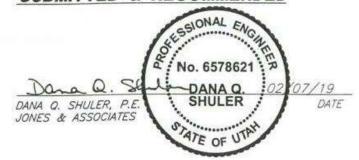
PLEASANT VIEW CITY CORPORATION PUBLIC WORKS STANDARD DRAWINGS

SUBMITTED & RECOMMENDED



APPROVAL

CITY ADMINISTRATOR

LORUN GARDNER, P.E.

C WORKS DIRECTOR

UTILITIES / PUBLIC WORKS ASSISTANT DIRECTOR

AURIE HELLSTROM TTEST, CITY RECORDER





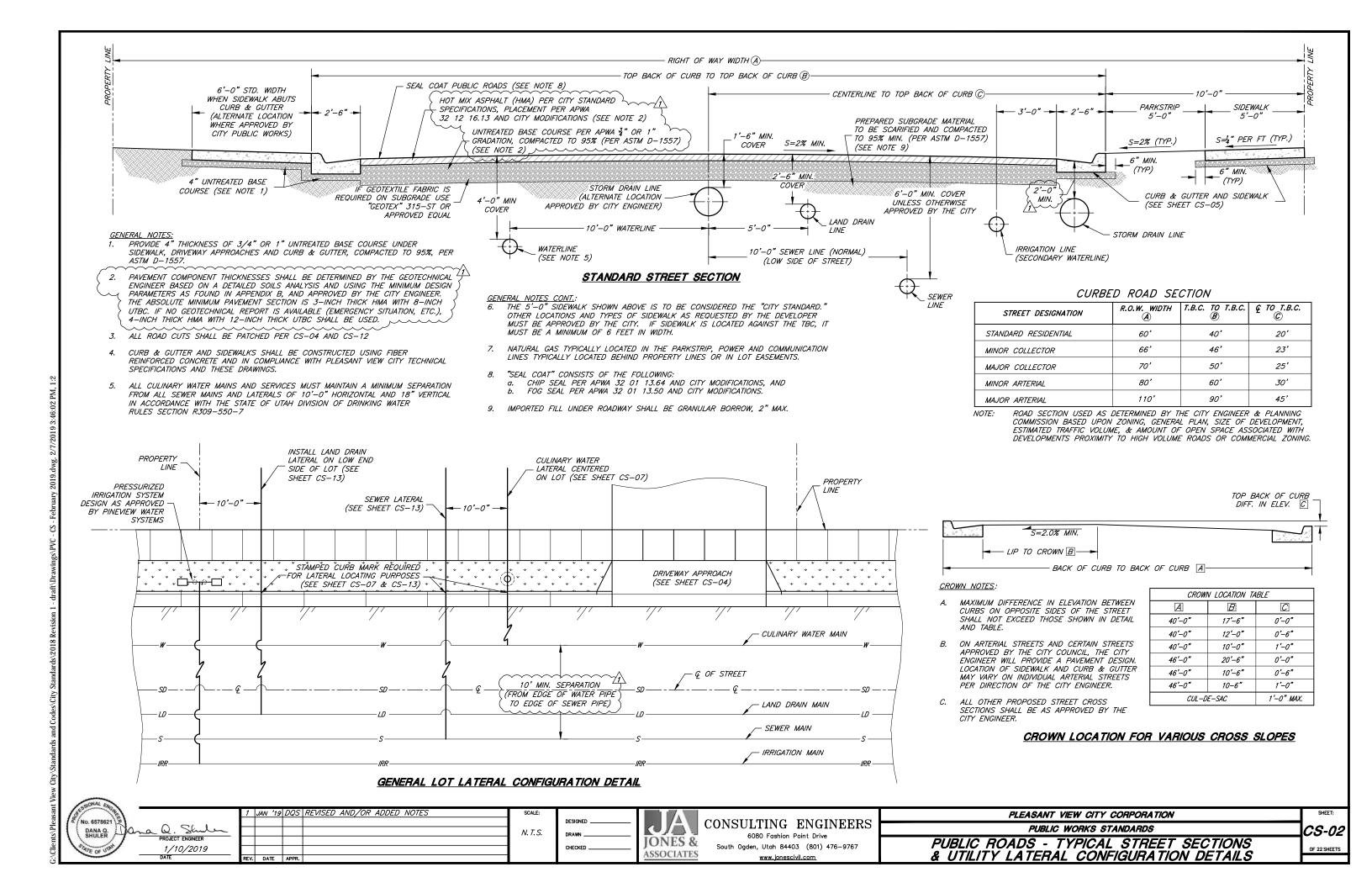


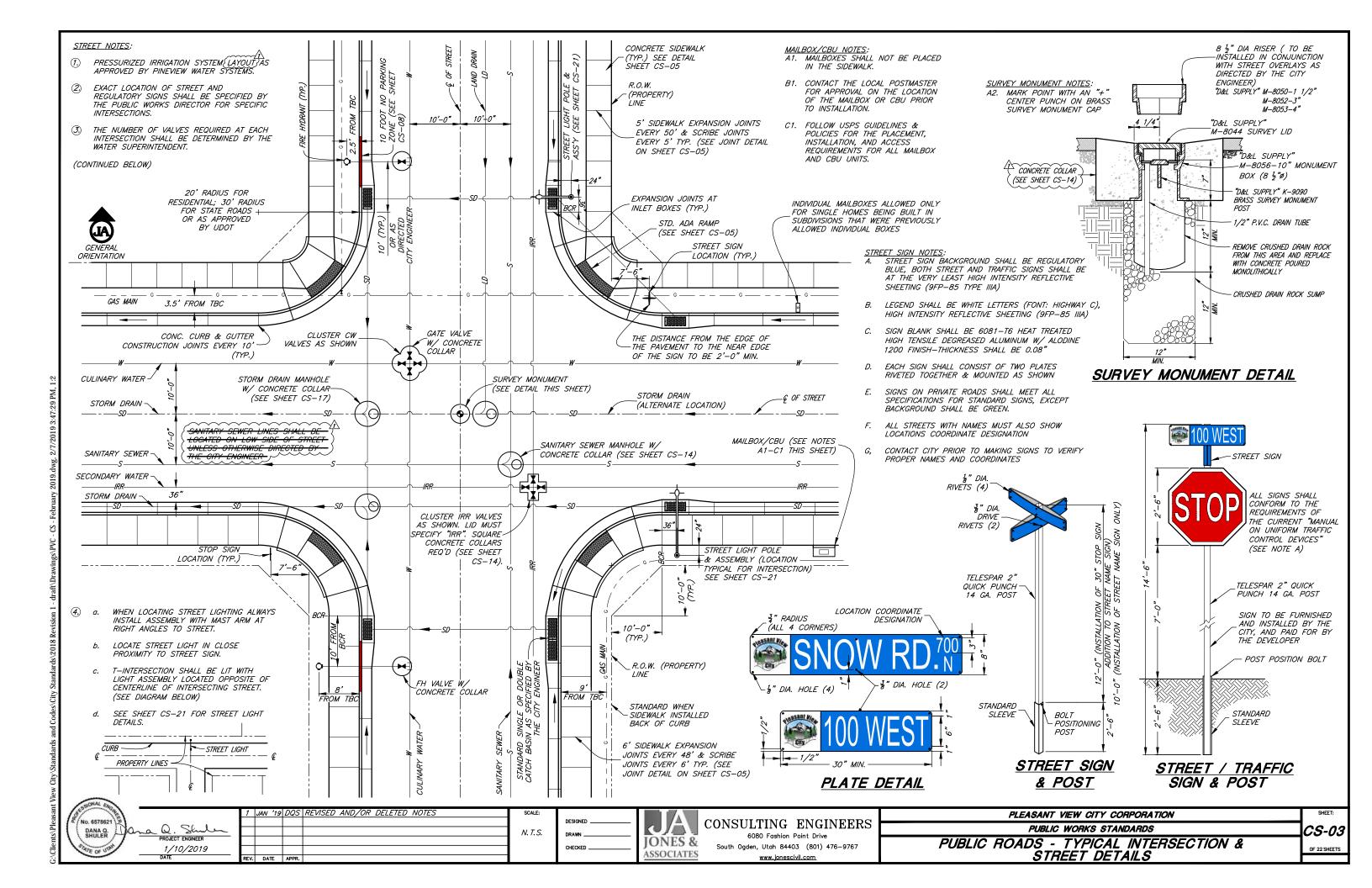


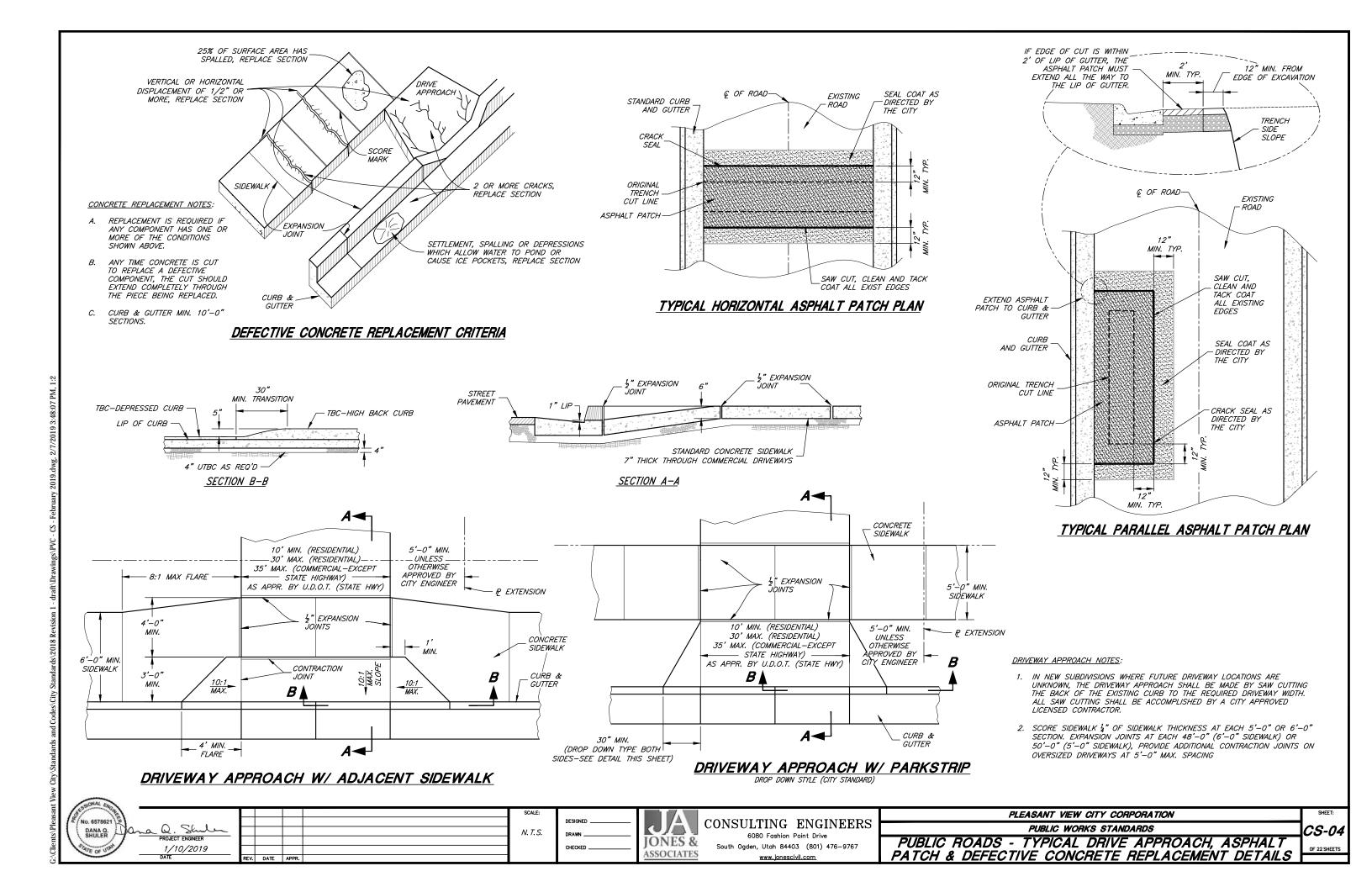
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- CS-03....PUBLIC ROADS TYPICAL INTERSECTION & STREET DETAILS
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- CS-05....PUBLIC ROADS TYPICAL ADA RAMP, SIDEWALK, CURB & GUTTER, AND CONCRETE JOINT DETAILS
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- CS-21....GENERAL STREET LIGHTING STANDARDS
- CS-22....GENERAL LID (LOW IMPACT DEVELOPMENT) EXAMPLES

AREVISION 1 - FEBRUARY 12, 2019 ORIGINAL - NOVEMBER 14, 2017







IONES &

ASSOCIATES

6080 Fashion Point Drive

South Ogden, Utah 84403 (801) 476-9767

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PUBLIC ROADS - TYPICAL ADA RAMP. SIDEWALK.

CURB & GUTTER. AND CONCRETE JOINT DETAILS

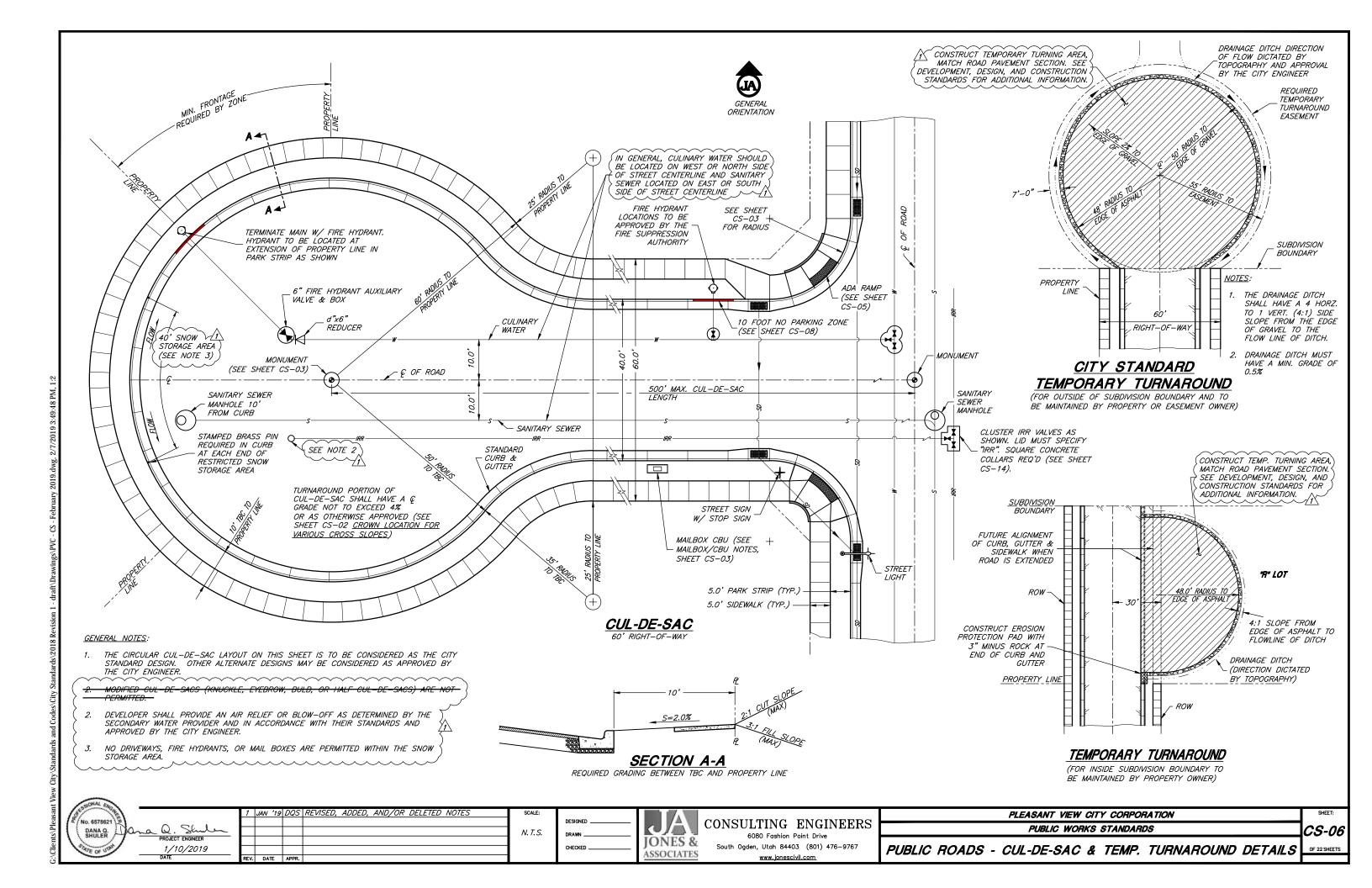
OF 22 SHEETS

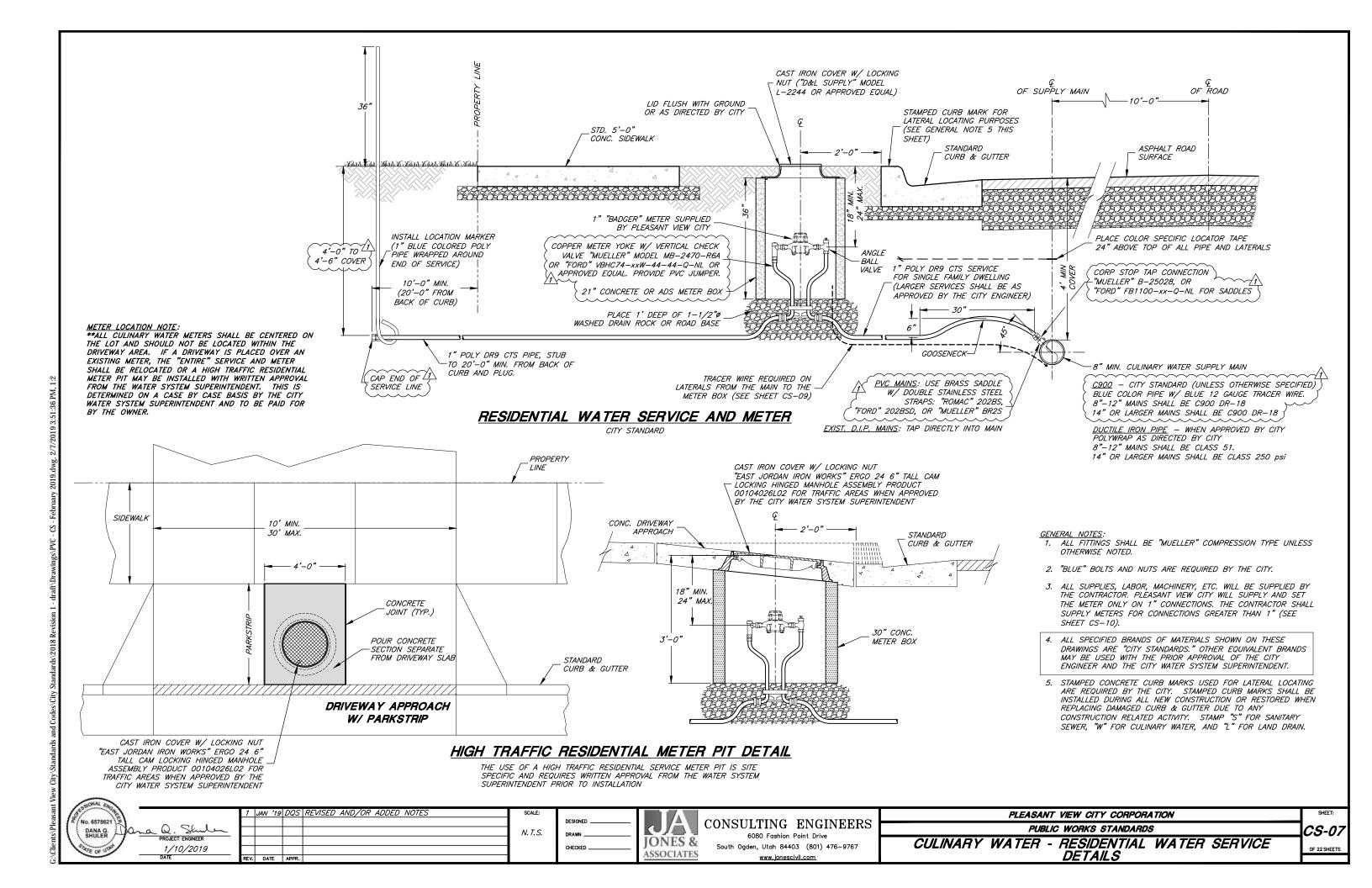
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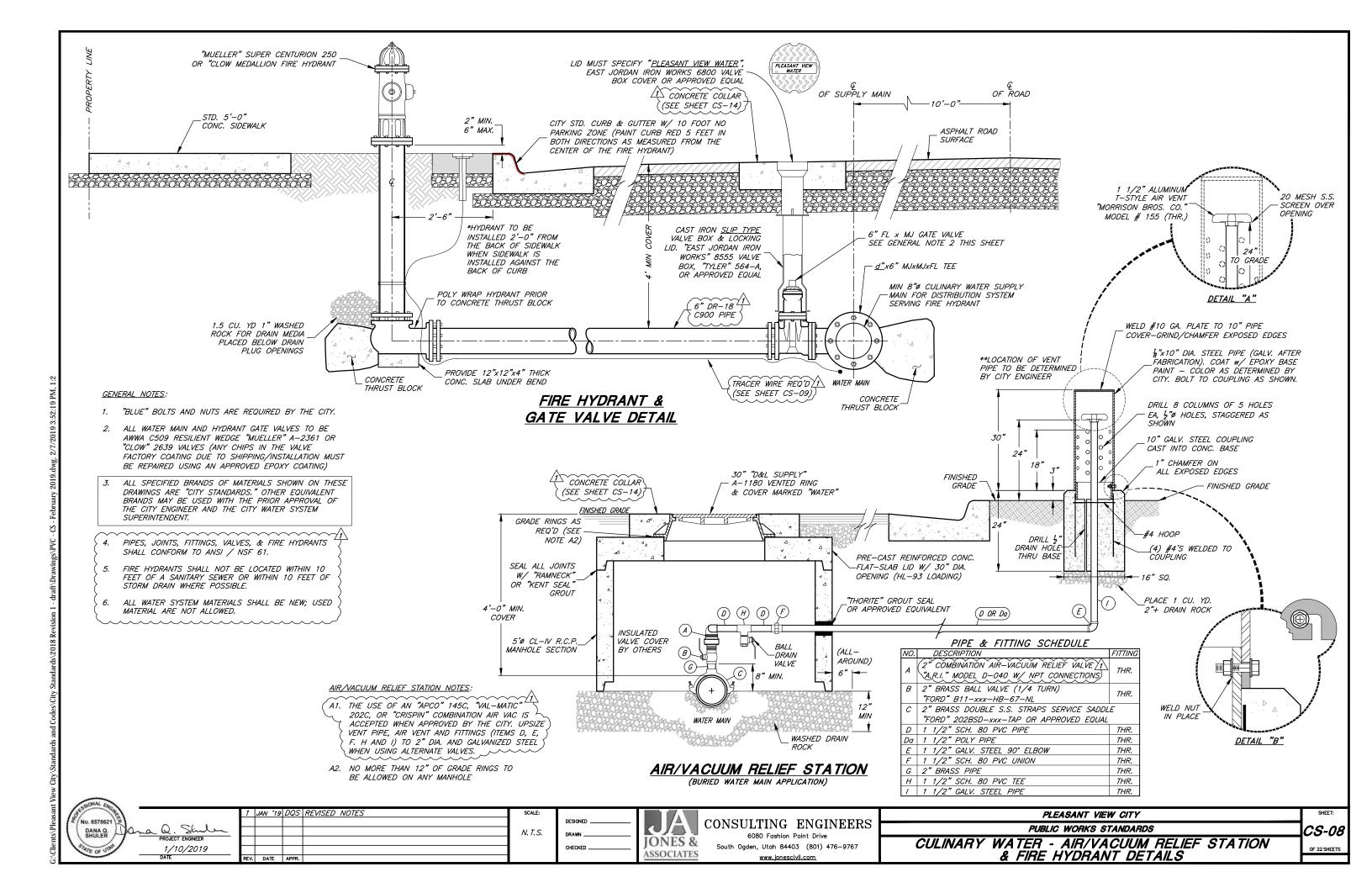
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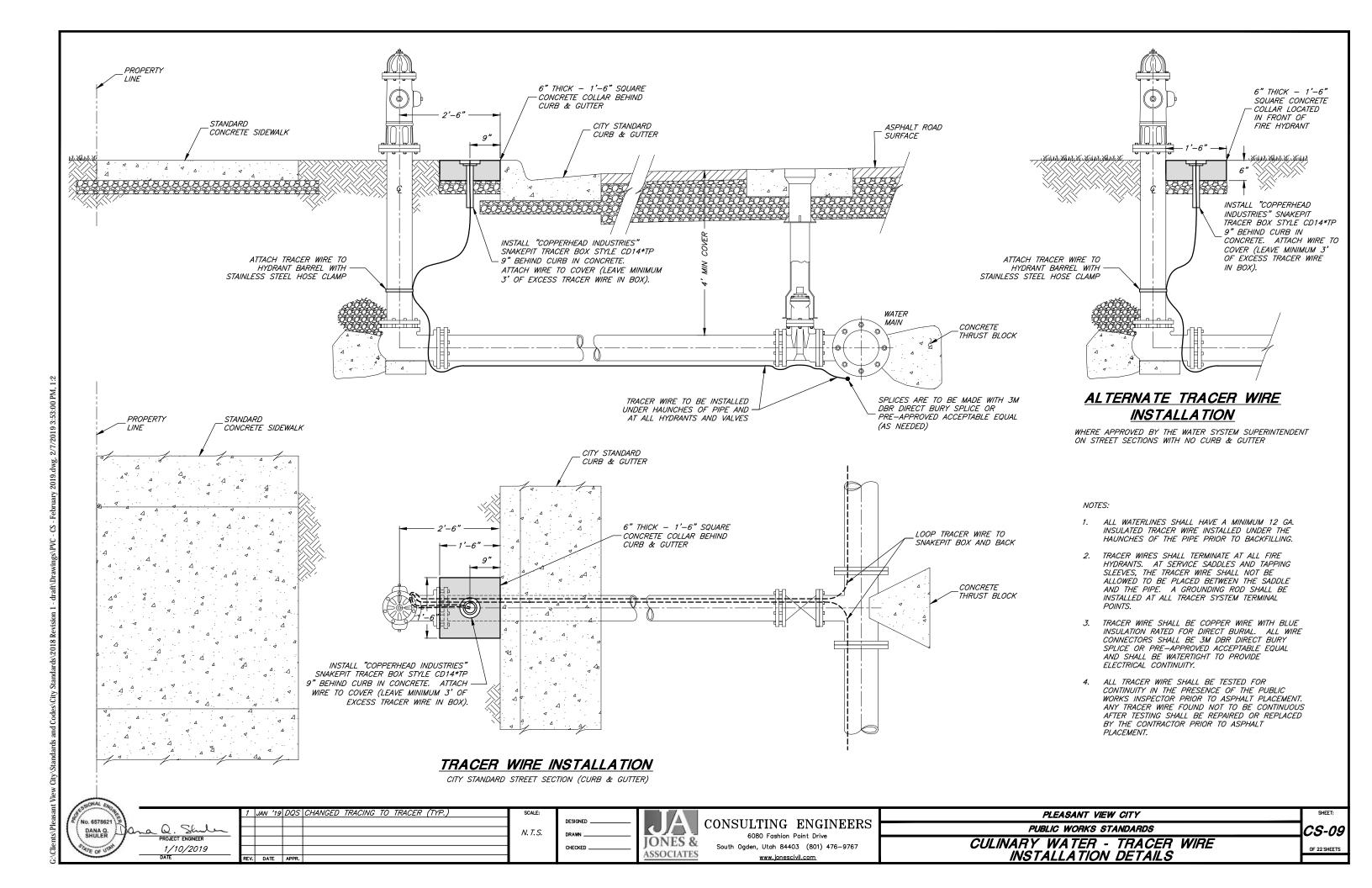
PROJECT ENGINEER

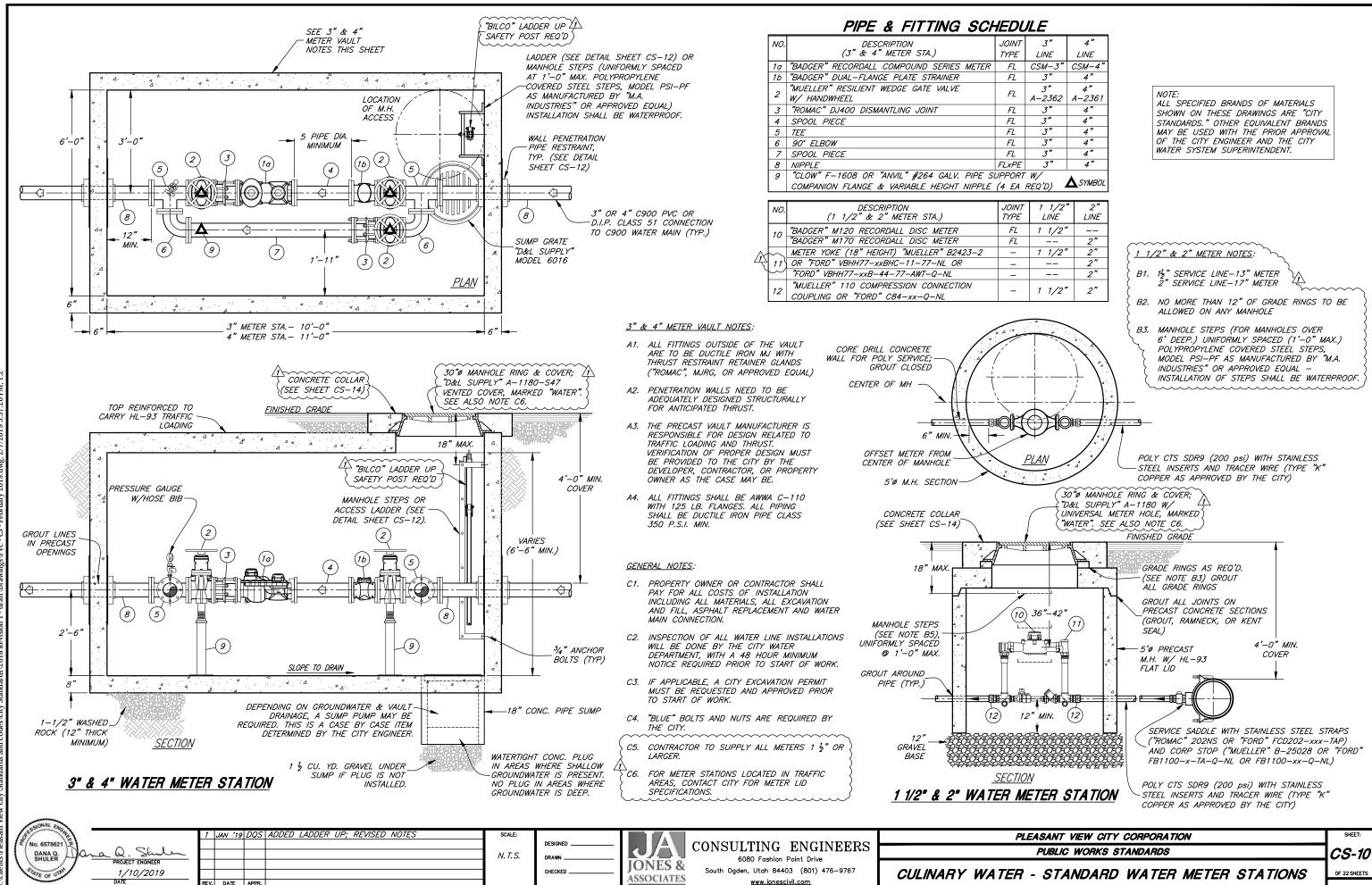
1/10/2019



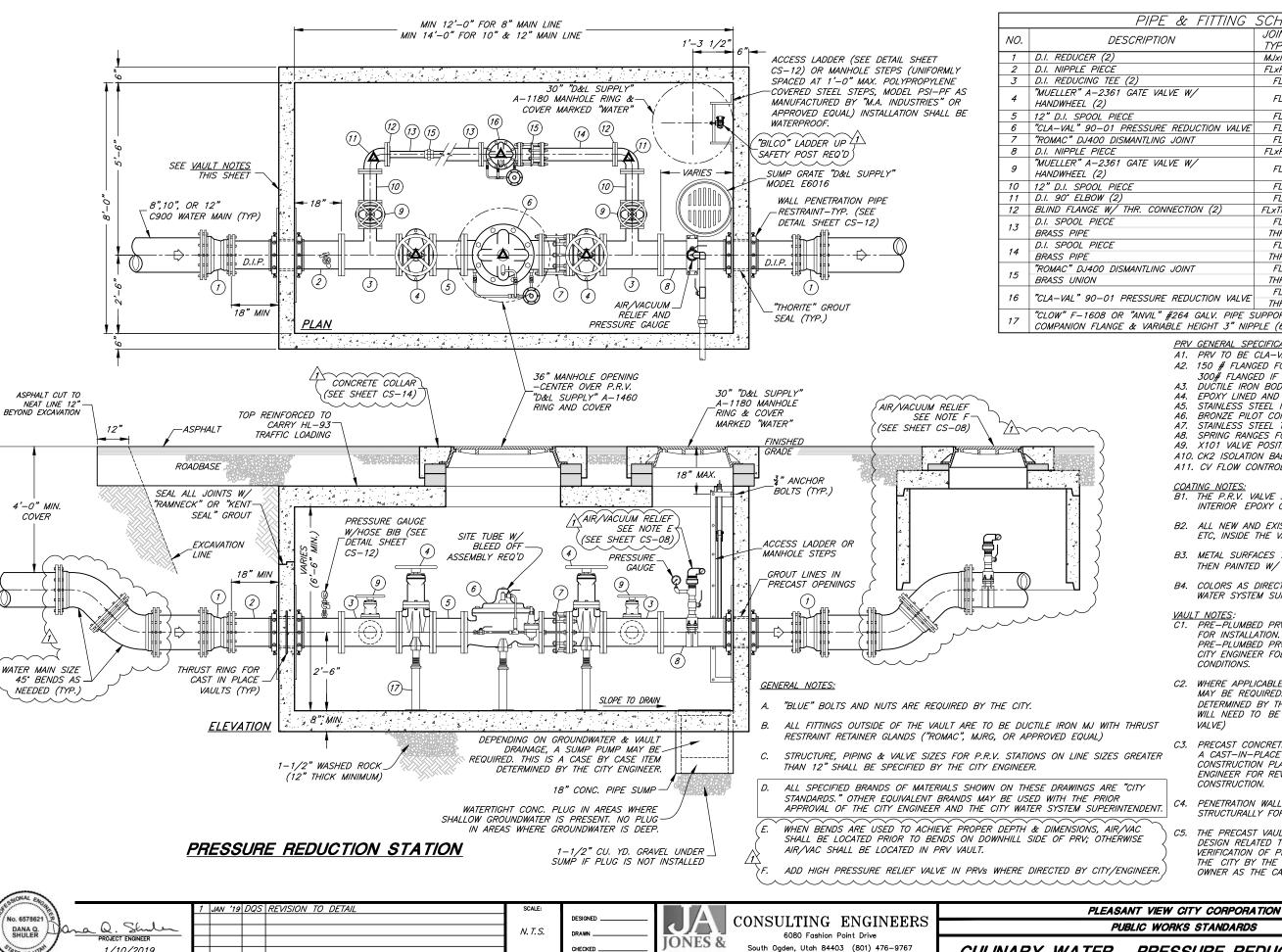








O / Ob on June Share Ct. V. Ct. and Call Call Control Control



PIPE & FITTING SCHEDULE TYPF MJxMJ8"x6 10"x8 12"x10 FLxPE 10" 8"X8"X4" | 10"X10"X4" FL 6"X6"X4" FL 8" 10' 10' "CLA-VAL" 90-01 PRESSURE REDUCTION VALVE 10 10' FΙ FLxPE 6" 8" 10" FL 4" FL FL 4" FLxTHR. 4"x2 FL THR FL THR FL THR. "CLA-VAL" 90-01 PRESSURE REDUCTION VALVE "CLOW" F-1608 OR "ANVIL" #264 GALV. PIPE SUPPORT W/ 3 **A** SYMBOL COMPANION FLANGE & VARIABLE HEIGHT 3" NIPPLE (6 EÁ REQD.)

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

DUCTILE IRON BODY GLOBE PATTERN

EPOXY LINED AND COATED

STAINLESS STEEL INTERNAL TRIM

BRONZE PILOT CONTROLS

STAINLESS STEEL TUBES & FITTINGS
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.
- B3. METAL SURFACES TO BE PAINTED SHALL BE PRIMED AND THEN PAINTED W/ TWO COATS OF EPOXY PAINT.
- B4. COLORS AS DIRECTED BY THE CITY ENGINEER OR CITY WATER SYSTEM SUPERINTENDENT.

- 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)
- PRECAST CONCRETE STRUCTURE CAN BE REPLACED WITH A 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.
- 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.

1/10/2019

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PUBLIC WORKS STANDARDS

CULINARY WATER - PRESSURE REDUCTION STATION

SHEET: CS-11 OF 22 SHEETS

(WATER, IRRIGATION, SEWER, STORM DRAIN, AND LAND DRAIN) (CL-51 POLYWRAPPED D.I.P. WHEN APPROVED BY CITY)

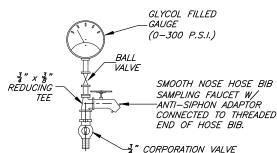
TYPICAL WATERLINE LOOP

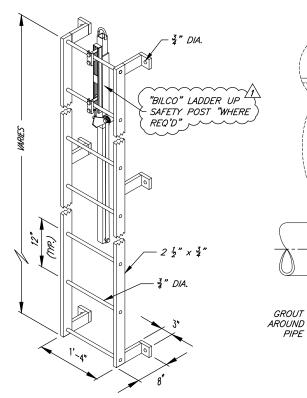
- TRANSITION COUPLING; "ROMAC" MODEL 501
- ② MJ 45° BEND W/RETAINER GLANDS
- (3) CONSTRUCT THRUST BLOCKS AT EACH 45° BEND W/(3) #6 REBAR SECURING BLOCK TO FITTING (EPOXY COATING)
- 4) MINIMUM OF 12" COVER BETWEEN THE WATERLINE AND CONFLICTING UTILITY YILLINE TO BE CROSSED, EXCEPT LOOPS INVOLVING <u>SEWER MAINS</u> WHERE A MINIMUM OF 18" VERTICAL COVER **ABOVE** THE SEWER MAIN IS REQUIRED. EXCEPTIONS MUST BE APPROVED BY THE UTAH DIVISION OF DRINKING WATER (DDW).
- AN AIR/VACUUM RELIEF VALVE MAY BE REQUIRED ON A CASE BY CASE BASIS AS DIRECTED BY THE CITY WATER SYSTEM SUPERINTENDENT.

TRENCH NOTES:

HOT MIX ASPHALT (HMA) PER CITY STANDARD

- A. BACKFILL PER APWA 33 05 20 AND CITY MODIFICATIONS.
- B. COMPACTION TEST REQUIRED AT SPRING—LINE FOR ALL P.V.C. OR H.D.P.E. PIPES.
- C. PAVEMENT RESTORATION PER APWA 33 05 25 AND CITY MODIFICATIONS.
- D. 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.
- E. WATER & SEWER LINES, INCLUDING SERVICE LINES, SHALL NOT BE INSTALLED IN THE SAME TRENCH.





LADDER DETAIL

HOT DIP GALVANIZE AFTER FABRICATION

THE ANCHOR PINS OF THE RESTRAINING — GLAND MUST POINT <u>AWAY</u> FROM THE VAULT WALL AS SHOWN.

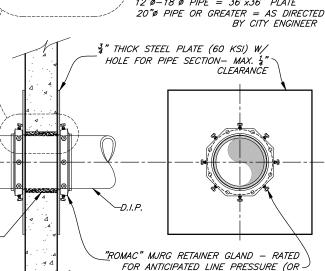
APPROVED EQUAL)

STEEL PLATE DIMENSIONS:

10"Ø PIPE OR LESS = 24"x24" PLATE

12"Ø-18"Ø PIPE = 36"x36" PLATE

20"Ø PIPE OR GREATER = AS DIRECTE



WALL PENETRATION DETAIL

FOR PRECAST VAULT (TYP)

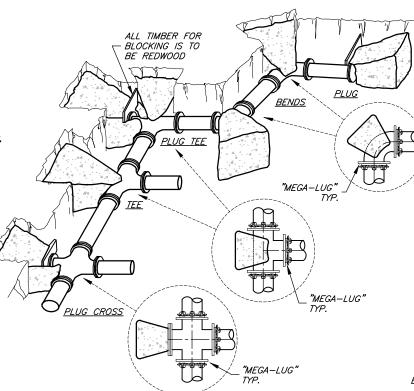
PRESSURE GAUGE W/SAMPLING FAUCET DETAIL

PIPE RESTRAINT

- A1. FOR NOMINAL PIPE DIAMETERS 8" 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

	IHKU.		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	<i>351</i>	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			

THRUST PER PSI OF WATER PRESSURE AT

NOTE.

- 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 = $94 \times 200 = 18,800$ LB. ASSUME BEARING STRENGTH = 2.000 LB./SQ. FT.

 $\frac{18,8000}{2,000} = 9.4 \ \text{SQ. FT.} \qquad \begin{array}{c} \textit{AREA OF BEARING REQUIRED} \\ \textit{FOR THRUST BLOCK} \end{array}$

No. 6578621 PANA Q. SHULER

ON ATE OF UTIN 1/10/2019

DESIGNED ______
DRAWN _____
CHECKED ____

JA JONES & ASSOCIATES

CONSULTING ENGINEERS

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South Ogden, Utah 84403 (801) 476-9767

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PLEASANT VIEW CITY CORPORATION

PIPE TRENCH & MISC. VAULT DETAILS

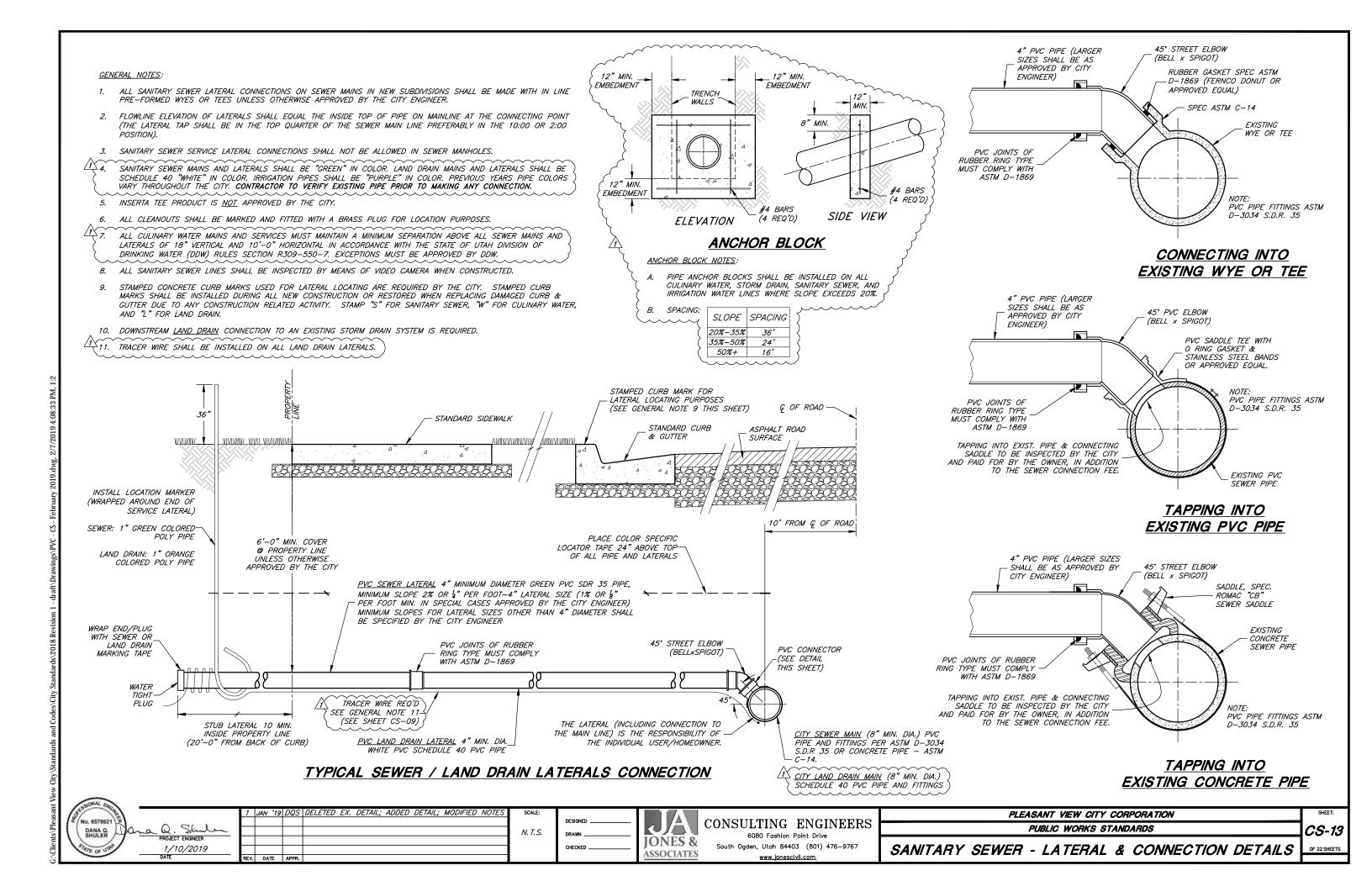
PUBLIC WORKS STANDARDS

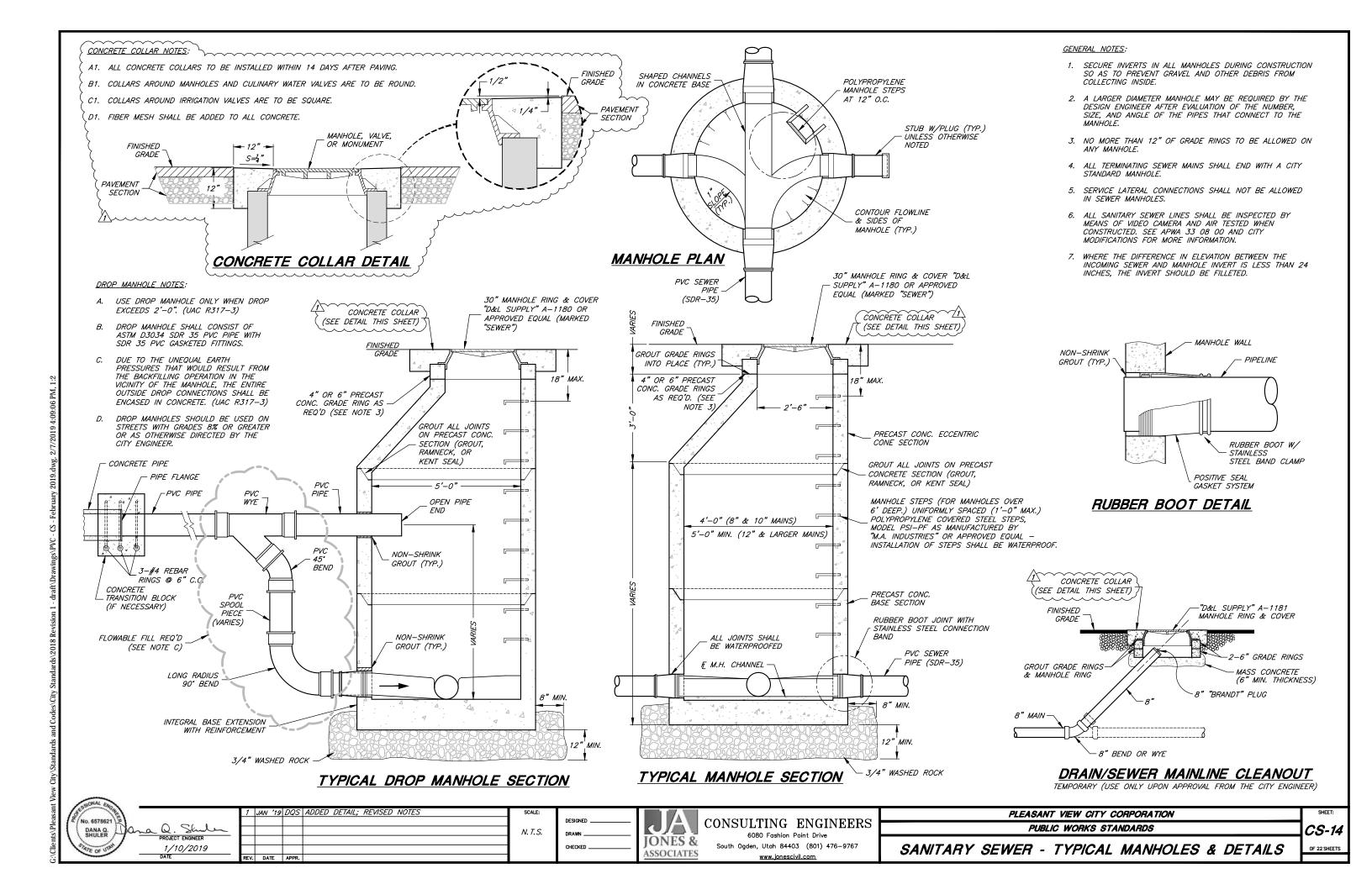
CULINARY WATER - THRUST BLOCK, WATERLINE LOOP,

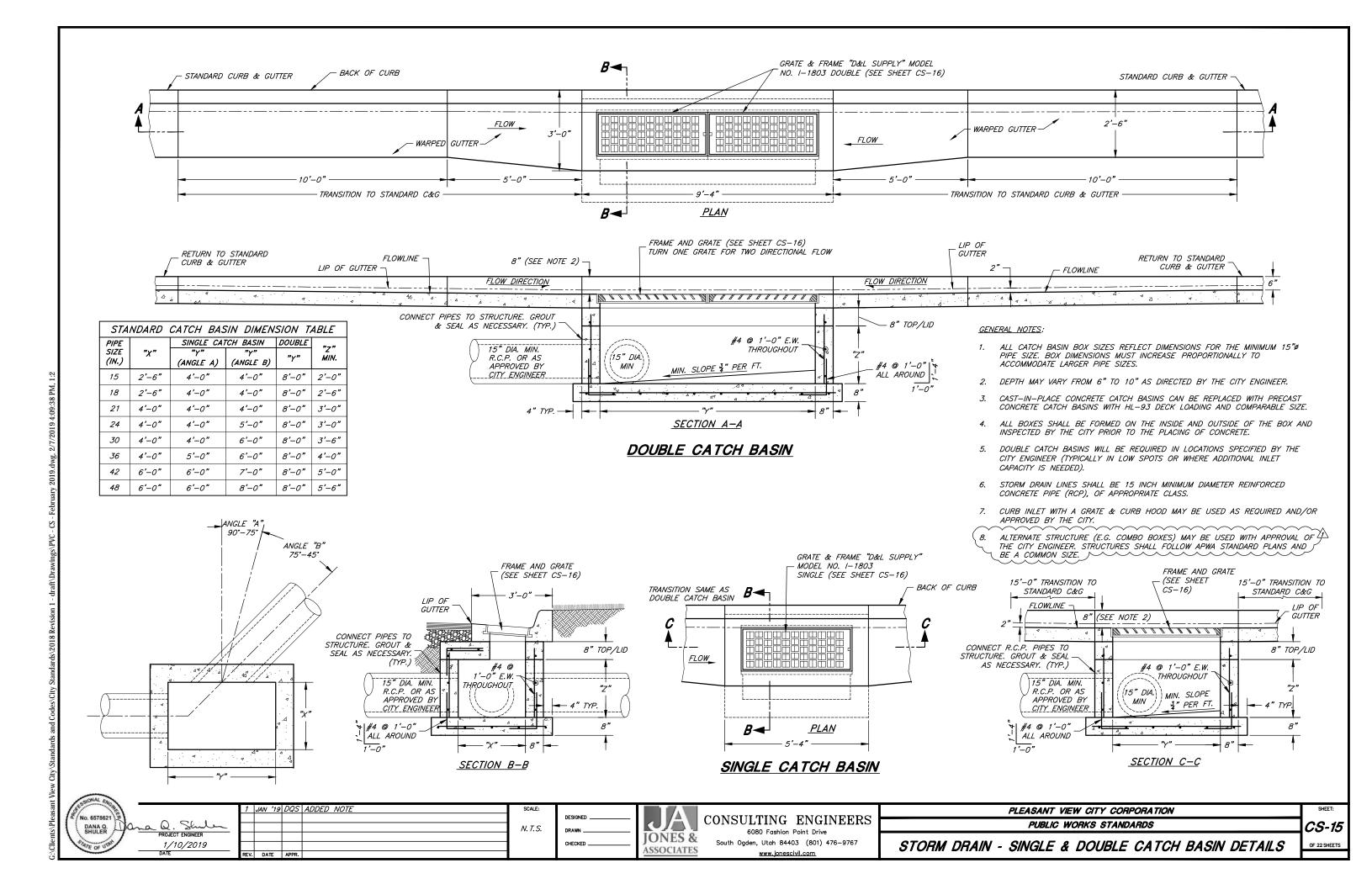
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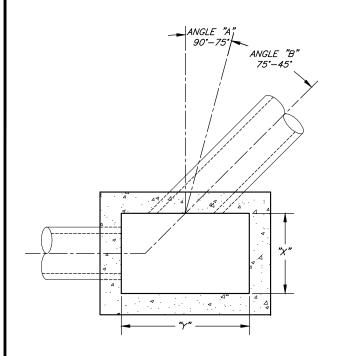
CS-12OF 22 SHEETS

SHEET:





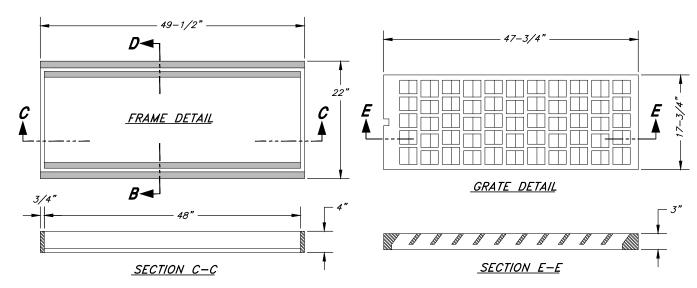




DRAINAGE DITCH INLET BOX DIMENSION TABLE							
PIPE SIZE (IN.)	"X"	INLET "Y" (ANGLE A)	BOX "Y" (ANGLE B)	"Z" MIN.			
15	2'-6"	4'-0"	4'-0"	2'-0"			
18	2'-6"	4'-0"	4'-0"	2'-6"			
21	4'-0"	4'-0"	4'-0"	3'-0"			
24	4'-0"	4'-0"	5'-0"	3'-0"			
30	4'-0"	4'-0"	6'-0"	3'-6"			
36	4'-0"	4'-0"	6'-0"	4'-0"			
42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

GENERAL NOTE:

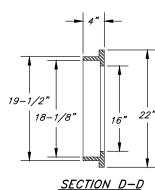
STORM DRAIN LINES SHALL BE 15 INCH MINIMUM DIAMETER REINFORCED CONCRETE PIPE (RCP), OF

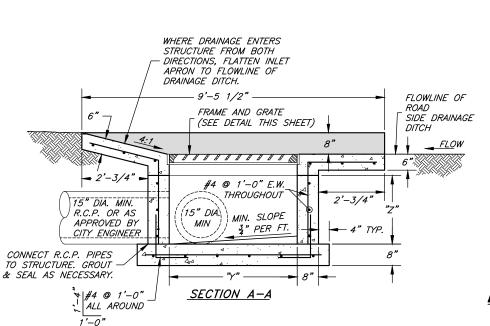


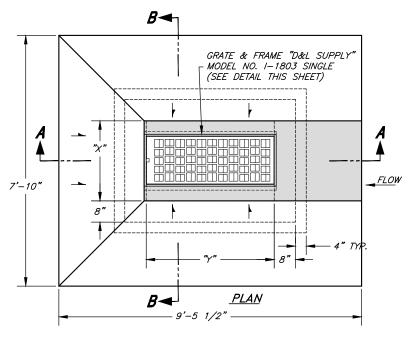
FRAME & GRATE DETAILS

FRAME AND GRATE NOTES:

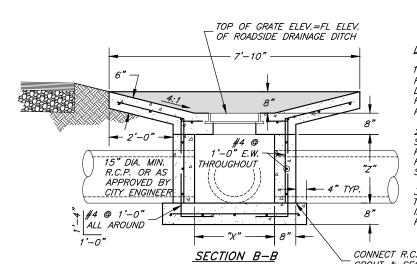
- A1. GRATE AND FRAME SHALL BE AS MANUFACTURED BY "D&L SUPPLY" I-1803
- B1. BICYCLE SAFE GRATE REQUIRED.
- C1. "OR EQUAL" GRATES AND FRAMES WILL BE CONSIDERED AS APPROVED BY THE CITY ENGINEER.











DRAINAGE BOX NOTES:

- ALL BOX SIZES REFLECT DIMENSIONS FOR THE MINIMUM 15" 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
- 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.

CONNECT R.C.P. PIPES TO STRUCTURE. GROUT & SEAL AS NECESSARY. (TYP.)

Q. Skulen PROJECT ENGINEER DANA Q. SHULER 1/10/2019

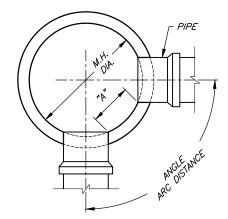
N. T.S. CHECKED _ **IONES &** ASSOCIATES

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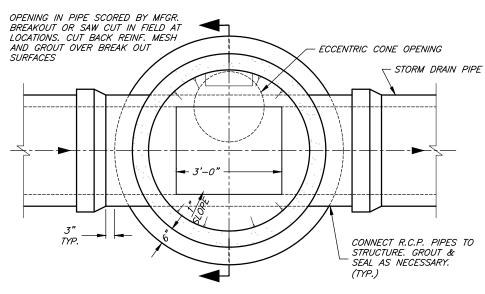
PLEASANT VIEW CITY CORPORATION PUBLIC WORKS STANDARDS STORM DRAIN - DRAINAGE DITCH INLET BOX & GENERAL GRATE AND FRAME DETAILS

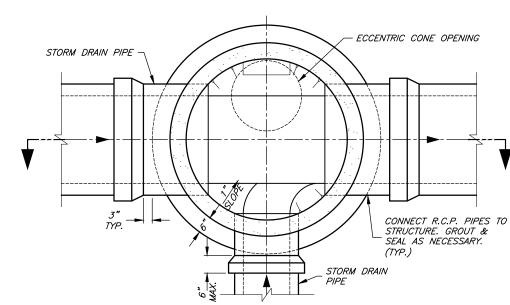
CS-16 OF 22 SHEETS



SIZING NOTES:

- . 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



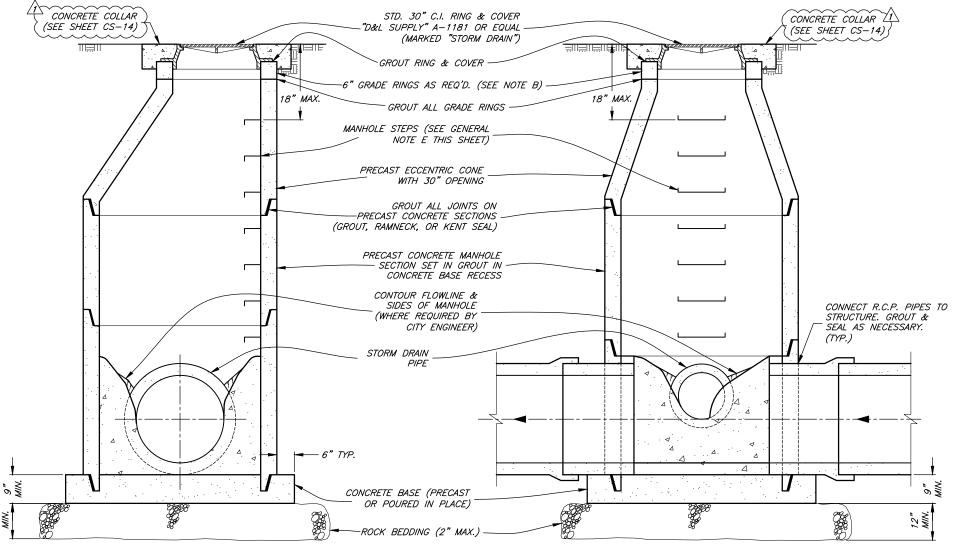


TYPICAL LINE MANHOLE

TYPICAL JUNCTION MANHOLE

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. MANHOLE STEPS UNIFORMLY SPACED (1'-0" MAX.)
 POLYPROPYLENE COVERED STEEL STEPS, MODEL
 PSI-PF AS MANUFACTURED BY "M.A. INDUSTRIES"
 OR APPROVED EQUAL INSTALLATION OF STEPS
 SHALL BE WATERPROOF.
- F. STORM DRAIN LINES SHALL BE 15 INCH MINIMUM DIAMETER REINFORCED CONCRETE PIPE (RCP), OF APPROPRIATE CLASS.





1 JAN '19 DQS DELETED NOTE, DIMENSIONS; ADDED NOTE

SCALE:

N. T. S.

DESIGNED _______
DRAWN ______
CHECKED _______
AS:

JA JONES & ASSOCIATES

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South Ogden, Utah 84403 (801) 476-9767

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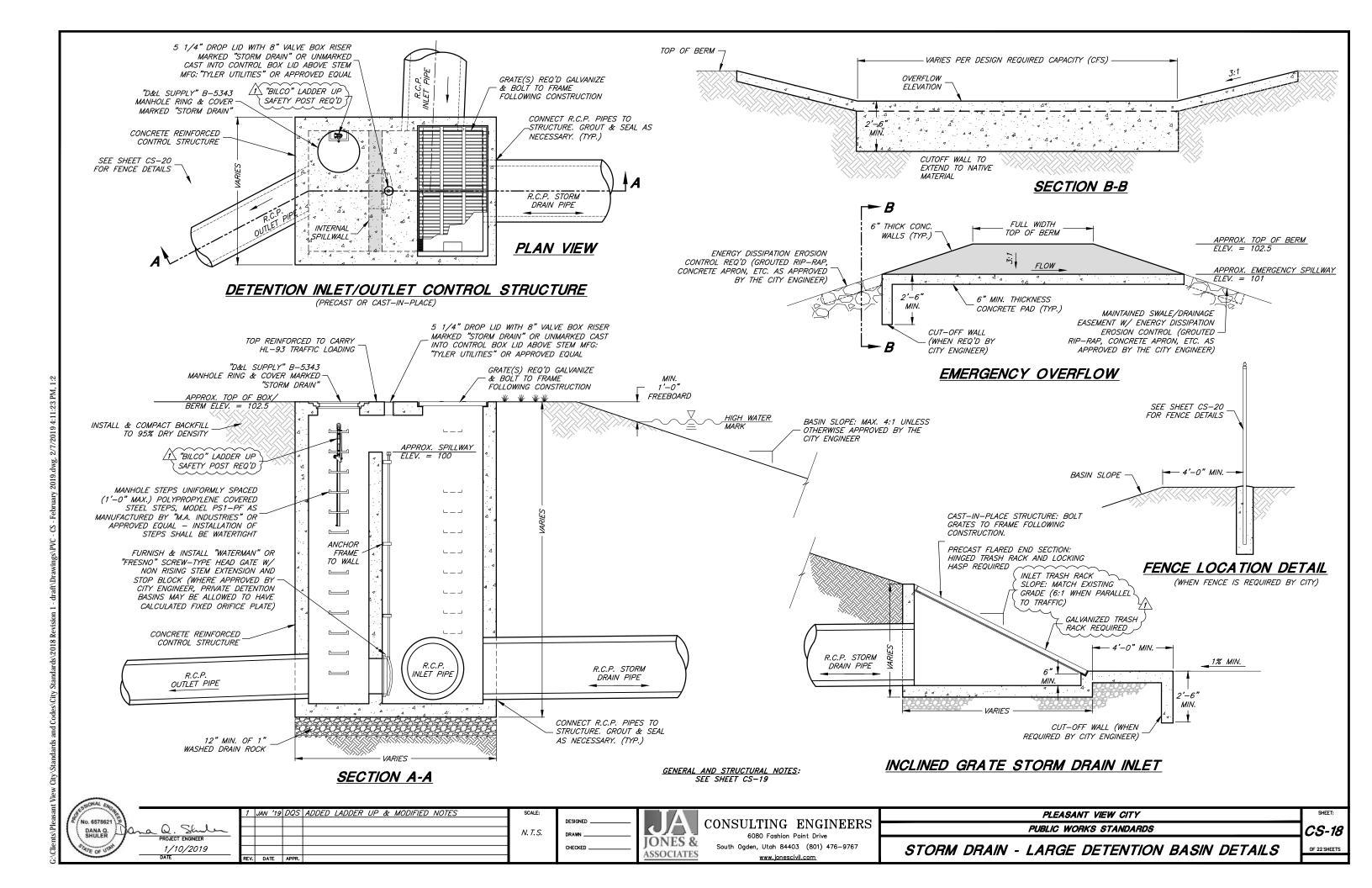
PLEASANT VIEW CITY CORPORATION
PUBLIC WORKS STANDARDS

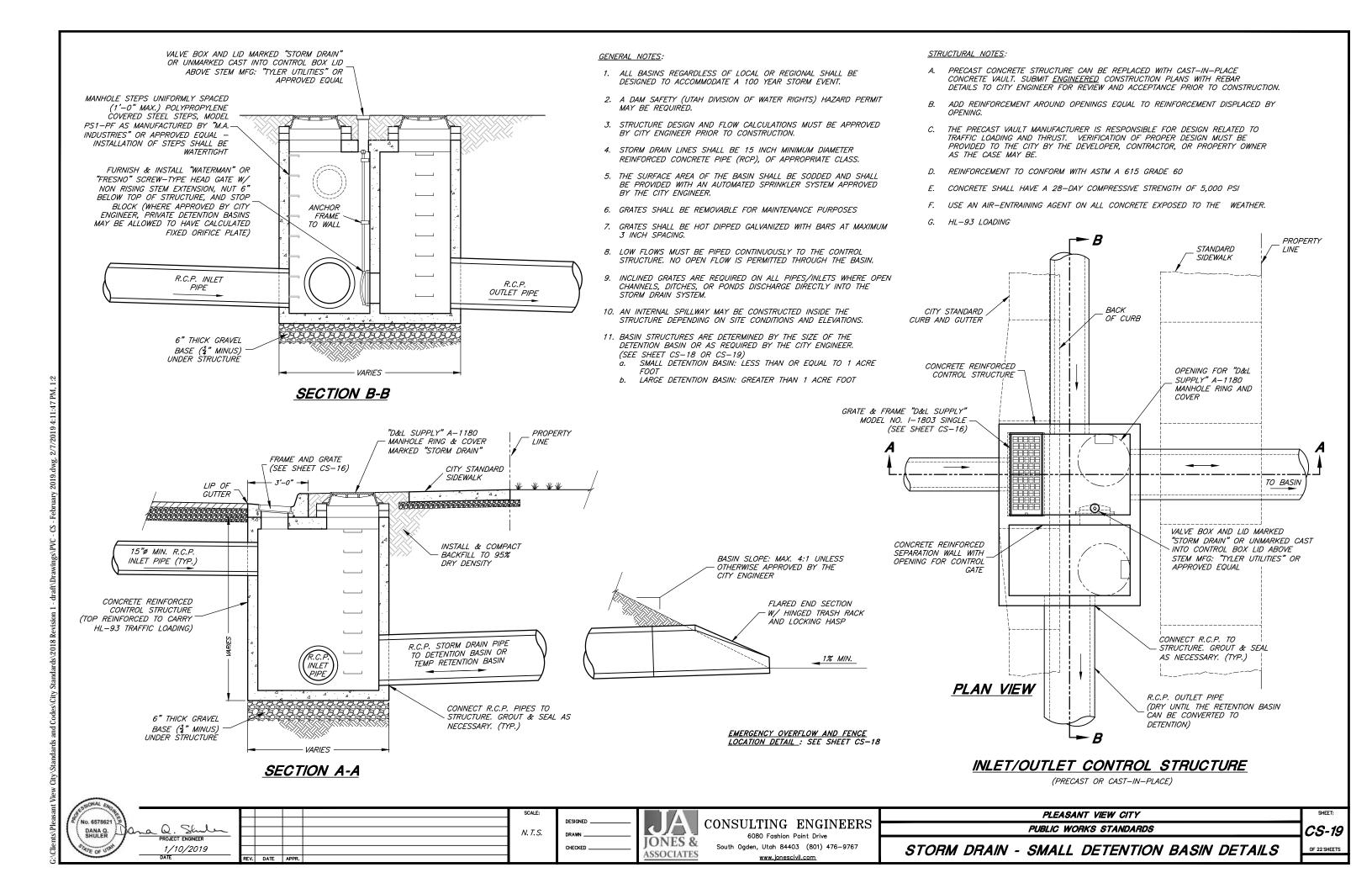
STORM DRAIN - MANHOLE DETAILS

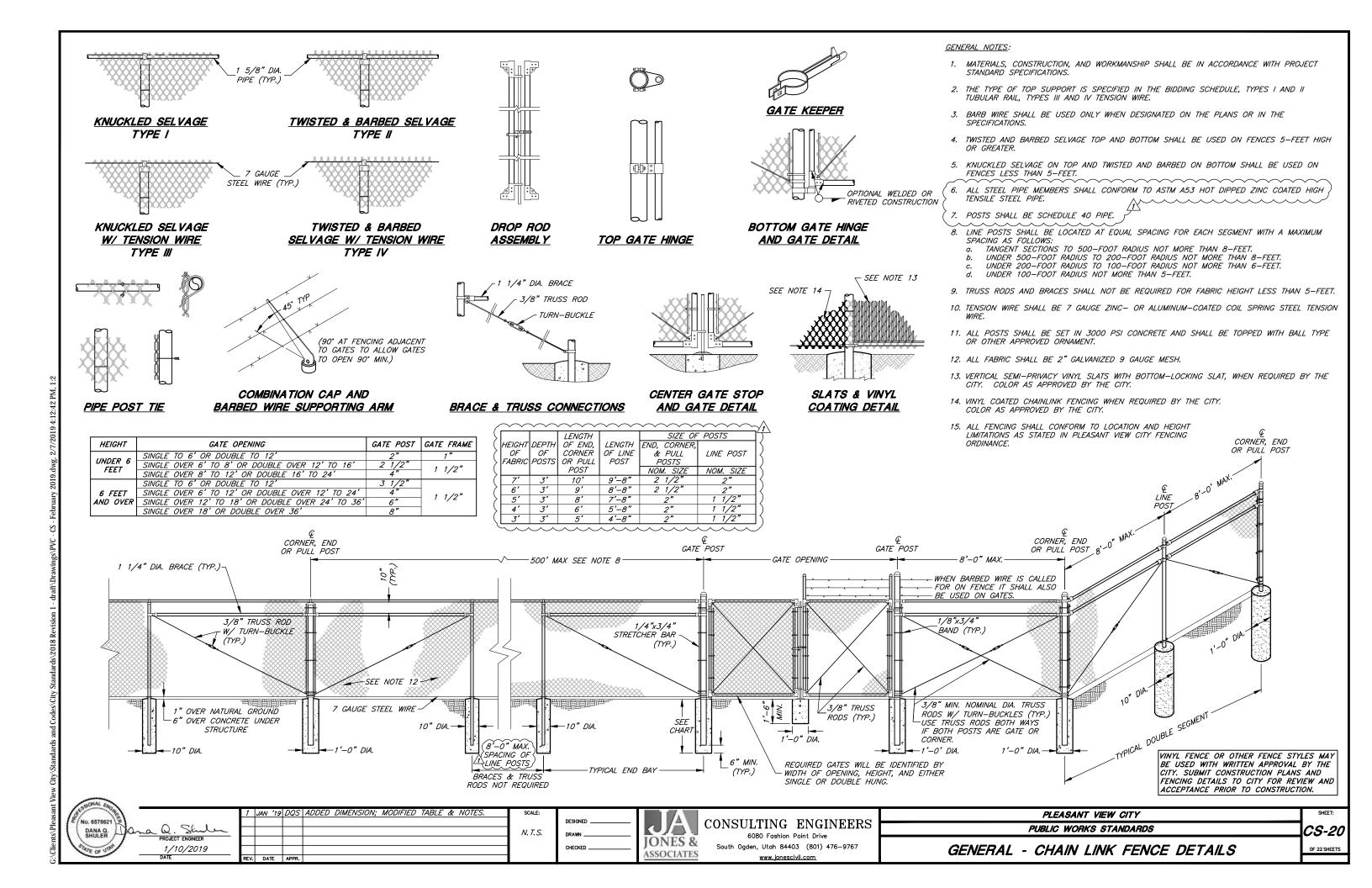
SHEET:

CS-17

OF 22 SHEETS







ROCKY MOUNTAIN POWER

STANDARD "COBRA HEAD" LED

ATTENTION

DEVELOPED/CONTRACTOR SHALL NOTIFY ROCKY MOUNTAIN POWER DESIGN OFFICE PRIOR TO LIGHTING INSTALLATION TO ARRANGE FOR POWER TO BE PROVIDED ON SITE, AS WELL AS APPROVAL OF LIGHTING UNIT LOCATIONS AND APPROVAL OF ACTUAL COMPONENT SELECTION.

ROCKY MOUNTAIN POWER 1-888-221-7070

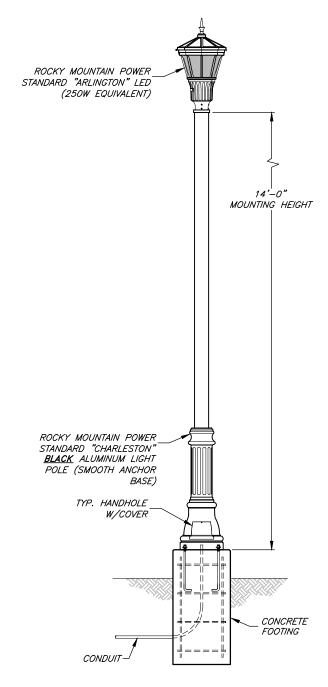
ALL FINAL WORK AND MATERIALS TO BE APPROVED BY THE CITY AND THE CITY ENGINEER.

GENERAL NOTES:

- 1. LIGHTS SHOWN ARE ROCKY MOUNTAIN POWER STANDARD STREET LIGHTS. STREET LIGHTS TO BE FURNISHED AND INSTALLED BY ROCKY MOUNTAIN POWER IN ACCORDANCE WITH THEIR REGULATIONS AND SPECIFICATIONS AND PAID FOR BY THE DEVELOPER/CONTRACTOR.
- 2. FOOTINGS TO BE INSTALLED PER MANUFACTURER/ROCKY MOUNTAIN POWER RECOMMENDATIONS. FOOTINGS SHOULD BE LOCATED WITH THE VERTICAL CENTERLINE 24" BACK FROM THE EDGE OF CURB.
- 3. THE DEVELOPER/CONTRACTOR MUST SUBMIT A WRITTEN REQUEST INCLUDING A MAP SHOWING THE LOCATION OF ALL STREET LIGHTS TO THE CITY. THE CITY WILL THEN SUBMIT A STREET LIGHT WORK ORDER TO ROCKY MOUNTAIN

SPACING AND LOCATION REQUIREMENTS

- A. COBRA HEAD STREET LIGHTS MUST BE LOCATED AT ALL INTERSECTIONS, CORNERS, AND CUL-DE-SACS FOR ALL STREET TYPES AT LOCATIONS SHOWN ON APPROVED CONSTRUCTION PLANS.
- STREET LIGHTS MUST BE SPACED AT A MAXIMUM 400 FOOT SPACING AND SHOULD ALTERNATE EACH SIDE OF THE STREET ON THE PROPERTY LINE AT LOCATIONS SHOWN ON APPROVED CONSTRUCTION PLANS.



STANDARD RESIDENTIAL STREET LIGHT (LOCAL STREETS)

Q. Skulen PROJECT ENGINEER N. T.S. 1/10/2019

CHECKED _

IONES & ASSOCIATES

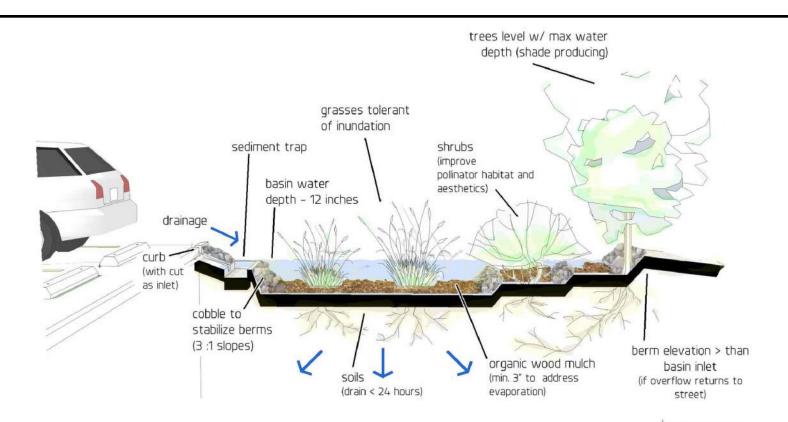
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PLEASANT VIEW CITY CORPORATION PUBLIC WORKS STANDARDS

GENERAL - STREET LIGHTING STANDARDS

CS-21 OF 22 SHEETS



Basic Basin Design Considerations

RAIN GARDEN

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



RAIN BARREL

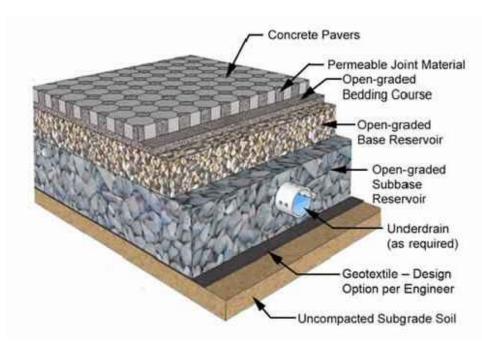
*** http://www.goodideasinc.com/products/rain-barrels/rain-wizard-50/ ***



diagram by

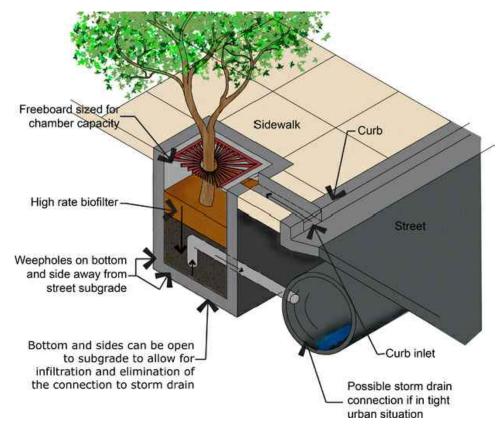
Paul Navrot

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PERMEABLE PAVER

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



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Q. Skulen PROJECT ENGINEER 1/10/2019 DATE

N. T. S. CHECKED _ **JONES &** ASSOCIATES

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PLEASANT VIEW CITY CORPORATION PUBLIC WORKS STANDARDS GENERAL - LID (LOW IMPACT DEVELOPMENT) EXAMPLES

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