Welby Jacob Water Users Company

Design Standards and Standard Drawings

Sheet Index

Standard Drawings Disclaimer:

The Drawings Provided in These Standards are Only Intended to Show the Type of Facilities That Will be Acceptable to WJWUC. These Are Not Intended to be Used Directly in the Design of Facilities as Each Encroachment/Crossing Has its Own Unique Circumstance, Dimensions, Design Criteria, etc. It is the Responsibility of the Design Engineer, Who Will Stamp the Drawing, to Ensure that Each Crossing is Designed Properly.

By Using Any Details in These Drawings, You Acknowledge That You Have Verified the Standard Drawing Detail is Adequate for Incorporating into Your Design. Franson Civil Engineers Will Not be Held Liable for any Use of These Drawings. Contact Vince Hogge from Franson Civil Engineers for any Questions Regarding These Standard Drawings.

Welby Jacob Water Users Company

DESIGNER:	Vince Hogge	PROJECT LEADER:	PROJECT LEADER
DRAFTSMAN:	Matt Gurr	PRINT DATE:	March 5, 2018
CHECKED:	CHECKED	REVISIONS	
REVIEWED:	REVIEWED		

NO.	DATE	INITS.	DESCRIPTION
1	January 2018	MG, VH	UPDATED

Welby Jacob Water Users Company

Standard Drawings
Cover and Sheet Index

JOB NO.

01-WJ Cover Sheet.dwg
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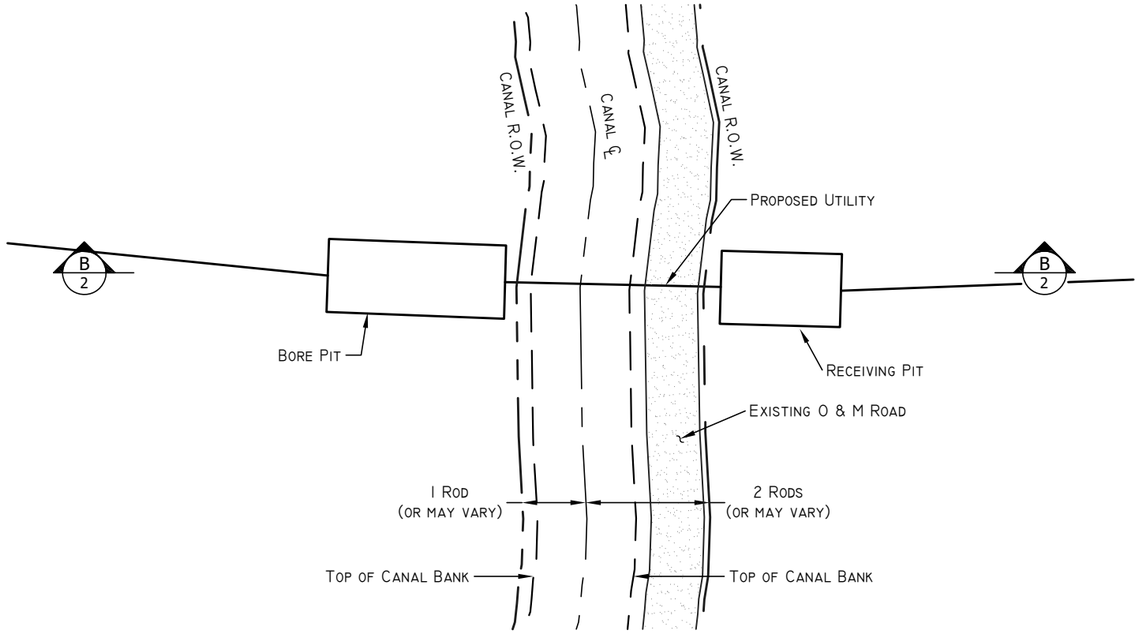
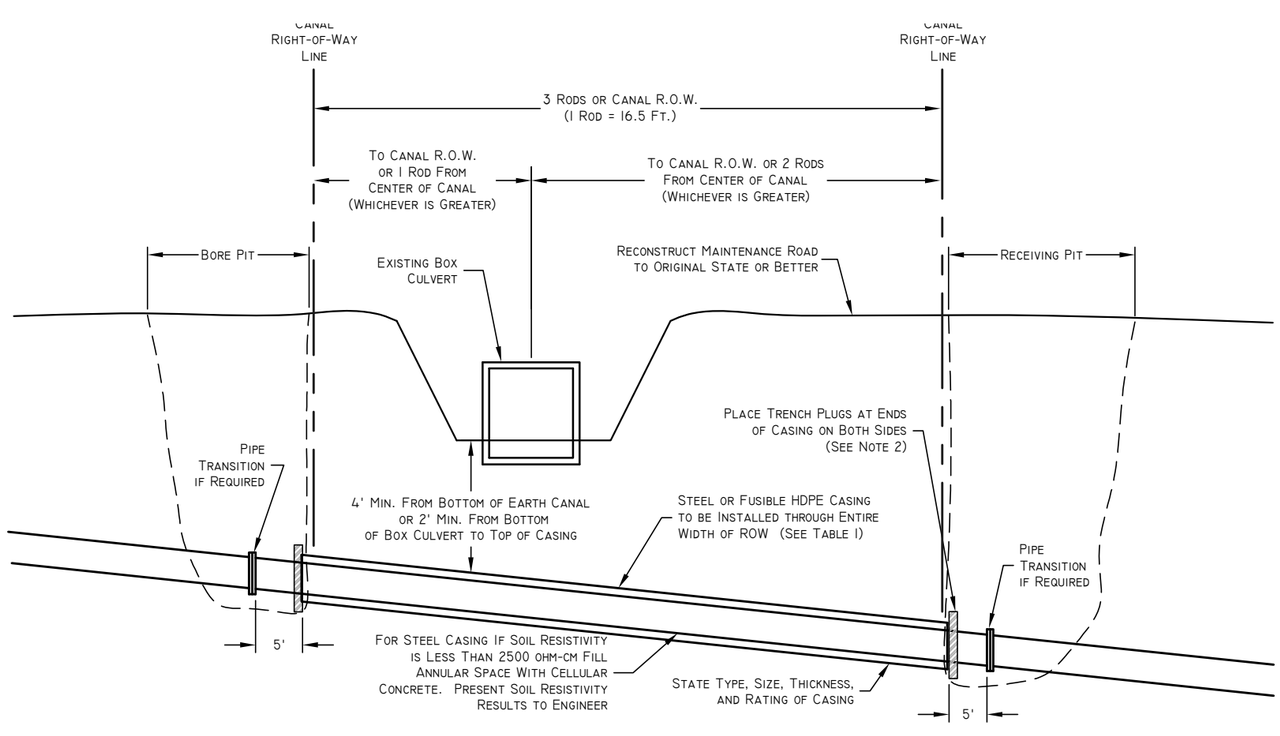
SHEET 1 OF 11



A **BORING UNDER CANAL**
NTS



B **BORE CASING CROSS SECTION**
NTS

NOTES:

1. BORE PIT COMPACTION TO BE 92% MODIFIED PROCTOR DENSITY.
2. TRENCH PLUGS ARE TO BE PLACED IN LOCATIONS SHOWN ON BOTH SIDES FOR WIDTH OF TRENCH AND 12 INCHES ABOVE AND BELOW CASING PIPES AND A THICKNESS OF 24 INCHES. PLUGS SHALL BE A 10% BENTONITE AND 90% CLAY MIXTURE, OR SHALL BE A FLOWABLE FILL CONCRETE.
3. STORMWATER RUNOFF ENTERS THE CANAL DURING STORM EVENTS OR AT OTHER UNEXPECTED TIMES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT THE WORK SITE.
4. WATERLINE PIPE INSIDE OF CASING SHALL HAVE RESTRAINING JOINTS.
5. THRUST BLOCKS ARE REQUIRED ON ALL BENDS FOR DIP, PVC, OR PIP WATERLINES.
6. CASING MUST BE A MINIMUM OF 2 FEET BELOW THE BOTTOM OF THE EXISTING CANAL BOX CULVERT OR 4 FEET BELOW EARTHEN CANAL BOTTOM.
7. BORE PITS MUST BE COMPLETELY PLACED OUTSIDE OF THE CANAL RIGHT-OF-WAY. CANAL RIGHT-OF-WAY IS GENERALLY 1 ROD ON THE UPHILL SIDE AND 2 RODS ON THE DOWNHILL SIDE FROM THE CENTER OF THE CANAL. R.O.W. DIMENSIONS MAY BE GREATER IN SOME AREAS.
8. CARRIER PIPE SHALL HAVE ADEQUATE CASING SPACERS.

TABLE 1
STEEL CASING THICKNESS

DIAMETER (INCHES)	MINIMUM WALL THICKNESS (INCHES)
12"	0.188"
14" - 16"	0.312"
18"	0.312"
20" - 22"	0.375"
24" - 26"	0.438"
28" - 32"	0.500"
34" - 36"	0.562"
38" - 42"	0.562"

WELBY JACOB WATER USERS COMPANY

DESIGNED: VINCE HOGGE
DRAFTSMAN: MATT GURR
CHECKED:
REVIEWED:
PROJECT LEADER:
PRINT DATE: MARCH 5, 2018

NO.	DATE	INITS.	REVISIONS DESCRIPTION
1	JANUARY 2018	MG, VH	UPDATED

STANDARD DRAWINGS
CANAL BORING DETAILS

JOB NO.
02-WJ Boring Details.dwg
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SHEET
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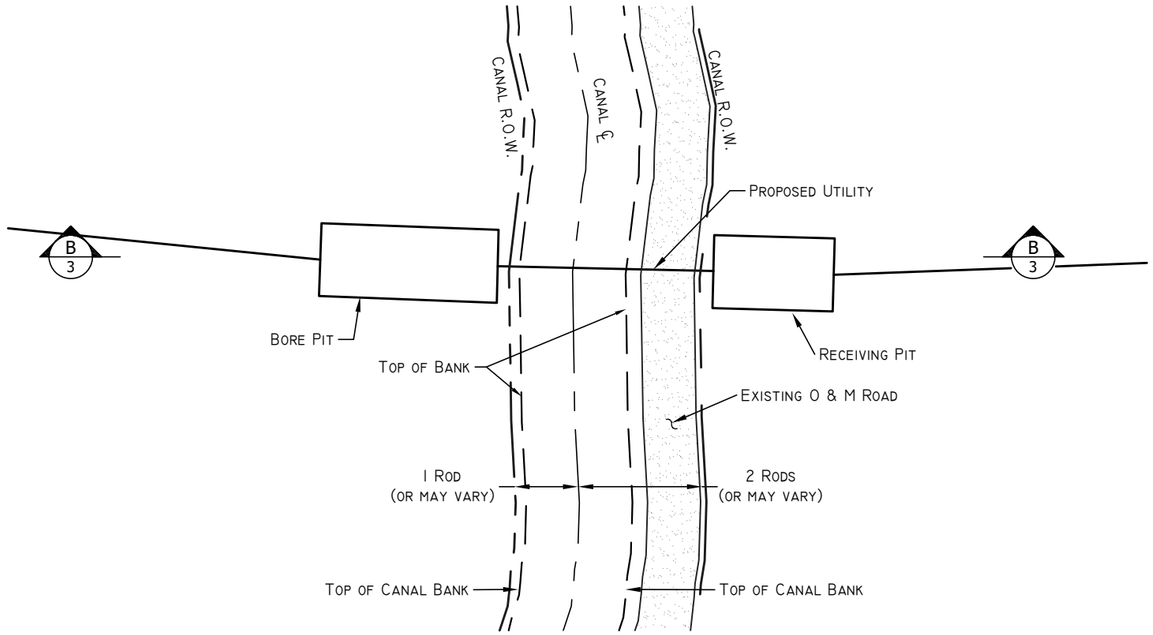
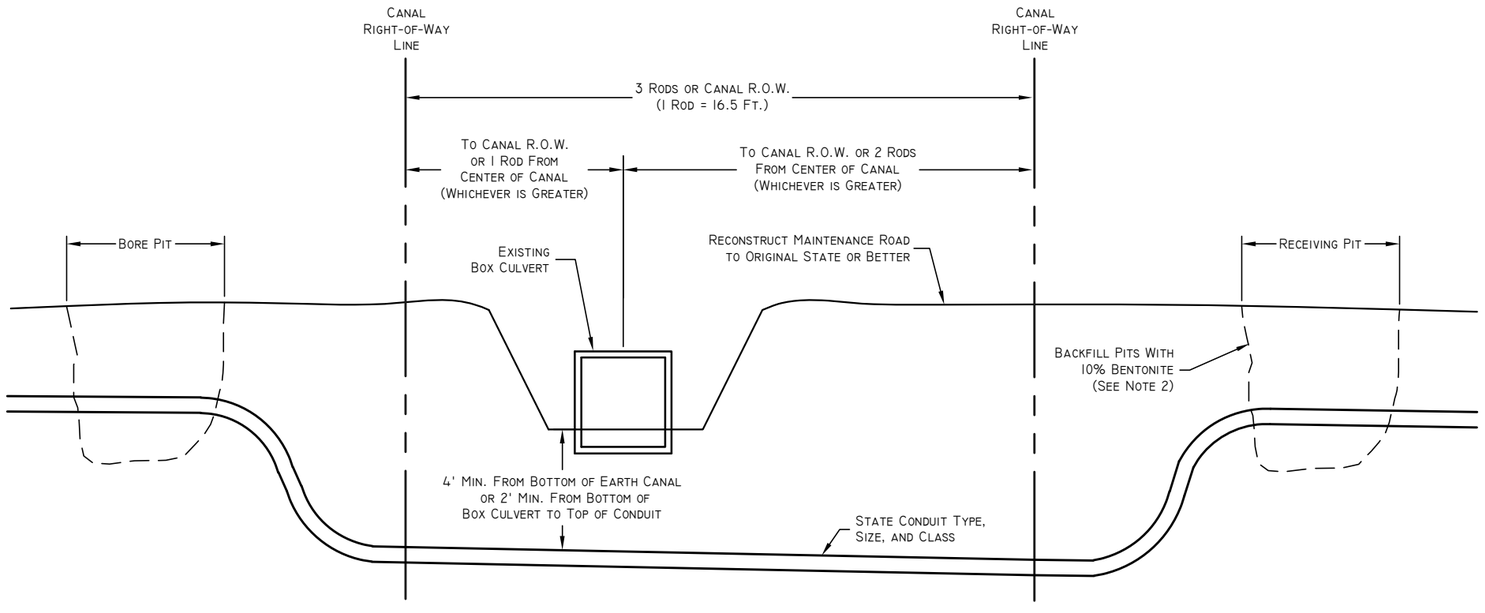


A DIRECTIONAL DRILL UNDER CANAL
NTS

NOTES:

1. BORE PIT COMPACTION TO BE 92% MODIFIED PROCTOR DENSITY.
2. FILL BORE PITS WITH A MIXTURE OF NATIVE MATERIAL AND 10% BENTONITE POWDER TO CREATE A SEAL THAT WILL PREVENT WATER FROM FOLLOWING THE NEW CONDUIT.
3. STORM WATER RUNOFF ENTERS THE CANAL DURING STORM EVENTS OR AT OTHER UNEXPECTED TIMES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT THE WORK SITE.
4. CONDUIT MUST BE A MINIMUM OF 2 FEET BELOW THE BOTTOM OF THE EXISTING CANAL BOX CULVERT OR 4 FEET BELOW EARTHEN CANAL BOTTOM.
5. BORE PITS MUST BE COMPLETELY PLACED OUTSIDE OF THE CANAL RIGHT-OF-WAY. CANAL RIGHT-OF-WAY IS GENERALLY 1 ROD ON THE UPHILL SIDE AND 2 RODS ON THE DOWNHILL SIDE FROM THE CENTER OF THE CANAL. ROW DIMENSIONS MAY BE GREATER IN SOME AREAS.



B DIRECTIONAL DRILL CROSS SECTION
NTS

WELBY JACOB WATER USERS COMPANY

DESIGNED: VINCE HOGGE
DRAFTSMAN: MATT GUPR
CHECKED:
REVIEWED:
PROJECT LEADER:
PRINT DATE: MARCH 5, 2018

NO.	DATE	INITS.	REVISIONS DESCRIPTION
1	JANUARY 2018	MG, VH	UPDATED

WELBY JACOB WATER USERS COMPANY
STANDARD DRAWINGS
DIRECTIONAL DRILLING DETAILS

JOB NO.
03-WJ Directional Drilling.dwg
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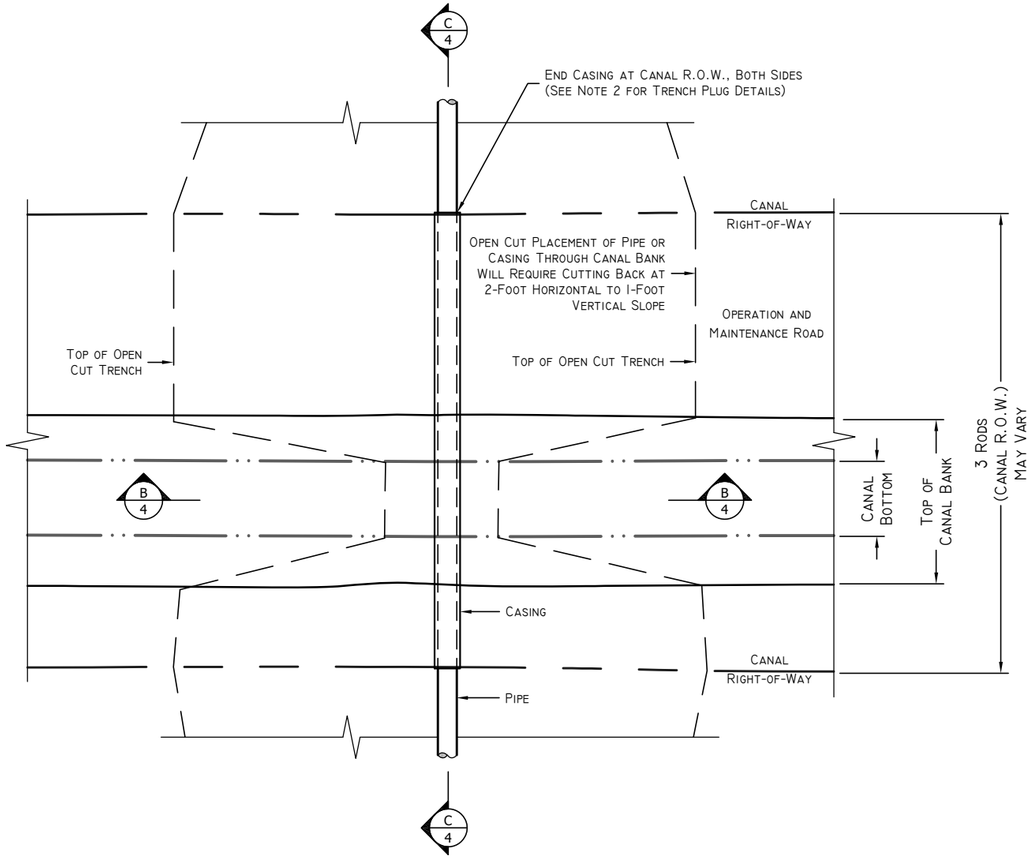
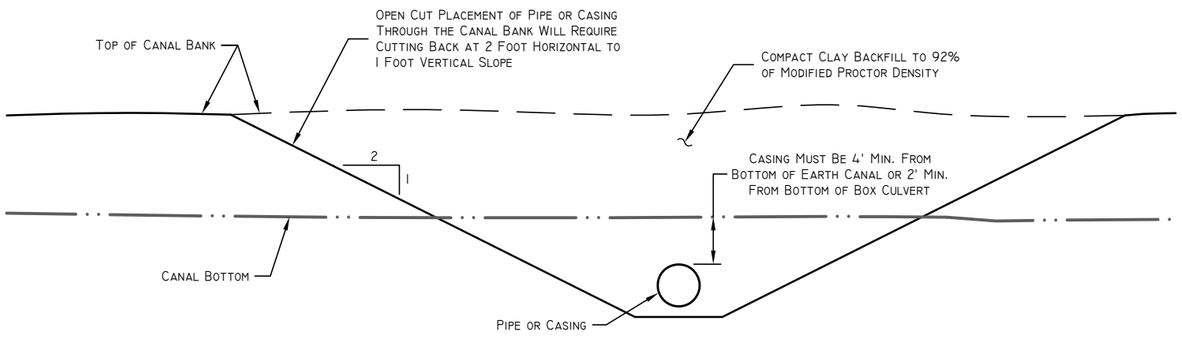
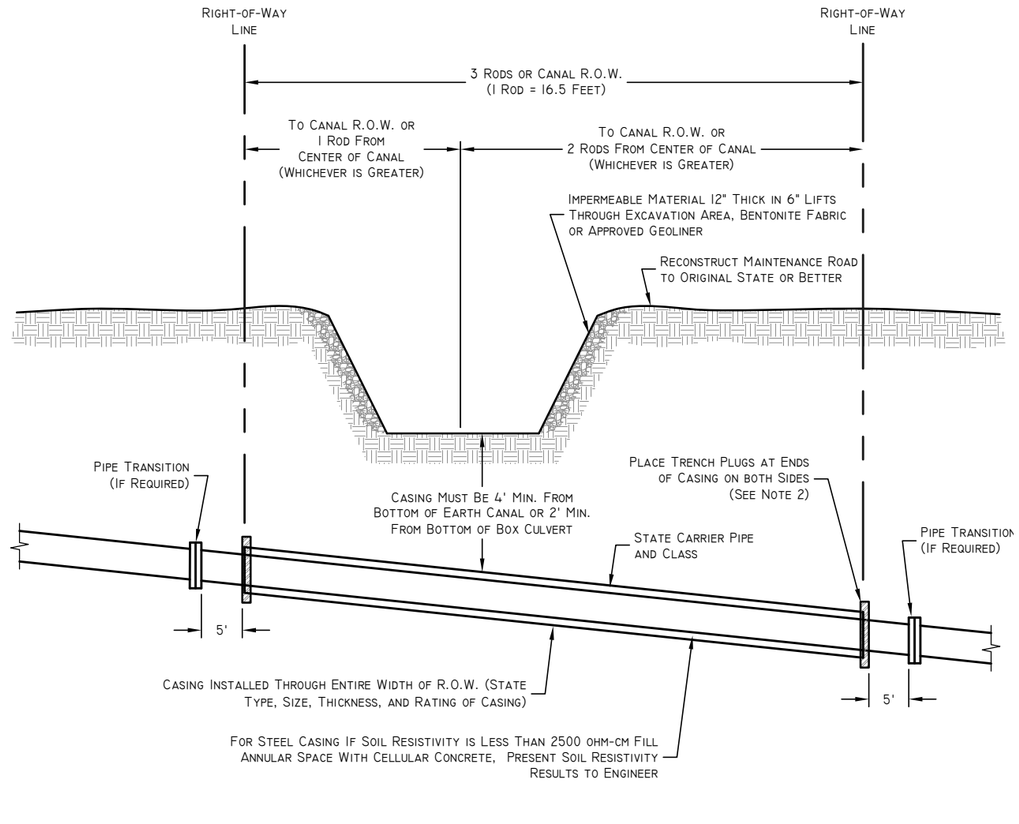
SHEET
3 OF 11



A **OPEN CUT PLAN VIEW**
NTS



B **OPEN CUT CANAL CROSSING CROSS SECTION**
NTS



C **OPEN CUT CANAL CROSSING PROFILE**
NTS

TABLE I
STEEL CASING THICKNESS

DIAMETER (INCHES)	MINIMUM WALL THICKNESS (INCHES)
12"	0.188"
14" - 16"	0.312"
18"	0.312"
20" - 22"	0.375"
24" - 26"	0.438"
28" - 32"	0.500"
34" - 36"	0.562"
38" - 42"	0.562"

NOTES:

1. REMOVAL AND REPLACEMENT OF CANAL FLOOR AND BANKS WILL REQUIRE TESTING AND PROCTORS BY A LICENSED SOILS LAB. COMPACTION TO BE 92% MODIFIED PROCTOR DENSITY.
2. TRENCH PLUGS ARE TO BE PLACED IN LOCATIONS SHOWN ON BOTH SIDES FOR WIDTH OF TRENCH AND 12 INCHES ABOVE AND BELOW CASING PIPES AND A THICKNESS OF 24 INCHES. PLUGS SHALL BE 10% BENTONITE AND 90% CLAY MIXTURE, OR SHALL BE A FLOWABLE FILL CONCRETE.
3. STORMWATER RUNOFF ENTERS THE CANAL DURING STORM EVENTS OR AT OTHER UNEXPECTED TIMES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT THE WORK SITE.
4. WATERLINE PIPE INSIDE OF CASING SHALL HAVE RESTRAINING JOINTS.
5. THRUST BLOCKS ARE REQUIRED ON ALL BENDS FOR DIP, PVC OR PIP WATERLINES.
6. CASING MUST BE 4' MIN. FROM BOTTOM OF EARTH CANAL OR 2' MIN. FROM BOTTOM OF BOX CULVERT.
7. CANAL RIGHT-OF-WAY IS GENERALLY 1 ROD ON THE UPHILL SIDE AND 2 RODS ON THE DOWNHILL SIDE FROM THE CENTER OF THE CANAL. R.O.W. DIMENSIONS MAY BE GREATER IN SOME AREAS.
8. CARRIER PIPE SHALL HAVE ADEQUATE CASING SPACERS.

WELBY JACOB WATER
USERS COMPANY

PROJECT LEADER
MARCH 5, 2018
PROJECT LEADER:
PRINT DATE:
CHECKED
REVIEWED
CHECKED:
REVIEWED:
REVISIONS
DESCRIPTION
DESIGNER: VINCE HOGGE
DRAFTSMAN: MATT GUMM
NO. | DATE | INITS.
1 | JANUARY 2018 | MG, VH | UPDATED

WELBY JACOB WATER USERS COMPANY
STANDARD DRAWINGS
OPEN CUT DETAILS
04-WJ Open Cut Details.dwg
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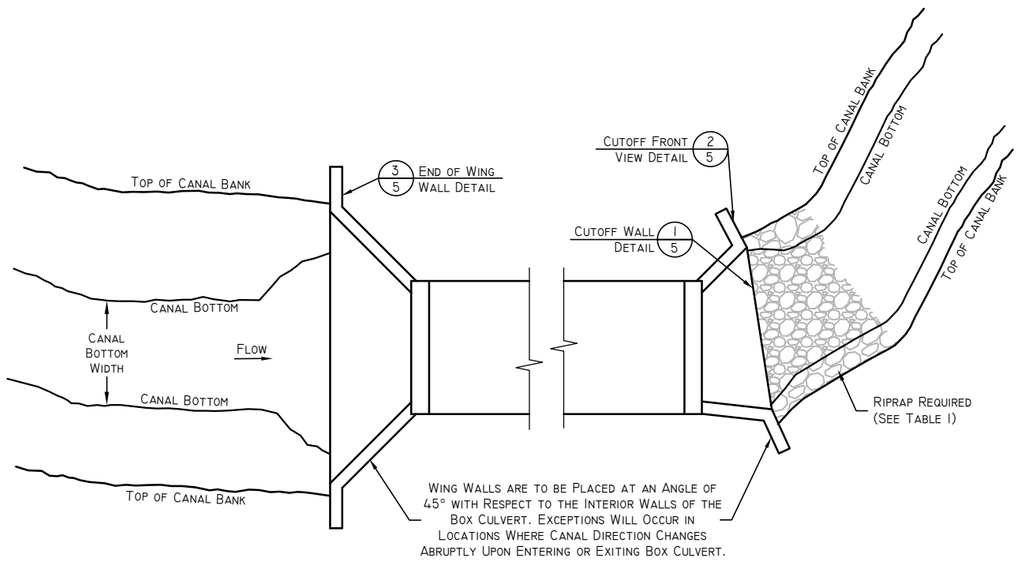
JOB NO.

SHEET
4 OF 11



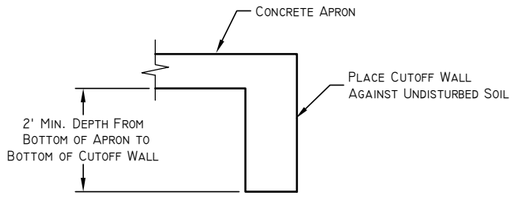
A **Plan View of Box Culvert**
NTS

Table 1
Riprap Gradation

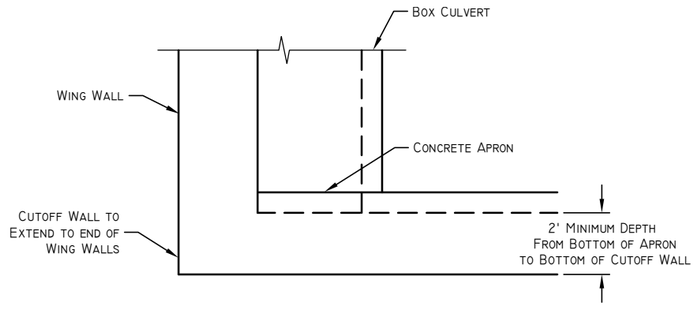
% Smaller than Given Size By Weight	Rip Rap Size in Inches (d 50 = Mean Particle Size)		
	d 50 = 6"	d 50 = 9"	d 50 = 12"
70 - 100	12	15	21
50 - 70	9	12	18
35 - 50	6	9	12
2 - 10	2	3	4

Notes:

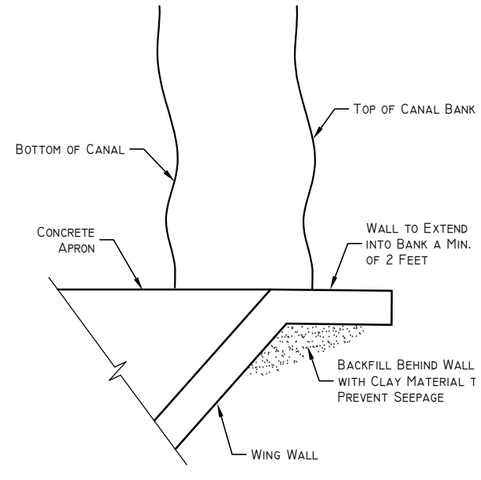
1. Box Culverts to Have a Minimum Height of 6 Feet.
2. Width of Box Culvert is to Match Existing Channel Bottom.
3. Riprap Size to be Determined for Specific Sites.
4. Access to Canal Operation and Maintenance Road Shall be Installed with Curb Cuts at Drive Approaches and Thickened Concrete at Sidewalks.
5. Cutoff Walls and Aprons Between Wing Walls are Required.
6. End of Wing Wall Shall Not Interfere with Operation and Maintenance Road.
7. 6 Foot Chain Link Fence or 4 Foot Parapet Wall is Required on All Box Culverts that Carry Pedestrian Traffic. Exceptions may Occur Where Local Ordinances Note Otherwise and Upon Approval by Canal Company.
8. Drawings Submitted for Review are to Show Plan and Profile Views, Note Slope, Include Detail Indicating Rebar Size and Spacing, and State Traffic Loading.
9. Casings Must Have a Minimum of 2 Feet Between Top of Casing and Bottom of Box Culvert.
10. All Concrete Used in Construction to have a Minimum Compressive Strength of 4,000 psi. The Concrete Mix Shall Include Between 5% and 7% Air Entrainment.



1 **Cutoff Wall Detail**
NTS



2 **Cutoff Front View Detail**
NTS



3 **End of Wing Wall Detail**
NTS

Welby Jacob Water Users Company

Designer:	
Draftsman:	Vince Hogge, Matt Gurr
Checked:	
Reviewed:	
Project Leader:	
Print Date:	March 5, 2018

No.	Date	Initials	Description
1	January 2018	MG, VH	Updated

Welby Jacob Water Users Company

Standard Drawings
Box Culvert Details

Job No.

05-WJ Box Culvert Details.dwg
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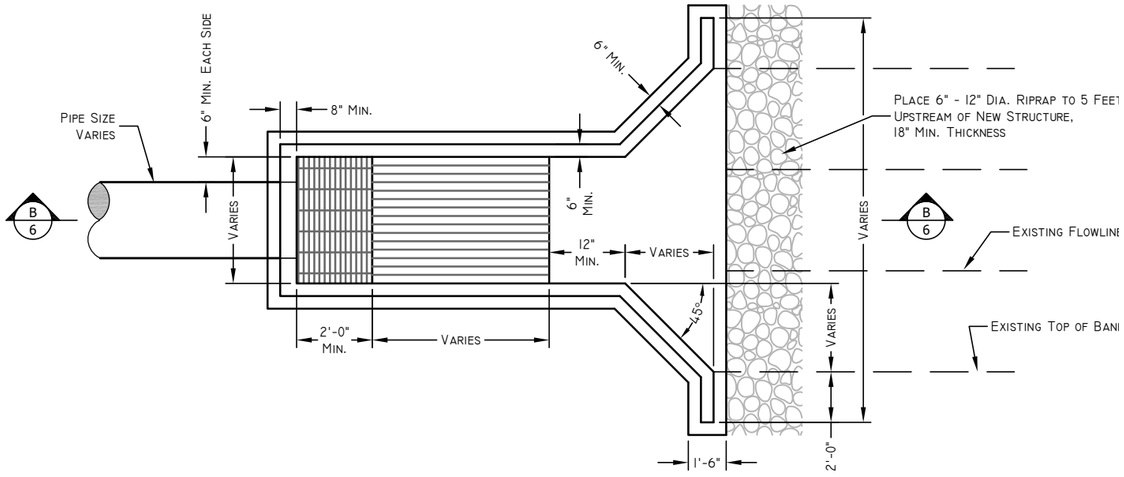
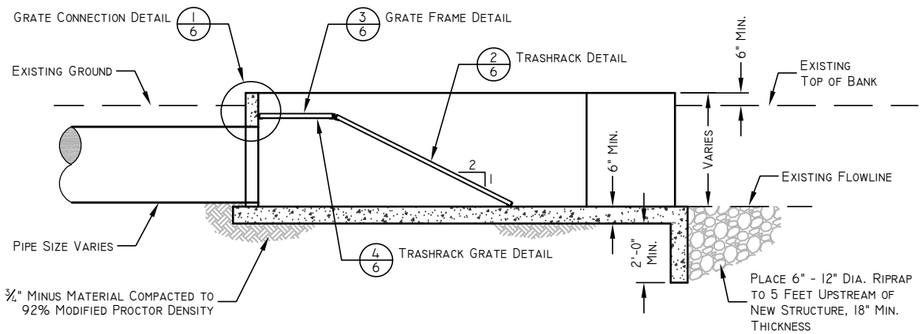
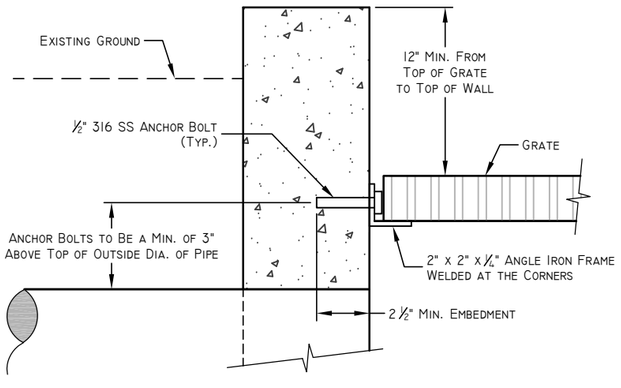
Sheet 5 of 11



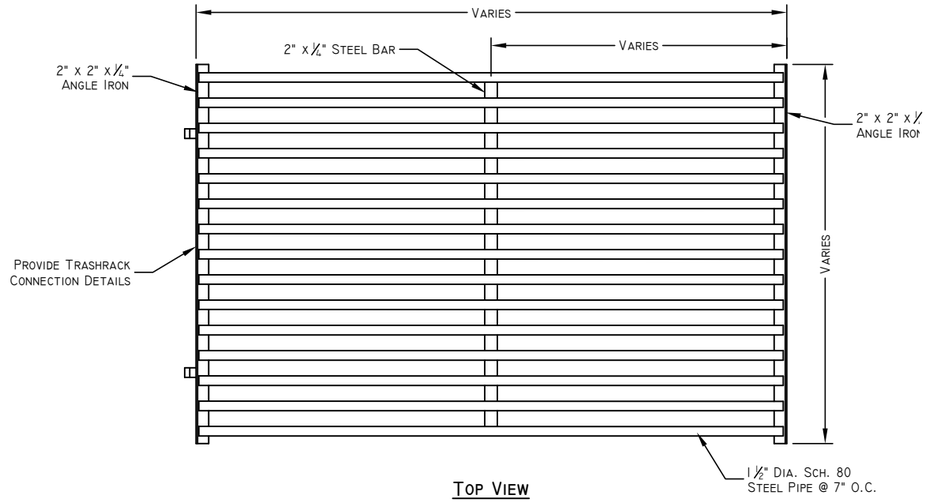
A INLET STRUCTURE PLAN
NOT TO SCALE



B INLET STRUCTURE PROFILE
NOT TO SCALE



1 GRATE CONNECTION DETAIL
NOT TO SCALE



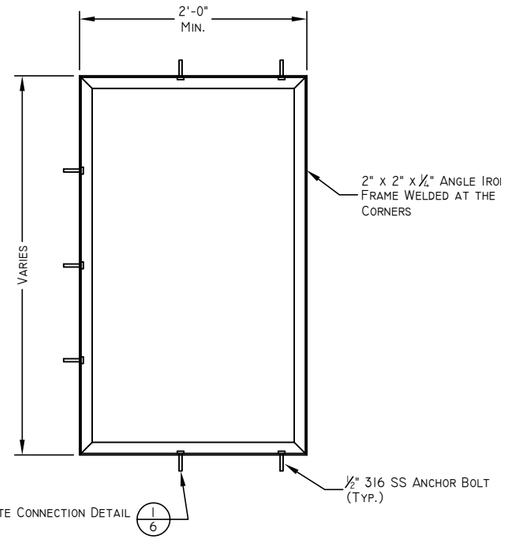
TOP VIEW

SIDE VIEW

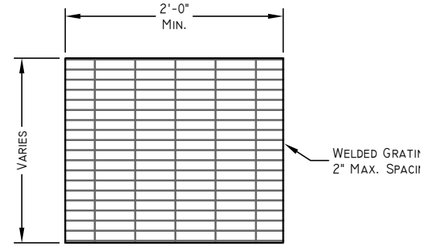
2 TRASHRACK DETAIL
NOT TO SCALE

NOTES:

1. IF BOX IS CAST-IN-PLACE, A MINIMUM OF #4 REBAR TO BE PLACED AT 12-INCHES ON CENTER EACH WAY.
2. ALL PIPES GOING INTO BOX SHALL BE GROUTED AND WATERTIGHT.
3. ENTIRE TRASHRACK TO BE HOT DIPPED GALVANIZED.
4. ALL CONCRETE USED IN CONSTRUCTION SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI.
5. THE CONCRETE MIX SHALL INCLUDE BETWEEN 5% AND 7% AIR ENTRAINMENT.



3 GRATE FRAME DETAIL
NOT TO SCALE



4 TRASHRACK GRATE DETAIL
NOT TO SCALE

WELBY JACOB WATER USERS COMPANY

DESIGNER: VINCE HOGGE
DRAFTSMAN: MATT GURR
CHECKED:
REVIEWED:
PROJECT LEADER:
PRINT DATE: MARCH 5, 2018

NO.	DATE	INITS.
1	JANUARY 2018	MG, VH

REVISIONS: UPDATED

WELBY JACOB WATER USERS COMPANY

STANDARD DRAWINGS
CANAL TRASHRACK AND INLET STRUCTURE

JOB NO.

06_WJ Canal Trashrack & Inlet Struct.dwg
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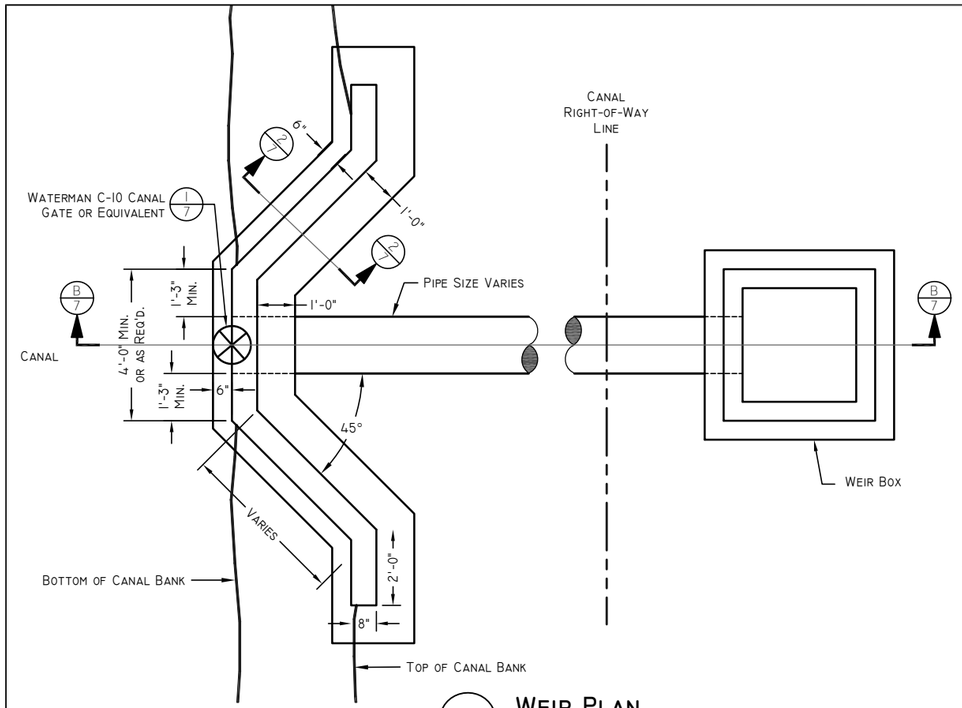
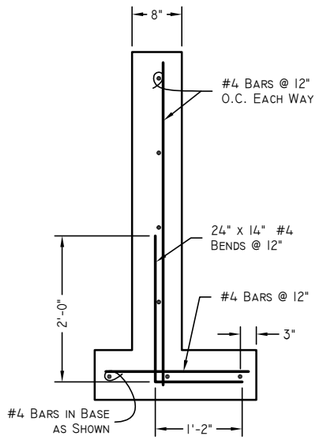
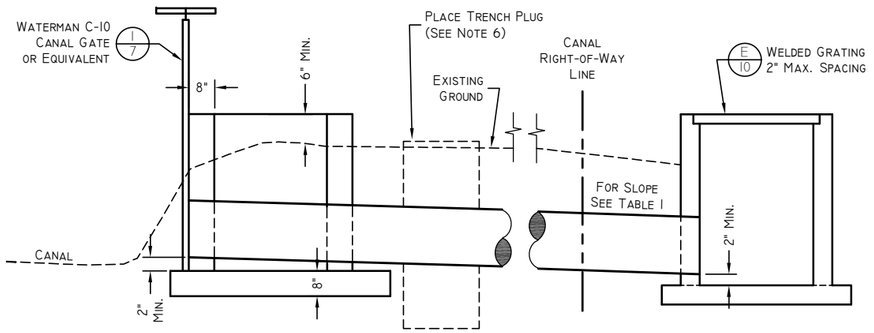
SHEET 6 OF 11



A WEIR PLAN
NTS



2 MINIMUM REBAR DETAIL
NTS



B WEIR SECTION
NTS

TABLE I

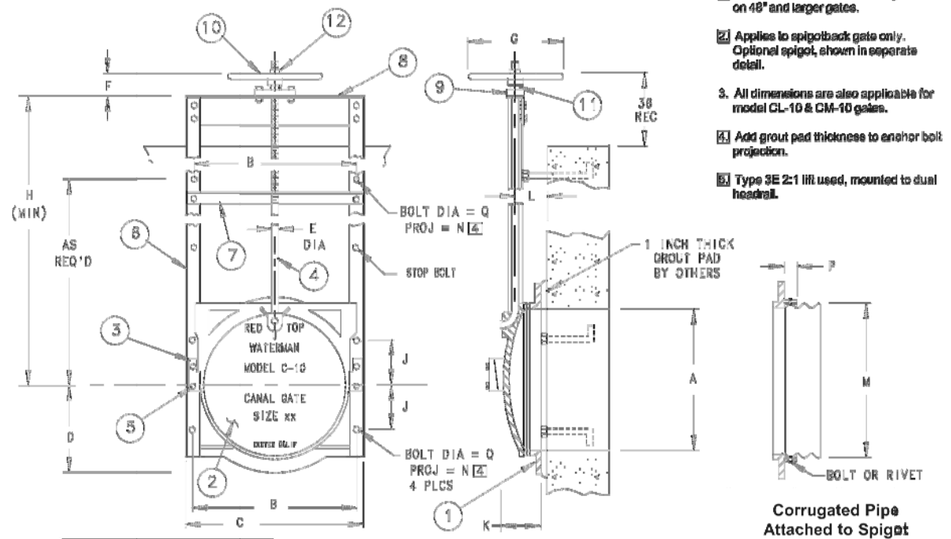
MINIMUM PIPE SLOPES		
PIPE SIZE	MIN. SLOPE, FT/FT	MIN. SLOPE, %
12"	0.002	.2%
15"	0.0015	.15%
18"	0.0012	.12%
24"	0.0008	.08%
30"	0.00058	.058%

NOTES:

1. LID DETAILS FOR BOX SHOWN ON SHEET (E/10).
2. BOX NOT TO BE PLACED IN DRIVEWAYS, ROADS, OR OTHER TRAFFIC AREAS.
3. ALL PIPES IN BOXES SHALL BE GROUTED AND WATERTIGHT.
4. BOX WALL THICKNESS AND REINFORCEMENT ARE DEPENDENT ON SITE CONDITIONS AND DEPTH. MINIMUM SIZE AS SHOWN.
5. DIMENSIONS SHOWN ON WALLS AND BOXES ARE MINIMUM SIZE. SPECIFIC SITE CONDITIONS OF BOXES AND WALLS MAY REQUIRE ADDITIONAL THICKNESS OR WIDTH.
6. TRENCH PLUG TO BE PLACED IN LOCATION SHOWN FOR WIDTH OF TRENCH AND 12 INCHES ABOVE AND BELOW PIPE AND A THICKNESS OF 24 INCHES. PLUGS SHALL BE A 10% BENTONITE AND 90% CLAY MIXTURE, OR A FLOWABLE FILL CONCRETE.
7. ALL NEW TURNOUTS TO INCLUDE CHECK STRUCTURE. SEE SHEET (A/11)
8. THE INVERT OF THE TURNOUT SHALL MATCH THE BOTTOM OF THE CANAL AND NOT THE CURRENT SILT LAYER.

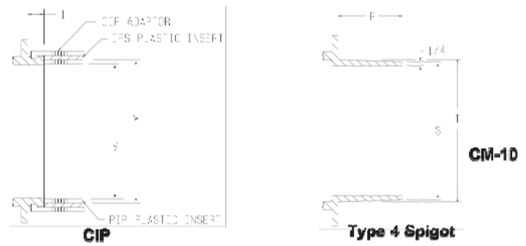
NOTES

1. TYPE 2 lubricated ball bearing lift used on 48" and larger gates.
2. Applies to spigotback gate only. Optional spigot, shown in seperate detail.
3. All dimensions are also applicable for model CL-10 & CM-10 gates.
4. Add grout pad thickness to anchor bolt projection.
5. Type 3E 2:1 lift used, mounted to dual headrail.



Corrugated Pipe Attached to Spigot Back Frame

PARTS LIST		
No.	Name	Qty.
1	Frame	1
2	Cover	1
3	Wedge (Right & Left)	1 ea.
4	Stem	1
5	Wedge Bolts	4
6	Guide Rail	2
7	Stem Support	A/R
8	Head Rail	1
9	Lift Collar	1
10	Handwheel	1
11	Lift Nut	1
12	Limit Nut	1



A	B	C	D	E	F	G	H	J	K	L	M [2]	N	P [2]	Q	R	S	T	V	W
6	8	9⅞	4	⅛	2⅞	10	24	3	3½	2⅝	7	3½	2¼	½	-	-	-	6.160	6.645
8	10	12	4⅞	⅛	2⅞	10	24	3	3¾	2½	9	3½	2¼	½	4	7¹⁵⁄₁₆	8	6.160	6.645
10	12	13⅞	6	⅛	2⅞	10	24	3½	3¾	2½	11	3½	2¼	½	3⅝	9⅝	10	10.220	10.770
12	14	15⅞	7	⅛	2⅞	10	24	4	3½	3	13	4	2¼	½	4	11⅞	12	12.270	12.780
14	16	17⅞	8	⅛	2⅞	10	27	4¼	3½	3¼	15	4	2¼	½	-	-	-	-	-
15	17	18⅞	8⅞	⅛	2⅞	10	30	5	4½	3½	16	4	2½	½	4	14⅞	15	-	-
16	18⅛	20⅛	9⅛	⅛	2⅞	10	32	5½	4½	3½	17	4½	2¼	⅝	-	-	-	-	-
18	21	22⅞	10⅛	1	3⅛	12	34	6	4½	4¼	19	4½	2¼	⅝	4	17¹⁵⁄₁₆	18	-	-
20	23¼	25⅛	11⅜	1	3⅛	12	38	7	4⅞	4	21	4½	2¼	⅝	-	-	-	-	-
21	24	25⅞	12⅜	1	3⅛	12	40	7	4¾	4	22	4½	2¼	⅝	-	-	-	-	-
24	27⅛	29⅛	13⅞	1	3⅛	12	44	8	5⅛	4½	25	4½	2¼	⅝	-	-	-	-	-
30	33¾	35½	17⅝	1½	4	15	54	10	6	4½	31	6	2¼	¾	-	-	-	-	-
36	39¾	42½	20½	1½	4	15	62	12	6¾	5⅝	37	6	2½	¾	-	-	-	-	-
42	45¾	48⅝	23⅝	1½	5	18	64	14	7	6	43	6	2½	¾	-	-	-	-	-
48	51¾	54⅝	26¾	1½	6	24 [1]	90	16	7⅝	6½	49⅛	6	2½	¾	-	-	-	-	-
54	58¼	61½	30	2	6	30 [1]	100	18	7⅝	6½	55⅛	7	3	1	-	-	-	-	-
60	65	68	34	2	6	30 [1]	102	20	8⅛	7⅛	61⅛	8	3¼	1	-	-	-	-	-
72	77½	80¼	41	2	13	[5]	121	25½	10⅜	8¾	73⅛	8	3⅜	1	-	-	-	-	-

GATE DIMENSIONS IN INCHES

1 WATERMAN C-10 CANAL GATE
NTS

NOTE: DETAIL 1 INFORMATION TAKEN FROM WATERMAN USA WEBSITE.

WELBY JACOB WATER USERS COMPANY

DESIGNER: VINCE HOGGE
DRAFTSMAN: MATT GUNN
CHECKED:
REVIEWED:
PROJECT LEADER:
PROJECT LEADER: MARCH 5, 2018
PRINT DATE:

NO.	DATE	INITS.	REVISIONS DESCRIPTION
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WELBY JACOB WATER USERS COMPANY

STANDARD DRAWINGS
WEIR TURNOUT GATE

07-W1 Weir Turnout Gate.dwg
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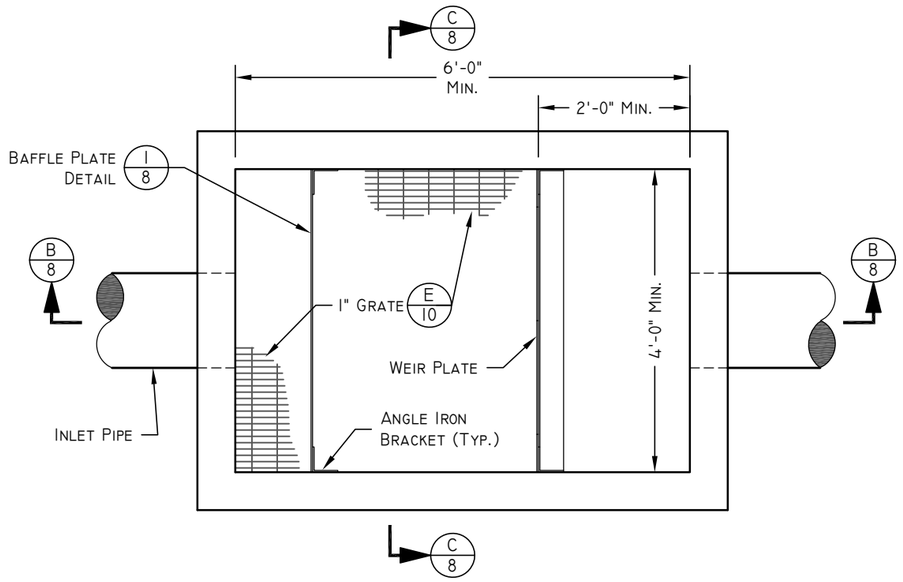
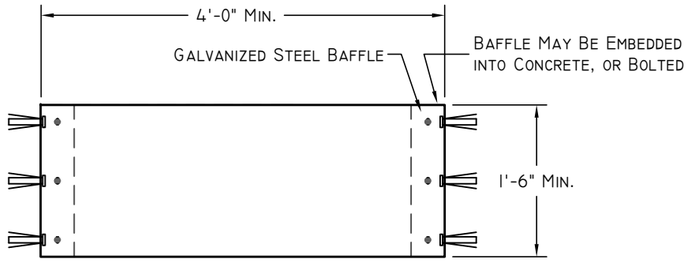
JOB NO.

SHEET 7 OF 11



A PLAN VIEW
NTS



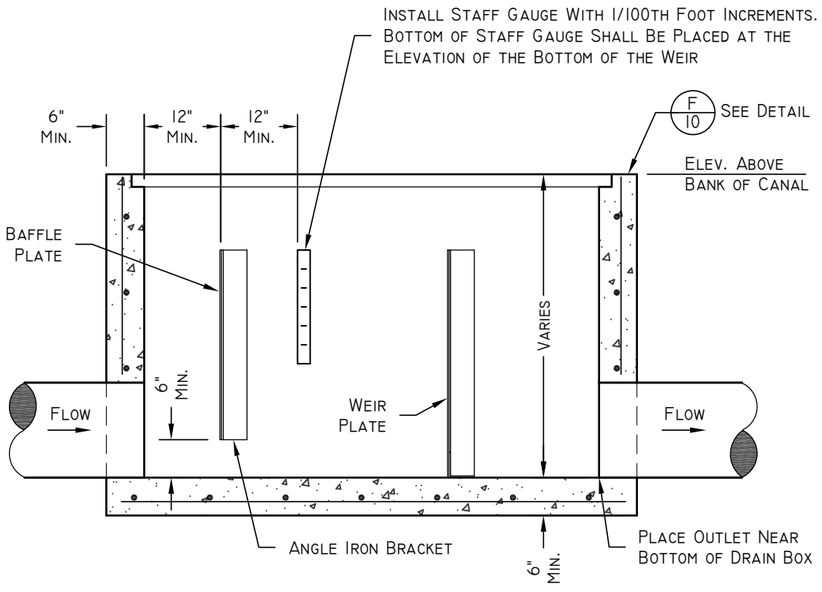
I BAFFLE PLATE DETAIL
NTS

TABLE I
$Q = 3.367\ L\ H^{3/2}$ @ L=3

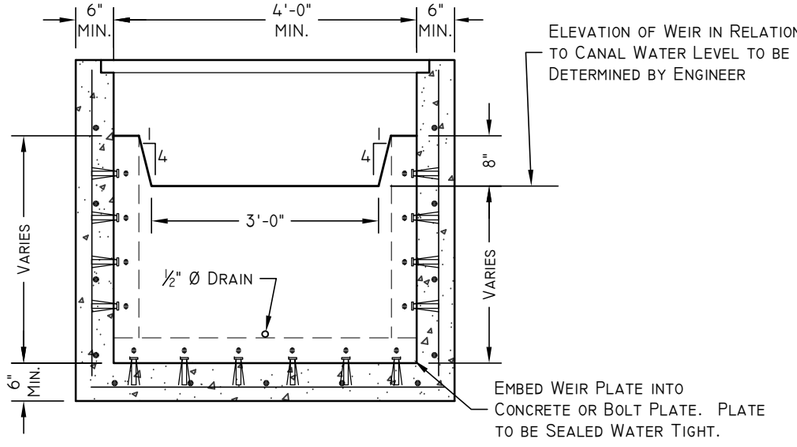
H (FT.)	Q (CFS)
0.2	0.90
0.3	1.66
0.4	2.56
0.5	3.57
0.6	4.69
0.66	5.42

NOTES:

1. IF BOX IS CAST IN PLACE REBAR TO BE PLACED AT 12 INCHES O.C. E.W. MINIMUM.
2. DETAILS FOR CAST IN PLACE BOX SEE (C/10).
3. ALL PIPES IN BOX SHALL BE GROUTED AND WATERTIGHT.
4. SUBMIT TO CANAL COMPANY ENGINEER FOR REVIEW ON FINAL DIMENSIONS ON REBAR REINFORCEMENT AND CONCRETE COMPONENTS.



B INLET OUTLET CROSS SECTION
NTS



C WEIR SECTION
NTS

WELBY JACOB WATER USERS COMPANY

DESIGNER: Vince Hogge
DRAFTSMAN: Matt Gunn
CHECKED:
REVIEWED:

NO.	DATE	INITS.
1	JANUARY 2018	MG, VH

REVISIONS
DESCRIPTION: UPDATED

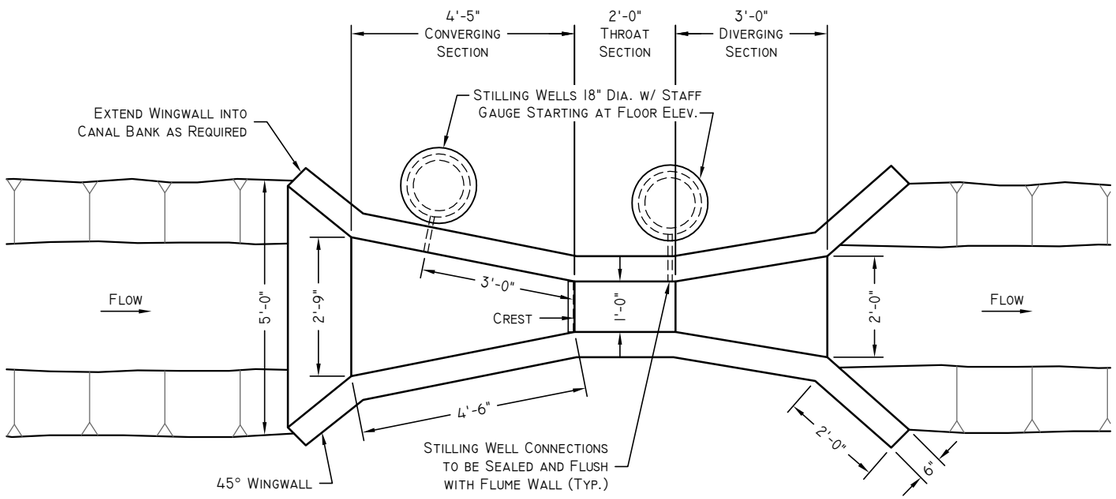
PROJECT LEADER:
PRINT DATE: MARCH 5, 2018
CHECKED
REVIEWED:

WELBY JACOB WATER USERS COMPANY

STANDARD DRAWINGS
3-FT CIPOLLETTI WEIR

JOB NO. 08-WJ 3-Ft Cipolletti Weir.dwg
P:\UT\Central\Welbyjacob\Drawings\Standard Dwgs
LAYOUT: Weir Details

SHEET
8 OF 11

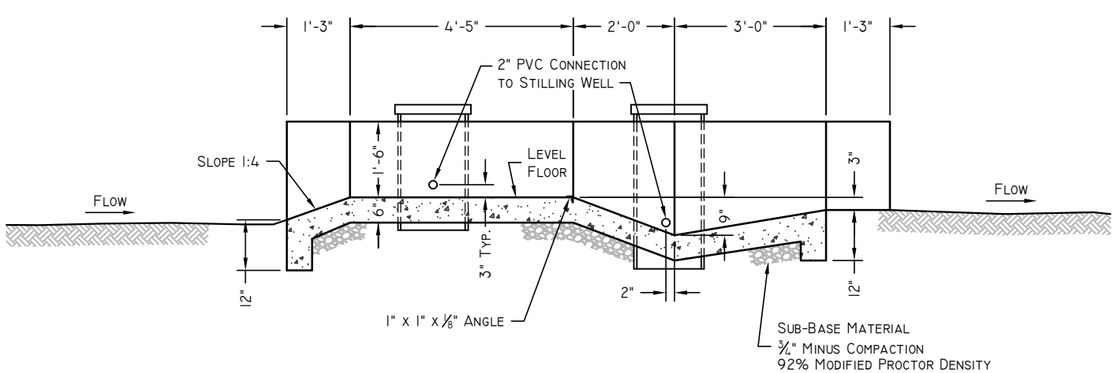


PLAN

A **FLUME PLAN VIEW**
NTS

NOTES:

1. REINFORCING TO BE MINIMUM OF #4 REBAR @ 12 INCHES ON CENTER, EACH WAY WITH 20 INCH MINIMUM SPLICE LENGTH.
2. APPLICANT TO SUBMIT ACTUAL PLANS AND MATERIAL OF FLUME PRIOR TO CONSTRUCTION.



B **FLUME PROFILE VIEW**
NTS

TABLE 1

HEAD-FLOW RELATIONSHIP FOR CONCRETE FLUME

HEAD H_a (FEET)	FLOW Q (CFS)	HEAD H_a (FEET)	FLOW Q (CFS)	HEAD H_a (FEET)	FLOW Q (CFS)	HEAD H_a (FEET)	FLOW Q (CFS)	HEAD H_a (FEET)	FLOW Q (CFS)	HEAD H_a (FEET)	FLOW Q (CFS)
0.20	0.35	0.42	1.07	0.64	2.03	0.86	3.18	1.08	4.50	1.30	5.96
0.21	0.37	0.43	1.11	0.65	2.08	0.87	3.24	1.09	4.56	1.31	6.03
0.22	0.40	0.44	1.15	0.66	2.13	0.88	3.29	1.10	4.62	1.32	6.10
0.23	0.43	0.45	1.19	0.67	2.18	0.89	3.35	1.11	4.68	1.33	6.18
0.24	0.46	0.46	1.23	0.68	2.23	0.90	3.41	1.12	4.75	1.34	6.25
0.25	0.49	0.47	1.27	0.69	2.28	0.91	3.46	1.13	4.82	1.35	6.32
0.26	0.51	0.48	1.31	0.70	2.33	0.92	3.52	1.14	4.88	1.36	6.39
0.27	0.54	0.49	1.35	0.71	2.38	0.93	3.58	1.15	4.94	1.37	6.46
0.28	0.58	0.50	1.39	0.72	2.43	0.94	3.64	1.16	5.01	1.38	6.53
0.29	0.61	0.51	1.44	0.73	2.48	0.95	3.70	1.17	5.08	1.39	6.60
0.30	0.64	0.52	1.48	0.74	2.53	0.96	3.76	1.18	5.15	1.40	6.68
0.31	0.68	0.53	1.52	0.75	2.58	0.97	3.82	1.19	5.21	1.41	6.75
0.32	0.71	0.54	1.57	0.76	2.63	0.98	3.88	1.20	5.28	1.42	6.82
0.33	0.74	0.55	1.62	0.77	2.68	0.99	3.94	1.21	5.34	1.43	6.89
0.34	0.77	0.56	1.66	0.78	2.74	1.00	4.00	1.22	5.41	1.44	6.97
0.35	0.80	0.57	1.70	0.79	2.80	1.01	4.06	1.23	5.48	1.45	7.04
0.36	0.84	0.58	1.75	0.80	2.85	1.02	4.12	1.24	5.55	1.46	7.12
0.37	0.88	0.59	1.80	0.81	2.90	1.03	4.18	1.25	5.62	1.47	7.19
0.38	0.92	0.60	1.84	0.82	2.96	1.04	4.25	1.26	5.69	1.48	7.26
0.39	0.95	0.61	1.88	0.83	3.02	1.05	4.31	1.27	5.76	1.49	7.34
0.40	0.99	0.62	1.93	0.80	3.07	1.06	4.37	1.28	5.82	1.50	7.41
0.41	1.03	0.63	1.98	0.85	3.12	1.07	4.43	1.29	5.89		

NOTE: THIS FLUME IS SHOWN AS AN EXAMPLE. THE EXACT FLUME DIMENSIONS & FLOW TABLE TO BE DETERMINED BY APPLICANTS ENGINEER.

WELBY JACOB WATER USERS COMPANY

DESIGNER: VINCE HOGGE
DRAFTSMAN: MATT GUHR
CHECKED:
REVIEWED:
PROJECT LEADER:
PRINT DATE: MARCH 5, 2018

NO.	DATE	INITS.	REVISIONS DESCRIPTION
1	JANUARY 2018	MG, VH	UPDATED

WELBY JACOB WATER USERS COMPANY

STANDARD DRAWINGS
1-FT PARSHALL FLUME

JOB NO.

9-WJ 1-Ft Parshall Flume.dwg
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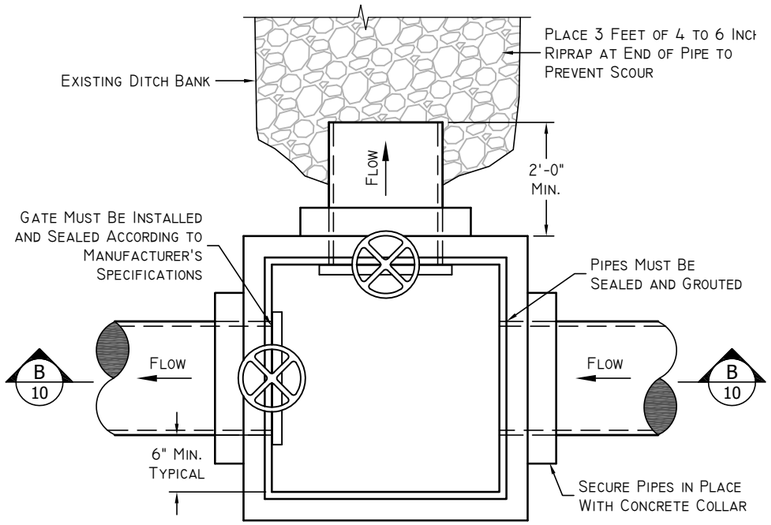
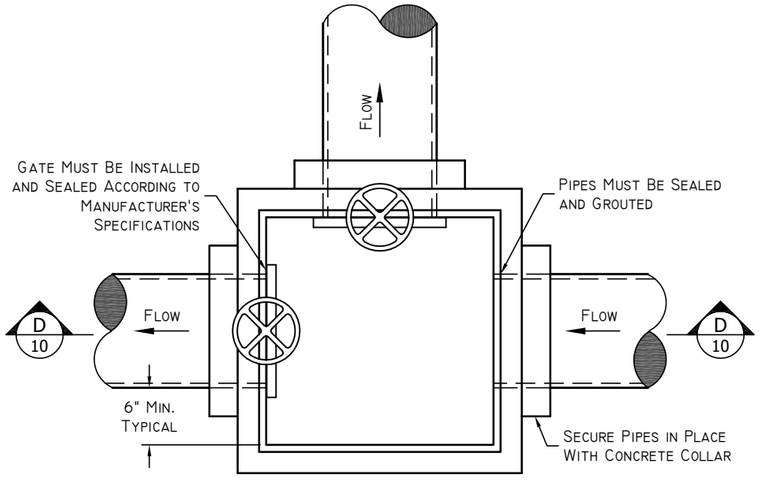
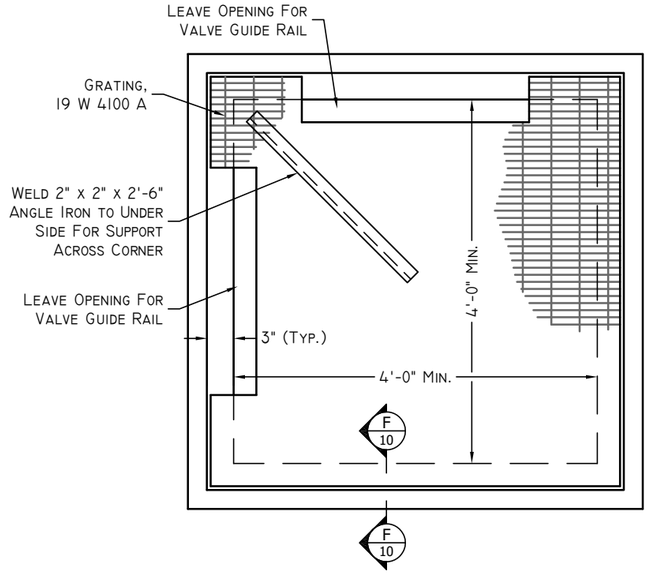
SHEET 9 OF 11



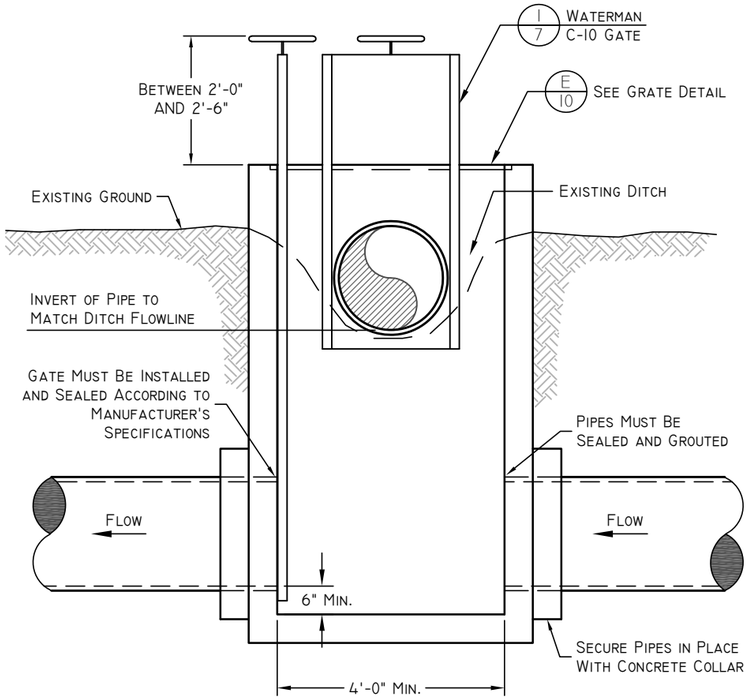
A **Turnout Box Plan**
NTS



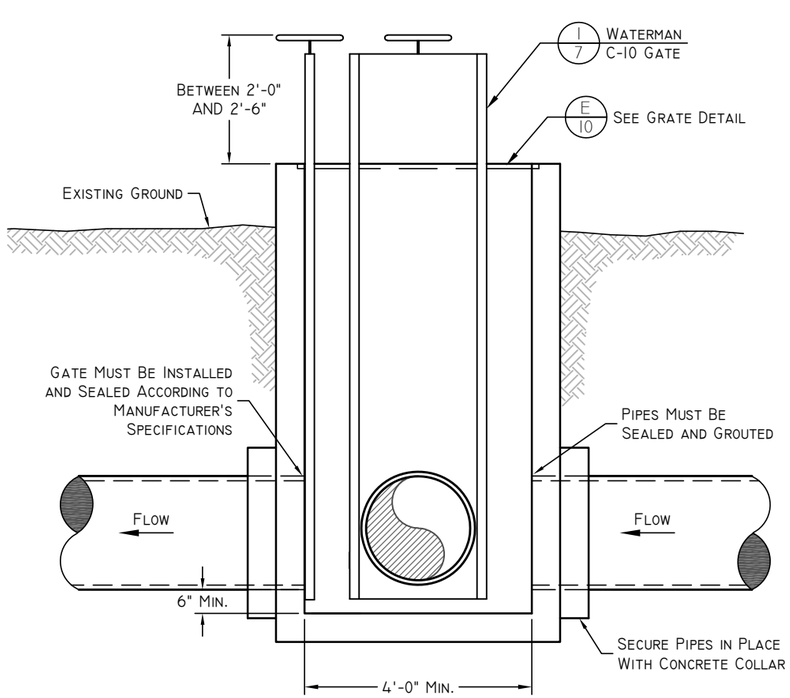
C **Diversion Box**
NTS



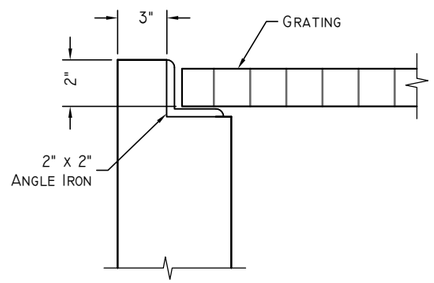
E **Grate Detail - Top View**
NTS



B **Turnout Box Section**
NTS



D **Diversion Box Section**
NTS



F **Wall Section**
NTS

Notes:

1. All pipes into box shall be grouted and watertight with concrete collar.
2. Boxes may be precast or cast in place. Boxes shall have a minimum interior width and length of 4 feet with minimum of #4 rebar @ 12 inches O.C. Boxes must be submitted for review.
3. Turnout and diversion boxes shall not be placed in roadway.
4. Grate to be galvanized.

Welby Jacob Water Users Company

No.	Date	Description
1	January 2018	Updated

Designer: Vince Hogge
Draftsman: Matt Gumm
Checked: Reviewed
Project Leader
Project Leader: March 5, 2018
Print Date:

Welby Jacob Water Users Company

Standard Drawings
Irrigation Turnout and Diversion Box

Job No.

10-WJ Irrig Turnout Diversion Box.dwg
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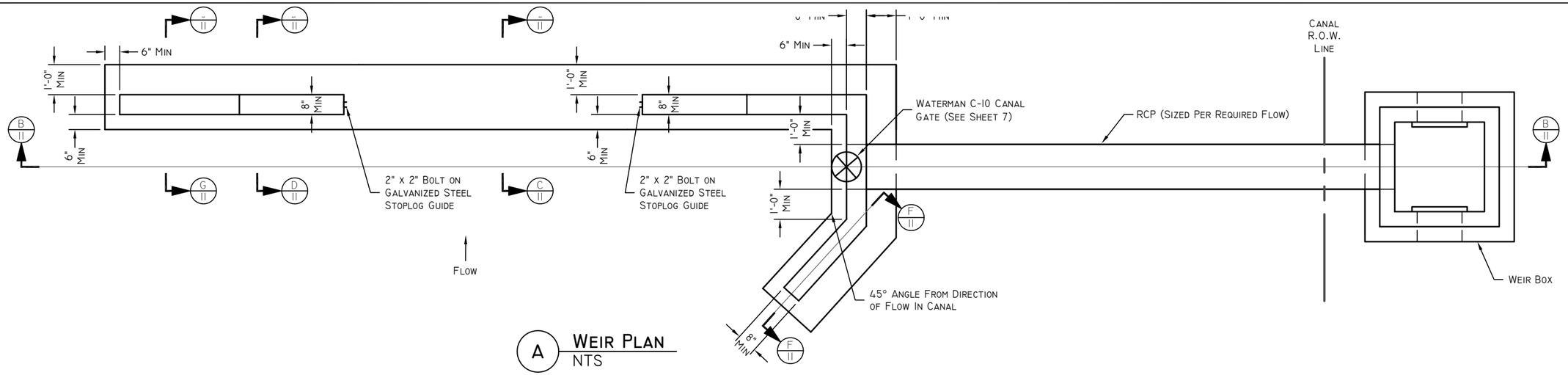
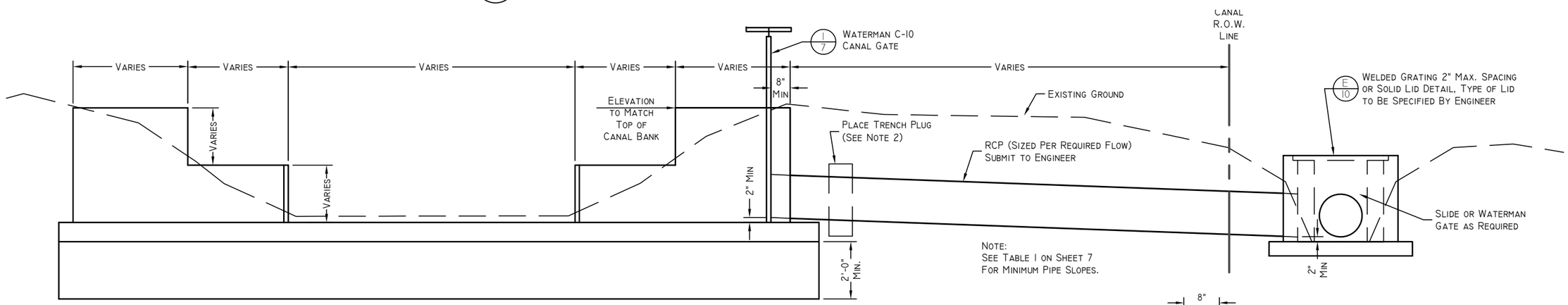
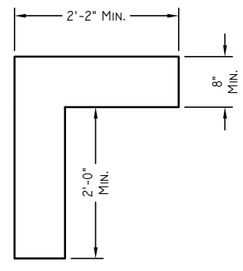


A **Weir Plan**
NTS

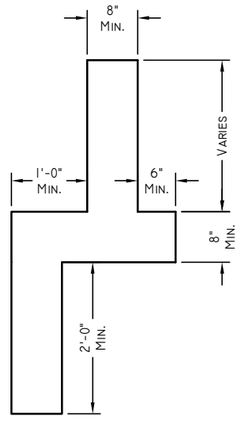


Note:
See Table 1 on Sheet 7
For Minimum Pipe Slopes.

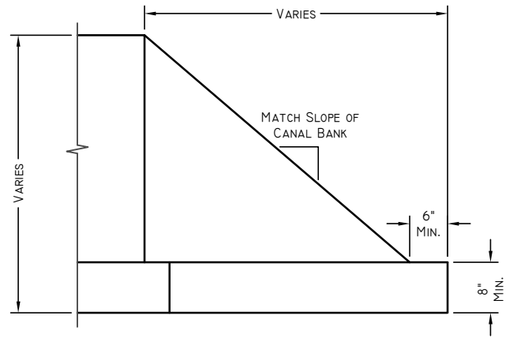
B **Weir Profile**
NTS



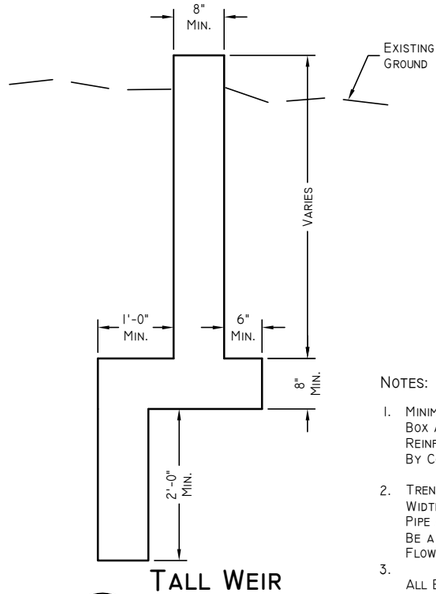
C **Footing Between Weir Walls - Detail**
NTS



D **Short Weir Wall Section**
NTS



F **Wingwall Detail**
NTS



G **Tall Weir Wall Section**
NTS

Notes:

1. Minimum of #4 Rebar @ 12 Inches O.C. E.W. in Box and Check Structure. Final Dimensions and Reinforcement Must Be Submitted and Reviewed By Company Engineer.
2. Trench Plug To Be Placed in Location Shown For Width of Trench and 12 Inches Above and Below Pipe and a Thickness of 24 Inches. Plugs Shall Be a 10% Bentonite and 90% Clay Mixture, or a Flowable Fill Concrete.
3. All Backfill Material in Canal ROW to be Compacted to 92% Modified Proctor Density.

Welby Jacob Water Users Company

No.	Date	Init.	Revisions Description
1	January 2018	MG, VH	Updated

Designer: Vince Hogge
Draftsman: Matt Gurr
Checked: Reviewed
Checked: Reviewed
Project Leader: Print Date: March 5, 2018
Project Leader

Welby Jacob Water Users Company

Standard Drawings
Check Structure and Turnout

Job No.
11-WJ Check Structure & Turnout.dwg
P:\UT\Canal\Welby Jacob\Drawings\Standard Dwgs

Sheet
11 of 11