor value(s) along with the pit name and location.

2. The most current ASTM, AASHTO, NDOT, and AWWA methods shall be used when performing the tests.

B. All samples shall be "cut" from the "belt." When circumstances do not allow for sampling during production, the Source shall coordinate with the Engineer to identify an alternative plan for sampling.

C. IQAC Annual Submittal
   1. For the purposes of IQAC submittal, the Engineer is the IQAC reviewing agency as noted on the IQAC web page.
   2. For the annual submittal by the supplier, the material to be approved for use as aggregate shall be obtained and "split" by an AASHTO accredited laboratory with the Engineer present at the time the sample is obtained with the sample large enough for a full suite of testing for the Source and Engineer.
   3. The Engineer shall be notified a minimum of 48 hours prior to obtaining the sample.
   4. If the Engineer is not present during the sampling of the material, the results for that sample will not be accepted.
   5. Sampling shall be performed during normal working hours for the Engineer.
   6. If the Source laboratory results are in compliance with the above noted specifications, Source shall submit the test report to the Engineer within 21 days of sampling requesting the review and approval of the materials for the proposed use of the material.
   7. Notification by the Source of samples not in compliance with the above noted specifications is requested but not required. Samples without notification or a qualification submittal within the 21-day period will be assumed by the IQAC to be outside the above noted specifications.
   8. The agency Engineer for a particular pit may accommodate minor adjustments for "tuning" of an operation. This courtesy shall not be extended during the qualification process.

D. Non-prequalified materials (materials not posted on the IQAC list)
   1. The material to be approved for use as aggregate shall be obtained and "split" by an AASHTO accredited laboratory with the Engineer present at the time the sample is obtained with the sample large enough for a full suite of testing for the Source and Engineer.
      a. The Engineer shall be notified a minimum of 48 hours prior to obtaining the sample.
      b. If the Engineer is not present during the sampling of the material, the results for that sample will not be accepted.
      c. Sampling shall be performed during normal working hours for the Engineer.
      d. If the Source laboratory results are in compliance with the above noted specifications, the Source shall submit the test report to the Engineer within 21 days of sampling with a letter requesting the review and approval of the materials report for the proposed use of the material.
2. Notification by the Source of samples not in compliance with the above noted specifications is requested but not required.
   a. Samples without notification or a qualification submittal within the 21-day period will be assumed by the IQAC to be outside the above noted specifications.
   b. The Source shall submit the material test report to the Engineer no earlier than 60 days and no later than 14 days prior to use.

3. The qualification is for one project only.

704.04.06 REPORT FORMAT
A. The report shall be prepared and stamped by, or under the direction of, a professional engineer registered in the state of Nevada. The report shall be on the standard IQAC\textsuperscript{13} form and shall include the pit name and location. The report shall include the following:
   1. Recommendation by the Source Professional Engineer.
   2. The testing results in accordance with the appropriate Table 16, "Source Quality Control Testing Requirements," test methods and reporting requirements, along with any graphs and charts.

B. When "no exceptions" are taken, a conditional posting on the web site will be provided by the IQAC within 10 days of the receipt of the submittal.

C. Discrepancies between test results will be reviewed on a case-by-case basis. The Engineer will notify the aggregate producer of substantial test variations within 10 days of receipt of the qualification submittal.

704.04.07 SAMPLING AND TESTING
A. When the Contractor/Material Source or Engineer acquires aggregate samples at an aggregate production plant, the plant shall provide a calibrated mechanical means for obtaining samples.
   1. If a mechanical means is not provided, a belt cut from a stopped conveyor will be required.
   2. Any mechanical sampling device shall be approved by the Engineer prior to starting the respective phase of the project, or shall have been approved as part of a prior plant inspection by the Engineer or the Engineer's representative.
   3. The sampling device shall be so constructed to provide for simultaneous "cutting" of the entire section of material being discharged or conveyed, and so constructed that small representative samples may be taken frequently and these samples combined to form the complete sample.
   4. The reference method for the mechanical procedure shall be a "belt cut" sample taken from a stopped conveyor belt.
   5. Samples of the finished product of the plant shall be obtained prior to or as the material leaves the conveyor belt for the bin or stockpile.

\textsuperscript{13} The form is on the IQAC website, or use an Agency approved form.
B. Test results run from samples taken will be furnished to the Engineer by the Contractor or the Contractor's representative. The results of such tests shall not be the basis for final acceptance of the material.

C. Sampling for final acceptance of materials will be as required in the appropriate USS sections and in general shall comply with the AASHTO requirements, where applicable, and with any exception to the method(s) listed on the IQAC website.

Table 16 – Source Quality Control Testing Requirements

<table>
<thead>
<tr>
<th>Spec Section</th>
<th>Description</th>
<th>Item</th>
<th>Reference Specification and/or Test Procedure</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>704.03.02, 704.03.03, 704.03.04, 704.03.08</td>
<td>Drain Rock, Type I, Type II Aggregate, Cement treated base</td>
<td>Submittal</td>
<td>IQAC and/or Agency Requirements</td>
<td>Annually for IQAC Source Approval OR per project</td>
</tr>
<tr>
<td>704.03.04, 704.03.05, 704.03.06</td>
<td>Drain rock, Type II, and Type III aggregate around water pipe</td>
<td>Total Available Water Soluble Sulfates</td>
<td>AWWA 3500-NaD AWWA 4550 E</td>
<td>1/month at plant</td>
</tr>
<tr>
<td>704.03.03, 704.03.04</td>
<td>Type I and Type II Aggregate</td>
<td>Plasticity Index</td>
<td>AASHTO T90</td>
<td>1/day at plant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Liquid Limit</td>
<td>AASHTO T89</td>
<td>1/day at plant</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Proctor</td>
<td>AASHTO T180</td>
<td>1/20,000 CY at source</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Proctor 100% Recy.</td>
<td>AASHTO T180</td>
<td>1/5,000 CY at source</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Resistance (R Value) or Resilient Modulus</td>
<td>ASTM D2844</td>
<td>Annually for IQAC Source Qualification OR per project</td>
</tr>
<tr>
<td>704.03.07</td>
<td>CLSM Class I, II, &amp; III</td>
<td>Mix Design</td>
<td>USS 704.03.07</td>
<td>Annually for IQAC Source Qualification OR per project</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Compressive Strength</td>
<td>USS 208.02.07 &amp; ASTM D4832</td>
<td>Annually for IQAC Source Qualification OR per project</td>
</tr>
<tr>
<td></td>
<td>CLSM Class III-BAF</td>
<td>Visual Inspection Report</td>
<td>USS 208.02.07 Split cylinders</td>
<td>Annually for IQAC Source Qualification OR per project</td>
</tr>
</tbody>
</table>

14 Review the IQAC website for any exceptions to the listed test methods.
15 Required only for placement around waterline pipe.
16 Test specimens shall be prepared following the dry preparation procedure AASHTO T87.
NOTES

1. THIS PULL BOX SHALL NOT BE USED IN TRAFFIC OR PARKING LANES.

2. ALL DIMENSIONS ARE NOMINAL.

3. TOP OF UTILITY BOXES INSTALLED IN SIDEWALK SHALL HAVE NO VERTICAL SURFACE DISCONTINUITIES GREATER THAN 1/4" WITH ADJACENT SIDEWALK, HAVE NO GAPS GREATER THAN 1/2", REGARDLESS OF CONSTRUCTION TOLERANCES, AND BE FIRM, STABLE, AND SLIP RESISTANT.
Notes:
1. Top of utility boxes installed in sidewalk shall have no vertical surface discontinuities greater than 1/4" with adjacent sidewalk, have no gaps greater than 1/2", regardless of construction tolerances, and be firm, stable, and slip resistant.
2. See Drawing No. 709 for cover to be used in street and undeveloped areas.
3. All dimensions are nominal.
POLYMER COVER MARKED "TRAFFIC SIGNAL" STEEL PULL BOX COVER, DRAWING NO. 709 IS PREFERRED FOR ALL USES, THIS PULL BOX ONLY.

PRECAST REINFORCED CONCRETE BODY

PRECAST REINFORCED CONCRETE EXTENSION (MUST NOT BE USED UNLESS SPECIFIED)

NOTES
1. THIS PULL BOX SHALL NOT BE USED IN TRAFFIC OR PARKING LANES.
2. SEE DRAWING NO. 709 FOR ALTERNATE COVER.
3. TOP OF UTILITY BOXES INSTALLED IN SIDEWALK SHALL HAVE NO VERTICAL SURFACE DISCONTINUITIES GREATER THAN 1/4" WITH ADJACENT SIDEWALK, HAVE NO GAPS GREATER THAN 1/2", REGARDLESS OF CONSTRUCTION TOLERANCES, AND BE FIRM, STABLE, AND SLIP RESISTANT.
NOTE:
1. THIS PULL BOX SHALL BE USED IN VEHICLE TRAVEL AREAS.

AVAILABLE IN #3, #5, & #7 SIZES
(3 GAUGE STEEL)
1. This cover to be used in street areas and undeveloped areas only.
2. Typical No. 7 pull box cover shown. Submit others to the engineer for approval.
3. All traffic and open area covers shall be H 20 rated.
4. Grounding of steel pull box covers is not necessary for pull boxes containing low voltage, power-limited connections.

Access hole to pull box "L" bolts

Bead weld inscription

Traffic signal

Steel floor plate, 3/8" thick, round corners to match edges of pull box

Cover

Finished grade

Side

Mounting bracket, welded to cover, typ. locate to match pull box "L" bolts

3/8" x 16 coarse thread tap, centered between ribs. For cover ground connection see sheet 2 of this drawing no.
NOTES:

1. THIS COVER TO BE USED IN STREET AREAS AND UNDEVELOPED AREAS ONLY.
2. TYPICAL NO. 7 PULL BOX COVER SHOWN. SUBMIT OTHERS TO THE ENGINEER FOR APPROVAL.
3. ALL TRAFFIC AND OPEN AREA COVERS SHALL BE H 20 RATED.
4. GROUNDING OF STEEL PULL BOX COVERS IS NOT NECESSARY FOR PULL BOXES CONTAINING LOW VOLTAGE, POWER-LIMITED CONNECTIONS.

PROFESSIONAL ELECTRICAL ENGINEER STAMP ON FILE

SPECIFICATION REFERENCE

506 STEEL STRUCTURES
623 TRAFFIC SIGNALS & STREETLIGHTING

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

PULL BOX STREET COVER

DATE 12-12-96  DWG. NO.  709  SHEET 1 OF 2
NOTES:

1. PULL BOX LID SHOULD BE TAPPED WITH A 3/8" X 16 COURSE THREAD TAP.
2. FOR TYPICAL NO. 7 PULL BOX COVER GROUNDING, SEE SHEET 1 OF THIS DRAWING.

PROFESSIONAL ELECTRICAL ENGINEER STAMP ON FILE

AGENCY APPROVED

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

PULL BOX COVER
BONDING DETAIL

DATE 12-12-96   DWG. NO. 709   SHEET 2 OF 2
PULL BOX COVER

6" MIN.

PULL BOX

12"

CONDUIT

NATIVE MATERIAL OR SAND AS REQUIRED BY THE ENGINEER COMPACTED TO 90%

CROSS SECTION

2"  3"

CONDUIT

TOP VIEW

AGENCY APPROVED

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

PULL BOX FOUNDATION

DATE 7-12-01  DWG. NO. 710
PULL BOX CONCRETE COLLAR
IN UNDEVELOPED AREAS

NOTES:

1. P30 PULL BOXES SHALL BE INSTALLED FOR THE SIGNAL ITS COMMUNICATIONS PER APPLICABLE STANDARDS.

2. PULL BOX COVER SHALL BE INSCRIBED "FIBER OPTIC".

3. LOCATIONS OF THE PROPOSED P30 ITS COMMUNICATION PULL BOXES SHOWN ON THE PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MARKING THE LOCATIONS IN THE FIELD AT APPROXIMATELY 500 FEET INTERVALS. THESE LOCATIONS SHALL BE SUBJECT TO APPROVAL BY THE ENGINEER BEFORE INSTALLATION.

4. DETAIL SHOWS METHOD OF INSTALLATION WHEN FIBER OPTIC CABLE IS REQUIRED.

5. CONDUIT SIZES SHALL BE PER UNIFORM STANDARD SPECIFICATIONS, SECTION 623.

6. ALL CONDUITS SHALL HAVE A CONTINUOUS RUN OF 6 PAIR PE39 #22 AWG INTERCONNECT CABLE.

7. UNDERGROUND ORANGE MARKING TAPE SHALL BE PLACED 12 INCHES ABOVE THE INSTALLED CONDUIT AND MARKED WITH THE LEGEND "FIBER OPTIC".

<table>
<thead>
<tr>
<th>SPECIFICATION REFERENCE</th>
<th>UNIFORM STANDARD DRAWINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CLARK COUNTY AREA</td>
</tr>
</tbody>
</table>

PULL BOX CONCRETE COLLAR
IN UNDEVELOPED AREAS

<table>
<thead>
<tr>
<th>AGENCY APPROVED</th>
<th>B</th>
<th>C</th>
<th>H</th>
<th>L</th>
<th>M</th>
<th>N</th>
</tr>
</thead>
</table>

DATE 3-13-08    DWG. NO. 711
NO. 4 AWG SEVEN (7) STRAND BARE COPPER GROUNDING WIRE 3' ABOVE FOUNDATION. CONNECT GROUNDING WIRE TO GROUNDING POINT.

CONDUIT TO EXTEND 6" ABOVE TOP OF THE ANCHOR BOLTS

BASE OF POLE

1" NON-SHRINK GROUT BETWEEN POLE BASE AND SIDEWALK

5/8" X 12" HOT-DIP GALVANIZED ANCHOR BOLTS

BRONZE GROUNDING CONNECTOR UL LISTED FOR UNDERGROUND USE (ONE PER BOLT) SEE NOTE 1

2% MAX. SLOPE

24" MIN.

48" MIN.

4" CAP

15# FELT (2 LAYERS)

STANDARD GROUNDING PLATE PER NEC 250.52 & 250.53

24" DIA. OR 18" SQ.

NOTE:

1. CONTINUOUS BARE COPPER GROUNDING WIRE SHALL BE LOOPED AROUND ANCHOR BOLTS ONE TIME AND CONNECTED TO EACH ANCHOR BOLT BEFORE CONTINUING DOWN TO THE GROUNDING PLATE.

SPECIFICATION REFERENCE

501 PORTLAND CEMENT CONCRETE
623 TRAFFIC SIGNALS & STREETLIGHTING

AGENCY APPROVED

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

TYPE "A" FOUNDATION

DATE 07-01-15 DWG. NO. 715

Effective 05/21/2020 to 10/07/2020
NO. 4 AWG SEVEN (7) STRAND BARE COPPER GROUNDING WIRE 3' ABOVE FOUNDATION. CONNECT GROUNDING WIRE TO GROUNDING POINT.

BRONZE GROUNDING CONNECTOR UL LISTED FOR UNDERGROUND USE (ONE PER BOLT) SEE NOTE 1

CONNECT GROUNDING WIRE TO GROUNDING BASE OF POLE

1. CONTINUOUS BARE COPPER GROUNDING WIRE SHALL BE LOOPED AROUND ANCHOR BOLTS ONE TIME AND CONNECTED TO EACH ANCHOR BOLT BEFORE CONTINUING DOWN TO THE GROUNDING PLATE.

NOTE:
NOTE:
1. CONTINUOUS BARE COPPER GROUNDING WIRE SHALL BE LOOPED AROUND ANCHOR BOLTS ONE TIME AND CONNECTED TO EACH ANCHOR BOLT BEFORE CONTINUING DOWN TO THE GROUNDING PLATE.

SPECIFICATION REFERENCE
501 PORTLAND CEMENT CONCRETE
623 TRAFFIC SIGNALS & STREETLIGHTING

AGENCY APPROVED

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

TYPE "C" FOUNDATION

DATE 07-01-15  DWG. NO. 717
NOTES:

1. ANCHOR BOLTS SHALL BE HOT-DIP GALVANIZED STEEL WITH NUT AND WASHER.

2. CONTINUOUS BARE COPPER GROUNDING WIRE SHALL BE LOOPED AROUND ANCHOR BOLTS ONE TIME AND CONNECTED TO EACH ANCHOR BOLT BEFORE CONTINUING DOWN TO THE GROUNDING PLATE.

<table>
<thead>
<tr>
<th>ANCHOR BOLTS</th>
<th>POLE GA.</th>
<th>BOLT &quot;E&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>11</td>
<td>SEE POLE DRAWING</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>1-1/8&quot; X 40&quot; X 4&quot;</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>1-1/4&quot; X 44&quot; X 4&quot;</td>
</tr>
</tbody>
</table>

BRONZE GROUNDING CONNECTOR UL LISTED FOR UNDERGROUND USE (ONE PER BOLT) SEE NOTE 2

NO. 4 AWG SEVEN (7) STRAND BARE COPPER GROUNDING WIRE 3' ABOVE FOUNDATION. CONNECT GROUNDING WIRE TO GROUNDING POINT.

CONDUIT TO EXTEND 6" ABOVE TOP OF THE ANCHOR BOLTS BASE OF POLE

1" NON-SHRINK GROUT BETWEEN POLE BASE AND SIDEWALK

4" MIN.-6" MAX. CONCRETE CAP

6"X6" WIRE MESH 10 GA.

2% MAX SLOPE

6" TOP OF THE ANCHOR BOLTS CONDUIT TO EXTEND 6" ABOVE TOP OF THE ANCHOR BOLTS CONNECT GROUNDING WIRE TO GROUNDING POINT.

2" CONDUIT

15# FELT (2 LAYERS)

36" DIA. CONCRETE BASE

6"X6" WIRE MESH 10 GA.

2% MAX SLOPE

2" CONDUIT

BASE COVER

48" MIN.

2" CONDUIT

6" TOP OF THE ANCHOR BOLTS CONDUIT TO EXTEND 6" ABOVE TOP OF THE ANCHOR BOLTS CONNECT GROUNDING WIRE TO GROUNDING POINT.

2" CONDUIT

15# FELT (2 LAYERS)

36" DIA. CONCRETE BASE

6"X6" WIRE MESH 10 GA.

2% MAX SLOPE

2" CONDUIT

BASE COVER

48" MIN.

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2% MAX SLOPE

2" CONDUIT

BASE COVER

48" MIN.
NOTES:

1. ANCHOR BOLTS SHALL BE HOT-DIP GALVANIZED STEEL WITH NUT AND WASHER.

2. CONTINUOUS BARE COPPER GROUNDING WIRE SHALL BE LOOPED AROUND ANCHOR BOLTS ONE TIME CONNECTED TO EACH ANCHOR BOLT BEFORE CONTINUING DOWN TO THE GROUNDING PLATE.

3. VERTICAL ADJUSTMENT REQUIRED FOR POLES INSIDE ACCESS RAMPS.

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BRONZE GROUNDING CONNECTOR UL LISTED FOR UNDERGROUND USE (ONE PER BOLT) SEE NOTE 2

NO. 4 AWG SEVEN (7) STRAND BARE COPPER GROUNDING WIRE 3" ABOVE FOUNDATION. CONNECT GROUNDING WIRE TO GROUNDING POINT.

CONDUIT TO EXTEND 6" ABOVE TOP OF THE ANCHOR BOLTS BASE OF POLE

1" NON-SHRINK GROUT BETWEEN POLE BASE AND SIDEWALK

4" MIN. 6" MAX. CONCRETE CAP

2" CONDUIT

BASE COVER

48" MIN.

FINISH GRADE SEE NOTE 3

2% MAX SLOPE

6" X 6" WIRE MESH 10 GA.

6" X 6" MESH HEIGHT

2" CONDUIT

36" DIA. CONCRETE BASE

15# FELT (2 LAYERS)

STD. GROUNDING PLATE PER NEC 250.52 & 250.53

PROFESSIONAL ELECTRICAL ENGINEER STAMP ON FILE
NOTE:
1. ANCHOR BOLTS SHALL BE HOT-DIP GALVANIZED STEEL WITH NUT AND WASHER.
2. CONTINUOUS BARE COPPER GROUNDING WIRE SHALL BE LOOPED AROUND ANCHOR BOLTS ONE TIME CONNECTED TO EACH ANCHOR BOLT BEFORE CONTINUING DOWN TO THE GROUNDING PLATE.
3. VERTICAL ADJUSTMENT REQUIRED FOR POLES INSIDE ACCESS RAMPS.

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NO. 4 AWG SEVEN (7) STRAND BARE COPPER GROUNDING WIRE 3' ABOVE FOUNDATION. CONNECT GROUNDING WIRE TO GROUNDING POINT.

1" NON-SHRINK GROUT BETWEEN POLE BASE AND SIDEWALK
4" MIN., 6" MAX. CONCRETE CAP

BASE COVER
FINISH GRADE
2% MAX SLOPE

FOR POLES INSIDE ACCESS RAMPS.

### ANCHOR BOLTS

1. ANCHOR BOLTS SHALL BE HOT-DIP GALVANIZED STEEL WITH NUT AND WASHER.

2. CONTINUOUS BARE COPPER GROUNDING WIRE SHALL BE LOOPED AROUND ANCHOR BOLTS ONE TIME CONNECTED TO EACH ANCHOR BOLT BEFORE CONTINUING DOWN TO THE GROUNDING PLATE.

3. VERTICAL ADJUSTMENT REQUIRED FOR POLES INSIDE ACCESS RAMPS.

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1" NON-SHRINK GROUT BETWEEN POLE BASE AND SIDEWALK
4" MIN., 6" MAX. CONCRETE CAP

BASE COVER
FINISH GRADE
2% MAX SLOPE

FOR POLES INSIDE ACCESS RAMPS.
NOTES:

1. ANCHOR BOLTS SHALL BE HOT-DIP GALVANIZED STEEL WITH NUT AND WASHER.

2. CONTINUOUS BARE COPPER GROUNDING WIRE SHALL BE LOOPEED AROUND ANCHOR BOLTS ONE TIME AND CONNECTED TO EACH ANCHOR BOLT BEFORE CONTINUING DOWN TO THE GROUNDING PLATE.

3. VERTICAL ADJUSTMENT REQUIRED FOR POLES INSIDE ACCESS RAMPS.

BASE COVER

BRONZE GROUNDING CONNECTOR UL LISTED FOR UNDERGROUND USE (ONE PER BOLT) SEE NOTE 2

NOTE 1:
ANCHOR BOLTS SHALL BE HOT-DIP GALVANIZED STEEL WITH NUT AND WASHER.

NOTE 2:
CONTINUOUS BARE COPPER GROUNDING WIRE SHALL BE LOOPEED AROUND ANCHOR BOLTS ONE TIME AND CONNECTED TO EACH ANCHOR BOLT BEFORE CONTINUING DOWN TO THE GROUNDING PLATE.

NOTE 3:
VERTICAL ADJUSTMENT REQUIRED FOR POLES INSIDE ACCESS RAMPS.

PROFESSIONAL ELECTRICAL ENGINEER STAMP ON FILE

AGENCY APPROVED

B C H L M N

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

TYPE "H" FOUNDATION

DATE 07-01-15 DWG. NO. 721
NOTES:
1. ANCHOR BOLTS SHALL BE HOT-DIP GALVANIZED STEEL WITH NUT AND WASHER.
2. ANCHOR BOLT MINIMUM YIELD STRENGTH Fy = 50 KSI.
3. SURROUNDING SOIL MUST HAVE SOIL-BEARING PRESSURE S1 OF 1500 PSF.
4. WRAP 20' OF #4 AWG BARE COPPER GROUNDING WIRE AROUND ENTIRE CAGE. GROUNDING WIRE SHALL BE CONNECTED TO ONE ANCHOR BOLT NEAR TOP OF FOUNDATION AND CONTINUE DOWN AROUND CAGE AND CONNECT TO GROUNDING PLATE AT BOTTOM OF FOUNDATION.
5. STEEL WIRE SHALL BE USED TO TIE ALL BARS AND WIRE MESH FIRMLY TOGETHER.
6. VERTICAL ADJUSTMENT REQUIRED FOR POLES INSIDE ACCESS RAMPS.

NOTES:
1. ANCHOR BOLTS SHALL BE HOT-DIP GALVANIZED STEEL WITH NUT AND WASHER.
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5. STEEL WIRE SHALL BE USED TO TIE ALL BARS AND WIRE MESH FIRMLY TOGETHER.
6. VERTICAL ADJUSTMENT REQUIRED FOR POLES INSIDE ACCESS RAMPS.
NOTES:
1. ANCHOR BOLTS SHALL BE HOT-DIP GALVANIZED STEEL WITH NUT AND WASHER.
2. WRAP 20' OF #4 AWG BARE COPPER GROUNDING WIRE AROUND ENTIRE CAGE.
3. STEEL WIRE SHALL BE USED TO TIE ALL BARS AND SPIRAL FIRMLY TOGETHER.
4. 28 DAY STRENGTH - 4000 PSI MIN. ALL REINFORCING STEEL SHALL BE ASTM A615 GR 60.
5. MAXIMUM ALLOWABLE OVERTURNING MOMENT IS 180 FT-KIPS.
6. MAXIMUM ALLOWABLE TORSION IS 220 FT-KIPS.
7. THE FOUNDATION DESIGN SHOWN ASSUMES INTERNAL FRICTION ANGLE OF 30 DEGREES. IF ACTUAL SOIL CONDITIONS ARE LESSER QUALITY, THE FOUNDATION SHOULD BE DESIGNED FOR THE SPECIFIC SITE CONDITIONS.
8. VERTICAL ADJUSTMENT REQUIRED FOR POLES INSIDE ACCESS RAMPS.
9. GROUNDING WIRE SHALL BE CONNECTED TO ONE ANCHOR BOLT NEAR TOP OF FOUNDATION AND CONTINUE DOWN AROUND CAGE AND CONNECT TO GROUNDING PLATE AT BOTTOM OF FOUNDATION.
10. CONNECT GROUNDING WIRE TO GROUNDING PLATE PER NEC 250.52 & 250.53 FOR TYPE XX-B SIGNAL AND LUMINAIRE POLES, SEE STANDARD DRAWING NO. 810.
11. STEEL WITHIN CAGE SHALL BE OF ONE TYPE AND SIZE.

NEW SPECIFICATION:
1. ANCHOR BOLTS SHALL BE HOT-DIP GALVANIZED STEEL WITH NUT AND WASHER.
2. WRAP 20' OF #4 AWG BARE COPPER GROUNDING WIRE AROUND ENTIRE CAGE.
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11. STEEL WITHIN CAGE SHALL BE OF ONE TYPE AND SIZE.
NOTES:
1. FOR CONDUIT SIZE, LOCATION AND QUANTITY, SEE PLANS.
2. ANCHOR BOLTS 3/4" X 18" X 3" SHALL BE HOT-DIP GALVANIZED COMMERCIAL GRADE STEEL WITH NUT AND WASHER.
3. ANCHOR BOLT PROJECTION ABOVE FOUNDATION SHALL BE 3-1/2" MIN., 4-1/2" MAX.
4. CONDUIT PROJECTION ABOVE FOUNDATION SHALL BE 2" MIN., 4" MAX.
5. CONTINUOUS BARE COPPER GROUNDING WIRE SHALL BE LOOPEd AROUND ANCHOR BOLTS ONE TIME AND CONNECTED TO EACH ANCHOR BOLT BEFORE CONTINUING DOWN TO THE GROUNDING PLATE.
NOTES:

1. 3" or 4" fiber or interconnect from type 200 or P-30 pull box. Refer to plans for interconnect/fiber conduit size.
2. 2" conduit from service pedestal.
3. 3" conduits from #7 traffic signal pull box for signal poles.
4. #4 single strand bare copper wire see drawing 725 for details.
5. Install conduits 1" front of center line.
6. Refer to plans for any additional conduits.
NOTES:

1. FOR CONDUIT SIZE, LOCATION, AND QUANTITY SEE PLANS REFER TO CONDUIT LAYOUT DRAWING # 725.1 FOR DETAILS.

2. 3/4" X 18" X 3" HOT-DIP GALVANIZED ANCHOR BOLTS. LOCATE WITH TEMPLATE.

3. ANCHOR BOLT PROJECTION ABOVE FOUNDATION SHALL BE 3-1/2" MIN., 4-1/2" MAX.

4. CONDUIT PROJECTION ABOVE FOUNDATION SHALL BE 1" MIN., 4" MAX.

5. LOCATION OF FOUNDATION MUST BE APPROVED BY ENGINEER IN FIELD.

6. CONTINUOUS BARE COPPER GROUNDING WIRE SHALL BE CONNECTED TO EACH ANCHOR BOLT WITH BRONZE GROUNDING CONNECTOR BEFORE CONTINUING DOWN TO THE GROUNDING PLATE.

6' OF #4 AWG SINGLE STRAND BARE COPPER GROUNDING WIRE ABOVE FOUNDATION. CONNECT GROUNDING WIRE TO GROUNDING POINT.

15# FELT (2 LAYERS)

STD. GROUNDING PLATE PER NEC 250-83

PROFESSIONAL ELECTRICAL ENGINEER STAMP ON FILE

AGENCY APPROVED

B C H L M N

SPECIFICATION REFERENCE

501 PORTLAND CEMENT CONCRETE
623 TRAFFIC SIGNALS & STREETLIGHTING

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

TYPE "J" & "K" FOUNDATIONS

DATE : 10-9-08 DWG. NO. 725
SERVICE PEDESTAL ENCLOSURE, 12 GA. SHEET METAL BODY AND EQUIPMENT MOUNTING PANEL, 14 GA. FRONT COVER(S) AND 16 GA. MIN. FOR ALL OTHER PANELS. ALL SHEET METAL SHALL BE FINISHED WITH ZINC CHROMATE PRIMER AND GREEN BAKED ENAMEL OR POWDER COAT FINISH. METERING SECTION PER P.U.E.S.E.R. STANDARDS.

UTILITY METER SECTION, 125 OR 200 AMP AS NEEDED, 120/240 VOLT, 1 PHASE, 3 WIRE. THE SECTION SHALL HAVE A HINGED COVER WITH PADLOCK TAB.

CIRCUIT BREAKER DISTRIBUTION SECTION, 125 OR 200 AMP AS NEEDED, 120/240 VOLT, 1 PHASE, 3 WIRE. THE SECTION SHALL BE COMPLETE WITH SEPARATE DEAD FRONT, COPPER BUSSING, SPACE FOR A MINIMUM OF TEN FULL SIZE (1") GE TYPE PLUG-IN CIRCUIT BREAKERS (EXCLUDING MAIN BREAKER), COPPER NEUTRAL/GROUNDING BUS AND MAIN BREAKER AS SPECIFIED BY THE ENGINEER. THE SECTION SHALL BE FACTORY WIRED TO THE METER SECTION WITH THE APPROPRIATE SIZE COPPER CONDUCTORS.

EQUIPMENT MOUNTING PANEL, 10" H X 12" W MIN., OPEN OR ENCLOSED, FOR LIGHTING CONTACTORS AS NEEDED.

DISTRIBUTION AND EQUIPMENT SECTION COVER WITH PADLOCK TAB.

TYPICAL MOUNTING BASE DETAIL
(DIMENSIONS MAY VARY DEPENDING ON MANUFACTURER)

BASE AND ENCLOSURE WIDTH (16" TYP.)
BASE DEPTH (16" TYP.)
ENCLOSURE DEPTH (17" TYP.)

SEPARATE PEDESTAL ENCLOSURE MOUNTING BASE (OPTIONAL)
SERVICE ENTRANCE WEATHERHEAD

TO UTILITY SINGLE PHASE, 3 WIRE, 120/240 VAC SERVICE.
LEAVE A MINIMUM OF 10 FEET SLACK IN EACH CONDUCTOR.

2" RIGID GALVANIZED STEEL CONDUIT

METER SOCKET (PER UTILITY'S REQUIREMENTS)
FACE METER AWAY FROM TRAFFIC.

SINGLE PHASE, 3 WIRE, 120/240 VAC CIRCUIT BREAKER
LOAD CENTER, MAIN LUGS ONLY, NEMA 3R (RAIN-TIGHT)
ENCLOSURE WITH PADLOCKING PROVISIONS, AND A
MINIMUM OF EIGHT (8) SINGLE SPACES.
BUSSING SHALL BE COPPER.
FOR LOAD MAINS AMPERE RATING, AND/OR CIRCUIT BREAKER
RATINGS, NUMBER OF POLES AND QUANTITY, SEE PLANS.

2" RIGID GALVANIZED STEEL CONDUIT
2-HOLE PIPE STRAPS

EQUIPMENT GROUNDING:
MINIMUM OF 20 FEET OF SOLID NO. 4 AWG
BARE COPPER WIRE,
SPIRAL WRAPPED AROUND POLE WITH A 1/2 INCH
PITCH.  SEE NOTE 2.

NO. 4 AWG GROUNDING CONDUCTOR ENCASED IN 1/2" E.M.T.

FINISHED GRADE

PVC COATED OR WRAPPED WITH 10 MIL CORROSION PROTECTIVE
TAPE, 1/2 LAPPELED, RIGID GALVANIZED STEEL 90° ELBOW, 24" MIN. RADIUS

2" PVC CONDUIT TO TRAFFIC SIGNAL CONTROLLER CABINET
(SEE PLANS FOR WIRE QUANTITY AND GAGES)

NOTES:
1. ALL WIRES TO BE COPPER; SEE PLANS FOR QUANTITY AND GAGES.
2. WITH ENGINEER'S APPROVAL, AN 8 FT. BY 5/8 IN. COPPER-CLAD GROUNDING ROD MAY BE USED.
3. ALL CONDUIT FITTINGS TO BE WATER-TIGHT.

SPECIFICATION REFERENCE

120/240 VAC SERVICE
ON WOOD POLE
OVERHEAD SERVICE

DATE 12-12-96 DWG. NO. 731
INSTALLATION OF CONDUIT INTO PULL BOX FROM LIP OF GUTTER TRENCH

36" MIN. RADIUS - USE ONLY 20 MIL OR THICKER PVC COATED RIGID IRON CONDUIT FOR BEND AREA. SEE SPECIFICATIONS.

EXCAVATE UNDER EXISTING CURB & GUTTER DO NOT REMOVE C & G.

CONNECTOR

CONTINUE CONDUIT RUN WITH A MINIMUM OF 5 FT. OF PVC COATED R.I.C. SEE CLARK COUNTY AREA SPECs.

FILL WITH SAND AND COMPACT AS REQUIRED BY FIELD ENGINEER

NOTE! DO NOT MAKE COMPOUND BENDS IN CONDUIT
THE CONTRACTOR SHALL USE PVC COATED RIGID IRON CONDUIT CONFORMING TO SPECIFICATIONS.

- PVC FOR CONTINUATION
- B.C. RADIUS VARIES
- PVC FOR CONTINUATION

RIGID IRON CONDUIT TO PVC CONDUIT CONNECTOR

6" MAX.
TRENCH
CURB & GUTTER
24"
TRENCH
6" MAX.

LIP OF GUTTER FOR A/C PAVEMENT
BACK OF CURB FOR SIDEWALK
SIDEWALK OR A/C PAVEMENT
BACKFILL WITH CONTROLLED LOW STRENGTH MATERIAL (CLSM)
SAND BACKFILL
CONDUIT SAND BEDDING

NEW CONSTRUCTION
NOTES (RETROFIT):
1. DEPTH TO MATCH EXISTING AC PAVEMENT, BUT NOT LESS THAN 4", PLACED IN MULTIPLE LIFTS OF EQUAL THICKNESS.
2. PATCH WIDTH SHALL BE SUFFICIENT TO ACCOMMODATE MECHANICAL PLACEMENT USING AGENCY APPROVED SPREADER BOX OR PAVING MACHINE, ROLLING AND COMPACTION PER UNIFORM STANDARD SPECIFICATION SECTION 491.03.11.
3. IF SAWCUT IS WITHIN 3 FEET OF EDGE OF EXISTING ASPHALT CONCRETE SURFACE OR OTHER PATCH, REMOVE EXISTING PAVEMENT TO THAT EDGE AND REPLACE ENTIRE SECTION.
4. IF 24" COVER IS NOT POSSIBLE, THEN RED CONCRETE ENCASEMENT MIN. 4" ABOVE CONDUIT REQUIRED.
5. CONTROLLED LOW STRENGTH MATERIAL (CLSM) MAY BE INSTALLED TO FINAL GRADE FOR TEMPORARY PATCHING.
6. PERMANENT PATCH MIX DESIGN SHALL BE AS REQUIRED BY ENGINEER.

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INSTALLATION OF CONDUIT

SPECIFICATION REFERENCE

DATE 5-17-01 DWG. NO. 733
NOTES:
1. CONSTRUCT FROM MINIMUM 12-GUAGE STEEL.
2. THE TIMER SHALL BE RTC-AP21 OR EQUIVALENT.
NOTES:
1. ALL WIRING INSIDE THE CABINET SHALL BE #14 THW.
2. ALL FIELD WIRE TO THE SIGNAL SHALL BE #14 SOLID COPPER.
3. THE SERVICE WIRE SHALL BE 2-#4 THW & 1-#6 THW.
   PROVIDE #10 PIGTAIL FOR CONNECTION TO BREAKER.
4. THE TIMER SHALL BE RTC-AP21 OR EQUIVALENT.
5. TWO POLE SOLID STATE FLASHER.
6. THERE SHALL BE A 1” MINIMUM CLEARANCE BETWEEN INDIVIDUAL COMPONENTS.
7. ALL SERVICE POINTS SHALL BE AS FOR STREET LIGHTING.
8. FLASHING PATTERN OF LIGHTS TO BE SPECIFIED BY THE ENTITY.
NOTES:
1. ALL POLES TO BE HOT-DIP GALVANIZED BY MANUFACTURER OR PRIME PAINTED BY MANUFACTURER AND FINISH PAINTED BY CONTRACTOR PER SPECIFICATIONS AND AS REQUIRED BY THE ENTITY.
2. LOW BIDDER MUST SUPPLY SHOP DRAWING FOR DESIGN APPROVAL BEFORE CONTRACT CAN BE AWARDED.
3. FOR OTHER DETAILS SEE DRAWING NO. 808 SHTS. 2 & 6.
4. INSTALL A BACKFACING LIGHT ON BACK OF OUTERMOST LIGHT, INDICATING THE SPEED LIMIT MESSAGE IS IN OPERATION.
5. HANDHOLE COVERS SHALL BE MOUNTED WITH TAMPER-RESISTANT SCREWS.
6. MULTI-SIDED POLE AND MAST ARM WITH A MINIMUM OF 16 SIDES MAY BE USED IF DIRECTED BY THE ENTITY ENGINEER.

SCHOOL FLASHING SIGN ON POLE WITH LUMINAIRE

AGENCY APPROVED  B  C  H  L  M  N

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

DATE  9-14-06  DWG. NO. 743  SHEET 1 OF 2
NOTES:

1. ALL POLES TO BE HOT-DIP GALVANIZED BY MANUFACTURER OR PRIME PAINTED BY MANUFACTURER AND FINISH PAINTED BY CONTRACTOR PER SPECIFICATIONS AND AS REQUIRED BY THE ENTITY.

2. INSTALL A BACKFACING LIGHT ON BACK OF OUTERMOST LIGHT, INDICATING THE SPEED LIMIT MESSAGE IS IN OPERATION.
PLAN OF BASE

4" X 6-1/2" (INSIDE DIM.)
HANDHOLE AND COVER
(SHALL FACE AWAY FROM ONCOMING TRAFFIC)

3/8" STEEL PLATE
BASE THICKNESS

HEAVY SQ. NUTS
FOR PLUMBING

NOTES:
1. DRILL 1" HOLES IN STEEL PIPE WHERE 1-1/2" STEEL COUPLINGS ARE TO BE.
2. POLE TO BE HOT-DIP GALVANIZED BY MANUFACTURER OR PRIME PaintED BY MANUFACTURER AND FINISH PAINTED BY CONTRACTOR PER SPECIFICATIONS AND AS REQUIRED BY THE ENTITY.
3. HANDHOLE COVERS SHALL BE MOUNTED WITH TAMPER-RESISTANT SCREWS.

FOR TYPE "G" FOUNDATION SEE DRAWING NO. 720
SPECIFICATION REFERENCE
UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

DATE DWG. NO.

SIGN POST WITH
SCHOOL SIGN MOUNTED
DETAILS

AGENCY APPROVED B C H L M N

SHEET 2 OF 2

1-1/4" HI-TENSILE HEX. HEAD BOLTS AND NUTS.

3/16"x3" HI-TENSILE STEEL CLAMPS

1" THICK FLANGE

2" DIA. WIRING HOLE

1-1/4" THICK FLANGE

ANGLE

ANGLE

DETAIL A

DETAIL B

3-1/2" 5/16"

48"

5/16" 3-1/2"
NOTES:

1. ALL POLES TO BE HOT-DIP GALVANIZED BY MANUFACTURER OR PRIME PAINTED BY MANUFACTURER AND FINISH PAINTED BY CONTRACTOR PER SPECIFICATIONS AND AS REQUIRED BY THE ENTITY.

2. FOR MAST ARM TENON MOUNTING AND SPACING AND ADDITIONAL INFORMATION REFER TO STANDARD DRAWING NO. 746.

3. MULTI SIDED POLE AND MAST ARM WITH A MINIMUM OF 16 SIDES MAY BE USED IF DIRECTED BY THE ENTITY ENGINEER.

FOR OTHER DETAILS SEE DRAWING NUMBER 808 SHT 2 & 6

FOR "H" TYPE FOUNDATION SEE DRAWING NO. 721

FOR "L" FOUNDATION SEE DWG. 722

IN THE CITY OF NORTH LAS VEGAS, USE ONLY XX-A POLE DWG. 808 SHT 3 & 6

Effective 05/21/2020 to 10/07/2020
**NOTES:**

1. LOW BIDDER MUST SUPPLY SHOP DRAWING FOR DESIGN APPROVAL BEFORE CONTRACT CAN BE AWARDED.

2. ALL POLES TO BE HOT-DIP GALVANIZED BY MANUFACTURER OR PRIME PAINTED BY MANUFACTURER AND FINISH PAINTED BY CONTRACTOR PER SPECIFICATIONS AND AS REQUIRED BY THE ENTITY.

3. FOR OTHER DETAILS SEE DRAWING NO. 808 SHTS. 2 & 6.

4. HANDHOLE COVERS SHALL BE MOUNTED WITH TAMPER-RESISTANT SCREWS.

5. SCHOOL SIGN SHALL BE MOUNTED AS SHOWN IN STANDARD DRAWING NO. 745

6. REFER TO DRAWING NO. 812 SHEET 1 OF 2 IF XX-20 POLE IS REQUIRED.

7. MULTI-SIDED POLE AND MAST ARM WITH A MINIMUM OF 16 SIDES MAY BE USED IF DIRECTED BY THE ENTITY ENGINEER.

FOR "H" TYPE FOUNDATION DRAWING NO. 721

IN THE CITY OF NORTH LAS VEGAS, USE ONLY XX-A POLE DWG.808 SHT 3 & 6

FOR "L" FOUNDATION SEE DWG.722

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**SCHOOL SIGN POLE**

**TYPE XX-A**

**UNIFORM STANDARD DRAWINGS**

**CLARK COUNTY AREA**

**SPECIFICATION REFERENCE**

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**DATE 04-12-07**

**DWG. NO. 746**

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Effect on 05/21/2020 to 10/07/2020
NOTES:

1. ALL INDICATIONS ARE TO BE YELLOW LED BALLS.
2. ALL M-2A INDICATIONS ARE 12" NOMINAL.
3. CIRCULAR VISORS TO BE INSTALLED ON ALL HEADS.
4. SEE SIGNAL PLANS FOR MAST ARM TENON LOCATIONS.
5. THIS HEAD ASSEMBLY SHALL BE USED ONLY ON THE END OF THE MAST ARM.

AGENCY APPROVED

<table>
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<th>UNIFORM STANDARD DRAWINGS</th>
<th>CLARK COUNTY AREA</th>
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<td></td>
<td>SCHOOL FLASHER</td>
<td>MAST ARM SIGNAL ASSEMBLIES</td>
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<td>M-2A</td>
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DATE 3-10-05  DWG. NO. 747  SHEET 1 OF 2
NOTES:

1. ALL INDICATIONS ARE TO BE YELLOW LED BALLS.
2. ALL M-2B INDICATIONS ARE 12" NOMINAL.
3. CIRCULAR VISORS TO BE INSTALLED ON ALL HEADS.
4. SEE SIGNAL PLANS FOR MAST ARM TENON LOCATIONS.
NOTES:
1. THIS PULL BOX SHALL NOT BE USED IN TRAVEL OR PARKING LANES
2. TAPERED SIDE WALLS ARE ALLOWED.
1. DESIGN LOAD: H-20 WHEEL LOADINGS.
2. SUITABLE FOR USE IN OFF STREET LOCATIONS WHERE NOT SUBJECT TO HIGH DENSITY TRAFFIC. IT SHALL NOT BE USED IN TRAVEL OR PARKING LANES.
3. INSIDE DIMENSIONS - 30"X48"X36"
4. FOR USE AT FIBER OPTIC SPLICE POINTS.

TYPE 200 VAULT
RIGID CONDUIT BEND
3' MINIMUM RADIUS

EXISTING CURB AND GUTTER

EXISTING CONCRETE SIDEWALK

4" PVC CONDUIT

CONSTRUCTION JOINT

TO NEAREST EXISTING CONSTRUCTION JOINT

SHEET 2

SIDEWALK TO BE REMOVED AND REPLACED PER SECTION 202 OF THE STANDARD SPECIFICATIONS

4" PVC CONDUIT

12" MIN CLEARANCE

FIBER OPTIC CABLE

SAWCUT

P30 ITS COMMUNICATION PULL BOX
SEE NOTES ON SHEET 2

5' TYP. TO NEAREST EXISTING CONSTRUCTION JOINT

10' TYP. TO NEAREST EXISTING CONSTRUCTION JOINT

REMOVE/REPLACE CURB AND GUTTER WHEN NEEDED TO SATISFY THE CONDUIT MINIMUM BEND RADIUS

10' 10' 10'

CLEARANCE

12" MIN

CONDUIT BEND

AGENCY APPROVED

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

ITS COMMUNICATION CONDUIT AND PULL BOX DETAIL
(FOR EXISTING CURB & GUTTER)

DATE 3-13-08  DWG. NO. 763  SHEET 1 OF 2
NOTES:

1. P30 PULL BOX SHALL BE INSTALLED FOR THE TRAFFIC SIGNAL ITS COMMUNICATIONS PER APPLICABLE STANDARDS.
2. PULL BOX COVER SHALL BE INSCRIBED "FIBER OPTICS".
3. APPROXIMATE LOCATIONS OF THE PROPOSED P30 ITS COMMUNICATION PULL BOXES ARE SHOWN ON THE PLANS.
   THE CONTRACTOR SHALL BE RESPONSIBLE FOR MARKING THE LOCATIONS OF THE PROPOSED ITS COMMUNICATION
   PULL BOXES IN THE FIELD PER STANDARD SPECIFICATION INTERVALS AND THESE LOCATIONS SHALL BE
   SUBJECT TO APPROVAL OF THE ENGINEER BEFORE INSTALLATION.
4. DETAIL SHOWS METHOD OF INSTALLATION WHEN FIBER OPTIC CABLE IS REQUIRED.

FLOWABLE BACKFILL

CONDUIT ENDS MAY ENTER THE BOTTOM OF THE PULLBOX IF NECESSARY

1/2" DRAIN ROCK 12" DEPTH

4" MINIMUM CLEARANCE

SECTION A-A

AGENCY APPROVED  B  C  H  L  M  N

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

ITS COMMUNICATION CONDUIT
AND PULL BOX DETAIL
(FOR EXISTING CURB & GUTTER)

DATE 3-13-08   DWG. NO. 763   SHEET 2 OF 2
**CLARK COUNTY AREA UNIFORM STANDARD DRAWINGS**

**SPECIFICATION REFERENCE**

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**UNIFORM STANDARD DRAWINGS**

**CLARK COUNTY AREA**

**ITS COMMUNICATION CONDUIT AND PULL BOX DETAIL INSTALLED UNDER NEW SIDEWALK**

**DATE** 3-13-08  **DWG. NO.** 764
1. ALL ITS CONDUITS SHALL HAVE A 6-PAIR, REA-PE39 #22 AWG TWISTED WIRE PAIR CABLE INSTALLED.
2. ANY EXISTING ITS CONDUITS FROM THE OPPOSING SIDE OF THE STREET SHALL BE CONNECTED TO PROPOSED CONDUITS USING THE SAME SIZE CONDUIT. IF UNDERGROUNDS DO NOT EXIST, THEN PROPOSED CONDUITS SHALL BE EXTENDED 5' PAST THE EXISTING OR PROPOSED EDGE OF PAVEMENT TO A #3-1/2 PULL BOX MARKED "FIBER OPTIC." 
3. FIBER OPTIC CONDUIT SHALL BE INSTALLED WITH P30 PULL BOXES PLACED AT A MAXIMUM SPACING OF 1000', BUT SHALL NOT BE INSTALLED WITHIN 5' OF THE POINT OF CURVATURE (PC) OF THE R/W RADIUS, IN SIDEWALK RAMPS OR DRIVEWAYS. THE ITS CONDUITS SHALL BE CONNECTED TO THE EXISTING ITS CONDUITS OR, IF NOT EXISTING, AN ADDITIONAL P30 PULL BOX SHALL BE INSTALLED AT THE PROPOSED DEVELOPMENT'S PROPERTY LINE. 
4. ALL CONDUIT BENDS SHALL BE PVC COATED RIGID w/ A MINIMUM RADIUS OF 36 INCHES.
5. ALL ITS PULL BOXES SHALL HAVE A POLYMER COMPOSITE BODY w/ RESIN POLYMER REINFORCED NON-CONDUCTIVE COVER MARKED "FIBER OPTIC".
6. UNDERGROUND ORANGE MARKING TAPE SHALL BE PLACED 12 INCHES ABOVE THE INSTALLED CONDUIT AND MARKED WITH THE LEGEND "FIBER OPTIC".
7. IF TRAFFIC SIGNAL CABINET EXISTS OR IS BEING INSTALLED ON CORNER, INSTALL TYPE 200 VAULT PER 762 AND 889 WITH ITS CONDUIT INTO TRAFFIC SIGNAL CABINET. IF TRAFFIC SIGNAL CABINET DOES NOT EXIST OR IS NOT BEING INSTALLED IN CORNER, INSTALL P30 PULL BOX.
CCTV CAMERA

COHU 3965 - 4101
(OR APPROVED EQUAL)

1/2" STAINLESS STEEL BOLTS WITH
SINGLE STAINLESS STEEL WASHER
TOP AND BOTTOM WITH DOUBLE
STAINLESS STEEL NUTS

WEATHER PROOF
MS STYLE CONNECTOR

CONNECT TO CA295H CABLE (MALE)
CONNECTS TO CAMERA ACCESSORY (FEMALE)

CABLE (COHU MODEL CA295H
OR APPROVED EQUAL)
SEE CABLE WIRING DIAGRAM
(DWG. NO. 766, SHEET 2 OF 4)

CONNECT TO BACK OF LOCAL
CCTV CAMERA CONTROL UNIT
COHU 9300 SERIES i-CONTROL
(OR APPROVED EQUAL IN TRAFFIC
CONTROLLER CABINET)
(MALE)
(SEE DWG. NO. 766, SHEET 2 OF 4)

TRAFFIC SIGNAL POLE

POLE CAP / CAMERA BASE

1/2" S.S. ALL THREAD WITH SINGLE S.S. FLAT WASHER
AND DOUBLE S.S. NUTS (EACH SIDE) TO EXTEND
COMPLETELY THROUGH POLE AND CAP (2-ALL-
THREAD BOLTS REQUIRED PER POLE WITH EACH
OFFSET TO EXTEND THROUGH POLE).

CABLE AND CONNECTOR:
PART OF CAMERA ACCESSORY

CONNECTS TO CAMERA ACCESSORY (FEMALE)
CONNECTS TO CA295H CABLE (MALE)

POLE & LENS HOUSING

10' CAMERA EXTENSION
POLE (SEE DWG. NO. 766, SHEET 3 OF 4)

VIDEO ENCODER

VIDEO ENCODER

CCTV FIELD EQUIPMENT

Effective 05/21/2020 to 10/07/2020
NOTE:

1. IF PULLING CCTV CABLE IN EXISTING SIGNAL CONDUIT, AGENCY APPROVAL REQUIRED FOR METHOD OF INSTALLATION.
CAMERA ADAPTER STAND
(REQUIRED FOR POLE CAP MOUNTING)

1/2" S.S. ALL THREAD w/SINGLE S.S. FLAT WASHER AND DOUBLE S.S. NUTS (EACH SIDE) TO EXTEND COMPLETELY THROUGH POLE AND CAP (2-ALL-THREAD BOLTS REO'D PER POLE WITH EACH OFFSET TO EXTEND THROUGH POLE).

CABLE AND CONNECTOR:
PART OF CAMERA ACCESSORY

MAT'L (FLANGE): 1018 STEEL OR EQUIV.

MAT'L (TUBE): Ø 3.5 X 1/8 WALL 1018 STEEL OR EQUIV.

3. ALL POLE AND CAP MATERIALS TO BE GALVANIZED STEEL.

4. REMOVE ALL BURRS AND SHARP EDGES 0.015 MAX

NOTE:
CAMERA STAND TO BE USED ONLY TO AVOID CONFLICT WITH OVERHEAD POWER LINES. AGENCY APPROVAL REQUIRED.
CAMERA EXTENSION POLE
(REQUIRED FOR POLE CAP MOUNTING)

0.38" THICK TOP PLATE

(2) -0.50" (SS) ALL THREAD ROD
(4) -0.50" (SS) FLAT WASHERS
(4) -0.50" (SS) NUTS WILL BE PROVIDED.

0.63" DIA. HOLE (4) REQ'D 90° O.C. (IN CAP ONLY)

(3) -0.50" (SS) SET SCREWS TO BE USED TO PLUMB POLE BEFORE ALL THREAD RODS ARE INSTALLED.

0.25" DIA.

8.00" DIA.

2.00" DIA.

0.375" X 0.750" THRU DIA. HOLES (4 REQD OR TO FIT APPROVED CAMERA).

4.75" DIA. BOLT CIRCLE

0.25"

TOP PLATE DETAIL 1

DETAIL 3

POLE EXTENSION CAP

VARIES TOP OF SIGNAL POLE SHAFT

CONTRACTOR TO FIELD MEASURE TOP OF EXISTING OR PROPOSED TRAFFIC SIGNAL POLE SHAFT BEFORE FABRICATION OF CAP.

SEE DETAIL 1

POLE DATA

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<th>COMPONENT</th>
<th>ASTM DESIGNATION</th>
<th>MIN. YIELD (KSI)</th>
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<tbody>
<tr>
<td>POLE TUBE</td>
<td>S109</td>
<td>36</td>
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<tr>
<td>PLATES</td>
<td>A36</td>
<td>36</td>
</tr>
<tr>
<td>GALVANIZING-HARDWARE</td>
<td>A153</td>
<td>36</td>
</tr>
<tr>
<td>GALVANIZING-STRUCTURE</td>
<td>A123</td>
<td>36</td>
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VARIIES 0.25" 3.00" 4.00" 6.00"

POLE BASE DETAIL 2

SEE DETAIL 2

SEE POLE DATA

MATERIAL DATA

CONTRACTOR TO FIELD MEASURE TOP OF EXISTING OR PROPOSED TRAFFIC SIGNAL POLE SHAFT BEFORE FABRICATION OF CAP.

POL DATA

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<tr>
<th>POLE TUBE</th>
<th>BASE DIA. (IN)</th>
<th>LENGTH (FT)</th>
<th>GAUGE OR THICKNESS (IN)</th>
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UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

CLOSED CIRCUIT TELEVISION CAMERA EXTENSION POLE

DATE 04-08-10 DWG. NO. 766 SHEET 4 OF 4

Effective 05/21/2020 to 10/07/2020

CAMERA EXTENSION POLE
(REQUIRED FOR POLE CAP MOUNTING)

0.38" THICK TOP PLATE

(2) -0.50" (SS) ALL THREAD ROD
(4) -0.50" (SS) FLAT WASHERS
(4) -0.50" (SS) NUTS WILL BE PROVIDED.

0.63" DIA. HOLE (4) REQ'D 90° O.C. (IN CAP ONLY)

(3) -0.50" (SS) SET SCREWS TO BE USED TO PLUMB POLE BEFORE ALL THREAD RODS ARE INSTALLED.

0.25" DIA.

8.00" DIA.

2.00" DIA.

0.375" X 0.750" THRU DIA. HOLES (4 REQD OR TO FIT APPROVED CAMERA).

4.75" DIA. BOLT CIRCLE

0.25"

TOP PLATE DETAIL 1

DETAIL 3

POLE EXTENSION CAP

VARIIES TOP OF SIGNAL POLE SHAFT

CONTRACTOR TO FIELD MEASURE TOP OF EXISTING OR PROPOSED TRAFFIC SIGNAL POLE SHAFT BEFORE FABRICATION OF CAP.

SEE DETAIL 1

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VARIIES 0.25" 3.00" 4.00" 6.00"

POLE BASE DETAIL 2

SEE DETAIL 2

SEE POLE DATA

MATERIAL DATA

CONTRACTOR TO FIELD MEASURE TOP OF EXISTING OR PROPOSED TRAFFIC SIGNAL POLE SHAFT BEFORE FABRICATION OF CAP.

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UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

CLOSED CIRCUIT TELEVISION CAMERA EXTENSION POLE

DATE 04-08-10 DWG. NO. 766 SHEET 4 OF 4

Effective 05/21/2020 to 10/07/2020
NOTE:

AN ADDITIONAL 120V OUTLET TO BE INSTALLED ON SIDE RAIL, NEAR TOP, FOR ITS EQUIPMENT ON EITHER SIDE OF CABINET. LOCATION TO BE APPROVED BY AGENCY ENGINEER BEFORE INSTALLATION. MAXIMUM OF FOUR OUTLETS PER CABINET.
MOTOR: 1/125 HP-3000 RPM NEMA CLASS B INS. 0.65 AMPS AT 115 VAC.

VENT FAN SPECIFICATION:
134 C.F.M. RATING AT .160" OF WATER STATIC PRESSURE.

NOTES:
1. MATERIAL - 14 GA. SHEET STEEL, OR ALUMINUM EQUIVALENT.
2. PAINT OUTSIDE TWO COATS AND INSIDE TWO COATS WHITE ENAMEL OR AS APPROPRIATE.
3. DOOR SHALL LOCK AT THREE POINTS.
4. FOR FOUNDATION DETAILS AND ANCHOR BOLT LOCATION SEE DRAWING NO. 724.
5. INCLUDE 3/4" x 18" x 3" HOT-DIP GALVANIZED ANCHOR BOLTS WITH EACH CABINET.
VENT FAN SPECIFICATION:
SEE STANDARD DRAWING NO. 801

NOTES:

1. MATERIAL - 14 GA. SHEET STEEL, OR ALUMINUM EQUIVALENT.

2. PAINT OUTSIDE TWO COATS AND INSIDE TWO COATS WHITE ENAMEL OR AS APPROPRIATE.

3. SHELVES SHALL BE REMOVABLE AND ADJUSTABLE FOR VERTICAL SPACING.

4. DOOR SHALL LOCK AT THREE POINTS.

5. FOR FOUNDATION DETAILS AND ANCHOR BOLT LOCATION SEE DRAWING NO. 725.

6. INCLUDE 3/4" x 18" x 3" HOT-DIP GALVANIZED ANCHOR BOLTS WITH EACH CABINET.

AGENCY APPROVED

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

TYPE VI CABINET

DATE 12-12-96  DWG. NO. 802
VENT FAN SPECIFICATION: SEE STANDARD DRAWING NO. 801

NOTES:

1. MATERIAL = 14 GA. SHEET STEEL, OR ALUMINUM EQUIVALENT.
2. PAINT OUTSIDE TWO COATS AND INSIDE TWO COATS WHITE ENAMEL OR AS APPROPRIATE.
3. FOR FOUNDATION DETAILS AND ANCHOR BOLT LOCATION SEE DRAWING NO. 725.
4. INCLUDE 3/4" x 18" x 3" HOT-DIP GALVANIZED ANCHOR BOLTS WITH EACH CABINET.
4. INCLUDE 3/4" x 18" x 3" HOT-DIP GALVANIZED ANCHOR BOLTS WITH EACH CABINET.

NOTES:
1. MATERIAL - 14 GA. SHEET STEEL, OR ALUMINUM EQUIVALENT.
2. PAINT OUTSIDE TWO COATS AND INSIDE TWO COATS WHITE ENAMEL OR AS APPROPRIATE.
3. FOUNDATION DETAILS SHALL BE SPECIFIED ON THE SIGNAL CONSTRUCTION PLANS.
4. INCLUDE 3/4" x 18" x 3" HOT-DIP GALVANIZED ANCHOR BOLTS WITH EACH CABINET.

VENT FAN SPECIFICATION:
SEE STANDARD DRAWING NO. 801

"RR" CABINET

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UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

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<th>TYPE IX CABINET</th>
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DATE 12-12-96 DWG. NO. 804
NOTES:

1. PEDESTRIAN PUSH BUTTON SHALL NOT BE LOCATED MORE THAN 24" FROM THE BACK OF WALK. IF DISTANCE FROM BACK OF WALK TO PUSH BUTTON IS 20" TO 24", THE BUTTON SHALL BE LOCATED AT A MAXIMUM HEIGHT OF 44" FROM THE SURFACE OF THE WALK; OTHERWISE, THE MAXIMUM HEIGHT SHALL BE 48".

2. THE FORCE REQUIRED TO ACTIVATE CONTROL SHALL BE NO GREATER THAN 5 LB.

3. POST SHALL BE HOT-DIP GALVANIZED BY MANUFACTURER OR PRIME PAINTED BY MANUFACTURER AND FINISH PAINTED BY CONTRACTOR PER SPECIFICATIONS AND AS REQUIRED BY THE ENTITY.

FOR TYPE "A" FOUNDATION SEE DRAWING NO. 715

AGENCY APPROVED

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PEDESTRIAN PUSH BUTTON POST FOR SPECIAL SIGN (8 FT.- 6 INCHES HIGH)

DATE 08-09-18  DWG. NO.  805  SHEET  1 OF 2
NOTES:

1. PEDESTRIAN PUSH BUTTON SHALL NOT BE LOCATED MORE THAN 24" FROM THE BACK OF WALK. IF DISTANCE FROM BACK OF WALK TO PUSH BUTTON IS 20" TO 24", THE BUTTON SHALL BE LOCATED AT A MAXIMUM HEIGHT OF 44" FROM THE SURFACE OF THE WALK; OTHERWISE, THE MAXIMUM HEIGHT SHALL BE 48".

2. THE FORCE REQUIRED TO ACTIVATE CONTROL SHALL BE NO GREATER THAN 5 LB.

3. POST SHALL BE HOT-DIP GALVANIZED BY MANUFACTURER OR PRIME PAINTED BY MANUFACTURER AND FINISH PAINTED BY CONTRACTOR PER SPECIFICATIONS AND AS REQUIRED BY THE ENTITY.

FOR TYPE "A" FOUNDATION SEE DRAWING NO.715

PEDESTRIAN PUSH BUTTON POST FOR 2 1/2 INCHES POSTTOP MOUNTING

DATE 08-09-18   DWG. NO. 805   SHEET 2 OF 2
SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

SIGNAL STANDARD
TYPE 1-A, 1-B

FOR TYPE "C" FOUNDATION SEE DRAWING NO. 717.

<table>
<thead>
<tr>
<th>POLE TYPE</th>
<th>&quot;A&quot; NOM.</th>
<th>SHAFT SIZE</th>
<th>COMMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-A</td>
<td>10'-0&quot;</td>
<td>11 GA. 5.5&quot; X 4.1&quot; X 10'-0&quot;</td>
<td>NEAR RIGHTS &amp; ISL. POLES</td>
</tr>
<tr>
<td>1-B</td>
<td>7'-0&quot;</td>
<td>11 GA. 5.5&quot; X 4.1&quot; X 7'-0&quot;</td>
<td>PED. HEADS &amp; BUTTON ONLY</td>
</tr>
</tbody>
</table>

NOTES:
1. ALL POLES TO BE HOT-DIP GALVANIZED BY MANUFACTURER OR PRIME PAINTED BY MANUFACTURER AND FINISH PAINTED BY CONTRACTOR PER SPECIFICATIONS AND AS REQUIRED BY THE ENTITY.
2. HANDHOLE COVERS SHALL BE MOUNTED WITH TAMPER-RESISTANT SCREWS.
NOTES:

1. ALL POLES TO BE HOT-DIP GALVANIZED BY MANUFACTURER OR PRIME PAINTED BY MANUFACTURER AND FINISH BY PAINTED BY CONTRACTOR PER SPECIFICATIONS AND AS REQUIRED BY THE ENTITY.

2. HANDHOLE COVERS SHALL BE MOUNTED WITH TAMPER-RESISTANT SCREWS.

FOR TYPE "C" FOUNDATION SEE DRAWING NO. 717.
LUMINAIRE ARM DATA

<table>
<thead>
<tr>
<th>ARM SPAN &quot;L&quot; (FT)</th>
<th>FIXED END DIA. (IN)</th>
<th>FREE END DIA. (IN)</th>
<th>GAUGE</th>
<th>LUMINAIRE MOUNTING HEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>3.42</td>
<td>2.38</td>
<td>11</td>
<td>32'-0&quot;</td>
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<tr>
<td>8</td>
<td>3.75</td>
<td>2.38</td>
<td>11</td>
<td>33'-3&quot;</td>
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<td>10</td>
<td>4.16</td>
<td>2.38</td>
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</tr>
<tr>
<td>12</td>
<td>4.52</td>
<td>2.38</td>
<td>11</td>
<td>36'-6&quot;</td>
</tr>
<tr>
<td>15</td>
<td>4.95</td>
<td>2.38</td>
<td>11</td>
<td>37'-0&quot;</td>
</tr>
</tbody>
</table>

NOTES:
1. CONTRACTOR MUST SUPPLY SHOP DRAWING FOR DESIGN APPROVAL.
2. ALL POLES TO BE HOT-DIP GALVANIZED BY MANUFACTURER OR PRIME PAINTED BY MANUFACTURER AND FINISH PAINTED BY CONTRACTOR PER SPECIFICATIONS AND AS REQUIRED BY THE ENTITY.
3. HANDHOLE COVERS SHALL BE MOUNTED WITH TAMPER-RESISTANT SCREWS.
4. WHERE SIGNALS AND STANDARDS ARE INSTALLED BELOW OVERHEAD POWER LINES, CLEARANCES SHALL BE PER NATIONAL ELECTRIC SAFETY CODE SECTION 234 REQUIREMENTS. INSTALL STRAIGHT ARM STREETLIGHT ASSEMBLIES WHERE ADDITIONAL CLEARANCE IS REQUIRED.
5. MULTI-SIDED POLE AND MAST ARM WITH A MINIMUM OF 16 SIDES MAY BE USED IF DIRECTED BY THE ENTITY ENGINEER.

POLES DESIGNED PER SPECIFICATION OF A.A.S.H.T.O., 90 MPH WINDS. (SEE DRAWING NO. 808 SHEET 5 FOR LOADING INFORMATION)

FOR "H" TYPE FOUNDATION SEE DRAWING NO. 721

AGENCY APPROVED

CLARK COUNTY AREA

UNIFORM STANDARD DRAWINGS

TYPE XX-30 FT.
SIGNAL & LUMINAIRE POLE
(45 FT. OR LESS MAST ARMS)

DATE 07-01-17 DWG. NO. 808 SHEET 1 OF 6
1. CONTRACTOR MUST SUPPLY SHOP DRAWING FOR DESIGN APPROVAL.
2. ALL POLES TO BE HOT-DIP GALVANIZED BY MANUFACTURER OR PRIME PAINTED BY MANUFACTURER AND FINISH PAINTED BY CONTRACTOR PER SPECIFICATIONS AND AS REQUIRED BY THE ENTITY.
3. HANDHOLE COVERS SHALL BE MOUNTED WITH TAMPER-RESISTANT SCREWS.
4. WHERE SIGNALS AND STANDARDS ARE INSTALLED BELOW OVERHEAD POWER LINES, CLEARANCES SHALL BE PER NATIONAL ELECTRIC SAFETY CODE SECTION 234 REQUIREMENTS. INSTALL STRAIGHT ARM STREETLIGHT ASSEMBLIES WHERE ADDITIONAL CLEARANCE IS REQUIRED.
5. MULTI-SIDED POLE AND MAST ARM WITH A MINIMUM OF 16 SIDES MAY BE USED IF DIRECTED BY THE ENTITY ENGINEER.
<table>
<thead>
<tr>
<th>ARM SPAN &quot;L&quot; (FT)</th>
<th>FIXED END DIA. (IN)</th>
<th>FREE END DIA. (IN)</th>
<th>GAUGE</th>
<th>LUMINAIRE MOUNTING HEIGHT</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>3.42</td>
<td>2.38</td>
<td>11</td>
<td>32'-0&quot;</td>
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<tr>
<td>8</td>
<td>3.75</td>
<td>2.38</td>
<td>11</td>
<td>33'-3&quot;</td>
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<td>10</td>
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<td>4.95</td>
<td>2.38</td>
<td>11</td>
<td>37'-0&quot;</td>
</tr>
</tbody>
</table>

1. CONTRACTOR MUST SUPPLY SHOP DRAWING FOR DESIGN APPROVAL.
2. ALL POLES TO BE HOT-DIP GALVANIZED BY MANUFACTURER OR PRIME PAINTED BY MANUFACTURER AND FINISH PAINTED BY CONTRACTOR PER SPECIFICATIONS AND AS REQUIRED BY THE ENTITY.
3. HANDHOLE COVERS SHALL BE MOUNTED WITH TAMPER-RESISTANT SCREWS.
4. WHERE SIGNALS AND STANDARDS ARE INSTALLED BELOW OVERHEAD POWER LINES, CLEARANCES SHALL BE PER NATIONAL ELECTRIC SAFETY CODE SECTION 234 REQUIREMENTS. INSTALL STRAIGHT ARM STREETLIGHT ASSEMBLIES WHERE ADDITIONAL CLEARANCE IS REQUIRED.
5. MULTI-SIDED POLE AND MAST ARM WITH A MINIMUM OF 16 SIDES MAY BE USED IF DIRECTED BY THE ENTITY ENGINEER.

POLES DESIGNED PER SPECIFICATION OF A.A.S.H.T.O., 90 MPH WINDS.

(SEE DRAWING NO. 808 SHEET 5 FOR LOADING INFORMATION)

FOR "L" TYPE FOUNDATION SEE DRAWING NO. 722
1. CONTRACTOR MUST SUPPLY SHOP DRAWING FOR DESIGN APPROVAL.
2. ALL POLES TO BE HOT-DIP GALVANIZED BY MANUFACTURER OR PRIME PAINTED BY MANUFACTURER AND FINISH PAINTED BY CONTRACTOR PER SPECIFICATIONS AND AS REQUIRED BY THE ENTITY.
3. HANDHOLE COVERS SHALL BE MOUNTED WITH TAMPER-RESISTANT SCREWS.
4. WHERE SIGNALS AND STANDARDS ARE INSTALLED BELOW OVERHEAD POWER LINES, CLEARANCES SHALL BE PER NATIONAL ELECTRIC SAFETY CODE SECTION 234 ADDITIONAL CLEARANCE IS REQUIRED.
5. MULTI-SIDED POLE AND MAST ARM WITH A MINIMUM OF 16 SIDES MAY BE USED IF DIRECTED BY THE ENTITY ENGINEER.
LOADING INFORMATION

<table>
<thead>
<tr>
<th>DEVICE</th>
<th>DESCRIPTION</th>
<th>PROJ. AREA (FT²)</th>
<th>WEIGHT (LBS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(A) SIGNAL</td>
<td>12&quot; - 3 SEC. W/ BACKPLATES (M-2)</td>
<td>9.80</td>
<td>40</td>
</tr>
<tr>
<td>(B) SIGNAL</td>
<td>R3-5 24&quot; X 30&quot;</td>
<td>5.00</td>
<td>15</td>
</tr>
<tr>
<td>(C) SIGNAL</td>
<td>R3-4 24&quot; X 24&quot;</td>
<td>4.00</td>
<td>10</td>
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<tr>
<td>(D) SIGNAL</td>
<td>12&quot; - 4 OR 5 SEC. W/ BACKPLATES (M-4 OR M-5)</td>
<td>13.68</td>
<td>80</td>
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<tr>
<td>(E) SIGNAL</td>
<td>R10-12 OR R10-12F 30&quot; X 36&quot;</td>
<td>11.25</td>
<td>30</td>
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<tr>
<td>(F) SIGNAL</td>
<td>STREET NAME-FREE SWINGING-1.68&quot; X 8&quot;</td>
<td>13.44</td>
<td>100</td>
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<tr>
<td>(G) SIGNAL</td>
<td>DUAL-12&quot; - 3 SEC. W BACKPLATES</td>
<td>17.34</td>
<td>80</td>
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<tr>
<td>(H) SIGNAL</td>
<td>DUAL-PEDESTRIAN</td>
<td>8.00</td>
<td>60</td>
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</table>

NOTE: TYPE XX-A POLE SHALL ALSO SUPPORT THE ALTERNATE LOADING SHOWN ABOVE.

DESIGN CRITERIA:

AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS. (FATIGUE LOADS SPECIFIED IN CHAPTER 11 NOT REQUIRED.)

MAXIMUM DESIGN MINIMUM YIELD STRENGTH FOR TUBULAR MEMBERS SHALL BE LIMITED TO 48,000 PSI FOR COLD WORKED MATERIALS AND 50,000 PSI FOR NON-COLD WORKED MATERIALS.

WIND VELOCITY: 90 MPH ISO TACH.
NOTE:

EACH CONDUCTOR SHALL HAVE A MINIMUM OF 18 INCHES OF SLACK

#8 GREEN THWN BONDING CONDUCTOR CONNECTED TO POLE GROUND WITH SPLIT BOLT CONNECTOR

CONTINUOUS BARE COPPER GROUNDING WIRE SHALL BE LOOPED AROUND ANCHOR BOLTS ONE TIME AND CONNECTED TO EACH ANCHOR BOLT BEFORE CONTINUING DOWN TO THE GROUNDING PLATE. (GROUNDING CONFIGURATION DIFFERS FOR TYPE "L" FOUNDATION. SEE STANDARD DRAWING NO. 722)

SIGNAL STANDARD

6” X 9” I.D. HANDHOLE AND COVER (SHALL FACE AWAY FROM ONCOMING TRAFFIC)

SPLIT-BOLT CONNECTOR

BRONZE GROUNDING CONNECTOR (UL LISTED FOR UNDERGROUND USE) FOR NO.4 WIRE

HEX HEAD NON-CORROSIVE CAP SCREW WITH FLAT WASHER WITH A SINGLE-STRAND BARE NO. 4 AWG COPPER GROUNDING CONDUCTOR

Effective 05/21/2020 to 10/07/2020

PROFESSIONAL ELECTRICAL ENGINEER STAMP ON FILE

<table>
<thead>
<tr>
<th>AGENCY APPROVED</th>
<th>B</th>
<th>C</th>
<th>H</th>
<th>L</th>
<th>M</th>
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<td>CLARK COUNTY AREA</td>
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<tr>
<td>TRAFFIC SIGNAL POLE GROUNDING</td>
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</table>

DATE 07-01-17 DWG. NO. 808 SHEET 6 OF 6
1/4" NON-THREADED WITH LOCK NUT WASHER WITH DOUBLE HEX HEAD NUTS (HOLES FOR NON-THREADED SHALL BE FIELD DRILLED)

REMOVABLE MAST ARM RAIN CAP
LUMINAIRE ARM DATA

<table>
<thead>
<tr>
<th>ARM SPAN &quot;L&quot; (FT)</th>
<th>FIXED END DIA. (IN)</th>
<th>FREE END DIA. (IN)</th>
<th>GAUGE</th>
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<td>37'-0&quot;</td>
</tr>
</tbody>
</table>

NOTES:

1. CONTRACTOR MUST SUPPLY SHOP DRAWING FOR DESIGN APPROVAL.
2. ALL POLES TO BE HOT-DIP GALVANIZED BY MANUFACTURER OR PRIME PAINTED BY MANUFACTURER AND FINISH PAINTED BY CONTRACTOR PER SPECIFICATIONS AND AS REQUIRED BY THE ENTITY.
3. HANDHOLE COVERS SHALL BE ATTACHED VIA TWO SCREWS INTO PLATES MOUNTED INSIDE THE HANDHOLE.
4. WHERE SIGNALS AND STANDARDS ARE INSTALLED BELOW OVERHEAD POWER LINES, CLEARANCES SHALL BE PER NATIONAL ELECTRIC SAFETY CODE SECTION 234 REQUIREMENTS.
5. IF DUAL LUMINAIRE ARMS ARE NOT SPECIFIED IN THE PLANS, THE SECOND CONNECTION POINT SHALL BE COVERED BY A COVER PLATE UNTIL SUCH TIME AS A SECOND ARM MIGHT BE ADDED.

POLES DESIGNED PER SPECIFICATION OF A.A.S.H.T.O. 90 MPH WINDS. (SEE DRAWING NO. 810 SHEET 3 OF 3 FOR LOADING INFORMATION) FOR "M" TYPE FOUNDATION SEE DRAWING NO. 723

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS CLARK COUNTY AREA

TYPE XX - B - 30 FT. SIGNAL & LUMINAIRE POLE (65 FT. THRU 85 FT. MAST ARMS)

DATE 07-01-17 DWG. NO. 810 SHEET 1 OF 3
LOADING INFORMATION

<table>
<thead>
<tr>
<th>DEVICE</th>
<th>DESCRIPTION</th>
<th>PROJ. AREA (FT²)</th>
<th>WEIGHT (LBS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>SIGNAL 12&quot;-3 SEC. W/ BACKPLATES (M-2)</td>
<td>9.80</td>
<td>40</td>
</tr>
<tr>
<td>B</td>
<td>SIGN R3-5 24&quot; X 30&quot;</td>
<td>5.00</td>
<td>15</td>
</tr>
<tr>
<td>C</td>
<td>SIGN R3-4 24&quot; X 24&quot;</td>
<td>4.00</td>
<td>10</td>
</tr>
<tr>
<td>D</td>
<td>SIGNAL 12&quot;-4 OR 5 SEC. W/ BACKPLATES (M-4 OR M-5)</td>
<td>13.68</td>
<td>80</td>
</tr>
<tr>
<td>E</td>
<td>SIGN R10-12 OR R10-12' 30&quot; X 36&quot;</td>
<td>6.00</td>
<td>15</td>
</tr>
<tr>
<td>F</td>
<td>SIGN STREET NAME-FREE SWINGING-1.68&quot; X 8&quot;</td>
<td>13.44</td>
<td>100</td>
</tr>
<tr>
<td>G</td>
<td>SIGNAL DUAL-12&quot;-3 SEC. W/ BACKPLATES</td>
<td>17.34</td>
<td>80</td>
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<td>H</td>
<td>SIGNAL DUAL-PEDESTRIAN</td>
<td>8.00</td>
<td>60</td>
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</tbody>
</table>

LOADING INFORMATION

NOTE:
TYPE XX-B POLE SHALL ALSO SUPPORT THE ALTERNATE LOADING SHOWN ABOVE.

DESIGN CRITERIA:
AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS. (FATIGUE LOADS SPECIFIED IN CHAPTER 11 NOT REQUIRED.)

DESIGN MINIMUM YIELD STRENGTH FOR TUBULAR MEMBERS SHALL BE LIMITED TO 48,000 PSI FOR COLD WORKED MATERIALS AND 50,000 PSI FOR NON-COLD WORKED MATERIALS.

WIND VELOCITY:
90 MPH ISOTACH.
NOTES:
1. CONTRACTOR TO INSTALL RED LIGHT RUNNING INDICATORS, McCain Models M61385 (RED) & M61448 (BLUE), OR APPROVED EQUAL AS INDICATED BY THE TRAFFIC ENGINEER.
2. RED (THRU) INDICATOR SHALL BE MOUNTED 16' ABOVE POLE BASE PLATE AND BLUE (LEFT) INDICATOR SHALL BE MOUNTED 17' ABOVE POLE BASE PLATE AND SHALL FACE AWAY FROM ONCOMING TRAFFIC.
3. RED LIGHT RUNNING INDICATOR L.E.D. HOUSING SHALL BE FIELD ADJUSTED. PLEASE CONTACT THE TRAFFIC ENGINEER FOR COORDINATION.
4. CONTRACTOR SHALL WIRE INDICATORS DIRECTLY TO BUSS IN "J" BOX PER CALL OUT PHASING IN POLE SCHEDULE ON TRAFFIC SIGNAL PLANS.

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

SUPPLEMENTAL DRAWING

RED LIGHT RUNNING INDICATOR
INSTALLATION DETAILS

DATE 9-14-06   DWG. NO. 811.S1

AGENCY APPROVED

C
NOTES:

1. CONTRACTOR MUST SUPPLY SHOP DRAWING FOR DESIGN APPROVAL.

2. ALL POLES TO BE HOT-DIP GALVANIZED BY MANUFACTURER OR PRIME PAINTED BY MANUFACTURER AND FINISH PAINTED BY CONTRACTOR PER SPECIFICATIONS AND AS REQUIRED BY THE ENTITY.

3. HANDHOLE COVERS SHALL BE MOUNTED WITH TAMPER-RESISTANT SCREWS.

4. PHOTOEYE MAY NEED TO BE AFFIXED TO POLE CAP FOR STREET NAME SIGN ACTIVATION.

5. MULTI-SIDED POLE AND MAST ARM WITH A MINIMUM OF 16 SIDES MAY BE USED IF DIRECTED BY THE ENTITY ENGINEER.

POLES DESIGNED PER SPECIFICATION OF A.A.S.H.T.O., 90 MPH WINDS.

(SEE DRAWING NO. 808 SHEET 5 FOR LOADING INFORMATION)

FOR OTHER DETAILS SEE DRAWING NO. 808 SHTS. 2 & 6.

FOR "H" TYPE FOUNDATION SEE DRAWING NO. 721.
NOTES:

1. CONTRACTOR MUST SUPPLY SHOP DRAWING FOR DESIGN APPROVAL.

2. ALL POLES TO BE HOT-DIP GALVANIZED BY MANUFACTURER OR PRIME PAINTED BY MANUFACTURER AND FINISH PAINTED BY CONTRACTOR PER SPECIFICATIONS AND AS REQUIRED BY THE ENTITY.

3. HANDHOLE COVERS SHALL BE MOUNTED WITH TAMPER-RESISTANT SCREWS.

4. PHOTOEYE MAY NEED TO BE AFFIXED TO POLE CAP FOR STREET NAME SIGN ACTIVATION.

5. MULTI-SIDED POLE MAST ARM WITH A MINIMUM OF 16 SIDES MAY BE USED IF DIRECTED BY THE ENTITY ENGINEER.

POLES DESIGNED PER SPECIFICATION OF A.A.S.H.T.O., 90 MPH WINDS. (SEE DRAWING NO. 808 SHEET 5 FOR LOADING INFORMATION)

FOR OTHER DETAILS SEE DRAWING NO. 808 SHTS. 4 & 6.

FOR "L" TYPE FOUNDATION SEE DRAWING NO. 722.
SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

BASE ADAPTOR PLATE
FOR TYPE "H" FOUNDATION

DATE 12-12-96  DWG. NO. 813  SHEET 1 OF 2
2" HOT-DIP GALV. ANCHOR BOLTS WITH TWO
HOT-DIP GALV. HEX. HD. NUTS & WASHERS
PER BOLT (4 REQD.) FOR FOUNDATION.
SEE DRAWING NO. 722.

1-1/8" R
1-3/16" HOLE, 4 REQD.
4" HOLE DIA.
1/4" X 4" GUSSETS
- 4 REQUIRED

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

BASE ADAPTOR PLATE
FOR TYPE "L" FOUNDATION

DATE 12-12-96 DWG. NO. 813 SHEET 2 OF 2
NOTES:

1. COMPLETE BACK BRACE ASSEMBLY SHALL BE HOT-DIP GALVANIZED OR PRIME-PAINTED AS REQUIRED BY THE ENTITY.

2. COMPLETE BRACE ASSEMBLY SIMILAR TO PUMCO PART NO. 769-6, AND SHALL HAVE (4) FOUR BOLTS.

3. BRACE ASSEMBLY TO BE USED ON 30’ POLES ONLY. TO BE MOUNTED 20’ FROM POLE BASE.

4. WHEN VOLTAGE EXCEEDS 120V, A STEP-DOWN TRANSFORMER SHALL BE SUPPLIED.

5. STREET NAME SIGN WIRING TO RUN THROUGH TWO (2) SEAL-TITE 90° FITTINGS WITH LIQUID-TIGHT FLEXIBLE CONDUIT. USE A DRIP LOOP SUFFICIENT ENOUGH TO ALLOW SIGN TO SWING FREELY.
SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

TYPE III POLE WITH ILLUMINATED STREET NAME SIGN

DATE 12-12-96  DWG. NO. 815

NOTES:
1. COMPLETE BACK BRACE ASSEMBLY SHALL BE HOT-DIP GALVANIZED OR PRIME-PAINTED AS REQUIRED BY THE ENTITY.
2. COMPLETE BRACE ASSEMBLY SIMILAR TO PUMCO PART NO. 769-6, AND SHALL HAVE (4) FOUR BOLTS.
3. BRACE ASSEMBLY TO BE USED ON 30' POLES ONLY. TO BE MOUNTED 24' FROM POLE BASE.
4. STREET NAME SIGN WIRING TO RUN THROUGH TWO (2) SEAL-TITE 90° FITTINGS WITH LIQUID-TIGHT FLEXIBLE CONDUIT. USE A DRIP LOOP SUFFICIENT ENOUGH TO ALLOW SIGN TO SWING FREELY.

AGENCY APPROVED
B C H L M N

See Drawing No. 818 for Street Name Sign Details.

See Detail A for Pipe Length.

See Detail A for Angle Brace.

5/8" x 1-1/4" SQ. HD. CUP POINT SET SCREW.

3/4" CLEARANCE HOLE OR PRIME-PAINTED AS REQUIRED BY THE ENTITY.

COMPLETE BRACE ASSEMBLY SIMILAR TO PUMCO PART NO. 769-6, AND SHALL HAVE (4) FOUR BOLTS.

BRACE ASSEMBLY TO BE USED ON 30' POLES ONLY. TO BE MOUNTED 24' FROM POLE BASE.

STREET NAME SIGN WIRING TO RUN THROUGH TWO (2) SEAL-TITE 90° FITTINGS WITH LIQUID-TIGHT FLEXIBLE CONDUIT. USE A DRIP LOOP SUFFICIENT ENOUGH TO ALLOW SIGN TO SWING FREELY.
NOTES:

1. FOR TYPE XX POLE SPECIFICATIONS SEE DRAWING NO. 808.

2. STREET NAME SIGN WIRING TO RUN THROUGH TWO (2) SEAL-TITE 90° FITTINGS WITH LIQUID-TIGHT FLEXIBLE CONDUIT. USE A DRIP LOOP SUFFICIENT ENOUGH TO ALLOW SIGN TO SWING FREELY.
1. OVERHEAD UTILITY LINES SHALL BE CLEAR OF HIGHEST BACK PLATE ON ANY GIVEN SIGNAL ARM AND LOWEST PLATE OF STREET NAME SIGN.
2. ANY UTILITY CABLE BEING INSTALLED WITHIN THE CLEARANCE ZONE SHALL NEED PRIOR APPROVAL FROM THE TRAFFIC ENGINEERING DIVISION WHO CONTROLS THE RIGHT OF WAY.
3. PARTIES SHALL COORDINATE AND CONCUR ON CABLE AND SIGNAL INSTALLATIONS TO AVOID CREATION OF CROSSING CONFLICTS WITHIN THIS CLEARANCE ZONE.
1. SIGN SHALL BE DOUBLE FACED.
2. ALUMINUM EXTRUSION CABINET 12" DEEP - MILL FINISH WITH ALL ALUMINUM INTERNAL STRUCTURE.
3. TOP-HINGED RETAINER SYSTEM WITH PROP ROD FOR ACCESS AND SERVICE.
4. T12 800MA CWHO FLUORESCENT ILLUMINATION INTERNALLY.
5. SIGN PANEL SHALL BE WHITE WIDE-ANGLE PRISMATIC TRANSLUCENT REFLECTIVE SHEETING, EITHER REVERSE-SCREENED WITH MANUFACTURER'S RECOMMENDED GREEN INK AND CLEAR COATING OR OVERLAYERED WITH GREEN ELECTRONIC CUTTABLE TRANSPARENT OVERLAY FILM, APPLIED TO A POLYCARBONATE CLEAR SUBSTRATE, 0.177" THICK.
6. LETTERS SHALL BE 8" SERIES E AND UNLESS OTHERWISE SPECIFIED BY THE TRAFFIC ENGINEER, SHALL BE ALL UPPERCASE WITH NO STREET NAME SUFFIX. IF NECESSARY TO MAKE SPACING FIT, REDUCE TO 8" SERIES D. SPACING BETWEEN LETTERS MAY BE INCREASED BY UP TO 25% (MAX) TO ACHIEVE 4" END SPACES.
7. STEEL BRACKETS SHALL BE USED FOR FLAG MOUNT POLE ATTACHMENT.
8. THE USE OF THE POLE MOUNTED STREET NAME SIGN SHALL BE APPROVED BY THE ENTITY ENGINEER.
FLAG MOUNT ATTACHMENT DETAIL
NOT TO SCALE

1. ALUMINUM ANGLE WELDED TO INSIDE OF EXTRUDED CABINET
2. NUTS WELDED TO ANGLE
3. 1/2" X 1 1/2" BOLTS
4. BRACKET FABRICATED FROM 3/8" PLATE STEEL
5. 5/16" SET SCREWS INTO POLE

TRAFFIC POLE

DIAMETER VARIES

2.25"
2"
1.75"
1" GAP
4.25"
5"
.75"
2.5"
3"
7.5"
2.25" TYP.

BRACKET DETAIL
NOT TO SCALE
INSTALLATION INSTRUCTIONS

* Attach brackets 1 to cabinet end at top and bottom with bolts provided loosely tighten bolts (snug).
* Lift cabinet with brackets to pole at finished height using a nylon lifting snap near the brackets (where balanced).
* Attach bracket halves 2 together around pole with provided hardware as shown.
* Move lifting strip to center of cabinet & level then tighten bolts into cabinet.
* Attach set screws 3 through bracket into pole as shown.
* Hook up electrical connection (see page 2 for an example).

WIRING RECOMMENDATIONS

* Locate & drill a 3/4" dia. hole A thru pole. Thread hole with 1/2" pipe thread tap.
* Pull wires from ground thru tapped hole guide wires to avoid scraping insulation.
* Assemble liquid tight 1/2" conduit B & fitting C to connect pole to cabinet.
* Feed wires thru conduit & into cabinet, use a 2x4 handy box inside of cabinet to facilitate wire pulling.
* After feeding wires, then thread fittings into threaded hole in pole & cabinet.
* Wire ballast inside cabinet as required.

NOTE: THE STREET NAME SIGN SHALL BE MOUNTED 18" ABOVE THE MAST ARM
NOTE:
THE BRACKET AND STRAP ARE OF THE BANDIT TYPE OR EQUIVALENT.

THEFT PROOF BOLT OR STANDARD HEX WASHER FACE BOLT.

12 GAUGE ZINC PLATED 0.003" - 0.005"

5" MFG. RISE

SIGN MOUNTING ILLUSTRATION

AGENCY APPROVED  B  C  H  L  M  N

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

SIGN MOUNTING

DATE  4-9-98  DWG. NO.  818.2
NOTES:
1. SIGN ASSEMBLY SHALL INCLUDE SIGN ENCLOSURE AND TWO SIGN PANELS.
2. TWO (2) ADVANCE BALLAST IOP-2P59-SC, OR AN APPROVED EQUIVALENT BY THE ENGINEER, SHALL BE INSTALLED FOR EACH SIGN ENCLOSURE.
3. SEE SHEETS 2 AND 3 FOR WIRING DIAGRAMS.
4. SEE SHEET 4 FOR SIGN PANEL DETAILS.
5. JAM NUT TO SECURE "L" BRACKET.
1. SIGN SHALL BE DOUBLE FACED.

2. SIGN PANELS SHALL BE FABRICATED OF CLEAR, IMPACT RESISTANT, ACRYLIC SHEETING WITH ALUMINUM FRAMING.

3. SIGN PANEL SHALL BE COVERED WITH WHITE, WIDE-ANGLE, TRANSLUCENT PRISMATIC TYPE XI REFLECTIVE SIGN FACE SHEETING, AND EITHER REVERSE-SCREENED WITH MANUFACTURER'S RECOMMENDED GREEN INK AND CLEAR COATING OR OVERLAID WITH GREEN ELECTRONIC CUTTABLE TRANSPARENT OVERLAY FILM.

4. SHEETING SHALL BE APPLIED IN A VERTICAL ORIENTATION IN ACCORDANCE WITH MANUFACTURER’S RECOMMENDATION.

5. SIGN PANEL SHALL BE CAPABLE OF WITHSTANDING WINDS OF 90 MPH OR GREATER WITHOUT DAMAGE OR SEPARATION FROM THE SIGN ENCLOSURE.

6. LETTERS FOR STREET NAMES SHALL BE 12" SERIES D, UNLESS OTHERWISE SPECIFIED BY THE ENGINEER, AND SHALL BE UPPER AND LOWERCASE. IF NECESSARY TO MAKE SPACING FIT, 12" SERIES C LETTERS MAY BE USED. LOWER CASE LETTERS SHALL BE 9" IN HEIGHT. LETTERS FOR CARDINAL DIRECTION, STREET NAME SUFFIX, AND BLOCK NUMBER SHALL BE 5" SERIES C, AND SHALL BE IN ALL UPPER CASE.

7. APPROVAL OF SHOP DRAWING OF SIGNFACE LAYOUT BY THE ENGINEER IS REQUIRED PRIOR TO FABRICATION OF SIGN PANELS.
SEE DRAWING NO. 818 FOR STREET NAME SIGN DETAILS

1. N, E, S, OR W REQUIRED ON ALL BLOCK NUMBER SIGNS WITH A SPACE BETWEEN THE LETTER AND THE NUMBERS. (i.e. W 6900)

2. STREET NAME SIGN WIRING TO RUN THROUGH TWO (2) SEAL-TITE 90° FITTINGS WITH LIQUID-TIGHT FLEXIBLE CONDUIT. USE A DRIP LOOP SUFFICIENT ENOUGH TO ALLOW SIGN TO SWING FREELY.
HALF CLAMP SIMILAR TO
PUMCO PART NO. 769-6

5/8" x 1-1/4" SQ. HD.
CUP POINT SET SCREW.

3/4" CLEARANCE HOLE

6" DIA.

6"

HALF CLAMP SIMILAR TO
PUMCO PART NO. 206-6

NOTES:

1. COMPLETE ASSEMBLY SHALL BE HOT-DIP GALVANIZED OR PRIME-PAINTED AS REQUIRED BY THE ENTITY.
2. COMPLETE ASSEMBLY SIMILAR TO PUMCO PART NO. 207-769-6.
3. THIS ASSEMBLY TO BE USED ON EXISTING 30' POLES ONLY.

Effective 05/21/2020 to 10/07/2020
(4) 1/2" - 13 N.C. X 2" HEX HEAD MACH. BOLTS W/(4) 1/2" - 13 N.C. HEX. NUTS (GALVANIZED)

CLAMP RANGE
3 3/4" TO 4" O.D.

8" SPAN (NOM.)

12" STRAIGHT

21' 7/8" R.

2" STD. PIPE
(2.375" O.D.)

44°

3/16"

EXISTING ROUND STEEL POLE
W/ SIMPLEX ATTACHMENT

EXISTING ARM ATTACHMENT
(ONE BOLT SIMPLEX)
USE FOR WIRING ENTRANCE

BRACKET RATING
MAX. LUMINAIRE AREA = 2.7 FT²
MAX. LUMINAIRE WT. = 57 LBS.
(4) 1/2" - 13 N.C. X 2" HEX HEAD MACH. BOLTS W/(4) 1/2" - 13 N.C. HEX. NUTS (GALVANIZED)

CLAMP RANGE
3 3/4" TO 4" O.D.

8' SPAN (NOM.)

12" STRAIGHT

21' 7/8" R.

6'-3" RISE

2" ST'D. PIPE
(2.375" O.D.)

44*

EXISTING ROUND STEEL POLE
W/ SIMPLEX ATTACHMENT

EXISTING ARM ATTACHMENT
(ONE BOLT SIMPLEX)
USE FOR WIRING ENTRANCE

BRACKET RATING
MAX. LUMINAIRE AREA = 2.7 FT²
MAX. LUMINAIRE WT. = 57 LBS.

RETROFIT STREETLIGHT
MAST ARM

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

AGENCY APPROVED
B C H L M N

SPECIFICATION REFERENCE

DATE

DWG. NO. 822
SPECIAL NOTE:
Pole shall not be drilled for clamshell until after installation of pole.

NOTES:
1. Drilling of pole to be oriented according to pole layout, specifications, and engineer.
2. Dimensions are from curb level.
3. Dimensions are to wire inlet hole only. Use manufacturer's template to locate all other holes.
4. All holes are to conform to manufacturer's recommendations.

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

POLE DRILLING DETAILS

AGENCY APPROVED | B | C | H | L | M | N

DATE | DWG. NO. | 823
SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

ISLAND SIGNAL POLE
DETAILS FOR 10 FT. POLE

DATE

DWG. NO. 824
NOTE:
FOR POLE LOCATION ON RIGHT TURN ISLAND SEE DRAWING NO. 887.

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TO PULL BOX IN ISLAND

SEE PLANS

OVERLAP ALL CUTS TO MAINTAIN FULL SLOT DEPTH FOR WIRES

SEE PLANS

TO PULL BOX IN SIDEWALK

3/8" X 2" MIN.

DETECTOR SEALANT (FLUSH W/ SURFACE)

A-A

A-A (AFTER INSTALLATION)

DIRECTION OF TRAVEL

Effective 05/21/2020 to 10/07/2020

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

SAWCUT DETAILS
FOR INDUCTION LOOPS

DATE DWG. NO. 826
4" HOLE, FILL WITH SAND TO WITHIN 1 INCH OF TOP. TOP 1 INCH TO BE FILLED WITH EPOXY.

NOTE:
PATCH SLOT AND HOLE WITH EPOXY, REMOVE OVERFLOW BEFORE IT HARDENS.
1. 4 turns of wire shown. Always install 4 turns of cable in duct unless otherwise specified on the plans. Winding direction shall be indicated on wire.

 Depths to allow 3/4" from top wire to surface.

 See drawing no. 826 for sawcut details.

 SECTION A-A

 SECTION B-B

 SAWCUT DIAGRAM

 See plans 6'.
2 turns of wire shown. Always install 2 turns of cable in duct unless otherwise specified on plans. Winding direction shall be indicated on wire.

See drawing No. 827 for method of installing pull box.

Wiring Diagram

Direction of Travel

Direction of Travel

Direction of Travel

Depth to allow 3/4" from top wire to surface 3/8".

A-A

Sawcut Diagram

See drawing No. 826 for sawcut details.
NOTE:
2 turns of wire shown. Always install 2 turns of cable in duct unless otherwise specified on plans. Winding direction shall be indicated on wire.

Sawcut Diagram
See Drawing No. 826 for sawcut details.

Wiring Diagram
See Drawing No. 827 for method of installing pull box.

Direction of travel

Depth to allow 3/4" from top wire to surface
3/8"

6'
2 turns of wire shown. Always install 2 turns of cable in duct unless otherwise specified on plans. Winding direction shall be indicated on wire.

See drawing no. 827 for method of installing pull box.

See plans for method of installing pull box.

Winding direction shall be indicated on wire.

Direction of travel

Depth to allow 3/4" from top wire to surface.

3/8"

A-A

Sawcut diagram

See drawing no. 826 for sawcut details.

Professional electrical engineer stamp on file.

Effective 05/21/2020 to 10/07/2020
NOTE:
2 TURNS OF WIRE SHOWN. ALWAYS INSTALL 2 TURNS OF CABLE IN DUCT UNLESS OTHERWISE SPECIFIED ON PLANS. WINDING DIRECTION SHALL BE INDICATED ON WIRE.

SEE DRAWING NO. 827 FOR METHOD OF INSTALLING PULL BOX

SAWCUT DIAGRAM
SEE DRAWING NO. 826 FOR SAWCUT DETAILS.

WIRING DIAGRAM

DEPTH TO ALLOW 3/4" FROM TOP WIRE TO SURFACE

6'
NOTE:
2 TURN OF WIRE SHOWN. ALWAYS INSTALL 2 TURNS OF CABLE IN DUCT UNLESS OTHERWISE SPECIFIED ON PLANS. WINDING DIRECTION SHALL BE INDICATED ON WIRE.

SEE DRAWING NO. 827 FOR METHOD OF INSTALLING PULL BOX.

SEE PLANS 48" MAX

DIRECTION OF TRAVEL

WINDING DIRECTION

DEPTH TO ALLOW 3/4" FROM TOP WIRE TO SURFACE.

3/8"

3/8"

SEE DRAWING NO. 826 FOR SAWCUT DETAILS.

PROFESSIONAL ELECTRICAL ENGINEER STAMP ON FILE

AGENCY APPROVED

B C H L M N

SPECIFICATION REFERENCE

ONE INDUCTION LOOP FOR FOUR TRAVEL LANES

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

DATE DWG. NO. SHEET 1 OF 2

831 1
2 turns of wire shown. Always install 2 turns of cable in duct unless otherwise specified on plans. Winding direction shall be indicated on wire.

SEE DRAWING NO. 826 FOR SAWCUT DETAILS.

SEE DRAWING NO. 827 FOR METHOD OF INSTALLING PULL BOX.
NOTES:
1. 4 TURNS OF WIRE SHOWN. ALWAYS INSTALL 4 TURNS OF CABLE IN DUCT UNLESS OTHERWISE SPECIFIED ON THE PLANS. WINDING DIRECTION SHALL BE INDICATED ON WIRE.
2. TRAFFIC ENGINEER SHALL ESTABLISH LATERAL LOCATIONS ON ROADS WITHOUT MARKED LINES.
1. Front of the loop must extend into the crosswalk 2' to 4'.
2. Insulation test for each loop to ground must not read less than 50 meg ohms to infinity. (using Megger)
3. Use color coded 4 turn cable in duct as shown.
4. See Drawing No. 836 for wiring connections.

Notes:
- See Drawing No. 836 for wire connections.
- See Drawing No. 826 for sawcut details.

Wiring Diagram

Specification Reference

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<td>Multiple Loop System for Thru Lane</td>
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</table>

Date: 12-12-96  | DWG. No.: 833
1. Front of the loop must extend in the crosswalk 2' to 4'.
2. Insulation test for each loop to ground must not read less than 50 meg ohms to infinity. (Using Megger)
3. Use color coded 4 turn cable in duct as shown.

See Drawing No. 827 for method of installing pull box. All wires into pull box must be tagged and winding direction shall be marked.

See Drawing No. 836 for wire connections. See Drawing No. 826 for sawcut details.
WHENEVER MORE THAN ONE LOOP TERMINATES IN A PULL BOX, ALL LEADS MUST BE TAGGED AND IDENTIFIED.

NOTES:
1. FOR ALL LOOPS, TWO TURNS ARE REQUIRED.
2. FRONT OF LOOP MUST EXTEND IN THE CROSSWALK 2' TO 4'.
WIRE DIAGRAMS FOR MULTIPLE LOOP SYSTEMS FOR LEFT TURN POCKET AND THRU LANE

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

WIRE DIAGRAMS FOR MULTIPLE LOOP SYSTEMS FOR LEFT TURN POCKET AND THRU LANE

DATE 12-12-96  DWG. NO. 836
NOTES:

1. INSULATION FOR EACH LOOP MUST NOT READ LESS THAN 50 MEG OHMS TO INFINITY. (USING MEGGER)
2. USE COLOR CODED 4 TURN CABLE IN DUCT AS SHOWN.
3. FRONT OF LOOP MUST EXTEND IN THE CROSSWALK 2' TO 4'.

SEE DRAWING NO. 827 FOR METHOD OF INSTALLING PULL BOX. ALL WIRES TO PULL BOX MUST BE TAGGED AND WINDING DIRECTION SHALL BE MARKED.
NOTES:
1. CAST ALUMINUM HOUSING.
2. PAINT COLOR SHALL MATCH SIGNAL HOUSING.

1. AT LOCATIONS WHERE "WALK" "DON'T WALK" SIGNALS ARE PROVIDED, PROVIDE BLACK LETTERING ON A WHITE BACKGROUND ON PORCELAIN SIGNS.
2. AT LOCATIONS WHERE "SYMBOLIC" SIGNALS ARE PROVIDED, PROVIDE WHITE FIGURES ON A BLACK BACKGROUND.
3. MOUNTING SURFACE FOR THE SIGNS SHALL BE 9" X 12".
1. All traffic signal backplates shall have a 2-inch retroreflective adhesive sheeting border on the entire outer perimeter of the front side of the backplate.
2. Retroreflective sheeting shall be fluorescent yellow, ASTM D4956-13 Type XI or better.
3. The retroreflective sheeting border shall have a minimum of 0.5" clearance from all louvers. No retroreflective sheeting shall be placed over any louvered area.
4. Retroreflective sheeting border shall be installed by the manufacturer, and modifications shall not be made by the contractor.
5. The back plate with retroreflective sheeting border shall be from the same manufacturer as the signal head assembly. The complete head assembly, including the backplate, shall be capable of withstanding winds of 90 MPH without damage or separation of any parts from the signal head assembly.

Notes:
- Effective 05/21/2020 to 10/07/2020

Dimensions and attachment methods vary per manufacturer.
1. All traffic signal backplates shall have a 2-inch retroreflective adhesive sheeting border on the entire outer perimeter of the front side of the backplate.

2. Retroreflective sheeting shall be fluorescent yellow, ASTM D4956-13 Type XI or better.

3. The retroreflective sheeting border shall have a minimum of 0.5" clearance from all louvers. No retroreflective sheeting shall be placed over any louvered area.

4. Retroreflective sheeting border shall be installed by the manufacturer, and modifications shall not be made by the contractor.

5. The back plate with retroreflective sheeting border shall be from the same manufacturer as the signal head assembly. The complete head assembly, including the backplate, shall be capable of withstanding winds of 90 MPH without damage or separation of any parts from the signal head assembly.

Paint: Flat Black  
Dimensions and attachment methods vary per manufacture. 
Border width: 5-inch (typ.)

2" Yellow retroreflective border line adhesive sheeting

1/2" clearance (min.)

Notes:

Effective 05/21/2020 to 10/07/2020
NOTES:

1. ALL TRAFFIC SIGNAL BACKPLATES SHALL HAVE A 2-INCH RETROREFLECTIVE ADHESIVE SHEETING BORDER ON THE ENTIRE OUTER PERIMETER OF THE FRONT SIDE OF THE BACKPLATE.
2. RETROREFLECTIVE SHEETING SHALL BE FLUORESCENT YELLOW, ASTM D4956-13 TYPE XI OR BETTER.
3. THE RETROREFLECTIVE SHEETING BORDER SHALL HAVE A MINIMUM OF 0.5" CLEARANCE FROM ALL LOUVERS. NO RETROREFLECTIVE SHEETING SHALL BE PLACED OVER ANY LOUVERED AREA.
4. RETROREFLECTIVE SHEETING BORDER SHALL BE INSTALLED BY THE MANUFACTURER, AND MODIFICATIONS SHALL NOT BE MADE BY THE CONTRACTOR.
5. THE BACK PLATE WITH RETROREFLECTIVE SHEETING BORDER SHALL BE FROM THE SAME MANUFACTURER AS THE SIGNAL HEAD ASSEMBLY. THE COMPLETE HEAD ASSEMBLY, INCLUDING THE BACKPLATE, SHALL BE CAPABLE OF WITHSTANDING WINDS OF 90 MPH WITHOUT DAMAGE OR SEPARATION OF ANY PARTS FROM THE SIGNAL HEAD ASSEMBLY.
PAINT: FLAT BLACK

SHOWN 5 SECTION, 12" SIGNAL HEAD BACKPLATE WITH ELEVATOR PLUMBIZER

REFER TO DRAWING NO. 863
1. ALL SIGNALS ARE 12" NOMINAL.
2. FOR ITEMIZED PARTS, SEE DRAWING NO. 845.2.
3. FOR ARROW LENS SEE DRAWING NO. 890.
1. All signals are 12" nominal.
2. For itemized parts, see drawing no. 845.
3. For arrow lens see drawing no. 890.
1. All signals are 12" nominal.
2. For itemized parts, see drawing no. 845.2.
3. For arrow lens see drawing no. 890.

NOTES:

1. All signals are 12" nominal.
2. For itemized parts, see drawing no. 845.
3. For arrow lens see drawing no. 890.
1. All signals are 12" nominal.
2. For itemized parts, see drawing No. 845.
3. For arrow lens see drawing No. 890.

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**NOTES:**

**DATE** 07-01-14  **DWG. NO.** 844  **SHEET** 2 OF 2
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**CLARK COUNTY AREA**

**BILL OF MATERIALS**

**DATE:** 10-9-08 **DWG. NO.:** 845
1. ALL SIGNALS ARE 12" NOMINAL (GLASS).
2. FOR ITEMIZED PARTS, SEE DRAWING NO. 845.

NOTES:

AGENCY APPROVED

Effective 05/21/2020 to 10/07/2020
1. ALL SIGNALS ARE 12" NOMINAL (GLASS).
2. FOR ITEMIZED PARTS, SEE DRAWING NO. 845.
NOTES:

1. ON LOWER ASSEMBLY, ALL INDICATIONS ARE 12" NOMINAL (GLASS).

2. SEE DRAWING NO. 890 FOR ARROW LENS.

3. ON TOP ASSEMBLY, USE M-3 WITH BACKPLATE.

4. SEE STANDARD SPECIFICATIONS FOR PROGRAMMED VISIBILITY HEAD.

5. SEE DRAWING NO. 845 FOR ITEMIZED PARTS.

6. SEE SIGNAL PLANS FOR R OR RED ARROW INDICATION.
NOTES:
1. PROVIDE BACKPLATE ON A-8T.
2. ALL INDICATIONS ARE 12" NOMINAL (GLASS).
3. SEE DRAWING NO. 890 OR ARROW LENS.
4. SEE DRAWING NO. 845 FOR ITEMIZED PARTS.
5. SEE SIGNAL PLANS FOR R OR RED ARROW INDICATION.
NOTES:

1. SEE DRAWING NO. 845 FOR ITEMIZED PARTS.

2. SEE STANDARD SPECIFICATIONS FOR PROGRAMMED VISIBILITY HEAD.

3. SEE SIGNAL PLANS FOR R OR RED ARROW INDICATION.
NOTES:

1. FOR ITEMIZED PARTS SEE DRAWING NO. 845.
2. FOR ARROW LENS SEE DRAWING NO. 890.
3. PROVIDE BACKPLATE ON A-13T ONLY.
4. ALL SIGNALS ARE 12" NOMINAL (GLASS).

AGENCY APPROVED

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UNIFORM STANDARD DRAWINGS

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CLARK COUNTY AREA

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<th>CLARK COUNTY AREA</th>
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SIGNAL ASSEMBLIES

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A-12T, A-13T

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<th>A-12T, A-13T</th>
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DATE 2-11-93    DWG. NO. 851
1. ALL SIGNS ARE 12" NOMINAL (GLASS).
2. FOR ITEMIZED PARTS, SEE DRAWING NO. 845.
3. FOR ARROW LENS SEE DRAWING NO. 890.
4. SEE PLANS FOR BACKPLATE REQUIREMENTS.
NOTES:

1. ALL SIGNALS ARE 12" NOMINAL (GLASS).
2. FOR ITEMIZED PARTS SEE DRAWING NO. 845.
3. FOR ARROW LENS SEE DRAWING NO. 890.
4. SEE PLANS FOR BACKPLATE REQUIREMENTS.
5. OPTIONAL 3" CUTOFF LOUVERS ON RED, YELLOW AND GREEN BALL INDICATIONS MAY BE PROVIDED AS DIRECTED BY THE TRAFFIC ENGINEER.
NOTES:

1. FOR ITEMIZED PARTS SEE DRAWING NO. 845.
2. FOR ARROW LENS SEE DRAWING NO. 890.
3. SEE PLANS FOR BACKPLATE REQUIREMENTS.
4. ALL SIGNALS ARE 12" NOMINAL (GLASS).
NOTES:
1. ALL SIGNALS ARE 12" NOMINAL (GLASS)
2. FOR ITEMIZED PARTS, SEE DRAWING 845.
1. SEE STANDARD SPECIFICATIONS FOR PROGRAMMED VISIBILITY HEAD.
2. ALL M-2 INDICATIONS ARE 12" NOMINAL (GLASS).
3. SEE DRAWING NO. 845 FOR ITEMIZED PARTS.
4. SEE SIGNAL PLANS FOR BALL OR ARROW INDICATIONS.

---

**NOTES:**

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<td>MAST ARM SIGNAL ASSEMBLIES M-3, M-2</td>
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<td>DWG. NO.</td>
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NOTES:

1. ALL SIGNALS ARE 12" NOMINAL.
2. FOR ITEMIZED PARTS, SEE DRAWING 845.

PROVIDE LOUVERED BACKPLATE SIMILAR TO DRAWING 840

1.9" Radius, 0.8" Border, 0.5" Indent,
Black on White
[YIELD] D;
[ON FLASHING] C 50% spacing
[YELLOW] C; [ARROW] C;

R10-12F
30" X 36" MIN.

DATE 07-01-14  DWG. NO.  857
NOTES:
1. SEE DRAWING NO. 845 FOR ITEMIZED PARTS.
2. SEE DRAWING NO. 890 FOR ARROW LENS.
3. ALL INDICATIONS ARE 12" NOMINAL. SEE SUB-SECTION 623 T.02.08 FOR SPECIFICATIONS.
4. SEE SIGNAL PLANS FOR BACKPLATE REQUIREMENTS.
5. SEE SIGNAL PLANS FOR R OR RED ARROW INDICATION.
6. ALL BOTTOM NIPPLES ARE 18" AND TOP NIPPLES ARE 18 1/2".

AGENCY APPROVED  B   C   H   L   M   N

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

SIGNAL ASSEMBLIES
B-1T, B-2T, B-3T

DATE: 10-9-08   DWG. NO. 858
NOTES:

1. SEE DRAWING NO. 845 FOR ITEMIZED PARTS.
2. SEE DRAWING NO. 890 FOR ARROW LENS.
3. ALL INDICATIONS ARE 12" NOMINAL (GLASS).
4. SEE SIGNAL PLANS FOR BACKPLATE REQUIREMENTS.
5. SEE SIGNAL PLANS FOR R OR RED ARROW INDICATION.
6. ALL BOTTOM NIPPLES ARE 18" AND TOP NIPPLES ARE 18 1/2".

GREEN ARROW

YELLOW ARROW

RED ARROW
NOTES:
1. FOR ITEMIZED PARTS, SEE DRAWING NO. 845.
2. FOR ARROW LENS SEE DRAWING NO. 890.
3. ALL SIGNALS ARE 12" NOMINAL (GLASS) UNLESS NOTED.
NOTES:

1. SEE DRAWING NO. 845 FOR ITEMIZED PARTS.

2. SEE STANDARD SPECIFICATIONS FOR PROGRAMMED VISIBILITY HEADS.

3. SEE SIGNAL PLANS FOR BACKPLATE REQUIREMENTS.

4. SEE SIGNAL PLANS FOR R OR RED ARROW INDICATION.

5. ALL BOTTOM NIPPLES ARE 18" AND TOP NIPPLES ARE 18 1/2".

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

SIGNAL ASSEMBLIES
B-12T, B-13T

DATE 2-11-93  DWG. NO. 862

AGENCY APPROVED
NOTES:

1. FOR ITEMIZED PARTS SEE DRAWING NO. 845.
2. FOR ARROW LENS SEE DRAWING NO. 890.
3. SEE PLANS FOR BACKPLATE REQUIREMENTS.
4. ALL SIGNALS ARE 12" NOMINAL. SEE SUB-SECTION 623 T.02.08 FOR SPECIFICATIONS.
5. OPTIONAL 3" CUTOFF LOUVERS ON RED, YELLOW AND GREEN BALL INDICATIONS ON 5-SECTION HEADS MAY BE PROVIDED AS DIRECTED BY THE TRAFFIC ENGINEER.
NOTES:
1. ALL SIGNALS ARE 12" NOMINAL (GLASS).
2. FOR ITEMIZED PARTS SEE DRAWING 845.
3. FOR ARROW LENS SEE DRAWING 890.
4. SEE PLANS FOR BACKPLATE REQUIREMENTS.
5. OPTIONAL 3" CUTOFF LOUVERS ON RED, YELLOW AND GREEN BALL INDICATIONS ON 5-SECTION HEADS MAY BE PROVIDED AS DIRECTED BY THE TRAFFIC ENGINEER.
LEFT TURN
YIELD
ON GREEN

R10-12
24" X 30"
MIN.

NOTES:
1. ALL BACKPLATES SHALL BE LOUVERED.
2. ALL LENSES SHALL BE GLASS.
3. OPTIONAL 3" CUTOFF LOUVERS ON RED, YELLOW AND GREEN BALL INDICATIONS MAY BE PROVIDED AS DIRECTED BY THE TRAFFIC ENGINEER.

SIDE VIEW
POST MOUNTING

PLUMBIZER
BACKPLATE
12' POLE

AGENCY APPROVED
B C H L M N

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

PROTECTED / PERMISSIVE
M-5 SIGNAL HEADS

DATE 5-12-94  DWG. NO.  865  SHEET 1 OF 4
NOTES:

1. ALL BACKPLATES SHALL BE LOUVERED.
2. ALL LENSES SHALL BE GLASS.
3. OPTIONAL 3" CUT-OFF LOUVERS ON RED, YELLOW AND GREEN BALL INDICATIONS MAY BE PROVIDED AS DIRECTED BY THE TRAFFIC ENGINEER.

Mast Arm Mounting

SPECIFICATION REFERENCE

PROTECTED / PERMISSIVE
M-5 SIGNAL HEADS

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DATE 5-12-94
DWG. NO. 865
SHEET 2 OF 4
BACKPLATE TO MATCH
ORDER PART NO. E 2074
NOTES:
UNLESS OTHERWISE SPECIFIED
### FW 2933 AND SIGNAL ASSEMBLY

FRAMEWORK -- CLUSTER MOUNTING  
1 WAY, 5 COL., 12" ALUMINUM SIGNAL  
WITH ELEVATOR PLUMBIZER

<table>
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<tr>
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<td>ASSEMBLY</td>
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<tr>
<td>2</td>
<td>E205P1</td>
<td>TOP BRACKET W/Cover</td>
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<td>6</td>
<td>E1251P1</td>
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<td>55712P6</td>
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<td>ATTACHING WASHER</td>
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<td>ATTACHING BOLT</td>
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<td>N210P23C</td>
<td>ATTACHING NUT</td>
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<td>12</td>
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<td>RED BALL LENS</td>
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<td>E4960P2</td>
<td>YELLOW ARROW LENS</td>
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<td>17</td>
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**Specifications Reference**

**Uniform Standard Drawings**

**Clark County Area**

**Type:** M-5 Assemblies  
**And Parts List**

**Date:** 865  
**DWG. No.:** 865  
**Sheet:** 4 OF 4
NOTES:

1. FOR GENERAL SPECIFICATIONS SEE TRAFFIC SIGNAL PLANS.
2. FOR ITEMIZED PARTS, SEE DRAWING NO. 845.
3. THE HAND SYMBOL (DON'T WALK) IS PORTLAND ORANGE AND HUMAN SYMBOL (WALK) IS LUNAR WHITE.
NOTE: TAMPER-PROOF SCREWS TO BE USED.
NOTES:

1. ALL BACKPLATES SHALL BE LOUVERED.
2. ALL LENSES SHALL BE GLASS.
3. OPTIONAL 3" CUTOFF LOUVERS ON RED, YELLOW AND GREEN BALL INDICATIONS MAY BE PROVIDED AS DIRECTED BY THE TRAFFIC ENGINEER.
VISORS (FOR 8" HEADS)

PAINT: FLAT BLACK ON INSIDE, OUTSIDE PAINT COLOR SHALL MATCH SIGNAL HOUSING.
LOUVERS AND VISORS FOR 12 INCH SIGNALS

NOMINAL

STANDARD FULL CIRCLE VISOR

STANDARD ANGLE VISOR

SECTION A-A

SECTION B-B

DIRECTIONAL LOUVERS
PAINT: FLAT BLACK

6 VANE 3° CUTOFF

3 VANE 7° CUTOFF

VISORS (FOR 12" HEADS)
PAINT: FLAT BLACK ON INSIDE, OUTSIDE PAINT COLOR SHALL MATCH SIGNAL HOUSING.

 Effective 05/21/2020 to 10/07/2020
SIDE VIEW

FRONT VIEW

SECTION A-A

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

GEOMETRICALLY PROGRAMMED LOUVER

AGENCY APPROVED

SPECIFICATION REFERENCE

DATE

DWG. NO.

SHEET

3 OF 3
NOTE:
ALL BOLTS, NUTS AND WASHERS SHALL BE BRASS OR STAINLESS STEEL.

BACKPLATE AND SIGNAL HEAD ASSEMBLY

AGENCY APPROVED B C H L M N

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS CLARK COUNTY AREA

DATE 12-12-96 DWG. NO. 871
72 TEETH - 1/2" HIGH ALL AROUND

LOCKING RING - 1/2 PIN
MATERIAL: BRONZE

LOCKING NIPPLE

TIE BRACE, FERROUS, 2 WAY
PAINT COLOR SHALL MATCH SIGNAL HOUSING

TIE BRACE, FERROUS, 3 WAY
PAINT COLOR SHALL MATCH SIGNAL HOUSING

TIE BRACE, FERROUS, 4 WAY
PAINT COLOR SHALL MATCH SIGNAL HOUSING

ORNAMENTAL CAP
DIE CAST ALUMINUM
PAINT COLOR SHALL MATCH SIGNAL HOUSING

Effective 05/21/2020 to 10/07/2020

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

MISCELLANEOUS SIGNAL MOUNTING HARDWARE

DATE DWG. NO. 872 SHEET 1 OF 2

 Agency Approved: 
B C H L M N
Ferrous Special Tee
Paint color shall match signal housing

Ferrous Special Elbow
Paint color shall match signal housing

72 teeth - 1/16” high all around

1-1/2” pipe thread

6-3/8” X 5/8” sq. hd. set screw (cadium plated steel)

1-1/2” pipe thread

4-1/2”

4-5/8” inside

Post top mounted bracket with serrated offset mount.

(Use for all post top mountings not requiring side ports)

Material: Bronze
Paint color shall match signal housing

Agency approved

Effective 05/21/2020 to 10/07/2020
NOTES:
1. MATERIAL-BRONZE
2. PAINT COLOR SHALL MATCH SIGNAL HOUSING
3. PROVIDE WASHERS SHOWN AND 1/2" PLATED BOLTS, LENGTH FOR STEEL POLE MOUNTING.

CURVED WASHER

NOTES: DO NOT PROVIDE UNLESS SPECIFIED ON THE PLANS.
### NOTES:
1. MATERIAL - BRONZE
2. PAINT COLOR SHALL MATCH SIGNAL HOUSING

### CADMIUM PLATED STEEL
3-3/8" X 3/4" SQ. HD.
SET SCREWS

### SLOTTED HOLE FOR 3/8" THRU BOLT BOTH SIDES

### ELEVATOR PLUMBIZER

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**Effective 05/21/2020 to 10/07/2020**
NOTES:
1. MATERIAL-BRONZE
2. PAINT COLOR SHALL MATCH SIGNAL HOUSING.
3. PROVIDE WASHERS SHOWN AND 1/2" PLATED BOLTS, LENGTH FOR STEEL POLE MOUNTING.

5/8" HOLE

CURVED WASHER

3/8" R (TYP.)

1-1/2" PIPE THREADS

WASHER CURVED TO FIT STANDARD

SECTION A-A
LIST OF MATERIALS

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<td>1.</td>
<td>2</td>
<td>1/4&quot; - 20 UNC-2A X 3/8&quot; SOCKET, CUP SET SCREW</td>
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<td>2.</td>
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<td>CORK GASKET TO MATCH COVER</td>
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<td>3.</td>
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<td>3/32&quot; STEEL COVER WITH 2 BOLT HOLES OPPOSITE</td>
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<td>4.</td>
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<td>STANDARD LOCK WASHER</td>
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<td>5.</td>
<td>5</td>
<td>3/8&quot; - 16 UNC-2A X 1&quot; BRASS HEX. HD CAP SCREW 2 REQ.</td>
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NOTES:

1. PAINT COLOR AND FINISHING SHALL MATCH SIGNAL HOUSING
2. MATERIAL: HIGH STRENGTH CAST ALUMINUM ALLOY

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

4 WAY CENTER HUB

AGENCY APPROVED

DATE  DWG. NO. 877
NOTES:

1. REAM FOR 1-1/2" IPS. PROVIDE SET SCREW.
2. ALL OTHER OPENINGS SHALL BE THREADED.
3. PAINT COLOR SHALL MATCH SIGNAL HOUSING.
NOTES:

1. MATERIAL - ALUMINUM
2. PAINT COLOR SHALL MATCH SIGNAL HOUSING
3. PROVIDE 12 POSITION PRESSURE TYPE TERMINAL BLOCK MOUNTED INSIDE COMPARTMENT

4. OMIT HOLE AND BOSS ON TWO-WAY TERMINAL COMPARTMENT
   SCREW TO BE CADMIUM PLATED STEEL

5. 4-1/2" SLIP FITTER

6. WEATHERPROOF GASKET

7. SECTION A-A

8. COVER PLATE

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

POST TOP MOUNTED ADAPTER WITH TERMINAL COMPARTMENT

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<td>POST TOP MOUNTED ADAPTER</td>
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DATE | DWG. NO. | 879
NOTES:
1. MATERIAL - ALUMINUM
2. PAINT COLOR SHALL MATCH SIGNAL HOUSING
3. PROVIDE 12 POSITION PRESSURE TYPE TERMINAL BLOCK MOUNTED INSIDE COMPARTMENT

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

SIDE BRACKET MOUNTED ADAPTER WITH WIRE GUIDE

AGENCY APPROVED  B  C  H  L  M  N

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**NOTES:**

1. THE DEVICES WILL BE CONSTRUCTED OR CAST IN ACCORDANCE WITH SPECIAL PATENTED DEVICES, MATERIALS, AND PROCESSES.
2. SIGNAL HEAD MOUNT AND FLANGE ADAPTER WILL BE OF HIGH STRENGTH CAST ALUMINUM.
3. SIGNAL HEAD MOUNT SHALL BE FASTENED TO FLANGE ADAPTER BY MEANS OF FOUR COMMON STRUCTURAL STEEL BOLTS PER SPEC. EACH WITH TWO FLAT WASHERS, LOCK WASHER AND NUT.
4. ALL BOLTS, NUTS, AND WASHERS REQUIRED SHALL BE AS REGULARLY SUPPLIED BY THE MANUFACTURER.
5. ONE-WAY MOUNT SHALL BE USED WHEN PLANS OR SPECIAL PROVISIONS CALL FOR ONE-WAY SIGNAL MOUNTED ON SIGNAL MAST ARM.
6. TWO-WAY MOUNT SHALL BE USED WHEN PLANS OR SPECIAL PROVISIONS CALL FOR TWO-WAY SIGNAL MOUNTED ON SIGNAL MAST ARM.
7. TWO SIGNAL INDICATIONS SHALL BE MOUNTED BELOW THE MOUNT AND ALL REMAINING SIGNAL INDICATIONS MOUNTED ABOVE.

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**SPECIFICATION REFERENCE**

**UNIFORM STANDARD DRAWINGS**

CLARK COUNTY AREA

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**ONE WAY MOUNT**

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**DATE**

**DWG. NO.** 881
SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS

CLARK COUNTY AREA

DATE DWG. NO.

ONE WAY MOUNT FOR
3M SIGNALS

32 H

NOTES:

1. THE DEVICES WILL BE CONSTRUCTED OR CAST IN ACCORDANCE WITH SPECIAL PATENTED DEVICES, MATERIALS, AND PROCESSES.

2. SIGNAL HEAD MOUNT AND FLANGE ADAPTER WILL BE OF HIGH STRENGTH CAST ALUMINUM.

3. SIGNAL HEAD MOUNT SHALL BE FASTENED TO FLANGE ADAPTER BY MEANS OF FOUR COMMON STRUCTURAL STEEL BOLTS PER SPEC. EACH WITH TWO FLAT WASHERS, LOCK WASHER AND NUT.

4. ALL BOLTS, NUTS, AND WASHERS REQUIRED SHALL BE AS REGULARLY SUPPLIED BY THE MANUFACTURER.

5. ONE-WAY MOUNT SHALL BE USED WHEN PLANS OR SPECIAL PROVISIONS CALL FOR ONE-WAY SIGNAL MOUNTED ON SIGNAL MAST ARM.

6. TWO-WAY MOUNT SHALL BE USED WHEN PLANS OR SPECIAL PROVISIONS CALL FOR TWO-WAY SIGNAL MOUNTED ON SIGNAL MAST ARM.

7. TWO SIGNAL INDICATIONS SHALL BE MOUNTED BELOW THE MOUNT AND ALL REMAINING SIGNAL INDICATIONS MOUNTED ABOVE.

SECTION THROUGH ONE-WAY MOUNT FOR 3M SIGNALS

OPENING WITH 1/4" x 1/4" "O" RING GROOVE, TOP & BOTTOM

TAPERED ALUMINUM PLUMBING ADJUSTMENT WASHERS
(2-1/2" I.D. - 4" O.D. - MINIMUM THICKNESS TOGETHER APPROX. 1-1/8") 11 G

FOUR 7/16" DIA. EQUALLY SPACED HOLES CENTERED ON A 4-3/4" DIA. CIRCLE. 11 G

ONE-WAY MOUNT FOR 3M SIGNALS
**FLANGE DETAIL**

2" CLAMP TYPE ADAPTER

2-3/4" DIA. HOLE

NOTE:

- SAFETY CHAIN HOLE
- 2\(\frac{1}{8}\)" O.D.

**ASSEMBLY DETAIL**

- WASHERS (TWO)
- TAPERED ALUMINUM AND NUT (FOUR)

**FLANGE DETAIL**

2" WELDED TYPE ADAPTER

2-3/8" O.D. 3/8" DIA.

2-13/32" DIA.

1/2"

**FLANGE DETAIL**

4-3/4" DIA. BOLT CIRCLE EQUALLY SPACED ON A 7/16" HOLES

**SECTION THROUGH ONE-WAY MOUNT**

3/16" PROTRUSIONS

3/4" DEEP X 3/16" WIDE TANGENT GROOVE BOTH SIDES

**DETAIL "A"**

FILLET WELD

**DETAIL"A"**

- 2-3/8" O.D.
- 1-1/8" P.C.

- 3/8" x 3/8" "O" RING

- SEE DETAIL "A"

- 1/16" PROTRUSIONS

- BOTTOM SIDE ONLY CIRCULAR INDENTATION 3/64" DEEP X 3/8" WIDE

**FLANGE TO BE WELDED TO MAST ARM SLIPFITTER 4" FROM THE END.**

**FLANGE ADAPTHER MAST ARM OR FLANGE WELDED TO**

**FLAT WASHER (FOUR)**

**COUPLING FLANGE**

**FLAT WASHER (FOUR)**

**LOCK WASHER (FOUR)**

**ONE-WAY MOUNT**

**SECTION THROUGH ONE-WAY MOUNT**

**ONE WAY MOUNT DETAIL**

**AGENCY APPROVED**

**B**

**C**

**H**

**L**

**M**

**N**

**SPECIFICATION REFERENCE**

**UNIFORM STANDARD DRAWINGS**

**CLARK COUNTY AREA**

**DATE**

**DWG. NO.** 883
1. ALTERNATE LOCATIONS FOR THE POLES MAY BE APPROVED BY THE AGENCY'S TRAFFIC ENGINEER.
MOUNT SIGNAL ASSEMBLIES ON SIDE OF POLE OPPOSITE OF CURB LINE AS SHOWN. SEE DRAWING NO. 808 FOR DRILLING DETAILS.

P.T.

SIDEWALK AREA

3' MIN. OFFSET FROM CENTER OF RETURN

PED. PUSH BUTTONS. SEE DRAWING NO. 808 FOR DRILLING DETAILS.

NOTE:
1. ALTERNATE LOCATIONS FOR THE SIGNAL POLE MAY BE APPROVED BY THE AGENCY'S TRAFFIC ENGINEER.
NOTE:

1. ALTERNATE LOCATIONS FOR THE POLES MAY BE APPROVED BY THE AGENCY'S TRAFFIC ENGINEER.

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POLE LOCATION & SIGNAL MOUNTING AT INTERSECTION (TWO POLE) OFFSET SIDEWALK

DATE 7-10-03  DWG. NO. 886  SHEET 1 OF 2
MOUNT SIGNAL ASSEMBLIES ON SIDE OF POLE OPPOSITE OF CURB LINE AS SHOWN. SEE DRAWING NO. 823 FOR DRILLING DETAILS.

3' MIN. OFFSET FROM CENTER OF RETURN

PED. PUSH BUTTONS. SEE DRAWING NO. 808 FOR DRILLING DETAILS.

UTILITY (ABOVE GROUND) CORRIDOR

NOTE:
1. ALTERNATE LOCATIONS FOR THE SIGNAL POLE MAY BE APPROVED BY THE AGENCY'S TRAFFIC ENGINEER.
SIDEWALK RAMPS IN ACCORDANCE WITH DRAWING NO. 235 SHALL BE CONSTRUCTED. HANDICAPPED ACCESS MUST BE IN COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA).

NOTE:

MOUNT SIGNAL ASSEMBLIES ON SIDE OF POLE, 180° OPPOSITE OF CURB LINE AS SHOWN. SEE DWG. 823 FOR DRILLING DETAILS.

PED. PUSH BUTTONS. SEE DWG NO. 808 FOR DRILLING DETAILS.

4' MIN (TYP.)

MIN (TYP.)

POLE LOCATION AND SIGNALS MOUNTING ON RIGHT TURN ISLANDS

AGENCY APPROVED

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

Specifications Reference

POLE LOCATION AND SIGNALS
MOUNTING ON RIGHT TURN ISLANDS

DATE 12-12-96
DWG. NO. 887
NOTES:
1. THE AREA SHALL REMAIN ACCESSIBLE FOR THESE FOUNDATIONS.
2. TRAFFIC SIGNAL POLES SHALL REMAIN AT THE MIDDLE OF THE RETURN BEHIND THE SIDEWALK SO THAT THE OUTSIDE SIGNAL HEAD IS DIRECTLY ABOVE THE LEFT TURN LANE.
3. A TYPE "H" OR "L" FOUNDATION IS REQUIRED FOR MAST ARMS 45' OR LESS. SEE DRAWING NO. 721.
4. A TYPE "L" FOUNDATION IS REQUIRED FOR MAST ARMS LONGER THAN 45'. SEE DRAWING NO. 722.
5. A MINIMUM OF 48" SHALL BE MAINTAINED BETWEEN TRAFFIC SIGNAL POLE FOUNDATION "CRASH CAP" AND THE BACK OF THE CURB FOR WHEELCHAIR CLEARANCE.
6. THE TRAFFIC ENGINEER WILL MAKE THE FINAL DETERMINATION FOR THE LOCATION OF TRAFFIC SIGNAL POLES.
NOTE:
1. SEE PLANS FOR FOUNDATION TYPE.
NOTES:

1. ALL TRAFFIC SIGNAL POLES SHALL BE GALVANIZED PER ASTM A.123.
2. ELECTRIC UTILITY TO SHOW FEEDER TO SERVICE PEDESTAL.
3. FOR POLE, POLE FOUNDATION, SERVICE PEDESTAL AND SERVICE PEDESTAL FOUNDATION DETAILS, SEE CLARK COUNTY AREA UNIFORM STANDARD DRAWINGS.
4. EXTEND THE 2-2" PVC, THE 2-3" AND THE 1-PER TABLE PVC SCHEDULE 40, 5 FEET PAST EDGE OF PAVEMENT STUB AND CAP OR CONNECT TO THE EXISTING TRAFFIC SIGNAL CONDUIT.
5. ALL EMPTY CONDUIT WILL CONTAIN A SINGLE No. 8 AWG THW OR BARE COPPER WIRE FOR THE PURPOSE OF LOCATING THE CONDUIT.

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* USE FOR 80 FT. R/W WHEN SINGLE LEFT TURN LANE IS REQUIRED.
** USE FOR 80 FT. R/W WHEN MULTIPLE TURN LANES ARE REQUIRED.
*** USE ONLY WHEN DIRECTED BY THE ENGINEER.

PROFESSIONAL ELECTRICAL ENGINEER STAMP ON FILE

AGENCY APPROVED | B | C | H | L | M | N

SPECIFICATION REFERENCE

UNIFORM STANDARD DRAWINGS
CLARK COUNTY AREA

TYPICAL TRAFFIC SIGNAL UNDERGROUND LAYOUT WITH INTERIM STREET LIGHTING AND SERVICE PEDESTAL (CENTER OF CURVE RADIUS)

DATE 3-13-03 DWG. NO. 889 SHEET 1 OF 2
TYPICAL TRAFFIC SIGNAL UNDERGROUND LAYOUT WITH INTERIM STREET LIGHTING AND SERVICE PEDESTAL (END OF CURVE RADIUS)

COMM CONDUIT PER TABLE
- Extend the 2-2” PVC, the 2-3” and the 1-PER TABLE PVC Schedule 40, 5 feet past edge of pavement stub and cap or connect to the existing traffic signal conduit.

FOR POLE, POLE FOUNDATION, SERVICE PEDESTAL AND SERVICE PEDESTAL FOUNDATION DETAILS, SEE CLARK COUNTY AREA UNIFORM STANDARD DRAWINGS.

ALL EMPTY CONDUIT WILL CONTAIN A SINGLE No. 8 AWG THW OR BARE COPPER WIRE FOR THE PURPOSE OF LOCATING THE CONDUIT.

NOTES:
1. ALL TRAFFIC SIGNAL POLES SHALL BE GALVANIZED PER ASTM A.123.
2. ELECTRIC UTILITY TO SHOW FEEDER TO SERVICE PEDESTAL.
3. FOR POLE, POLE FOUNDATION, SERVICE PEDESTAL AND SERVICE PEDESTAL FOUNDATION DETAIL, SEE CLARK COUNTY AREA UNIFORM STANDARD DRAWINGS.
4. EXTEND THE 2-2” PVC, THE 2-3” AND THE 1-PER TABLE PVC SCHEDULE 40, 5 FEET PAST EDGE OF PAVEMENT STUB AND CAP OR CONNECT TO THE EXISTING TRAFFIC SIGNAL CONDUIT.
5. ALL EMPTY CONDUIT WILL CONTAIN A SINGLE No. 8 AWG THW OR BARE COPPER WIRE FOR THE PURPOSE OF LOCATING THE CONDUIT.

** USE FOR 80 FT. R/W WHEN SINGLE LEFT TURN LANE IS REQUIRED.
*** USE ONLY WHEN DIRECTED BY THE ENGINEER.
SPECIFICATIONS:

THE ARROW LENS SHALL BE GLASS AND CONFORM TO THE SPECIFICATIONS AS SET FORTH IN TECHNICAL REPORT NO. 1, REVISED 1966, BY THE INSTITUTE OF TRAFFIC ENGINEERS AND APPROVED AS A STANDARD BY THE UNITED STATES OF AMERICA STANDARD INSTITUTE. ANY FUTURE REVISIONS ACCEPTABLE AND ADOPTED BY THE U.S.A.S.I. SHALL AUTOMATICALLY BE PART OF THIS DRAWING SPECIFICATION.
NOTES:
1. MAIN SWITCH.
2. 30 AMP CIRCUIT BREAKERS.
3. SIGNAL FLASH SWITCH INSIDE CABINET.
4. AUXILIARY DOOR SIGNAL FLASH SWITCH.
5. NEMA STD. PLUG RECEPTACLE WITH GROUNDING CONTACT.
6. RADIO FREQUENCY INTERFERENCE SUPPRESSOR.
7. SOLID STATE SIGNAL FLASHER (CABINET MFR. TO DETERMINE POLES AND CAPACITY, UNLESS OTHERWISE SPECIFIED)
8. SIGNAL FLASHING CONTROL RELAYS.