STANDARD PLANS
FOR STREET IMPROVEMENTS

MAY 2019

Stephen Jackson, City Engineer
Shannon Hansen, Assistant City Engineer – Development
Alan McKean, Assistant City Engineer – Capital Projects
## STREET DRAWINGS INDEX

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PIPE ZONE BACKFILLING

TYPE A
FLOWABLE FILL CONCRETE

TYPE B
TYPICAL FOR PVC PIPE INSTALLATION

TYPE C
TYPICAL FOR CONCRETE PIPE INSTALLATION

TYPE D
TYPICAL FOR DUCTILE IRON PIPE OR C-900 INSTALLATION

NOTES
1. PLACE GRADED IMPORTED 1-1/2 INCH MINUS SEWER ROCK (ASTM 4 OR 5) GRAVEL MATERIAL PER APWA 31 05 13 OR NATIVE SOIL (AS DIRECTED BY CITY ENGINEER) FOR BACKFILL IN PIPE ZONE WITH MAXIMUM LIFT THICKNESS 6-INCHES BEFORE COMPACTION. COMPACTION IS 95% OR GREATER RELATIVE TO A STANDARD PROCTOR DENSITY.

2. MINIMUM WIDTH OF TRENCH MEASURED AT THE SPRING LINE OF THE PIPE, INCLUDING ANY NECESSARY SHEATHING.

<table>
<thead>
<tr>
<th>PIPE I.D.</th>
<th>1/2&quot; OVER WIDTH</th>
</tr>
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<tbody>
<tr>
<td>LESS THAN 21&quot;</td>
<td>O.D. + 12&quot;</td>
</tr>
<tr>
<td>21&quot; TO 44&quot;</td>
<td>O.D. + 24&quot;</td>
</tr>
<tr>
<td>GREATER THAN 44&quot;</td>
<td>O.D. + 30&quot;</td>
</tr>
</tbody>
</table>

I.D. MEANS INSIDE DIAMETER OF PIPE BARREL
O.D. MEANS OUTSIDE DIAMETER OF PIPE BARREL

3. INSTALL PIPE IN CENTER OF TRENCH.

4. CONCRETE: 2000 PSI MINIMUM PER APWA 03 30 04 FLOWABLE FILL PER APWA 31 05 15

5. PIPE ZONE: DO NOT USE LARGE SEWER ROCK, PEA GRAVEL OR RECYCLED RIP AGGREGATE IN THE PIPE ZONE.

6. UNDER PERFORATED PVC PIPE INSTALL MIRAFI 500X, OR ACCEPTABLE EQUVALENT. STABILIZATION-SEPARATION GEOTEXTILE BETWEEN SEWER ROCK AND ALL OTHER BACKFILL MATERIAL PER APWA SECTION 31 05 19.

7. INSTALL GEOTEXTILE MIRAFI #140 FABRIC OR APPROVED EQUIVALENT OVER TRENCH BACKFILL PRIOR TO PLACEMENT OF ROADBASE OR SUBGRADE.
RESTORATION OF ASPHALT PAVEMENT STRUCTURAL SECTION OVER TRENCHES

NOTES:

1. PROVIDE APWA 31 05 13 GRANULAR BORROW WELL GRADED 2-INCH MAXIMUM ABOVE PIPE ZONE. IF NATIVE MATERIAL COMPLIES WITH THE SPECIFIED BORROW, CONTRACTOR MAY USE AS APPROVED BY CITY ENGINEER. COMPACT MATERIALS IN MAXIMUM LIFTS OF 8 INCH BEFORE COMPACTION. COMPACTION IS 95% OR GREATER RELATIVE TO A MODIFIED PROCTOR DENSITY, APWA SECTION 31 23 26.


3. SEAL CRACKS PER APWA 32 01 17 WITH ELASTOFLEX 65 PER ASTM D 5078.

4. UNTREATED BASE COURSE: USE GRADE 1 OR GRADE 3/4 APWA 32 11 23 AGGREGATE BASE COURSE. INSTALL PER APWA SECTION 32 05 10 WITH LIFT THICKNESS (BEFORE COMPACTION) OF 8-INCHES WITH RIDING COMPACTOR AND 6-INCHES USING HANDHELD COMPACTOR EQUIPMENT.

5. TACK COAT: CLEAN ALL HORIZONTAL AND VERTICAL SURFACES. APPLY FULL COVERAGE. USE EMULSIFIED ASPHALT GRADE SS–1H AT THE RATE OF 0.15 GALLONS PER SQUARE YARD PER APWA SECTION 32 12 13.13.

6. MATCH THICKNESS OF EXISTING ROADBASE OR 8" MINIMUM.

7. A 3 YEAR MORATORIUM EXISTS ON ALL NEWLY PAVED ROAD WAYS. ANY CUTS INTO A MORATORIUM MUST BE APPROVED BY THE CITY ENGINEER. THE EXISTING ASPHALT MUST BE MILED AND PAVED A MINIMUM OF 5', OR AT THE DISCRETION OF THE CITY ENGINEER, FROM EACH EDGE OF THE TRENCH.
NOTES:

1. CONCRETE SHALL BE AS SPECIFIED IN APPLICABLE STANDARD DRAWINGS & SPECIFICATIONS.

2. ALL STREET CROWNS SHALL BE INSPECTED AND APPROVED BY THE CITY INSPECTOR BEFORE PAVING OPERATION BEGINS.

3. NO SANITARY SEWER OR LAND DRAIN LATERALS OUT OF MANHOLES.

4. NATURAL GAS LINES SHALL BE LAID 6.0 FT FROM PROPERTY LINE ON EITHER SIDE OF THE STREET.

5. SANITARY SEWER LINES AND CULINARY WATER LINES SHALL BE LOCATED ON OPPOSITE SIDES OF THE STREET, WITH A MINIMUM OF 10' OF SEPARATION, AS SHOWN, AT ALL TIMES AND SHALL CROSS AS FEW TIMES AS POSSIBLE.

6. WATER VALVES SHALL BE PLACED IN LINE WITH PROPERTY LINES AT INTERSECTIONS AND AS DETERMINED BY THE CITY ENGINEER.

7. SEE ST-ST-04 AND ST-ST-05 FOR WIDTHS ON ITEMS A-D AS WELL AS PROPER USE OF 4.5' AND 7.5' WIDTH PARK STRIPS.

8. THIS DRAWING SHALL BE CONSIDERED A PART OF ALL DEVELOPMENT UTILITY CONSTRUCTION AND THE CITY'S STANDARD SPECIFICATIONS.

9. FOR ADDITIONAL INFORMATION ON SPECIFIC ITEMS, SEE STANDARD DRAWINGS.
STREET SECTION

- RIGHT OF WAY WIDTH
- TBC TO TBC
- PAVEMENT WIDTH

**ARTERIAL**
- 100' 81' 76' 38' 12.0' 8.0' 4.5'

**MINOR ARTERIAL**
- 84' 65' 60' 30' 11.0' 8.0' 4.5'

**COLLECTOR**
- 66' 47' 42' 21.0' 13.5' 7.5' 4.5'

**MINOR COLLECTOR**
- 60' 41' 36' 18.0' 10.5' 7.5' 4.5'

STREET DIMENSIONS

- **ARTERIAL** 100' 81' 76' 38' 12.0' 8.0' 4.5'
- **MINOR ARTERIAL** 84' 65' 60' 30' 11.0' 8.0' 4.5'
- **COLLECTOR** 66' 47' 42' 21.0' 13.5' 7.5' 4.5'
- **MINOR COLLECTOR** 60' 41' 36' 18.0' 10.5' 7.5' 4.5'

*ONLY ALLOWED IN CUL-DE-SACS OR LOOP STREETS SERVING TEN OR FEWER LOTS OR SENSITIVE LANDS AREA*

** ARTERIAL STREETS SHALL HAVE:
- 4 - 12 FT. WIDE TRAFFIC LANES
- 2 - 8 FT. WIDE PARKING LANES
- 1 - 12 FT. WIDE MEDIAN STRIP

** HILLSIDE RESIDENTIAL STREET - AS APPROVED BY CITY ENGINEER

**** PARK STRIP/SIDEWALK/ROW REQUIREMENTS AS APPROVED BY CITY ENGINEER

NOTE:
UNLESS APPROVED OTHERWISE, MIN. DEPTH OF COVER OVER BURIED UTILITY LINES SHALL BE:

- WATER MAIN 4.0 FT.
- WATER SERVICE LINE 4.0 FT.
- SEWER MAIN 5.0 FT.
- STORM DRAIN 2.0 FT.
- LAND DRAIN 4.5 FT.

TYPICAL SUBDIVISION

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
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<tr>
<td>RESIDENTIAL COLLECTOR</td>
<td>62' 37' 32' 16' 10' 6' 7.5'</td>
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<tr>
<td>RESIDENTIAL</td>
<td>58' 33' 28' 14' 10' 4' 7.5'</td>
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<tr>
<td><strong>MINOR STREET</strong></td>
<td>50' 33' 28' 14' 14' - 4.5'</td>
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<tr>
<td>***6.0 ABUTTING WALK</td>
<td>39' 33' 28' 14' 10' 4' -</td>
<td></td>
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<td></td>
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<tr>
<td>***PRIVATE STREET</td>
<td>- 33' 28' 14' 10' 4' -</td>
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4.0' WALK

Layton City

STANDARD DRAWING

ST-ST-04

DHR

06/10

03/12
DRIVE APPROACH

SECTION A-A

TABLE OF DRIVEWAY WIDTHS

<table>
<thead>
<tr>
<th>ZONE</th>
<th>MINIMUM WIDTH (FT)</th>
<th>MAXIMUM WIDTH (FT)</th>
<th>% OF FRONTAGE ALLOWED IN APPROACH</th>
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<tbody>
<tr>
<td>A</td>
<td>10</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>R-5</td>
<td>10</td>
<td>35</td>
<td>35</td>
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<tr>
<td>R-1-6</td>
<td>10</td>
<td>35</td>
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</tr>
<tr>
<td>R-1-8</td>
<td>10</td>
<td>35</td>
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<tr>
<td>R-1-10</td>
<td>10</td>
<td>35</td>
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<tr>
<td>R-MH</td>
<td>10</td>
<td>32</td>
<td>33</td>
</tr>
<tr>
<td>R-2</td>
<td>10</td>
<td>32</td>
<td>33</td>
</tr>
<tr>
<td>RM-1</td>
<td>10</td>
<td>32</td>
<td>33</td>
</tr>
<tr>
<td>RM-2</td>
<td>10</td>
<td>32</td>
<td>33</td>
</tr>
<tr>
<td>R-H</td>
<td>10</td>
<td>32</td>
<td>33</td>
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</tbody>
</table>

THE DRIVE PAVEMENT SHALL BE CONSTRUCTED AS FOLLOWS:

WIDTH AT WALK  PAVEMENT SECTION

- 10.0' TO 12.0'  NO SPLIT REQUIRED
- 13.0' TO 20.0'  2 EQUAL WIDTH SECTIONS
- 21.0' TO 28.0'  3 EQUAL WIDTH SECTIONS
- 29.0' TO 40.0'  4 EQUAL WIDTH SECTIONS

THERE SHALL BE EXPANSION JOINT MATERIAL BETWEEN EACH SECTION
SECTION A-A

1. DRIVE APPROACH SHALL BE USED AS APPROVED BY CITY ENGINEER.
2. DRIVEWAY SHALL HAVE A WIDTH OF NOT LESS THAN TWENTY FEET (20') NOR GREATER THAN THIRTY-FIVE FEET (35') IN WIDTH ON LOCAL AND COLLECTOR STREETS.
3. ON CITY ARTERIAL STREETS THE WIDTH SHALL NOT BE LESS THAN TWENTY-EIGHT FEET (28'), NOR EXCEED FORTY FEET (40') IN WIDTH.
4. THERE SHALL BE EXPANSION JOINT MATERIAL BETWEEN EACH SECTION.
5. SIDEWALK SECTION MUST BE 6" MINIMUM THICKNESS (PLACED ON 6 INCHES OF COMPACTED ROADBASE) THROUGH WIDTH OF DRIVEWAY OR BE REPLACED WITH 6" CONCRETE TO NEAREST JOINT BEYOND WIDTH OF DRIVEWAY.
6. REMOVE AND REPLACE ALL DETERIORATED, WEAK, OR UNSOUND CONCRETE.
7. DIFFERENCE IN SLOPE OF DRIVEWAY RAMP AND THE SLOPE OF A LINE BETWEEN THE GUTTER AND A POINT ON THE ROADWAY 5' FROM THE FRONT EDGE OF THE GUTTER SHALL NOT EXCEED 15%. REDUCE DRIVEWAY RAMP SLOPE, NOT GUTTER SLOPE, WHERE REQUIRED. BREAKOVER ANGLE AT BACK OF APPROACH SHALL NOT EXCEED 6% MAXIMUM.
8. CONCRETE SHALL BE CLASS 4,000 PER APWA 03 30 04.

THE DRIVE PAVEMENT SHALL BE CONSTRUCTED AS FOLLOWS:

WIDTH AT WALK  PAVEMENT SECTION
20' TO 28'  3 EQUAL WIDTH SECTIONS
28' TO 40'  4 EQUAL WIDTH SECTIONS
DRIVE APPROACH AT EXISTING CURB & GUTTER

NOTES
1. THE CONTRACTOR IS REQUIRED TO HAVE A CITY PERMIT.
2. HORIZONTAL CUT TO BE WIDTH OF DRIVEWAY PLUS FLARES ON EACH SIDE.
3. SIDEWALK SECTION MUST BE 6" MINIMUM THICKNESS (PLACED ON 6 INCHES OF COMPACTED ROADBASE) THROUGH WIDTH OF DRIVEWAY OR BE REPLACED WITH 6" CONCRETE TO NEAREST JOINT BEYOND WIDTH OF DRIVEWAY.
4. REMOVE AND REPLACE ALL DETERIORATED, WEAK, OR UNSOUND CONCRETE.
5. DIFFERENCE IN SLOPE OF DRIVEWAY RAMP AND THE SLOPE OF A LINE BETWEEN THE GUTTER AND A POINT ON THE ROADWAY 5' FROM THE FRONT EDGE OF THE GUTTER SHALL NOT EXCEED 15%. REDUCE DRIVEWAY RAMPSLOPE, NOT GUTTER SLOPE, WHERE REQUIRED. BREAKOVER ANGLE AT BACK OF APPROACH SHALL NOT EXCEED 6% MAXIMUM.
6. CONCRETE SHALL BE CLASS 4,000 PER APWA 03 30 04.
7. THE MINIMUM DISTANCE FROM THE PROPERTY LINE TO THE DRIVEWAY (MEASURED AT THE FRONT OF THE WALK) IS 4.5 FEET.
8. CURE CONCRETE WITH TYPE II (WHITE PIGMENTED) COMPOUND PER APWA 03 39 00.

<table>
<thead>
<tr>
<th>TABLE OF DRIVEWAY WIDTHS</th>
<th>% OF FRONTAGE ALLOWED IN APPROACH</th>
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<tbody>
<tr>
<td>ZONE</td>
<td>MINIMUM WIDTH(FT)</td>
</tr>
<tr>
<td>A</td>
<td>10</td>
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<tr>
<td>R-S</td>
<td>10</td>
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<tr>
<td>R-1-6</td>
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<td>R-MH</td>
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<td>R-2</td>
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<tr>
<td>RM-1</td>
<td>10</td>
</tr>
<tr>
<td>RM-2</td>
<td>10</td>
</tr>
<tr>
<td>R-H</td>
<td>10</td>
</tr>
</tbody>
</table>
A PERMIT AND INSPECTION ARE REQUIRED FOR CURB AND GUTTER OR DRIVE APPROACH REPLACEMENT. CALL PUBLIC WORKS AT 801-336-3700 TO SET UP INSPECTION. MINIMUM OF 24 HOURS NOTICE IS REQUIRED.

TYPICALLY 30" WIDE HIGH BACK CURB AND GUTTER

WHEN CURB AND GUTTER OR A DRIVE APPROACH IS BEING REPLACED ADJACENT TO EXISTING STREET ASPHALT, A MINIMUM WIDTH OF 12 INCHES OF EXISTING ASPHALT, MUST BE SAWCUT, REMOVED AND REPLACED. THE LENGTH OF ASPHALT TO BE REMOVED WILL BE THE SAME LENGTH OF CURB AND GUTTER OR DRIVE APPROACH BEING REPLACED.
CURB & GUTTER & WATERWAY

TYPICAL SECTION — STANDARD 30 INCH HIGH BACK CONCRETE CURB AND GUTTER — 4.5 FT. OR 7.0 FT. PARKSTRIP — 4.0 FT. WIDE WALK

TYPICAL SECTION — STANDARD 30 INCH HIGH BACK CONCRETE CURB AND GUTTER — 6.0 FT. WIDE ABUTTING WALK.

TYPICAL SECTION 30” CONCRETE CURB & GUTTER

NOTE: PLACE MASTIC EXPANSION JOINTS @ 40 FT. AND CONSTRUCTION JOINTS @ 10 FT.

TYPICAL WATERWAY SECTION

MINIMUM 8 INCHES COMPACTED

5-#5 BARS @ 12” O.C.

CONCRETE SHALL BE 6.3 BAG MIX MINIMUM 4000 PSI.
CONCRETE SIDEWALK

NOTE: PLACE MASTIC EXPANSION JOINTS @ 40 FT. AND CONSTRUCTION JOINTS @ 40 FT. (ALTERNATE) AND CONTROL JOINT @ 4 FT.

NOTES:

1. USE MONOLITHIC CONSTRUCTION 4" THICK EXCEPT AT DRIVEWAYS WHERE THICKNESS OF 6" IN RESIDENTIAL ZONE AND 8" IN COMMERCIAL AND INDUSTRIAL ZONE AREA IS REQUIRED.

2. PLACE CONTROL JOINTS AT INTERVALS EQUAL TO 1 TO 1 1/2 TIMES THE WIDTH OF THE SIDEWALK UNFORMLY PLACED ALONG LENGTH OF SIDEWALK. CONTROL JOINT 3/4 INCH DEEP.

3. USE 1/2" EXPANSION JOINT FILLER AT INTERSECTIONS WITH PERPENDICULAR SIDEWALKS OR DRIVEWAYS AND WHERE SIDEWALK MEETS TOP BACK OF CURB.

4. EDGE SIDEWALK WITH 1/2" RADIUS EDGING TOOL, ROUND EDGES AT EXPANSION JOINTS TO A RADIUS OF 1/2".

5. USE FINE HAIR-BROOM TO FINISH WALKS ON GRADES UNDER 6% OVER 6% GRADE USE ROUGH HAIR-BROOM.

6. USE SIX INCHES OF COMPACTED ROADBASE UNDER SIDEWALK, CURB AND CUTTER AND DRIVE APPROACHES.

7. CURE CONCRETE WITH TYPE II (WHITE PIGMENTED) COMPOUND PER APWA 03 39 00.
HANDICAP RAMPS

NOTES:
1. SITE CONDITIONS WILL VARY. CONFIGURATION OF RAMP, LANDING, AND TRANSITION MAY BE CHANGED, BUT THEY MUST MEET DIMENSIONS AND SLOPE SHOWN ON PLAN. THE USE OF FLARES, CURB WALLS, ETC. ARE AT THE DISCRETION OF THE ENGINEER.

2. 4' X 4' MINIMUM LANDING WITH MAXIMUM 2% RUNNING AND CROSS SLOPE. BLENDED RAMPS (5% MAX. SLOPE) DO NOT REQUIRE LANDING.

3. RAMPS 8.33% (1:12) MAXIMUM RUNNING SLOPE.

4. THE WARNING SURFACE SHALL EXTEND 24" MIN. IN THE DIRECTION OF PEDESTRIAN TRAVEL AND MUST OCCUPY THE FULL WIDTH OF CURB CUT.

5. LOCATE THE DETECTABLE WARNING SURFACE SO THE EDGE NEAREST THE STREET IS AT OR WITHIN 2" OF THE BACK OF CURB.

6. RAMP GRADE BREAK MUST BE PERPENDICULAR TO RUNNING SLOPE.

7. LOCATE CURB CUT WITHIN CROSSWALK.

8. WHEN DETECTABLE WARNING SURFACE IS CUT, GRIND OFF REMAINING PORTION OF ANY CUT DOMES. SEAL ALL CUT PANEL EDGES TO PREVENT WATER DAMAGE.

9. PROVIDE BRICK RED DETECTABLE WARNING SURFACE (SEE ST-ST-12).

SLOPE TABLE

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<th>ITEM</th>
<th>MAX. RUNNING SLOPE*</th>
<th>MAX. CROSS SLOPE*</th>
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<tbody>
<tr>
<td>(A) LANDING</td>
<td>2% (1:48H)</td>
<td>2% (1:48H)</td>
</tr>
<tr>
<td>(B) RAMP</td>
<td>8.33% (1:12H)</td>
<td>2% (1:48H)</td>
</tr>
<tr>
<td>(C) CLEAR SPACE</td>
<td>5% (1:20H)</td>
<td>2% *1:48H</td>
</tr>
<tr>
<td>SIDEWALK</td>
<td></td>
<td>2% *1:48H</td>
</tr>
<tr>
<td>FLARE</td>
<td>10% (1:10H)</td>
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</table>

DRAWN BY
RB

SCALE
NONE

DATE
1/12

REVISIONS

STANDARD DRAWING
ADA RAMP
ST-ST-11
MINIMUM MILL AND OVERLAY LIMITS FOR STREET EXCAVATION

PERPENDICULAR TRENCHES

PARALLEL TRENCHES

NOTES:

1. WIDTH OF MILL AND OVERLAY
   EXTEND 2-INCH MILL AND OVERLAY TO THE
   EDGE OF THE ADJACENT TRAVEL LANE.
   MINIMUM OF 10-FEET WIDE.

2. SURFACE LEVEL TOLERANCES
   3/8 INCH PARALLEL TO STREET CENTERLINE
   AND 1/4 INCH TRANSVERSE TO STREET
   CENTERLINE AS MEASURED WITH A 10 FOOT
   LONG STRAIGHT EDGE.

3. MULTIPLE TRENCHES
   MULTIPLE TRENCHES INTO THE STREET AN
   INDIVIDUAL STREET SYSTEM WILL REQUIRE A
   CONTIGUOUS MILL AND OVERLAY THAT
   ENCOMPASSES ALL TRENCHES.

TRENCH REPAIR

OVERLAY LIMITS
STANDARD AND TEMPORARY CUL-DE-SAC

500' MAXIMUM LENGTH OF CUL-DE-SAC

30" CURB & GUTTER
4.5' PARK STRIP
4.0 FT. WALK
STANDARD CUL-DE-SAC

FIRE ACCESS ROAD FOR FUTURE DEVELOPMENT WITH ON-SITE AND OFF-SITE TEMPORARY TURN-AROUNDS

500' MAXIMUM LENGTH OF CUL-DE-SAC

30" CURB & GUTTER
7.5' PARK STRIP
5.0 FT. WALK
MOUNTABLE CURB
ASPHALT SURFACE
DRIVABLE SURFACE
SUBDIVISION BOUNDARY

*ANY CUL-DE-SAC WITH FUTURE STREET TIE-IN MUST HAVE CITY ENGINEER AND FIRE MARSHALL APPROVAL PRIOR TO CONSTRUCTION.

RADIUS (FT.)

| R-1 MINIMUM DRIVEABLE SURFACE | 40 |
| R-2 CENTER TO RIGHT-OF-WAY | 50 |
| R-3 BACK OF CURB RADIUS | 25 |

DRAWN BY
DHR

SCALE
NONE

DATE
3/96

REVISIONS
4/10

Layton City
STANDARD DRAWING
CULDE SAC
ST-ST-14
DEAD END ACCESS WAY
ONLY ALLOWED IN SENSITIVE LAND AREA

ALTERNATIVES TO 120’ HAMMERHEAD
TEMPORARY TURNAROUNDS – MODIFIED

REQUIREMENTS FOR TEMPORARY TURNAROUND:

1. TEMPORARY EASEMENT ESTABLISHED ON PLAT & WILL BE VACATED UPON EXTENSION OF PUBLIC STREET
2. HOMEOWNER TO MAINTAIN & KEEP THE TURN AROUND CLEAR AT ALL TIMES. NOTE ON PLAT AS WELL AS SEPARATE NOTICE TO BE RECORDED TO LOT.
3. SIGN ADDED AT ENTRANCE “TURNAROUND – PUBLIC SERVICE VEHICLES ONLY”
4. PERMANENT DRIVABLE SURFACE CAPABLE OF HOLDING 75,000 LB VEHICLE
5. SIDEWALK DEPTH 6” MINIMUM OVER 6” THICK ROADBASE
6. CURB SHALL BE PAINTED RED 12’ EACH SIDE OF DRIVE APPROACH

DRAWN BY
SH

SCALE
NONE

DATE
2/19

REVISIONS

Layton City

STANDARD DRAWING
TEMP TURN

ST-ST-15B
MONUMENT CAP AND BASE

MONUMENT CAP
SURVEYED BY LAND SURVEYORS

(TYP.) NOTE 4

3-18-1993
L.S. 1012

(TYP.) NOTE 2
(TYP.) NOTE 3

PLAN

CAST IN PLACE
MONUMENT BASE

6" MIN.

6" MIN.

30" - 36"

30" - 36"

8" MIN.

CONCRETE APAWA 03304
CLASS 4000

SECTION

1.5" MIN

1/4"

3" MIN.

5/8"

1/4"

1 1/2"

NOTES:

1. USE MONUMENT CAP (PLATE) OF BRASS OR BRONZE.

2. SHOW MONTH, DAY, AND YEAR WHEN CAP IS INSTALLED.

3. SHOW LICENSE NUMBER OF LAND SURVEYOR WHO SET THE CAP.

4. SHOW THE TYPE OF MONUMENT ON THE CAP. THE FOLLOWING IS A LIST OF COMMONLY USE ABBREVIATIONS:

ML. INT. : MONUMENT LINE INTERSECTION
INT. : INTERSECTION LINE
C. INT. : CENTERLINE INTERSECTION
P.I. : POINT OF INTERSECTION
P.C. : POINT OF CURVATURE
P.T. : POINT OF TANGENCY
P.O.C. : POINT ON CURVE
P.R.C. : POINT OF REVERSE CURVE
P.C.C. : POINT OF COMPOUND CURVE
W.C. : WITNESS CORNER
P.O.T. : POINT ON TANGENT
S.C. : SECTION CORNER

STANDARD DRAWING
MON-CAP
ST-ST-16
UTILITY LOCATION ON CURVED STREET MINIMUM RADIUS 200'

STORM DRAIN TYPICALLY PLACED SOUTH AND WEST OF LIP OF CURB.

WATERLINE TYPICALLY PLACED 4 FT. NORTH OR EAST OF THE STREET CENTERLINE. BENDS ARE REQUIRED ON WATERLINE WITH STREET CENTERLINE RADIUS LESS THAN 220 FT.

MIN. 200' RADIUS

STORM DRAIN AND LAND DRAIN MAXIMUM 3 FT. EXTENSION PAST TOP BACK OF CURB

SANITARY SEWER TYPICALLY PLACED 9 FEET SOUTH AND WEST OF STREET CENTERLINE.

LAND DRAIN TYPICALLY PLACED 10 FEET NORTH AND EAST OF STREET CENTERLINE.

SECONDARY WATERLINE TYPICALLY PLACED OFF LIP OF CURB OR IN 7.5 FT. PARK-STRIP ON EITHER SIDE OF THE STREET SO IT DOES NOT CROSS AT CURVES.
CONCRETE GRADE RING ADJUSTMENT

PLAN

12" MIN.

STORM

SEE NOTE

12"

FINAL PAVEMENT
SURFACE

CONCRETE SHALL
BE 4000 PSI

USE GRADE RINGS TO
ADJUST FRAME TO GRADE

PLAN

12" MIN.

WATER

SEE NOTE

12"

12" MIN. CONCRETE COLLAR

SECTION A

SECTION B

NOTE: FINISH GRADE TO BE 1/2"
BELOW AND MATCH EXISTING SLOPE OF
STREET PAVEMENT SURFACE.
FIELD FENCE AND GATE

1. FIELD "T" FENCE POSTS TO BE INSTALLED 2' MINIMUM IN GROUND.

2. ALL CORNER AND GATE POST TO BE 3" DIAMETER SCHEDULE 40 STEEL POSTS EMBEDDED IN 3' ON CONCRETE WITH MIN 2" DIAMETER ANGLE POST.

3. MAXIMUM BRACE POST SPACING IS 400'.

4. FENCE TO BE CONNECTED TO FENCE POST WITH 10 GAUGE WIRE AT GROUND LEVEL, TOP OF FENCE POSTS, AND AT 1' SPACING BETWEEN (3 CONNECTIONS MINIMUM).

5. CONCRETE SHALL BE 6.0 BAG MIN. AND DESIGNED TO 4000 PSI ON A 28 DAY COMpressive TEST.

6. MAXIMUM FENCE POST SPACING IS 16 FEET WITH 2 - 36" STAYS (RED BRAND OR EQUAL) PER 16 FEET.

7. MESH TO BE 12 GAUGE GALVANIZED WIRE WITH 4"X4" SPACING (RED BRAND OR EQUAL).

8. BARB WIRE TO BE 50 DEFENDER WITH 2 RUNS WITH 6" SPACING (RED BRAND OR EQUAL).
NON-CLIMBING FIELD FENCE AND GATE

FIELD "T" FENCE POST

2" DIA. STEEL ANGLE POST

3" DIA. STEEL GATE POSTS

CONCRETE EMBEDMENT
(CORNER/GATE POSTS)
(ANGLE POST OPTION 1)

5.0 FT. HIGH NON-CLIMBING FENCE OR
4.0 FT. HIGH NON-CLIMBING FENCE
WITH ONE STRAND OF BARB WIRE

NOTES:
1. FIELD "T" FENCE POSTS TO BE
INSTALLED 2" MINIMUM IN
GROUND.

2. ALL CORNER AND GATE POST TO
BE 3" DIAMETER SCHEDULE 40
STEEL POSTS EMBEDDED IN 3'
OF CONCRETE WITH MIN 2"
DIAMETER ANGLE POST.

3. FENCE TO BE CONNECTED TO
FENCE POST WITH 10 GAUGE
WIRE AT GROUND LEVEL, TOP OF
FENCE POSTS, AND AT 1'
SPACING BETWEEN (3
CONNECTIONS MINIMUM).

4. MAXIMUM FENCE POST SPACING IS
10 FEET.

5. CONCRETE SHALL BE 6.0 BAG
MIN. AND DESIGNED TO 4000 PSI
ON A 28 DAY COMpressive
TEST.

6. MAXIMUM BRACE POST SPACING
IS 400 FEET.
SHOULDER WORK WITH MINOR ENCROACHMENT
66-FOOT RIGHT OF WAY

NOTES:
1. FOR NIGHTTIME USE, CONES AND WARNING SIGNS SHALL BE EQUIPPED WITH LIGHTING DEVICES FOR MAXIMUM VISIBILITY.

2. THIS EXAMPLE IS FOR A 40 MPH SPEED LIMIT (S) AND AN OFFSET (W) OF 8.0’. L = WSS/60. IN THIS EXAMPLE, L = (8x40x40)/60 = 213.3’. 1/3 L = 213.3/3 = 71 OR ROUND TO 70.0’.
SHOULDER WORK WITH MINOR ENCROACHMENT
60-FOOT RIGHT OF WAY

NOTES:

1. FOR NIGHTTIME USE, CONES AND WARNING SIGNS SHALL BE EQUIPPED WITH LIGHTING DEVICES FOR MAXIMUM VISIBILITY.

2. THIS EXAMPLE IS FOR A 40 MPH SPEED LIMIT (S) AND AN OFFSET (W) OF 8.0'. L = WSS/60. IN THIS EXAMPLE, L = (8x40x40)/60 = 213.3'. 1/3 L = 213.3/3 = 71 OR ROUND TO 70.0'.
LANE CLOSURE ON TWO LANE ROAD WITH LOW TRAFFIC VOLUMES

NOTES:
1. FOR NIGHTTIME USE, CONES AND WARNING SIGNS SHALL BE EQUIPPED WITH LIGHTING DEVICES FOR MAXIMUM VISIBILITY.
NOTES:

1. FOR NIGHTTIME USE, CONES AND WARNING SIGNS SHALL BE EQUIPPED WITH LIGHTING DEVICES FOR MAXIMUM VISIBILITY.

2. FOR SPEEDS OF 40 MPH AND LESS \( L = \left( \frac{W*S^2}{60} \right) \). FOR SPEEDS GREATER THAN 40 MPH \( L = W*S \), WHERE \( S \) = POSTED SPEED.

3. 10.0-FT MIN. LANES REQUIRED.
TEMPORARY MAIL SERVICE

ACCEPTABLE TEMPORARY MAIL SERVICE MUST BE MOVABLE AND ON STABLE BASE
STANDARD CROSSWALK SIGNS AND STRIPING

NOTES:
1. The City Engineer may approve having the lights flash at all times. In this case, the pedestrian push button should not be installed.

<table>
<thead>
<tr>
<th>TABLE 1: PLACEMENT OF YIELD LINES</th>
<th>TABLE 2: PLACEMENT OF WARNING SIGN</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 MPH AND BELOW</td>
<td>20 FT</td>
</tr>
<tr>
<td>35-40 MPH</td>
<td>35 FT</td>
</tr>
<tr>
<td>40 MPH AND ABOVE</td>
<td>40 FT</td>
</tr>
<tr>
<td>40-50 MPH</td>
<td>42 FT</td>
</tr>
<tr>
<td>50 MPH AND ABOVE</td>
<td>50 FT</td>
</tr>
<tr>
<td>60 MPH AND ABOVE</td>
<td>57 FT</td>
</tr>
</tbody>
</table>

DRAWN BY: [Signature]
DATE: [Date]
REVISIONS: [Revision Notes]
# CULINARY WATER DRAWINGS INDEX

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<tr>
<th>DETAIL NAME</th>
<th>ABBREV.</th>
<th>PAGE #</th>
</tr>
</thead>
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<td>ST-WL-01</td>
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<td>JUMPER</td>
<td>ST-WL-02</td>
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<td>2” HDPE METER BOX</td>
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<td>Concrete Meter Box for 1 1/2” or 2” Water Service</td>
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<td>OCTAVE METER NO REDUCER</td>
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<td>OCTAVE METER W/REDUCER</td>
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<td>With 8” Bypass</td>
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<td>4”, 6”, of 8” Octave Meter with Same Size Bypass</td>
<td>4”-8” METER SAME BYPASS</td>
<td>ST-WL-07</td>
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<td>3”-4” METER 3”-4” BYPASS</td>
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<td>Reserved</td>
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<td>ST-WL-09</td>
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<td>Reserved</td>
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<td>ST-WL-10</td>
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<tr>
<td>Sampling Station</td>
<td>SAMPLING STATION</td>
<td>ST-WL-11</td>
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<td>Water Meter Vault</td>
<td>VAULT</td>
<td>ST-WL-12</td>
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<td>TRACING WIRE</td>
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<td>AIR-VAC</td>
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<td>Air-Vacuum Relief Station (In Park Strip)</td>
<td>AIR-VAC PARK STRIP</td>
<td>ST-WL-17</td>
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<td>Fire Hydrant Installation (Valve at Main Line)</td>
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<td>Flushing Hydrant</td>
<td>FLUSHING HYDRANT</td>
<td>ST-WL-19</td>
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<td>Minimum Clearance Around Fire Hydrant</td>
<td>FH-CLEARANCE</td>
<td>ST-WL-20</td>
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3/4" & 1" WATER SERVICE CONNECTION

WATER METER FURNISHED AND INSTALLED BY LAYTON CITY PUBLIC WORKS DEPARTMENT, 1925 NORTH FORT LANE, 801-336-3720.

ACCEPTABLE ANGLE VALVES:
FORD 3/4"
DA 96-323W-G
AV 96-323W-G
FORD 1"
DA 96-444W-G
AV 96-444W-G
MUELLER
B-24273
H-14273
OR LAYTON CITY PRE-APPROVED ACCEPTABLE EQUAL

ACCEPTABLE DUAL CHECK VALVES:
FORD 3/4"
HHCA 91-323-G
MUELLER 3/4" OR 1"
H-14466A
OR LAYTON CITY PRE-APPROVED ACCEPTABLE EQUAL

DUCTILE IRON OR C-900 WATER MAIN

METER BOX-PLACED 1 FOOT FROM BACK OF CURB.

EXPANSION LOOP PLACED IN VERTICAL POSITION

FILL METER BOX WITH 2" MINUS GRAVEL TO WITHIN 8'-10" OF BOTTOM OF YOKE

U SHAPED 1/2" DIA GROUNDING ROD INSTALLED MINIMUM BURY DEPTH 18" DEEP ATTACHED TO YOKE WITH STAINLESS STEEL HOSE CLAMP

PROPERTY LINE

METER BOX SIZE
3/4" SERVICE (21" X 36" BOX)
1" SERVICE (21" X 36" BOX)

NOTES:
ALL RESIDENTIAL METERS SHALL BE PLACED 1.0' BEHIND THE SIDEWALK IF THE SIDEWALK ABUTS THE CURB & GUTTER.
TRACING WIRE SHALL TERMINATE INSIDE METER BOX AND BE CONNECTED TO GROUND ROD.

STANDARD DRAWING
ST-WL-01

4/18

SCALE
NONE

DATE
10/97

REVISIONS

DHR

Layton City
JUMPER SPECIFICATIONS FOR 3/4” OR 1” METER

THE METER PIT RING AND COVER SHALL BE D&L SUPPLY L-2240 OR L-2242 OR ACCEPTABLE EQUAL

A - FORD OR MUELLER ANGLE VALVE*
B - EXPANDER FOR 3/4” YOKE
C - 3/4” OR 1” GALV. PIPE W/ THREADED ENDS (10.5 INCHES LONG)
D - FORD OR MUELLER DUAL CHECK VALVE**

*ACCEPTABLE ANGLE VALVES
FORD 3/4"
BA 96-323W-G
AV 96-323W-G
FORD 1"
BA 96-444W-G
AV 96-444W-G
MUELLER
B-24273
H-14273
OR LAYTON CITY PRE-APPROVED ACCEPTABLE EQUAL

**ACCEPTABLE DUAL CHECK VALVES
FORD 3/4"
HHCA 91-323-G
FORD 1"
HHCA 91-444-G
MUELLER 3/4” OR 1”
H-14466A
OR LAYTON CITY PRE-APPROVED ACCEPTABLE EQUAL

FOR QUESTIONS ON METER SET-UP OR INSTALLATION, CONTACT THE LAYTON CITY WATER DEPARTMENT AT 801-336-3720.

METER BOX SIZE

3/4” SERVICE (21” X 30” BOX)
1” SERVICE (21” X 30” BOX)

ACCEPTABLE METER BOX MATERIAL:
PRECAST CONCRETE OR CORRUGATED POLYETHYLENE PIPE CONFORMING TO AASHTO M294 TYPE S, WITH A SMOOTH INTERIOR LINER.
HDPE METER BOX FOR 1 1/2” OR 2” WATER SERVICE

ST-WL-04 REQUIRED FOR METERS LOCATED IN TRAFFIC AREA

MANHOLE RING AND COVER WITH DOUBLE COVER D&L SUPPLY A-1427 (WATER) OR PRE-APPROVED ACCEPTABLE EQUAL

FINAL SURFACE ELEVATION

48” HDPE PIPE SECTION
SMOOTH INTERIOR
CORRUGATED EXTERIOR

15” TO
18”

45”

22 1/8”

8”

3/4” MIN. ROCK AROUND STRUCTURE

PROVIDE BRASS NIPPLE BRACING PIPE IN EYELETS.

FORD CUSTOM SETTER
1 1/2” – VFH66-18"x13”
2” – VFH77-18"x17”

1 1/2” OR 2” TYPE "K"
COPPER OR HDPE CTS-OD
SDR-9 POLY SERVICE

NOTE: TRACING WIRE SHALL TERMINATE IN METER BOX.

METER SHALL BE MASTER METER WITH 3G RADIO READER PROVIDED BY LAYTON CITY PUBLIC WORKS WATER DEPARTMENT. 1925 NORTH FORT LANE, 801-336-3720

STANDARD DRAWING
2” HDPE METER

ST-WL-03
CONCRETE METER BOX FOR 1 1/2” OR 2” WATER SERVICE
CONCRETE BOX REQUIRED IF METER IS LOCATED IN TRAFFIC AREA

48” MANHOLE SECTION
(36” HEIGHT TYPICAL)

MANHOLE RING AND COVER D&L
SUPPLY #A-1181 (WATER)

PRECAST FLAT LID

FINAL SURFACE ELEVATION

12”

15” TO 18”

8”

1 1/2” OR 2”
ANGLE STOP
WITH FLANGE

1 1/2’ OR 2”
TYPE “K” COPPER
OR HDPE CTS-00
SDR-9 POLY
SERVICE

FORD CUSTOM SETTER
1 1/2” – VFH66-18”x13”
2” – VFH77-18”x17”

PROVIDE BRASS NIPPLE
BRACING PIPE IN EYELETS.
USE 1/2” BRASS NIPPLE FOR
1-1/2” SERVICE AND 1” BRASS
NIPPLE FOR 2” SERVICE
MINIMUM 18” LENGTH.

NOTE: TRACING WIRE SHALL
TERMINATE IN METER BOX

STANDARD
DRAWING
2” CONC METER BOX
ST-WL-04

METER SHALL BE MASTER METER WITH 3G RADIO
READER PROVIDED BY LAYTON CITY PUBLIC WORKS
WATER DEPARTMENT. 1925 NORTH FORT LANE,
801-336-3720
4”, 6”, or 8” Octave Meter Installation With 8” Bypass

**Water Meter Size**

<table>
<thead>
<tr>
<th>PART</th>
<th>4”</th>
<th>6”</th>
<th>8”</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>8” x 8” x 4” FLG TEE</td>
<td>8” x 8” x 6” FLG TEE</td>
<td>8” x 8” x 8” FLG TEE</td>
<td>2</td>
</tr>
<tr>
<td>B</td>
<td>8” FLG GATE VALVE</td>
<td>8” FLG GATE VALVE</td>
<td>8” FLG GATE VALVE</td>
<td>1</td>
</tr>
<tr>
<td>C</td>
<td>4” FLG GATE VALVE</td>
<td>6” FLG GATE VALVE</td>
<td>8” FLG GATE VALVE</td>
<td>2</td>
</tr>
<tr>
<td>D</td>
<td>4” FLG 45° BEND</td>
<td>6” FLG 45° BEND</td>
<td>8” FLG 45° BEND</td>
<td>4</td>
</tr>
<tr>
<td>E</td>
<td>4” FLG X PE PIPE</td>
<td>6” FLG X PE PIPE</td>
<td>8” FLG X PE PIPE</td>
<td>2</td>
</tr>
<tr>
<td>F</td>
<td>4” x 2”-6” FLG X FLG PIPE WITH SEEP RING</td>
<td>6” x 2”-6” FLG X FLG PIPE WITH SEEP RING</td>
<td>8” x 2”-6” FLG X FLG PIPE WITH SEEP RING</td>
<td>2</td>
</tr>
<tr>
<td>G</td>
<td>4” x 1”-11” FL X FL PIPE</td>
<td>6” x 1”-9” FL X FL PIPE</td>
<td>8” x 1”-8” FL X FL PIPE</td>
<td>1</td>
</tr>
<tr>
<td><strong>H</strong></td>
<td>4” MASTER OCTAVE METER WITH 3G RADIO HEAD</td>
<td>6” MASTER OCTAVE METER WITH 3G RADIO HEAD</td>
<td>8” MASTER OCTAVE METER WITH 3G RADIO HEAD</td>
<td>1</td>
</tr>
<tr>
<td>I</td>
<td>4” FL COUPLING ADAPTER</td>
<td>6” FL COUPLING ADAPTER</td>
<td>8” FL COUPLING ADAPTER</td>
<td>1</td>
</tr>
<tr>
<td>J</td>
<td>4” X 2” BRASS SADDLE W/ PLUG</td>
<td>6” X 2” BRASS SADDLE W/ PLUG</td>
<td>8” X 2” BRASS SADDLE W/ PLUG</td>
<td>1</td>
</tr>
<tr>
<td>K</td>
<td>4” x 1”-11” FL X PE PIPE</td>
<td>6” x 1”-9” FL X PE PIPE</td>
<td>8” x 1”-8” FL X PE PIPE</td>
<td>1</td>
</tr>
</tbody>
</table>

**Denotes material supplied by Layton City Water Department**

1925 North Fort Lane, 336-3720

8” meter will service up to 2800 gallons per minute
6” meter will service up to 1600 gallons per minute
4” meter will service up to 1000 gallons per minute
3” or 4” Octave Meter Installation With 8” Bypass And Reducer

Water Meter Size

<table>
<thead>
<tr>
<th>PART</th>
<th>3”</th>
<th>4”</th>
<th>QUANTITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>8” X 8” X 4” FLG TEE</td>
<td>8” X 8” X 6” FLG TEE</td>
<td>2</td>
</tr>
<tr>
<td>B</td>
<td>8” FLG GATE VALVE</td>
<td>8” FLG GATE VALVE</td>
<td>1</td>
</tr>
<tr>
<td>C</td>
<td>4” FLG GATE VALVE</td>
<td>6” FLG GATE VALVE</td>
<td>2</td>
</tr>
<tr>
<td>D</td>
<td>4” FLG 45° BEND</td>
<td>6” FLG 45° BEND</td>
<td>4</td>
</tr>
<tr>
<td>E</td>
<td>4” FLG X PE PIPE</td>
<td>6” FLG X PE PIPE</td>
<td>2</td>
</tr>
<tr>
<td>F</td>
<td>4” X 2’–6” FLG X FLG PIPE WITH SEEP RING</td>
<td>6” X 2’–6” FLG X FLG PIPE WITH SEEP RING</td>
<td>2</td>
</tr>
<tr>
<td>G</td>
<td>4” X 3” REDUCER</td>
<td>6” X 4” REDUCER</td>
<td>2</td>
</tr>
<tr>
<td>H</td>
<td>3” X 1’–5” FL X FL PIPE</td>
<td>4” X 1’–2” FL X FL PIPE</td>
<td>1</td>
</tr>
<tr>
<td>**I</td>
<td>3” MASTER OCTAVE METER WITH 3G RADIO HEAD</td>
<td>4” MASTER OCTAVE METER WITH 3G RADIO HEAD</td>
<td>1</td>
</tr>
<tr>
<td>J</td>
<td>3” FL COUPLING ADAPTER</td>
<td>4” FL COUPLING ADAPTER</td>
<td>1</td>
</tr>
<tr>
<td>K</td>
<td>3” X 2” BRASS SADDLE W/ PLUG</td>
<td>4” X 2” BRASS SADDLE W/ PLUG</td>
<td>1</td>
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<tr>
<td>L</td>
<td>3” X 1’–5” FL X PE PIPE</td>
<td>4” X 1’–2” FL X PE PIPE</td>
<td>1</td>
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</tbody>
</table>

** DENOTES MATERIAL SUPPLIED BY LAYTON CITY WATER DEPARTMENT 1925 NORTH FORT LANE, 336–3720

4” METER WILL SERVICE UP TO 1000 GALLONS PER MINUTE
3” METER WILL SERVICE UP TO 500 GALLONS PER MINUTE
3" or 4" Octave Meter Installation With 3" or 4" Bypass

---

**Water Meter Size**

<table>
<thead>
<tr>
<th>PART</th>
<th>3&quot;</th>
<th>4&quot;</th>
<th>QUANTITY</th>
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<tbody>
<tr>
<td>A</td>
<td>4&quot; X 4&quot; X 4&quot; FLG TEE</td>
<td>4&quot; X 4&quot; X 4&quot; FLG TEE</td>
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<tr>
<td>B</td>
<td>4&quot; FLG GATE VALVE</td>
<td>4&quot; FLG GATE VALVE</td>
<td>3</td>
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<tr>
<td>C</td>
<td>4&quot; FLG 45° BEND</td>
<td>4&quot; FLG 45° BEND</td>
<td>4</td>
</tr>
<tr>
<td>D</td>
<td>4&quot; FLG X PE PIPE</td>
<td>4&quot; FLG X PE PIPE</td>
<td>2</td>
</tr>
<tr>
<td>E</td>
<td>4&quot; X 2'-6&quot; FLG X FLG PIPE WITH SEEP RING</td>
<td>4&quot; X 2'-6&quot; FLG X FLG PIPE WITH SEEP RING</td>
<td>2</td>
</tr>
<tr>
<td>F</td>
<td>4&quot; X 3&quot; REDUCER</td>
<td>NOT USED</td>
<td>2</td>
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<tr>
<td>G</td>
<td>3&quot; X 1'-5&quot; FL X FL PIPE</td>
<td>4&quot; X 1'-2&quot; FL X FL PIPE</td>
<td>1</td>
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<tr>
<td><strong>H</strong></td>
<td>3&quot; MASTER OCTAVE METER WITH 3G RADIO HEAD</td>
<td>4&quot; MASTER OCTAVE METER WITH 3G RADIO HEAD</td>
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<tr>
<td>I</td>
<td>3&quot; FL COUPLING ADAPTER</td>
<td>4&quot; FL COUPLING ADAPTER</td>
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<tr>
<td>J</td>
<td>3&quot; X 2&quot; BRASS SADDLE W/ PLUG</td>
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<td>K</td>
<td>3&quot; X 1'-5&quot; FL X PE PIPE</td>
<td>4&quot; X 1'-2&quot; FL X PE PIPE</td>
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</tbody>
</table>

**Denotes Material Supplied by Layton City Water Department**

1925 North Fort Lane, 336-3720

4" Meter Will Service Up to 1000 Gallons per Minute

3" Meter Will Service Up to 500 Gallons per Minute

---

**Layton City**

**STANDARD DRAWING**

3"-4" Meter 3"-4" Bypass

ST-WL-08
SAMPLING STATION

FOR QUESTIONS ON SAMPLING STATION SET-UP OR INSTALLATION, CONTACT THE LAYTON CITY WATER DEPARTMENT AT 801-336-3720.

ECLIPSE #88 SAMPLING STATION
PLACED IN CENTER OF PARKSTRIPE TO FACE STREET

NOTES:
1. SAMPLING STATIONS TO BE USED IN LOCATIONS PRE-APPROVED BY CITY ENGINEER.
2. TRACING WIRE SHALL TERMINATE IN CURB SERVICE BOX WITH MINIMUM 3" EXCESS. ATTACH TRACING WIRE TO CURB SERVICE BOX WITH STAINLESS STEEL HOSE CLAMP.

* ACCEPTABLE CORPORATION STOPS
FORD CORPORATION STOPS
FB-1000  F-1000
MUELLER CORPORATION STOPS
B-2500B  H-1500B
OR LAYTON CITY PRE-APPROVED ACCEPTABLE EQUIVALENT

DUCTILE IRON OR C-900 WATER MAIN
TAP MAIN
CORPORATION STOP AT 2 OR 10 O'CLOCK POSITION

CURB SERVICE BOX 93-D
PLACED IN FRONT OF SAMPLING STATION
EXPANSION LOOP PLACED IN VERTICAL POSITION
FORD BALL VALVE CURBSTOP B11-333

PROVIDE Brass 3/4" 90° ELBOW (MNPT x FNPT)
3/4" x 8" BRASS NIPPLE
3/4" QUICK COUPLING FORD CB4-33Q
TYPE "K" COPPER OR HDPE OTS-OD SDR-9 POLY TUBING
PROVIDE GRAVEL DRAIN
WATER METER VAULT

END VIEW

31" DIA. OPENING W/ D&L SUPPLY A-1180 RING AND COVER

ELEVATION VIEW

31" DIA. OPENING W/ D&L SUPPLY A-1180 RING AND COVER

PROVIDE GRAVEL BEDDING MINIMUM 4 INCHES THICK OR AS REQUIRED BY THE PUBLIC WORKS INSPECTOR

PLAN VIEW

2"x2" OPENING FOR 2"x2" AMCOR STANDARD FRAME & GRATE CAST FLUSH IN FLOOR

12" DIA. OPENING FOR 8" DIA. D.I.P

12" DIA. OPENING FOR 8" DIA. D.I.P

STANDARD DRAWING
VAULT
ST-WL-12

DRAWN BY
SWJ

SCALE
NONE

DATE
1/08

REVISIONS
1/15

Layton City
TRACING WIRE INSTALLATION

NOTES:
1. ALL WATERLINES SHALL HAVE A MINIMUM 12 GA. INSULATED TRACING WIRE INSTALLED UNDER THE HAUNCHES OF THE PIPE PRIOR TO BACKFILLING.

2. TRACING WIRES SHALL TERMINATE INSIDE OF ALL VALVE BOXES AND FIRE HYDRANTS. AT SERVICE SADDLES AND TAPPING SLEEVES, THE TRACING WIRE SHALL NOT BE ALLOWED TO BE PLACED BETWEEN THE SADDLE AND THE PIPE. A GROUNDING ROD SHALL BE INSTALLED AT ALL TRACER SYSTEM TERMINAL POINTS.

3. TRACING WIRE SHALL BE COPPER WIRE WITH BLUE INSULATION RATED FOR DIRECT BURIAL. ALL WIRE CONNECTORS SHALL BE 3M DBR DIRECT BURY SPLICE OR PRE-APPROVED ACCEPTABLE EQUAL AND SHALL BE WATERPROOF TO PROVIDE ELECTRICAL CONTINUITY.

4. ALL TRACING WIRE SHALL BE TESTED FOR CONTINUITY IN THE PRESENCE OF THE PUBLIC WORKS INSPECTOR PRIOR TO ASPHALT PLACEMENT. ANY TRACING WIRE FOUND NOT TO BE CONTINUOUS AFTER TESTING SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR PRIOR TO ASPHALT PLACEMENT.
WATER LINE LOOP

NOTE:
1. SEE ST–WL–15 FOR THRUST BLOCK SIZING.
2. SEE APWA PLAN 562 TIE DOWN THRUST RESTRAINTS.

TABLE OF DIMENSIONS

<table>
<thead>
<tr>
<th>NO.</th>
<th>OBSTRUCTION</th>
<th>SEWER MAIN</th>
<th>OTHER</th>
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<tbody>
<tr>
<td>A</td>
<td></td>
<td>18”</td>
<td>12” MIN.</td>
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<tr>
<td>B</td>
<td>FULL PIPE LENGTH</td>
<td></td>
<td>O.D. + 12”</td>
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</table>
DIRECT BEARING THRUST BLOCKS

NOTES:
1. ALL WORK MUST BE INSPECTED PRIOR TO BACKFILL.
2. POUR THRUST BLOCKS AGAINST UNDISTURBED SOIL.
3. ALL PIPE JOINTS MUST BE LEFT ACCESSIBLE.
4. CURE CONCRETE FOR 5 DAYS PRIOR TO PRESSURIZING WATER LINES.
5. CONCRETE MUST HAVE A MINIMUM OF 4000 PSI COMpressive STRENGTH IN 28 DAYS.
6. POUR THRUST TO THE CONFIGURATION SHOWN.
7. BEARING AREAS FOR HORIZONTAL BEND THRUST BLOCKS ARE BASED ON TEST PRESSURE OF 100 PSI AND AN ALLOWABLE SOIL BEARING STRESS OF 2000 LBS./SQ.FT.
8. BEARING AREAS, VOLUMES, AND SPECIAL BLOCKING DETAILS SHOWN ON PLANS TAKE PRECEDENCE OVER THIS STANDARD.
9. BEARING AREAS FOR PIPE SIZES OR CONFIGURATIONS NOT SHOWN REQUIRE A SPECIAL DESIGN.

<table>
<thead>
<tr>
<th>SIZE OF PIPE</th>
<th>TEES, VAL. DEAD ENDS</th>
<th>90° BEND</th>
<th>45° BEND</th>
<th>22.5° BEND</th>
<th>11.25° BEND</th>
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<td>6&quot;</td>
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</table>
AIR–VACUUM RELIEF STATION IN STREET

24" HEAVY DUTY CAST IRON FRAME AND COVER

GROUND LINE

2" UNION

PRE-CAST REINFORCED CONCRETE FLAT-SLAB LIP WITH 30" DIA. OPENING

2" SCREWED CAP

2" DIAM. SLOPPET PIPE W/ALUM. FLY SCREEN INSIDE – #14 MESH

2" SCREWED RETURN BEND

24"

VENTED COVER AS APPROVED BY CITY ENGINEER.

2" DIA. GALVANIZED STND. STEEL PIPE

6"

2 – 2" 90° SCREWED ELBOWS WITH 2" CLOSE NIPPLE (6" LONG)

5'-0" MANHOLE SECTION

2" HEAVY-DUTY COMBINATION AIR–VACUUM RELIEF VALVE

2" FLANGED GATE VALVE WITH HAND WHEEL

ALL AROUND

12"

GRAVEL

PROJECT PIPE WITH 2" SADDLE TRAP

STANDARD DRAWING
AIR–VAC
ST–WL–16

DRAWN BY
DHR
SCALE
NONE
DATE
9/01
REVISIONS

Layton City
FIRE HYDRANT INSTALLATION

NOTE: USE CLOW MEDALLION FIRE HYDRANT OR MUELLER SUPER CENTURION 200 FIRE HYDRANT, OR ACCEPTABLE EQUAL.

SECTION VIEW – HYDRANT IN PARK STRIP

PLAN VIEW

SECTION VIEW – HYDRANT BEHIND ABUTTING SIDEWALK

DRAWN BY
DHR

SCALE
NONE

DATE
1/98

STANDARD
DRAWING
FH-DET12

ST-WL-18
FLUSHING HYDRANT

12" TO 18"

PAINTED GREEN

CONCRETE SIDEWALK

18" MIN.

UNDISTURBED EARTH OR THRUST BLOCK

DRAINAGE PT. WITH 3 CU.FT. OF GRADED GRAVEL

BRASS NIPPLE, BRASS 90°, AND MALE ADAPTOR

2" TYPE "K" COPPER OR HDPE CTS-OD SDR-9 POLY TUBING

NOTES:
1. FLUSHING HYDRANTS MAY BE USED IN LOCATIONS PRE-APPROVED BY CITY ENGINEER.
2. TRACING WIRE SHALL TERMINATE AT FLUSHING HYDRANT SHUTOFF VALVE.
MINIMUM CLEARANCE AROUND A FIRE HYDRANT

FOR A PRIVATE LANE SERVING ONE OR TWO DWELLINGS AS OUTLINED IN MUNICIPAL CODE 18.50.060

26 FOOT WIDE DRIVABLE SURFACE FOR 20 FEET ON EACH SIDE OF THE HYDRANT
<table>
<thead>
<tr>
<th>DETAIL NAME</th>
<th>ABBREV.</th>
<th>PAGE #</th>
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<tbody>
<tr>
<td>Standard Manhole</td>
<td>STRD MH</td>
<td>ST-SS-01</td>
</tr>
<tr>
<td>Standard Connection to Existing Manhole</td>
<td>MH-EX-CONN</td>
<td>ST-SS-02</td>
</tr>
<tr>
<td>Drop Manhole w/ Manhole on Outside Sweep</td>
<td>DROPMH2MH45°</td>
<td>ST-SS-03</td>
</tr>
<tr>
<td>Manhole Cover</td>
<td>SSMH-LID</td>
<td>ST-SS-04</td>
</tr>
<tr>
<td>Sanitary Sewer Service Connection</td>
<td>SCONN</td>
<td>ST-SS-05</td>
</tr>
<tr>
<td>Manhole and Valve Box Marker</td>
<td>MHMARKER</td>
<td>ST-SS-06</td>
</tr>
<tr>
<td>Steel Casing for Sewer Pipe</td>
<td>CASING</td>
<td>ST-SS-07</td>
</tr>
</tbody>
</table>
STANDARD MANHOLE

LAYTON CITY STANDARD MANHOLE COVER
SEE ST-SS-04

Provide precast rings to bring cover to proper elevation (min 8" max 10"), grout rings in place.

Cone & wall sections to be "Reinforced concrete manhole sections" (ASTM C476) or as described in the specifications.

Profile

Flow

Flow

Plywood

3/4" plywood

Floor line

Slope 16:1

PREFORMED PLASTIC GASKETS OR CONCRETE MORTER

4", 5", OR 6" DIAMETER

3" minimum from bottom of section to top of highest pipe.

STEP DETAIL

MAXIMUM DEPTH (FROM SHOULDER TO TOP OF PIPE) 20 FEET

MINIMUM DEPTH 6'

Minimum depth 6'

Flow

SeWER

FLOW

D2

D3

NOTES:
1. Furnish and install 3/4" plywood false bottom cover in all new or existing manholes around which grading or surfacing is being performed.

2. If manhole is to be poured in place follow same pattern as shown except use 8" min. wall thickness.

3. Provide stubs where shown on the plan drawings.

4. Manholes may be 4", 5", or 6" as shown on the plan drawings.

5. Provide flexible joints in pipelines, 18" from outside face of manhole.

6. After all grading around manhole has been completed and final surfacing is in place, remove debris and temporary false bottom cover.
STANDARD CONNECTION TO EXISTING MANHOLE

NOTES:
1. FURNISH AND INSTALL 3/4" PLYWOOD FALSE BOTTOM COVER IN ALL NEW OR EXISTING MANHOLES AROUND WHICH GRADING OR SURFACING IS BEING PERFORMED.

2. MANHOLES MAY BE 4', 5', OR 6' AS SHOWN ON THE PLAN DRAWING.

3. PROVIDE FLEXIBLE JOINTS IN PIPELINES, 18" FROM OUTSIDE FACE OF MANHOLE.

4. AFTER ALL GRADING AROUND MANHOLE HAS BEEN COMPLETED AND FINAL SURFACING IS IN PLACE, REMOVE DEBRIS AND TEMPORARY FALSE BOTTOM COVER.

SECTION

PLAN

STANDARD DRAWING
MH-EX-CONN
ST-SS-02

DHR
NONE

3/96

REVISIONS
DROP MANHOLE
WITH MANHOLE ON OUTSIDE
DROP WITH 45° ON DROP

Construct new 4' Ø manhole next to standard manhole and over new outside drop. Manhole bottom to match fl of existing pipe. See standard manhole drawing (ST-SS-01).

Cut away top of pipe to access for cleaning.

Install 45° bend in manhole.

Vertical pipe.

Modify trough as necessary.

See standard manhole drawings ST-SS-01 and ST-SS-02 for manhole dimensions and details.
MANHOLE COVER

STANDARD MANHOLE FRAME AND COVER EQUAL TO D & L SUPPLY A-1180 MANHOLE RING & COVER (VENTED).

PLAN RING & COVER

SECTION

MARK "SEWER"

CONCRETE COLLAR

12" MAX. 8" MIN.
FINISH GRADE

DETAIL UNIMPROVED AREAS

NOTE: CONTRACTOR SHALL POUR A CONCRETE COLLAR (MIN. 12") AROUND THE CAST IRON RING, EVEN WHEN THE MANHOLE IS LOCATED IN AN UNIMPROVED LOCATION.

Layton City

STANDARD DRAWING
SSMH-LID
ST-SS-04
SANITARY SEWER SERVICE CONNECTION

TOP OF SERVICE LINE IS SAME ELEVATION AS TOP OF MAIN LINE PIPE

4" 45° WYE BRANCH OR TEE BRANCH

22 1/2° OR 45° BEND AS REQUIRED

SERVICE LINE MIN. 2% SLOPE

WATER TIGHT PLUG

SECTION

PROPERTY LINE

4" PVC PIPE

22 1/2° OR 45° BEND AS REQUIRED

4"-45° WYE BRANCH

WATER TIGHT PLUG

PLAN
MANHOLE & VALVE BOX MARKER

ORANGE TRIANGLE W/ REFLECTIVE TAPE BOTH SIDES OF PIPE

1 1/2" GALV. PIPE

6’ MIN.

CONCRETE FOOTING 2’ MIN. BURY

1’

2’
STEEL CASING FOR SEWER PIPE

SEWER PIPE

FOR CASING LENGTH & INVERT ELEV SEE PLAN & PROFILE

SEWER PIPE

SEAL EACH END OF CASING WITH NEOPRENE RUBBER END SEAL WITH STAINLESS STEEL BANDS CCI PIPELINE SYSTEMS MODEL ESC OR ESW AS APPLICABLE OR ACCEPTABLE EQUAL AT EACH END OF CASING.

ANY voids created by boring, jacking, or tunneling shall be filled by pressure grouting.

Casing spacers CCI pipeline system model CSP or CSC or acceptable equal, minimum of three spaces per length of pipe, to center the pipe inside the casing. Pipe throughout the length of the casing shall be at a continuous grade as shown in drawings.

NOTES:
1. Casing pipes shall be required as indicated on the drawings and/or where required by the city engineer.

2. The casing pipe shall be sized with a diameter equal to the outside bell diameter of the carrier pipe plus a minimum 4 inches.

3. Carrier pipe shall be tested before sealing the ends of the casing.

4. Carrier pipe shall be joint restraint.

5. Spacers shall be securely attached to carrier pipe per manufacturer's requirements.

6. Casing pipe shall be welded steel, ASTM A53, grade B or approved equivalent.

MINIMUM WALL THICKNESS OF CASINGS

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<thead>
<tr>
<th>DIAMETER</th>
<th>WALL THICKNESS</th>
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<tr>
<td>12&quot; &amp; UNDER</td>
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<tr>
<td>14&quot; - 18&quot;</td>
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<td>20&quot; - 22&quot;</td>
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<td>24&quot; - 26&quot;</td>
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<td>28&quot; - 32&quot;</td>
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<td>34&quot; - 42&quot;</td>
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DRAWN BY
STANDARD DRAWING
CASING
ST-SS-07
STANDARD PLANS
FOR STORM DRAIN

MAY 2019

Stephen Jackson, City Engineer
Shannon Hansen, Assistant City Engineer – Development
Alan McKean, Assistant City Engineer – Capital Projects
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<thead>
<tr>
<th>DETAIL NAME</th>
<th>ABBREV.</th>
<th>PAGE #</th>
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<tbody>
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<td>Location of Storm Drain Pipe</td>
<td>SD-LOC</td>
<td>ST-SD-01</td>
</tr>
<tr>
<td>Inlet Box – 15” Pipe</td>
<td>15” IB</td>
<td>ST-SD-02</td>
</tr>
<tr>
<td>Double Inlet Box Curb &amp; Gutter Location</td>
<td>DIB</td>
<td>ST-SD-03</td>
</tr>
<tr>
<td>Gutter Inlet Box</td>
<td>GTRINLET</td>
<td>ST-SD-04</td>
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<tr>
<td>Manhole Inlet</td>
<td>MH-INLET</td>
<td>ST-SD-05</td>
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<tr>
<td>5’ X 4’ Inlet Box</td>
<td>5X4INLET</td>
<td>ST-SD-06</td>
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<tr>
<td>Bicycle Safe Inlet Grate</td>
<td>BIKEGRATE</td>
<td>ST-SD-07</td>
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<tr>
<td>Cleanout Box – 12”, 15”, or 18” Pipe</td>
<td>12”-18” CO BOX</td>
<td>ST-SD-08</td>
</tr>
<tr>
<td>Cleanout Box – 21” – 30” Pipe</td>
<td>21”-30” CO BOX</td>
<td>ST-SD-09</td>
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<tr>
<td>Cleanout Box – 36” – 42” Pipe</td>
<td>36”-42” CO BOX</td>
<td>ST-SD-10</td>
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<tr>
<td>Cleanout Box – 48” Pipe</td>
<td>48” CO BOX</td>
<td>ST-SD-11</td>
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<tr>
<td>Cleanout Box with Manhole Lid</td>
<td>CO-MH-LID</td>
<td>ST-SD-12</td>
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<tr>
<td>Combination Cleanout Box/Inlet Box</td>
<td>COMBO</td>
<td>ST-SD-13</td>
</tr>
<tr>
<td>Combination Cleanout Box/Double Inlet Box</td>
<td>COMBO-DI</td>
<td>ST-SD-14</td>
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<td>Irrigation Diversion Box</td>
<td>IRR-CO</td>
<td>ST-SD-15</td>
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<td>Detention Pond Inlet/Outlet Structure</td>
<td>I/O STRUCTURE</td>
<td>ST-SD-16</td>
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<tr>
<td>Storm Drain &amp; Land Drain Manhole</td>
<td>SDMH</td>
<td>ST-SD-17</td>
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<tr>
<td>Manhole Cover</td>
<td>SDMH-LID</td>
<td>ST-SD-18</td>
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<td>Footing and Foundation Subdrain</td>
<td>FOOTING</td>
<td>ST-SD-19</td>
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<td>Pond Berm Cross Section</td>
<td>POND BERM</td>
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<td>SDBASIN SPRINKLER</td>
<td>ST-SD-21</td>
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<td>Combination Cleanout/Inlet Box in Waterway</td>
<td>COMBO-WWY</td>
<td>ST-SD-22</td>
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<td>Inlet Box – 15” Pipe (Stub to IRR Ditch)</td>
<td>IB – DITCH</td>
<td>ST-SD-23</td>
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<td>8” Drain Line Installation for Slope Stabilization/Dewatering</td>
<td>8” PERF</td>
<td>ST-SD-24</td>
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# Location of Storm Drain Pipe

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<tr>
<th>Pipe Diameter</th>
<th>Horizontal Offset from TBC to CL of Pipe (FT.)</th>
<th>Min Vertical Offset from TBC (FT.) to FL of Pipe</th>
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<td>0.94</td>
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<td>48&quot;</td>
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**Drawn By:** DHR  
**Scale:** NONE  
**Date:** 3/96  
**Revisions:** 5/12
INLET BOX – 15” PIPE

CURB & CUTTER PLAN

TOP BACK OF CURB

MINIMUM GRATE OPENING 300 SQ. INCHES

INLET FRAME AND GRATE WITH ADJUSTABLE CURB BOX (D&L FOUNDRY I-3517 OR ACCEPTABLE EQUAL)

SECTION A

1. ALL REINFORCEMENT SHALL BE #4 DEFORMED STEEL, GRADE 60, KSI PER APWA 03 20 00.

2. ALL REINFORCEMENT SHALL BE PLACED AT 9” O.C. EACH WAY IN THE FLOOR AND THE WALLS.

3. THE ADJUSTABLE CURB BOX INLET GRATE SHALL BE CYCLE SAFE (D&L FOUNDRY I-3517 OR ACCEPTABLE EQUAL)

3A. THE WATERWAY INLET GRATE SHALL BE CYCLE SAFE AND SHALL BE SET ON 3”x3”x1/2” ANGLE IRON SUPPORTS CAST IN EACH END OF THE BOX (D&L SUPPLY I-1805 OR ACCEPTABLE EQUAL) (SEE LEDGE DETAIL).

4. CONCRETE SHALL BE CLASS 4,000 PER APWA 03 30 04.

5. ALL PIPES IN THE BOX SHALL BE CUT WITH THE INTERIOR OF THE BOX AND GROUTED SMOOTH.

6. REBAR SHALL HAVE 2” CLEAR ON EARTH SIDE OF THE STRUCTURE.

7. IF PRECAST BOX HAS BEEN ALLOWED, A CONCRETE COLLAR SHALL BE POURED AT ALL CONNECTIONS.

NOTES:

*INTERIOR BOX SIZE 1’-9” X 36”

STANDARD DRAWING

Layton City

ST-SD-02

DRAWN BY DHR

SCALE NONE

DATE 3/96

REVISIONS 4/18

WATERWAY PLAN

BICYCLE SAFE INLET GRATE

D & L SUPPLY I-1805 OR ACCEPTABLE EQUAL

SECTION B

VARIATES

CURB BOX ADJUSTABLE 6 TO 9 INCHES

6” WALLS

1-9” O.C. EACH WAY

4 BAR @ 9” O.C. EACH WAY

3” MIN

3”x3”x0.5” ANGLE IRON (17” LONG) EACH END OF BOX

LEDGE DETAIL

WATERWAY INLET GRATE

3”

2.5”
DOUBLE INLET BOX
CURB & GUTTER LOCATION

NOTES:
1. ALL REINFORCEMENT SHALL BE #4 DEFORMED STEEL, GRADE 60.
   KSI PER APWA 03 20 03.
2. ALL REINFORCEMENT SHALL BE PLACED AT 9" O.C. EACH WAY IN
   THE FLOOR AND THE WALLS.
3. THE ADJUSTABLE CURB BOX INLET GRATE SHALL BE BICYCLE
   SAFE (OLYMPIC FOUNDRY 1-3517 OR ACCEPTABLE EQUAL).
4. CONCRETE SHALL BE CLASS 4,000 PER APWA 03 30 04.
5. ALL PIPES IN THE BOX SHALL BE CUT AND GROUTED SMOOTH.
6. REBAR SHALL HAVE 2" CLEAR ON EARTH SIDE OF STRUCTURE.
7. IF PRECAST BOX ALLOWED, A CONCRETE COLLAR SHALL BE
   POURED AT ALL CONNECTIONS.

PLAN - DOUBLE INLET

SECTION B

#4 BAR @
9" O.C.
EACH WAY

CURB BOX ADJUSTABLE
6 TO 9 INCHES

SECTION A

INLET FRAME AND GRATE
WITH ADJUSTABLE CURB BOX
(D&L FOUNDRY 1-3517
OR ACCEPTABLE EQUAL)
GUTTER INLET BOX

MINIMUM GRATE OPENING
300 SQ. INCHES

PLAN

INLET FRAME AND GRATE
WITH ADJUSTABLE CURB BOX
(D&L FOUNDRY 1-3517
OR ACCEPTABLE EQUAL)

"INTERIOR BOX SIZE 1'-8 1/2" X 36"
(PIPES 36 INCHES AND SMALLER)

NOTES:

1. ALL REINFORCEMENT SHALL BE #4 DEFORMED STEEL,
GRADE 60 KSI PER APWA 03 20 00.

2. ALL REINFORCEMENT SHALL BE PLACED AT 9" O.C.
EACH WAY IN THE FLOOR AND THE WALLS.

3. THE ADJUSTABLE CURB BOX INLET GRATE SHALL BE
BICYCLE SAFE (D&L FOUNDRY 1-3517 OR ACCEPTABLE
EQUAL).

4. CONCRETE SHALL BE CLASS 4,000 PER APWA
03 30 04.

5. ALL PIPES IN THE BOX SHALL BE CUT WITH THE
INTERIOR OF THE BOX AND GROUTED SMOOTH.

6. REBAR SHALL HAVE 2" CLEAR ON EARTH SIDE OF
THE STRUCTURE.

7. IF PRECAST BOX HAS BEEN ALLOWED, A CONCRETE
COLLAR SHALL BE Poured AT ALL CONNECTIONS.
MANHOLE INLET
WITH INLET GRATE COVER
CURB & GUTTER LOCATION

MINIMUM GRATE OPENING 300 SQ. INCHES

PLAN

INLET FRAME AND GRATE
WITH ADJUSTABLE CURB BOX
(D&L FOUNDRY 1-3517
OR ACCEPTABLE EQUAL)

CURB BOX ADJUSTABLE
6 TO 9 INCHES

NOTES:

1. ALL REINFORCEMENT SHALL BE #4 DEFORMED STEEL, GRADE 60. KSI PER APWA 03 30 00.

2. ALL REINFORCEMENT SHALL BE PLACED AT 9" O.C. EACH WAY IN THE FLOOR AND THE WALLS.

3. THE ADJUSTABLE CURB BOX INLET GRATE SHALL BE BICYCLE SAFE (D&L FOUNDRY 1-3517 OR ACCEPTABLE EQUAL).

4. CONCRETE SHALL BE CLASS 4,000 PER APWA 03 30 04.

5. ALL PIPES IN THE BOX SHALL BE CUT WITH THE INTERIOR OF THE BOX AND GROUTED SMOOTH.

6. REBAR SHALL HAVE 2" CLEAR ON EARTH SIDE OF THE STRUCTURE.

SECTION A
SEE DRAWING "ST-SD-17" FOR MANHOLE CONSTRUCTION DETAILS

Layton City
STANDARD DRAWING
MH-INLET
ST-SD-05

DRAWN BY
DHR
SCALE
NONE
DATE
3/96
REVISIONS
4/18
5' X 4' INLET BOX

NOTES:
1. ALL REINFORCEMENT SHALL BE #4 DEFORMED STEEL, GRADE 60 KSI PER APWA 03 20 00.
2. ALL REINFORCEMENT SHALL BE PLACED AT 9" O.C. EACH WAY IN THE FLOOR AND THE WALLS.
3. THE INLET GRATE SHALL BE SET ON 3"x3"x1/2" ANGLE IRON SUPPORTS CAST IN EACH END OF THE BOX.
4. CONCRETE SHALL BE CLASS 4,000 PER APWA 03 30 04.
5. ALL PIPES IN THE BOX SHALL BE CUT WITH THE INTERIOR OF THE BOX AND GROUTED SMOOTH.
6. REBAR SHALL HAVE 2" CLEAR ON EARTH SIDE OF THE STRUCTURE.
7. TO BE USED IN FIELDS OR PARKING LOT AREAS.

BICYCLE SAFE STEEL GRATING
(NOT TO SCALE)
BICYCLE SAFE INLET GRATE

WELD 0.375 φ BAR ON GRATE TO PROVIDE FOR BICYCLE SAFETY (13 EACH)

WELD 2.5”x0.5”x16” STEEL BARS ACROSS EACH END.

2.5”x0.5” SPACER BARS WELD BETWEEN LONGITUDINAL BARS (8 REQUIRED).

9 – 2.5”x0.5”x3’-9” LONG STEEL BARS

DETAILS - STEEL GRATE

RECTANGULAR FRAME AND GRATE
D&L SUPPLY I-1805 OR ACCEPTABLE EQUAL

3”x3”x0.5” ANGLE IRON (17” LONG) EACH END OF BOX

LEDGE DETAIL
WATERWAY INLET GRATE

STANDARD DRAWING
BIKEGRATE
ST-SD-07
CLEANOUT BOX – 12", 15" OR 18" PIPE

NOTES:

1. ALL REINFORCEMENT SHALL BE #4 DEFORMED STEEL, GRADE 60 KSI PER APWA 03 20 00.

2. ALL REINFORCEMENT SHALL BE PLACED AT 9 INCHES O.C. EACH WAY IN THE FLOOR AND WALLS.

3. THE MANHOLE FRAME AND COVER SHALL BE D & L SUPPLY MODEL A-1181 OR ACCEPTABLE EQUAL.

4. CONCRETE SHALL BE CLASS 4,000 PER APWA 03 30 04.

5. ALL PIPES IN THE BOX SHALL BE CUT FLUSH WITH THE INTERIOR OF THE BOX AND GROUTED SMOOTH.

6. REBAR SHALL HAVE 2" CLEAR ON EARTH SIDE OF STRUCTURE.

7. IF A PRECAST BOX HAS BEEN ALLOWED, A CONCRETE COLLAR SHALL BE Poured AT ALL CONNECTIONS.

8. TOP OF DECK SHALL PROVIDE A MINIMUM COVER OF 9" WITH A MINIMUM OF 6" THICK ROADBASE PLUS THICKNESS OF ASPHALT FROM FINISHED GRADE.

SEE ST-SD-01 STANDARD FOR MINIMUM DEPTH OF BOX FOR CONCRETE PIPE
CLEANOUT BOX – 21” – 30” PIPE

NOTES:
1. ALL REINFORCEMENT SHALL BE #4 DEFORMED STEEL, GRADE 60 KSI PER APWA 03 20 00.
2. ALL REINFORCEMENT SHALL BE PLACED AT 9 INCHES O.C. EACH WAY IN THE FLOOR AND WALLS.
3. THE MANHOLE FRAME AND COVER SHALL BE D & L SUPPLY MODEL A-1181 OR ACCEPTABLE EQUAL.
4. CONCRETE SHALL BE CLASS 4,000 PER APWA 03 30 04.
5. ALL PIPES IN THE BOX SHALL BE CUT FLUSH WITH THE INTERIOR OF THE BOX AND GROUTED SMOOTH.
6. REBAR SHALL HAVE 2 INCHES CLEAR ON EARTH SIDE OF STRUCTURE.
7. IF A PRECAST BOX HAS BEEN ALLOWED, A CONCRETE COLLAR SHALL BE POURED AT ALL CONNECTIONS.
8. TOP OF DECK SHALL PROVIDE A MINIMUM COVER OF 9” WITH A MINIMUM OF 6” THICK ROADBASE PLUS THICKNESS OF ASPHALT FROM FINISHED GRADE.

Layton City
STANDARD DRAWING
21”–30” CO BOX
ST-SD–09

DRAWN BY: DHR
SCALE: NONE
DATE: 8/05
REVISIONS:
CLEANOUT BOX - 36” - 42” PIPE

**NOTES:**

1. ALL REINFORCEMENT SHALL BE #4 DEFORMED STEEL, GRADE 60 KSI PER APWA 03 20 00.

2. ALL REINFORCEMENT SHALL BE PLACED AT 9 INCHES O.C. EACH WAY IN THE FLOOR AND WALLS.

3. THE MANHOLE FRAME AND COVER SHALL BE D & L SUPPLY MODEL A-1181 OR ACCEPTABLE EQUAL.

4. CONCRETE SHALL BE CLASS 4,000 PER APWA 03 30 04.

5. ALL PIPES IN THE BOX SHALL BE CUT FLUSH WITH THE INTERIOR OF THE BOX AND GROUTED SMOOTH.

6. REBAR SHALL HAVE 2 INCHES CLEAR ON EARTH SIDE OF STRUCTURE.

7. IF A PRECAST BOX HAS BEEN ALLOWED, A CONCRETE COLLAR SHALL BE Poured AT ALL CONNECTIONS.

8. TOP OF DECK SHALL PROVIDE A MINIMUM COVER OF 9” WITH A MINIMUM OF 6” HICK ROADBASE PLUS ASPHALT THICKNESS.

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**DRAWN BY**

Layton City

**STANDARD DRAWING**

36”-42” CO BOX

**ST-SD-10**
CLEANOUT BOX - 48" PIPE
WITH MANHOLE COVER AND CONCRETE COLLAR

NOTES:
1. ALL STEEL REINFORCEMENT SHALL BE DEFORMED STEEL, GRADE 60 KSI PER AWWA 03 20 00.
2. ALL REINFORCEMENT WILL BE PLACED AT 9" O.C. EACH WAY IN THE FLOOR AND THE WALLS.
3. THE CLEANOUT COVER SHALL BE MODEL A-1181 AS MANUFACTURED BY DAIL SUPPLY OR EQUAL.
4. CONCRETE SHALL BE CLASS 4,000 PER AWWA 03 30 04.
5. ALL PIPES IN THE BOX SHALL BE CUT FLUSH WITH THE INTERIOR OF THE BOX AND GROUTED SMOOTH.
6. REBAR SHALL HAVE 2 INCHES CLEAR ON EARTH SIDE OF STRUCTURE.
7. WALL AND FLOOR THICKNESS SHALL BE 8 INCHES THICK.
8. IF A PRECAST BOX HAS BEEN ALLOWED, A CONCRETE COLLAR SHALL BE POURED AT ALL CONNECTIONS.
9. TOP OF DECK SHALL PROVIDE A MINIMUM COVER OF 9" WITH A MINIMUM OF 6" THICK ROADBASE PLUS THICKNESS OF ASPHALT.

DRAWN BY
DHR

SCALE
NONE

DATE
3/05

REVISIONS
3/19

Layton City
STANDARD DRAWING
48" CO BOX
ST-SD-11
CLEANOUT BOX WITH MANHOLE LID

CONSTRUCT 8" THICK BY 12" WIDE CONCRETE COLLAR

STANDARD MANHOLE FROM AND COVER EQUAL TO D&L SUPPLY A-1181 MANHOLE RING AND COVER (SOLID).

PLAN

ADD CONCRETE GRADE RINGS IF NECESSARY. SEE STANDARD CONCRETE GRADE RING ADJUSTMENT.

#4 @ 9" O.C. EACH WAY

SEE CLEANOUT BOX STANDARDS FOR BOX DIMENSIONS.

6" SAND TRAP AREA

4"

8" CONC. COLLAR

VARIES

8"

VARIES

VARIES

6"

GRavel BEDDING AS REQUIRED

SECTION A

STANDARD DRAWING
CO-MH-LID
ST-SD-12
COMBINATION
CLEANOUT/INLET BOX

NOTES:

1. ALL REINFORCEMENT SHALL BE #4 DEFORMED STEEL, GRADE 60 KSI PER APWA 03 20 00.

2. ALL REINFORCEMENT SHALL BE PLACED AT 9" O.C. EACH WAY IN THE FLOOR AND THE WALLS.

3. THE CLEANOUT COVER SHALL BE MODEL A-1181 AS MANUFACTURED BY D & L SUPPLY OR ACCEPTABLE EQUAL.

4. THE ADJUSTABLE CURB BOX INLET GRATE SHALL BE BICYCLE SAFE (OLYMPIC FOUNDRY I-3517 OR ACCEPTABLE EQUAL).

5. CONCRETE SHALL BE CLASS 4,000 PER APWA 03 30 04.

6. ALL PIPES IN THE BOX SHALL BE CUT WITH THE INTERIOR OF THE BOX AND GRouted SMOOTH.

7. WALL THICKNESS SHALL BE INCREASED TO 8 INCHES FOR PIPES 36 INCHES AND LARGER.

8. REBAR SHALL HAVE 2" CLEAR ON EARTH SIDE OF STRUCTURE.

9. SEE ST-SD-01 STANDARD FOR EXACT HORIZONTAL LOCATION OF PIPE IN BOX.

10. FRAME MUST TOUCH WALL ON A MINIMUM OF 3 SIDES.

11. IF A PRECAST BOX HAS BEEN ALLOWED, A CONCRETE COLLAR SHALL BE POURED AT ALL CONNECTIONS.
COMBINATION CLEANOUT/DOUBLE INLET BOX

NOTES

1. ALL REINFORCEMENT SHALL BE #4 DEFORMED STEEL, GRADE 60 KSI PER APWA 03 20 00.

2. ALL REINFORCEMENT SHALL BE PLACED AT 9" O.C. EACH WAY IN THE FLOOR AND THE WALLS.

3. THE CLEANOUT COVER SHALL BE MODEL A–1181 AS MANUFACTURED BY D & L SUPPLY OR ACCEPTABLE EQUAL.

4. THE ADJUSTABLE CURB BOX INLET GRATE SHALL BE BICYCLE SAFE (OLYMPIC FOUNDRY I–3517 OR ACCEPTABLE EQUAL).

5. CONCRETE SHALL BE CLASS 4,000 PER APWA 03 30 04.

6. ALL PIPES IN THE BOX SHALL BE CUT WITH THE INTERIOR OF THE BOX AND GROUTED SMOOTH.

7. WALL THICKNESS SHALL BE INCREASED TO 8 INCHES FOR PIPES 36 INCHES AND LARGER.

8. REBAR SHALL HAVE 2" CLEAR ON EARTH SIDE OF STRUCTURE.

9. SEE ST–SD–01 STANDARD FOR EXACT HORIZONTAL LOCATION OF PIPE IN BOX.

10. FRAME MUST TOUCH THE WALLS ON A MINIMUM OF 3 SIDES.

11. IF A PRECAST BOX HAS BEEN ALLOWED, A CONCRETE COLLAR SHALL BE POURED AT ALL CONNECTIONS.
IRRIGATION DIVERSION BOX

24" X 42" TYPICAL CLEANOUT BOX

FLOW

3'-0"

A

4'-6"

FLOW

PIECE ORIENTATION AND SIZE VARIES

HEADGATES

NOTES
1. ALL REINFORCEMENT SHALL BE #4 DEFORMED STEEL, GRADE 60 KSI PER APWA 03 20 00.

2. ALL REINFORCEMENT WILL BE PLACED AT 9" O.C. EACH WAY IN THE FLOOR AND THE WALLS.

3. THE CLEANOUT COVER SHALL BE MODEL H-1801 AS MANUFACTURED BY D & L SUPPLY OR EQUAL (LID SIZE IS 20" X 48").

4. CONCRETE SHALL BE CLASS 4,000 APWA 03 30 04.

5. ALL PIPES IN THE BOX SHALL BE CUT FLUSH WITH THE INTERIOR OF THE BOX AND GROUTED SMOOTH.

6. REBAR SHALL HAVE 2" CLEAR ON EARTH SIDE OF STRUCTURE.

7. HEADGATES MUST BE GALVANIZED STEEL WITH 14 GAUGE SLIDE GATES.
NOTES:
1. ALL REINFORCEMENT SHALL BE #4 DEFORMED STEEL, GRADE 60 KSI PER APWA 03 20 00.
2. CONCRETE SHALL BE CLASS 4,000 PER APWA 03 30 04.
3. ALL PIPES IN THE BOX SHALL BE CUT WITH THE INTERIOR OF THE BOX AND CROUTED SMOOTH.
4. PROTECTIVE GRATE SHALL BE BOLTED TO HEADWALLS, TYPICALLY 4.5' X 3' WITH 4" X 1" SPACED GRATING USING 2" X 3/16" GALVANIZED STEEL FLAT BAR.
STORM DRAIN & LAND DRAIN MANHOLE

NOTE:
1. ALL PIPES IN THE MANHOLE SHALL BE CUT FLUSH WITH THE INTERIOR OF THE MANHOLE AND GROUTED SMOOTH.

2. FURNISH AND INSTALL 3/4" PLYWOOD FALSE BOTTOM COVER IN ALL NEW OR EXISTING MANHOLES AROUND WHICH GRADING OR SURFACING IS BEING PERFORMED.

3. IF MANHOLE IS TO BE Poured IN PLACE FOLLOW SAME PATTERN AS SHOWN EXCEPT USE 8" MIN. WALL THICKNESS.

4. PROVIDE STEPS WHERE SHOWN ON THE PLAN DRAWINGS.

5. MANHOLES MAY BE 4", 5", OR 6" AS SHOWN ON THE PLAN DRAWINGS.

6. AFTER ALL GRADING AROUND MANHOLE HAS BEEN COMPLETED AND FINAL SURFACING IS IN PLACE, REMOVE DEBRIS AND TEMPORARY FALSE BOTTOM COVER.
MANHOLE COVER

PLAN RING & COVER

SECTION

NOTE: CONTRACTOR SHALL POUR A
CONCRETE COLLAR (MIN. 12") AROUND THE
CAST IRON RING, EVEN WHEN THE MANHOLE
IS LOCATED IN AN UNIMPROVED LOCATION.

STANDARD MANHOLE FRAME AND
COVER EQUAL TO D&L SUPPLY
A-1181 MANHOLE RING &
COVER (SOLID)
TYPICAL FOOTING AND FOUNDATION SUBDRAIN

NOTES:
1. MINIMUM OF TWO CLEANOUTS REQUIRED IN THE FOLLOWING LOCATIONS:
   - WHERE THE LATERAL COMES TO THE HOME AND TEES OFF
   - ANYWHERE ALONG THE REAR PORTION OF THE HOUSE OPPOSITE OF THE GARAGE

FINISHED GRADE

DAMP PROOF WALL & FOOTING

"PEA" GRAVEL OR 3/4" TO 1" MINUS GAP-GRADED GRAVEL

ALTERNATE LOCATION FOR SUBDRAIN

4" MIN.

TO FOOTING DRAIN LATERAL

3" DIA. MINIMUM CLASS 200 RIDGED SLOTTED OR PERFORATED PIPE (PROPERLY BEDDED)

GEOTEXTILE MIRAFI OR EQUIVALENT

STANDARD DRAWING
FOOTING
ST−SD−19
POND BERM CROSS SECTION

ADDITIONAL REQUIREMENTS FOR BERM(S) (GRADING, TESTING, EXCAVATION, BEDDING, BORROW MATERIAL, COMPACTION, ETC.):

(1) THE EMBANKMENT SHALL BE CONSTRUCTED WITH IMPORTED CLAY (CL, BASED ON THE UNIFIED SOIL CLASSIFICATION) HAVING THE FOLLOWING PROPERTIES: LIQUID LIMIT INDEX OF 50 (MAXIMUM) TO 30 (MINIMUM), AND PLASTICITY INDEX OF 25 (MAXIMUM) TO 13 (MINIMUM), AT A 3 FOOT HORIZONTAL TO 1 FOOT VERTICAL SLOPE. SLOPES WHICH ARE CONSTRUCTED IN AREAS WHERE THE EXCAVATION WILL EXTEND BELOW THE CURRENT WATER LEVEL REQUIRE THE INSTALLATION OF AN 8 INCH PVC SDR-35 D--3034 PIPE TO INTERCEPT THE WATER PRIOR TO REACHING THE SLOPE. THIS DRAIN LINE PROVIDES THE DEWATERING AND SLOPE STABILIZATION TYPICALLY REQUIRED BY THE SOILS REPORT.

(2) PRIOR TO PLACING GRADING FILL AND FILL FOR EMBANKMENTS, REMOVE THE EXISTING SURFACE ORGANIC MATERIAL, SOD, TOPSOIL AND OTHER DELETERIOUS MATERIALS.

(3) THE BASE OF THE CLAY EMBANKMENTS SHALL BE ESTABLISHED A MINIMUM OF 1 FOOT BELOW THE ADJACENT GROUND ELEVATION. PRIOR TO PLACEMENT OF FILL, THE EXPOSED EMBANKMENT SUBGRADE SHALL BE OBSERVED BY LAYTON CITY.

(4) EMBANKMENT FILL SHALL BE COMPACTED AT A MOISTURE CONTENT WITHIN 2% OF optimum, (Drying of the soil may be required), placed in 8 inch lifts, in horizontal layers and compacted with a medium to heavy weight segmented pad or sheep’s foot roller to a minimum of 95% of the maximum dry density as determined by ASTM D-698 before placing the subsequent lift.

(5) FILL PLACEMENT SHALL BE CONTINUOUS TO MAINTAIN CONSTANT MOISTURE CONTENT. IF EMBANKMENTS ARE CONSTRUCTED WITH SIGNIFICANT TIME PERIODS BETWEEN PLACEMENT OF LIFTS, THE UPPER 6 INCHES OF THE FILL SURFACE SHALL BE SCARIFIED, MOISTURE CONDITIONED, AND RECOMPACTED, AS RECOMMENDED ABOVE, BEFORE PLACING AND COMPACTING THE SUBSEQUENT LIFT.

(6) EMBANKMENT COMPACTING AND MOISTURE CONTENT SHALL BE EVALUATED DURING CONSTRUCTION THROUGH VISUAL OBSERVATION AND FIELD TESTING WITH A NUCLEAR DENSITY GAUGE.

(7) INTERIOR AND EXTERIOR EMBANKMENT SLOPES SHALL BE CONSTRUCTED NO STEEPER THAN 3H:1V.

(8) EMBANKMENTS SHALL HAVE A MINIMUM CREST WIDTH OF 5 FEET. THE CREST SHALL BE SLOPED AT A MINIMUM OF 1% TOWARD THE POND.

(9) THE EMBANKMENTS SHALL BE OVER BUILT A MINIMUM OF 2 FEET, AND THEN TRIMMED BACK TO THEIR FINAL SLOPE CONFIGURATION (DUE TO DIFFICULTY IN COMPACTION THE OUTER PORTION OF SLOPING FILLS).

(10) THE BERM EDGES SHALL BE ROUNDED TO A MINIMUM OF A 5-FOOT RADIUS AT THE BOTTOM AND 2-FOOT RADIUS AT THE TOP.

(11) 6” OF TOPSOIL SHALL BE PLACED OVER CLAY CORE BERM FOR LANDSCAPING SOD.

(12) COMPACTION TESTING SHALL OCCUR EVERY 100 FEET ALONG THE CENTERLINE OF THE BERM FOR EACH LIFT.
STORM DRAIN DETENTION BASIN SPRINKLING SYSTEM SPECIFICATIONS FOR CITY PONDS

NOTES:
1. FOR LARGE RECTANGLE VALVE BOXES, INSTALL CARSON—BROOKS PLASTICS, INC. MODEL NUMBER 1220–4 NON BOLT T—COVER AND MODEL 1220–12 BOX IN GREEN.
2. FOR SMALL CIRCULAR VALVE BOXES, INSTALL CARSON—BROOKS PLASTICS, INC. MODEL 910–2 NON BOLT COVER AND MODEL 910–10 BODY IN GREEN.
3. FOR QUICK COUPLING VALVES, INSTALL RAIN BIRD QUICK COUPLING VALVES. 1” MINIMUM.
4. FOR CONTROL VALVES, INSTALL RAIN BIRD EFB—CP—R SERIES VALVES.
5. FOR CONTROLLERS, INSTALL RAIN BIRD ESP—MC SERIES OUTDOOR CONTROLLER.
6. FOR SPRAY HEADS, INSTALL RAIN BIRD IRRIGATION PRODUCTS. DESIGN SYSTEM FOR HEAD TO HEAD COVERAGE.
7. FOR PIPE, INSTALL PWpoly POLY—LD P.R. 125 PSI SCHEDULE 40 PIPE, MATERIAL IS LINEAR LOW DENSITY POLYETHYLENE PE 1404 AND MEETS CELL CLASS 123110C.
8. INSTALL BACKFLOW PREVENTION ON ALL SPRINKLER SYSTEMS CONNECTED TO CULINARY WATER AS REQUIRED BY LAYTON CITY AND UTAH DIVISION OF DRINKING WATER STANDARDS.
COMBINATION CLEANOUT/INLET BOX IN A WATERWAY

NOTES:

1. All reinforcement shall be #4 deformed steel, grade 60 KSI per APWA 03 20 00.

2. All reinforcement shall be placed at 9" O.C. each way in the floor and the walls.

3. The cleanout cover shall be model A-1181 as manufactured by D & L Supply or acceptable equal.

4. The adjustable curb box inlet grate shall be bicycle safe (Olympic Foundry 1-3517 or acceptable equal).

5. Concrete shall be class 4,000 per APWA 03 30 04.

6. All pipes in the box shall be cut with the interior of the box and grouted smooth.

7. Rebar shall have 2" clear on earth side of structure.

8. If a precast box has been allowed, a concrete collar shall be poured at all connections.
INLET BOX – 15” PIPE
WITH STUB TO IRRIGATION DITCH

CURB & GUTTER PLAN

TOP BACK OF CURB

MINIMUM GRATE OPENING 300 SQ. INCHES

INLET FRAME AND GRATE WITH ADJUSTABLE CURB BOX
(OLYMPIC FOUNDRY I-3517 OR ACCEPTABLE EQUAL)

* INTERIOR BOX SIZE 2’ X 3’

NOTES:
1. ALL REINFORCEMENT SHALL BE #4 DEFORMED STEEL, GRADE 60 KSI PER APWA 03 20 00.

2. ALL REINFORCEMENT SHALL BE PLACED AT 9” O.C. EACH WAY IN THE FLOOR AND THE WALLS.

3. THE ADJUSTABLE CURB BOX INLET GRATE SHALL BE BICYCLE SAFE. OLYMPIC FOUNDRY I-3517 OR ACCEPTABLE EQUAL.

3A. THE WATERWAY INLET GRATE SHALL BE BICYCLE SAFE AND SHALL BE SET ON 3” X 3” X 1/2” ANGLE IRON SUPPORTS CAST IN EACH END OF THE BOX. D & L SUPPLY I-1805 OR ACCEPTABLE EQUAL. (SEE LARGE DETAIL)

4. CONCRETE SHALL BE CLASS 4,000 PER APWA 03 30 04.

5. ALL PIPES IN THE BOX SHALL BE CUT WITH THE INTERIOR OF THE BOX AND GROUTED SMOOTH.

6. REBAR SHALL HAVE 2” CLEAR ON EARTH SIDE OF STRUCTURE.
8 INCH DRAIN LINE INSTALLATION
FOR SLOPE
STABILIZATION/DEWATERING

FINISH GRADE TOP OF GROUND

WRAP FABRIC OVER GRAVEL AND DOWN SIDES A MIN 1.0 FT (FABRIC TO BE USED WITH PERFORATED PIPE ONLY)

DEPTH VARIES

1" MINUS GAP-GRATED GRAVEL FROM 6 INCHES BELOW PIPE TO 1.0 FT. BELOW FINISHED GRADE FOR BOTH PERFORATED AND PVC PIPE.

GEOTEXTILE MIRAFI OR EQUIVALENT (TO BE USED WITH PERFORATED PIPE ONLY).

6" MIN.

8" PVC PIPE OR CORRUGATED PERFORATED PIPE.
STANDARD PLANS
FOR STREET LIGHTING

MAY 2019
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<td>Single Street Light Installation</td>
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<td>Rocky Mountain Power Detail</td>
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STANDARD RESIDENTIAL POLE AND FIXTURE SL-02

SUBDIVISION ROADS – 66' ROW AND LESS

LUMILOCK LED SPECIFICATIONS:
- TYPE III ASYMMETRIC DISTRIBUTION.
- 4000K (CCT) 40 LUXEON REBEL ES LED's ON ALUMINUM CORE PCB. SEALED ACRYLIC LENS, IP66 RATED.
- MINIMUM 65 COLOR RENDERING INDEX (CRI).
- 120-277 VAC, 50-60Hz AUTO SENSING.
- 10kVA/10kA SURGE SUPPRESSION BUILT IN.

40 LED MODULE:
TYPE III LUMILOCK, IP66 RATED
DRIVER COVER:
DIE-CAST ALUMINUM, TOOL-LESS ENTRY
GLOBE HOLDER:
DIE-CAST ALUMINUM
DRIVER ENCLOSURE:
DIE-CAST ALUMINUM, TOOL-LESS ENTRY ACCESS DOOR
SLIP FITTER:
3" I.D.

LUMILOCK LED ASSEMBLY

PHOTOCELL:
TWIST-LOCK 8YR WARRANTY

FASTENERS:
STAINLESS STEEL HEX HEAD BOLTS

TOP VIEW

12'-0"

MOUNTAIN STATES LIGHTING POLE
#16"OH/12" AG RTS/3-5.25-BK
POLE: 12' ABOVE GRADE (16' OVERALL)
SHAFT: TAPERED STEEL
MIN 8 EPA, DIRECT BURIAL TYPE

MSL WASHINGTON DECORATIVE BASE
#22"H x 17"W WASH/LAYTON CITY/HH/GL/BK POLYURETHANE 1/2" MIN. THICKNESS

CONCRETE MOW STRIP

COLD TAP EPOXY COATING
UNDERGROUND PORTION OF POLE 4' MINIMUM

WIREWAY HOLE

FINISH:
BLACK

BASE DETAIL
STANDARD RESIDENTIAL
LIGHT FIXTURE – SL-02A
(WITH OPTIONAL CAGE ON
FIXTURE)

MOUNTAIN STATES POLE #
16'0H/12' AG RTS/3-5.25/17”
WASH) NAME=HH=GL=BK
POLE: 12’ ABOVE GRADE
(16’ OVERALL)
SHAFT: TAPERED STEEL
MIN 8 EPA, DIRECT BURIAL TYPE

BASE DETAIL
FINISH: BLACK

MOUNTAIN STATES DECORATIVE
BASE 23” H x 17” W
WASH/LAYTON CITY/HH/GL/BK
POLYURETHANE 1/2” MIN.
THICKNESS GOLD TIPPED LOGO

PRE-CAST CONCRETE
MOW STRIP

COLD TAR EPOXY COATING
UNDERGROUND PORTION
OF POLE 4’ MINIMUM

HADCO FIXTURE:
#C6549C-40LED
TYPICAL RESIDENTIAL LIGHT FIXTURE - SL-02B
(WITH OPTIONAL CAGE AND FLUTED POLE)

HADCO FIXTURE:
#C6549C-40LED

MOUNTAIN STATES POLE #
16'OH/12' AG EFA/17" WASH)
NAME—HH—GL—BK
POLE: 12' ABOVE GRADE
(16' OVERALL)
SHAFT: FLUTED STEEL
MIN 10 EPA, DIRECT BURIAL TYPE

BASE DETAIL
FINISH: BLACK

MOUNTAIN STATES DECORATIVE
BASE 23" H x 17" W WASH/
LAYTON CITY/HH/GL/BK
POLYURETHANE 1/2" MIN.
THICKNESS GOLD TIPPED LOGO

PRE-CAST CONCRETE
MOW STRIP

WIREWAY HOLE

5/11
1/12

STANDARD DRAWING
SL-02B OPT. CAGE, FLUTE
ST-LT-04
DOUBLE LIGHT FLUTED POLE – SL-03
COMMERCIAL AND/OR RESIDENTIAL AS DESIGNATED BY THE CITY ENGINEER

TWIN ARM BRACKET: CAST ALUMINUM
2-LITE @ 180 W/ CENTER HUB TO ACCOMMODATE 4” POLE TENON W/ DUPLEX 120V RECEPTACLE

POLE BY MOUNTAIN STATES LIGHTING
PART# 14EFA-5/14S-TT/3x30D-FRANK(LOGO)
–BLACK (PART # IS FOR POLE & DECORATIVE BASE) 14” FLUTED ALUMINUM .25” WALL THICKNESS PAINTED BLACK WITH FIRST 16” OF POLE AND BASE PLATE TO BE COATED WITH INDUSTRIAL COLD GALV MIN EPA OF 20 IN 80 MPH ZONE (1.3 GUST FACTOR)

DECORATIVE BASE BY MOUNTAIN STATES LIGHTING
PART# 17” FRANK(LOGO)-HDE8-BK (BASE ONLY)
40”H x 17”D HIGH DENSITY ELASTOMER DECORATIVE BASE, DENSITY OF 71 LBS PER CUBIC FOOT, PAINTED BLACK WITH A MODIFIED URETHANE COATING, LOGO TIPPED GOLD (STAYS FLEXIBLE OVER TIME W/MAX ADHESION)

BASE DETAIL
FINISH: BLACK

ANCHOR BASE DETAIL
12” BOLT CIRCLE
ANCHOR BOLTS: 3/4” x 18”

HUB STYLE TOP BANNER W/FLAG HOLDER & BOTTOM CLIP

SEE ST-LT-08 FOR REQUIRED CONCRETE BASE DETAIL

STANDARD DRAWING
SL-03 DBL LIGHT FLUTED
ST-LT-05
SINGLE LIGHT FLUTED POLE AND FIXTURE SL-04

LUMILOCK LED SPECIFICATIONS:
- TYPE III ASYMMETRIC DISTRIBUTION.
- 4000K (CCT) 80 LUXEON REBEL ES LED's ON ALUMINUM CORE PCB, SEALED ACRYLIC LENS, IP66 RATED.
- MINIMUM 65 COLOR RENDERING INDEX (CRI).
- 120-277 VAC, 50-60Hz AUTO SENSING.
- 10KV/10KA SURGE SUPPRESSION BUILT IN.

TOP VIEW

80 LED MODULE:
TYPE III LUMILOCK,
IP66 RATED

DRIVER COVER:
DIE-CAST ALUMINUM,
TOOL-LESS ENTRY

GLOBE HOLDER:
DIE-CAST ALUMINUM

DRIVER ENCLOSURE:
DIE-CAST ALUMINUM,
TOOL-LESS ENTRY

ACCESS DOOR

SLIP FITTER:
3" I.D.

FASTENERS:
STAINLESS STEEL
HEX HEAD BOLTS

LUMILOCK LED ASSEMBLY

BASE DETAIL

SEE ST-LT-08 FOR REQUIRED
CONCRETE BASE DETAIL. ALL LIGHT
POLES INSTALLED WITHIN UDOT
RIGHT-OF-WAY "CLEAR ZONE"
(UDOT D018) MUST HAVE A
BREAKAWAY BASE (UDOT SL11) AND
USE PRE-CAST POLYMER CONCRETE
JUNCTION BOXES

FINISH: BLACK

14'-0" FLUTED ALUMINUM .25" WALL THICKNESS
PAINTED BLACK WITH FIRST 16" OF POLE AND BASE PLATE TO BE
COATED WITH INDUSTRIAL COLD GALV
MIN EPA OF 20 IN 80 MPH ZONE
(1.3 GUST FACTOR)

MSL DECORATIVE BASE:
FRANKLIN 40"x17"Dia.

HIGH DENSITY ELASTOMER BASE
DENSITY OF 71 LBS PER CUBIC FT.
1/2" MIN. THICKNESS
PAINTED BLACK WITH A MODIFIED
URETHANE COATING. LOGO PAINTED GOLD

GALVANIZED ANCHOR PLATE
4" O.D. TRANSITION PIPE SLD
UP INSIDE ALUMINUM EXTRUSION
WITH A COMPRESSION FIT &
BOLTED TOGETHER.

ANCHOR BASE DETAIL
12" BOLT CIRCLE
ANCHOR BOLTS: 3/4" x 18"

STANDARD DRAWING
SL-02 RES. POL. & FIXTURE
ST-LT-06

DRAWN BY
MTL
DATE 5/11
REVISIONS 5/16

Layton City
NOTES:

1. ALL STREET LIGHT CABLE SHALL BE DIRECT BURIAL CABLE IN CONDUIT 1 1/2" MINIMUM SCHEDULE 40 GRAY NON-CONDUCTIVE PVC.

2. IF TRENCH REPAIR IS IN A ROADWAY OR PAVED TRAIL THE REPAIR WILL BE AS PER LAYTON CITY EXCAVATION PERMIT SPECIFICATION.

3. INGROUND BOXES LOCATED WITHIN 20' OF APPROACHES AND INTERSECTIONS SHALL BE CARSON H SERIES H1324.
NOTE:
1. CONTRACTORS SHALL FOLLOW LAYTON CITY INSTALLATION AND INSPECTION PROCEDURE FOR LIGHT POLES AND LIGHT FIXTURES BEFORE ACCEPTANCE.
2. STREET LIGHT POLES SHALL BE LOCATED AS INDICATED ON THE APPROVED LIGHTING SITE PLAN, AND INSTALLED AS DESCRIBED IN THE CITY STANDARDS.
3. EACH STREET LIGHT ASSEMBLY SHALL HAVE A JUNCTION BOX WITH COVER MARKED "STREET LIGHTING" WITH FUSES.
4. FUSE HOT WIRES IN JUNCTION BOXES; SUPPLY SPICE KIT FOR NEUTRAL WIRE.
5. INSTALL GRAY NON-CO-CONDUCTIVE PVC 1 1/2" MIN. CONDUITS WITH 24" COVER AND SAND BEDDING.
6. CONTRACTOR TO INSTALL METER CABINET STRONG BOX WITH BREAKER PANEL BOX TO BE LOCATED MIN. 8' FROM UTILITY CO. TRANSFORMER OR SECONDARY BOX.
7. BALANCE LOADS ACROSS PHASES FOR 120 V RECEPTACLES.
8. VIBRATED 4000 PSI CONCRETE @ 28 DAYS (6.5 CITY MIX).
9. ANY DISTURBED MATERIAL WITHIN 8' OF POLE FOUNDATION SHALL BE COMPACTED TO 90% OR GREATER.
10. UNDISTURBED NATIVE GRAVEL-SANDY GRAVEL ASSUMED. IF DIFFERENT, CONTACT CITY ENGINEER.
11. USE A 30" DIA. SONO TUBE.
12. LIGHTING LAYOUT MUST BE SHOWN ON AS-BUILTS.
13. GROUND AND NEUTRAL SHALL BE SEPARATE.
14. IF DEPTH CANNOT BE MET, MASS MUST BE EQUIVALENT TO MASS AS SHOWN.
15. REBAR AND TRENCH MUST BE INSPECTED PRIOR TO CONCRETE POUR.
16. ALL SPECIFICATIONS FOR WIRE, CONDUIT, FUSE KITS, SPICE KITS, JUNCTION BOXES AND CONNECTORS MUST BE SUBMITTED TO THE CITY ENGINEER FOR APPROVAL PRIOR TO ANY WORK BEING PERFORMED.
17. ALL CONDUCTORS SHALL BE OKONITE-FMR TYPE TC-CABLE #112-10-4054; OKONITE X-OILEN OKOSEAL #112-31-3747; OR ANIXTER VNTC #3H-0603 COPPER ONLY.
18. FUSE HOLDERS SHALL BE IN-LINE, WATER TIGHT LEC-AA FOR ARTERIAL POLES.
SINGLE STREET LIGHT INSTALLATION

UNDISTURBED EARTH OR 60% COMPACTION AROUND CONCRETE BASE

ROCKY MTN POWER TRANSFORMER OR POLE (SEE ROCKY MTN POWER DETAIL)

FROM ROCKY MTN POWER

DETAIL-SPLICE BOX A ST-LT-09

DETAIL-JUNCTION BOX WITH FUSES ST-LT-09

#6 TO DIRECT BURIAL COPPER CABLE (TYPICAL)

1 1/2" MIN. SCHEDULE 40 PVC CONDUIT

SCHEDULE 40 OR IMC RIGID ELBOW

CONCRETE BASE

24" D

TOP OF CONCRETE

(4) #4 BARS WITH
(5) #4 TIES

GALVANIZED ANCHOR BOLTS 3/4" x 18"

ELASTOMER TWO PIECE BASE COVER

GROUND WIRES

CARSON L 1419-12 BOX

RAB 350 SERIES CONNECTOR

GROUND ROD 5/8" x 8"

MULTI-PONY CONNECTIONS RAM 350 SERIES HOT LEG NEUTRAL

HOT LEG WITH 10 AMP FUSE

NEUTRAL WIRES

GROUND WIRES

CARSON L 1419-12 BOX

GROUND ROD 5/8" x 8"

DETAIL-JUNCTION BOX WITH FUSES SCALE NO SCALE

DETAILED-POLE SPACING FROM FACE OF CURB SCALE NO SCALE

SCHEDULE-DRAWING SINGLE LIGHT INSTALL ST-LT-10

SEE SHEET ST-LT-09 FOR GENERAL NOTES ON STREET LIGHT INSTALLATION.

DETAIL-COMMERCIAL BRANCH CIRCUIT TRENCH
More information on streetlights is posted online at: www.pacificpower.net/ed/streetlights/im.html and www.rockymountainpower.net/ed/streetlights/im.html.