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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LOCATION OF STORM DRAIN PIPE

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<td>3.00</td>
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<td>1.25</td>
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<tr>
<td>48”</td>
<td>4.75</td>
<td>6.00</td>
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INLET BOX – 15” PIPE

CURB & GUTTER PLAN

MINIMUM GRATE OPENING 300 SQ. INCHES

3'-0.5" 2'-7"

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

11.25" SEE TABLE ON SHEET ST-SD-01

2'-7"

2" 3'-7"

TOP BACK OF CURB

WATERWAY PLAN

6" 3'-6"

4'-6"

5' 1'-6"

21" 21"

6" WALLS

BICYCLE SAFE INLET GRATE
D & L SUPPLY I-1805 OR ACCEPTABLE EQUAL

SECTION A

VARIABLE CURB BOX ADJUSTABLE 6 TO 9 INCHES

R=3"

1'-9"

6"

4 @ 9" O.C. EACH WAY

SECTION B

VARIABLES IN PELD

4 BAR @ 9" O.C. EACH WAY

3" MIN

5"

2'-3"

2"

3" X 3" X 0.5" ANGLE IRON (12" LONG) EACH END OF 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 ADJUSTABLE CURB BOX INLET GRATE SHALL BE BICYCLE SAFE (D&L FOUNDRY I-3517 OR ACCEPTABLE EQUAL)

3A. THE WATERWAY INLET GRATE SHALL BE BICYCLE SAFE AND SHALL BE SET ON 3"X3"X1/2" ANGLE IRON SUPPORT 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 POUR AT ALL CONNECTIONS.

LEDGE DETAIL
WATERWAY INLET GRATE

STANDARD DRAWING
15" IB

ST-SD-02

DHR

Layton City
DOUBLE INLET BOX
CURB & GUTTER LOCATION

MINIMUM GRATE OPENING
600 SQ. INCHES

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 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

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

INLET FRAME AND GRATE
WITH ADJUSTABLE CURB BOX
(D&L FOUNDRY I-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 I-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 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.

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

STANDARD DRAWING
MH-INLET
ST-SD-05
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" x 3" x 1/2" 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 INLET GRATE

WELD 0.375 \( \phi \) 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
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 EQUIVALENT.

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.

STANDARD DRAWING
12”-18” CO BOX
ST-SD-08
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 4000 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.

DRAWN BY:
DHR
SCALE: NONE
DATE: 8/05
REVISIONS

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

SEE ST-SD-01 STANDARD FOR MINIMUM DEPTH OF BOX FOR CONCRETE PIPE
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.
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 DIAL 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.

SECTION F

8” ROADBASE (TYPICAL)
3” ASPHALT (TYPICAL)

CONSTRUCT 9” THICK BY 12” WIDE CONCRETE COLLAR

GRADE RING AS REQUIRED
8 @ 9” O.C. EACH WAY

4” SAND TRAP AREA

GRADE RING AS REQUIRED

SECTION E

8” ROADBASE (TYPICAL)

2.5 FT MANHOLE COVER

GRADE RING AS REQUIRED
CLEANOUT BOX WITH MANHOLE LID

STORM

CONSTRUCT 8” THICK
BY 12” WIDE
CONCRETE COLLAR

PLAN

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

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

GRavel BEdding AS ReqUired

SECTION A

8” Conc. Collar

4’

VARIES

VARIes

VARIes
COMBINATION CLEANOUT/INLET BOX

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

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

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

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. HEAD GATES MUST BE GALVANIZED STEEL WITH 14 GAUGE SLIDE GATES.

SECTION A

SECTION B
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

Provide precast rings to bring cover to proper elevation (min: 6" max: 10") and grout rings in place.

Cone sections to be reinforced concrete sewer pipe (ASTM C476), or as described in the specifications.

Wall sections to be manufactured and reinforced in conformity with ASTM specifications C76-Class II or as described in the specifications.

Standard manhole frame and cover equal to Dal Supply A-1181 manhole ring and cover (solid).

Maximum depth (from finished grade to top of pipe) 20 feet.

Pour manhole base after pipes are in place. If pre-formed base is used as alternative to poured base, provide foundation of Class I material 1.5" deep under base.

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

GEOTEXTILE MIRAFI OR EQUIVALENT

4" MIN.

6" MIN.

TO FOOTING DRAIN LATERAL

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

ADDITIONAL REQUIREMENTS FOR BERMS (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 DELUTERIOUS 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 COMPACTION 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 BERMS 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 PW poly 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 FOUNDRT 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)

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

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

8" PVC PIPE OR
CORRUGATED
PERFORATED PIPE.

6" MIN.

6" MIN.

STANDARD
DRAWING
8" PERF
ST-SD-24