Mapleton Irrigation Company

Typical Drawings

Sheet Index

MAPLETON IRRIGATION COMPANY

DESIGNER:	CHAD BROWN
DRAFTSMAN:	MATT GUHR
CHECKED:	CHECKED
REVIEWED:	REVIEWED
PROJECT LEADER:	CHAD BROWN
PRINT DATE:	MARCH 27, 2025

REVISIONS

NO.	DATE	INITS.	DESCRIPTION

MAPLETON IRRIGATION COMPANY

TYPICAL DRAWINGS

COVER SHEET, SHEET INDEX

JOB NO. CU.0000108

01- Cover Sheet.dwg
O:\00006 MAPLETON IC Reviews 2020\Standard Drawings

LAYOUT: Cover

SHEET 1 OF 13

MAPLETON IRRIGATION COMPANY (MIC) NOTES

NOTES TO BE ADDED TO THE DRAWING SET UNDER HEADING LABELED "MAPLETON IRRIGATION COMPANY (MIC) NOTES"

- ☐ Applicant must notify Franson Civil Engineers at least 24 hours before construction on MIC facilities. Call Kyle DeVaney with Franson Civil Engineers at 801-756-0309. Failure to do so may result in a $5,000 fine.
- ☐ Contact information for Franson Civil and MIC
  - o Kyle DeVaney, P.E., Franson Civil Engineers, 801-756-0309
  - o Patricia Ayaa, Franson Civil Engineers, 801-756-0309
  - o Mike Miner, President, MIC, 801-376-1454
- ☐ All construction affecting irrigation facilities and within the MIC right-of-way must be done to MIC Standards.
- ☐ All backfill materials shall be compacted to a minimum of 95% standard Proctor density.
- ☐ Work cannot interfere with delivery of water. Construction activities that affect irrigation company facilities must take place between October 31st and April 1st.
- ☐ Applicant is required to perform compaction testing at the Applicant's cost. If requested, compaction test results shall be submitted to Franson Civil Engineers. All failed material shall be removed and compacted to specifications. Testing must be performed by a licensed soils lab.
- ☐ All concrete used in construction shall have a minimum compressive strength of 4,000 psi. The concrete mix shall include between 5% and 7% air entrainment.
- ☐ Apply Waterstop RX, Swellstop, or MIC Engineer-approved equivalent to all concrete cold joints.
- ☐ PVC water stop, or equivalent, is required in all joints of cast-in-place concrete to prevent seepage between the surfaces.
- ☐ Fences disturbed during construction activities must be replaced and returned to pre-construction conditions, or better.
- ☐ Neither MIC nor Franson Civil can verify the locations of underground facilities. Blue Stakes should always be called before digging (1-800-662-4111).
- ☐ It is the responsibility of the contractor to protect the work site. Any damage to MIC facilities caused by construction activities will be the responsibility of the contractor and applicant.

PIPES

- ☐ Contractor must document all new pipes by video camera after installation and backfill. Any problems with joints, levels, slopes, etc. discovered by the video technicians must be repaired. A digital copy of the video must be submitted to Franson Civil Engineers.
- ☐ Prior to backfilling of pipes, the contractor must notify Kyle DeVaney of Franson Civil Engineers so a GPS survey of the location and elevation of the installed pipelines can be performed.
- ☐ Pipes crossing perpendicularly over or under the irrigation pipe(s) shall have a minimum one-foot vertical clearance.
- ☐ Pipes or other utilities running parallel to the irrigation pipe in a shared easement shall be placed a minimum of 5 feet horizontally distanced from the irrigation pipe.
- ☐ Pipes entering or exiting a cleanout box or manhole should be sealed and grouted.
- ☐ Pipes entering a cleanout box or manhole must be secured in place with a concrete collar.

IRRIGATION CLEANOUT BOXES AND MANHOLES

- ☐ Knock out boxes and manholes are not allowed. All boxes and manholes shall be pre-cast with cored openings for the pipes or shall be cast-in-place.
- ☐ Pipes entering boxes and manholes should be concreted on the outside and grouted on the inside.
- ☐ Irrigation boxes and manholes shall not be buried. They shall extend to the surface of the final grade. Any existing boxes and manholes that will not extend to the final grade surface shall be extended to match the final grade. If the box has gates, the box shall extend 6 inches above the ground surface.

INLET AND OUTLET STRUCTURES

- ☐ Canal floor and embankment material removed for excavation shall be replaced with 12_inch minimum thickness of 10^{-6} cm/sec permeability clay material, compacted to 95% standard Proctor density in 6-inch maximum lifts.
- ☐ Canal embankment shall be shaped to match the existing canal prism.

BORING

- ☐ Bore pits must be placed completely outside the canal right-of-way.
- ☐ 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.
- ☐ Bore pit compaction shall be a minimum of 95% standard Proctor density.
- ☐ Trench plugs are to be placed at each end of the casing.
- ☐ Trench plugs are to extend the width of trench, 12 inches above and below casing pipes, and with a thickness of 24 inches.
- ☐ Trench plugs shall be a 10% bentonite and 90% clay mixture. At least 40% of the backfill material must pass a No. 200 U.S. standard sieve prior to adding bentonite powder. The backfill material shall then be amended by adding and thoroughly mixing commercial bentonite powder with the backfill material at a ratio of one-part bentonite to nine parts backfill material. Impermeable flowable fill is an acceptable alternative.
- ☐ Contractor to notify Kyle DeVaney of Franson Civil Engineers when trench plugs are installed. Verification of trench plug completion must be performed by Franson Civil Engineers before backfilling. Kyle can be reached at 801-756-0309.
- ☐ Water line pipe inside the casing shall have restraining joints.
- ☐ Thrust blocks are required on all bends for DIP, PVC, or PIP water lines.

DIRECTIONAL DRILLING AND MICROTRENCHING

- ☐ Work cannot interfere with delivery of water. Installation activities may take place at any time provided MIC's access to operation, maintenance, and replacement of irrigation facilities is not impacted.
- ☐ Bore pits must be placed completely outside the canal right-of-way.
- ☐ 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.
- ☐ Bore pit compaction shall be a minimum of 95% standard Proctor density.

EASEMENTS

ADD THE FOLLOWING NOTES TO THE PLAT MAP

- ☐ No trees or shrubs in Mapleton Irrigation Company easements.
- ☐ No telephone boxes or power boxes in Mapleton Irrigation Company easements.
- ☐ Fences disturbed during construction activities must be replaced and returned to pre-construction condition, or better.
- ☐ Irrigation boxes may not be fenced in yards. Direct access (not through fences) must be provided to Mapleton Irrigation Company from city streets.

MAPLETON IRRIGATION COMPANY

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REVISIONS

NO.	DATE	INITS.	DESCRIPTION

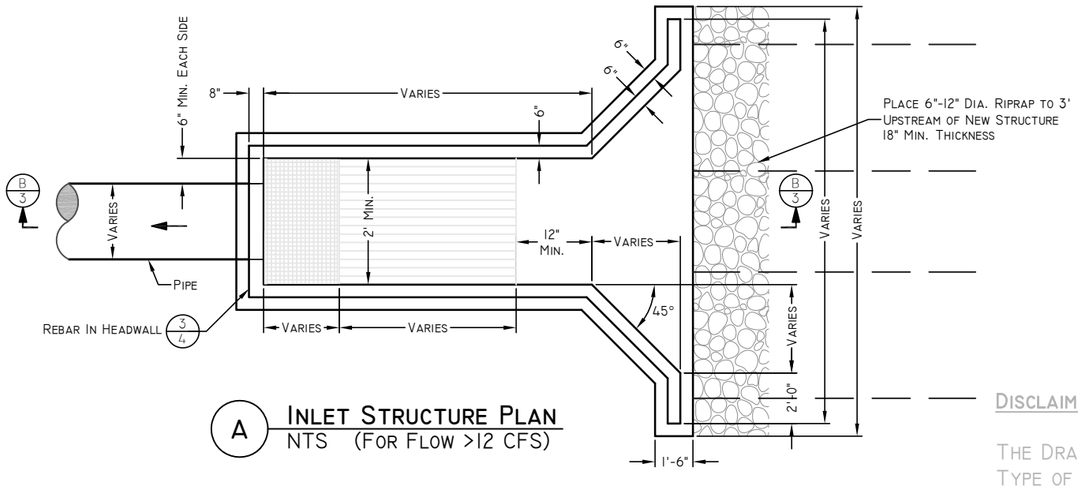
MAPLETON IRRIGATION COMPANY

TYPICAL DRAWINGS
GENERAL NOTES

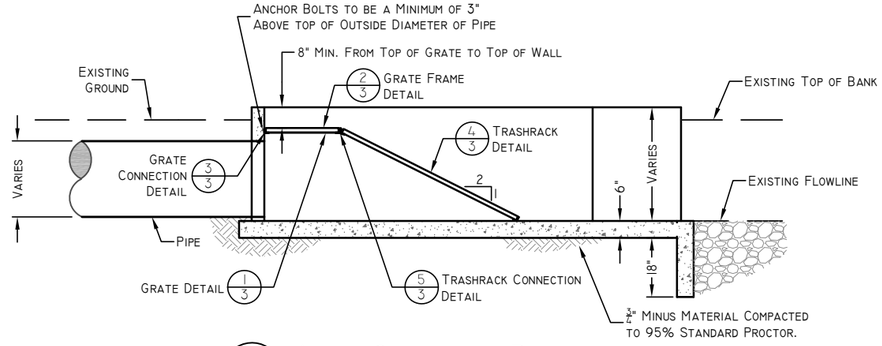
JOB NO. CU.0000008

02- General Notes.dwg
O:\20006 MAPLETON IC Reviews 2020\Standard Drawings

LAYOUT: Cover



A **INLET STRUCTURE PLAN**
NTS (FOR FLOW >12 CFS)



B **INLET STRUCTURE PROFILE**
NTS

DISCLAIMER:

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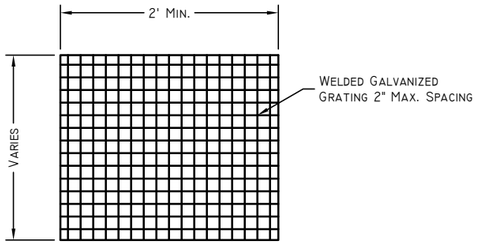
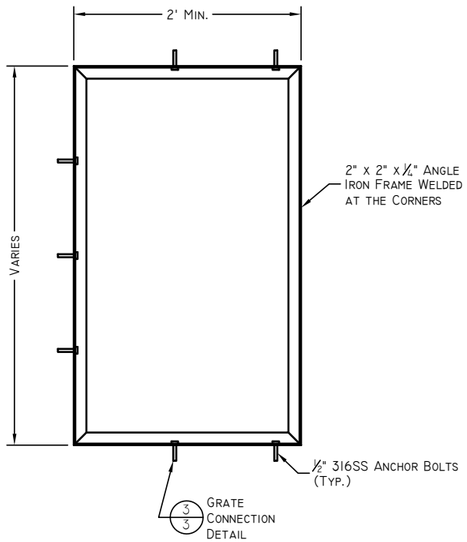
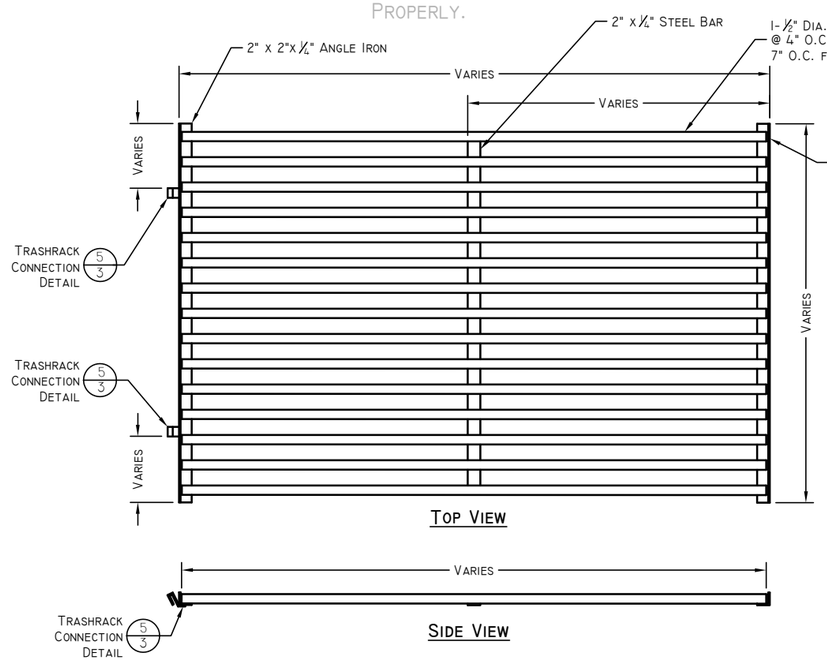


1 **GRATE DETAIL**
NTS



2 **GRATE FRAME DETAIL**
NTS



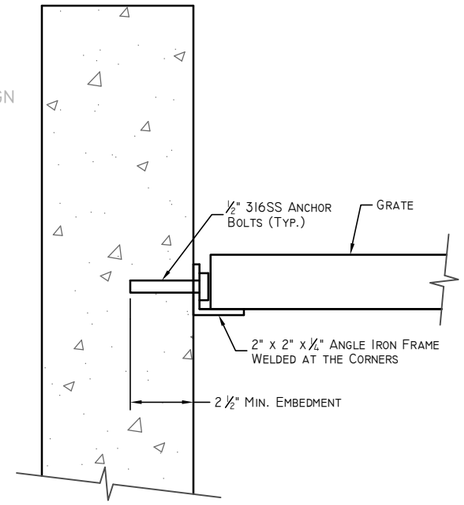
4 **TRASHRACK DETAIL**
NTS

NOTES:

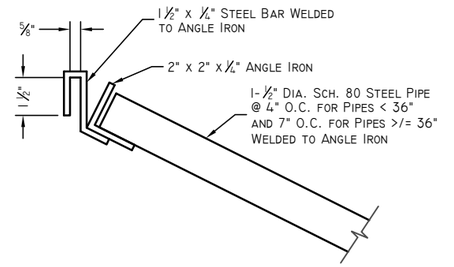
1. IF BOX IS CAST IN PLACE, REBAR TO BE PLACED AT 12 INCHES ON CENTER (O.C.) EACH WAY (E.W.) MINIMUM.
2. ALL PIPES INTO BOX SHALL BE GROUTED AND WATERTIGHT.
3. SUBMIT TO CANAL COMPANY ENGINEER FOR APPROVAL.
4. ENTIRE TRASHRACK TO BE HOT DIPPED GALVANIZED.
5. MINIMUM TWO GRATES TO BE INSTALLED. SUBMIT TO CANAL COMPANY ENGINEER FOR APPROVAL.

TABLE 1 FOR DETAIL 5 3

TRASHRACK CONNECTIONS REQUIRED	
PIPE SIZE	NUMBER OF CONNECTIONS REQUIRED
24"	4
30"	5



3 **GRATE CONNECTION DETAIL**
NTS



5 **TRASHRACK CONNECTION DETAIL**
NTS

MAPLETON IRRIGATION COMPANY

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REVISIONS

MAPLETON IRRIGATION COMPANY

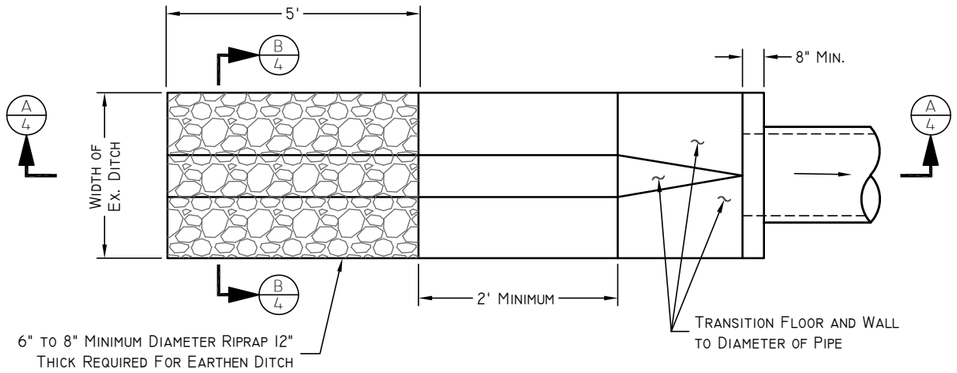
TYPICAL DRAWINGS
TRASHRACK AND INLET STRUCTURE

JOB NO. CU.0000108

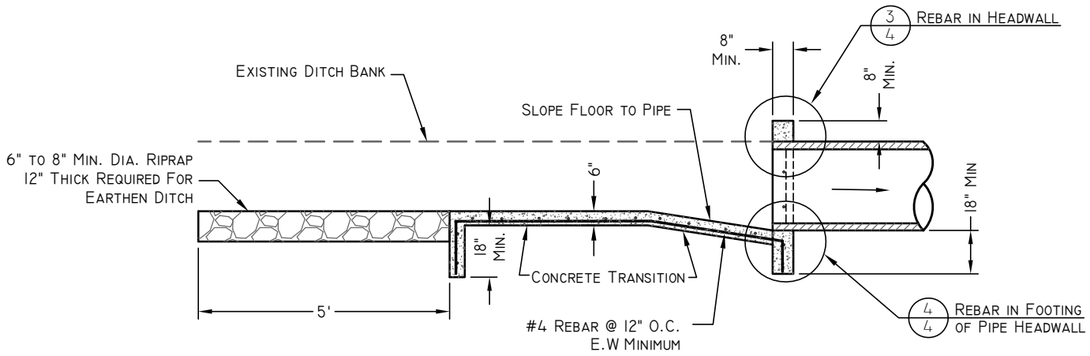
03-Trashrack and Inlet Structure.dwg
O:\00006 MAPLETON IC Reviews 2020\Standard Drawings

LAYOUT: Details

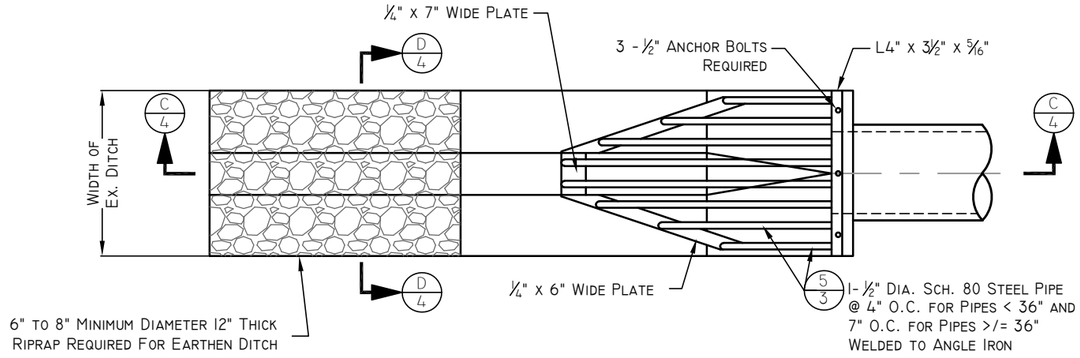
SHEET 3 OF 13



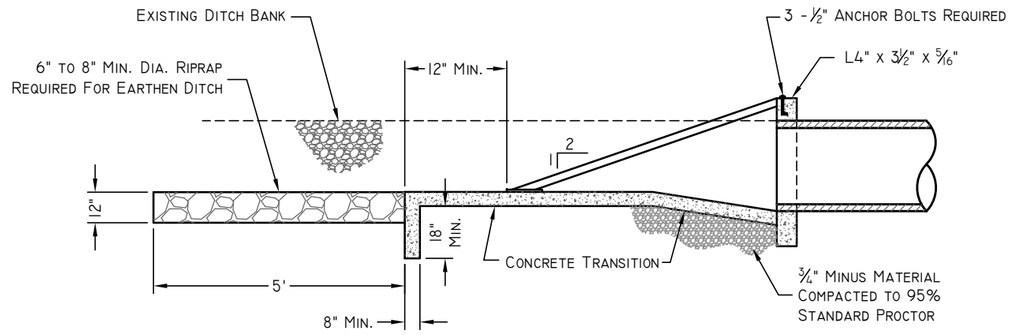
1 DITCH PIPE CONNECTION
NTS (FOR FLOWS 12 CFS OR LESS)



A DITCH PIPE CONNECTION SECTION
NTS



2 TRASH RACK PLAN
NTS



C TRASH RACK SECTION
NTS

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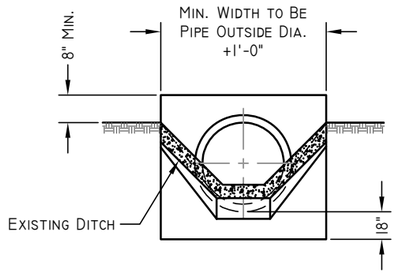
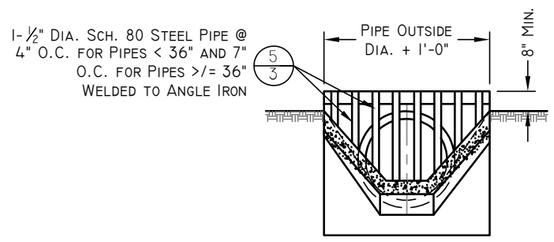
NOTES:

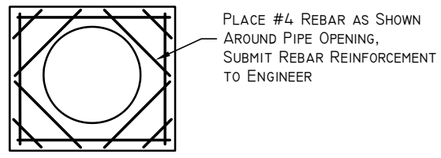
1. IF BOX IS CAST IN PLACE, REBAR TO BE PLACED AT 12 INCHES O.C. E.W. MINIMUM.
2. ALL PIPES INTO BOX SHALL BE GROUTED AND WATERTIGHT.
3. SUBMIT TO CANAL COMPANY ENGINEER FOR APPROVAL OF FINAL DIMENSIONS ON REBAR REINFORCEMENT AND CONCRETE COMPONENTS.



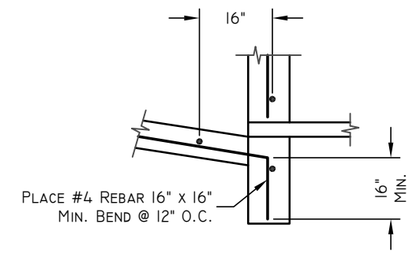
B DITCH PIPE CONNECTION SECTION
NTS



D TRASH RACK FRONT SECTION
NTS



3 REBAR IN HEADWALL
NTS



4 REBAR IN FOOTING OF PIPE HEADWALL
NTS

MAPLETON IRRIGATION COMPANY

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DRAFTSMAN: MATT GUMR

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PROJECT LEADER: CHAD BROWN
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CHECKED: REVIEWED:

MAPLETON IRRIGATION COMPANY

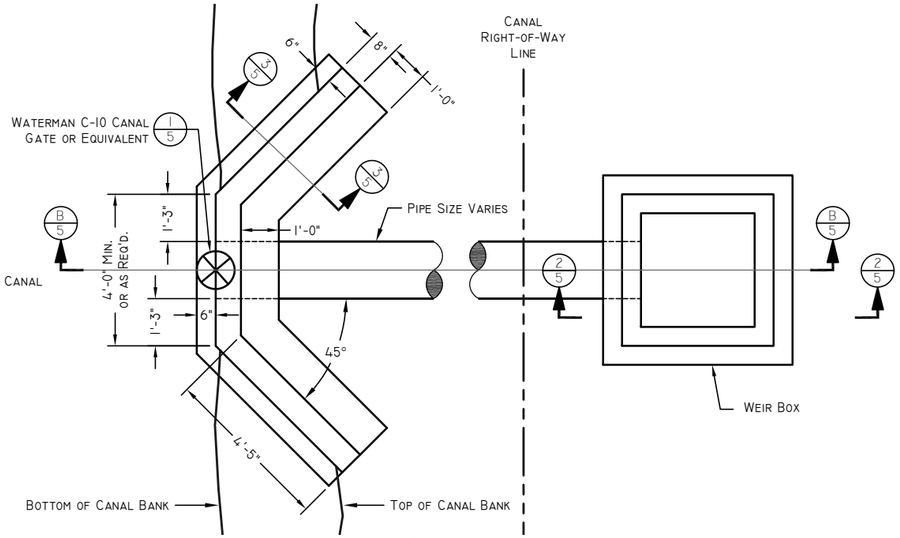
TYPICAL DRAWINGS
OPEN DITCH TO PIPE TRANSITION & STRUCTURE

JOB NO. CU.0000108

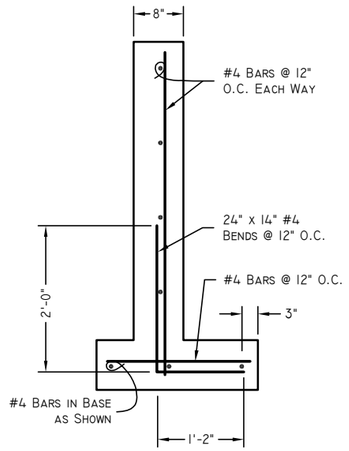
04-Open Ditch to Pipe Transition.dwg
O:\2000s\MAPLETON IC Reviews 2020\Standard Drawings

LAYOUT: Details

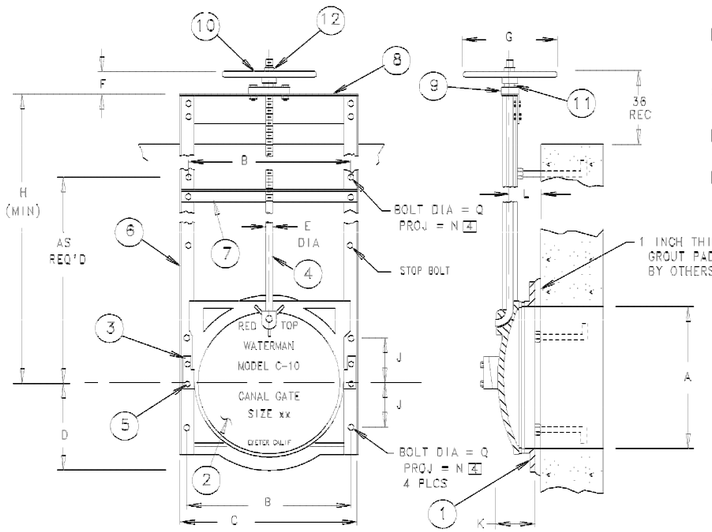
SHEET 4 OF 13



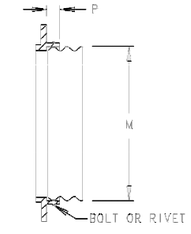
A WEIR PLAN
NTS



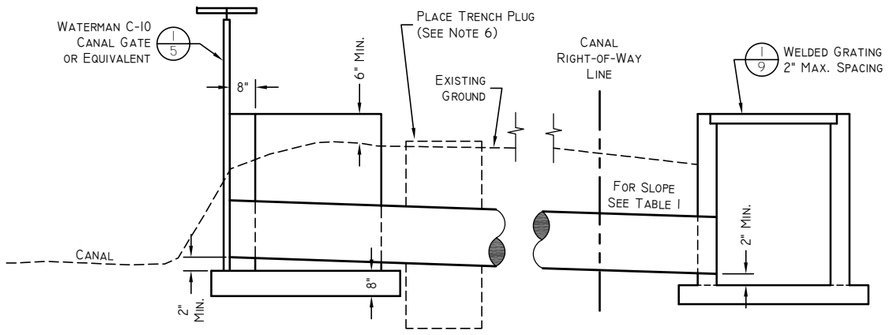
3 REBAR DETAIL
NTS



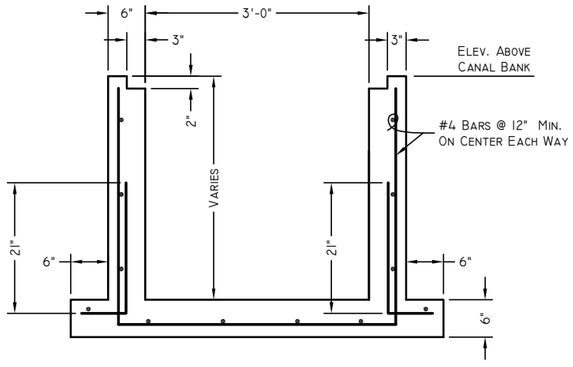
NOTES
1. TYPE 2 lubricated ball bearing lift used on 48" and larger gates.
2. Applies to spigotback gate only. Optional spigot, shown in separate detail.
3. All dimensions are also applicable for model CL-10 & CM-10 gates.
4. Add grout pad thickness to anchor bolt projection.
5. Type 3E 2:1 lift used,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



Corrugated Pipe Attached to Spigot Back Frame



B WEIR SECTION
NTS



2 REBAR DETAIL
NTS

NOTES:

1. LID DETAILS FOR BOX SHOWN ON SHEET 1/9 OR 2/9.
2. BOX NOT TO BE PLACED IN DRIVEWAYS, ROADS, OR OTHER TRAFFIC AREAS.
3. ALL PIPES INTO 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 AT A THICKNESS OF 24 INCHES. PLUGS SHALL BE A 10% BENTONITE AND 90% CLAY MIXTURE.
7. PLACE STRUCTURE ON 6-INCHES OF IRRIGATION COMPANY ENGINEER APPROVED COMPACTED BEDDING.

TABLE I

MINIMUM PIPE SLOPES		
PIPE SIZE	MIN. SLOPE, FT/FT	MIN. SLOPE, %
24"	0.0008	.08%
30"	0.00058	.058%

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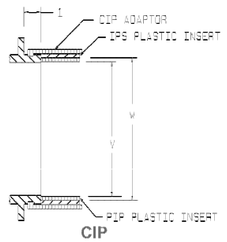
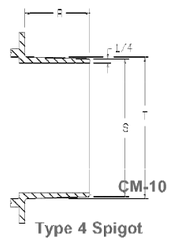
PARTS LIST		
No.	Name	Qty.
1	Frame	1
2	Cover	1
3	Wedge (Right & Left)	1 ea.
4	Stem	1
5	Wedge Bolts	4
6	Guide Rail	2
7	Stem Support	A/R
8	Head Rail	1
9	Lift Collar	1
10	Handwheel	1
11	Lift Nut	1
12	Limit Nut	1





Type 4 Spigot

A	B	C	D	E	F	G	H	J	K	L	M [2]	N	P [2]	Q	R	S	T	V	W
6	8	9⅛	4	⅛	2⅛	10	24	3	3½	2⅝	7	3½	2¼	½	-	-	-	6.160	6.645
8	10	12	4⅛	⅛	2⅛	10	24	3	3¾	2½	9	3½	2¼	½	4	7 19/16	8	8.180	8.645
10	12	13⅛	6	⅛	2⅛	10	24	3½	3¾	2½	11	3½	2¼	½	3⅞	9⅞	10	10.220	10.770
12	14	15⅛	7	⅛	2⅛	10	24	4	3½	3	13	4	2¼	½	4	11⅞	12	12.270	12.780
14	16	17⅛	8	⅛	2⅛	10	27	4¾	3¾	3¼	15	4	2¼	½	-	-	-	-	-
15	17	18⅛	8⅛	⅛	2⅛	10	30	5	4½	3½	16	4	2⅛	½	4	14⅞	15	-	-
16	18¾	20⅝	9⅛	⅛	2⅛	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	17 13/16	18	-	-
20	23¼	25⅛	11¾	1	3⅛	12	38	7	4¾	4	21	4½	2¼	⅝	-	-	-	-	-
21	24	25⅞	12 5/16	1	3⅛	12	40	7	4¾	4	22	4½	2¼	⅝	-	-	-	-	-
24	27¼	29⅛	13⅛	1	3⅛	12	44	8	5¾	4⅛	25	4½	2¼	⅝	-	-	-	-	-
30	33¾	36⅛	17⅜	1⅛	4	15	54	10	6	4½	31	6	2¼	¾	-	-	-	-	-
36	39¾	42⅛	20½	1⅛	4	15	62	12	6¼	5⅜	37	6	2⅛	¾	-	-	-	-	-
42	45¾	48⅜	23⅝	1½	5	18	84	14	7	6	43	6	2½	¾	-	-	-	-	-
48	51¾	54⅜	26¾	1½	6	24 [1]	90	16	7⅜	6⅛	49⅛	6	2½	¾	-	-	-	-	-
54	58½	61½	30	2	6	30 [1]	100	18	7⅛	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	10⅝	8¾	73¼	8	3⅜	1	-	-	-	-	-

GATE DIMENSIONS IN INCHES

1 WATERMAN C-10 CANAL GATE
NTS

SEE WWW.WATERMANUSA.COM/PDF/C-10.PDF

MAPLETON IRRIGATION COMPANY

REVISIONS

NO.	DATE	INITS.

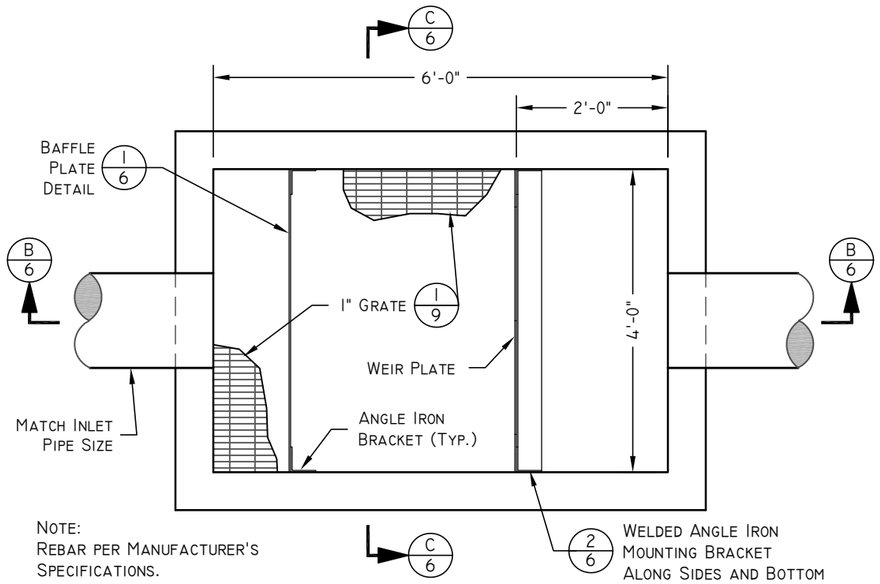
DESIGNER: CHAD BROWN
DRAFTSMAN: MATT GUMM
CHECKED: CHAD BROWN
REVIEWED: MARCH 27, 2025

MAPLETON IRRIGATION COMPANY

TYPICAL DRAWINGS
WEIR TURNOUT GATE

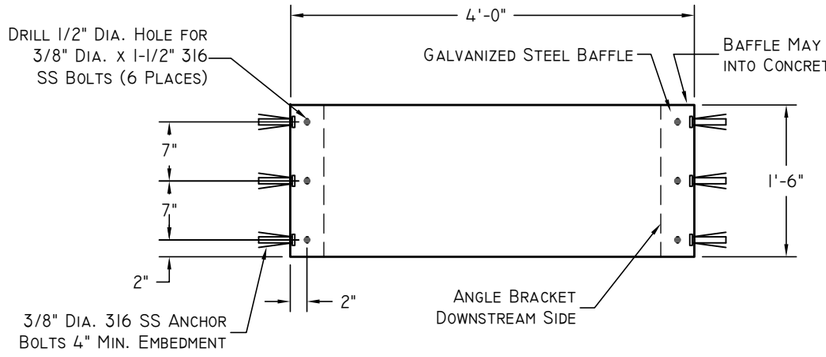
JOB NO. CU.0000108

05- Weir Turnout Gate.dwg
O:\00006 MAPLETON IC Reviews 2020\Standard Drawings
LAYOUT: Details



NOTE:
REBAR PER MANUFACTURER'S SPECIFICATIONS.

A **PLAN VIEW**
NTS



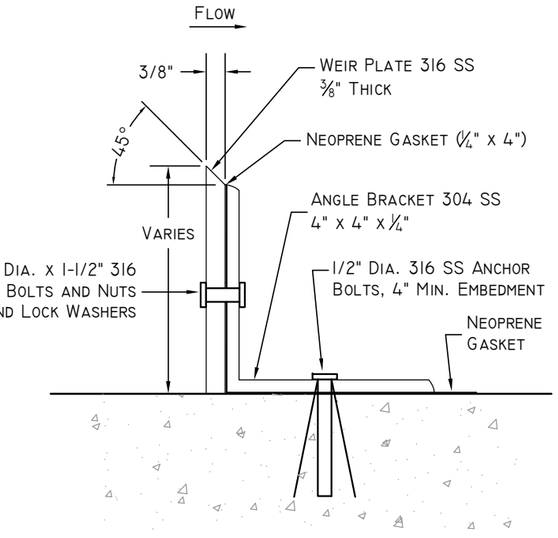
1 **BAFFLE PLATE DETAIL**
NTS

DISCLAIMER:

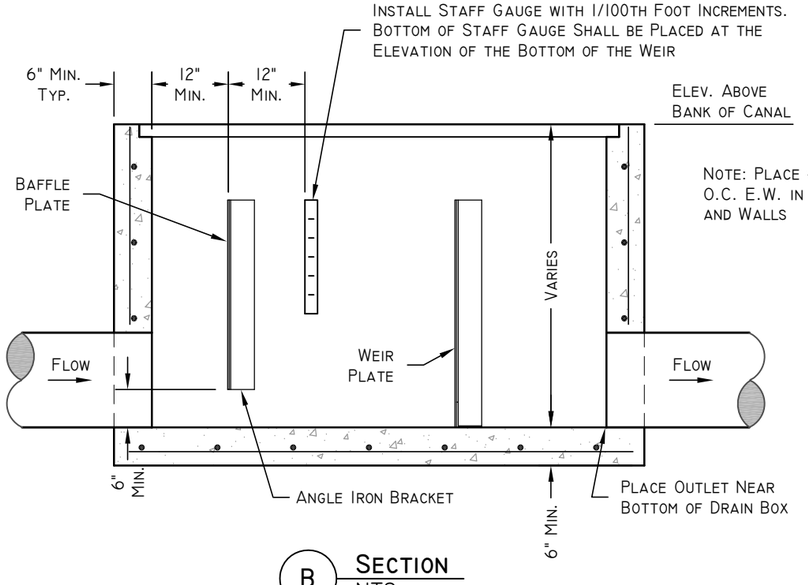
THE DRAWINGS PROVIDED IN THESE STANDARDS ARE ONLY INTENDED TO SHOW THE TYPE OF FACILITY(IES) THAT WILL BE ACCEPTABLE TO THE MIC. THESE ARE NOT INTENDED TO BE USED DIRECTLY IN THE DESIGN OF FACILITIES AS EACH ENCROACHMENT/CROSSING HAS ITS OWN UNIQUE CIRCUMSTANCE, DIMENSIONS, DESIGN CRITERIA, ETC. IT IS THE RESPONSIBILITY OF THE APPLICANT'S DESIGN ENGINEER, WHO WILL STAMP THE DRAWING, TO ENSURE THAT EACH PROJECT IS DESIGNED PROPERLY.

TABLE 1
$Q=3.367\ LH^{3/2}$ @ L=3

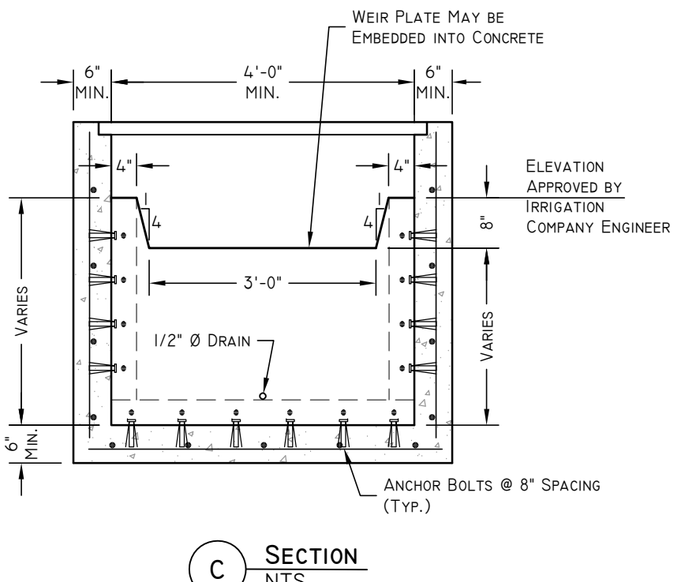
H (FT.)	Q (CFS)
0.2	0.90
0.3	1.66
0.4	2.56
0.5	3.57
0.6	4.69
0.66	5.42



2 **ANGLE IRON DETAIL**
NTS



B **SECTION**
NTS



C **SECTION**
NTS

NOTES:

1. IF BOX IS CAST IN PLACE REBAR TO BE PLACED AT 12" O.C. E.W. MINIMUM.
2. DETAILS FOR CAST IN PLACE BOX SEE (2/5).
3. ALL PIPES INTO BOX SHALL BE GROUTED AND WATERTIGHT.
4. SUBMIT TO IRRIGATION COMPANY ENGINEER FOR APPROVAL ON FINAL DIMENSIONS ON REBAR REINFORCEMENT AND CONCRETE COMPONENTS.
5. PLACE STRUCTURE ON 6-INCHES OF IRRIGATION COMPANY ENGINEER APPROVED COMPACTED BEDDING.

MAPLETON IRRIGATION COMPANY

DESIGNER: CHAD BROWN
DRAFTSMAN: MATT GUMP
CHECKED: REVIEWED:
PROJECT LEADER: CHAD BROWN
PRINT DATE: MARCH 27, 2025

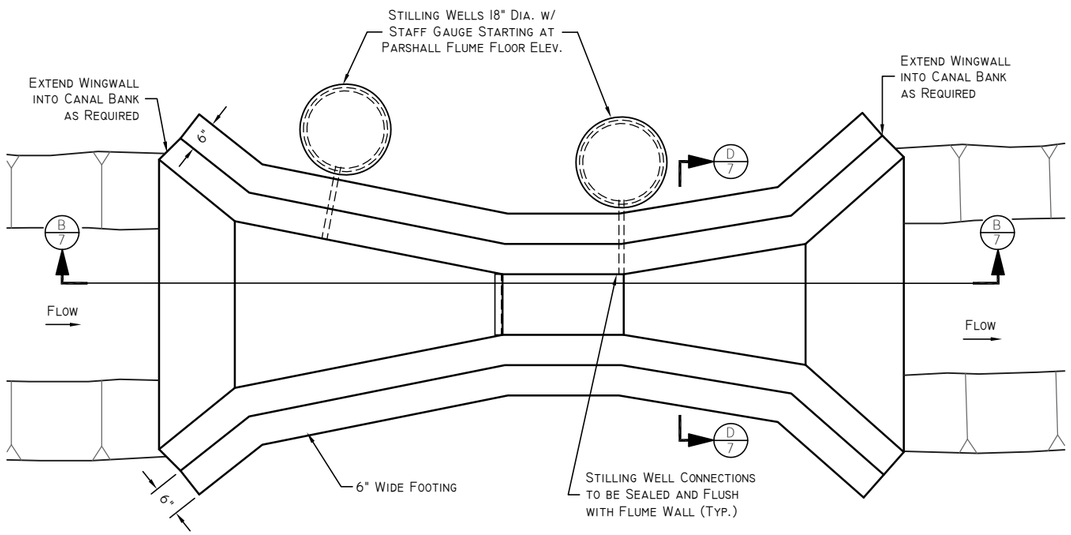
NO.	DATE	REVISIONS DESCRIPTION	INITS.

MAPLETON IRRIGATION COMPANY
TYPICAL DRAWINGS
3 FOOT CIPOLETTI WEIR

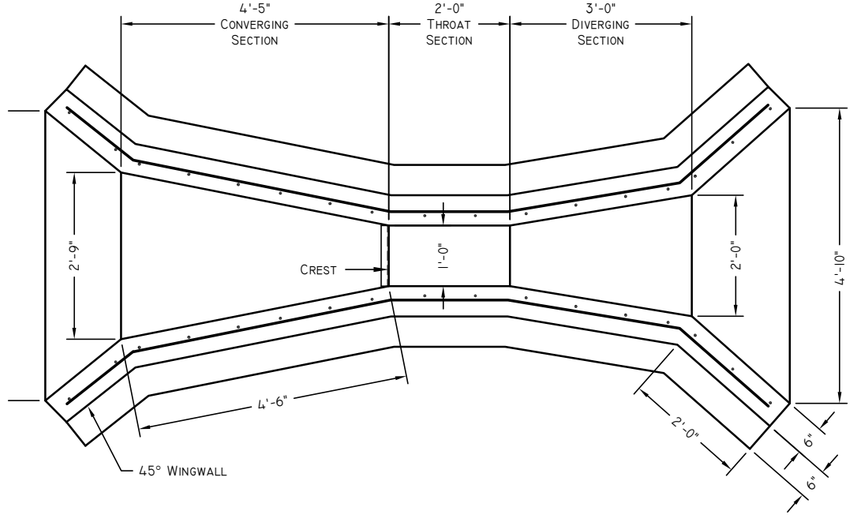
JOB NO. CU 0000108

06-3 Foot Cipoletti Weir.dwg
O:\00006 MAPLETON IC Reviews 2020\Standard Drawings
LAYOUT: Details (11x17)

SHEET 6 OF 13



A PLAN



C REBAR PLAN

TABLE 1
HEAD-FLOW RELATIONSHIP FOR CONCRETE FLUME

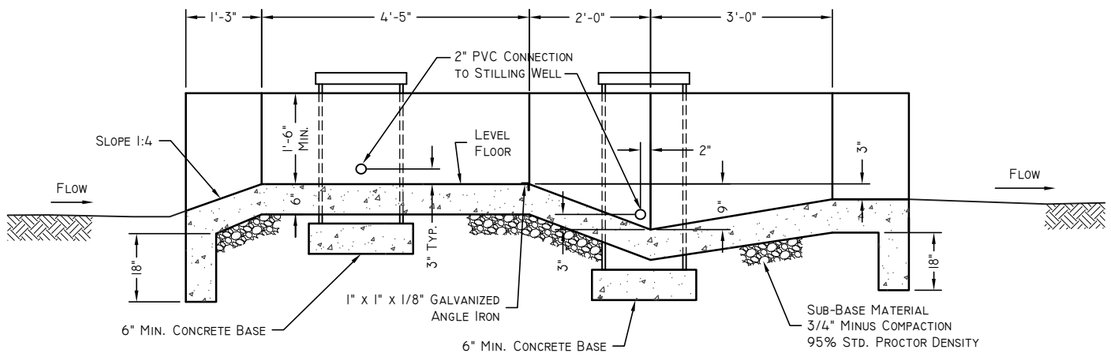
HEAD H_a (FEET)	FLOW Q (CFS)	HEAD H_a (FEET)	FLOW Q (CFS)
0.20	0.35	0.86	3.18
0.21	0.37	0.87	3.24
0.22	0.40	0.88	3.29
0.23	0.43	0.89	3.35
0.24	0.46	0.90	3.41
0.25	0.49	0.91	3.46
0.26	0.51	0.92	3.52
0.27	0.54	0.93	3.58
0.28	0.58	0.94	3.64
0.29	0.61	0.95	3.70
0.30	0.64	0.96	3.76
0.31	0.68	0.97	3.82
0.32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

DISCLAIMER:

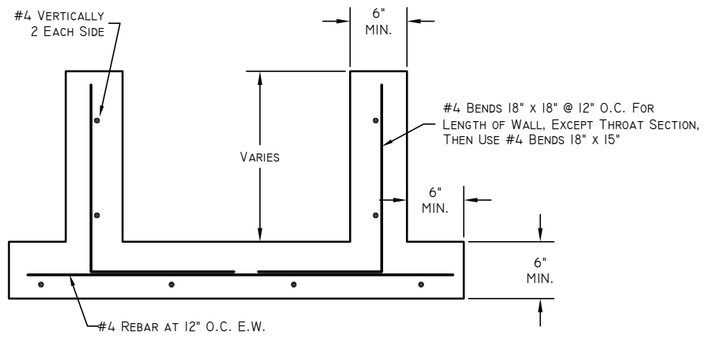
THE DRAWINGS PROVIDED IN THESE STANDARDS ARE ONLY INTENDED TO SHOW THE TYPE OF FACILITY(IES) THAT WILL BE ACCEPTABLE TO THE MIC. THESE ARE NOT INTENDED TO BE USED DIRECTLY IN THE DESIGN OF FACILITIES AS EACH ENCROACHMENT/CROSSING HAS ITS OWN UNIQUE CIRCUMSTANCE, DIMENSIONS, DESIGN CRITERIA, ETC. IT IS THE RESPONSIBILITY OF THE APPLICANT'S DESIGN ENGINEER, WHO WILL STAMP THE DRAWING, TO ENSURE THAT EACH PROJECT IS DESIGNED PROPERLY.

NOTES:

1. REINFORCING TO BE #4 REBAR @ 12-INCHES O.C. E.W. WITH 20-INCH MINIMUM SPLICE LENGTH.
2. REBAR TO BE BENT AT ANGLES OF STRUCTURES. OVERLAP TO BE IN STRAIGHT LENGTHS ONLY.
3. APPLICANT TO SUBMIT ACTUAL PLANS AND MATERIAL OF FLUME PRIOR TO CONSTRUCTION.



B PROFILE



D CROSS SECTION
NTS

MAPLETON IRRIGATION COMPANY

MAPLETON IRRIGATION COMPANY
TYPICAL DRAWINGS
1-FOOT PARSHALL FLUME

DESIGNER: CHAD BROWN
DRAFTSMAN: MATT GUMM
CHECKED: CHAD BROWN
REVIEWED: CHECKED
APPROVED: REVIEWED
PROJECT LEADER: CHAD BROWN
PRINT DATE: MARCH 27, 2025

REVISIONS

NO.	DATE	INITS.	DESCRIPTION

07- 1 foot Parshall Flume.dwg
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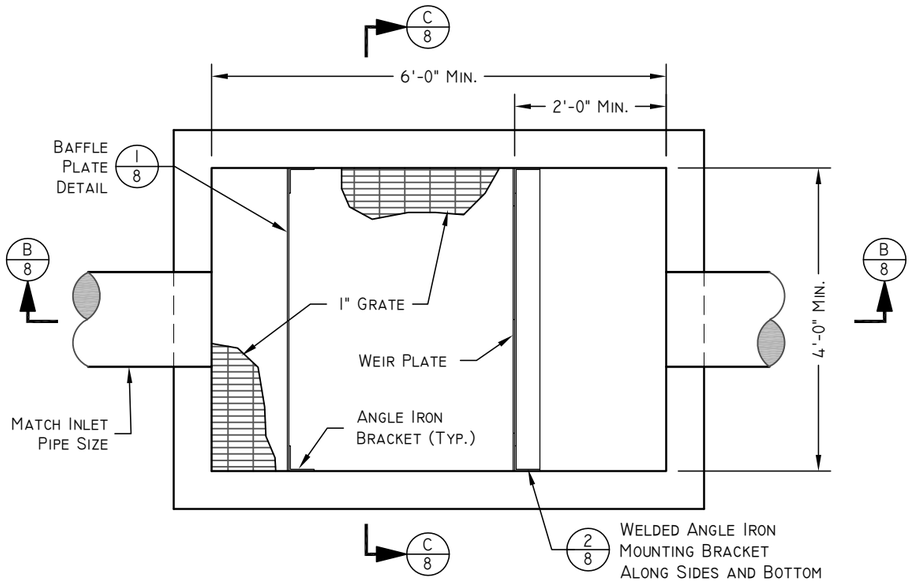
JOB NO. CU 0000108

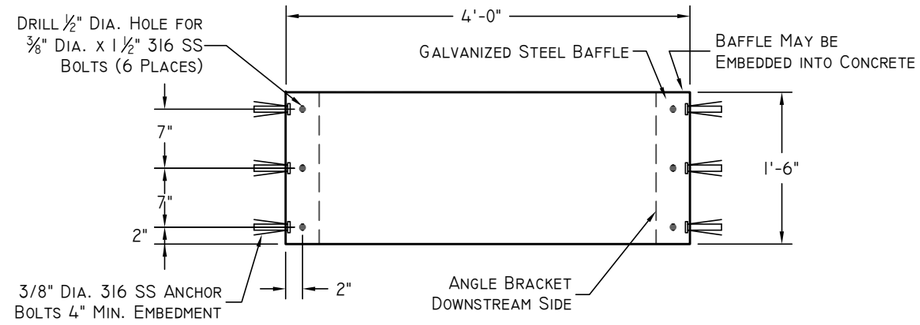
LAYOUT: 11 x 17



A **PLAN VIEW**
NTS

FLOW TABLE
Q=Cw x H^2.5

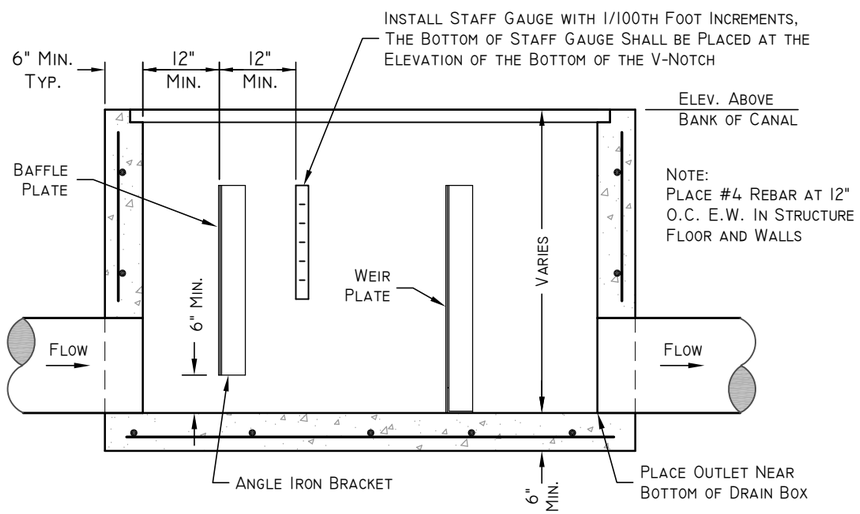
Cw	2.5
H (FT.)	Q (CFS)
0.20	0.04
0.30	0.12
0.40	0.25
0.50	0.44
0.60	0.70
0.70	1.02
0.80	1.43
0.90	1.92
1.00	2.50
1.10	3.17
1.20	3.94
1.30	4.82
1.40	5.80
1.50	6.89



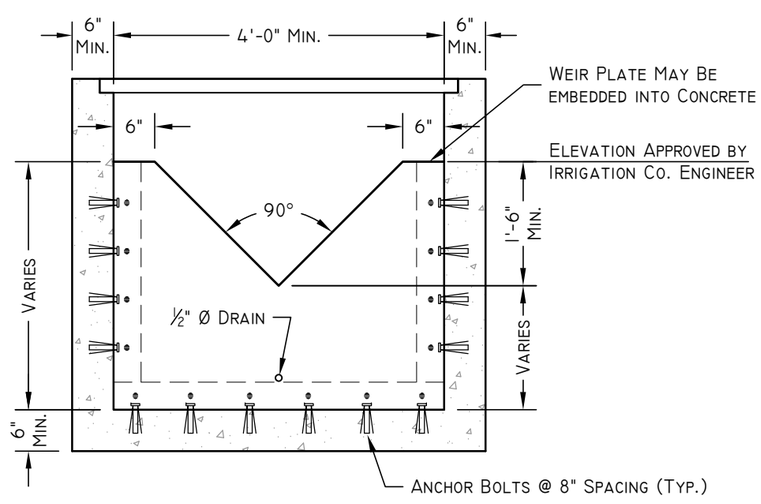
I **BAFFLE PLATE DETAIL**
NTS

NOTES:

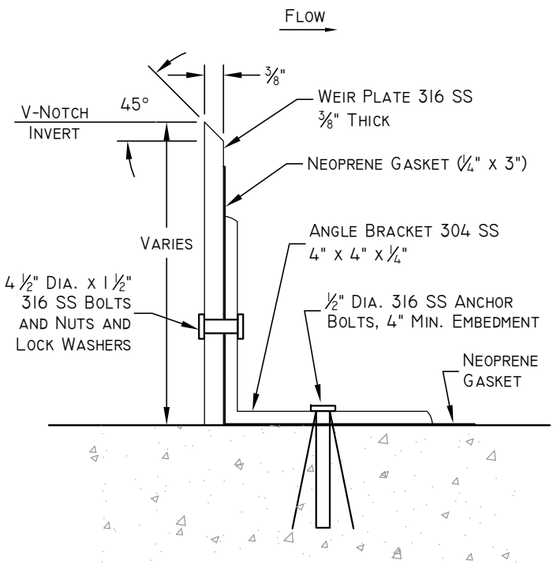
1. IF BOX IS CAST IN PLACE, PUT #4 REBAR PLACED AT 12" O.C. E.W. IN STRUCTURE FLOOR AND WALLS MINIMUM.
2. DETAILS FOR CAST IN PLACE BOX SEE 2 5.
3. ALL PIPES INTO BOX SHALL BE GROUTED AND WATERTIGHT.
4. SUBMIT TO IRRIGATION COMPANY ENGINEER FOR FINAL DIMENSIONS ON REBAR REINFORCEMENT AND CONCRETE COMPONENTS.
5. PLACE STRUCTURE ON 6-INCHES OF IRRIGATION COMPANY ENGINEER APPROVED COMPACTED BEDDING



B **SECTION**
NTS



C **SECTION**
NTS



2 **ANGLE IRON DETAIL**
NTS

MAPLETON IRRIGATION COMPANY

DESIGNER: CHAD BROWN
DRAFTSMAN: MATT GUMM
CHECKED: CHAD BROWN
REVIEWED:
PROJECT LEADER:
PRINT DATE: MARCH 27, 2025

NO.	DATE	DESCRIPTION
		INITS.

MAPLETON IRRIGATION COMPANY

TYPICAL DRAWINGS 90D V-NOTCH WEIR

JOB NO. CU 0000108

08-90° V-Notch Weir.dwg
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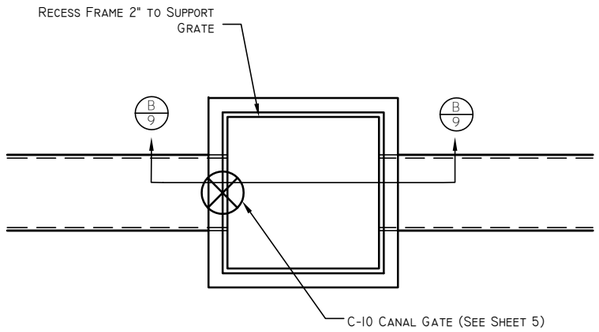
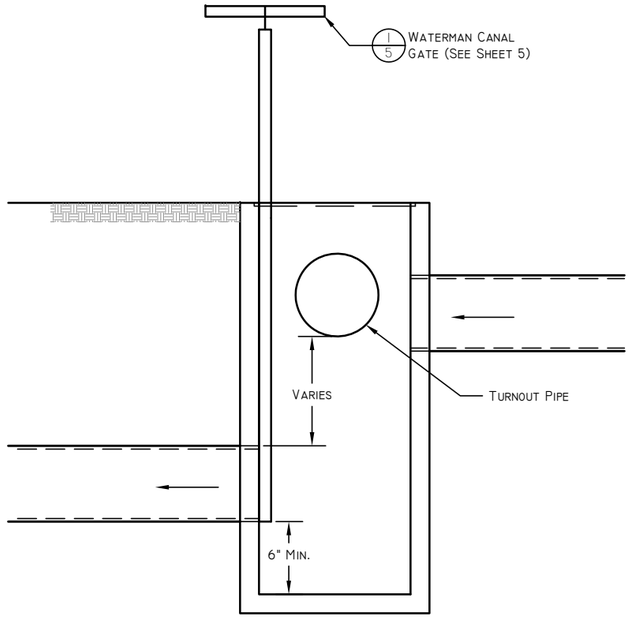
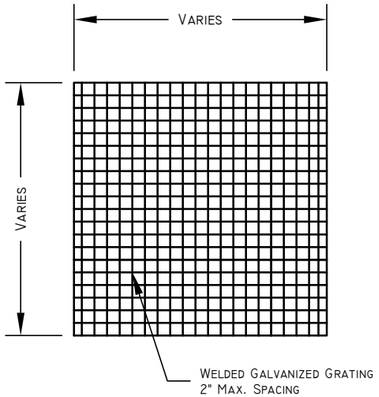
LAYOUT: Details (11x17)



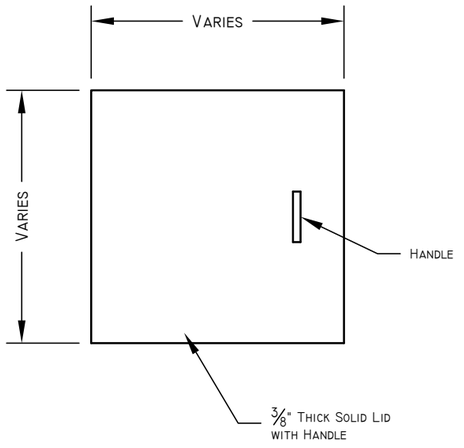
A 4' x 4' Irrigation Box Plan
NTS



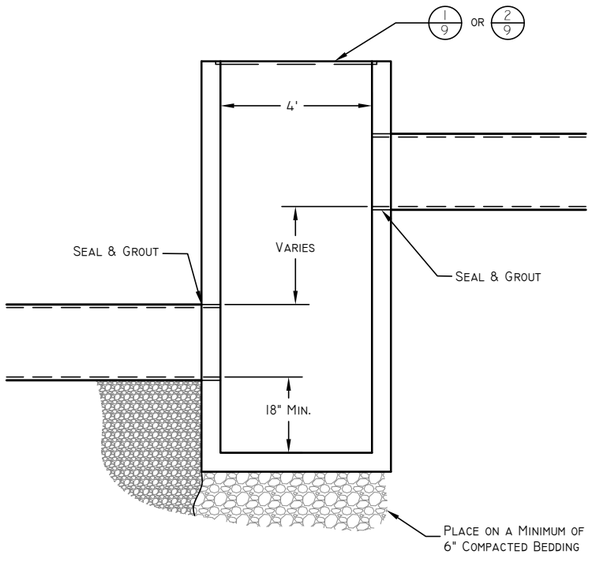
4 Bubble Up Turnout Box Section
NTS



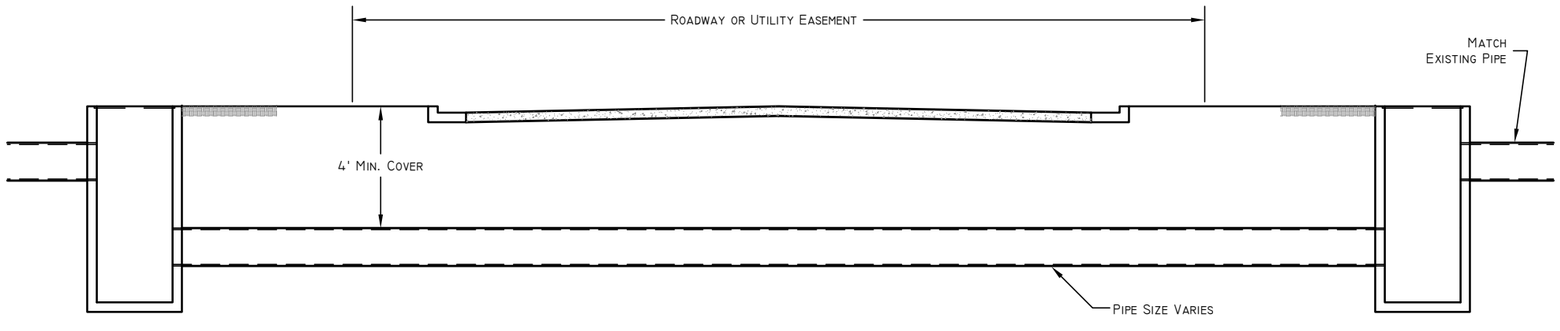
I Grate Detail
NTS



2 Solid Lid
NTS



B 4' x 4' Irrigation Box Profile
NTS



3 Bubble Up Box Section
NTS

Disclaimer:

The Drawings Provided in These Standards are Only Intended to Show the Type of Facility(ies) That Will be Acceptable to the MIC. 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 Applicant's Design Engineer, Who Will Stamp the Drawing, to Ensure that Each Project is Designed Properly.

Notes

1. If Box is Cast in Place, Rebar to be Placed at 12" O.C. E.W. Minimum.
2. Details For Cast in Place Box See 2/5.
3. All Pipes into Box Shall Be Grouted and Watertight.
4. Submit to Engineer Final Dimensions on Rebar Reinforcement and Concrete Components.
5. Minimum Pipe Slopes for Pipe Under Roadway See Sheet 4.
6. Boxes May be Precast or Cast in Place. Boxes Shall Have a Minimum Interior Width and Length of 4' With #4 Rebar @ 12" O.C. Boxes Must Be Submitted for Review.
7. Irrigation Boxes Shall not be Placed In Roadway.
8. All Pipe Placed in Roadway Must be Class III RCP.
9. Removal and Replacement of Canal Banks will Require Testing and Proctors by a Licensed Soils Lab.

Mapleton Irrigation Company

DESIGNED: Chad Brown
DRAFTSMAN: Matt Gurr
CHECKED: Chad Brown
REVIEWED:

NO.	DATE	INITS.	REVISIONS DESCRIPTION

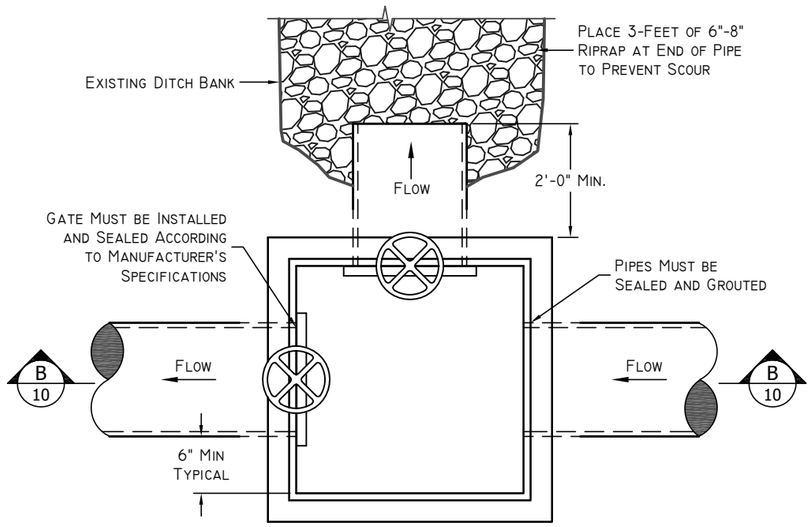
PROJECT LEADER: Chad Brown
PRINT DATE: March 27, 2025
CHECKED:
REVIEWED:

Mapleton Irrigation Company

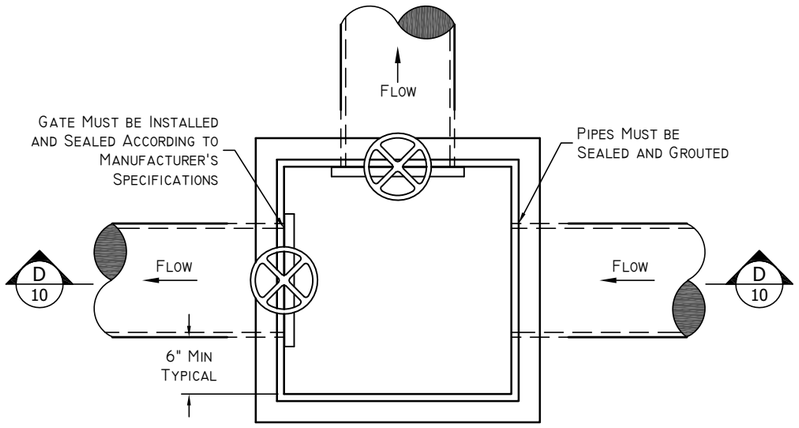
Typical Drawings
Irrigation Bubble up Box

JOB NO. CU.0000108
09- Irrigation Bubble up Box.dwg
O:\2006 MAPLETON IC Reviews 2020\Standard Drawings
LAYOUT: Details

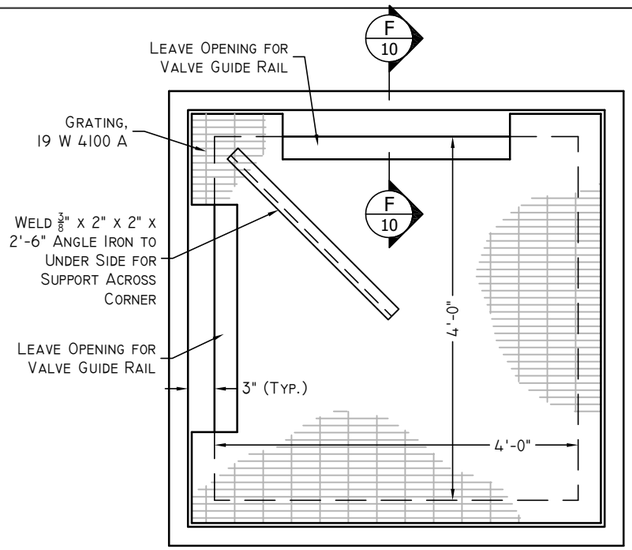
SHEET 9 OF 13



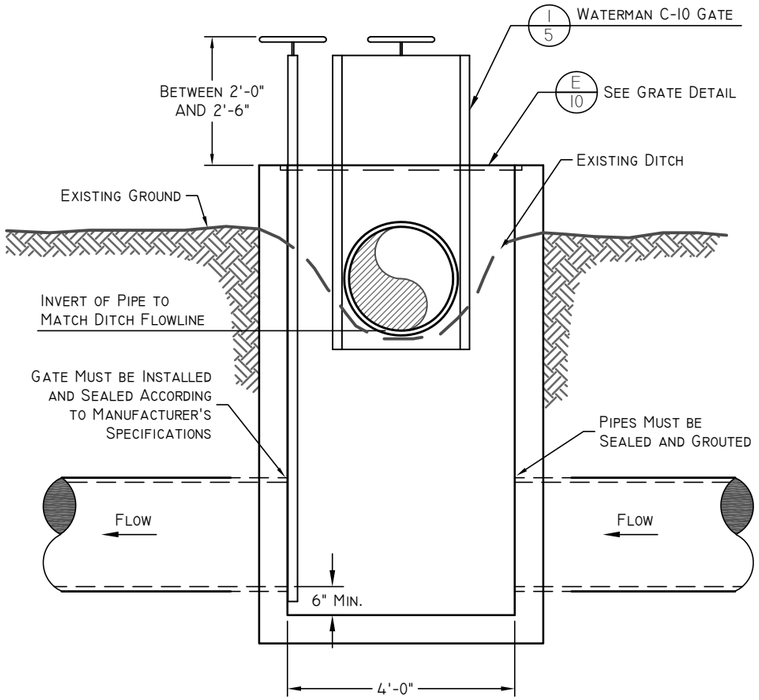
A **Turnout Box Plan**
NTS



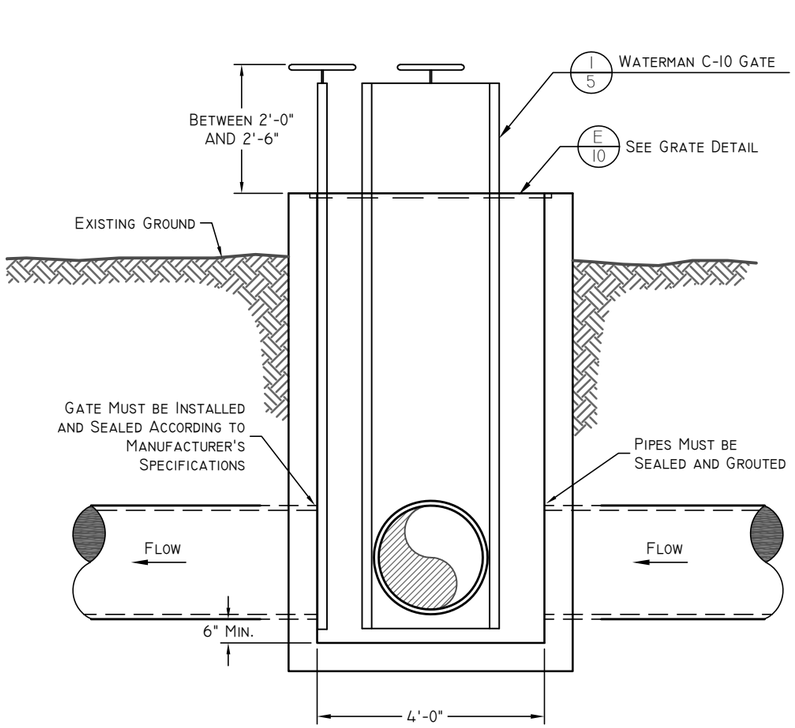
C **Diversion Box**
NTS



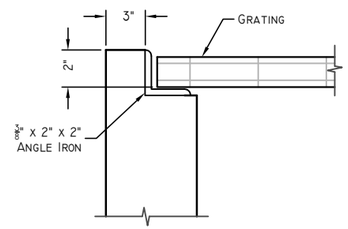
E **Grate Detail - Top View**
NTS



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.
2. Boxes May Be Precast or Cast In Place. Boxes Shall Have a Minimum Interior Width and Length of 4 Feet With #4 Rebar @ 12 Inches O.C. Boxes Must Be Submitted For Review.
3. Turnout and Diversion Boxes Shall Not Be Placed In Roadway.
4. All Exposed Metal Shall be Galvanized.

MAPLETON IRRIGATION COMPANY

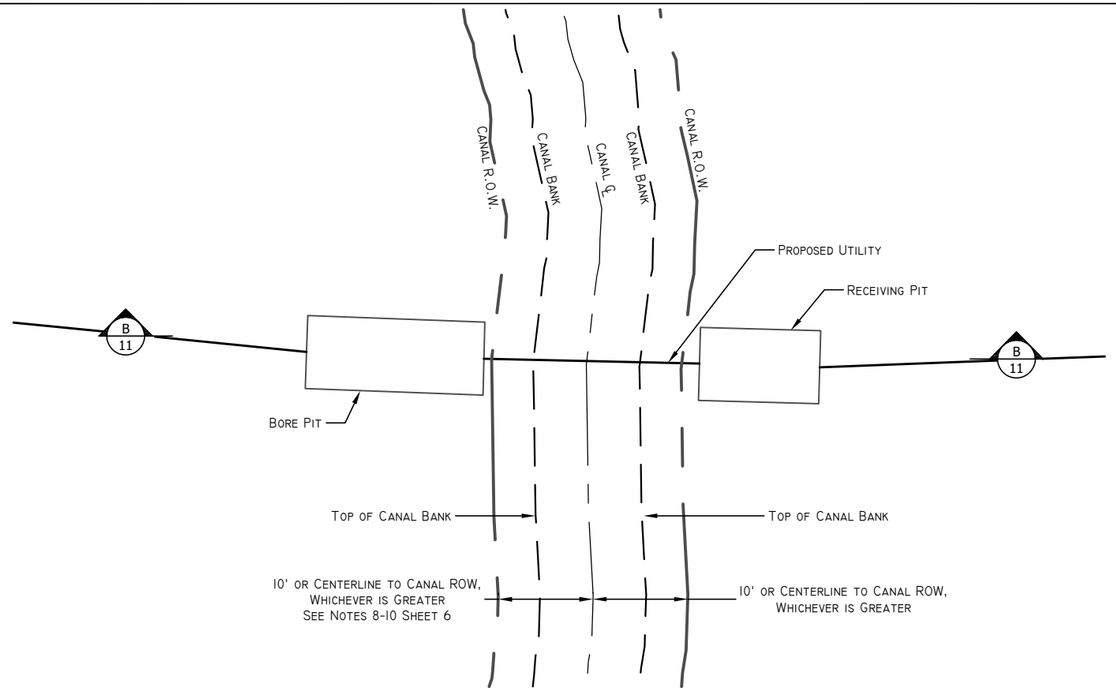
DESIGNER: CHAD BROWN
DRAFTSMAN: MATT GUNN
CHECKED: CHAD BROWN
REVIEWED: MATT GUNN
PROJECT LEADER: CHAD BROWN
PRINT DATE: MARCH 27, 2025

NO.	DATE	REVISIONS	INITS.

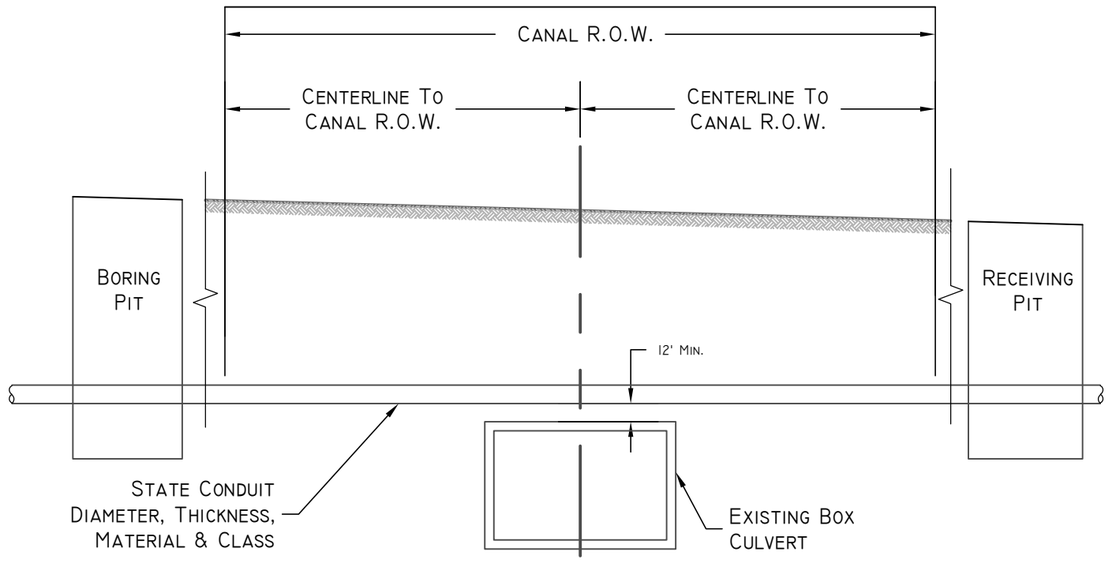
MAPLETON IRRIGATION COMPANY

TYPICAL DRAWINGS
IRRIGATION TURNOUT-DIVERSION BOX

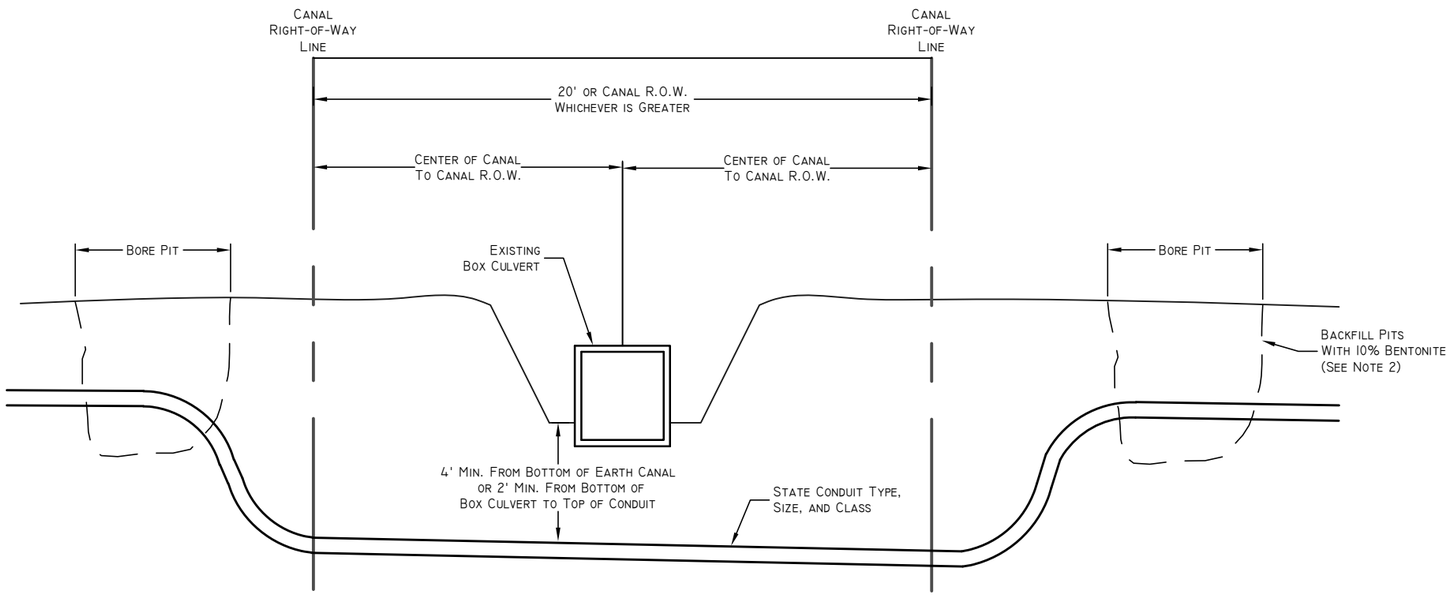
JOB NO. 10-Irrigation Turnout Diversion Box.dwg
C:\2006 MAPLETON IC Reviews 2020\Standard Drawings
CU 000008
LAYOUT: Details



A **DIRECTION DRILL OR MICROTRENCH**
NOT TO SCALE



B **DIRECTIONAL DRILL OR MICROTRENCH ABOVE CANAL CROSS SECTION**
NOT TO SCALE



B **DIRECTIONAL DRILL UNDER CANAL CROSS SECTION**
NOT TO SCALE

NOTES:

1. BORE PIT COMPACTION TO BE 95% STANDARD 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. 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. 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 PLACED COMPLETELY OUTSIDE OF THE CANAL RIGHT-OF-WAY.
6. ABOVE CANAL CONDUIT/CABLES MUST BE A MINIMUM OF 1 FOOT ABOVE THE TOP OF CANAL.

MAPLETON IRRIGATION COMPANY

DESIGNER:	CHAD BROWN	NO.	DATE	INITS.	DESCRIPTION
DRAFTSMAN:	MATT GUHR				
CHECKED:	CHAD BROWN				
REVIEWED:					

REVISIONS

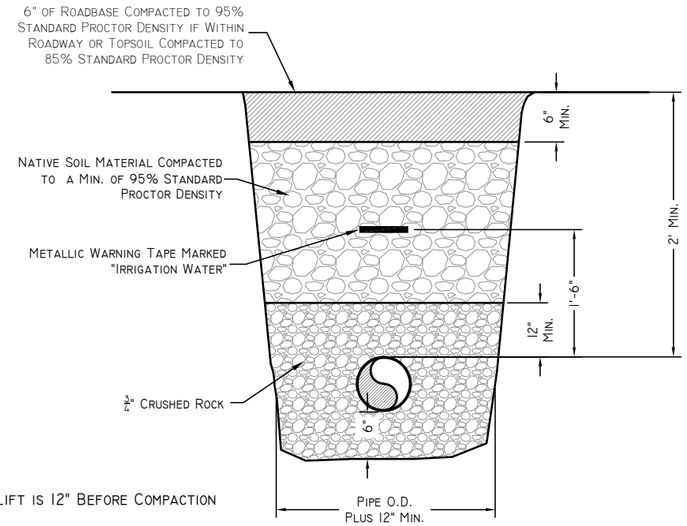
PROJECT LEADER: CHAD BROWN
PRINT DATE: MARCH 27, 2025

MAPLETON IRRIGATION COMPANY

TYPICAL DRAWINGS
DIRECTIONAL DRILLING AND MICROTRENCHING DETIALS

JOB NO. CU.0000108

11- Directional Drilling.dwg
O:\2006 MAPLETON IC Reviews 2020\Standard Drawings
LAYOUT: Directional Drilling



NOTES:

1. MAXIMUM LIFT IS 12" BEFORE COMPACTION

A PIPE BEDDING TRENCH SECTION
NTS

DISCLAIMER:

THE DRAWINGS PROVIDED IN THESE STANDARDS ARE ONLY INTENDED TO SHOW THE TYPE OF FACILITY(IES) THAT WILL BE ACCEPTABLE TO THE MIC. 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 APPLICANT'S DESIGN ENGINEER, WHO WILL STAMP THE DRAWING, TO ENSURE THAT EACH PROJECT IS DESIGNED PROPERLY.

MAPLETON IRRIGATION COMPANY

DESIGNED: CHAD BROWN
DRAFTSMAN: MATT GUPR
CHECKED:
REVIEWED:
PROJECT LEADER: CHAD BROWN
PRINT DATE: MARCH 27, 2025

REVISIONS

NO.	DATE	INITS.	DESCRIPTION

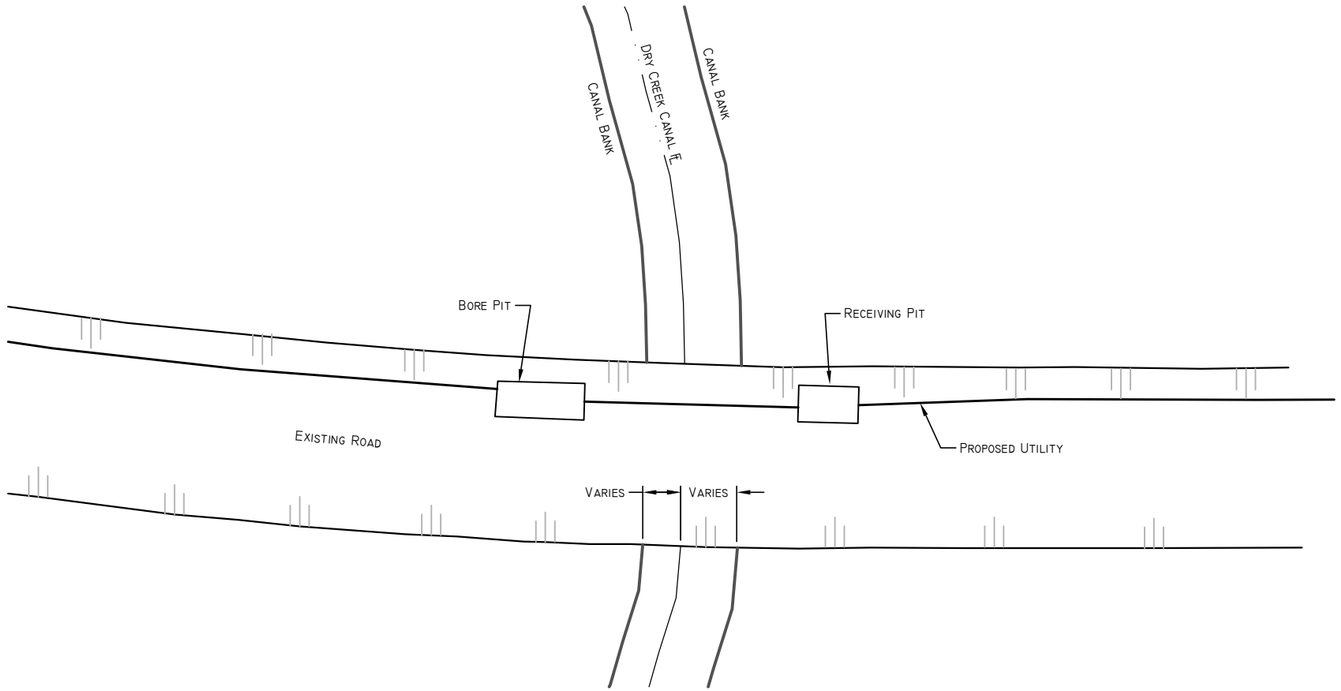
MAPLETON IRRIGATION COMPANY

TYPICAL DRAWINGS
TRENCH DETAIL

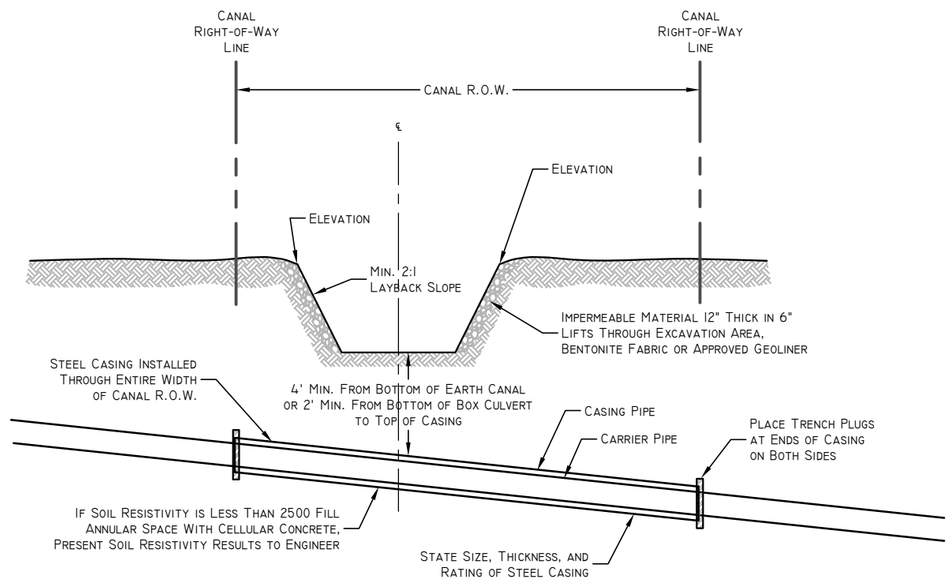
JOB NO. CU.0000108

12- Pipe Bedding Detail.dwg
O:\20006 MAPLETON IC Reviews 2020\Standard Drawings

LAYOUT: Details



A **Canal Boring Plan**
Not To Scale



B **Canal Boring Section**
Not To Scale

Notes:

1. Bore Pit Compaction to Be 95% Standard 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.
3. Contractor Should Note Canals Are Sometimes Used For storm Drain and Will Collect Storm Water During and Following Rain, Snow, or Other Event Resulting in Water Being Discharged in the Storm Drain System.
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 or Canal Bottom.
7. Bore Pits Must Be Completely Placed Outside of the Canal Right-of-Way.

Table 1
Steel Casing Diameter

Diameter (Inches)	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

Mapleton Irrigation Company

Designer:	Chad Brown	Checked:	
Draftsman:	Matt Gunn	Reviewed:	
No.	Date	Revisions	Description
		Ints.	
		Project Leader:	Chad Brown
		Print Date:	March 27, 2025

Mapleton Irrigation Company
Typical Drawings
Canal Boring Details

13- Canal Boring.dwg
O:\2006 MAPLETON IC Reviews 2020\Standard Drawings
LAYOUT: Boring Plan & Sect.

Job No. CU.0000108

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