FRUIT HEIGHTS CITY CORPORATION

PUBLIC WORKS STANDARD DRAWINGS

SUBMITTED & RECOMMENDED

Brandon K. Jones 9-4-2018

BRANDON K. JONES P.E. — DATE
FRUIT HEIGHTS CITY ENGINEER

REGISTERED PROFESSIONAL ENGINEER
BRANDON KENT JONES
No. 5148758
State of Utah

APPROVAL

9/13/18
JOHN POHLMAN — DATE
FRUIT HEIGHTS CITY MAYOR

Brandon Green 9/4/18
BRANDON GREEN — DATE
FRUIT HEIGHTS CITY MANAGER

Darren Frandsen 9/4/18
DARREN FRANDSEN — DATE
FRUIT HEIGHTS CITY PUBLIC WORKS SUPERINTENDENT

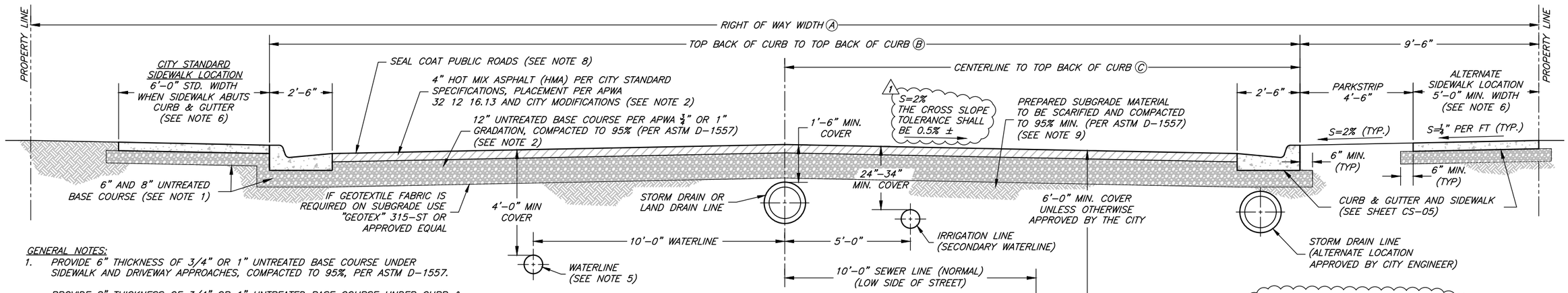
Crystal Kunkel 9/13/18
ATTEST, CITY DEPUTY RECORDER — DATE

JONES & ASSOCIATES
CONSULTING ENGINEERS

ADOPTED
SEPTEMBER 4, 2018

⚠1 **REVISION 1 - APRIL 9, 2019**

Index of Drawings



STANDARD STREET SECTION

GENERAL NOTES:

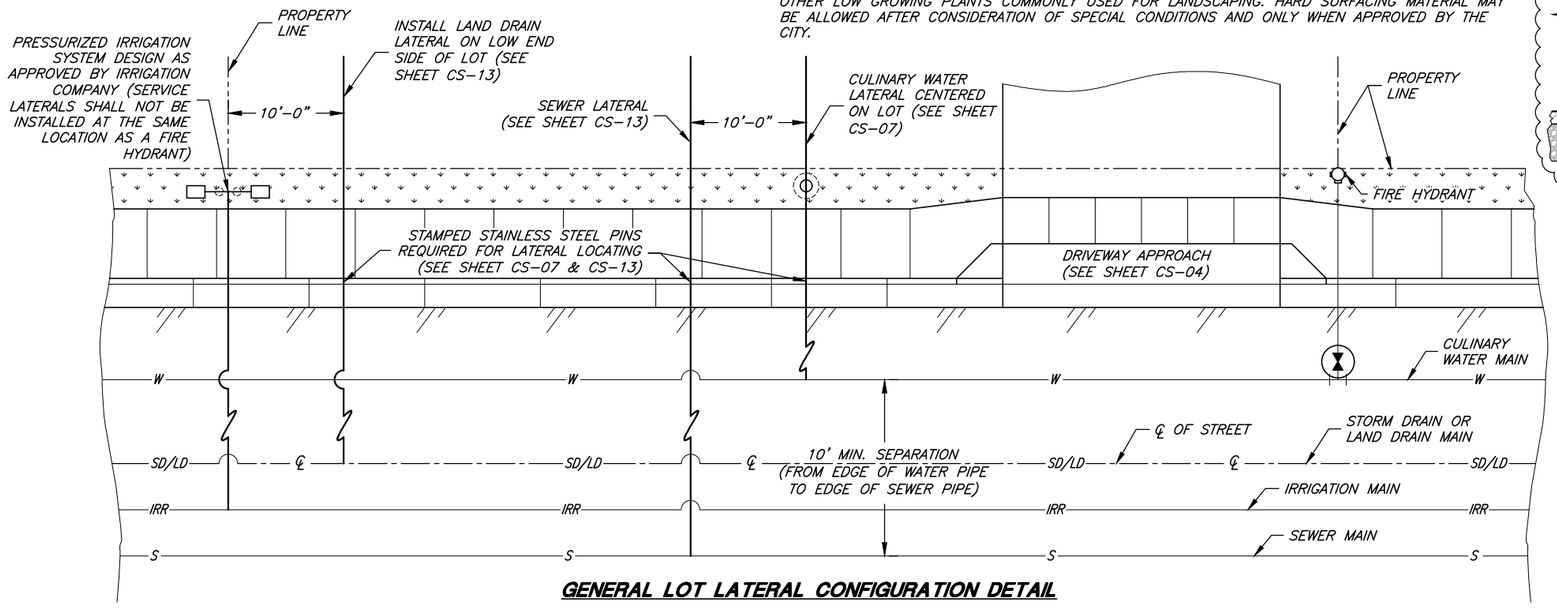
1. PROVIDE 6" THICKNESS OF 3/4" OR 1" UNTREATED BASE COURSE UNDER SIDEWALK AND DRIVEWAY APPROACHES, COMPACTED TO 95%, PER ASTM D-1557.

   PROVIDE 8" THICKNESS OF 3/4" OR 1" UNTREATED BASE COURSE UNDER CURB & GUTTER, COMPACTED TO 95%, PER ASTM D-1557.

2. THESE PAVEMENT THICKNESS SHALL BE CONSIDERED AS CITY MINIMUMS AND MAY BE INCREASED BY THE CITY ENGINEER WHEN A GREATER DEPTH IS NECESSARY TO PROVIDE SUFFICIENT STABILITY. DESIGNER AND/OR DEVELOPER MAY SUBMIT AN ALTERNATIVE PAVEMENT DESIGN BASED ON A DETAILED SOILS ANALYSIS FOR APPROVAL BY THE CITY ENGINEER WHICH MAY MODIFY PAVEMENT THICKNESS, BUT IN NO CASE SHALL THE BITUMINOUS SURFACE COURSE BE LESS THAN 4" AND UNTREATED BASE COURSE LESS THAN 12" THICK.
3. ALL ROAD CUTS SHALL BE PATCHED PER CS-04 AND CS-12
4. CURB & GUTTER AND SIDEWALKS SHALL BE CONSTRUCTED USING FIBER REINFORCED CONCRETE AND IN COMPLIANCE WITH FRUIT HEIGHTS CITY TECHNICAL SPECIFICATIONS AND THESE DRAWINGS.
5. ALL CULINARY WATER MAINS AND SERVICES MUST MAINTAIN A MINIMUM SEPARATION FROM ALL SEWER MAINS AND LATERALS OF 10'-0" HORIZONTAL AND 18" VERTICAL IN ACCORDANCE WITH THE STATE OF UTAH DIVISION OF DRINKING WATER RULES SECTION R309-550-7

GENERAL NOTES CONT.:

6. THE 6'-0" SIDEWALK AGAINST THE BACK OF CURB SHOWN ABOVE IS TO BE CONSIDERED THE "CITY STANDARD." OTHER LOCATIONS AND TYPES OF SIDEWALK AS REQUESTED BY THE DEVELOPER MUST BE APPROVED BY THE CITY.
7. NATURAL GAS TYPICALLY LOCATED BEHIND THE SIDEWALK OR IN THE PARKSTRIP, POWER AND COMMUNICATION LINES TYPICALLY LOCATED BEHIND PROPERTY LINES OR IN LOT EASEMENTS.
8. "SEAL COAT" CONSISTS OF THE FOLLOWING:
   a. CHIP SEAL PER APWA 32 01 13.64 AND CITY MODIFICATIONS, AND
   b. FOG SEAL PER APWA 32 01 13.50 AND CITY MODIFICATIONS.
9. IMPORTED FILL UNDER ROADWAY SHALL BE GRANULAR BORROW, 2" MAX.
10. ALL EARTHWORK SHALL BE SUBJECT TO SOIL TESTING.
11. PARK-STRIPS: IN ORDER TO ACCOMMODATE UTILITY MAINTENANCE, REPAIR, CONSTRUCTION OR REPLACEMENT, HARD SURFACING SUCH AS CONCRETE, STAMPED CONCRETE, ASPHALT, TREES, OR HEDGES ARE NOT ALLOWED IN PARK-STRIP AREAS. ANY PROTECTIVE COVERING IN THE PARK-STRIP MUST BE LIMITED TO MATERIALS SUCH AS PAVERS, BARK, DECORATIVE ROCK, SOD, FLOWERS OR OTHER LOW GROWING PLANTS COMMONLY USED FOR LANDSCAPING. HARD SURFACING MATERIAL MAY BE ALLOWED AFTER CONSIDERATION OF SPECIAL CONDITIONS AND ONLY WHEN APPROVED BY THE CITY.



GENERAL LOT LATERAL CONFIGURATION DETAIL

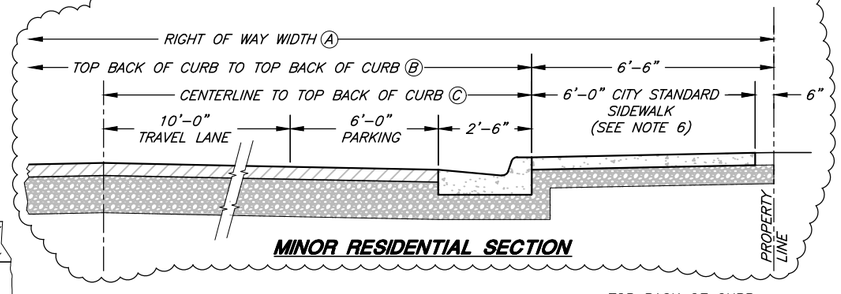
CURBED ROAD SECTION

STREET DESIGNATION	R.O.W. WIDTH (A)	T.B.C. TO T.B.C. (B)	℄ TO T.B.C. (C)
MINOR RESIDENTIAL (SEE NOTE B1 & DETAIL THIS SHEET)	50'	37'	18.5'
STANDARD RESIDENTIAL	60'	41'	20.5'
COLLECTOR	66'	47'	23.5'

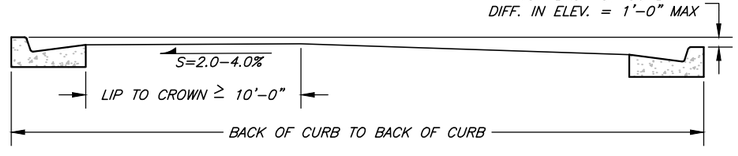
CURBED ROAD SECTION NOTES:

A1. ROAD SECTION USED AS DETERMINED BY THE CITY ENGINEER & PLANNING COMMISSION BASED UPON ZONING, GENERAL PLAN, SIZE OF DEVELOPMENT, ESTIMATED TRAFFIC VOLUME, & AMOUNT OF OPEN SPACE ASSOCIATED WITH DEVELOPMENTS PROXIMITY TO HIGH VOLUME ROADS OR COMMERCIAL ZONING.

B1. CAN ONLY BE USED FOR CUL-DE-SACS, WHERE RECOMMENDED AND APPROVED BY THE CITY.



MINOR RESIDENTIAL SECTION



CROWN LOCATION FOR VARIOUS CROSS SLOPES

CROWN NOTES:

A. MAXIMUM DIFFERENCE IN ELEVATION BETWEEN CURBS ON OPPOSITE SIDES OF THE STREET SHALL NOT EXCEED 1'-0" AS SHOWN IN DETAIL.

B. ON ARTERIAL STREETS AND CERTAIN STREETS APPROVED BY THE CITY COUNCIL, THE CITY ENGINEER WILL PROVIDE A PAVEMENT DESIGN. LOCATION OF SIDEWALK AND CURB & GUTTER MAY VARY PER DIRECTION OF THE CITY ENGINEER.

C. ALL OTHER PROPOSED STREET CROSS SECTIONS SHALL BE AS APPROVED BY THE CITY ENGINEER.

REGISTERED PROFESSIONAL ENGINEER — BRANDON KENT JONES No. 5148758 — State of Utah

PROJECT ENGINEER

9-4-2018
DATE

REV.	DATE	APPR.	
1	4-9-2019	BKJ	REVISED STREET CROSS SLOPE & ADDED 50' R.O.W.

SCALE: N.T.S.

DESIGNED
DRAWN
CHECKED

JA JONES & ASSOCIATES
CONSULTING ENGINEERS
6080 Fashion Point Drive
South Ogden, Utah 84403 (801) 476-9767
www.jonescivil.com

FRUIT HEIGHTS CITY CORPORATION

PUBLIC WORKS STANDARDS

PUBLIC ROADS - TYPICAL STREET SECTIONS & UTILITY LATERAL CONFIGURATION DETAILS

SHEET: CS-02

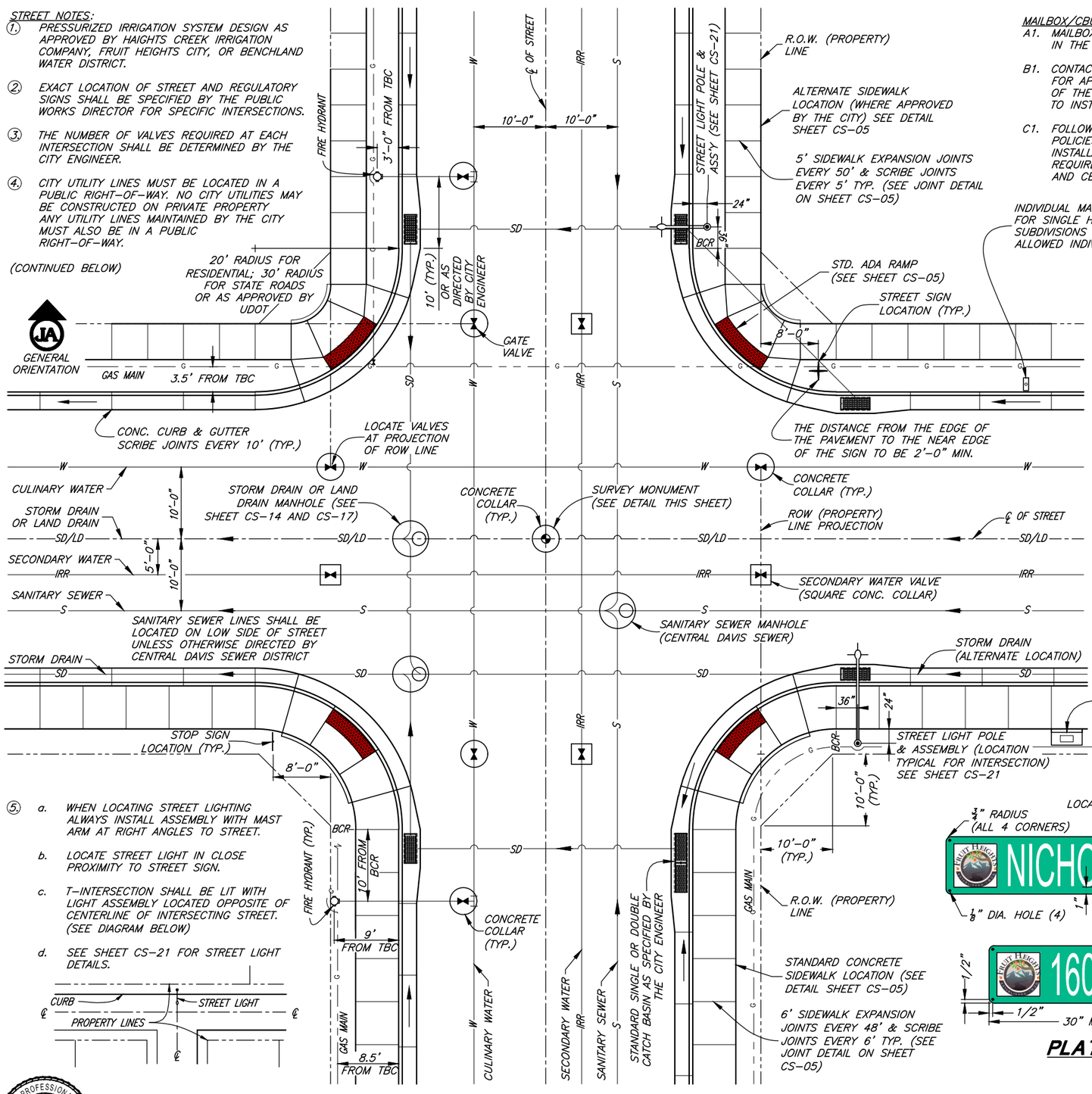
OF 22 SHEETS

0

STREET NOTES:

1. PRESSURIZED IRRIGATION SYSTEM DESIGN AS APPROVED BY HAIGHTS CREEK IRRIGATION COMPANY, FRUIT HEIGHTS CITY, OR BENCHLAND WATER DISTRICT.
2. EXACT LOCATION OF STREET AND REGULATORY SIGNS SHALL BE SPECIFIED BY THE PUBLIC WORKS DIRECTOR FOR SPECIFIC INTERSECTIONS.
3. THE NUMBER OF VALVES REQUIRED AT EACH INTERSECTION SHALL BE DETERMINED BY THE CITY ENGINEER.
4. CITY UTILITY LINES MUST BE LOCATED IN A PUBLIC RIGHT-OF-WAY. NO CITY UTILITIES MAY BE CONSTRUCTED ON PRIVATE PROPERTY ANY UTILITY LINES MAINTAINED BY THE CITY MUST ALSO BE IN A PUBLIC RIGHT-OF-WAY.

(CONTINUED BELOW)



5. a. WHEN LOCATING STREET LIGHTING ALWAYS INSTALL ASSEMBLY WITH MAST ARM AT RIGHT ANGLES TO STREET.
   b. LOCATE STREET LIGHT IN CLOSE PROXIMITY TO STREET SIGN.
   c. T-INTERSECTION SHALL BE LIT WITH LIGHT ASSEMBLY LOCATED OPPOSITE OF CENTERLINE OF INTERSECTING STREET. (SEE DIAGRAM BELOW)
   d. SEE SHEET CS-21 FOR STREET LIGHT DETAILS.

MAILBOX/CBU NOTES:

A1. MAILBOXES SHALL NOT BE PLACED IN THE SIDEWALK.

B1. CONTACT THE LOCAL POSTMASTER FOR APPROVAL ON THE LOCATION OF THE MAILBOX OR CBU PRIOR TO INSTALLATION.

C1. FOLLOW USPS GUIDELINES & POLICIES FOR THE PLACEMENT, INSTALLATION, AND ACCESS REQUIREMENTS FOR ALL MAILBOX AND CBU UNITS.

INDIVIDUAL MAILBOXES ALLOWED ONLY FOR SINGLE HOMES BEING BUILT IN SUBDIVISIONS THAT WERE PREVIOUSLY ALLOWED INDIVIDUAL BOXES

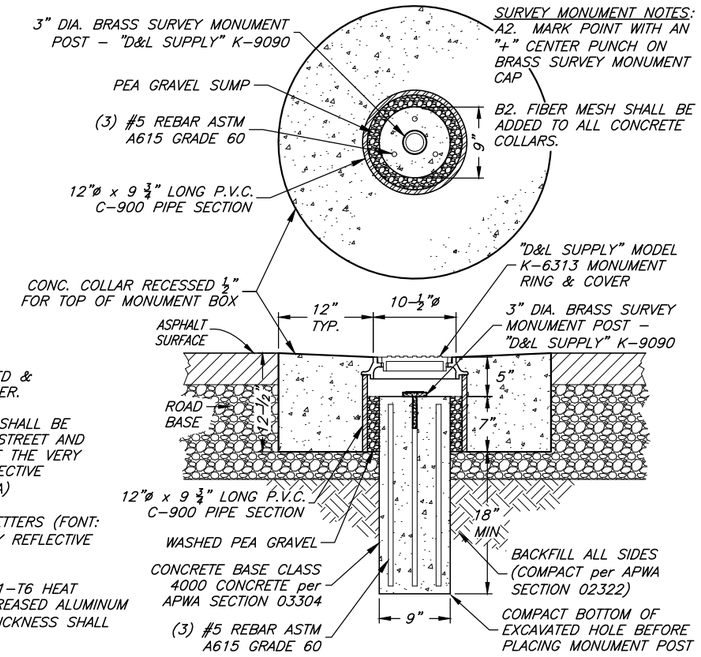
STREET SIGN NOTES:

A. ALL SIGNS TO BE FURNISHED & INSTALLED BY THE DEVELOPER.
B. STREET SIGN BACKGROUND SHALL BE REGULATORY GREEN, BOTH STREET AND TRAFFIC SIGNS SHALL BE AT THE VERY LEAST HIGH INTENSITY REFLECTIVE SHEETING (9FP-85 TYPE IIIA)
C. LEGEND SHALL BE WHITE LETTERS (FONT: HIGHWAY C), HIGH INTENSITY REFLECTIVE SHEETING (9FP-85 IIIA)
D. SIGN BLANK SHALL BE 6081-T6 HEAT TREATED HIGH TENSILE DEGREASED ALUMINUM W/ALODINE 1200 FINISH-THICKNESS SHALL BE 0.08"
E. EACH SIGN SHALL CONSIST OF TWO PLATES RIVETED TOGETHER & MOUNTED AS SHOWN
F. SIGNS ON PRIVATE ROADS SHALL MEET ALL SPECIFICATIONS FOR STANDARD SIGNS, EXCEPT BACKGROUND SHALL BE BLUE (PRIVATE SIGNS WILL NOT BE MAINTAINED BY THE CITY)
G. ALL STREETS WITH NAMES MUST ALSO SHOW LOCATIONS COORDINATE DESIGNATION
H. CONTACT CITY PRIOR TO MAKING SIGNS TO VERIFY PROPER NAMES AND COORDINATES

SURVEY MONUMENT NOTES:

A2. MARK POINT WITH AN "+" CENTER PUNCH ON BRASS SURVEY MONUMENT CAP

B2. FIBER MESH SHALL BE ADDED TO ALL CONCRETE COLLARS.



SURVEY MONUMENT DETAIL

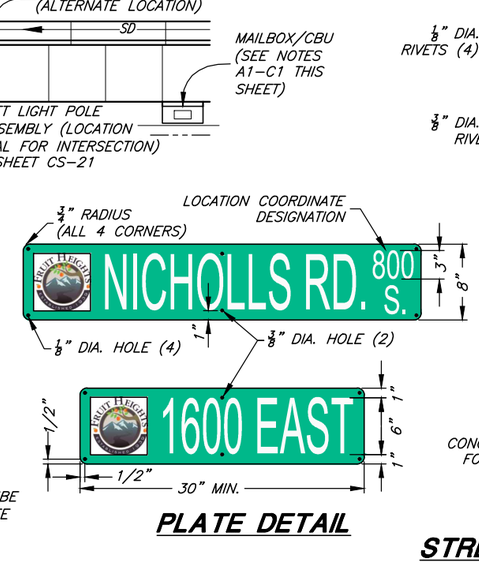
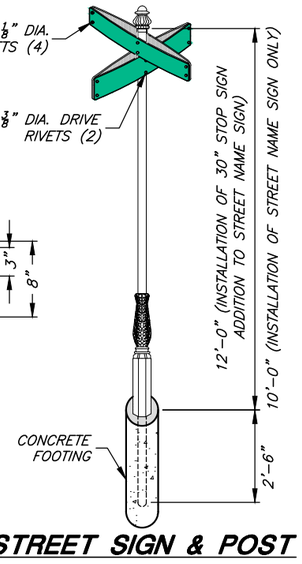
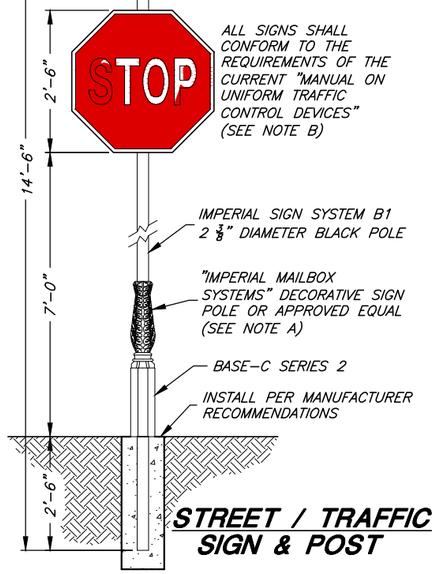


PLATE DETAIL



STREET SIGN & POST



STREET / TRAFFIC SIGN & POST

REGISTERED PROFESSIONAL ENGINEER — BRANDON KENT JONES No. 5148758 — State of Utah

Brandon K. Jones
PROJECT ENGINEER
9-4-2018
DATE

REV.	DATE	APPR.

SCALE: N.T.S.

DESIGNED
DRAWN
CHECKED

JA JONES & ASSOCIATES
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FRUIT HEIGHTS CITY CORPORATION
PUBLIC WORKS STANDARDS

PUBLIC ROADS - TYPICAL INTERSECTION & STREET DETAILS

SHEET: CS-03
OF 22 SHEETS
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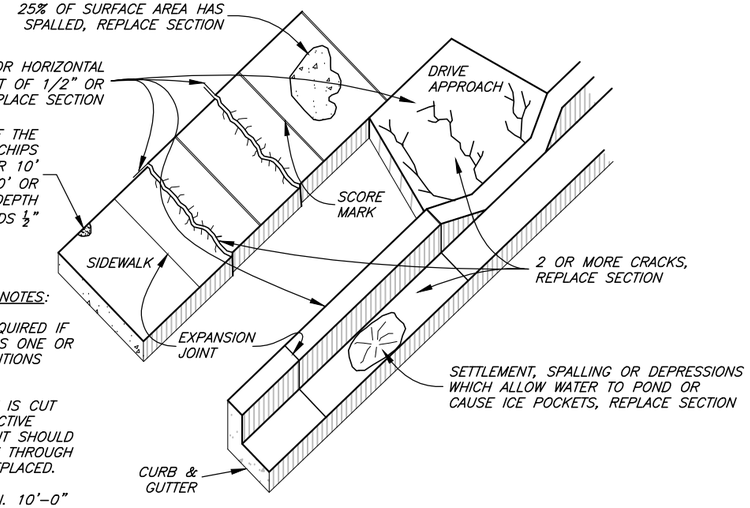


CONCRETE REPLACEMENT NOTES:

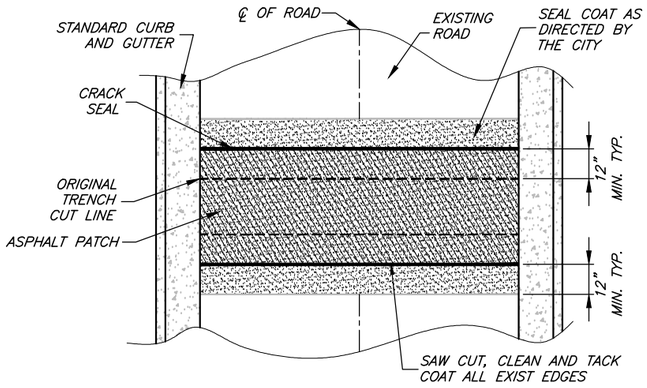
A. REPLACEMENT IS REQUIRED IF ANY COMPONENT HAS ONE OR MORE OF THE CONDITIONS SHOWN ABOVE.

B. ANY TIME CONCRETE IS CUT TO REPLACE A DEFECTIVE COMPONENT, THE CUT SHOULD EXTEND COMPLETELY THROUGH THE PIECE BEING REPLACED.

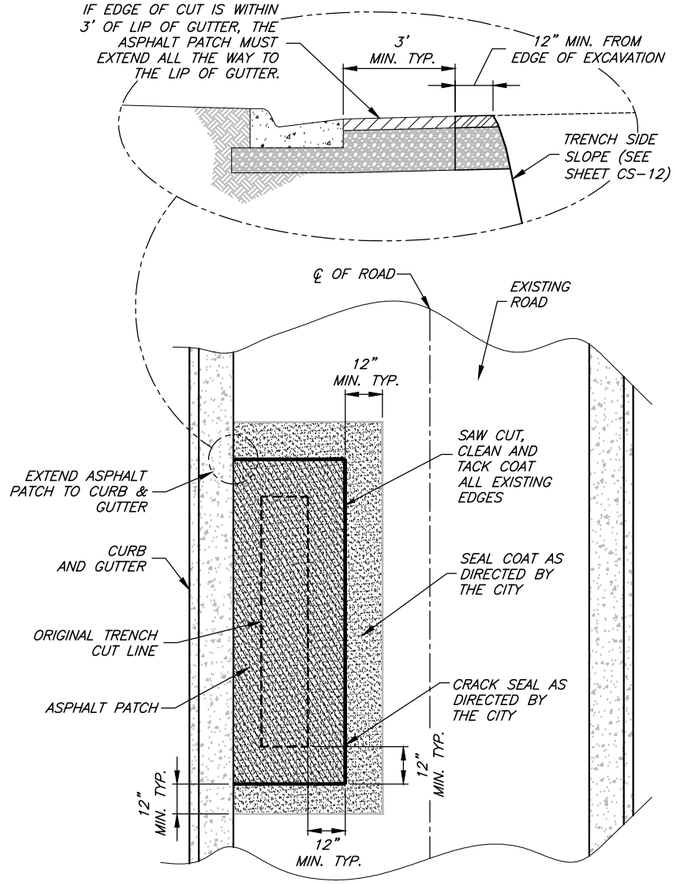
C. CURB & GUTTER MIN. 10'-0" SECTIONS.

D. A "CHIP" IS CONCRETE EDGE DAMAGE THAT IS DEEPER THAN 1/4" AND LARGER THAN 2" DIA.

DEFECTIVE CONCRETE REPLACEMENT CRITERIA



TYPICAL HORIZONTAL ASPHALT PATCH PLAN



TYPICAL PARALLEL ASPHALT PATCH PLAN

ASPHALT PATCH NOTE:

A1. ON ANY ROAD PAVED OR OVERLAYED WITHIN THE LAST 10 YEARS, THE PATCH MUST BE COMPLETED PER APWA PLAN 255 BITUMINOUS PAVEMENT T-PATCH. (SEE SHEET CS-04A)

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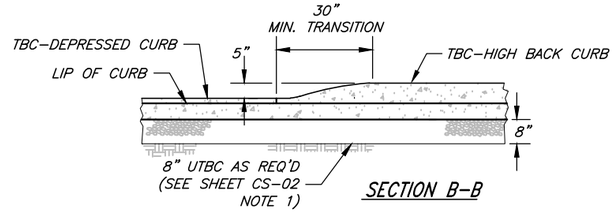
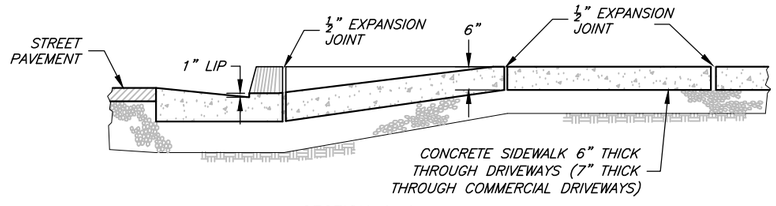
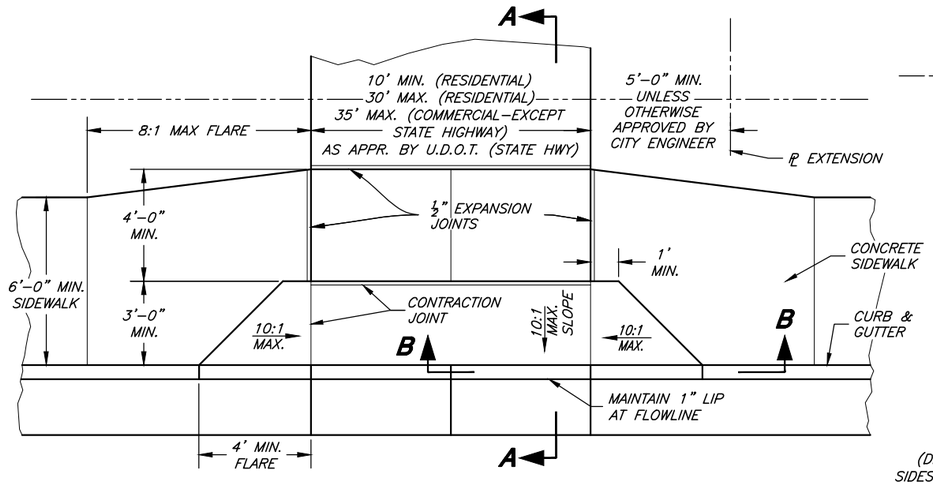


SECTION B-B

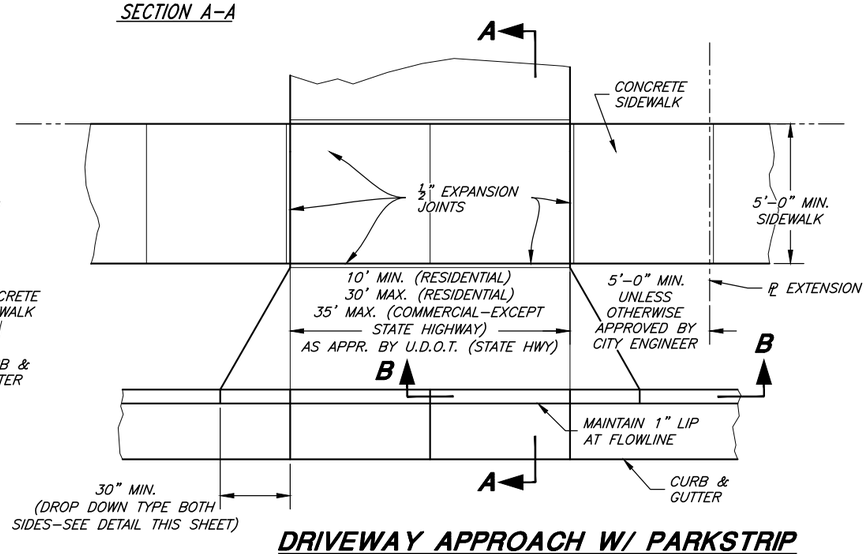


SECTION A-A



DRIVEWAY APPROACH W/ ADJACENT SIDEWALK

CITY STANDARD



DRIVEWAY APPROACH W/ PARKSTRIP

DROP DOWN STYLE (ALTERNATE SIDEWALK LOCATION)

DRIVEWAY APPROACH AND SIDEWALK NOTES:

1. IN NEW SUBDIVISIONS WHERE FUTURE DRIVEWAY LOCATIONS ARE UNKNOWN, THE DRIVEWAY APPROACH SHALL BE MADE BY SAW CUTTING THE BACK OF THE EXISTING CURB TO THE REQUIRED DRIVEWAY WIDTH. ALL SAW CUTTING SHALL BE ACCOMPLISHED BY A CITY APPROVED LICENSED CONTRACTOR.
2. SCORE SIDEWALK 1/4" OF SIDEWALK THICKNESS AT EACH 6'-0" OR 5'-0" SECTION. EXPANSION JOINTS AT EACH 48'-0" (6'-0" SIDEWALK) OR 50'-0" (5'-0" SIDEWALK), PROVIDE ADDITIONAL CONTRACTION JOINTS ON OVERSIZED DRIVEWAYS AT 5'-0" MAX. SPACING.
3. STAMPED CONCRETE OR PAVERS ARE NOT ALLOWED WITHIN THE DRIVE APPROACH AREA.

REGISTERED PROFESSIONAL ENGINEER — BRANDON KENT JONES No. 5148758 — State of Utah

PROJECT ENGINEER

9-4-2018
DATE

REV.	DATE	APPR.	
1	NOV '20	BKJ	ADDED NOTE

SCALE: N.T.S.

DESIGNED
DRAWN
CHECKED

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FRUIT HEIGHTS CITY CORPORATION

PUBLIC WORKS STANDARDS

PUBLIC ROADS - TYPICAL DRIVE APPROACH, ASPHALT PATCH & DEFECTIVE CONCRETE REPLACEMENT DETAILS

SHEET: CS-04

OF 22 SHEETS

0

BITUMINOUS PAVEMENT T-PATCH NOTES:

1. GENERAL:

A. VERTICAL CUTS IN BITUMINOUS PAVEMENT MAY BE DONE BY SAW OR PAVEMENT ZIPPING. IF CUTS GREATER THAN 6 INCHES ARE NECESSARY TO PREVENT PAVEMENT "BREAK OFF" CONSULT CITY ENGINEER FOR DIRECTION ON HANDLING ADDITIONAL COSTS.

B. REPAIR A T-PATCH RESTORATION IF ANY OF THE FOLLOWING CONDITIONS OCCUR PRIOR TO FINAL PAYMENT OR AT THE END OF THE ONE YEAR CORRECTION PERIOD:

1) PAVEMENT SURFACE DISTORTION EXCEEDS 1/4-INCH DEVIATION IN 10 FEET.
REPAIR OPTION - PLANE OFF SURFACE DISTORTIONS. COAT PLANED SURFACE WITH A CATIONIC OR ANIONIC MULSION THAT COMPLIES WITH APWA SECTION 32 12 03.

2) SEPARATION APPEARS AT A CONNECTION TO AN EXITING PAVEMENT OR ANY STREET FIXTURE.
REPAIR OPTION - BLOW SEPARATION CLEAN AND APPLY JOINT SEALANT, PLAN 265.

3) CRACKS AT LEAST 1-FOOT LONG AND 1/4-INCH WIDE OCCUR MORE OFTEN THAN 1 IN 10 SQUARE FEET.
REPAIR OPTION - BLOW CLEAN AND APPLY CRACK SEAL, PLAN 265.

4) PAVEMENT RAVELING IS GREATER THAN 1 SQUARE FOOT PER 100 SQUARE FEET.
REPAIR OPTION - MILL AND INLAY, APWA SECTIONS 32 01 16.71 AND 32 12 05.

2. PRODUCTS:

A. BASE COURSE: UNTREATED BASE COURSE, APWA SECTION 32 11 23. DO NOT USE GRAVEL AS A BASE COURSE WITHOUT ENGINEER'S PERMISSION.

B. FLOWABLE FILL:TARGET IS 60 PSI IN 28 DAYS WITH 90 PSI MAXIMUM IN 28 DAYS, APWA SECTION 31 05 15. IT MUST FLOW EASILY REQUIRING NO VIBRATION FOR CONSOLIDATION.

C. REINFORCEMENT: NO. 5 GALVANIZED OR EPOXY COATED, DEFORMED, 60 KSI YIELD GRADE STEEL, ASTM A615.

D. CONCRETE:CLASS 4000, APWA SECTION 03 30 04.

E. TACK COAT: APWA SECTION 32 12 05.

F. BITUMINOUS CONCRETE: APWA SECTION 32 12 05.

1) WARM WEATHER PATCH: PG64-22-DM-1/2, UNLESS INDICATED OTHERWISE.

2) COLD WEATHER PATCH: MODIFIED MC-250-FM-1 AS INDICATED IN APWA SECTION 33 05 25.

3. EXECUTION:

A. BASE COURSE PLACEMENT: APWA SECTION 32 05 10. MAXIMUM LIFT THICKNESS BEFORE COMPACTION IS 8-INCHES WHEN USING RIDING EQUIPMENT OR 6-INCHES WHEN USING HAND HELD EQUIPMENT. COMPACTION IS 95 PERCENT OR GREATER RELATIVE TO A MODIFIED PROCTOR DENSITY, APWA SECTION 31 23 26.

B. FLOWABLE FILL: CURE TO INITIAL SET BEFORE PLACING AGGREGATE BASE OR BITUMINOUS PAVEMENT. USE IN EXCAVATIONS THAT ARE TOO NARROW TO RECEIVE COMPACTION EQUIPMENT.

C. TACK COAT: CLEAN ALL HORIZONTAL AND VERTICAL SURFACES. APPLY FULL COVERAGE ALL SURFACES.

D. PAVEMENT PLACEMENT: FOLLOW APWA SECTION 32 12 16.13. UNLESS INDICATED OTHERWISE, LIFT THICKNESS IS 3-INCHES MINIMUM AFTER COMPACTION. COMPACT TO 94 PERCENT OF ASTM D2041 (RICE DENSITY) PLUS OR MINUS 2 PERCENT.

E. BITUMINOUS CONCRETE SUBSTITUTION: IF BITUMINOUS CONCRETE IS SUBSTITUTED FOR PORTLAND CEMENT CONCRETE SUBSTRATE, OMIT REBAR AND PROVIDE 1.25 INCHES OF BITUMINOUS CONCRETE FOR EACH 1 INCH OF PORTLAND CEMENT CONCRETE. FOLLOW PARAGRAPH E REQUIREMENTS.

F. REINFORCEMENT: REQUIRED IF THICKNESS OF EXISTING PORTLAND-CEMENT CONCRETE SUBSTRATE IS 6-INCHES OR GREATER. NOT REQUIRED IF:

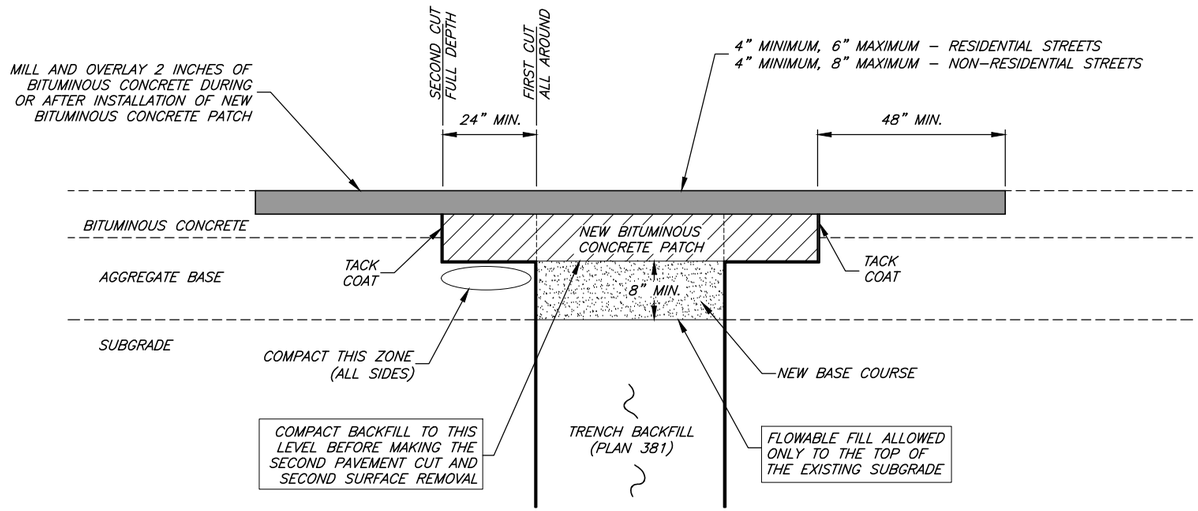
1) LESS THAN 6-INCHES THICK,

2) IF EXISTING CONCRETE IS DETERIORATING,

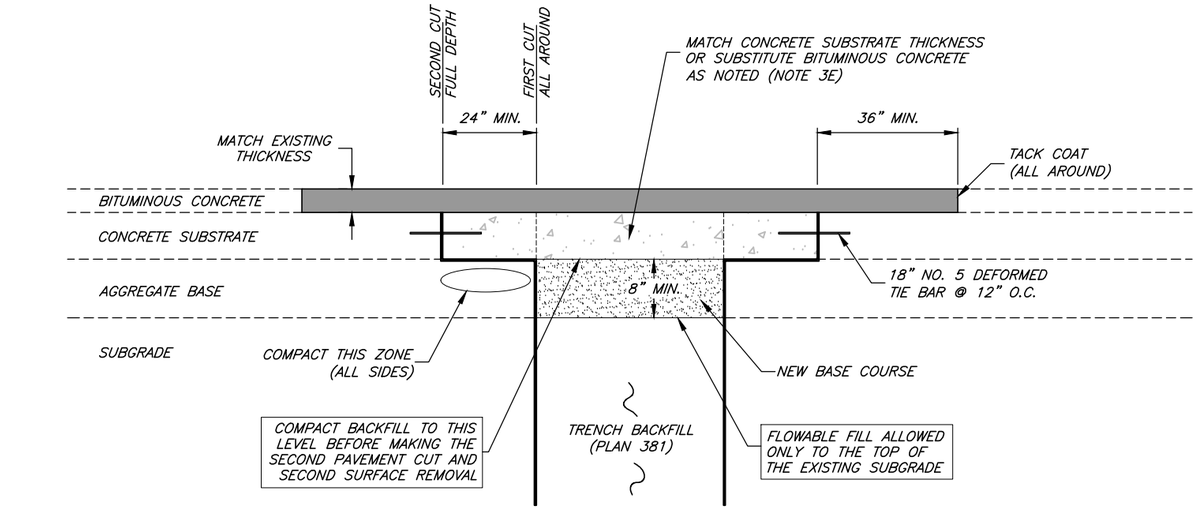
3) IF EXCAVATION IS LESS THAN 3 FEET SQUARE, OR

4) IF BITUMINOUS PAVEMENT IS SUBSTITUTED FOR PORTLAND-CEMENT CONCRETE SUBSTRATE.

G. CONCRETE SUBSTRATE: CURE TO INITIAL SET BEFORE PLACING NEW BITUMINOUS CONCRETE PATCH.



BITUMINOUS CONCRETE RESTORATION



COMPOSITE RESTORATION

APWA Utah Chapter

Bituminous pavement T-patch

Plan **255** November 2015

REGISTERED PROFESSIONAL ENGINEER — BRANDON KENT JONES No. 5149758 — State of Utah

PROJECT ENGINEER

9-4-2018
DATE

REV.	DATE	APPR.	
1	NOV '20	BKJ	ADDED APWA REFERENCE NOTES & DETAILS TO STANDARDS

SCALE: N.T.S.

DESIGNED ____
DRAWN ____
CHECKED ____

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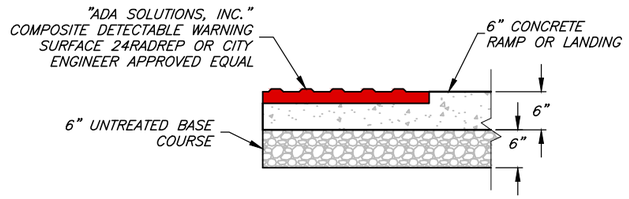
www.jonescivil.com

FRUIT HEIGHTS CITY CORPORATION
PUBLIC WORKS STANDARDS
PUBLIC ROADS - APWA PLAN 255
BITUMINOUS PAVEMENT T-PATCH

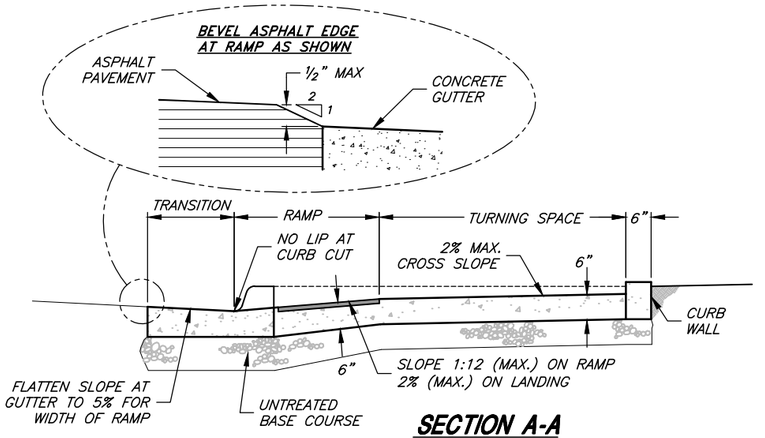
SHEET: CS-04A
OF 22 SHEETS
0

DETECTABLE WARNING SURFACE NOTES:

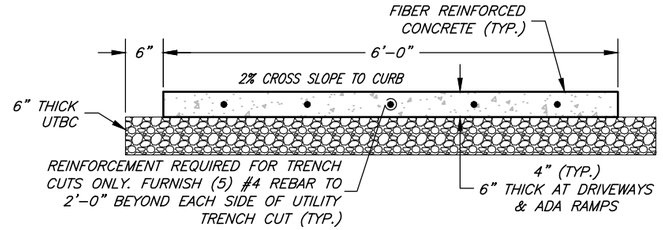
1. LOCATE THE DETECTABLE WARNING SURFACE SO THE OUTSIDE CORNER NEAREST THE STREET IS WITHIN 1 INCH OF THE BACK OF CURB (TBC). PROVIDE 2–FOOT MINIMUM DEPTH.
2. PROVIDE DETECTABLE WARNING SURFACE FOR FULL WIDTH OF CURB CUT.
3. THE DETECTABLE WARNING SURFACE DOMES SHALL BE ORIENTED SUCH THAT THE ROWS ARE PARALLEL WITH THE DIRECTION OF PEDESTRIAN TRAVEL TO THE RAMP ON THE OPPOSITE SIDE OF THE STREET.
4. THE STANDARD COLOR FOR THE DETECTABLE WARNING SURFACE SHALL BE RED OR PRE–APPROVED CONTRASTING COLOR. WHEN THE EXISTING SIDEWALK COLOR IS NOT STANDARD CONCRETE, THE COLOR OF THE DETECTABLE WARNING SURFACE SHALL BE DETERMINED BY THE CITY ENGINEER OR AUTHORIZED REPRESENTATIVE.
5. WHEN A DETECTABLE WARNING SURFACE DOME IS CUT, THE REMAINING PORTION OF THE DOME SHALL BE BEVELED TO A MAXIMUM SLOPE OF 1:2.



DETECTABLE WARNING SURFACE DETAIL

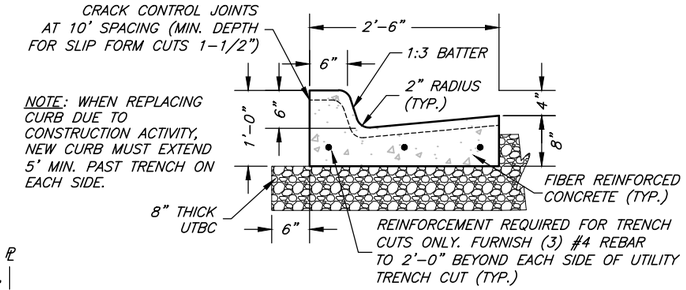


SECTION A-A



SIDEWALK SECTION

(CITY STANDARD)



CURB & GUTTER SECTION

(CITY STANDARD)

ADA RAMP NOTES:

A. WHERE DESIGNATED BY THE CITY, ALTERNATE UDOT OR APWA RAMP DESIGNS MAY BE USED WITH THE PRIOR APPROVAL OF THE CITY ENGINEER AND THE CITY PUBLIC WORKS DEPARTMENT. SUBMIT ENGINEERED CONSTRUCTION PLANS TO CITY ENGINEER FOR REVIEW AND ACCEPTANCE PRIOR TO CONSTRUCTION.

B. SITE CONDITIONS WILL VARY. CONFIGURATION OF RAMP, LANDING, AND TRANSITION MAY BE CHANGED, BUT THEY MUST MEET DIMENSIONS AND SLOPES AS SHOWN IN THE MOST RECENT EDITION OF THE U.D.O.T. STANDARDS & SPECIFICATIONS (SHEETS PA1 THROUGH PA5). THE USE OF FLARES, CURB WALLS, ETC. ARE AT THE DISCRETION OF THE ENGINEER.

C. LOCATE CURB CUT WITHIN CROSSWALK.

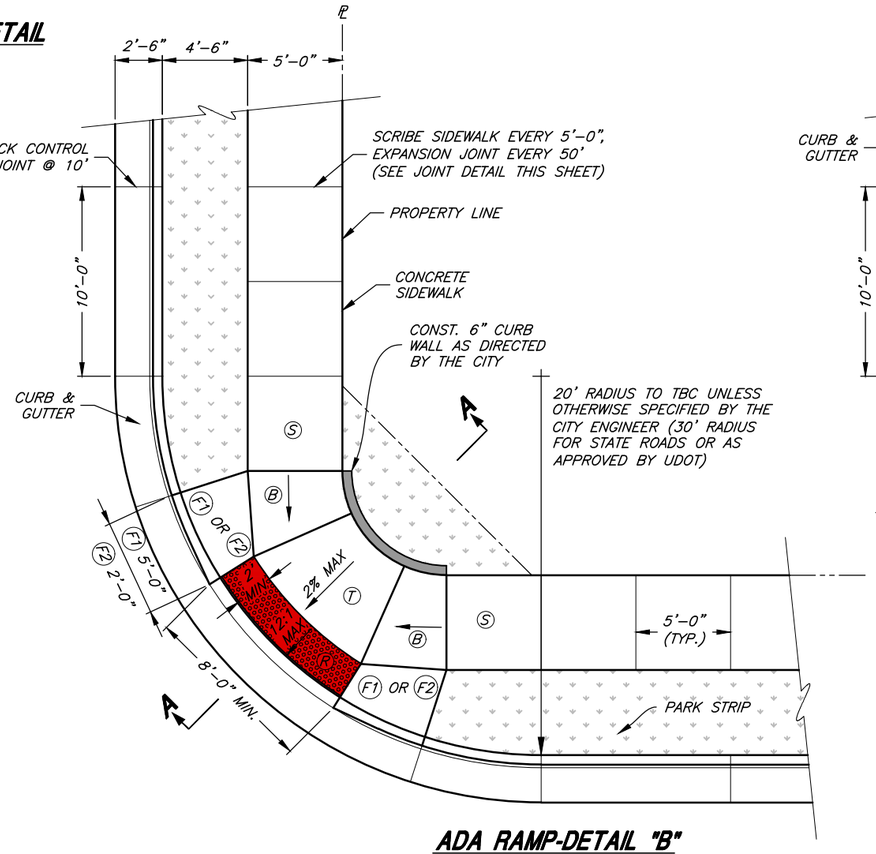
D. RAMP GRADE BREAK MUST BE PERPENDICULAR TO THE RUNNING SLOPE.

SLOPE TABLE			
	ITEM	MAX RUNNING SLOPE*	MAX. CROSS SLOPE*
(T)	TURNING SPACE [2]	2% (1V:48H)	2% (1V:48H)
(R)	RAMP	8.3% (1V:12H)	2% (1V:48H)
(S)	SIDEWALK	5% (1:20) [1]	2% (1V:48H)
(F1)	TRAVERSABLE SURFACE	10% (1V:10H)	--
(F2)	NON–TRAVERSABLE SURFACE	25% (1V:4H)	--
(B)	BLENDED TRANSITION	5% (1V:20H) 2% MIN.	2% (1V:48H)

* RUNNING SLOPE IS IN THE DIRECTION OF PEDESTRIAN TRAVEL. CROSS SLOPE IS PERPENDICULAR TO PEDESTRIAN TRAVEL.

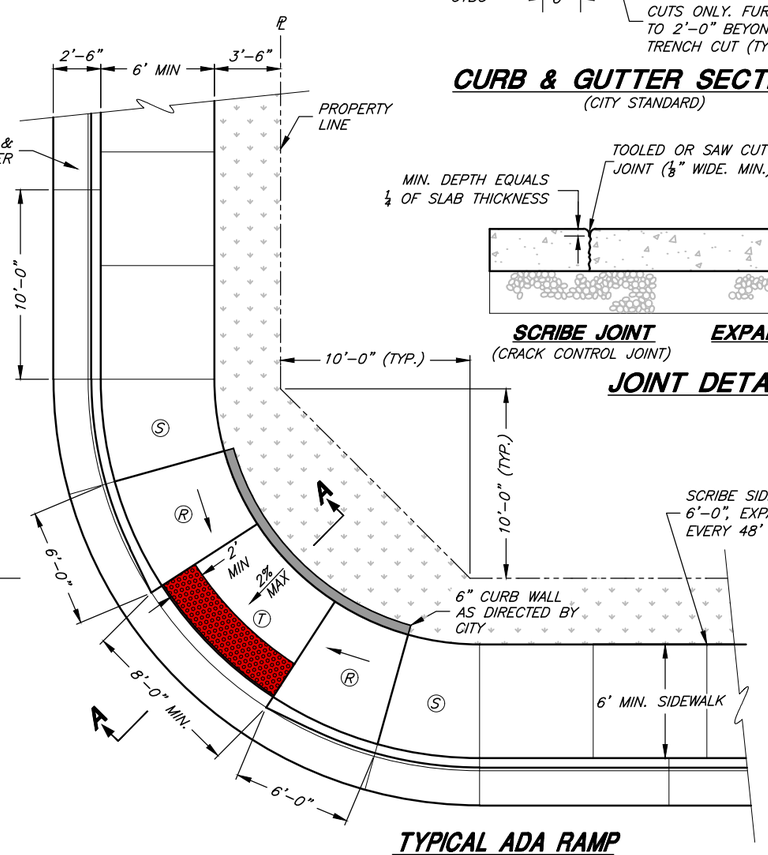
[1] 5% MAX OR NATURAL SLOPE OF LAND

[2] NOT TO EXCEED 2% IN ANY DIRECTION



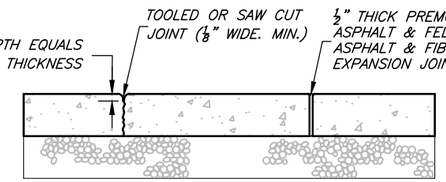
ADA RAMP-DETAIL "B"

REQUIRES WRITTEN CITY APPROVAL (PARK STRIP)

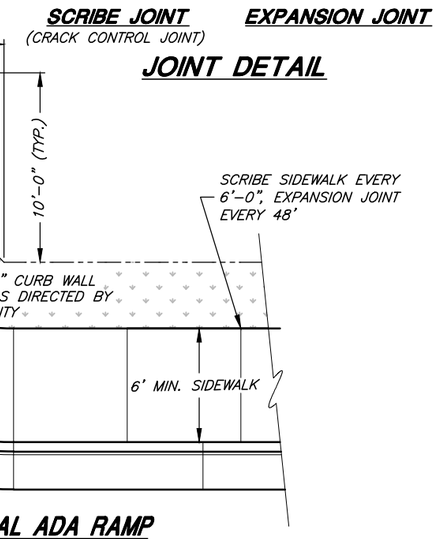


TYPICAL ADA RAMP

CITY STANDARD



SCRIBE JOINT (CRACK CONTROL JOINT) **EXPANSION JOINT**



JOINT DETAIL

BRANDON KENT JONES No. 5148758 REGISTERED PROFESSIONAL ENGINEER State of Utah

Brandon K. Jones
PROJECT ENGINEER
9-4-2018
DATE

REV.	DATE	APPR.

SCALE: N.T.S.

DESIGNED _____
DRAWN _____
CHECKED _____

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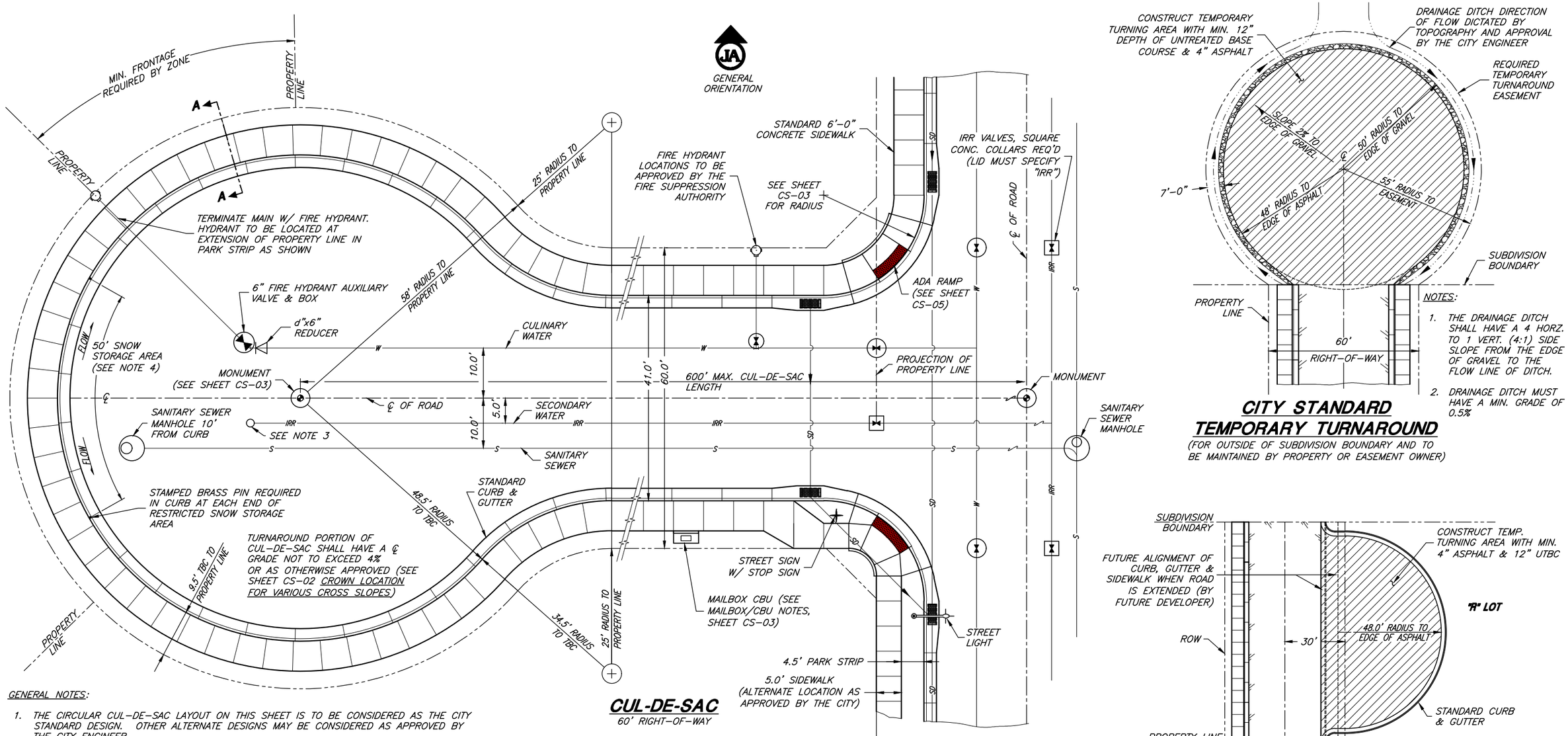
FRUIT HEIGHTS CITY CORPORATION
PUBLIC WORKS STANDARDS

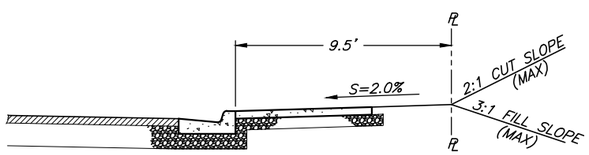
PUBLIC ROADS - TYPICAL ADA RAMP, SIDEWALK, CURB & GUTTER, AND CONCRETE JOINT DETAILS

SHEET: CS-05
OF 22 SHEETS
0



CUL-DE-SAC

60' RIGHT-OF-WAY



SECTION A-A

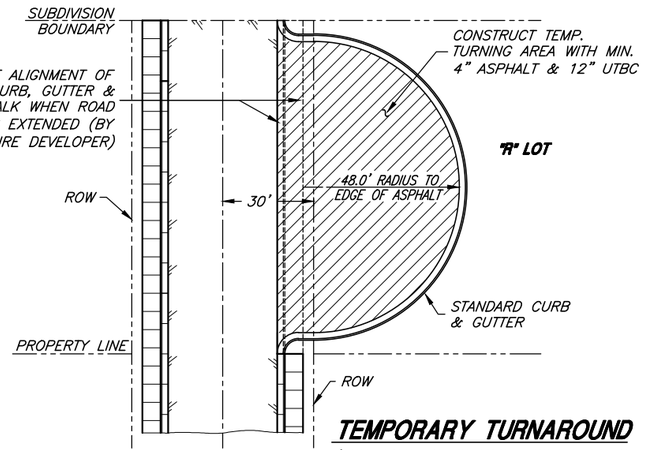
REQUIRED GRADING BETWEEN TBC AND PROPERTY LINE

NOTES:

1. THE DRAINAGE DITCH SHALL HAVE A 4 HORZ. TO 1 VERT. (4:1) SIDE SLOPE FROM THE EDGE OF GRAVEL TO THE FLOW LINE OF DITCH.
2. DRAINAGE DITCH MUST HAVE A MIN. GRADE OF 0.5%

CITY STANDARD TEMPORARY TURNAROUND

(FOR OUTSIDE OF SUBDIVISION BOUNDARY AND TO BE MAINTAINED BY PROPERTY OR EASEMENT OWNER)



TEMPORARY TURNAROUND

(FOR INSIDE SUBDIVISION BOUNDARY TO BE MAINTAINED BY PROPERTY OWNER)

GENERAL NOTES:

1. THE CIRCULAR CUL-DE-SAC LAYOUT ON THIS SHEET IS TO BE CONSIDERED AS THE CITY STANDARD DESIGN. OTHER ALTERNATE DESIGNS MAY BE CONSIDERED AS APPROVED BY THE CITY ENGINEER.
2. MODIFIED CUL-DE-SACS (KNUCKLE, EYEBROW, BULB, OR HALF CUL-DE-SACS) ARE NOT PERMITTED.
3. DEVELOPER SHALL PROVIDE AN AIR RELIEF OR BLOW-OFF AS DETERMINED BY THE SECONDARY WATER PROVIDER AND IN ACCORDANCE WITH THEIR STANDARDS AND APPROVED BY THE CITY ENGINEER.
4. NO DRIVEWAYS, FIRE HYDRANTS, OR MAIL BOXES ARE PERMITTED WITHIN THE 50' SNOW STORAGE AREA. THE 50' SNOW STORAGE AREA SHALL BE SHOWN ON THE IMPROVEMENT/CONSTRUCTION PLANS PRIOR TO SUBDIVISION AND/OR CUL-DE-SAC APPROVAL.
5. REQUIREMENT FOR SIDEWALK ON CUL-DE-SAC WILL BE THE DETERMINATION OF THE FRUIT HEIGHTS CITY.

REGISTERED PROFESSIONAL ENGINEER
BRANDON KENT JONES
No. 5148758
State of Utah

Brandon K. Jones
PROJECT ENGINEER
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SCALE: N.T.S.

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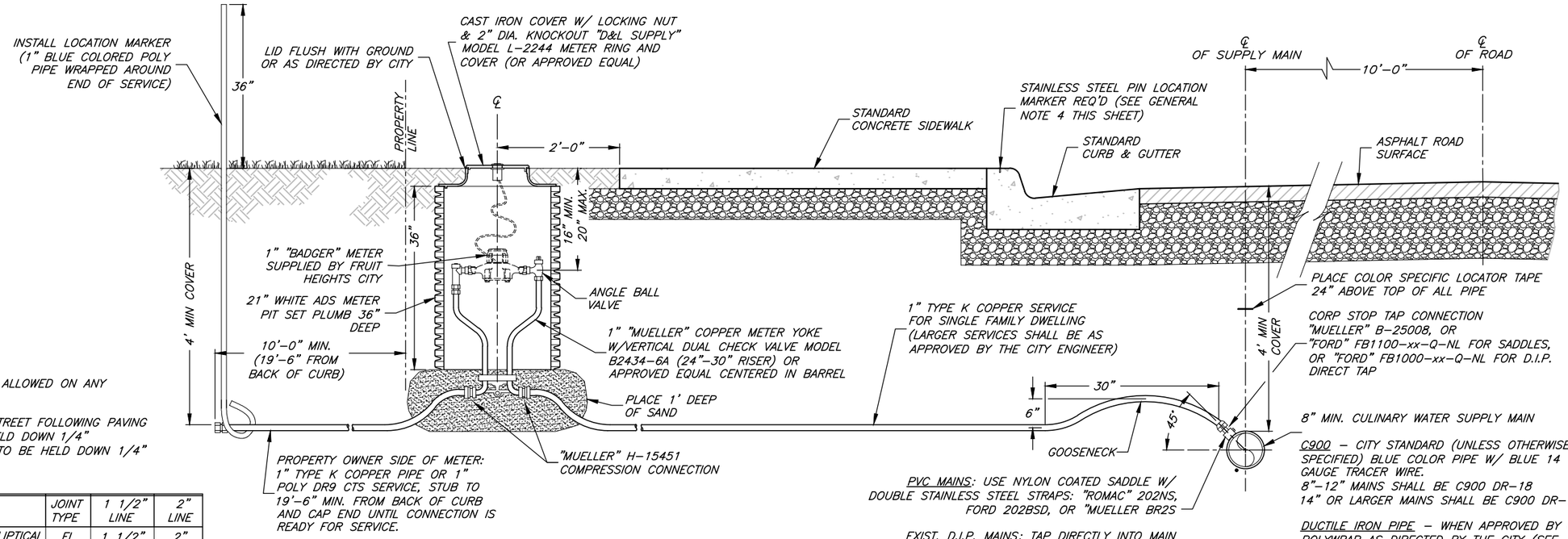
FRUIT HEIGHTS CITY CORPORATION
PUBLIC WORKS STANDARDS
PUBLIC ROADS - CUL-DE-SAC & TEMP. TURNAROUND DETAILS

SHEET: CS-06
OF 22 SHEETS
0



RESIDENTIAL WATER SERVICE AND METER

CITY STANDARD

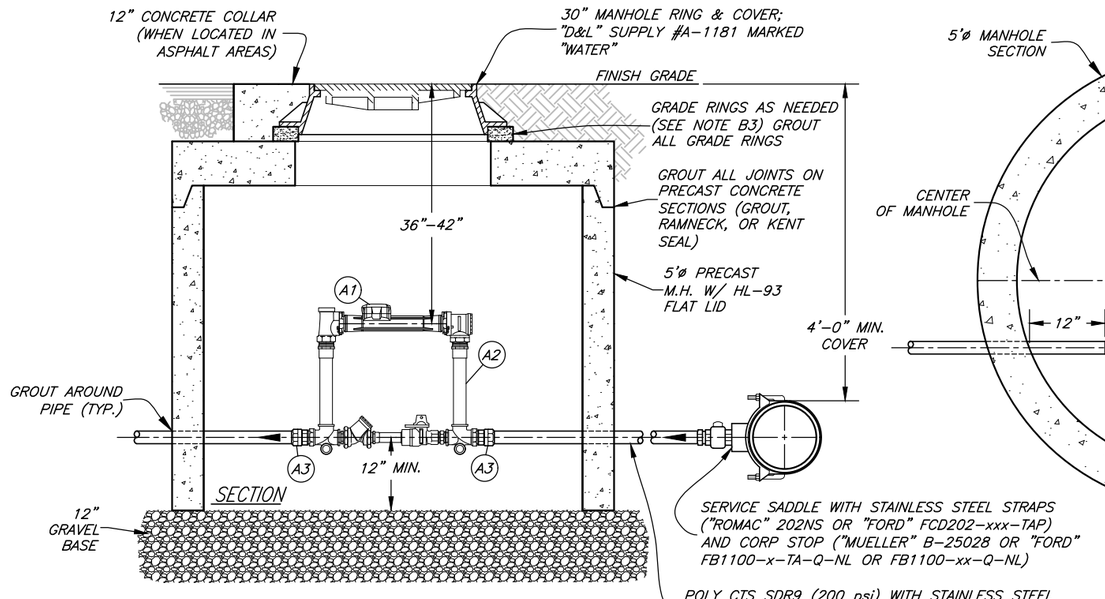
1 1/2" & 2" METER NOTES:

B1. 1½" SERVICE LINE-13" METER
2" SERVICE LINE-17" METER

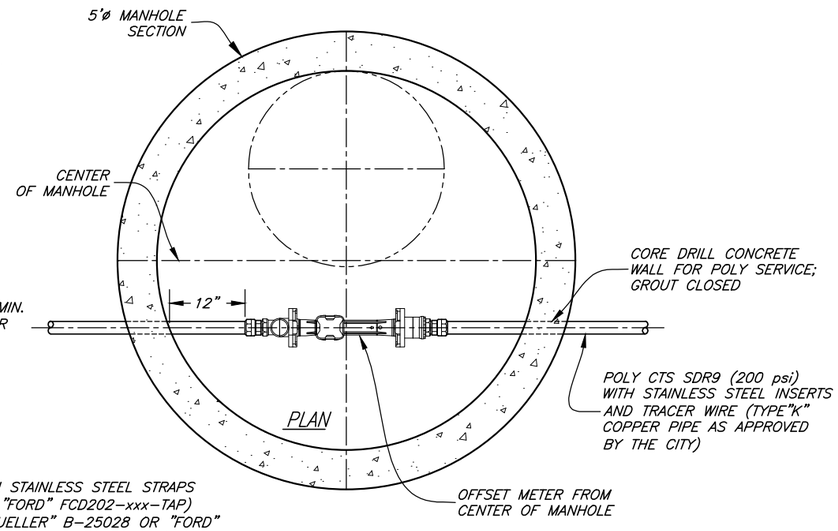
B2. NO MORE THAN 12" OF GRADE RINGS TO BE ALLOWED ON ANY MANHOLE

B3. RAISE ALL MANHOLES TO FINISH GRADE OF STREET FOLLOWING PAVING WITH A CONCRETE COLLAR; COLLAR TO BE HELD DOWN 1/4" BELOW TOP OF NEW ASPHALT. MANHOLE LID TO BE HELD DOWN 1/4" BELOW CONC. COLLAR.

NO.	DESCRIPTION (1 1/2" & 2" METER STA.)	JOINT TYPE	1 1/2" LINE	2" LINE
A1	"BADGER" E SERIES ULTRASONIC METER - ELLIPTICAL	FL	1 1/2"	2"
A2	METER YOKE (18" HEIGHT) "MUELLER" H-1423-2	-	1 1/2"	2"
	OR "FORD" VBHH77-xxBHC-11-77-NL OR	-	--	2"
	"FORD" VBHH77-xxB-44-77-AWT-Q-NL	-	--	2"
A3	"MUELLER" 110 COMPRESSION CONNECTION COUPLING OR "FORD" C84-xx-Q-NL	-	1 1/2"	2"



1 1/2" & 2" WATER METER STATION



GENERAL NOTES:

1. ALL FITTINGS SHALL BE "MUELLER" COMPRESSION TYPE UNLESS OTHERWISE NOTED.
2. ALL SIZES OF WATER METERS SHALL BE PAID FOR BY THE DEVELOPER, CONTRACTOR, OR PROPERTY OWNER AND INSTALLED BY THE CITY. THE CITY WILL SUPPLY ALL 1" OR 1 ½" METERS. DEVELOPER/CONTRACTOR SHALL SUPPLY ALL METERS 2" OR LARGER. THE MAKE AND MODEL FOR METERS LARGER THAN 2" TO BE SPECIFIED BY THE FRUIT HEIGHTS CITY ENGINEER.
3. ALL SPECIFIED BRANDS OF MATERIALS SHOWN ON THESE DRAWINGS ARE "CITY STANDARDS." OTHER EQUIVALENT BRANDS MAY BE USED WITH THE PRIOR APPROVAL OF THE CITY ENGINEER AND THE CITY WATER SYSTEM SUPERINTENDENT.
4. STAMPED STAINLESS STEEL PINS USED FOR LATERAL LOCATING ARE REQUIRED BY THE CITY. BLANK S.S. PINS SHALL BE PROVIDED BY THE CITY AND INSTALLED AND STAMPED BY THE CONTRACTOR DURING ALL NEW CONSTRUCTION OR RESTORED WHEN REPLACING DAMAGED CURB & GUTTER DUE TO ANY CONSTRUCTION RELATED ACTIVITY. S.S. PINS SHALL BE STAMPED "S" FOR SANITARY SEWER, "W" FOR CULINARY WATER, AND "L" FOR LAND DRAIN.
5. ALL CULINARY WATER METERS SHALL BE CENTERED ON THE LOT AND SHOULD NOT BE LOCATED WITHIN THE DRIVEWAY AREA. IF A DRIVEWAY IS PLACED OVER AN EXISTING METER, THE "ENTIRE" SERVICE AND METER SHALL BE RELOCATED AT THE OWNER'S EXPENSE.
6. PROPERTY OWNER OR CONTRACTOR SHALL PAY FOR ALL COSTS OF INSTALLATION INCLUDING ALL MATERIALS, ALL EXCAVATION AND FILL, ASPHALT REPLACEMENT AND WATER MAIN CONNECTION.
7. INSPECTION OF ALL WATER LINE INSTALLATIONS WILL BE DONE BY THE CITY WATER DEPARTMENT, WITH A 48 HOUR MINIMUM NOTICE REQUIRED PRIOR TO START OF WORK.
8. IF APPLICABLE, A CITY EXCAVATION PERMIT MUST BE REQUESTED AND APPROVED PRIOR TO START OF WORK.
9. FIBER MESH SHALL BE ADDED TO ALL CONCRETE COLLARS ON VALVES AND MANHOLES.
10. WATER SYSTEM CORROSION PROTECTION REQUIREMENTS: SEE GENERAL NOTE 6 ON SHEET CS-08

REGISTERED PROFESSIONAL ENGINEER
BRANDON KENT JONES
No. 5148758
State of Utah

PROJECT ENGINEER
9-4-2018
DATE

REV.	DATE	APPR.	

SCALE: N.T.S.

DESIGNED
DRAWN
CHECKED

JONES & ASSOCIATES
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South Ogden, Utah 84403 (801) 476-9767
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FRUIT HEIGHTS CITY CORPORATION
PUBLIC WORKS STANDARDS

CULINARY WATER - RESIDENTIAL WATER SERVICE & STANDARD METER STATION DETAILS

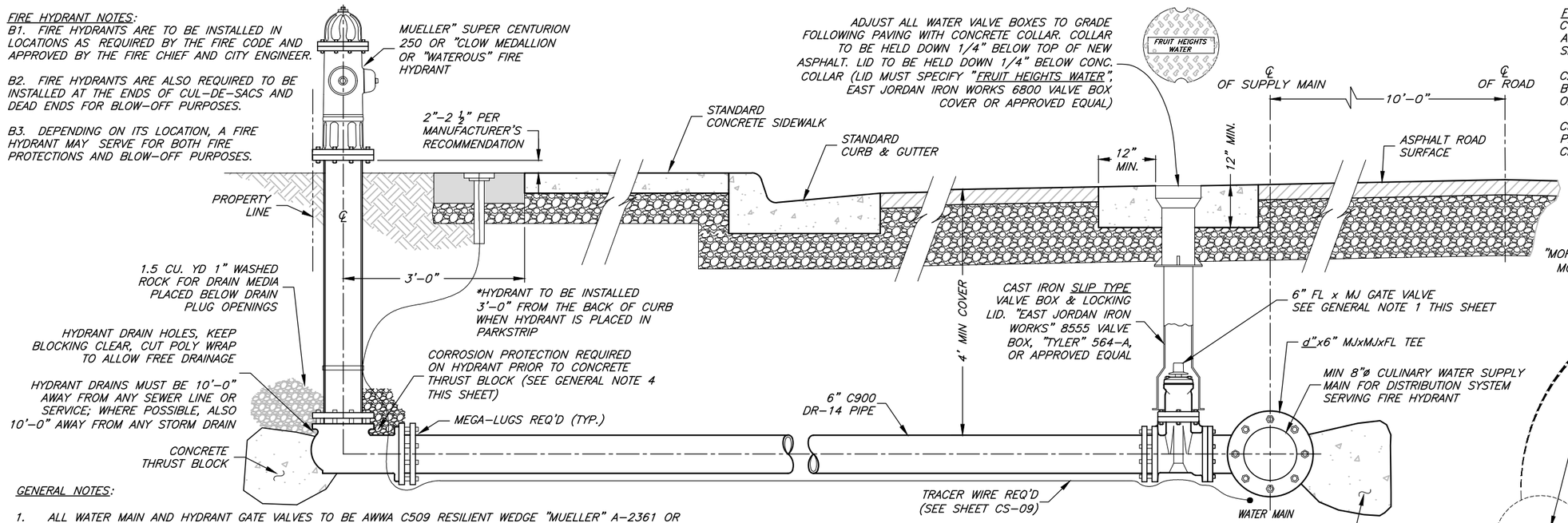
SHEET: CS-07
OF 22 SHEETS
0

FIRE HYDRANT NOTES:

B1. FIRE HYDRANTS ARE TO BE INSTALLED IN LOCATIONS AS REQUIRED BY THE FIRE CODE AND APPROVED BY THE FIRE CHIEF AND CITY ENGINEER.

B2. FIRE HYDRANTS ARE ALSO REQUIRED TO BE INSTALLED AT THE ENDS OF CUL-DE-SACS AND DEAD ENDS FOR BLOW-OFF PURPOSES.

B3. DEPENDING ON ITS LOCATION, A FIRE HYDRANT MAY SERVE FOR BOTH FIRE PROTECTIONS AND BLOW-OFF PURPOSES.



FIRE HYDRANT & GATE VALVE DETAIL

GENERAL NOTES:

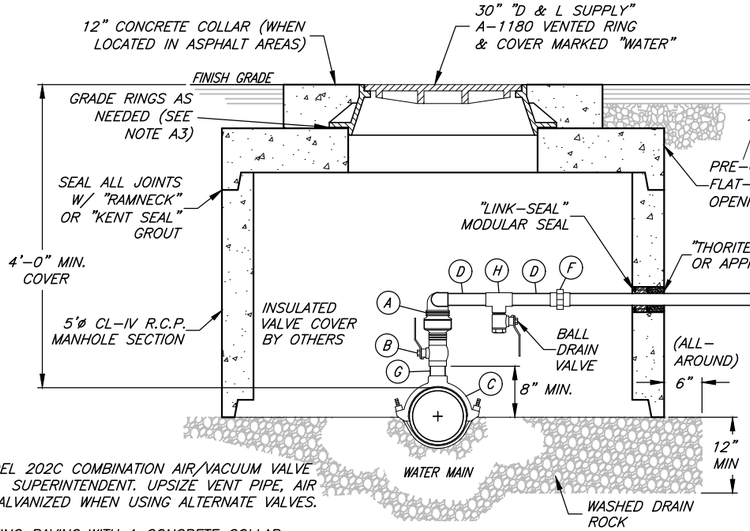
1. ALL WATER MAIN AND HYDRANT GATE VALVES TO BE AWWA C509 RESILIENT WEDGE "MUELLER" A-2361 OR "CLOW" 2639 VALVES (ANY CHIPS IN THE VALVE FACTORY COATING DUE TO SHIPPING/INSTALLATION MUST BE REPAIRED USING AN APPROVED EPOXY COATING)
2. ALL PIPE, JOINTS, FITTINGS, VALVES AND FIRE HYDRANTS SHALL CONFORM TO ANSI/NSF STANDARD 61.
3. ALL WATER SYSTEM MATERIALS SHALL BE NEW. NO USED MATERIALS WILL BE ALLOWED.
4. ALL SPECIFIED BRANDS OF MATERIALS SHOWN ON THESE DRAWINGS ARE "CITY STANDARDS." OTHER EQUIVALENT BRANDS MAY BE USED WITH THE PRIOR APPROVAL OF THE CITY ENGINEER AND THE CITY WATER SYSTEM SUPERINTENDENT.
5. FIBER MESH SHALL BE ADDED TO ALL CONCRETE COLLARS ON VALVES AND MANHOLES.
6. **WATER SYSTEM - CORROSION PROTECTION REQUIREMENTS**:
   - 6a. NONCORROSIVE "BLUE" BOLTS AND NUTS ARE REQUIRED BY THE CITY.
   - 6b. POLYETHYLENE ENCASEMENT, HIGH DENSITY CROSS LAMINATED (HDCL) POLYETHYLENE FILM, AWWA C105 & AWWA C703E METHODS A & C. AWWA C703E METHOD A (4 MIL) AT PIPE AND AWWA C703E METHOD C (10 MIL) AT BOLT-TYPE JOINTS, FITTING AND VALVES. (CHRISTY'S OR APPROVED EQUAL)
   - 6c. IN ADDITION TO THE REQUIRED POLYETHYLENE WRAP, APPLY A WAX TAPE COATING SYSTEM TO VALVE BONNET BOLTS AND ALL OTHER BURIED BOLTS, NUTS, CONNECTORS, RESTRAINER GLAND BOLTS, AND COUPLING HARDWARE, AWWA C217. COATING SYSTEM TO INCLUDE A 4-MIL MINIMUM WAX TAPE PRIMER, FILLER MATERIAL, 45-MIL MINIMUM WAX TAPE AND PROTECTIVE OUTER WRAP.
   - 6d. WAX TAPE COATING MATERIALS:
     - d1. DENSO NORTH AMERICA DENSO PRIMER, DENSYL TAPE AND/OR MASTIC, DENSO FIBER-WRAP
     - d2. TRENTON PRIMER, #1 WAX-TAPE, AND GUARD-WRAP
     - d3. OR APPROVED EQUAL (SUBMITTAL TO CITY AND WRITTEN APPROVAL REQUIRED PRIOR TO INSTALLATION)

AIR/VACUUM RELIEF STATION NOTES:

A1. THE USE OF AN "APCO" MODEL 145C OR "VAL-MATIC" MODEL 202C COMBINATION AIR/VACUUM VALVE IS ACCEPTED WHEN APPROVED BY THE CITY WATER DEPARTMENT SUPERINTENDENT. UPSIZE VENT PIPE, AIR VENT AND FITTINGS (ITEMS D, E, F, H AND I) TO 2" DIA. AND GALVANIZED WHEN USING ALTERNATE VALVES.

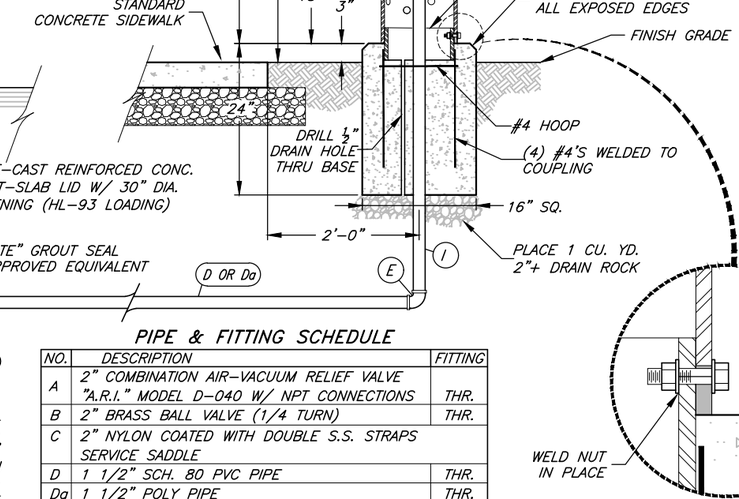
A2. RAISE ALL MANHOLES TO FINISH GRADE OF STREET FOLLOWING PAVING WITH A CONCRETE COLLAR; COLLAR TO BE HELD DOWN 1/4" BELOW TOP OF NEW ASPHALT. MANHOLE LID TO BE HELD DOWN 1/4" BELOW CONCRETE COLLAR.

A3. NO MORE THAN 12" OF GRADE RINGS TO BE ALLOWED ON ANY MANHOLE



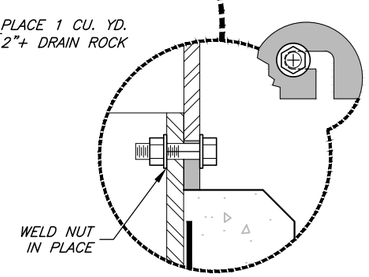
AIR/VACUUM RELIEF STATION

(BURIED WATER MAIN APPLICATION)



PIPE & FITTING SCHEDULE

NO.	DESCRIPTION	FITTING
A	2" COMBINATION AIR-VACUUM RELIEF VALVE "A.R.I." MODEL D-040 W/ NPT CONNECTIONS	THR.
B	2" BRASS BALL VALVE (1/4 TURN)	THR.
C	2" NYLON COATED WITH DOUBLE S.S. STRAPS SERVICE SADDLE	
D	1 1/2" SCH. 80 PVC PIPE	THR.
Da	1 1/2" POLY PIPE	THR.
E	1 1/2" GALV. STEEL 90° ELBOW	THR.
F	1 1/2" SCH. 80 PVC UNION	THR.
G	2" BRASS PIPE	THR.
H	1 1/2" SCH. 80 PVC TEE	THR.
I	1 1/2" GALV. STEEL PIPE	THR.



DETAIL "B"

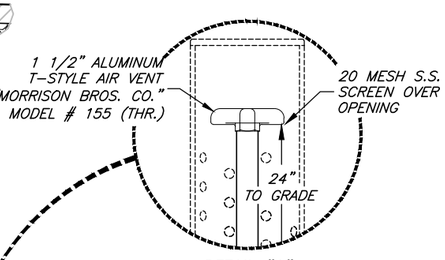
**LOCATION OF VENT PIPE TO BE DETERMINED BY CITY ENGINEER

FIRE LINE NOTES:

C1. NO WATER SERVICE OR FIRE LINES TO BUILDINGS ARE PERMITTED TO CONNECT TO AUXILIARY LINES SERVICING FIRE HYDRANTS.

C2. COMMERCIAL FIRE LINES FROM THE MAIN TO BUILDING SHALL BE SEPARATE LINES AND NOT PART OF THE WATER SERVICE LATERAL.

C3. FIRE LINES ARE TO BE MAINTAINED BY THE PROPERTY OWNER UP TO THE VALVE AT THE MAIN. THE CITY SHALL OWN AND MAINTAIN THE VALVE AT THE MAIN.



DETAIL "A"

REGISTERED PROFESSIONAL ENGINEER — BRANDON KENT JONES No. 5148758 — State of Utah

Brandon K. Jones
PROJECT ENGINEER
9-4-2018
DATE

REV.	DATE	APPR.	

SCALE: N.T.S.

DESIGNED _____
DRAWN _____
CHECKED _____

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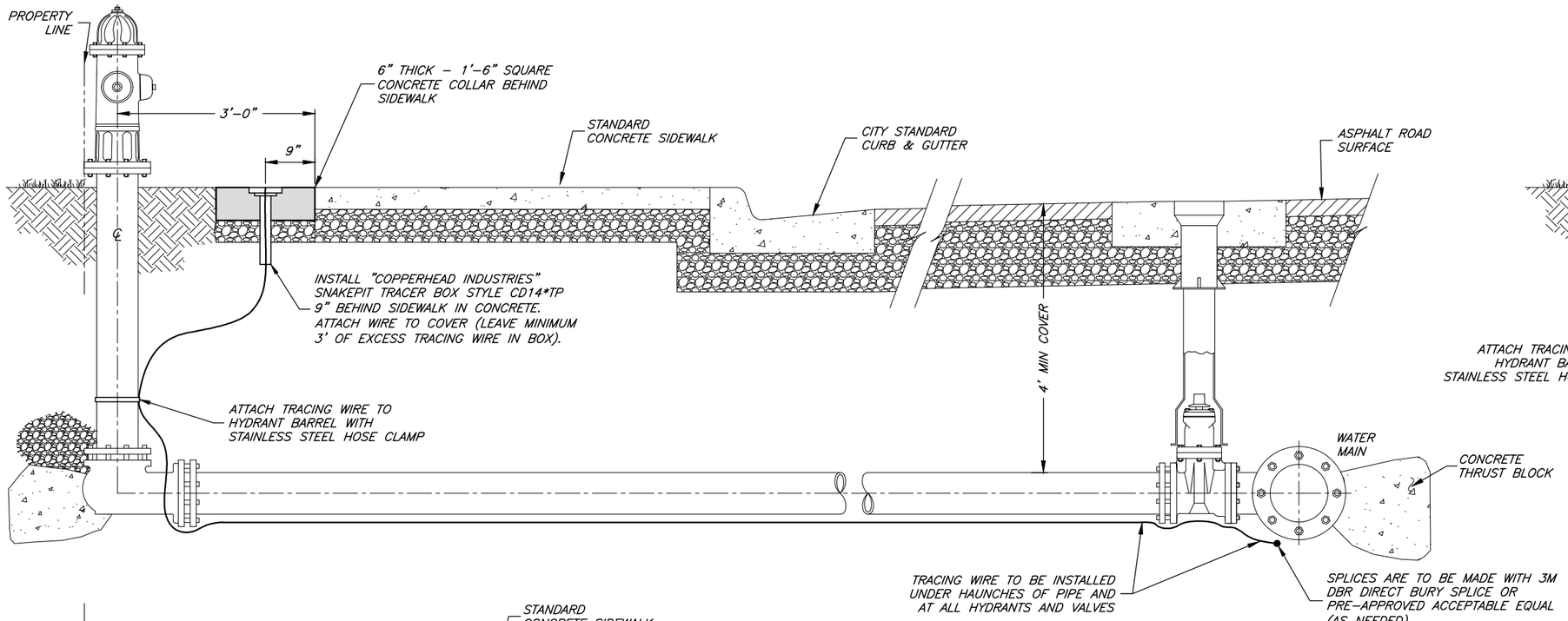
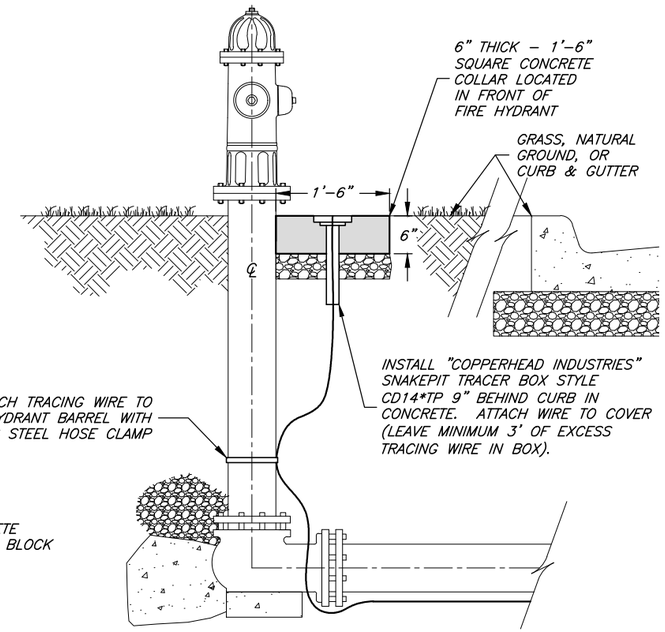
FRUIT HEIGHTS CITY
PUBLIC WORKS STANDARDS

CULINARY WATER - AIR/VACUUM RELIEF STATION, FIRE HYDRANT & GATE VALVE DETAILS, AND CORROSION PROTECTION NOTES

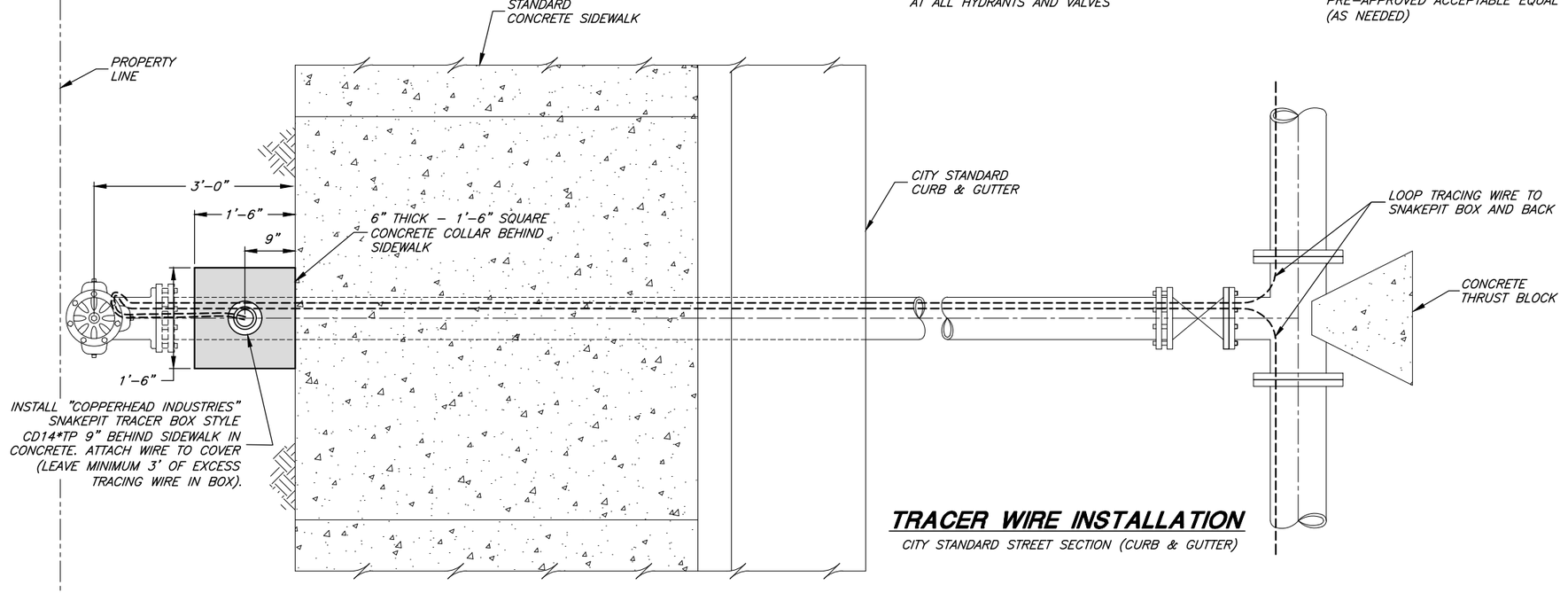
SHEET: CS-08
OF 22 SHEETS
0





ALTERNATE TRACER WIRE INSTALLATION

WHERE APPROVED BY THE WATER SYSTEM SUPERINTENDENT ON STREET SECTIONS WITH NO CURB & GUTTER, OR WHEN HYDRANT IS PLACED IN PARKSTRIP.



TRACER WIRE INSTALLATION

CITY STANDARD STREET SECTION (CURB & GUTTER)

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 AT ALL 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 WATERTIGHT 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.

REGISTERED PROFESSIONAL ENGINEER
BRANDON KENT JONES
No. 5148758
State of Utah

PROJECT ENGINEER
9-4-2018
DATE

REV.	DATE	APPR.

SCALE: N.T.S.

DESIGNED
DRAWN
CHECKED

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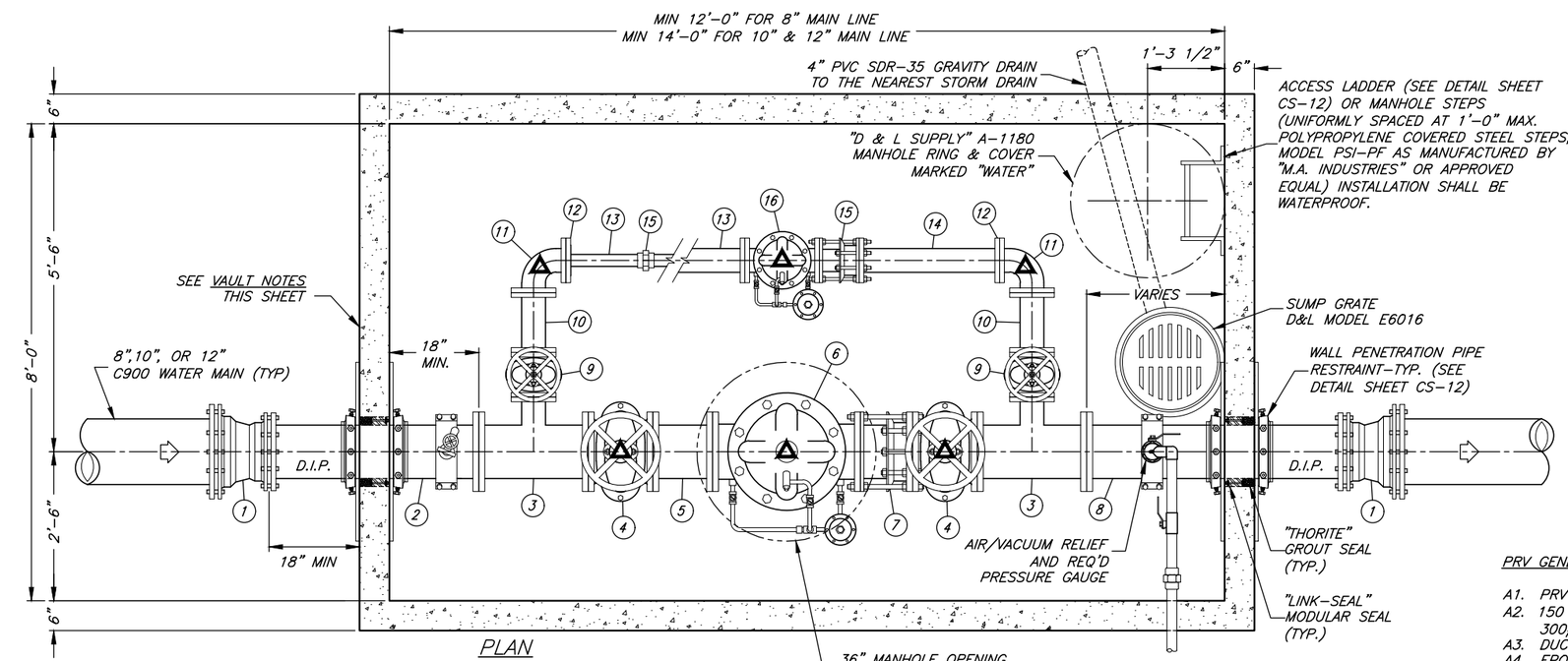
FRUIT HEIGHTS CITY
PUBLIC WORKS STANDARDS
CULINARY WATER - TRACING WIRE INSTALLATION DETAILS

SHEET: CS-09
OF 22 SHEETS
0



PRESSURE REDUCTION STATION #1

CITY STANDARD

PIPE & FITTING SCHEDULE					
NO.	DESCRIPTION	JOINT TYPE	8" LINE	10" LINE	12" LINE
1	D.I. REDUCER (2)	MJxMJ	8"x6"	10"x8"	12"x10"
2	D.I. NIPPLE PIECE	FLxPE	6"	8"	10"
3	D.I. REDUCING TEE (2)	FL	6"X6"X4"	8"X8"X4"	10"X10"X4"
4	"MUELLER" A-2361 GATE VALVE W/ HANDWHEEL (2)	FL	6"	8"	10"
5	12" D.I. SPOOL PIECE	FL	6"	8"	10"
6	"CLA-VAL" 90-01 PRESSURE REDUCTION VALVE	FL	6"	8"	10"
7	"ROMAC" DJ400 DISMANTLING JOINT	FL	6"	8"	10"
8	D.I. NIPPLE PIECE	FLxPE	6"	8"	10"
9	"MUELLER" A-2361 GATE VALVE W/ HANDWHEEL (2)	FL	4"	4"	4"
10	12" D.I. SPOOL PIECE	FL	4"	4"	4"
11	D.I. 90° ELBOW (2)	FL	4"	4"	4"
12	BLIND FLANGE W/ THR. CONNECTION (2)	FLxTHR.	4"x2"	--	--
13	D.I. SPOOL PIECE	FL	--	4"	4"
	BRASS PIPE	THR.	2"	--	--
14	D.I. SPOOL PIECE	FL	--	4"	4"
	BRASS PIPE	THR.	2"	--	--
15	"ROMAC" DJ400 DISMANTLING JOINT	FL	--	4"	4"
	BRASS UNION	THR.	2"	--	--
16	"CLA-VAL" 90-01 PRESSURE REDUCTION VALVE	FL	--	4"	4"
		THR.	2"	--	--
17	"CLOW" F-1608 OR "ANVIL" #264 GALV. PIPE SUPPORT W/ 3" COMPANION FLANGE & VARIABLE HEIGHT 3" NIPPLE (6 EA REQ'D.)				△ SYMBOL

PRV GENERAL SPECIFICATIONS:

A1. PRV TO BE CLA-VAL #90-01 YBCSKC
A2. 150 # FLANGED FOR 250 PSI WORKING PRESSURE, 300# FLANGED IF GREATER THAN 250 PSI
A3. DUCTILE IRON BODY GLOBE PATTERN
A4. EPOXY LINED AND COATED
A5. STAINLESS STEEL INTERNAL TRIM
A6. BRONZE PILOT CONTROLS
A7. STAINLESS STEEL TUBES & FITTINGS
A8. SPRING RANGES FOR PRESSURE REDUCING PILOT
A9. X101 VALVE POSITION INDICATOR
A10. CK2 ISOLATION BALL VALVES (STAINLESS)
A11. CV FLOW CONTROL (OPENING)

COATING NOTES:

B1. THE P.R.V. VALVE SHALL INCLUDE FACTORY INSTALLED INTERIOR EPOXY COATING.

B2. ALL NEW AND EXISTING PIPING, VALVES, FITTINGS, METERS, ETC, INSIDE THE VAULT SHALL BE EPOXY PAINTED BLUE.

B3. METAL SURFACES TO BE PAINTED SHALL BE PRIMED AND THEN PAINTED W/ TWO COATS OF BLUE EPOXY PAINT.

VAULT NOTES:

C1. PRE-PLUMBED PRV VAULTS ARE THE PREFERRED OPTION FOR INSTALLATION. THE USE AND LOCATION OF A PRE-PLUMBED PRV VAULT SHALL BE AS DIRECTED BY THE CITY ENGINEER FOLLOWING REVIEW OF CURRENT SITE CONDITIONS.

C2. WHERE APPLICABLE, PRESSURE RELIEF VALVE ASSEMBLY MAY BE REQUIRED. THIS IS A CASE BY CASE ITEM DETERMINED BY THE CITY WATER DEPARTMENT (PRV VAULT WILL NEED TO BE LENGTHENED TO ACCOMMODATE SUCH VALVE)

C3. PRECAST CONCRETE STRUCTURE CAN BE REPLACED WITH CAST-IN-PLACE CONCRETE VAULT. SUBMIT ENGINEERED CONSTRUCTION PLANS WITH REBAR DETAILS TO CITY ENGINEER FOR REVIEW AND ACCEPTANCE PRIOR TO CONSTRUCTION.

C4. PENETRATION WALLS NEED TO BE ADEQUATELY DESIGNED STRUCTURALLY FOR ANTICIPATED THRUST.

C5. THE PRECAST VAULT MANUFACTURER IS RESPONSIBLE FOR DESIGN RELATED TO HL-93 TRAFFIC LOADING AND THRUST. VERIFICATION OF PROPER DESIGN MUST BE PROVIDED TO THE CITY BY THE DEVELOPER, CONTRACTOR, OR PROPERTY OWNER AS THE CASE MAY BE.

GENERAL NOTES:

A. WATER SYSTEM CORROSION PROTECTION REQUIREMENTS: SEE GENERAL NOTE 6 ON SHEET CS-08

B. ALL FITTINGS OUTSIDE OF THE VAULT ARE TO BE DUCTILE IRON MJ WITH THRUST RESTRAINT RETAINER GLANDS ("ROMAC", MJRG, OR APPROVED EQUAL)

C. STRUCTURE, PIPING & VALVE SIZES FOR P.R.V. STATIONS ON LINE SIZES GREATER THAN 12" SHALL BE SPECIFIED BY THE CITY ENGINEER.

D. ALL SPECIFIED BRANDS OF MATERIALS SHOWN ON THESE DRAWINGS ARE "CITY STANDARDS." OTHER EQUIVALENT BRANDS MAY BE USED WITH THE PRIOR APPROVAL OF THE CITY ENGINEER AND THE CITY WATER SYSTEM SUPERINTENDENT.

E. FIBER MESH SHALL BE ADDED TO ALL CONCRETE COLLARS ON VALVES AND MANHOLES.

F. WHEN AN AIR/VACUUM RELIEF VALVE IS NOT NEEDED A PRESSURE GAUGE IS STILL REQUIRED ON THE DOWNSTREAM SIDE OF THE PRV.

REGISTERED PROFESSIONAL ENGINEER — BRANDON KENT JONES No. 5148758 — State of Utah

PROJECT ENGINEER

9-4-2018

DATE

REV.	DATE	APPR.

SCALE: N.T.S.

DESIGNED _____
DRAWN _____
CHECKED _____

JA JONES & ASSOCIATES
CONSULTING ENGINEERS
6080 Fashion Point Drive
South Ogden, Utah 84403 (801) 476-9767
www.jonescivil.com

FRUIT HEIGHTS CITY CORPORATION
PUBLIC WORKS STANDARDS
CULINARY WATER - PRESSURE REDUCTION STATION I

SHEET: CS-10
OF 22 SHEETS
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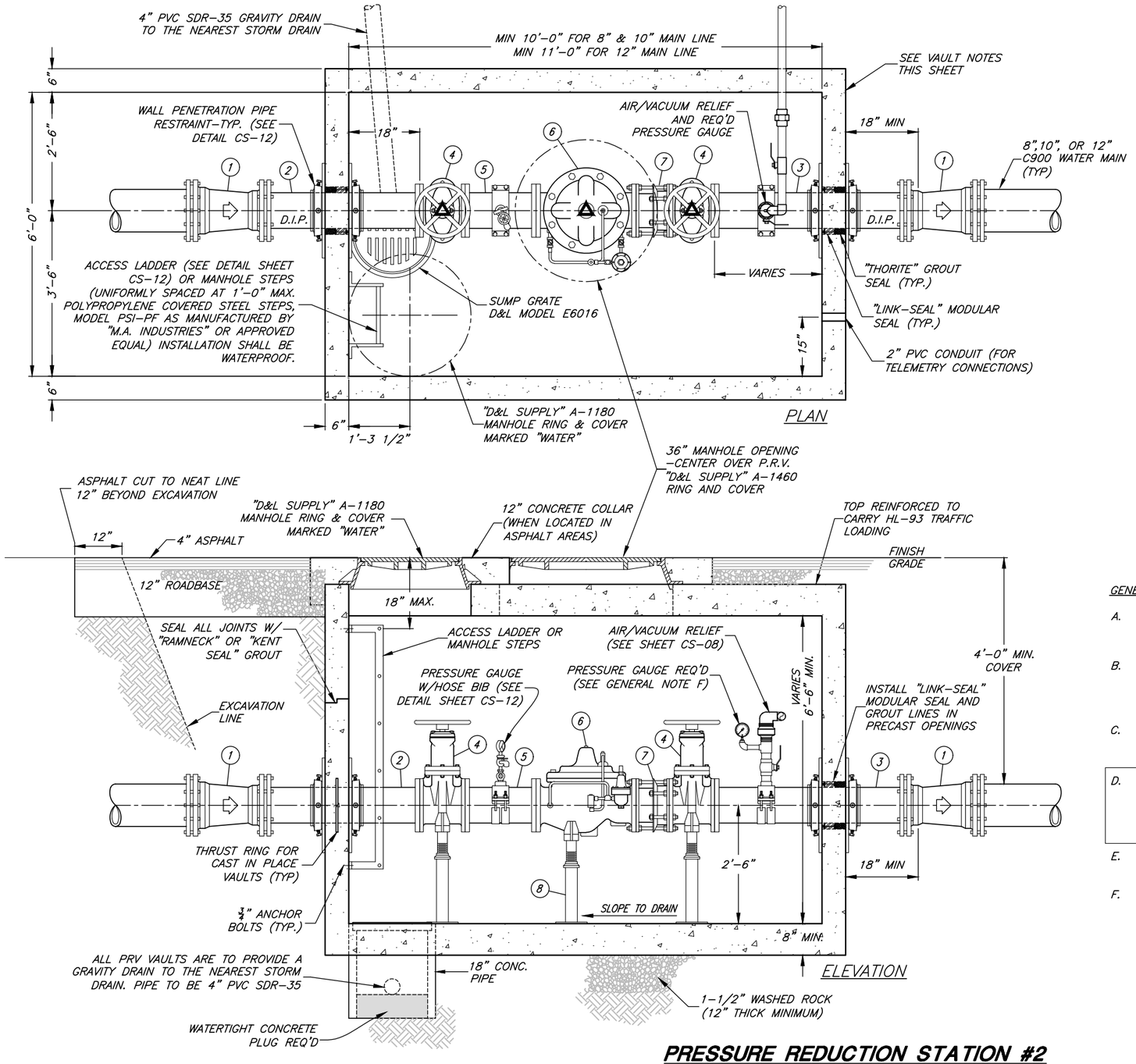

PRESSURE REDUCTION STATION #2

FOR USE ONLY WITH APPROVAL OF THE CITY ENGINEER IN AREAS WITH MULTIPLE WATER SYSTEM FEEDS.

PRV PIPE & FITTING SCHEDULE					
NO.	DESCRIPTION	JOINT TYPE	8" LINE	10" LINE	12" LINE
1	D.I. REDUCER	MJxMJ	8"x6"	10"x8"	12"x10"
2	D.I. NIPPLE PIECE	FLxPE	6"	8"	10"
3	D.I. NIPPLE PIECE	FLxPE	6"	8"	10"
4	"MUELLER" A-2361 GATE VALVE W/ HANDWHEEL	FL	6"	8"	10"
5	1'-6" D.I. SPOOL PIECE	FL	6"	8"	10"
6	"SINGER" MODEL 106 PR-C-AC PRESSURE REDUCTION VALVE	FL	6"	8"	10"
7	"ROMAC" DJ400 DISMANTLING JOINT	FL	6"	8"	10"
8	"CLOW" F-1608 OR "ANVIL" #264 GALV. PIPE SUPPORT W/ 3" COMPANION FLANGE & VARIABLE HEIGHT 3" NIPPLE (3 EA REQ'D.)				△ SYMBOL

PRV GENERAL SPECIFICATIONS:

A1. PRV TO BE "SWINGER" MODEL 106 PR-C-AC
A2. 150 # FLANGED FOR 250 PSI WORKING PRESSURE,
A3. DUCTILE IRON BODY GLOBE PATTERN
A4. EPOXY LINED AND COATED
A5. STAINLESS STEEL INTERNAL TRIM
A6. STAINLESS STEEL PILOT CONTROLS
A7. STAINLESS STEEL TUBES & FITTINGS
A8. 10-80 P.S.I. SPRING RANGES FOR PRESSURE REDUCING PILOT
A9. X107 VALVE POSITION INDICATOR

COATING NOTES:

B1. THE P.R.V. VALVE SHALL INCLUDE FACTORY INSTALLED INTERIOR FUSION BONDED EPOXY COATING.

B2. ALL PIPING, VALVES, FITTINGS, METERS, ETC, INSIDE THE VAULT SHALL BE EPOXY PAINTED BLUE.

B3. METAL SURFACES TO BE PAINTED SHALL BE PRIMED AND THEN PAINTED W/ TWO COATS OF BLUE EPOXY PAINT.

GENERAL NOTES:

A. "WATER SYSTEM CORROSION PROTECTION REQUIREMENTS: SEE GENERAL NOTE 6 ON SHEET CS-08

B. ALL FITTINGS OUTSIDE OF THE VAULT ARE TO BE DUCTILE IRON MJ WITH THRUST RESTRAINT RETAINER GLANDS ("ROMAC", MJRG, OR APPROVED EQUAL)

C. STRUCTURE, PIPING & VALVE SIZES FOR P.R.V. STATIONS ON LINE SIZES GREATER THAN 12" SHALL BE SPECIFIED BY THE CITY ENGINEER.

D. ALL SPECIFIED BRANDS OF MATERIALS SHOWN ON THESE DRAWINGS ARE "CITY STANDARDS." OTHER EQUIVALENT BRANDS MAY BE USED WITH THE PRIOR APPROVAL OF THE CITY ENGINEER AND THE CITY WATER SYSTEM SUPERINTENDENT.

E. FIBER MESH SHALL BE ADDED TO ALL CONCRETE COLLARS ON VALVES AND MANHOLES.

F. WHEN AN AIR/VACUUM RELIEF VALVE IS NOT NEEDED A PRESSURE GAUGE IS STILL REQUIRED ON THE DOWNSTREAM SIDE OF THE PRV.

VAULT NOTES:

C1. PRE-PLUMBED PRV VAULTS ARE THE PREFERRED OPTION FOR INSTALLATION. THE USE AND LOCATION OF A PRE-PLUMBED PRV VAULT SHALL BE AS DIRECTED BY THE CITY ENGINEER FOLLOWING REVIEW OF CURRENT SITE CONDITIONS.

C2. WHERE APPLICABLE, PRESSURE RELIEF VALVE ASSEMBLY MAY BE REQUIRED. THIS IS A CASE BY CASE ITEM DETERMINED BY THE CITY WATER DEPARTMENT (PRV VAULT WILL NEED TO BE LENGTHENED TO ACCOMMODATE SUCH VALVE)

C3. PRECAST CONCRETE STRUCTURE CAN BE REPLACED WITH CAST-IN-PLACE CONCRETE VAULT. SUBMIT ENGINEERED CONSTRUCTION PLANS WITH REBAR DETAILS TO CITY ENGINEER FOR REVIEW AND ACCEPTANCE PRIOR TO CONSTRUCTION.

C4. PENETRATION WALLS NEED TO BE ADEQUATELY DESIGNED STRUCTURALLY FOR ANTICIPATED THRUST.

C5. THE PRECAST VAULT MANUFACTURER IS RESPONSIBLE FOR DESIGN RELATED TO HL-93 TRAFFIC LOADING AND THRUST. VERIFICATION OF PROPER DESIGN MUST BE PROVIDED TO THE CITY BY THE DEVELOPER, CONTRACTOR, OR PROPERTY OWNER AS THE CASE MAY BE.

REGISTERED PROFESSIONAL ENGINEER — BRANDON KENT JONES No. 5148758 — State of Utah

PROJECT ENGINEER

9-4-2018
DATE

REV.	DATE	APPR.

SCALE: N.T.S.

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DRAWN _____
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JA JONES & ASSOCIATES
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6080 Fashion Point Drive
South Ogden, Utah 84403 (801) 476-9767
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FRUIT HEIGHTS CITY CORPORATION
PUBLIC WORKS STANDARDS

CULINARY WATER - PRESSURE REDUCTION STATION II

SHEET: CS-11
OF 22 SHEETS
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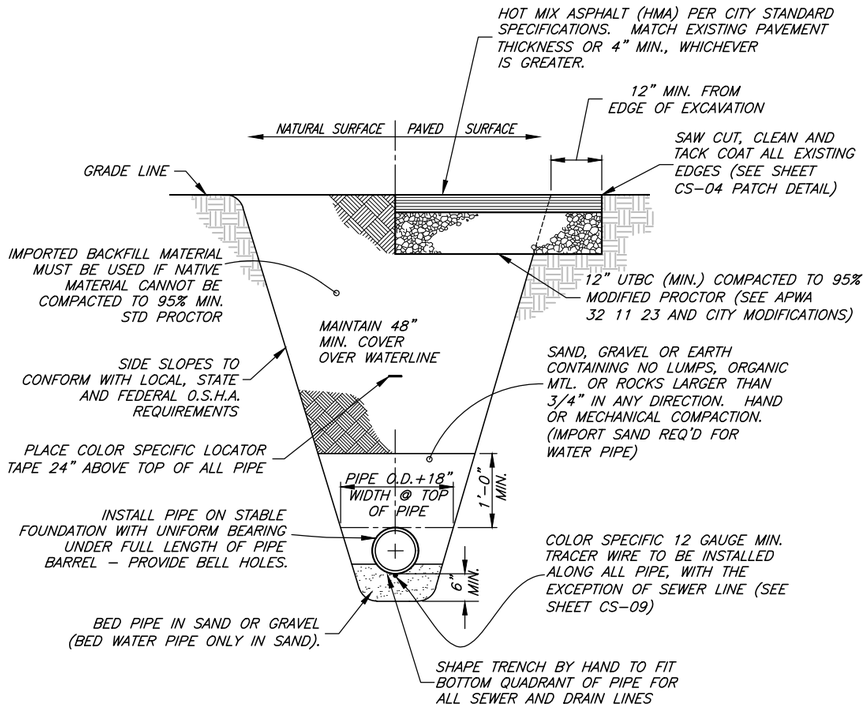


TYPICAL TRENCH SECTION

(WATER, IRRIGATION, SEWER, STORM DRAIN, AND LAND DRAIN)

TRENCH NOTES:

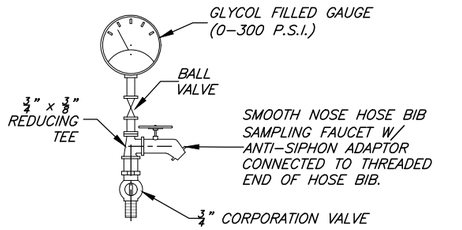
A. BACKFILL PER APWA 33 05 20 AND CITY MODIFICATIONS.

B. PAVEMENT RESTORATION PER APWA 33 05 25 AND CITY MODIFICATIONS.

C. GRAVEL SURFACED AREAS, SUCH AS ROADS AND SHOULDERS, PARKING AREAS, AND UNPAVED DRIVEWAYS, SHALL BE REPAIRED WITH 8" THICK (MIN.) 1" UNTREATED BASE COURSE COMPACTED TO 95% MODIFIED PROCTOR.

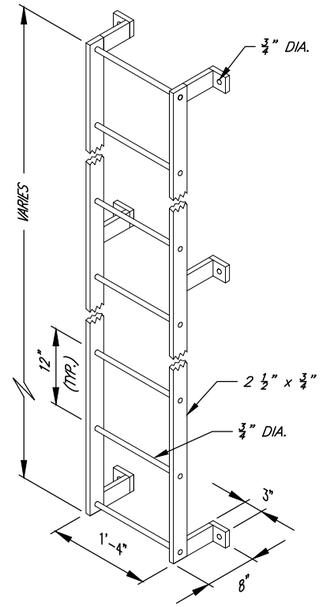
D. COMPACTION TEST REQUIRED AT SPRING–LINE FOR ALL P.V.C. OR H.D.P.E. PIPES.

E. COMPACTION TESTS SHALL BE REQUIRED AS SPECIFIED, OR AS DIRECTED BY PROJECT ENGINEER. ALL TESTS SHALL BE PERFORMED IN THE PRESENCE OF PROJECT INSPECTOR, IN LOCATIONS DETERMINED BY THEM. (MINIMUM NUMBER OF TESTS: 1 PER 200', PER 2' BACKFILL HEIGHT). MORE TESTS MAY BE REQUIRED BY CITY ENGINEER OR PUBLIC WORKS DIRECTOR IF NECESSARY. CONTRACTOR/DEVELOPER TO SCHEDULE AND COORDINATE TESTING.



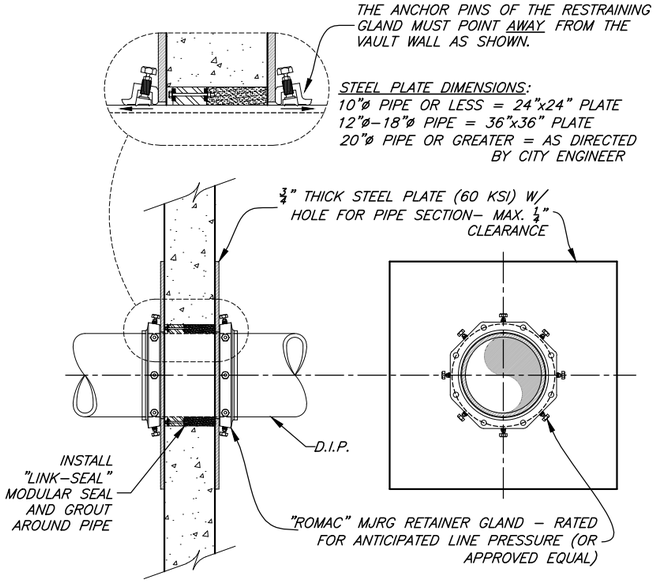
PRESSURE GAUGE

W/SAMPLING FAUCET DETAIL



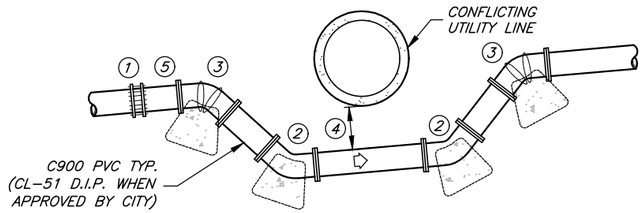
LADDER DETAIL

HOT DIP GALVANIZE AFTER FABRICATION



WALL PENETRATION DETAIL

FOR PRECAST VAULT (TYP)



TYPICAL WATERLINE LOOP

1. TRANSITION COUPLING; "ROMAC" MODEL 501
2. MJ 45° BEND W/RETAINER GLANDS
3. CONSTRUCT THRUST BLOCKS AT EACH 45° BEND W/(3) #6 REBAR SECURING BLOCK TO FITTING (EPOXY COATING)
4. MINIMUM OF 12" COVER BETWEEN THE WATERLINE AND CONFLICTING UTILITY LINE TO BE CROSSED, EXCEPT LOOPS INVOLVING SEWER MAINS. LOOPS UNDER SEWER MAINS MUST MEET ALL THE REQUIRED CONDITIONS AND BE APPROVED BY THE STATE DDW IN ACCORDANCE WITH R309–550–7.
5. AN AIR/VACUUM RELIEF VALVE MAY BE REQUIRED ON A CASE BY CASE BASIS AS DIRECTED BY THE CITY WATER SYSTEM SUPERINTENDENT.

PIPE RESTRAINT

A1. FOR NOMINAL PIPE DIAMETERS 6" AND GREATER, ALL BENDS, CROSSES, TEES, REDUCERS, AND VALVES SHALL BE INSTALLED WITH RESTRAINING JOINTS ("MEGA–LUG", "ALPHA" OR APPROVED EQUAL).

A2. DESIGN SHALL ALSO BE REQUIRED TO ENSURE ADEQUATE RESTRAINT FOR PIPING JOINTS NEAR FITTINGS BASED ON PIPE DIAMETER AND PIPE PRESSURE.

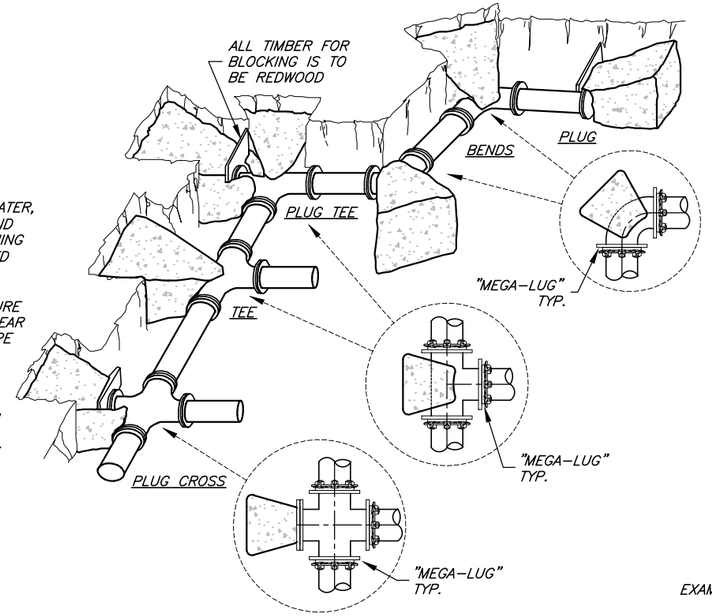
THRUST BLOCKING NOTES:

B1. CONCRETE SHALL NOT BE PLACED WITHIN 1–1/2" OF JOINTS AND BOLTS. COVER ALL METAL CONTACT AREAS WITH A POLY WRAP PRIOR TO CONCRETE PLACEMENT.

B2. IN THE ABSENCE OF A SOILS REPORT, ALL THRUST BLOCKS SHALL BE SIZED ON THE BASIS OF A MAXIMUM LATERAL BEARING VALUE FOR 2000 P.S.F. AND A THRUST RESULTING FROM 200% OF THE WATER LINE STATIC LINE TEST.

B3. THRUST BLOCKS ARE REQUIRED AT ALL BENDS OF 22–1/2° OR MORE. 11–1/4° BENDS SHALL HAVE RETAINER GLANDS.

B4. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF NOT LESS THAN 3000 PSI IN 28 DAYS.



TYPICAL RETAINER GLANDS & THRUST BLOCKING

THRUST PER PSI OF WATER PRESSURE AT VARIOUS FITTINGS				
PIPE SIZE (IN.)	DEAD END OR TEE (LB.)	90° ELBOW (LB.)	45° ELBOW (LB.)	22–1/2° ELBOW (LB.)
4	19	27	15	7
6	39	55	30	15
8	67	94	51	26
10	109	154	84	43
12	155	218	119	61
14	210	296	161	82
16	272	383	209	106
18	351	494	269	137
20	434	611	333	169
24	623	878	487	244
30	947	1,332	722	377
36	1,356	1,905	1,032	542

NOTES:

C1. IN USING THE ABOVE TABLE, USE THE MAXIMUM INTERNAL PRESSURE ANTICIPATED (I.E. HYDROSTATIC TEST PRESSURE, POSSIBLE SURGE PRESSURE DUE TO PUMP SHUT OFF, ETC.).

C2. SEE SOILS REPORT FOR BEARING STRENGTH OF SOIL. IN THE ABSENCE OF A SOILS REPORT, AN AVERAGE SOIL (SPADABLE MEDIUM CLAY) CAN BE ASSUMED TO HAVE A BEARING STRENGTH OF 2000 P.S.F.

EXAMPLE:

8–INCH 90° ELBOW, PRESSURE 200 LB./SQ. IN.
FROM TABLE: THRUST = 94 X 200 = 18,800 LB.
ASSUME BEARING STRENGTH = 2.000 LB./SQ. FT.

18,8000 / 2,000 = 9.4 SQ. FT. AREA OF BEARING REQUIRED FOR THRUST BLOCK

REGISTERED PROFESSIONAL ENGINEER — BRANDON KENT JONES No. 5148758 — State of Utah

BRANDON K. JONES
PROJECT ENGINEER
9-4-2018
DATE

REV.	DATE	APPR.

SCALE: N.T.S.

DESIGNED _____
DRAWN _____
CHECKED _____

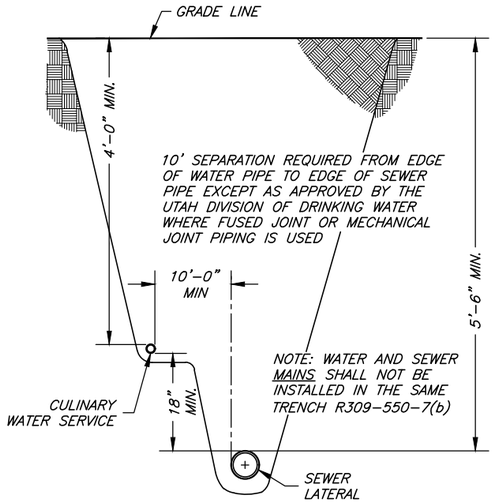
JA JONES & ASSOCIATES
CONSULTING ENGINEERS
6080 Fashion Point Drive
South Ogden, Utah 84403 (801) 476–9767
www.jonescivil.com

FRUIT HEIGHTS CITY CORPORATION
PUBLIC WORKS STANDARDS
CULINARY WATER - THRUST BLOCK, WATERLINE LOOP, PIPE TRENCH & MISC. VAULT DETAILS

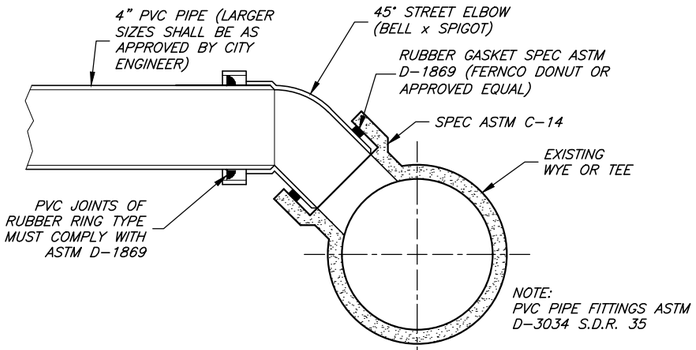
SHEET: CS-12
OF 22 SHEETS
0

GENERAL NOTES:

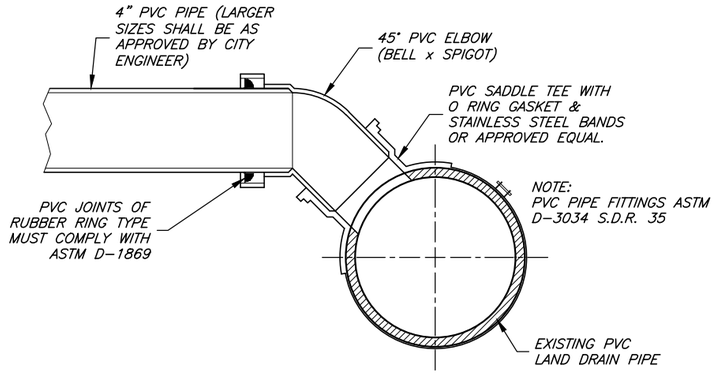
1. ALL LAND DRAIN LATERAL CONNECTIONS ON MAINS IN NEW SUBDIVISIONS SHALL BE MADE WITH IN LINE PRE–FORMED WYES OR TEES UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.
2. FLOWLINE ELEVATION OF LATERALS SHALL EQUAL THE INSIDE TOP OF PIPE ON MAINLINE AT THE CONNECTING POINT (THE LATERAL TAP SHALL BE IN THE TOP QUARTER OF THE MAIN LINE PREFERABLY IN THE 10:00 OR 2:00 POSITION).
3. LATERAL CONNECTIONS SHALL NOT BE ALLOWED IN MANHOLES.
4. LAND DRAIN MAIN LINES SHALL BE "GREEN" IN COLOR AND LAND DRAIN LATERAL LINES SHALL BE "WHITE" IN COLOR. IRRIGATION PIPES SHALL BE "PURPLE" IN COLOR. SANITARY SEWER PIPES SHALL BE AS SPECIFIED BY CENTRAL DAVIS SEWER DISTRICT. PREVIOUS YEARS PIPE COLORS VARY THROUGHOUT THE CITY. **CONTRACTOR TO VERIFY EXISTING PIPE PRIOR TO MAKING ANY CONNECTION.**
5. INSERTA TEE PRODUCT IS NOT APPROVED BY THE CITY
6. THE LOCATION OF THE SEWER LATERAL MUST BE DOCUMENTED AND SUBMITTED TO THE CITY AND/OR CENTRAL DAVIS SEWER DISTRICT ON SCALED AS–BUILT DRAWINGS.
7. ALL CULINARY WATER MAINS AND SERVICES MUST MAINTAIN A MINIMUM SEPARATION ABOVE ALL SEWER MAINS AND LATERALS OF 10'–0" HORIZONTAL AND 18" VERTICAL IN ACCORDANCE WITH THE STATE OF UTAH DIVISION OF DRINKING WATER RULES SECTION R309–550–7
8. ALL LAND DRAIN LINES SHALL BE INSPECTED BY MEANS OF VIDEO CAMERA WHEN CONSTRUCTED. PRIOR TO VIDEO, PIPE SHALL BE FLUSHED WITH A PRESSURIZED CLEANING TRUCK. ALL WATER & DEBRIS SHALL BE SUCKED OUT & REMOVED FROM THE LOW END MANHOLE. CONNECTIONS TO EXISTING LINES SHALL BE BLOCKED TO PREVENT FLUSHED DEBRIS FROM ENTERING SYSTEM. CLEAN WATER SHALL BE ADDED TO LINE WHILE VIDEOING. ALL PROBLEMS FOUND AND CORRECTED TO BE RE–INSPECTED BY THE SAME PROCEDURE. VIDEOS TO BE RETAINED BY CITY.
9. STAMPED STAINLESS STEEL PINS USED FOR LATERAL LOCATING ARE REQUIRED BY THE CITY. BLANK S.S. PINS SHALL BE PROVIDED BY THE CITY AND INSTALLED AND STAMPED BY THE CONTRACTOR DURING ALL NEW CONSTRUCTION OR RESTORED WHEN REPLACING DAMAGED CURB & GUTTER DUE TO ANY CONSTRUCTION RELATED ACTIVITY. S.S. PINS SHALL BE STAMPED "S" FOR SANITARY SEWER, "W" FOR CULINARY WATER, AND "L" FOR LAND DRAIN.
10. DOWNSTREAM LAND DRAIN CONNECTION TO AN EXISTING STORM DRAIN SYSTEM IS REQUIRED.
11. TAPPING INTO EXIST. PIPE TO BE WITH A CITY APPROVED TAPPING MACHINE. TAPPING INTO EXIST. PIPE AND CONNECTION SADDLE TO BE INSPECTED BY THE CITY AND PAID FOR BY THE OWNER, IN ADDITION TO THE CONNECTION FEE.



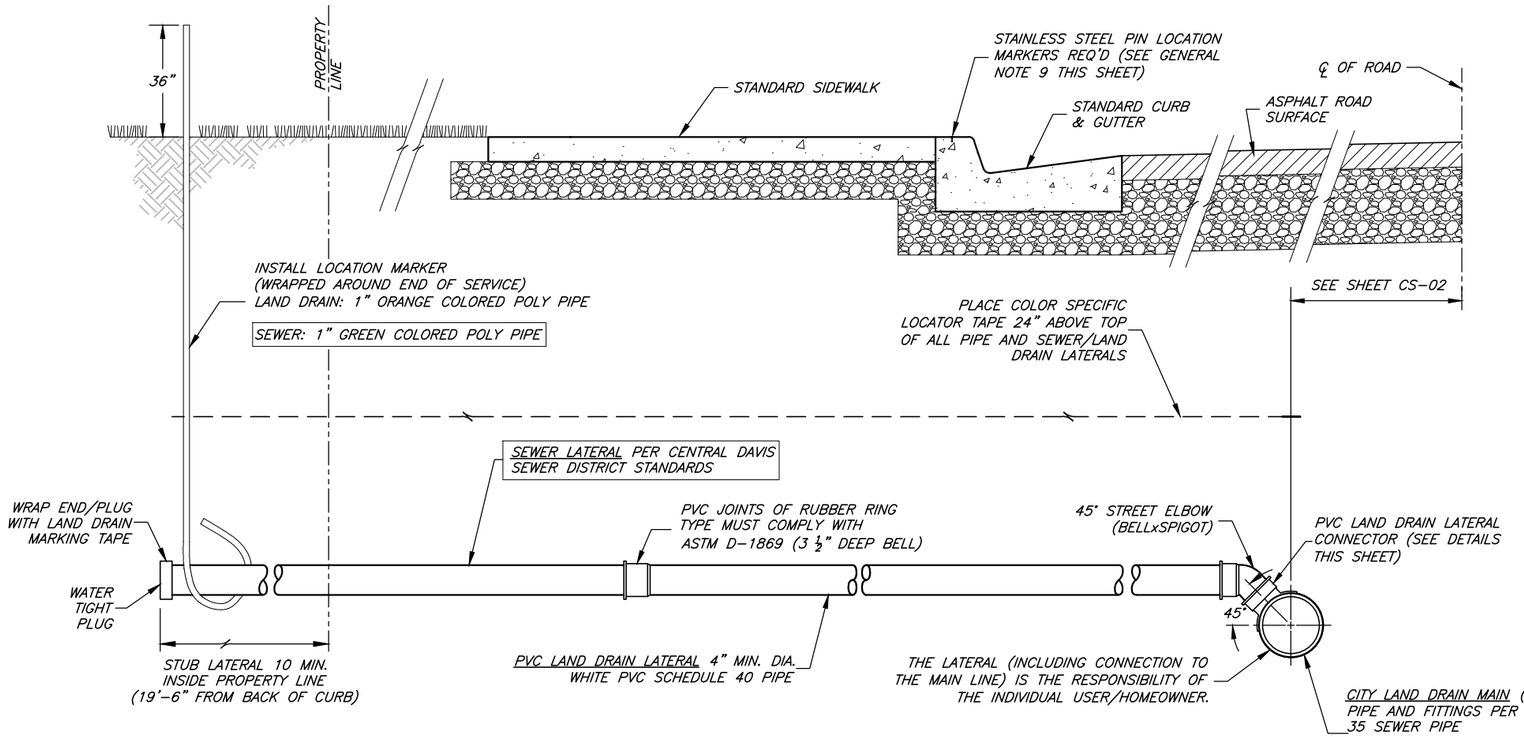
COMBINED WATER SERVICE & SEWER LATERAL TRENCH SECTION



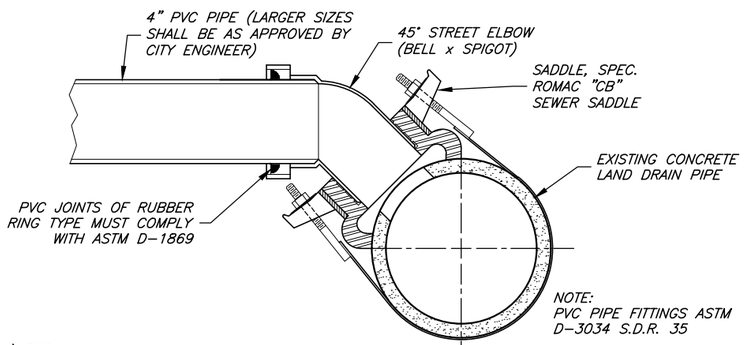
CONNECTING INTO EXISTING WYE OR TEE



TAPPING INTO EXISTING PVC PIPE



TYPICAL LAND DRAIN / SEWER LATERALS CONNECTION



TAPPING INTO EXISTING CONCRETE PIPE

REGISTERED PROFESSIONAL ENGINEER — BRANDON KENT JONES No. 5148758 — State of Utah

Brandon K. Jones
PROJECT ENGINEER
9-4-2018
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6080 Fashion Point Drive
South Ogden, Utah 84403 (801) 476–9767
www.jonescivil.com

FRUIT HEIGHTS CITY CORPORATION
PUBLIC WORKS STANDARDS
LAND DRAIN / SANITARY SEWER - LATERAL & CONNECTION DETAILS

SHEET: CS-13
OF 22 SHEETS
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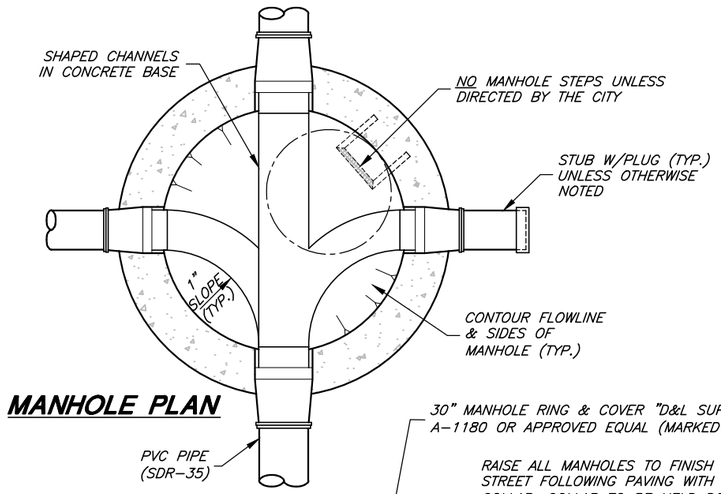
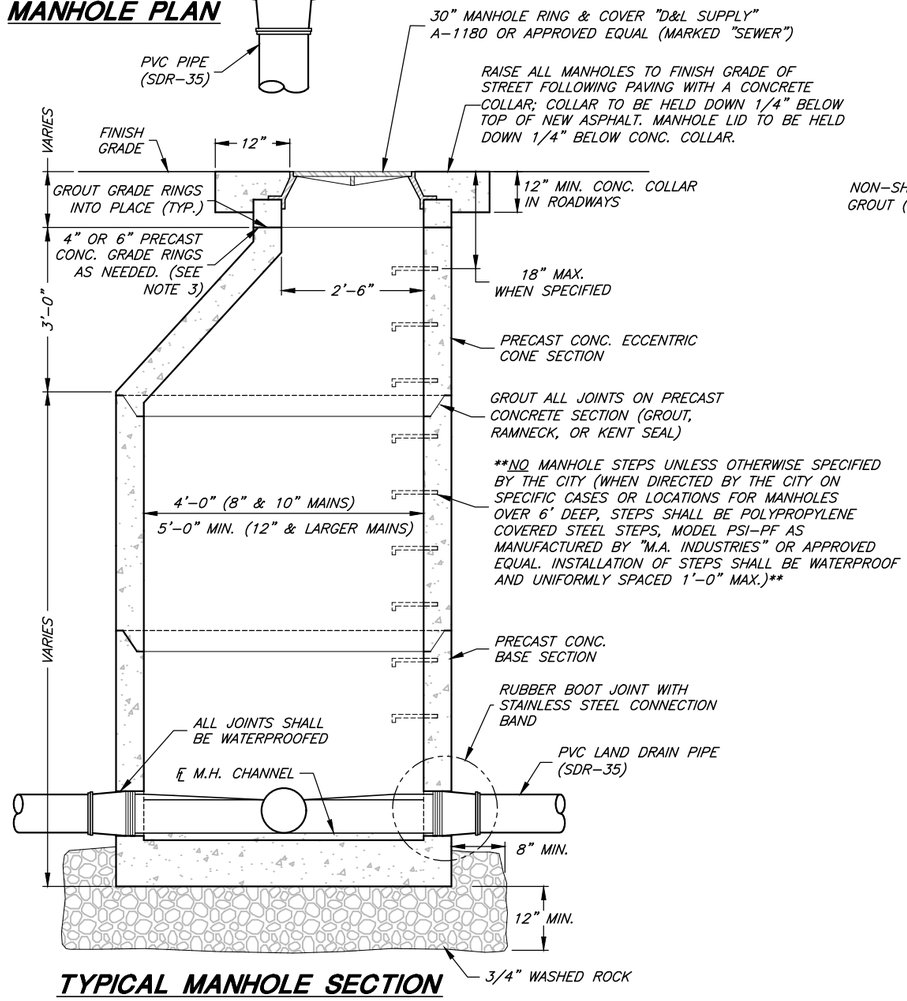


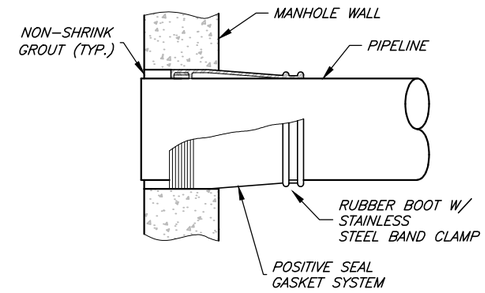
MANHOLE PLAN



TYPICAL MANHOLE SECTION

GENERAL NOTES:

1. SECURE INVERTS IN ALL MANHOLES DURING CONSTRUCTION SO AS TO PREVENT GRAVEL AND OTHER DEBRIS FROM COLLECTING INSIDE.
2. A LARGER DIAMETER MANHOLE MAY BE REQUIRED BY THE DESIGN ENGINEER AFTER EVALUATION OF THE NUMBER, SIZE, AND ANGLE OF THE PIPES THAT CONNECT TO THE MANHOLE.
3. NO MORE THAN 12" OF GRADE RINGS TO BE ALLOWED ON ANY MANHOLE.
4. ALL TERMINATING LAND DRAIN MAINS SHALL END WITH A CITY STANDARD MANHOLE.
5. SERVICE LATERAL CONNECTIONS SHALL NOT BE ALLOWED IN MANHOLES.
6. FIBER MESH SHALL BE ADDED TO ALL CONCRETE COLLARS ON VALVES AND MANHOLES.



RUBBER BOOT DETAIL

REGISTERED PROFESSIONAL ENGINEER
BRANDON KENT JONES
No. 5148758
State of Utah

PROJECT ENGINEER

9-4-2018
DATE

REV.	DATE	APPR.	

SCALE: N.T.S.

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South Ogden, Utah 84403 (801) 476-9767
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FRUIT HEIGHTS CITY CORPORATION
PUBLIC WORKS STANDARDS

LAND DRAIN - TYPICAL MANHOLES & DETAILS

SHEET: CS-14
OF 22 SHEETS
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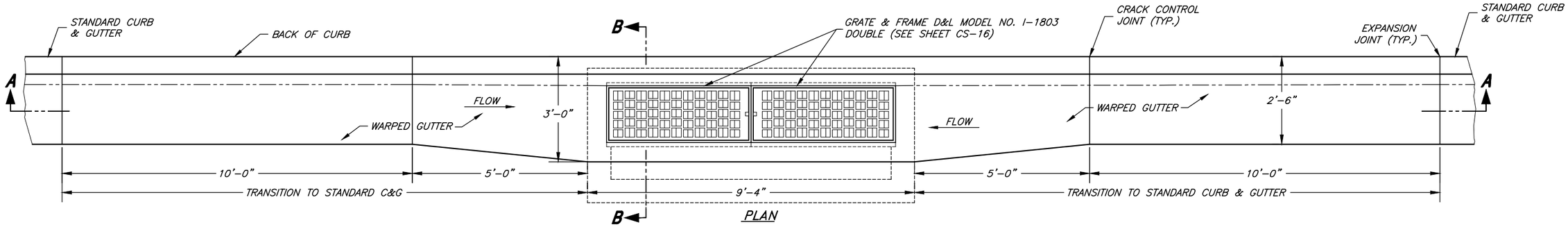
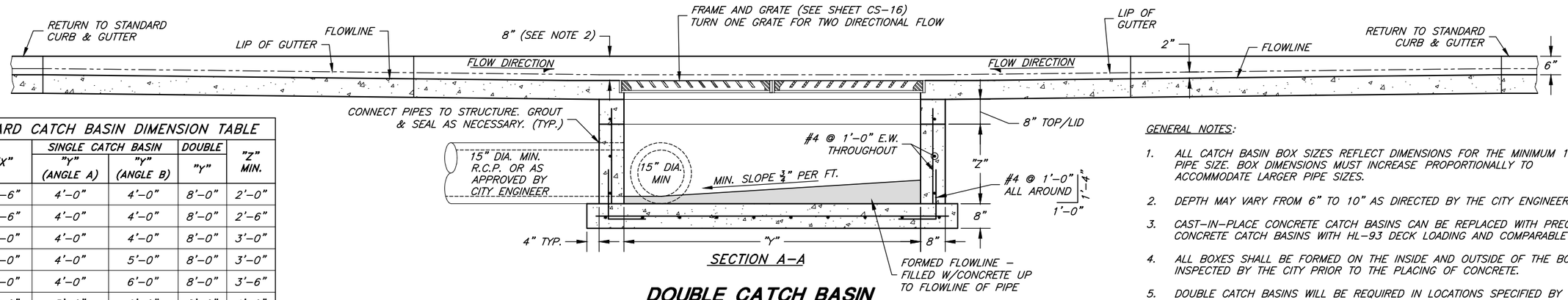
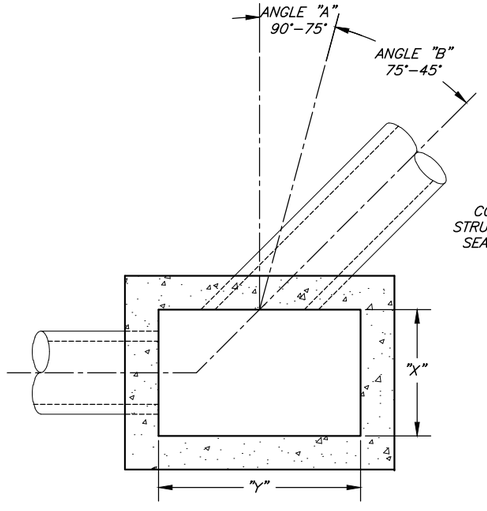
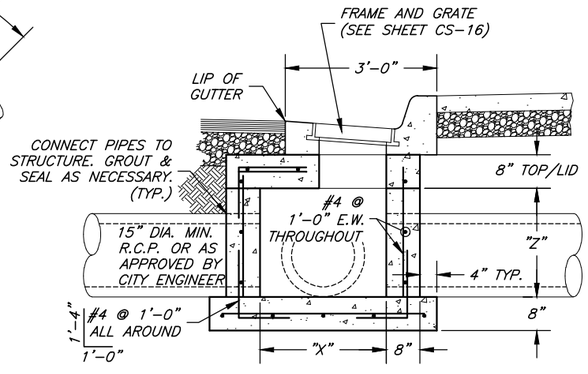




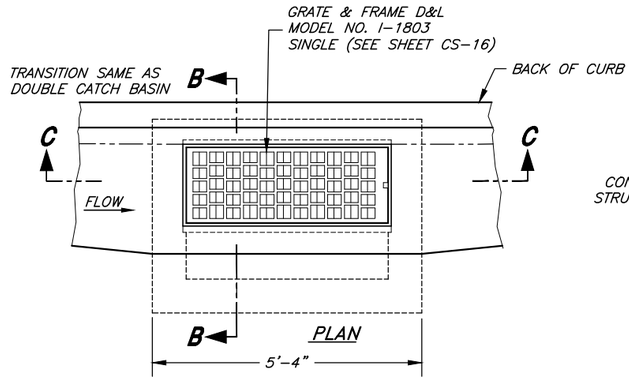
DOUBLE CATCH BASIN

STANDARD CATCH BASIN DIMENSION TABLE					
PIPE SIZE (IN.)	"X"	SINGLE CATCH BASIN "Y" (ANGLE A)	SINGLE CATCH BASIN "Y" (ANGLE B)	DOUBLE "Y"	"Z" MIN.
15	2'-6"	4'-0"	4'-0"	8'-0"	2'-0"
18	2'-6"	4'-0"	4'-0"	8'-0"	2'-6"
21	4'-0"	4'-0"	4'-0"	8'-0"	3'-0"
24	4'-0"	4'-0"	5'-0"	8'-0"	3'-0"
30	4'-0"	4'-0"	6'-0"	8'-0"	3'-6"
36	4'-0"	5'-0"	6'-0"	8'-0"	4'-0"
42	6'-0"	6'-0"	7'-0"	8'-0"	5'-0"
48	6'-0"	6'-0"	8'-0"	8'-0"	5'-6"

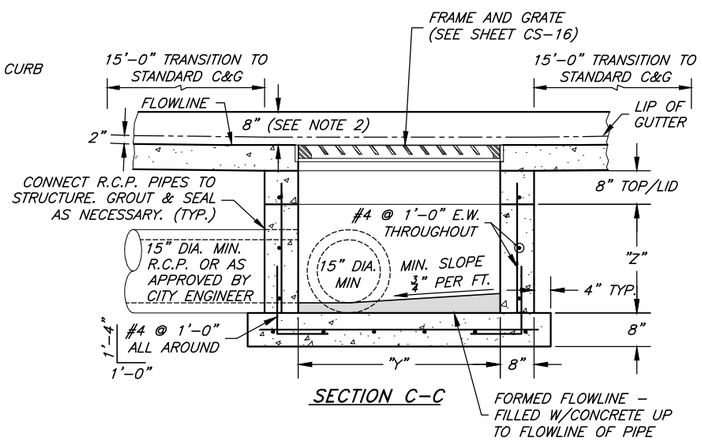




SECTION B-B



SINGLE CATCH BASIN



SECTION C-C

GENERAL NOTES:

1. ALL CATCH BASIN BOX SIZES REFLECT DIMENSIONS FOR THE MINIMUM 15"ø PIPE SIZE. BOX DIMENSIONS MUST INCREASE PROPORTIONALLY TO ACCOMMODATE LARGER PIPE SIZES.
2. DEPTH MAY VARY FROM 6" TO 10" AS DIRECTED BY THE CITY ENGINEER
3. CAST-IN-PLACE CONCRETE CATCH BASINS CAN BE REPLACED WITH PRECAST CONCRETE CATCH BASINS WITH HL-93 DECK LOADING AND COMPARABLE SIZE.
4. ALL BOXES SHALL BE FORMED ON THE INSIDE AND OUTSIDE OF THE BOX AND INSPECTED BY THE CITY PRIOR TO THE PLACING OF CONCRETE.
5. DOUBLE CATCH BASINS WILL BE REQUIRED IN LOCATIONS SPECIFIED BY THE CITY ENGINEER (TYPICALLY IN LOW SPOTS OR WHERE ADDITIONAL INLET CAPACITY IS NEEDED).
6. STORM DRAIN LINES SHALL BE 15 INCH MINIMUM DIAMETER REINFORCED CONCRETE PIPE (RCP), OF APPROPRIATE CLASS.
7. CURB INLET WITH A GRATE & CURB HOOD MAY BE USED AS REQUIRED AND/OR APPROVED BY THE CITY.

REGISTERED PROFESSIONAL ENGINEER — BRANDON KENT JONES No. 5148758 — State of Utah

PROJECT ENGINEER

9-4-2018
DATE

REV.	DATE	APPR.

SCALE: N.T.S.

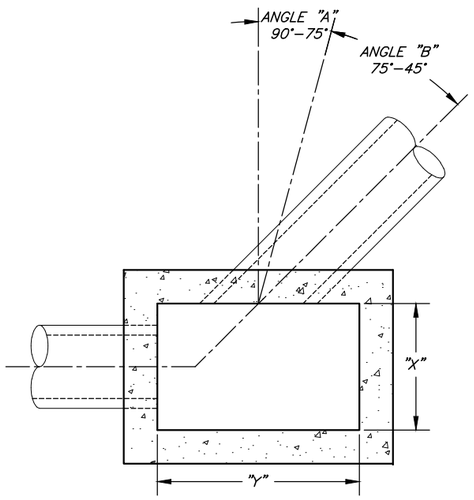
DESIGNED _____
DRAWN _____
CHECKED _____

JA JONES & ASSOCIATES
CONSULTING ENGINEERS
6080 Fashion Point Drive
South Ogden, Utah 84403 (801) 476-9767
www.jonescivil.com

FRUIT HEIGHTS CITY CORPORATION
PUBLIC WORKS STANDARDS

STORM DRAIN - SINGLE & DOUBLE CATCH BASIN DETAILS

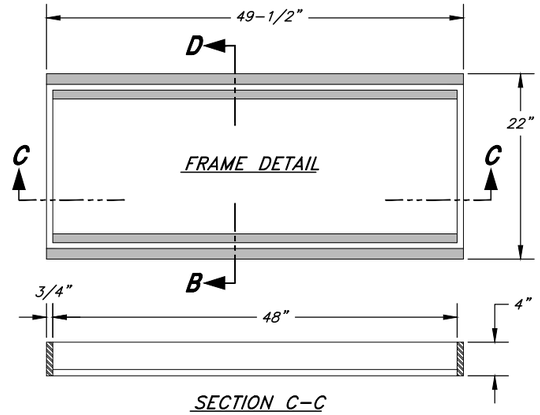
SHEET: CS-15
OF 22 SHEETS
0



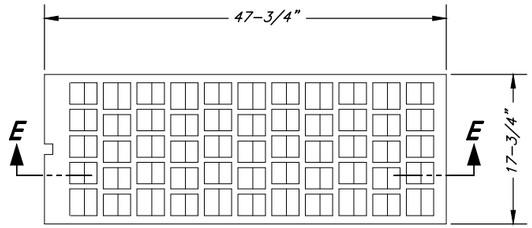
DRAINAGE DITCH INLET BOX DIMENSION TABLE				
PIPE SIZE (IN.)	"X"	INLET BOX "Y" (ANGLE A)	INLET BOX "Y" (ANGLE B)	"Z" MIN.
15	2'–6"	4'–0"	4'–0"	2'–0"
18	2'–6"	4'–0"	4'–0"	2'–6"
21	4'–0"	4'–0"	4'–0"	3'–0"
24	4'–0"	4'–0"	5'–0"	3'–0"
30	4'–0"	4'–0"	6'–0"	3'–6"
36	4'–0"	4'–0"	6'–0"	4'–0"
42	6'–0"	6'–0"	7'–0"	5'–0"
48	6'–0"	6'–0"	8'–0"	5'–6"

GENERAL NOTE:

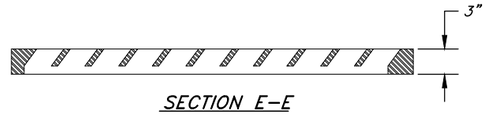
STORM DRAIN LINES SHALL BE 15 INCH MINIMUM DIAMETER REINFORCED CONCRETE PIPE (RCP), OF APPROPRIATE CLASS.



SECTION C–C



GRATE DETAIL



SECTION E–E

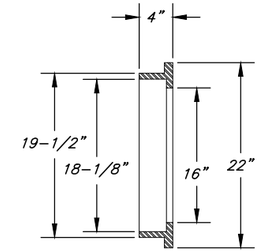
FRAME & GRATE DETAILS

FRAME AND GRATE NOTES:

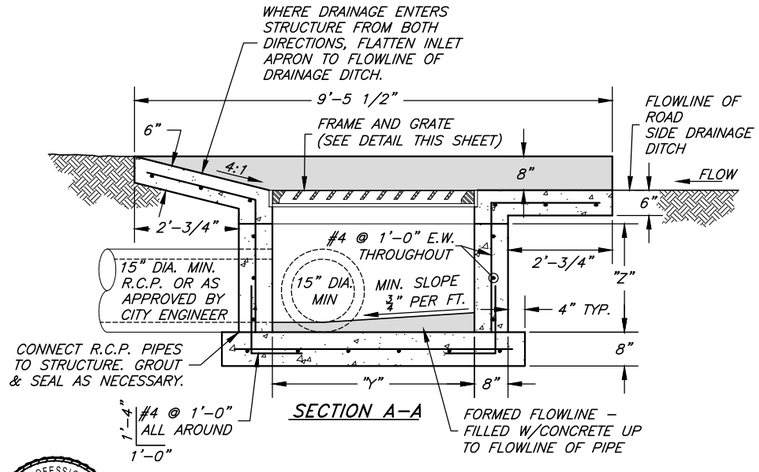
A1. GRATE AND FRAME SHALL BE AS MANUFACTURED BY "D&L SUPPLY" I–1803

B1. BICYCLE SAFE GRATE REQUIRED.

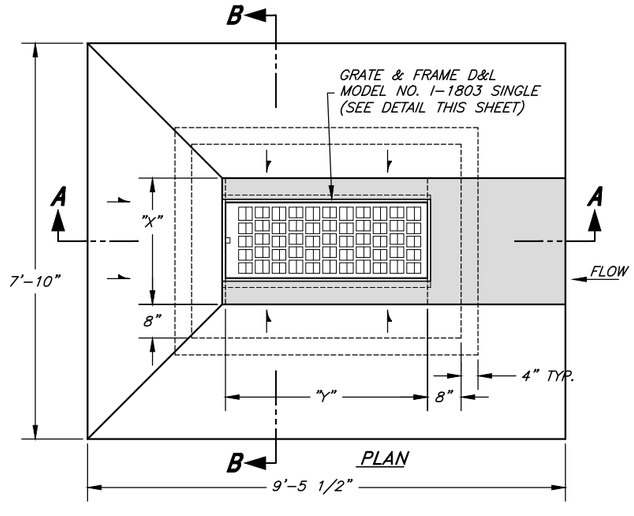
C1. "OR EQUAL" GRATES AND FRAMES WILL BE CONSIDERED AS APPROVED BY THE CITY ENGINEER.



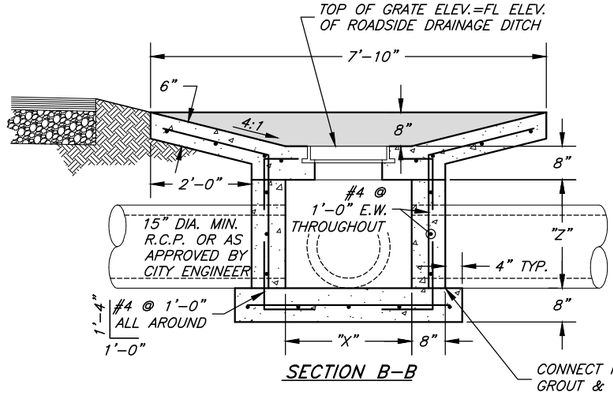
SECTION D–D



SECTION A–A



DRAINAGE DITCH / PARKING LOT INLET BOX



SECTION B–B

DRAINAGE BOX NOTES:

1. ALL BOX SIZES REFLECT DIMENSIONS FOR THE MINIMUM 15"ø PIPE SIZE. BOX DIMENSIONS MUST INCREASE PROPORTIONALLY TO ACCOMMODATE LARGER PIPE SIZES. (SEE TABLE THIS SHEET)

2. CAST–IN–PLACE CONCRETE STRUCTURES CAN BE REPLACED WITH PRECAST CONCRETE STRUCTURES WITH HL–93 DECK LOADING AND COMPARABLE SIZE.

3. ALL BOXES SHALL BE FORMED ON THE INSIDE AND OUTSIDE OF THE BOX AND INSPECTED BY THE CITY PRIOR TO THE PLACING OF CONCRETE.

REGISTERED PROFESSIONAL ENGINEER
BRANDON KENT JONES
No. 5148758
State of Utah

PROJECT ENGINEER
9-4-2018
DATE

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DESIGNED
DRAWN
CHECKED

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South Ogden, Utah 84403 (801) 476–9767
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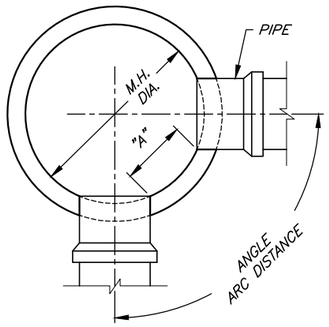
FRUIT HEIGHTS CITY CORPORATION
PUBLIC WORKS STANDARDS
STORM DRAIN - DRAINAGE INLET BOX & GENERAL GRATE AND FRAME DETAILS

SHEET: CS-16
OF 22 SHEETS
0

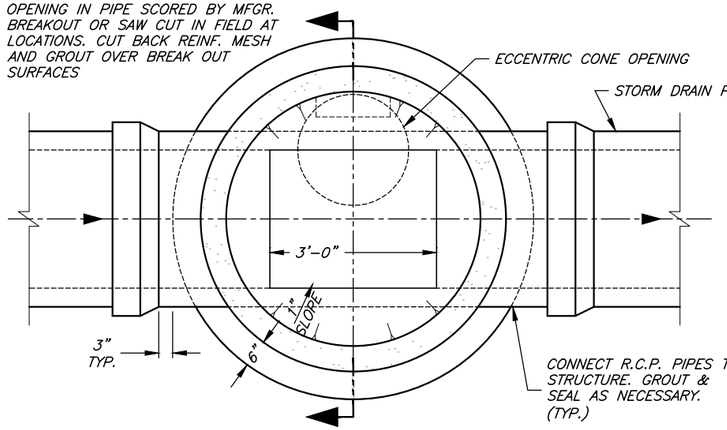
PIPE SIZES

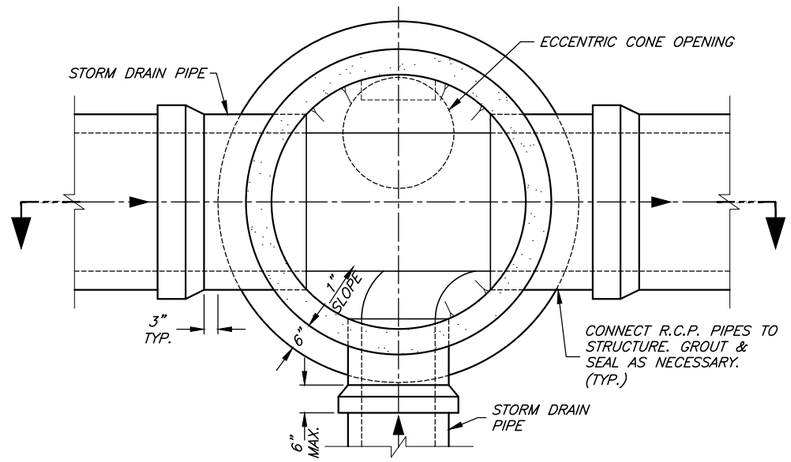
M.H. SIZE	IN–LINE M.H. 180°	JUNCTION MANHOLE (ANGLE / ARC DISTANCE)									
		90°	85°	80°	75°	70°	65°	60°	55°	50°	45°
4'ø M.H.	15"–24"	15"–18"	15"–18"	15"	15"	––	––	––	––	––	––
5'ø M.H.	27"–30"	21"–24"	21"–24"	18"–21"	18"–21"	15"–18"	15"–18"	15"	––	––	––
6'ø M.H.	36"–48"	27"–30"	27"–30"	24"–27"	24"	21"–24"	21"	18"	15"–18"	15"	––
7'ø M.H.	54"	36"	36"	30"	27"–30"	27"	24"	21"–24"	21"	18"	15"
8'ø M.H.	60"	42"	42"	36"	36"	30"	27"–30"	27"	24"	21"	18"



SIZING NOTES:

1. SUGGESTED "A" DISTANCE IS 6" OR GREATER FOR 48", 60" AND 72" DIAMETER MANHOLES
2. SUGGESTED "A" DISTANCE IS 8" OR GREATER FOR 84" AND 96" DIAMETER MANHOLES





GENERAL NOTES:

A. STORM DRAIN MANHOLE DIAMETER TO BE DETERMINED BY THE DESIGN ENGINEER AFTER EVALUATION OF THE NUMBER, SIZE, AND PIPE ENTRY ANGLE OF THE PIPES THAT CONNECT TO THE MANHOLE.

B. NO MORE THAN 12" OF GRADE RINGS TO BE ALLOWED ON ANY MANHOLE

C. PLYWOOD COVERS SHALL BE USED AT MANHOLE FLOOR TO COVER FLOWLINE DURING CONSTRUCTION AND MAINTENANCE ACTIVITIES.

D. ALL INTERIOR JOINTS SHALL BE SMOOTH AND EVENLY GROUTED WITH NON–SHRINK GROUT MIX.

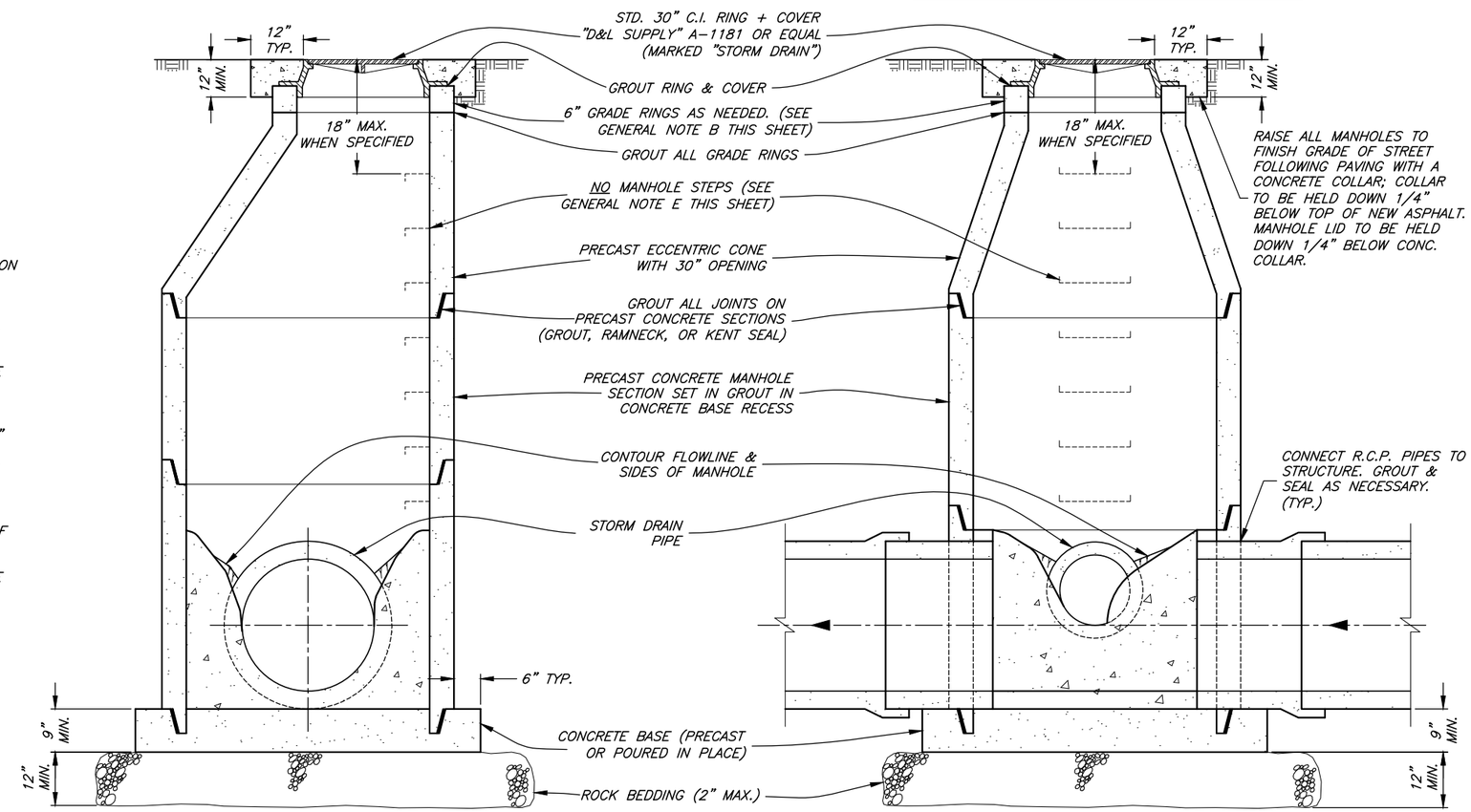
E. **NO MANHOLE STEPS UNLESS OTHERWISE SPECIFIED BY THE CITY (WHEN DIRECTED BY THE CITY ON SPECIFIC CASES OR LOCATIONS FOR MANHOLES OVER 6' DEEP, STEPS SHALL BE POLYPROPYLENE COVERED STEEL STEPS, MODEL PSI–PF AS MANUFACTURED BY "M.A. INDUSTRIES" OR APPROVED EQUAL. INSTALLATION OF STEPS SHALL BE WATERPROOF AND UNIFORMLY SPACED 1'–0" MAX.)**

F. STORM DRAIN LINES SHALL BE 15" MINIMUM DIAMETER REINFORCED CONCRETE PIPE (RCP), OF APPROPRIATE CLASS.

G. FIBER MESH SHALL BE ADDED TO ALL CONCRETE COLLARS ON VALVES AND MANHOLES.

TYPICAL LINE MANHOLE

TYPICAL JUNCTION MANHOLE



REGISTERED PROFESSIONAL ENGINEER — BRANDON KENT JONES No. 5148758 — State of Utah

PROJECT ENGINEER

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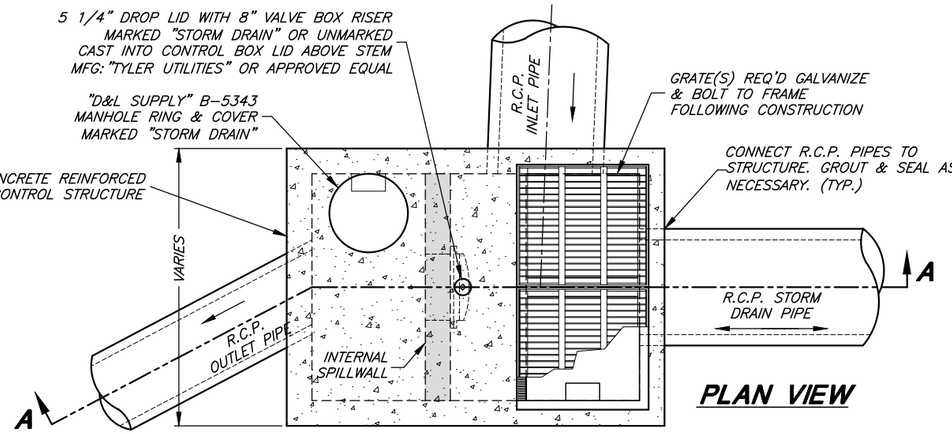
FRUIT HEIGHTS CITY CORPORATION
PUBLIC WORKS STANDARDS

STORM DRAIN - MANHOLE DETAILS

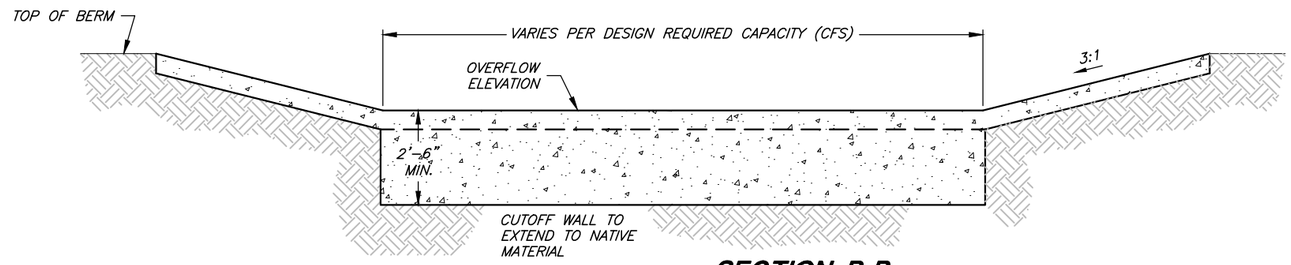
SHEET: CS-17
OF 22 SHEETS
0



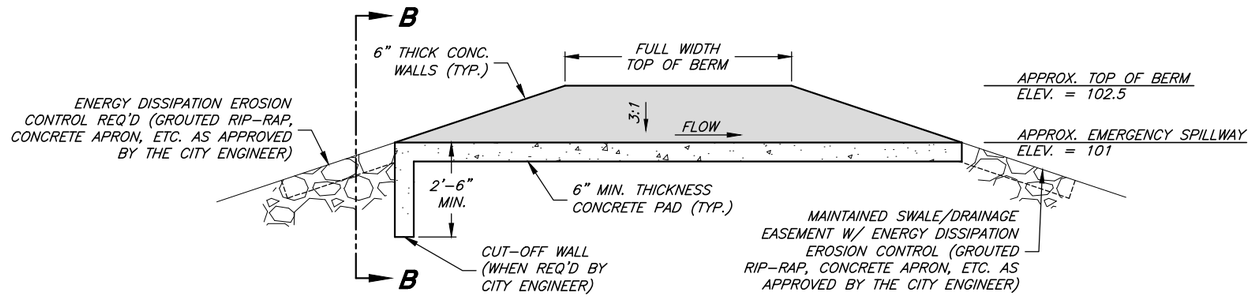
PLAN VIEW

DETENTION INLET/OUTLET CONTROL STRUCTURE

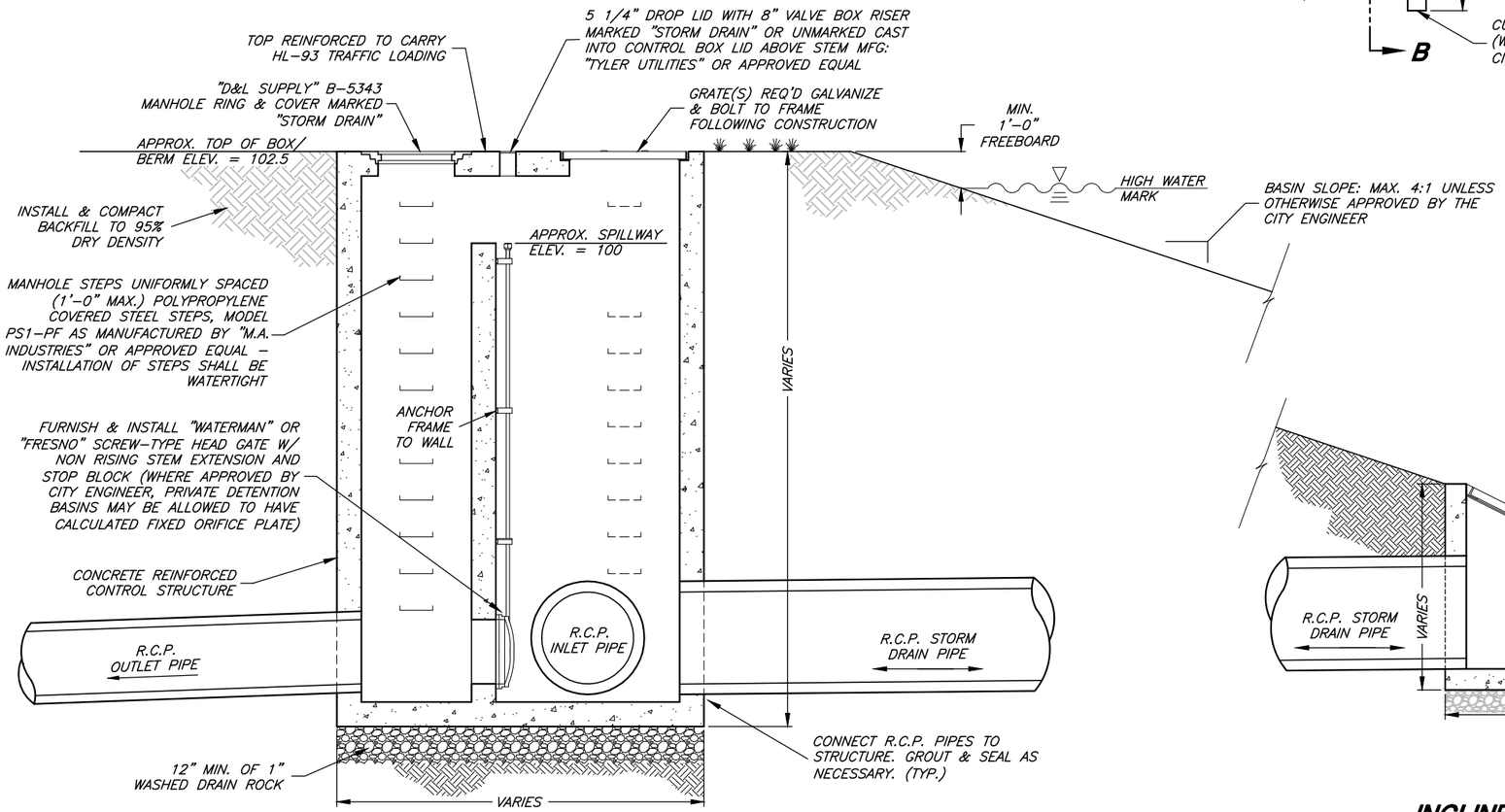
(PRECAST OR CAST-IN-PLACE)



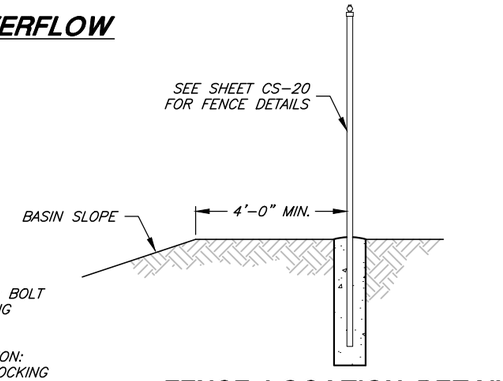
SECTION B-B



EMERGENCY OVERFLOW

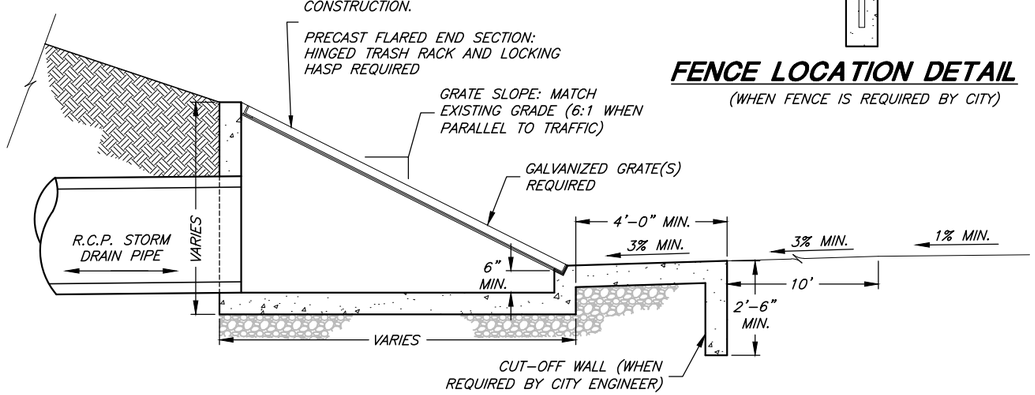


SECTION A-A



FENCE LOCATION DETAIL

(WHEN FENCE IS REQUIRED BY CITY)



INCLINED GRATE STORM DRAIN INLET

GENERAL AND STRUCTURAL NOTES: SEE SHEET CS-19

REGISTERED PROFESSIONAL ENGINEER — BRANDON KENT JONES No. 5148758 — State of Utah

PROJECT ENGINEER

9-4-2018

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FRUIT HEIGHTS CITY

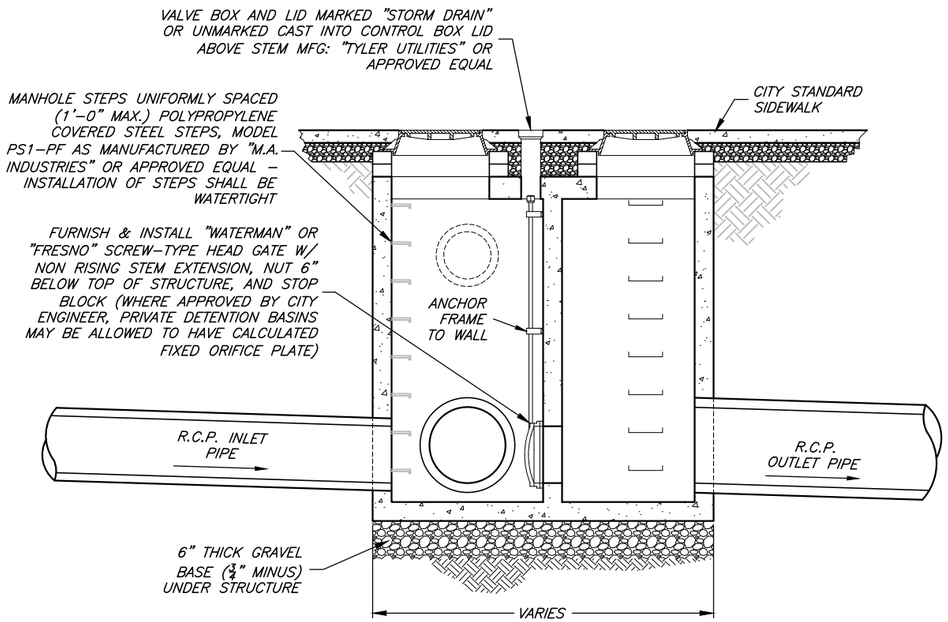
PUBLIC WORKS STANDARDS

STORM DRAIN - LARGE DETENTION BASIN DETAILS

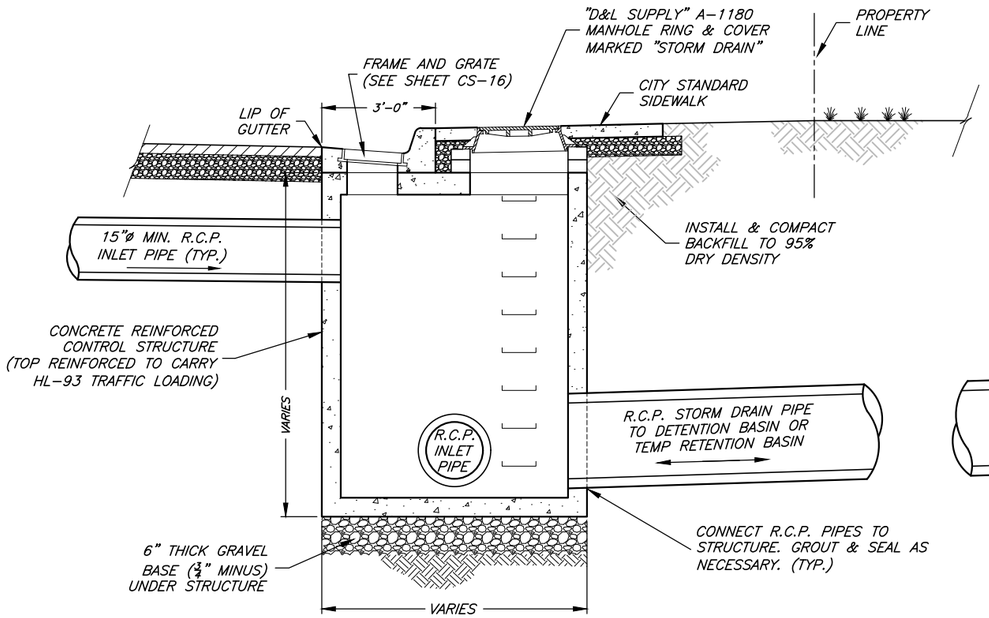
SHEET: CS-18

OF 22 SHEETS

0



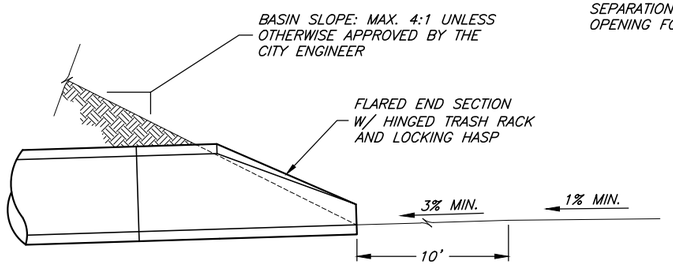
SECTION B-B



SECTION A-A

GENERAL NOTES:

1. ALL BASINS REGARDLESS OF LOCAL OR REGIONAL SHALL BE DESIGNED TO ACCOMMODATE A 100 YEAR STORM EVENT.
2. A DAM SAFETY (UTAH DIVISION OF WATER RIGHTS) HAZARD PERMIT MAY BE REQUIRED.
3. STRUCTURE DESIGN AND FLOW CALCULATIONS MUST BE APPROVED BY CITY ENGINEER PRIOR TO CONSTRUCTION.
4. STORM DRAIN LINES SHALL BE 15 INCH MINIMUM DIAMETER REINFORCED CONCRETE PIPE (RCP), OF APPROPRIATE CLASS.
5. THE SURFACE AREA OF THE BASIN SHALL BE SODDED AND SHALL BE PROVIDED WITH AN AUTOMATED SPRINKLER SYSTEM APPROVED BY THE CITY ENGINEER.
6. GRATES SHALL BE REMOVABLE FOR MAINTENANCE PURPOSES
7. GRATES SHALL BE HOT DIPPED GALVANIZED WITH BARS AT MAXIMUM 3 INCH SPACING.
8. LOW FLOWS MUST BE PIPED CONTINUOUSLY TO THE CONTROL STRUCTURE. NO OPEN FLOW IS PERMITTED THROUGH THE BASIN.
9. INCLINED GRATES ARE REQUIRED ON ALL PIPES/INLETS WHERE OPEN CHANNELS, DITCHES, OR PONDS DISCHARGE DIRECTLY INTO THE STORM DRAIN SYSTEM.
10. AN INTERNAL SPILLWAY MAY BE CONSTRUCTED INSIDE THE STRUCTURE DEPENDING ON SITE CONDITIONS AND ELEVATIONS.
11. BASIN STRUCTURES ARE DETERMINED BY THE SIZE OF THE DETENTION BASIN OR AS REQUIRED BY THE CITY ENGINEER. (SEE SHEET CS-18 OR CS-19)
    a. SMALL DETENTION BASIN: LESS THAN OR EQUAL TO 1 ACRE FOOT
    b. LARGE DETENTION BASIN: GREATER THAN 1 ACRE FOOT



EMERGENCY OVERFLOW AND FENCE LOCATION DETAIL : SEE SHEET CS-18

STRUCTURAL NOTES:

A. PRECAST CONCRETE STRUCTURE CAN BE REPLACED WITH CAST-IN-PLACE CONCRETE VAULT. SUBMIT ENGINEERED CONSTRUCTION PLANS WITH REBAR DETAILS TO CITY ENGINEER FOR REVIEW AND ACCEPTANCE PRIOR TO CONSTRUCTION.

B. ADD REINFORCEMENT AROUND OPENINGS EQUAL TO REINFORCEMENT DISPLACED BY OPENING.

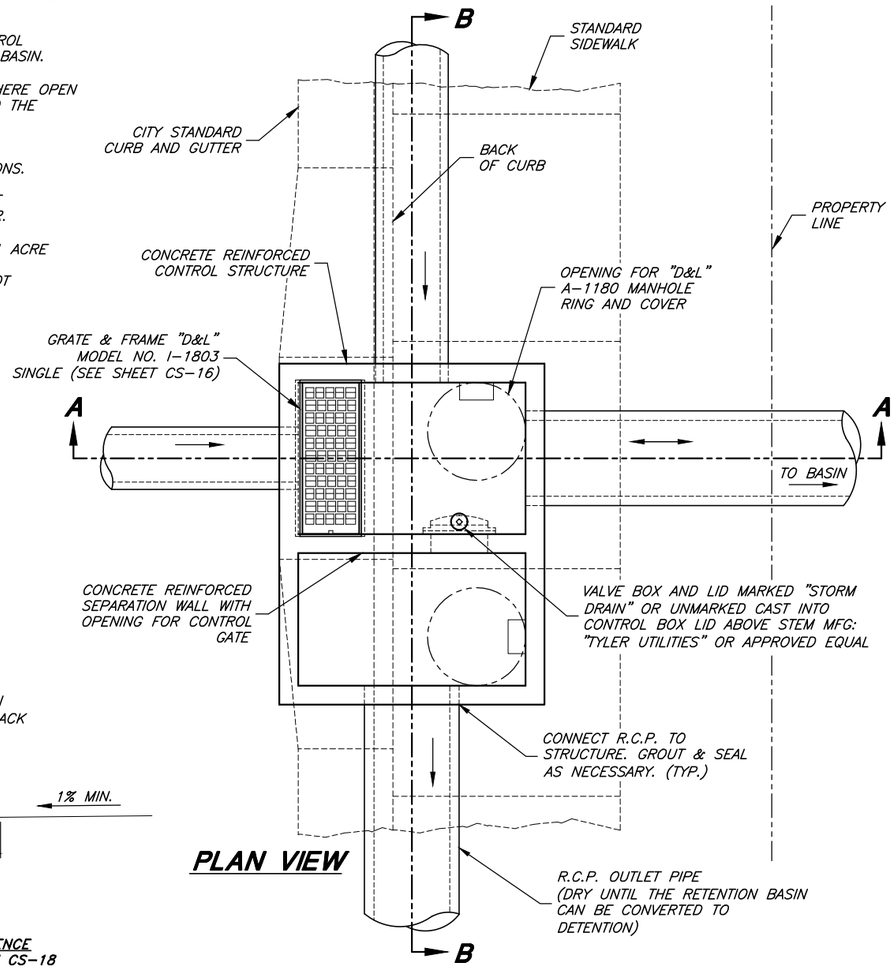
C. THE PRECAST VAULT MANUFACTURER IS RESPONSIBLE FOR DESIGN RELATED TO TRAFFIC LOADING AND THRUST. VERIFICATION OF PROPER DESIGN MUST BE PROVIDED TO THE CITY BY THE DEVELOPER, CONTRACTOR, OR PROPERTY OWNER AS THE CASE MAY BE.

D. REINFORCEMENT TO CONFORM WITH ASTM A 615 GRADE 60

E. CONCRETE SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH OF 5,000 PSI

F. USE AN AIR-ENTRAINING AGENT ON ALL CONCRETE EXPOSED TO THE WEATHER.

G. HL-93 LOADING



PLAN VIEW

INLET/OUTLET CONTROL STRUCTURE

(PRECAST OR CAST-IN-PLACE)

REGISTERED PROFESSIONAL ENGINEER — BRANDON KENT JONES No. 5148758 — State of Utah

PROJECT ENGINEER

9-4-2018

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FRUIT HEIGHTS CITY

PUBLIC WORKS STANDARDS

STORM DRAIN - SMALL DETENTION BASIN DETAILS

SHEET: CS-19

OF 22 SHEETS

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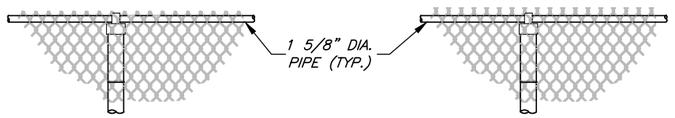
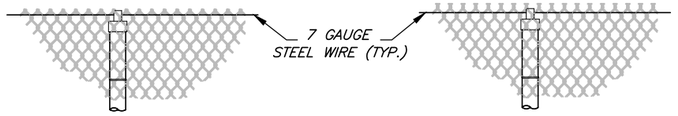


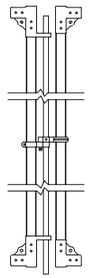
KNUCKLED SELVAGE
TYPE I

TWISTED & BARBED SELVAGE
TYPE II

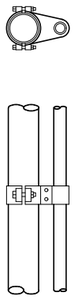


KNUCKLED SELVAGE
W/ TENSION WIRE
TYPE III

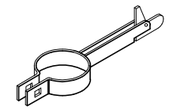
TWISTED & BARBED
SELVAGE W/ TENSION WIRE
TYPE IV



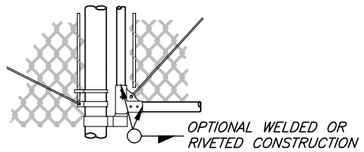
DROP ROD
ASSEMBLY



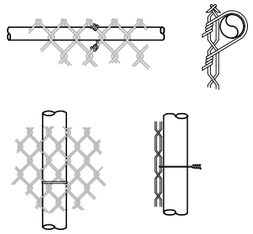
TOP GATE HINGE



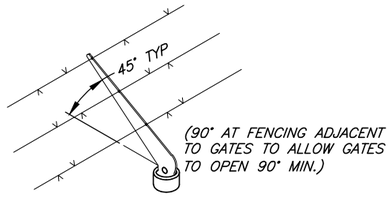
GATE KEEPER



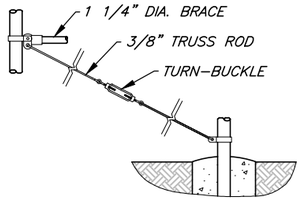
BOTTOM GATE HINGE
AND GATE DETAIL



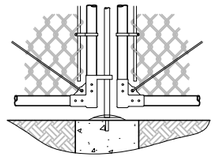
PIPE POST TIE



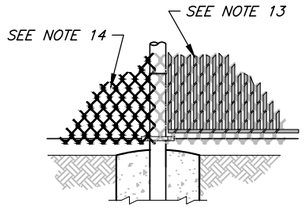
COMBINATION CAP AND
BARBED WIRE SUPPORTING ARM



BRACE & TRUSS CONNECTIONS



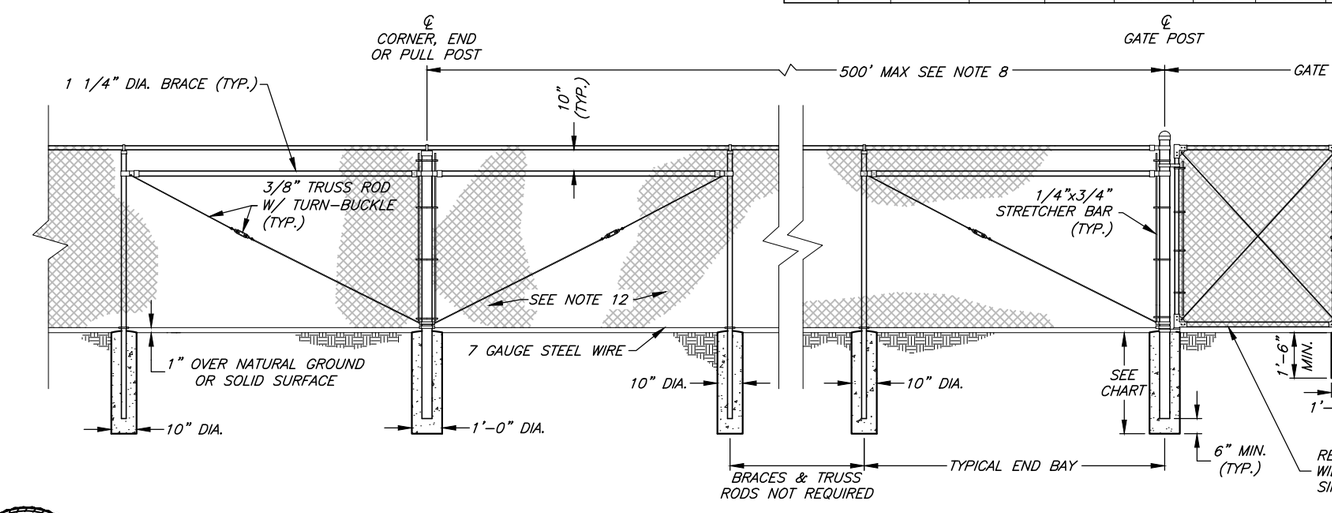
CENTER GATE STOP
AND GATE DETAIL

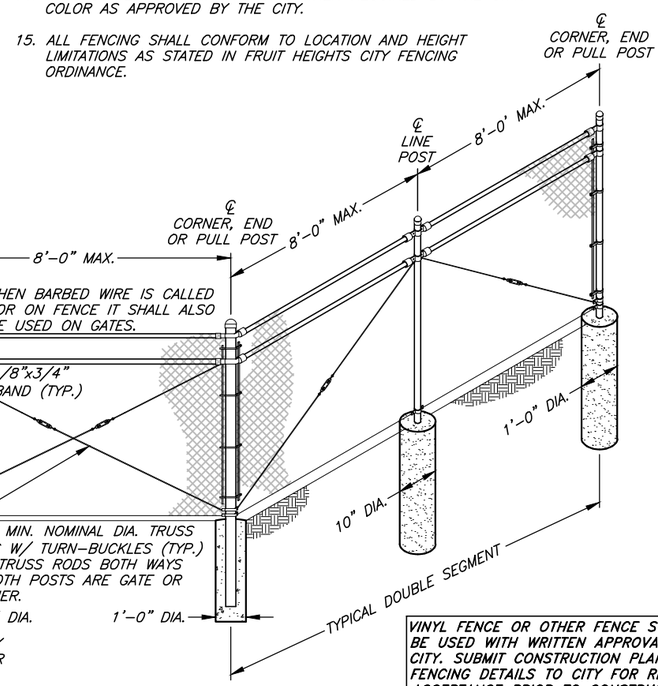


SLATS & VINYL
COATING DETAIL

HEIGHT	GATE OPENING	GATE POST	GATE FRAME
UNDER 6 FEET	SINGLE TO 6' OR DOUBLE TO 12'	2"	1"
	SINGLE OVER 6' TO 8' OR DOUBLE OVER 12' TO 16'	2 1/2"	1 1/2"
	SINGLE OVER 8' TO 12' OR DOUBLE 16' TO 24'	4"	
6 FEET AND OVER	SINGLE TO 6' OR DOUBLE TO 12'	3 1/2"	1 1/2"
	SINGLE OVER 6' TO 12' OR DOUBLE OVER 12' TO 24'	4"	
	SINGLE OVER 12' TO 18' OR DOUBLE OVER 24' TO 36'	6"	
	SINGLE OVER 18' OR DOUBLE OVER 36'	8"	

HEIGHT OF FABRIC	DEPTH OF POSTS	LENGTH OF END, CORNER OR PULL POST	LENGTH OF LINE POST HOLES	SIZE OF POSTS							
				END, CORNER, & PULL POSTS				LINE POST MIN. SIZE			
				NOM. SIZE	OUTSIDE DIA.	PIPE WEIGHT ASTM A-120	PIPE WEIGHT TRIPLE COATED	NOM. SIZE	OUTSIDE DIA.	PIPE WEIGHT ASTM A-120	PIPE WEIGHT TRIPLE COATED
7'	3'	10'	9'-8"	2 1/2"	2.875"	5.79	4.64	2"	2.375"	3.65	3.11
6'	3'	9'	8'-8"	2 1/2"	2.875"	5.79	4.64	2"	2.375"	3.65	3.11
5'	3'	8'	7'-8"	2"	2.375"	3.65	3.11	1 1/2"	1.900"	2.72	2.23
4'	3'	6'	5'-8"	2"	2.375"	3.65	3.11	1 1/2"	1.900"	2.72	2.23
3'	3'	5'	4'-8"	2"	2.375"	3.65	3.11	1 1/2"	1.900"	2.72	2.23





GENERAL NOTES:

1. MATERIALS, CONSTRUCTION, AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH PROJECT STANDARD SPECIFICATIONS.
2. THE TYPE OF TOP SUPPORT IS SPECIFIED IN THE BIDDING SCHEDULE, TYPES I AND II TUBULAR RAIL, TYPES III AND IV TENSION WIRE.
3. BARB WIRE SHALL BE USED ONLY WHEN DESIGNATED ON THE PLANS OR IN THE SPECIFICATIONS.
4. TWISTED AND BARBED SELVAGE TOP AND BOTTOM SHALL BE USED ON FENCES 5-FEET HIGH OR GREATER.
5. KNUCKLED SELVAGE ON TOP AND TWISTED AND BARBED ON BOTTOM SHALL BE USED ON FENCES LESS THAN 5-FEET.
6. ALL STEEL PIPE MEMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM DESIGNATION A 120 SCHEDULE 40 HOT DIPPED ZINC COATED HIGH TENSILE STEEL PIPE OR TRIPLE COATED PIPE MADE FROM STEEL CONFORMING TO ASTM 569.
7. POSTS SHALL BE STEEL SCHEDULE 40 PIPE OR TRIPLE COATED HIGH TENSILE STEEL PIPE OF THE SIZE SHOWN IN THE CHART. WEIGHT IN POUNDS PER FOOT WITH A TOLERANCE OF 5%.
8. LINE POSTS SHALL BE LOCATED AT EQUAL SPACING FOR EACH SEGMENT WITH A MAXIMUM SPACING AS FOLLOWS:
   a. TANGENT SECTIONS TO 500-FOOT RADIUS NOT MORE THAN 8-FEET.
   b. UNDER 500-FOOT RADIUS TO 200-FOOT RADIUS NOT MORE THAN 8-FEET.
   c. UNDER 200-FOOT RADIUS TO 100-FOOT RADIUS NOT MORE THAN 6-FEET.
   d. UNDER 100-FOOT RADIUS NOT MORE THAN 5-FEET.
9. TRUSS RODS AND BRACES SHALL NOT BE REQUIRED FOR FABRIC HEIGHT LESS THAN 5-FEET.
10. TENSION WIRE SHALL BE 7 GAUGE ZINC- OR ALUMINUM-COATED COIL SPRING STEEL TENSION WIRE.
11. ALL POSTS SHALL BE SET IN 3000 PSI CONCRETE AND SHALL BE TOPPED WITH BALL TYPE OR OTHER APPROVED ORNAMENT.
12. ALL FABRIC SHALL BE 2" GALVANIZED 9 GAUGE MESH.
13. VERTICAL SEMI-PRIVACY VINYL SLATS WITH BOTTOM-LOCKING SLAT, WHEN REQUIRED BY THE CITY. COLOR AS APPROVED BY THE CITY.
14. VINYL COATED CHAINLINK FENCING WHEN REQUIRED BY THE CITY. COLOR AS APPROVED BY THE CITY.
15. ALL FENCING SHALL CONFORM TO LOCATION AND HEIGHT LIMITATIONS AS STATED IN FRUIT HEIGHTS CITY FENCING ORDINANCE.

VINYL FENCE OR OTHER FENCE STYLES MAY BE USED WITH WRITTEN APPROVAL BY THE CITY. SUBMIT CONSTRUCTION PLANS AND FENCING DETAILS TO CITY FOR REVIEW AND ACCEPTANCE PRIOR TO CONSTRUCTION.

REGISTERED PROFESSIONAL ENGINEER
BRANDON KENT JONES
No. 5148758
State of Utah

PROJECT ENGINEER
9-4-2018
DATE

REV.	DATE	APPR.

SCALE: N.T.S.

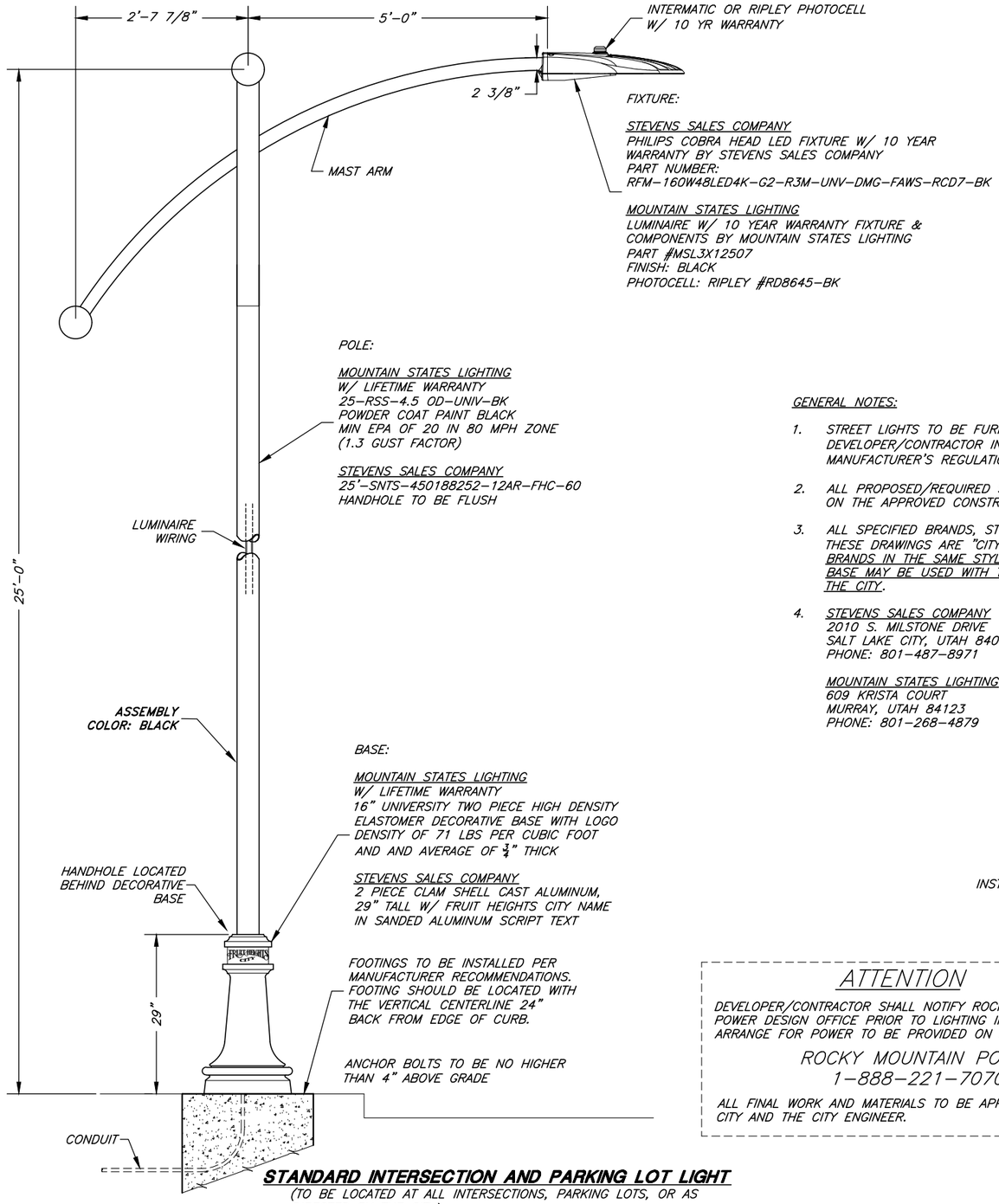
DESIGNED
DRAWN
CHECKED

JA JONES & ASSOCIATES
CONSULTING ENGINEERS
6080 Fashion Point Drive
South Ogden, Utah 84403 (801) 476-9767
www.jonescivil.com

FRUIT HEIGHTS CITY
PUBLIC WORKS STANDARDS

GENERAL - CHAIN LINK FENCE DETAILS

SHEET: CS-20
OF 22 SHEETS
0



FIXTURE:

STEVENS SALES COMPANY
PHILIPS COBRA HEAD LED FIXTURE W/ 10 YEAR WARRANTY BY STEVENS SALES COMPANY
PART NUMBER:
RFM-160W48LED4K-G2-R3M-UNV-DMG-FAWS-RCD7-BK

MOUNTAIN STATES LIGHTING
LUMINAIRE W/ 10 YEAR WARRANTY FIXTURE & COMPONENTS BY MOUNTAIN STATES LIGHTING
PART #MSL3X12507
FINISH: BLACK
PHOTOCELL: RIPLEY #RD8645-BK

POLE:

MOUNTAIN STATES LIGHTING
W/ LIFETIME WARRANTY
25-RSS-4.5 OD-UNIV-BK
POWDER COAT PAINT BLACK
MIN EPA OF 20 IN 80 MPH ZONE
(1.3 GUST FACTOR)

STEVENS SALES COMPANY
25'-SNTS-450188252-12AR-FHC-60
HANDHOLE TO BE FLUSH

BASE:

MOUNTAIN STATES LIGHTING
W/ LIFETIME WARRANTY
16" UNIVERSITY TWO PIECE HIGH DENSITY ELASTOMER DECORATIVE BASE WITH LOGO
DENSITY OF 71 LBS PER CUBIC FOOT
AND AND AVERAGE OF ¼" THICK

STEVENS SALES COMPANY
2 PIECE CLAM SHELL CAST ALUMINUM,
29" TALL W/ FRUIT HEIGHTS CITY NAME
IN SANDED ALUMINUM SCRIPT TEXT

FOOTINGS TO BE INSTALLED PER MANUFACTURER RECOMMENDATIONS. FOOTING SHOULD BE LOCATED WITH THE VERTICAL CENTERLINE 24" BACK FROM EDGE OF CURB.

ANCHOR BOLTS TO BE NO HIGHER THAN 4" ABOVE GRADE

STANDARD INTERSECTION AND PARKING LOT LIGHT
(TO BE LOCATED AT ALL INTERSECTIONS, PARKING LOTS, OR AS DIRECTED BY THE CITY)

GENERAL NOTES:

1. STREET LIGHTS TO BE FURNISHED AND INSTALLED BY DEVELOPER/CONTRACTOR IN ACCORDANCE WITH THE MANUFACTURER'S REGULATIONS AND SPECIFICATIONS.
2. ALL PROPOSED/REQUIRED STREET LIGHTS MUST BE SHOWN ON THE APPROVED CONSTRUCTION PLANS.
3. ALL SPECIFIED BRANDS, STYLES, AND MATERIALS SHOWN ON THESE DRAWINGS ARE "CITY STANDARDS." OTHER EQUIVALENT BRANDS IN THE SAME STYLE OF POLE AND DECORATIVE BASE MAY BE USED WITH THE PRIOR WRITTEN APPROVAL OF THE CITY.
4. STEVENS SALES COMPANY
   2010 S. MILSTONE DRIVE
   SALT LAKE CITY, UTAH 84014
   PHONE: 801-487-8971

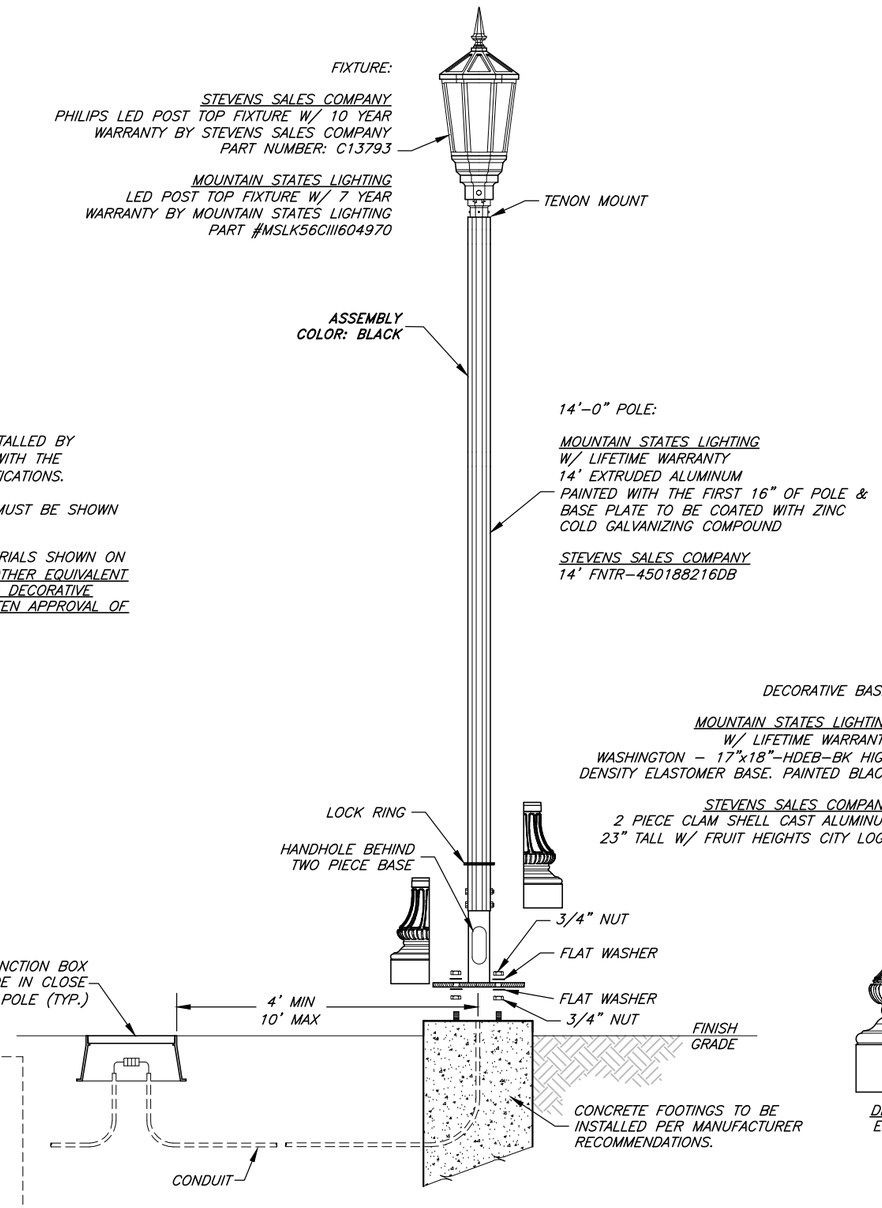
   MOUNTAIN STATES LIGHTING
   609 KRISTA COURT
   MURRAY, UTAH 84123
   PHONE: 801-268-4879

ATTENTION

DEVELOPER/CONTRACTOR SHALL NOTIFY ROCKY MOUNTAIN POWER DESIGN OFFICE PRIOR TO LIGHTING INSTALLATION TO ARRANGE FOR POWER TO BE PROVIDED ON SITE.

ROCKY MOUNTAIN POWER
1-888-221-7070

ALL FINAL WORK AND MATERIALS TO BE APPROVED BY THE CITY AND THE CITY ENGINEER.



FIXTURE:

STEVENS SALES COMPANY
PHILIPS LED POST TOP FIXTURE W/ 10 YEAR WARRANTY BY STEVENS SALES COMPANY
PART NUMBER: C13793

MOUNTAIN STATES LIGHTING
LED POST TOP FIXTURE W/ 7 YEAR WARRANTY BY MOUNTAIN STATES LIGHTING
PART #MSLK56CIII604970

14'-0" POLE:

MOUNTAIN STATES LIGHTING
W/ LIFETIME WARRANTY
14' EXTRUDED ALUMINUM
PAINTED WITH THE FIRST 16" OF POLE & BASE PLATE TO BE COATED WITH ZINC COLD GALVANIZING COMPOUND

STEVENS SALES COMPANY
14' FNTR-450188216DB

DECORATIVE BASE:

MOUNTAIN STATES LIGHTING
W/ LIFETIME WARRANTY
WASHINGTON - 17"x18"-HDEB-BK HIGH DENSITY ELASTOMER BASE. PAINTED BLACK

STEVENS SALES COMPANY
2 PIECE CLAM SHELL CAST ALUMINUM, 23" TALL W/ FRUIT HEIGHTS CITY LOGO

DECORATIVE BASE
ENLARGED DETAIL

STANDARD RESIDENTIAL STREET LIGHT
LOCAL STREET LIGHTS MUST BE SPACED AT A MAXIMUM 400 FOOT SPACING AND SHOULD ALTERNATE EACH SIDE OF THE STREET ON THE PROPERTY LINE.

REGISTERED PROFESSIONAL ENGINEER
BRANDON KENT JONES
No. 5148758
State of Utah

Brandon K. Jones
PROJECT ENGINEER
9-4-2018
DATE

REV.	DATE	APPR.	
1	3-23-2020	BKJ	ADDED MTN. STATES LIGHTING LED FIXTURES

SCALE: N.T.S.

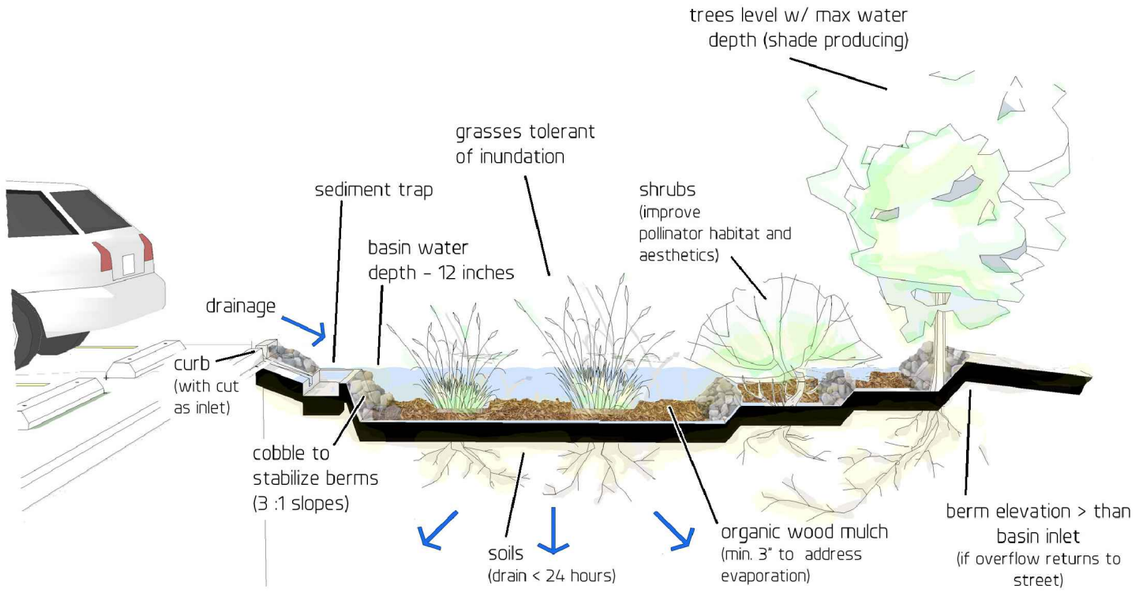
DESIGNED
DRAWN
CHECKED

JA JONES & ASSOCIATES
CONSULTING ENGINEERS
6080 Fashion Point Drive
South Ogden, Utah 84403 (801) 476-9767
www.jonescivil.com

FRUIT HEIGHTS CITY CORPORATION
PUBLIC WORKS STANDARDS

GENERAL - STREET LIGHTING STANDARDS

SHEET: CS-21
OF 22 SHEETS
0



Basic Basin Design Considerations

diagram by
Paul Navrot
for SUH

RAIN GARDEN

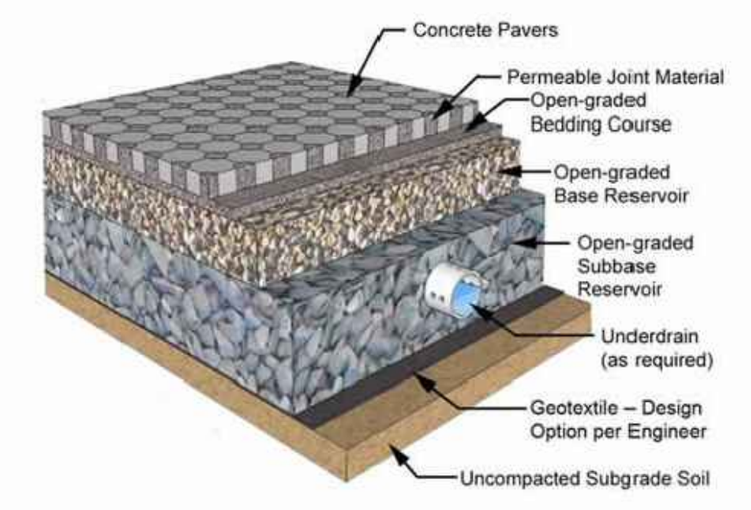
**** http://www.lid-stormwater.net/site_map.htm ****

RAIN BARREL

**** http://www.goodideasinc.com/products/rain-barrels/rain-wizard-50/ ****

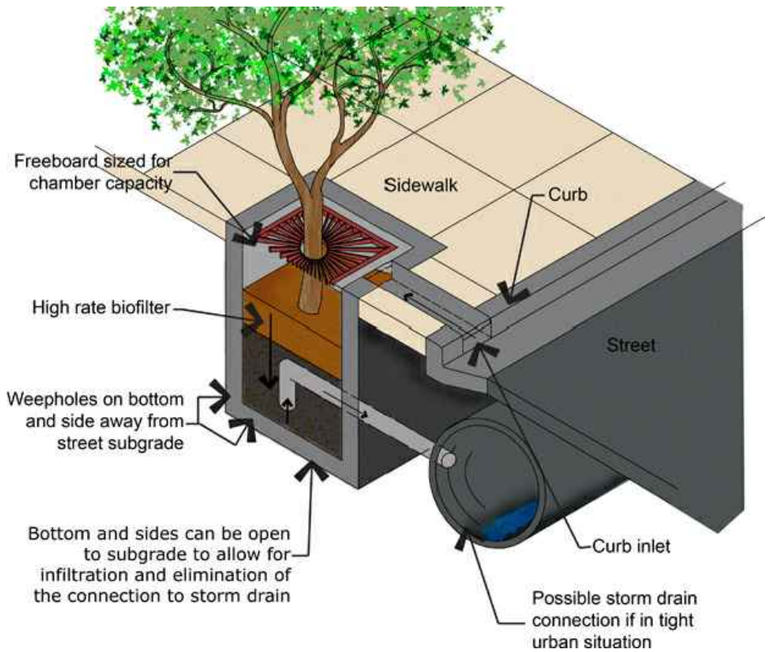
DISCLAIMER:
ALL LID EXAMPLES SHOWN ON THIS SHEET ARE FOR REFERENCE PURPOSES ONLY. ANY SPECIFIC WEBSITES, COMMERCIAL PRODUCTS, PROCESS OR SERVICE BY TRADE NAME, TRADEMARK, MANUFACTURER, OR OTHERWISE, DOES NOT CONSTITUTE OR IMPLY ITS ENDORSEMENT, RECOMMENDATION, OR FAVORING BY FRUIT HEIGHTS CITY. THE PURPOSE OF PROVIDING SPECIFIC PRODUCT INFORMATION IS TO ENSURE THAT THE CONTRACTOR AND/OR DEVELOPER HAS ALL THE APPROPRIATE INFORMATION AND REFERENCES TO ASSESS THE USEFULNESS OF THE PRODUCT.

THE LID EXAMPLES LISTED ON THIS SHEET ARE POSSIBLE RECOMMENDATIONS FOR USE WITHIN THE CITY. OTHER LID REQUIREMENTS OR TYPES WILL BE CONSIDERED ON A CASE BY CASE BASIS.



PERMEABLE PAVER

From Smith, D. 2006. *Permeable Interlocking Concrete Pavement–selection design, construction and maintenance. Third Edition.* Interlocking Concrete Pavement Institute. Herndon, VA



TREE BOX FILTER

From www.wbdg.org

REGISTERED PROFESSIONAL ENGINEER — BRANDON KENT JONES No. 5148758 — State of Utah

PROJECT ENGINEER

9-4-2018
DATE

REV.	DATE	APPR.	

SCALE: N. T. S.

DESIGNED _____
DRAWN _____
CHECKED _____

JA JONES & ASSOCIATES
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6080 Fashion Point Drive
South Ogden, Utah 84403 (801) 476-9767
www.jonescivil.com

FRUIT HEIGHTS CITY CORPORATION
PUBLIC WORKS STANDARDS

GENERAL - LID (LOW IMPACT DEVELOPMENT) EXAMPLES

SHEET: CS-22
OF 22 SHEETS
0