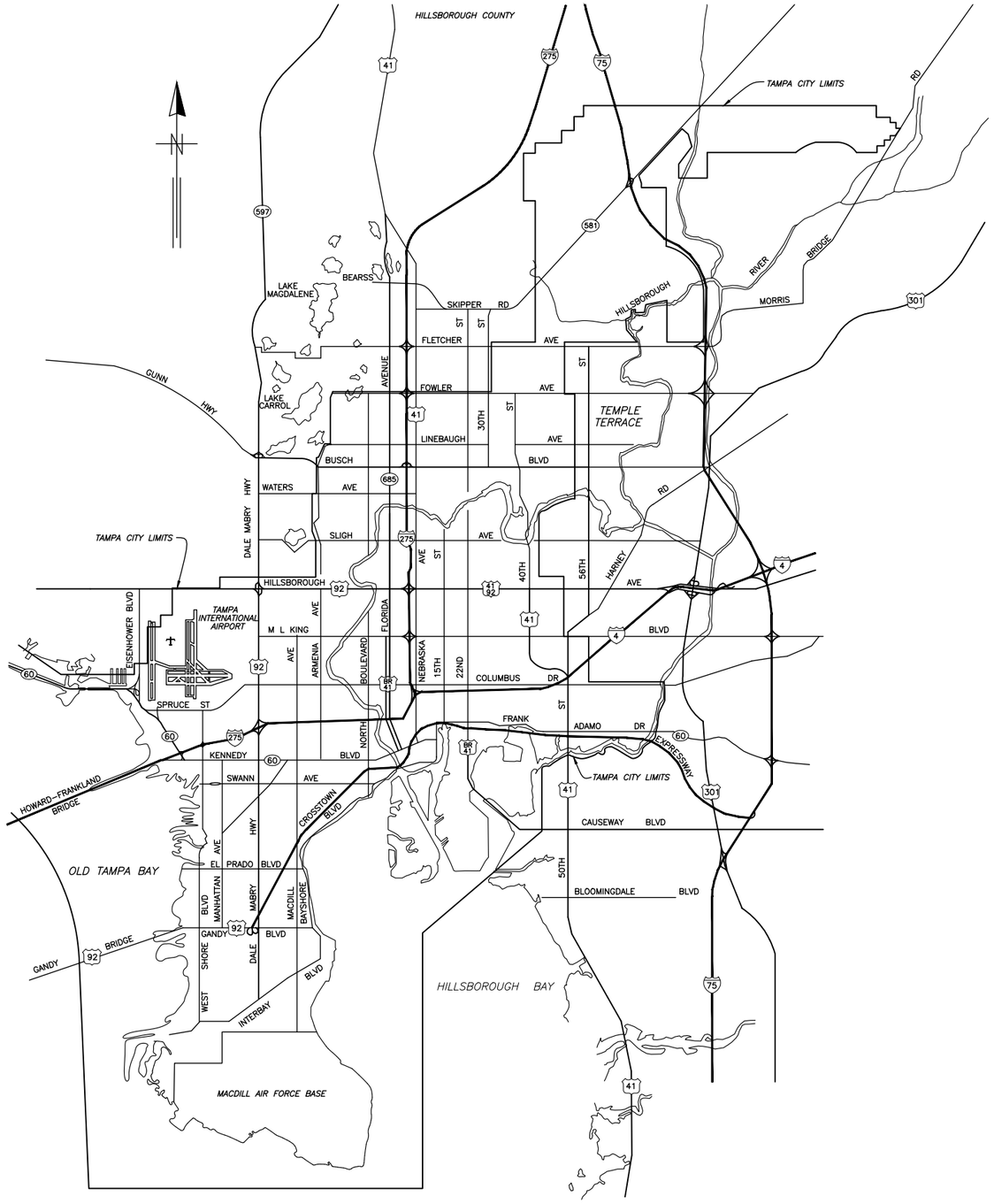
SW



CITY of TAMPA

CITY OF TAMPA FLORIDA
MASCOTTE
ORGANIZED JULY 15 1887

STORMWATER DIVISION

STANDARD DETAILS

No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1			4		

DES: STORM
DRN: STORM
CKD:
DATE:

CITY of TAMPA
Department of Transportation and Stormwater Services
Stormwater Engineering Division

COVER SHEET

SHEET 1 OF 40

SW

STORMWATER DEPARTMENT
ETAILS GENERAL NOTES

ANHOLES, INLETS, OUTFALL STRUCTURES AND OTHERS)
PACTED #57 AGGREGATE FOUNDATION, WRAPPED COMPLETELY
OT STANDARD SPECIFICATIONS 441–2.3

PTICAL AND BOX CULVERTS) SHALL BE WRAPPED COMPLETELY
OT STANDARD SPECIFICATIONS 441–2.3. FABRIC SHALL
PIPE SECTION (JOINT) AND SHALL OVERLAP A MINIMUM OF
ABRIC SHALL BE HELD IN PLACE WITH RUST–PROOF METAL

LL BE CONSISTENT WITH FDOT INDEX 200 AND AS APPROVED

D DETAILS	
r)	US- lb.)
g)	US-
)	US- Type AO (160 lb.)
Ring)	US
Ring)	-
-	
-	
bove or equal.	
Ci - Tampa ROW or easemen- hall no- includ	
- ɔa" nor -he ship logo.	
include -he - x - rmwa- r" as shown in -h	
-	

INDEX

Shee- .	Descrip-ion
1	r
2	Index & General No-
3 – 4	Type 1 Inle-
5 – 7	Type 2 Inle-
8 – 10	Type 3 Inle-
11	Type 1 Inle- di-ied
12 – 13	Type BS–1 Curb Inle-
14 – 15	Type BV–1 Curb Inle-
16 – 19	Type BR–1 Curb Inle-
20 – 23	Type BR–2 Curb Inle-
24–25	ra- Inle -ails
26–27	Manhole & INL=T Covers
28	Guidelines For Con-lic- anholes
29	Open Bo - m Inle- Type "=")
30	Temproary - rce Main & Pumping S-andards
31	Pipe Bedding De-ails
32	Paymen- limi- acked Crossing De-ails
33–35	Miscellaneous De-ails
36–40	Residen-ial Driveway De-ails

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CITY of TAMPA
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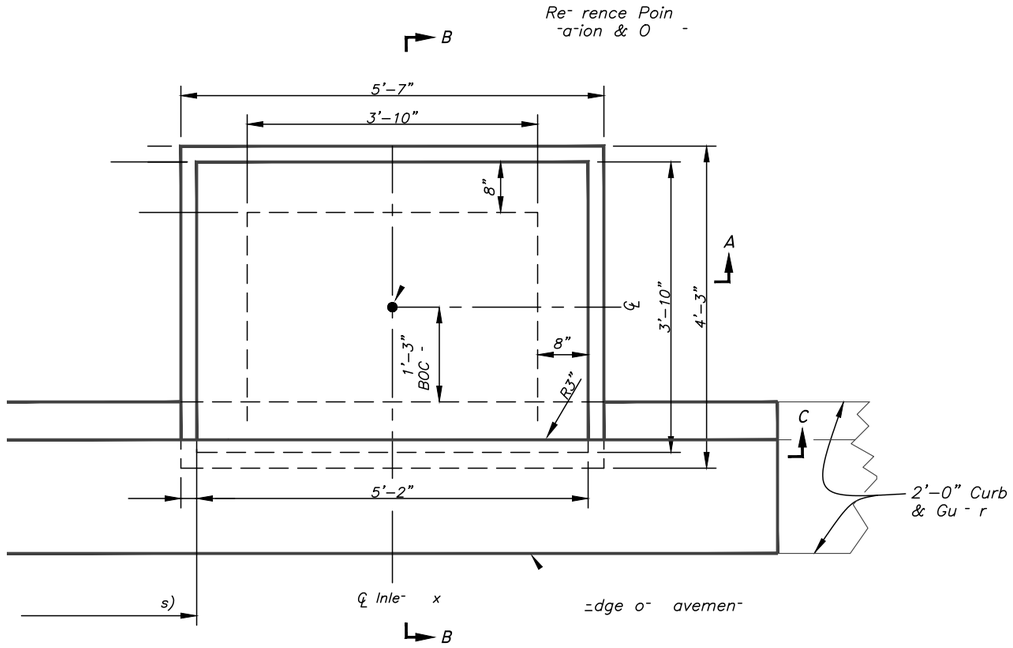
and Stormwater Services
Stormwater Engineering Division

INDEX & GENERAL NOTES

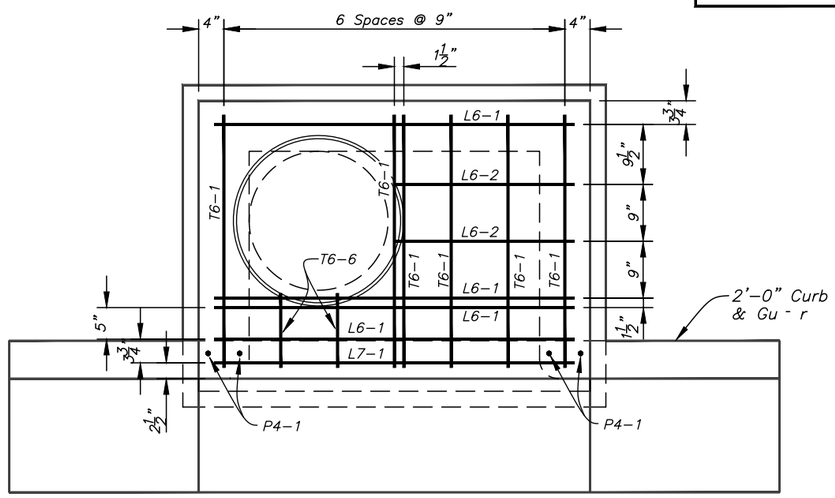
HEET 2
0- 40



PLAN

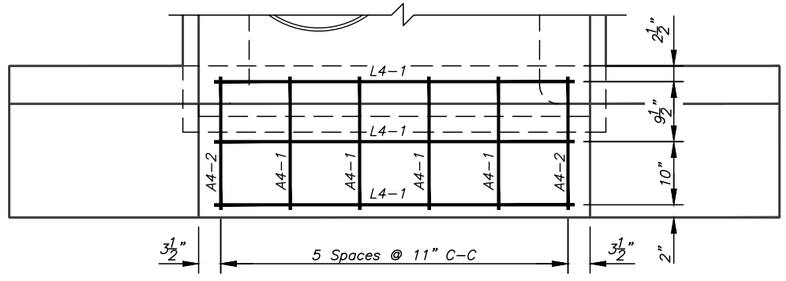
Scale: 1/2" = 1'–0"

SCH=DUL= O- \=IN- \CING ST==L B-\S (- \ INL=T TOP - \ON ONLY)					
M-\K	SIZ=	COUNT	L=NGTH	WT =- H	TOT- T
T6–1	No 6	6	3' 5"	5.132	30.794
T6–6	No 6	2	1' 1"	1.627	3.253
L4–1	No 4	3	4' 11"	3.285	9.854
L6–1	No 6	4	4' 11"	7.385	29.541
L6–2	No 6	2	2' 5 1/2"	3.692	7.384
L7–1	No 7	1	4' 11"	10.050	10.050
- –1	No 4	4	1' 9"	1.169	4.676
- –2	No 4	2	2' 9 1/4"	1.851	3.702
P4–1	No 4	4	1' 1 1/2"	0.752	3.006
TOT =IGHT IN POUNDS					102.261



PLAN - TOP SLAB REINFORCEMENT

Scale: 1/2" = 1'–0"



PLAN - APRON REINFORCEMENT

Scale: 1/2" = 1'–0"

	No.	DATE	REVISIONS
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DES: STORM
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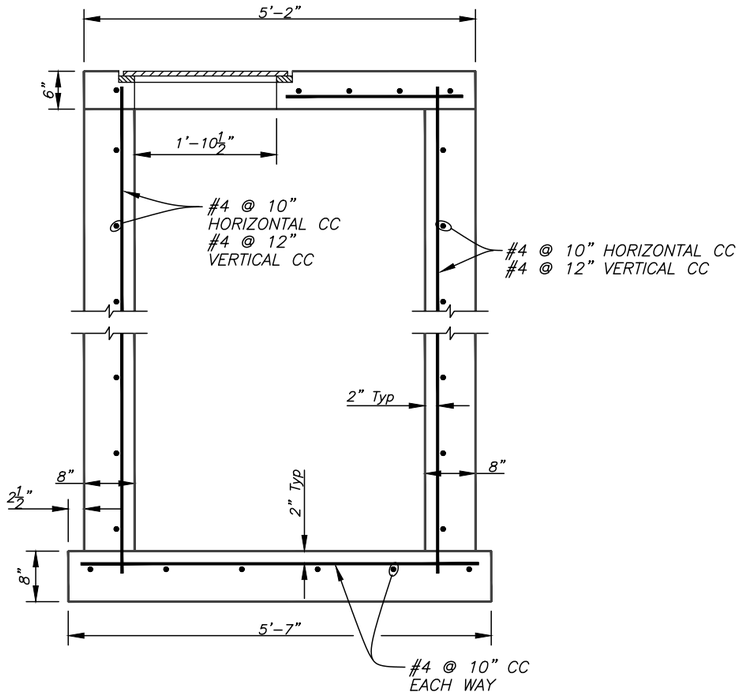
DATE: 7/03

CITY of TAMPA
Department of Transportation and Stormwater Services
Stormwater Engineering Division

STANDARD INLET DETAILS TYPE I INLET

SHEET 3 OF 40



SECTION A-A

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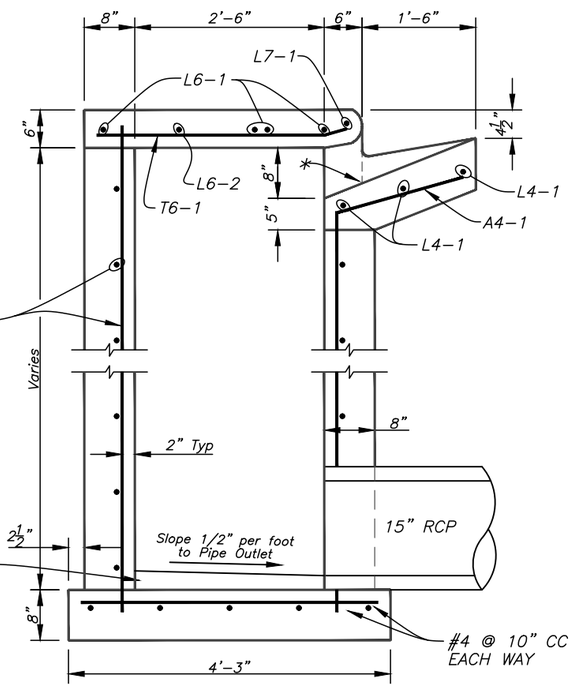
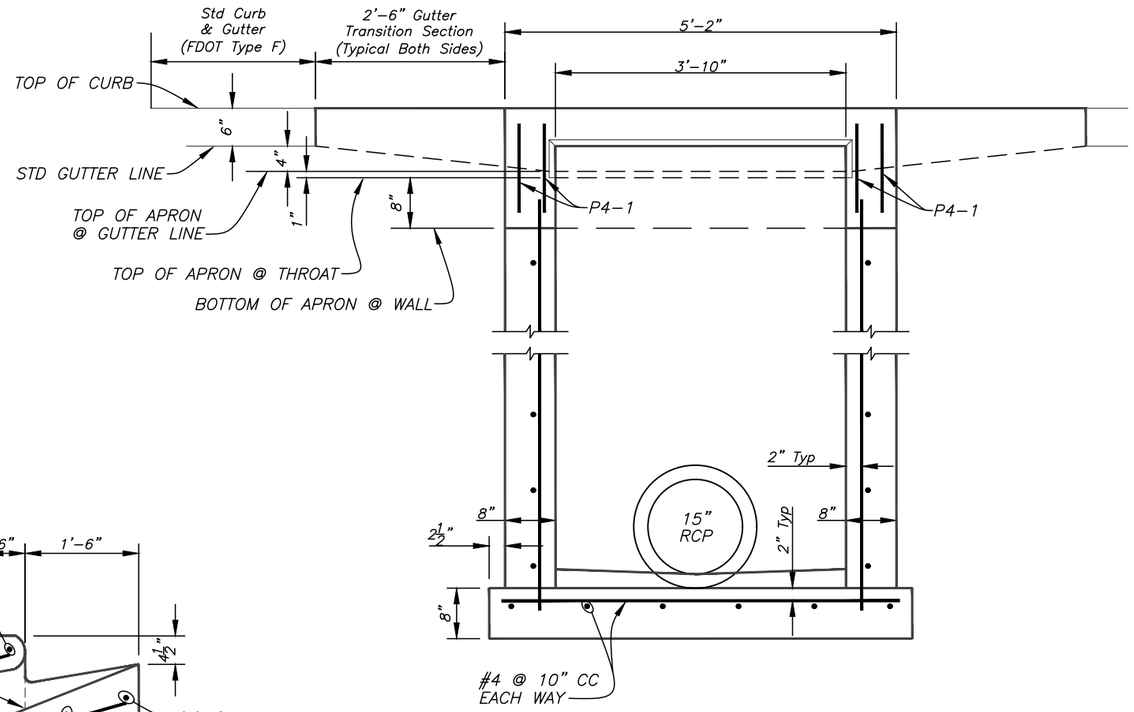


SECTION B-B

Scale: 1/2" = 1'–0"



SECTION C-C

Scale: 1/2" = 1'–0"

*LOCATION OF THROAT ELEVATION

No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1			4		

DES: STORM
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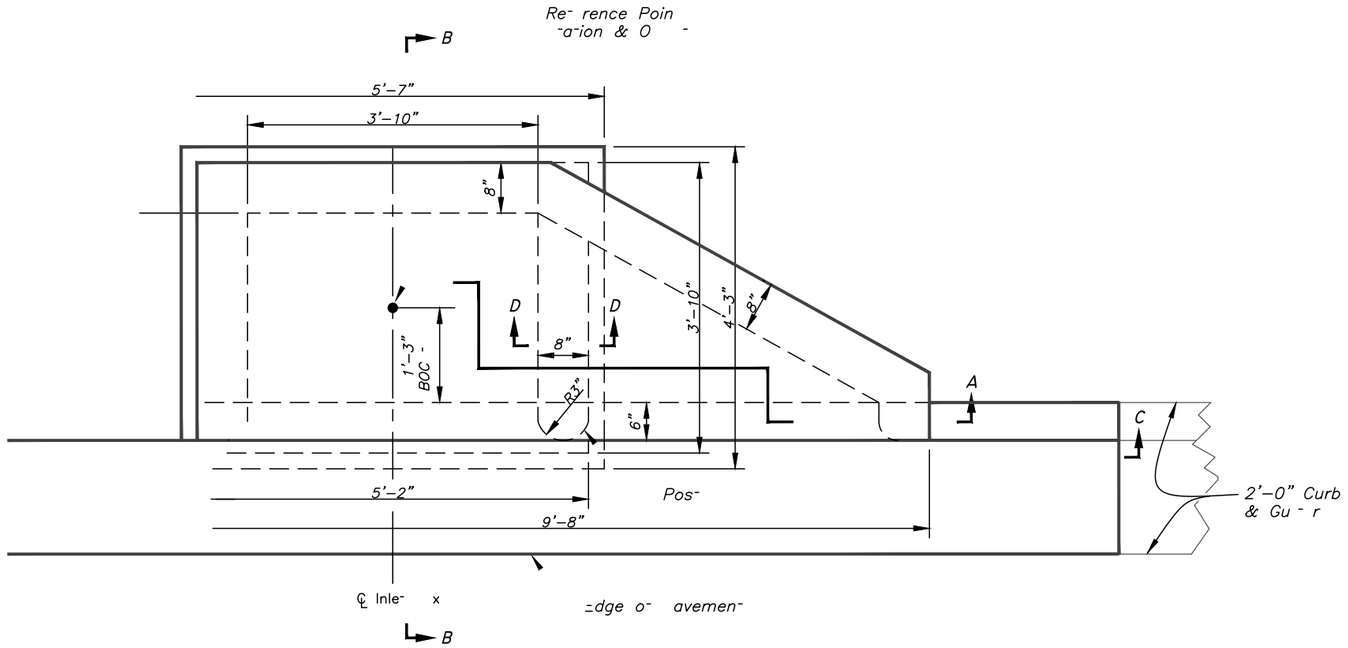
DATE: 7/03

CITY of TAMPA
Department of Transportation and Stormwater Services
Stormwater Engineering Division

STANDARD INLET DETAILS TYPE I INLET

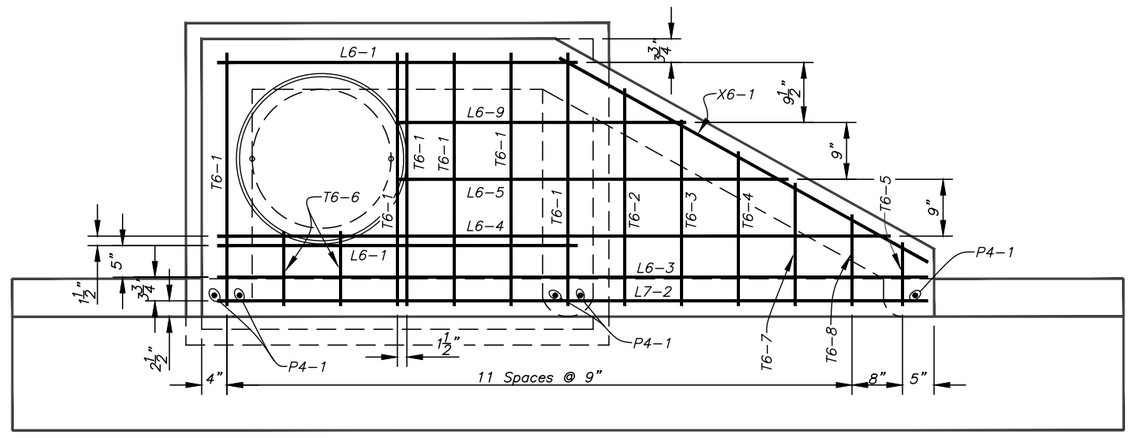
SHEET 4 OF 40

SW



PLAN

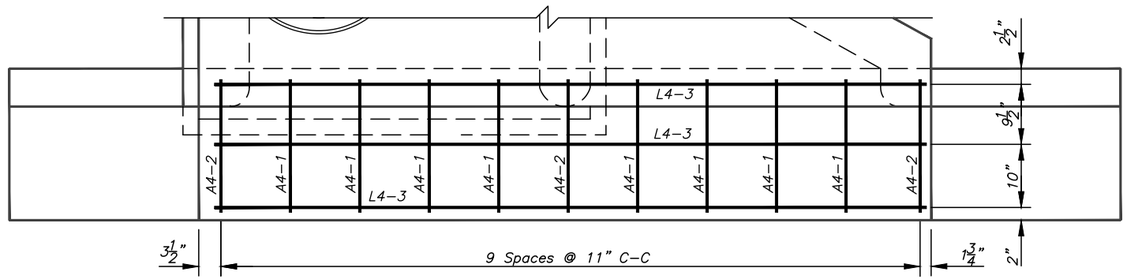
Scale: 1/2" = 1'-0"



PLAN - TOP SLAB REINFORCEMENT

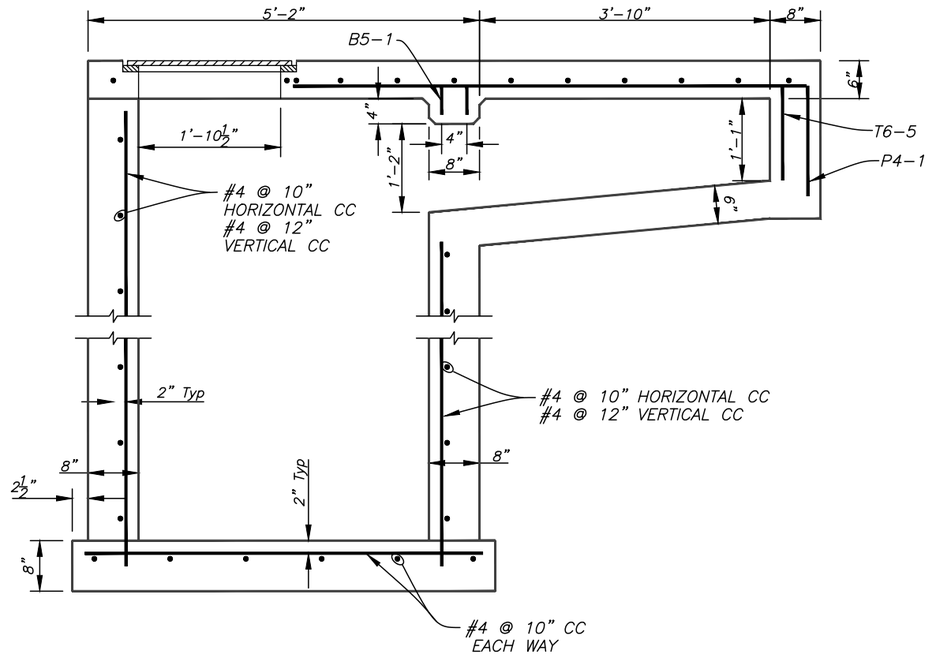
Scale: 1/2" = 1'-0"

	No.	DATE	REVISIONS				
	6			DES: STORM DRN: STORM CKD: DATE: 7/03	CITY of TAMPA Department of Transportation and Stormwater Services Stormwater Engineering Division	STANDARD INLET DETAILS TYPE 2 INLET	SHEET 5 OF 40
	5						
	4						



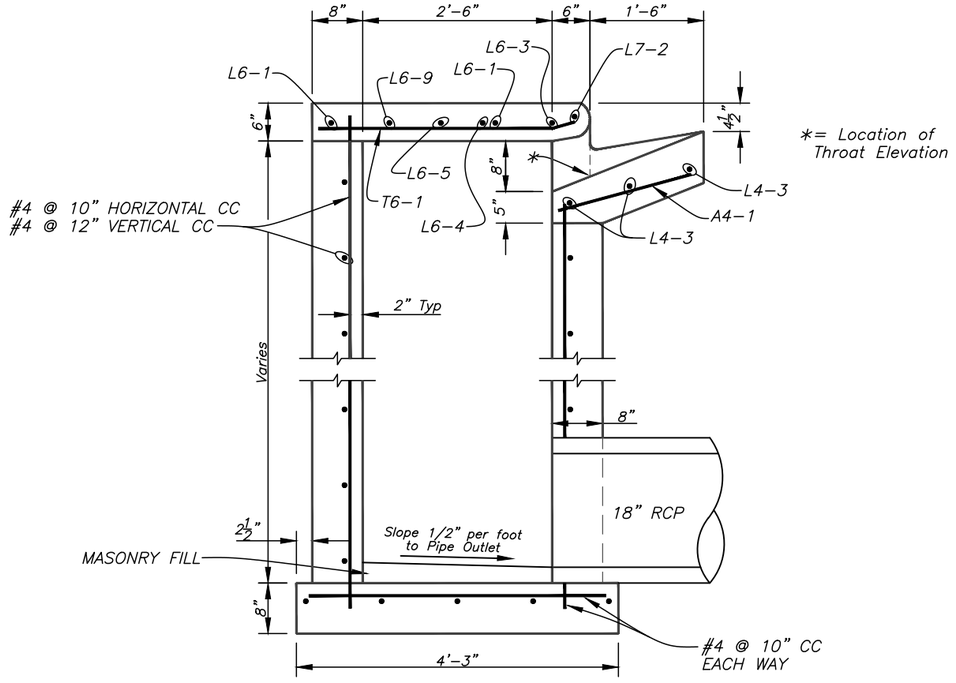
PLAN - APRON REINFORCEMENT

Scale: 1/2" = 1'-0"



SECTION A-A

Scale: 1/2" = 1'-0"



*= Location of Throat Elevation

SECTION B-B

Scale: 1/2" = 1'-0"

No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1			4		

DES: STORM
DRN: STORM
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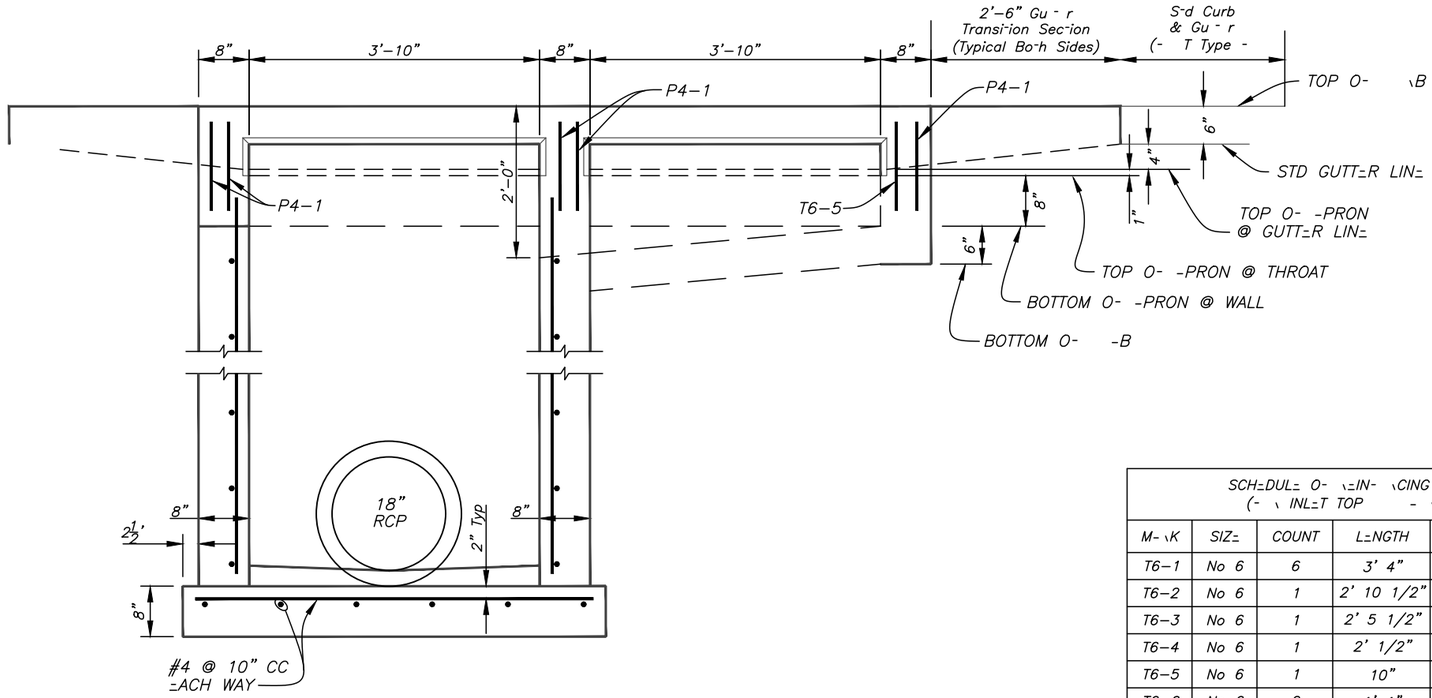
CITY of TAMPA
Department of Transportation and Stormwater Services
Stormwater Engineering Division

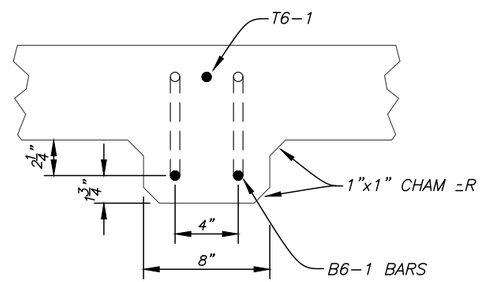
STANDARD INLET DETAILS TYPE 2 INLET

SHEET 6 OF 40



SECTION C-C

Scale: 1/2" = 1'-0"



SECTION D-D

No To Scale

SCHEDULE OF REINFORCING STEEL BARS
(FOR INLET TOP ONLY)

MARK	SIZE	COUNT	LENGTH	WT PER	TOTAL
T6-1	No 6	6	3' 4"	5.007	30.040
T6-2	No 6	1	2' 10 1/2"	4.318	4.318
T6-3	No 6	1	2' 5 1/2"	3.692	3.692
T6-4	No 6	1	2' 1/2"	3.067	3.067
T6-5	No 6	1	10"	1.252	1.252
T6-6	No 6	2	1' 1"	1.627	3.254
T6-7	No 6	1	1' 7 1/2"	2.441	2.441
T6-8	No 6	1	1' 2 1/2"	1.815	1.815
L6-1	No 6	2	4' 9"	7.135	14.269
L6-3	No 6	1	9' 4"	14.019	14.019
L6-4	No 6	1	8' 10 1/2"	13.330	13.330
L6-5	No 6	1	5' 1 3/4"	7.729	7.729
L6-9	No 6	1	3' 9 3/4"	5.726	5.726
L7-2	No 7	1	9' 4"	19.077	19.077
L4-3	No 4	3	9' 4"	6.235	18.704
- -1	No 4	8	1' 9"	1.169	9.352
- -2	No 4	3	2' 9 1/4"	1.851	5.553
P4-1	No 4	5	1' 1 1/2"	0.752	3.758
B6-1	No 6	2	3' 8 1/2"	5.570	11.140
X6-1	No 6	1	5' 8 1/2"	8.574	8.574
TOTAL WEIGHT IN POUNDS					181.109

	No.	DATE	REVISIONS
	6		
	5		
	4		

DES: STORM
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CITY of TAMPA
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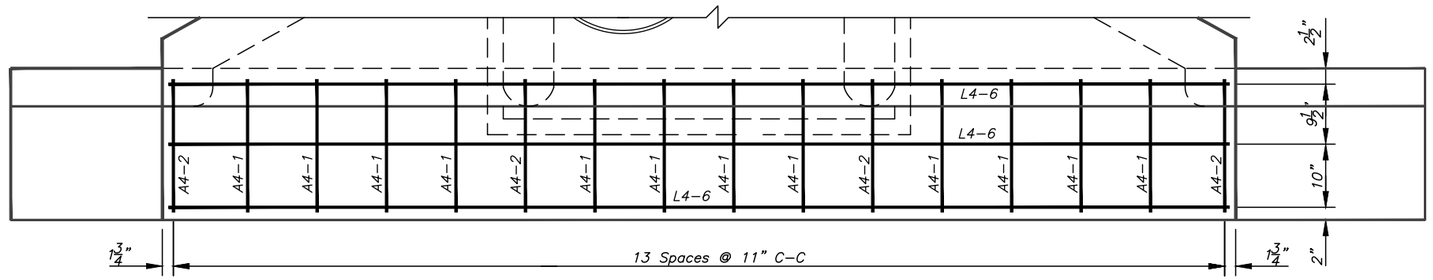
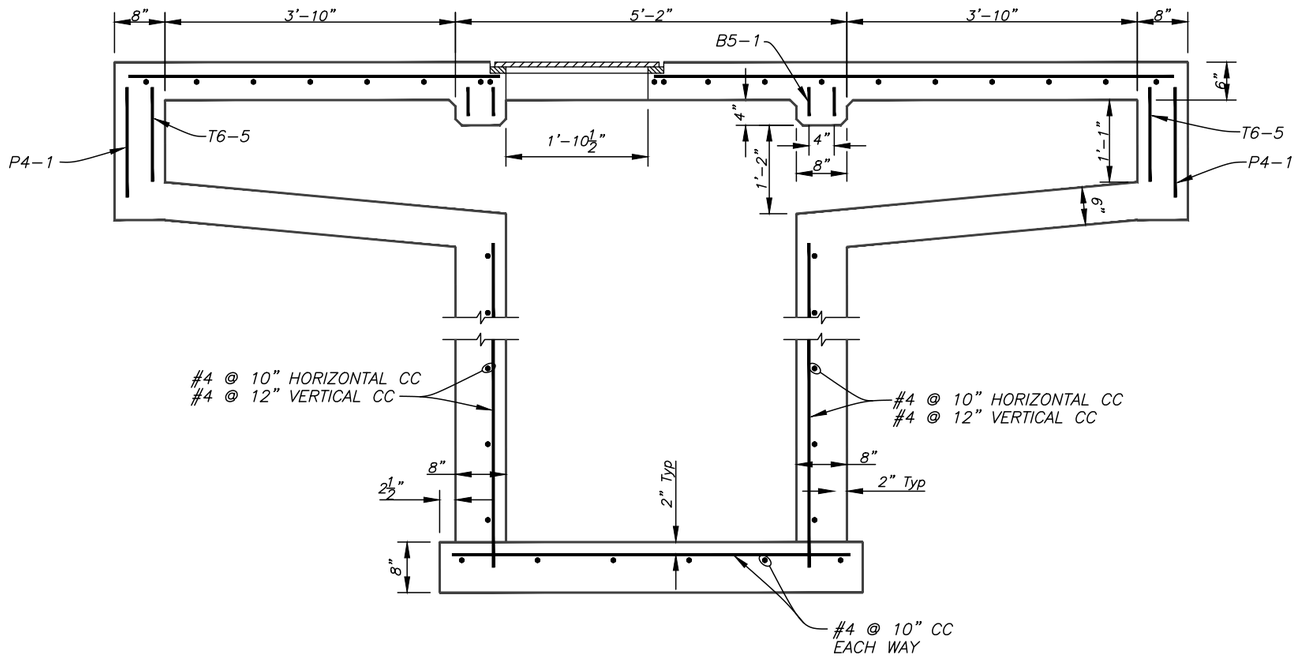
Stormwater Engineering Division

STANDARD INLET DETAILS TYPE 2 INLET



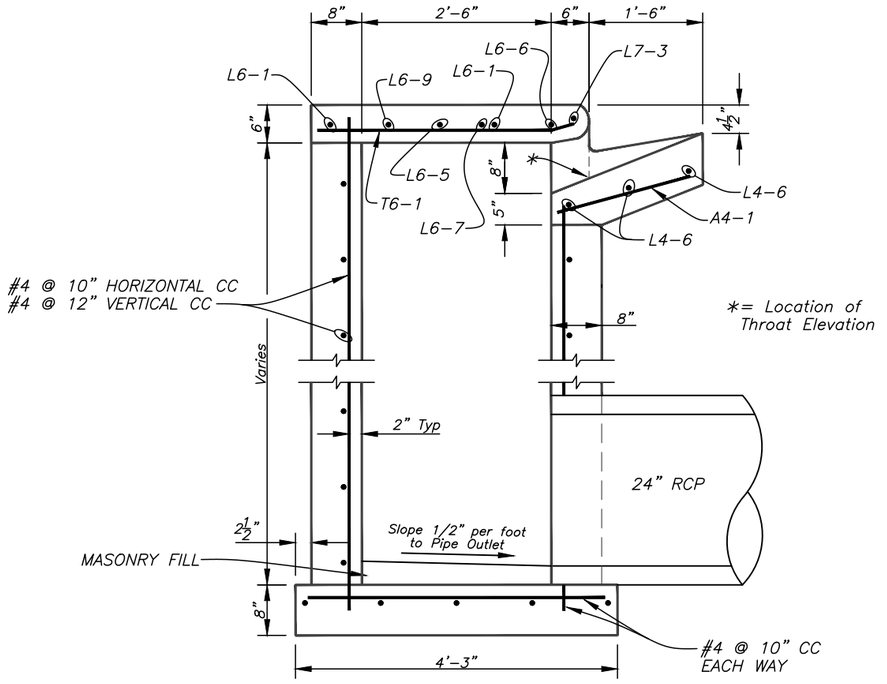
PLAN - APRON REINFORCEMENT

Scale: 1/2" = 1'-0"



SECTION A-A

Scale: 1/2" = 1'-0"



SECTION B-B

Scale: 1/2" = 1'-0"

No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1			4		

DES: STORM
DRN: STORM
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DATE: 7/03

CITY of TAMPA
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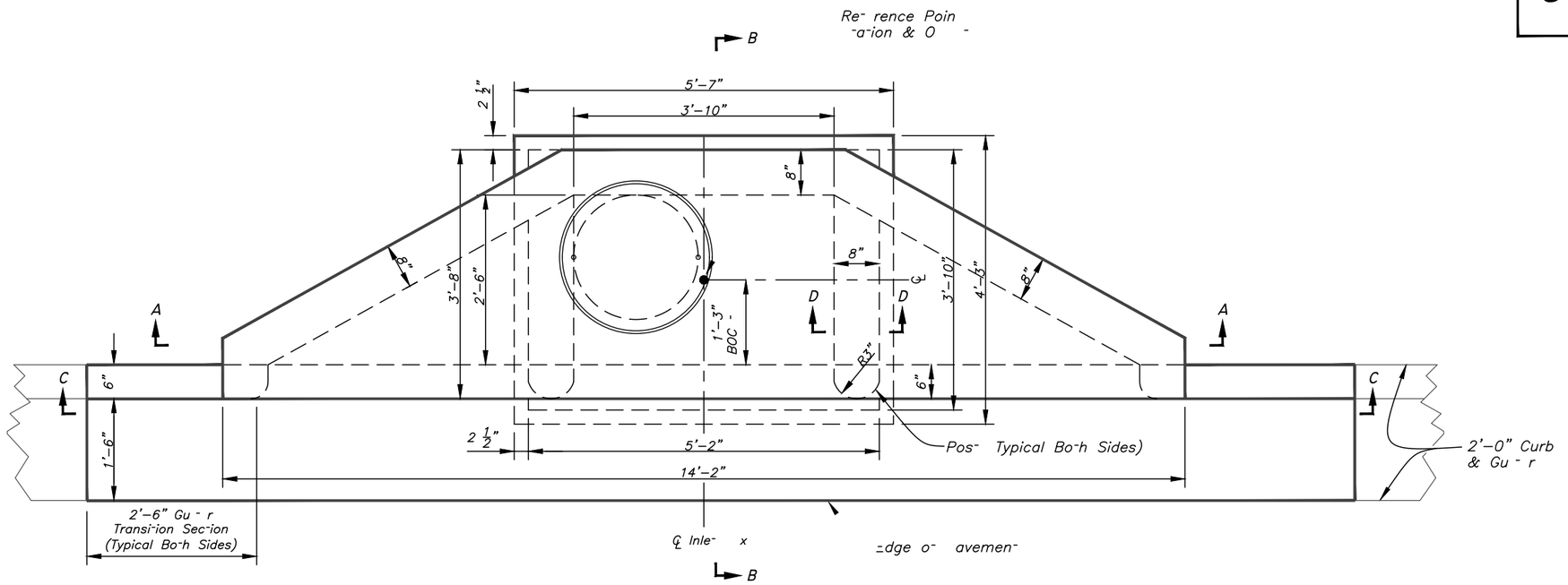
and Stormwater Services
Stormwater Engineering Division

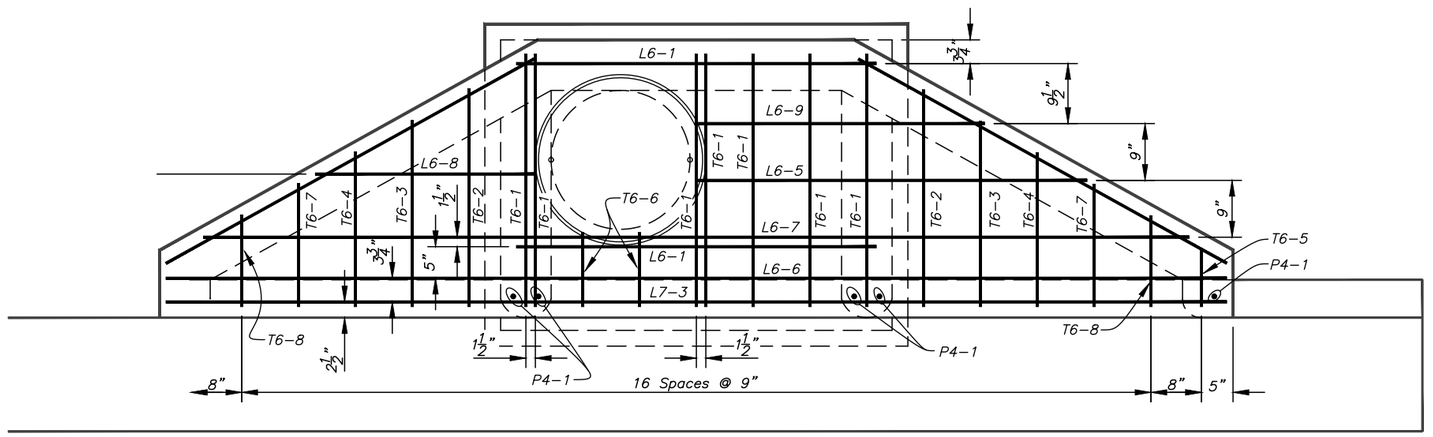
STANDARD INLET DETAILS
TYPE 3 INLET

SHEET 8 OF 40



PLAN

Scale: 1/2" = 1'–0"



PLAN - TOP SLAB REINFORCEMENT

Scale: 1/2" = 1'–0"

	No.	DATE	REVISIONS
	6		
	5		
	4		

DES: STORM
DRN: STORM
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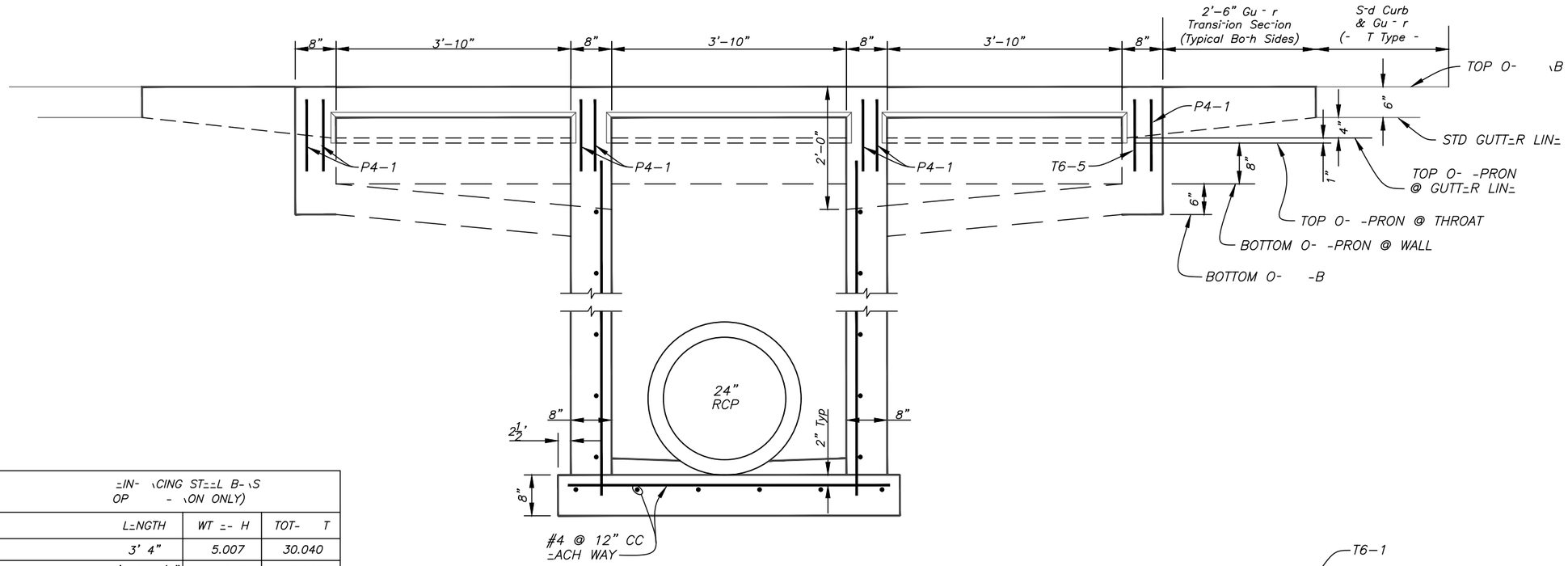
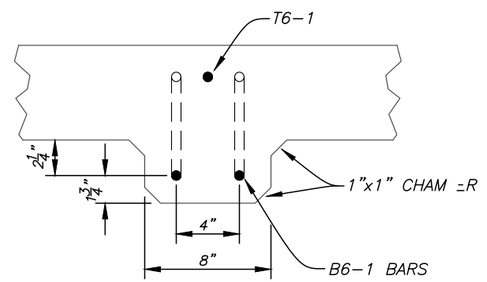
STANDARD INLET DETAILS
TYPE 3 INLET

SHEET 9 OF 40



SECTION C-C

Scale: 1/2" = 1'–0"



SECTION D-D

No- To Scale

=IN- \CING ST==L B-\S
OP - \ON ONLY)

L=NGTH	WT =- H	TOT- T
3' 4"	5.007	30.040
2' 10 1/2"	4.318	8.637
2' 5 1/2"	3.692	7.385
2' 1/2"	3.067	6.133
10"	1.252	2.503
1' 1"	1.627	3.254
1' 7 1/2"	2.441	4.882
1' 2 1/2"	1.815	3.630
4' 9"	7.135	14.269
5' 1 3/4"	7.729	7.729
13' 11"	20.903	20.903
13' 1/4"	19.557	19.557
2' 11"	4.381	4.381
3' 9 3/4"	5.726	5.726
13' 11"	28.446	28.446
13' 11"	9.296	9.296
1' 9"	1.169	14.028
2' 9 1/4"	1.851	7.404
1' 1 1/2"	0.752	4.509
3' 8 1/2"	5.570	22.279
5' 8 1/2"	8.574	17.148
		242.138

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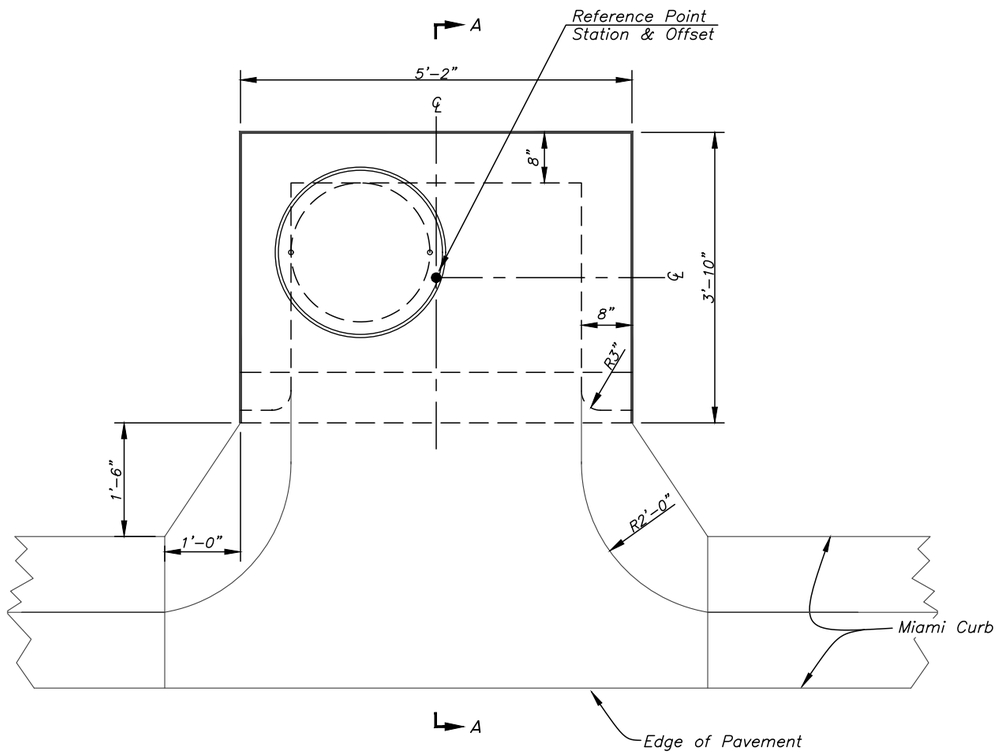
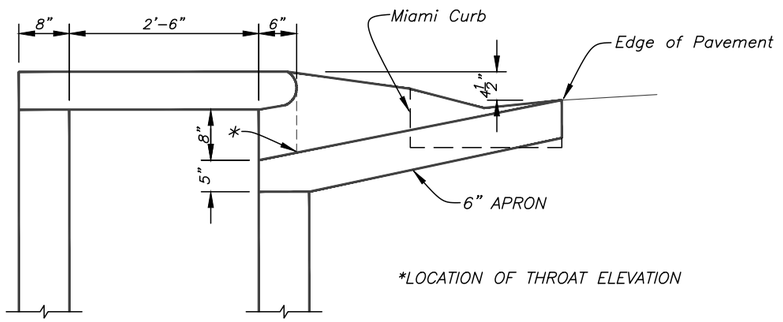
STANDARD INLET DETAILS
TYPE 3 INLET

SHEET 10 OF 40



PLAN

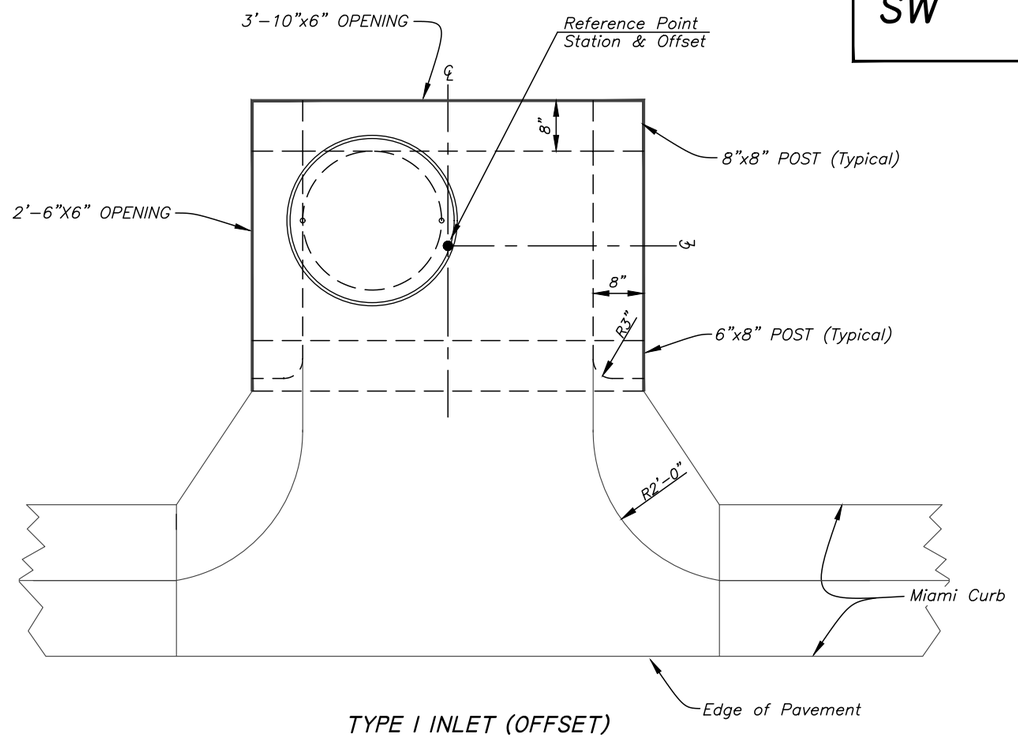


*LOCATION OF THROAT ELEVATION

SECTION A-A

TYPE I INLET (OFFSET)

Scale: 1/2" = 1'–0"



TYPE I INLET (OFFSET) WITH SIDE AND/OR BACK OPENINGS

Scale: 1/2" = 1'–0"

TYPE 1 INLET (OFFSET)

In cases where a curb inlet is used but no barrier curb is present, the Type 1 inlet shall be offset as shown herein. Preferably, Miami curb shall be used to convey runoff along the edge of pavement to the inlet.

In cases where no Miami curb is used, the offset shall remain as shown herein and the concrete apron shall be extended on a 1.5–to–1 horizontal angle to meet the edge of pavement. The concrete apron shall be reinforced with Number 4 steel bars at 11" on center. (Disregard the A4–designated bar counts and lengths in the Schedule of Reinforcing.)

Payment for the concrete apron, curb transitions and all other work incidental to offsetting the inlet shall be made under the Type 1 Inlet contract pay item and no separate nor additional payment shall be made for this modification to the standard.

TYPE 1 INLET WITH TYPE D CURB

In cases where a curb inlet is used with Type D Curb, the Type 1 Inlet may be offset as shown in "Type 1 Inlet (Offset)" or may be constructed in the same alignment as the standard detail; i.e. with the face of the inlet top aligned with the face of curb.

If the standard alignment is used, the concrete inlet throat shall be constructed as shown in the standard. A 2'6" long concrete transition section shall be constructed on each side of the concrete inlet throat. This section shall transition from the Type D Curb (no gutter) to the 1'6" wide concrete inlet throat.

Payment for the concrete apron or concrete inlet throat, curb transitions and all other work incidental to offsetting the inlet or adapting the inlet to a Type D Curb shall be made under the Type 1 Inlet contract pay item and no separate nor additional payment shall be made for this modification to the standard.

TYPE 1 INLET WITH SIDE AND/OR BACK OPENINGS

If side and/or back openings are called for in the project plans, dimensions of the openings shall be as shown in the detail included herein. Additional P4–1 reinforcing bars shall be used at the rate of four (4) per post section, as applicable. Six (6) inch thick concrete apron(s) as shown in the project plans shall be constructed at each side and back opening.

Payment for concrete aprons and all other work incidental to constructing inlets with side and/or back openings shall be made under the Inlet contract pay item and no separate nor additional payment shall be made for this modification to the standard.

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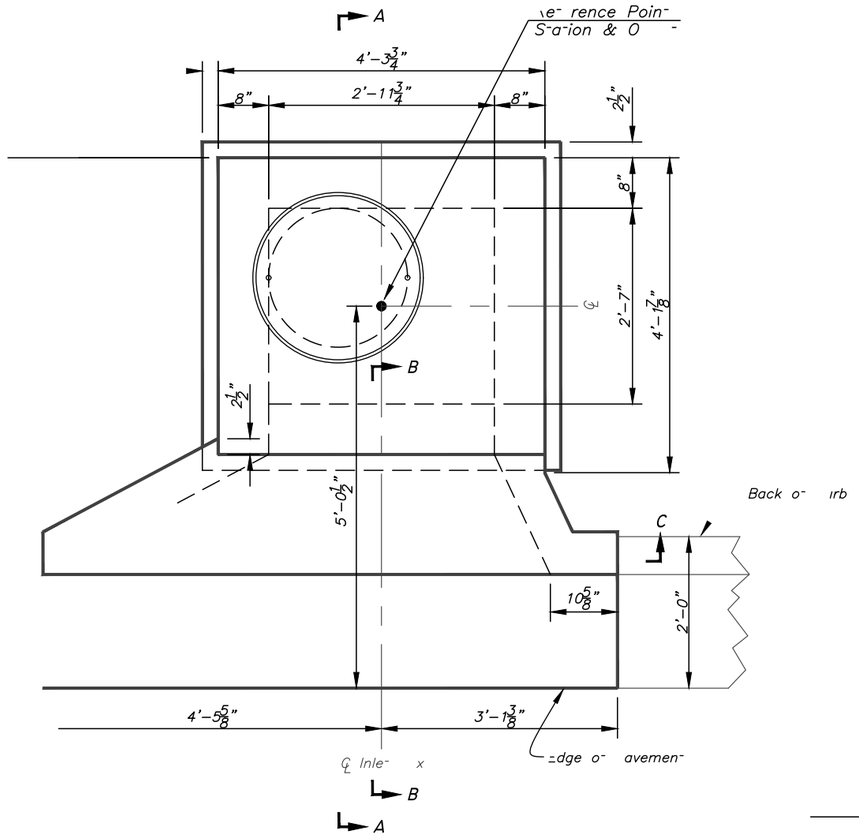
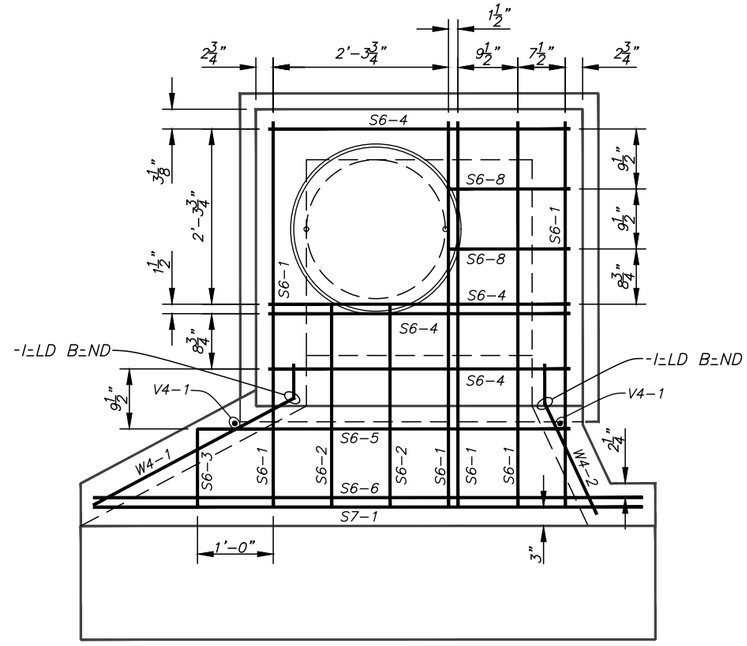
STANDARD INLET DETAILS TYPE I INLET MODIFIED

SHEET 11 OF 40



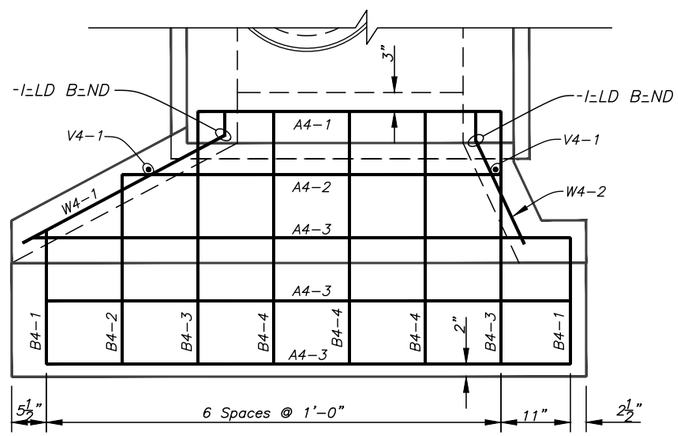
PLAN

Scale: 1/2" = 1'-0"



PLAN - TOP SLAB REINFORCEMENT

Scale: 1/2" = 1'-0"



PLAN - APRON REINFORCEMENT

Scale: 1/2" = 1'-0"

	No.	DATE	REVISIONS
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	4		

DES: STORM
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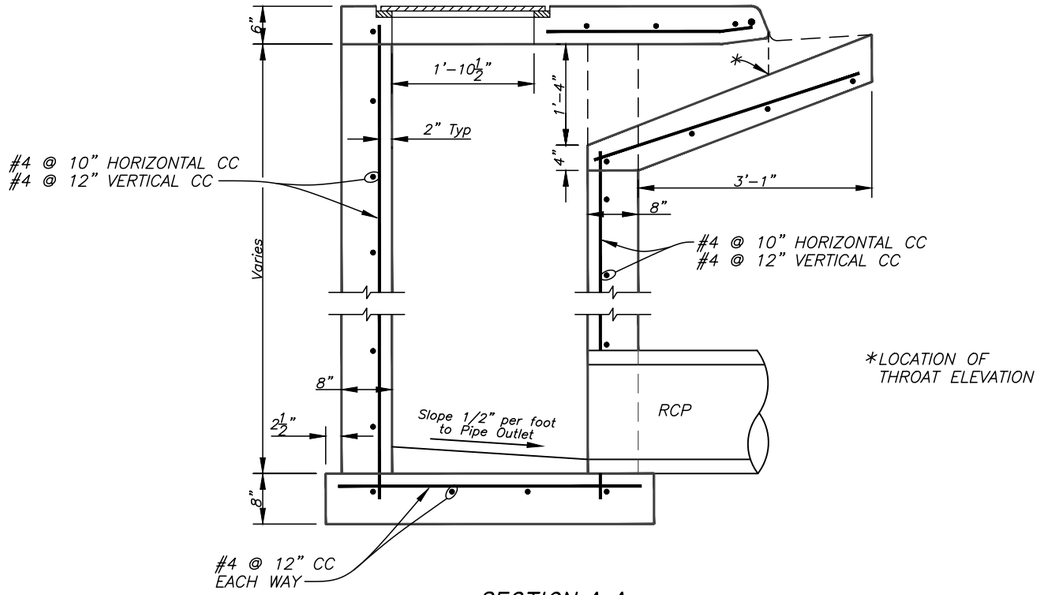
CITY of TAMPA
Department of Transportation and Stormwater Services
Stormwater Engineering Division

STANDARD INLET DETAILS
TYPE BS-I CURB INLET

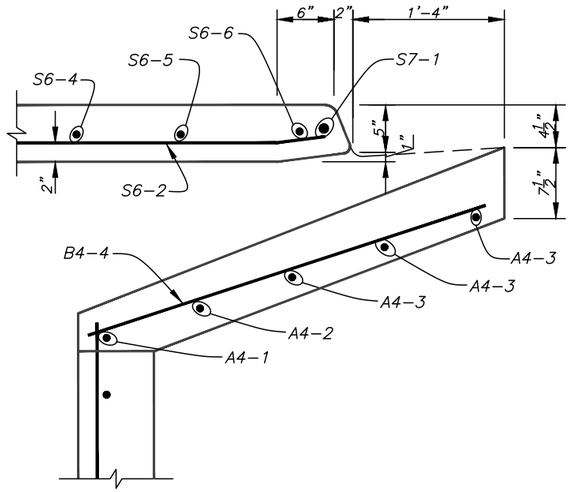
SHEET 12 OF 40

SW



SECTION A-A

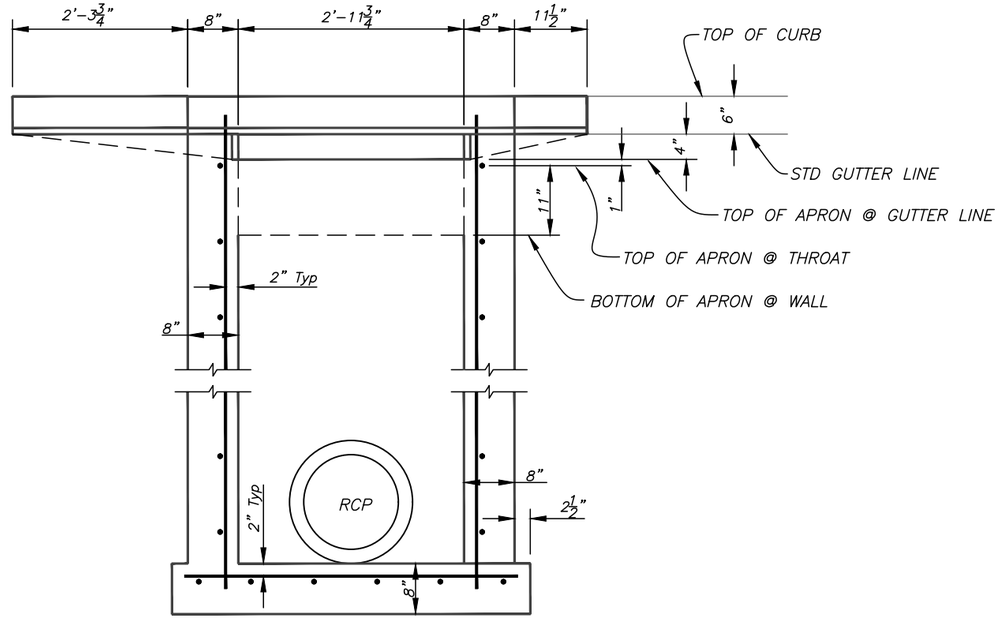
Scale: 1/2" = 1'-0"



SECTION B-B

Scale: 3/4" = 1'-0"

SCHEDULE OF REINFORCING STEEL BARS (FOR INLET TOP AND APRON ONLY)					
MARK	SIZE	COUNT	LENGTH	WT EACH	TOTAL WT
A4-1	No 4	1	3' 11 3/4"	2.658	2.658
A4-2	No 4	1	4' 11"	3.285	3.285
A4-3	No 4	3	7' 4"	4.898	4.898
B4-1	No 4	2	2' 9"	1.837	3.674
B4-2	No 4	2	3' 7 3/4"	2.436	4.871
B4-3	No 4	2	5' 0 3/4"	3.382	6.764
B4-4	No 4	3	3' 6 3/4"	2.380	7.140
S6-1	No 6	5	5' 3"	7.886	39.428
S6-2	No 6	2	2' 11"	4.381	8.763
S6-3	No 6	1	1' 2 1/2"	1.814	1.814
S6-4	No 6	4	3' 11 3/4"	5.976	23.906
S6-5	No 6	1	4' 10 1/2"	7.322	7.322
S6-6	No 6	1	6' 8"	10.014	10.014
S6-8	No 6	2	1' 7 1/2"	29.289	58.578
S7-1	No 7	1	7' 4"	14.989	14.989
V4-1	No 4	2	1' 8 1/2"	1.141	2.282
W4-1	No 4	2	3' 6"	2.338	4.676
W4-2	No 4	2	2' 1"	1.391	2.783
TOTAL WEIGHT IN POUNDS					217.641



SECTION C-C

Scale: 1/2" = 1'-0"

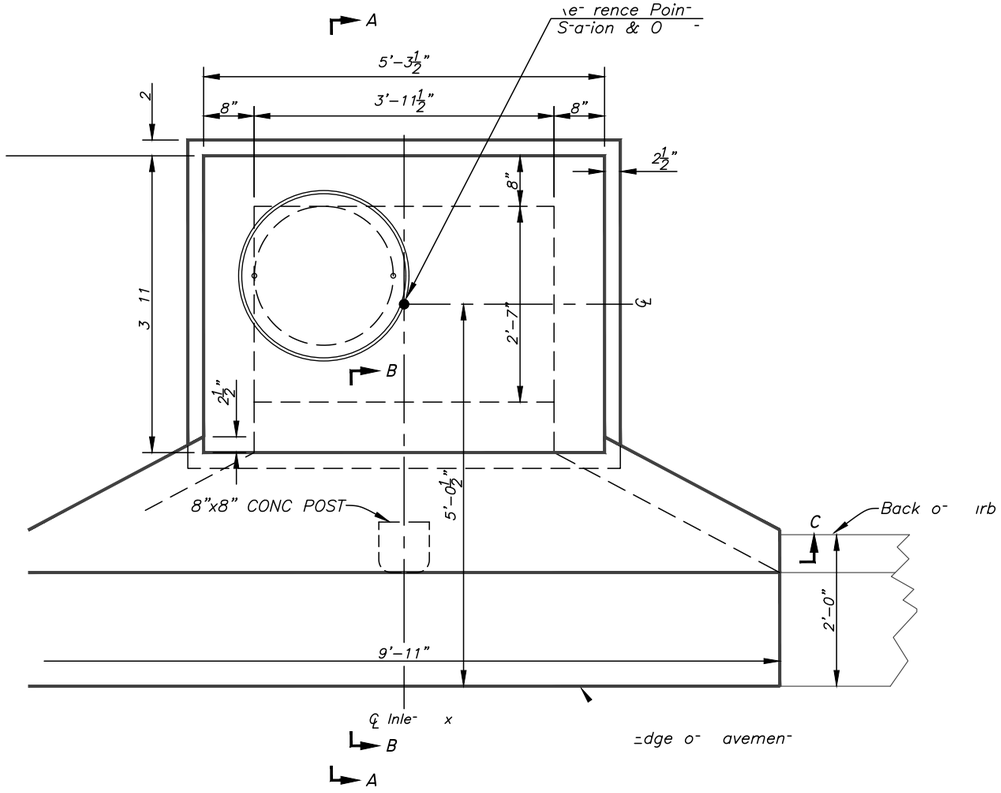
No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1			4		

DES: STORM
DRN: STORM
CKD:
DATE: 7/03

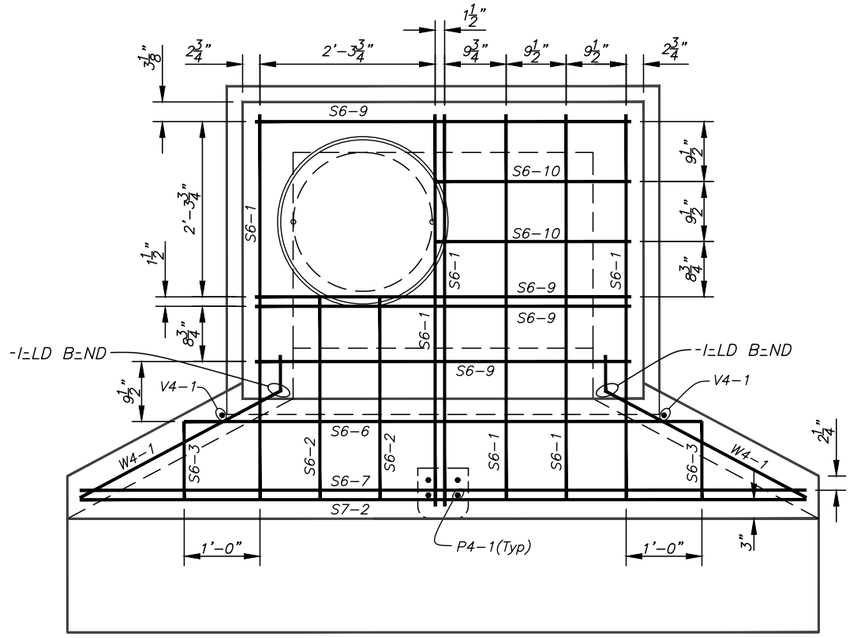
CITY of TAMPA
Department of Transportation and Stormwater Services
Stormwater Engineering Division

STANDARD INLET DETAILS TYPE BS-I CURB INLET

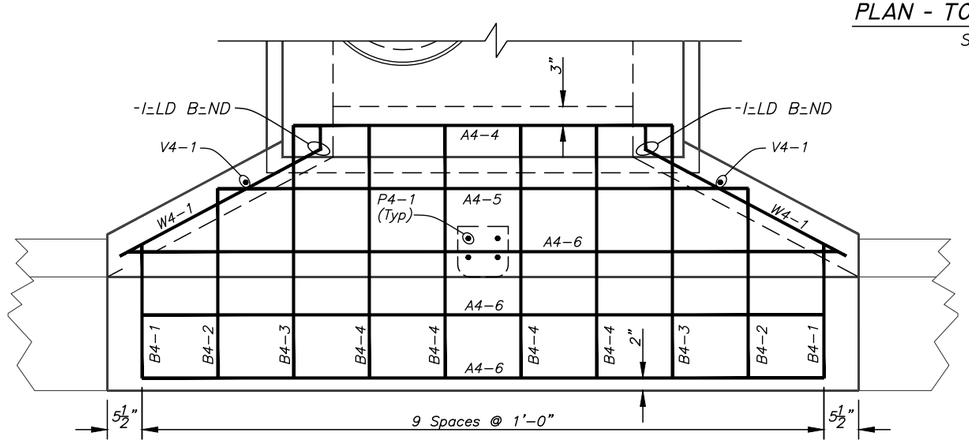
SHEET 13 OF 40



PLAN
Scale: 1/2" = 1'–0"



PLAN - TOP SLAB REINFORCEMENT
Scale: 1/2" = 1'–0"



PLAN - APRON REINFORCEMENT
Scale: 1/2" = 1'–0"

	No.	DATE	REVISIONS
	6		
	5		
	4		

DES: STORM
DRN: STORM
CKD:
DATE: 7/03

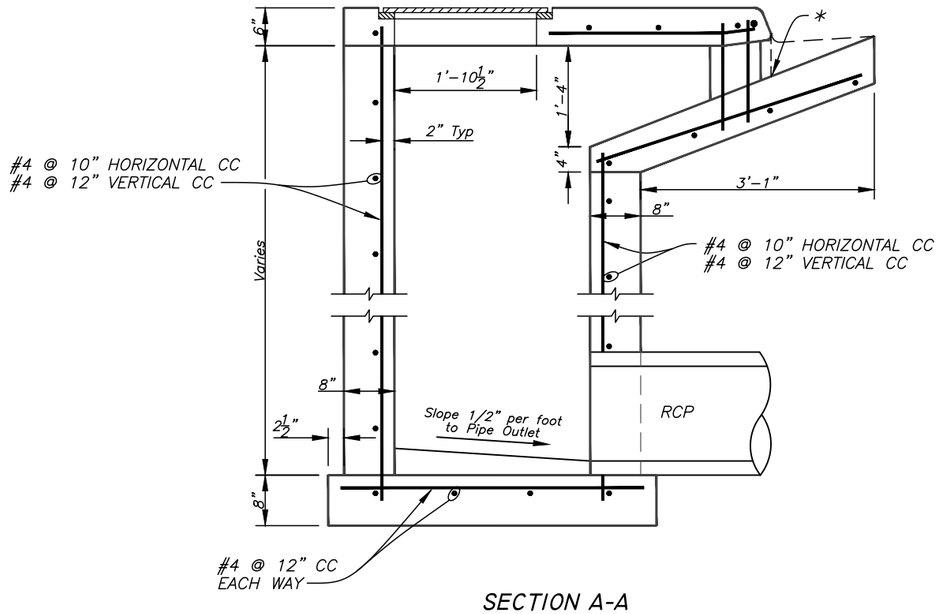
CITY of TAMPA
Department of Transportation and Stormwater Services
Stormwater Engineering Division

STANDARD INLET DETAILS TYPE BV-I CURB INLET

SHEET 14 OF 40

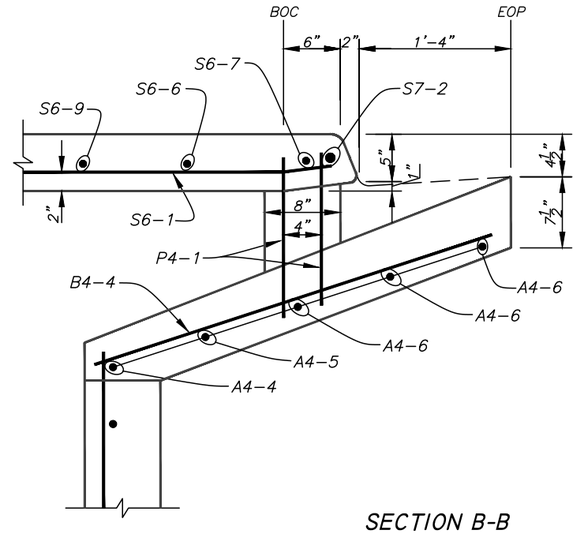
SW

*LOCATION OF THROAT ELEVATION



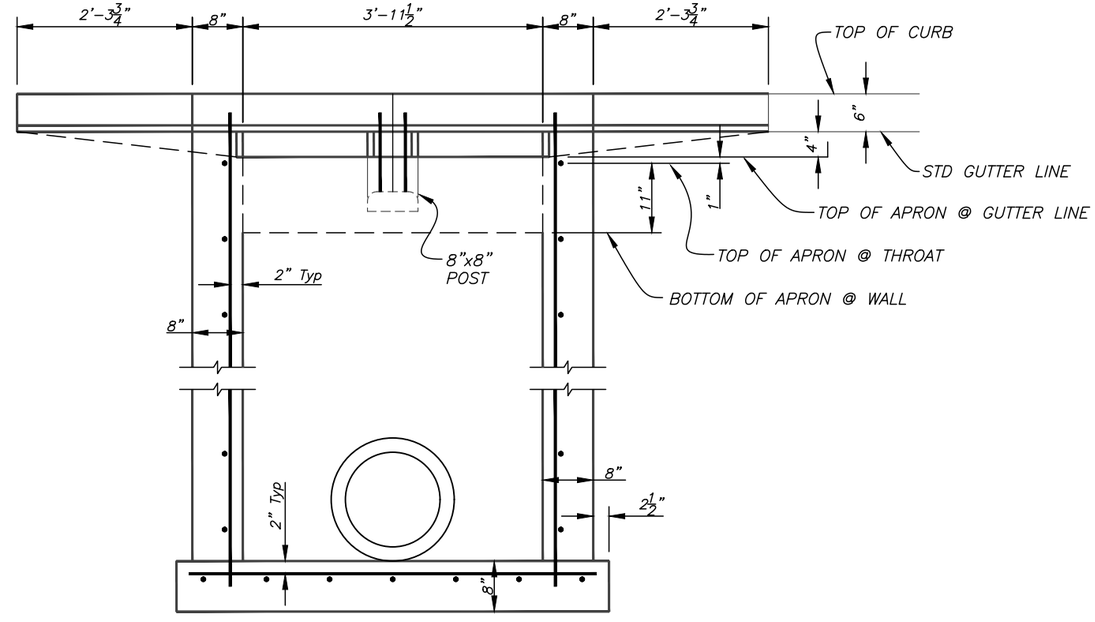
SECTION A-A

Scale: 1/2" = 1'-0"



SECTION B-B

Scale: 3/4" = 1'-0"



SECTION C-C

Scale: 1/2" = 1'-0"

SCHEDULE OF REINFORCING STEEL BARS (FOR INLET TOP AND APRON ONLY)

MARK	SIZE	COUNT	LENGTH	WT EACH	TOTAL WT	MARK	SIZE	COUNT	LENGTH	WT EACH	TOTAL WT
A4-4	No 4	1	4' 11 1/2"	3.312	3.312	S6-2	No 6	5	2' 11"	4.381	8.763
A4-5	No 4	1	6' 7"	4.397	4.397	S6-3	No 6	2	1' 2 1/2"	1.814	3.629
A4-6	No 4	3	9' 7 3/4"	6.444	19.331	S6-6	No 6	1	6' 8"	10.014	10.014
B4-1	No 4	2	2' 9"	1.837	3.674	S6-7	No 6	1	9' 7 3/4"	14.488	14.488
B4-2	No 4	2	3' 7 3/4"	2.436	4.871	S6-9	No 6	4	4' 11 1/2"	7.447	29.788
B4-3	No 4	2	3' 6 3/4"	2.380	9.520	S6-10	No 6	2	2' 6"	3.755	7.510
B4-4	No 4	4	3' 6 3/4"	2.380	9.520	S7-2	No 7	1	9' 7 3/4"	19.716	19.716
P4-1	No 4	4	1' 3"	0.835	3.340	V4-1	No 4	2	1' 8 1/2"	1.141	2.282
S6-1	No 6	6	5' 3"	7.886	47.313	W4-1	No 4	4	3' 6"	2.338	9.352
TOTAL WEIGHT IN POUNDS											208.064

No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1			4		

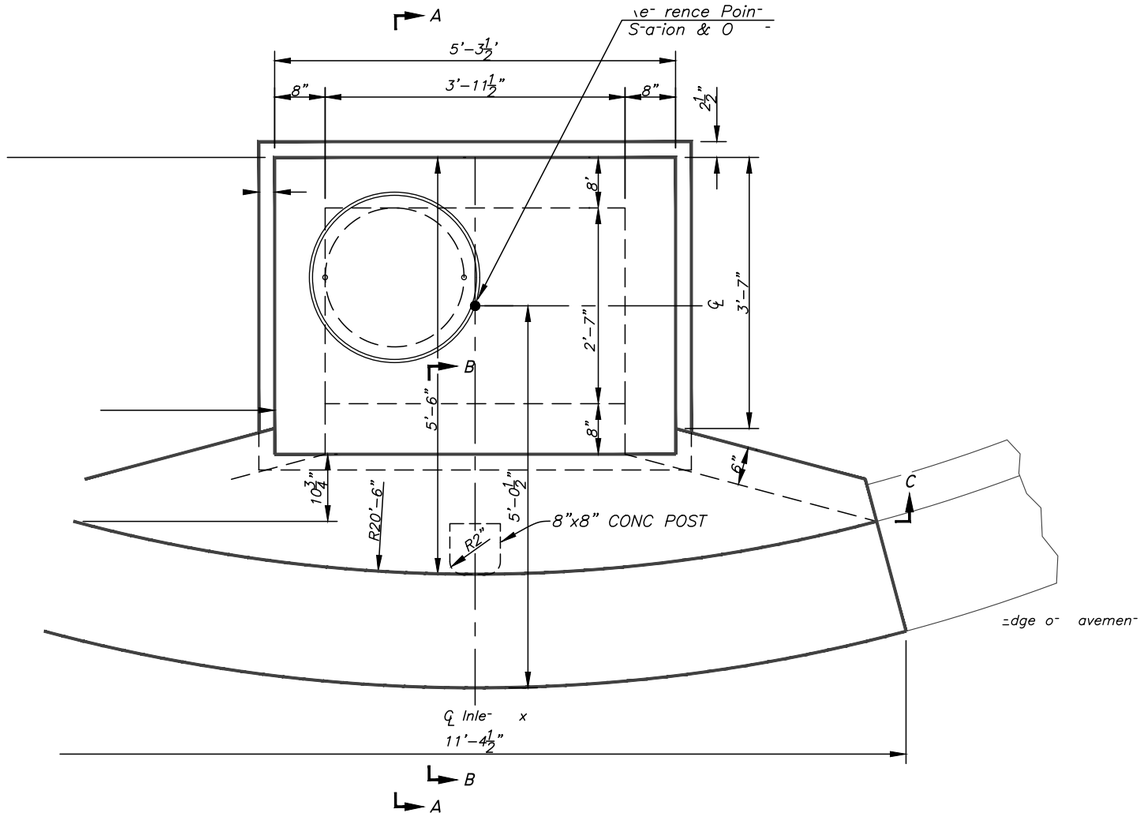
DES: STORM
DRN: STORM
CKD:
DATE: 7/03

CITY of TAMPA
Department of Transportation and Stormwater Services
Stormwater Engineering Division

STANDARD INLET DETAILS TYPE BV-I CURB INLET

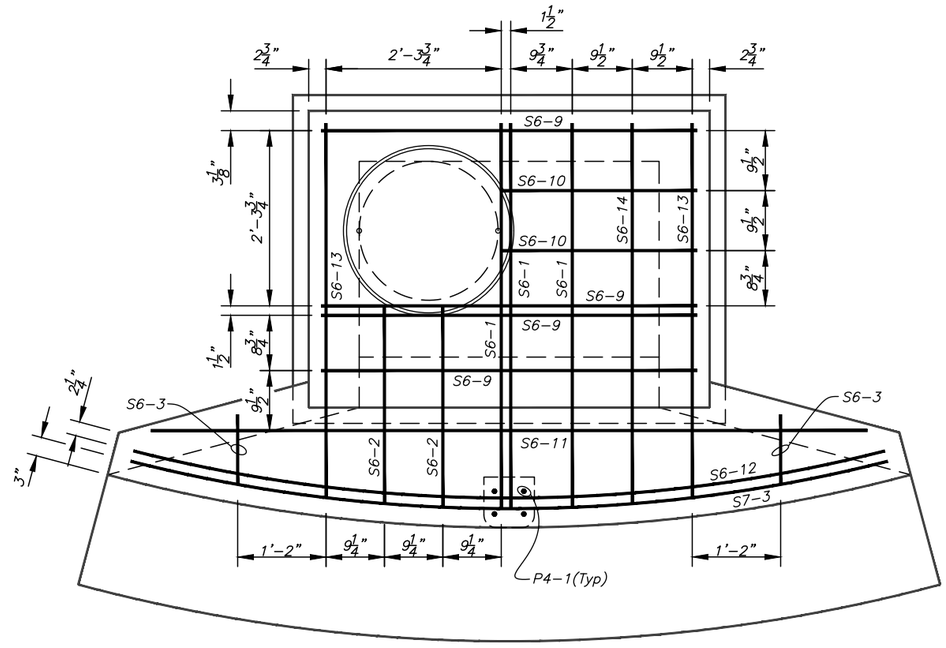
SHEET 15 OF 40

SW



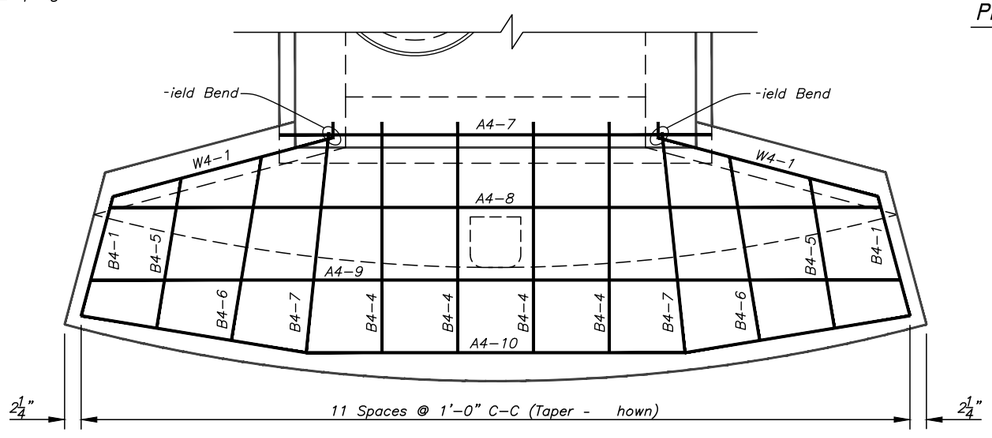
PLAN

Scale: 1/2" = 1'-0"



PLAN - TOP SLAB REINFORCEMENT

Scale: 1/2" = 1'-0"



PLAN - APRON REINFORCEMENT

Scale: 1/2" = 1'-0"

	No.	DATE	REVISIONS
	6		
	5		
	4		

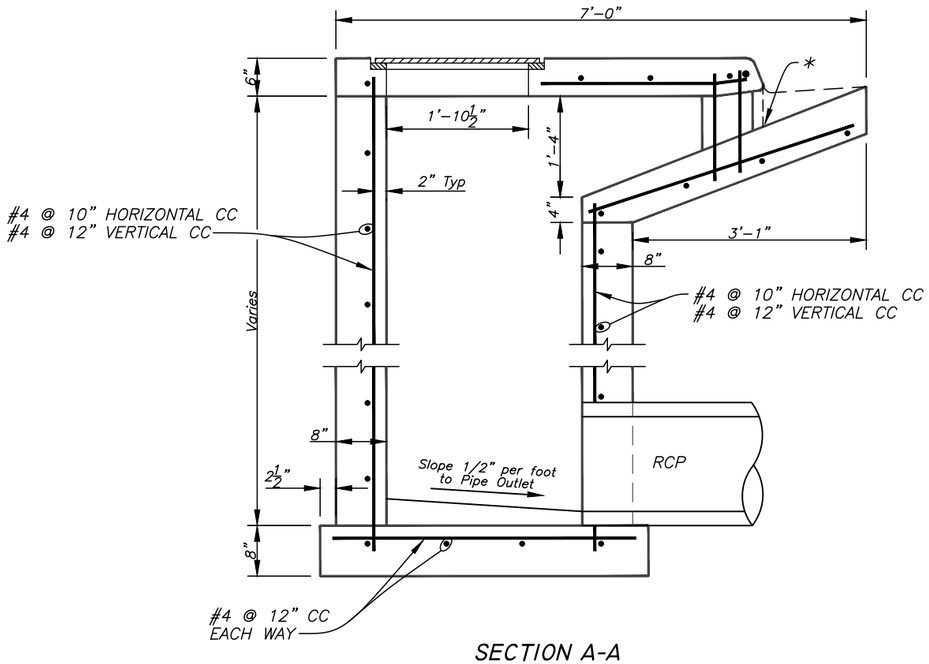
DES: STORM
DRN: STORM
CKD:
DATE: 7/03

CITY of TAMPA
Department of Transportation and Stormwater Services
Stormwater Engineering Division

STANDARD INLET DETAILS TYPE BR-I CURB INLET

SHEET 16 OF 40

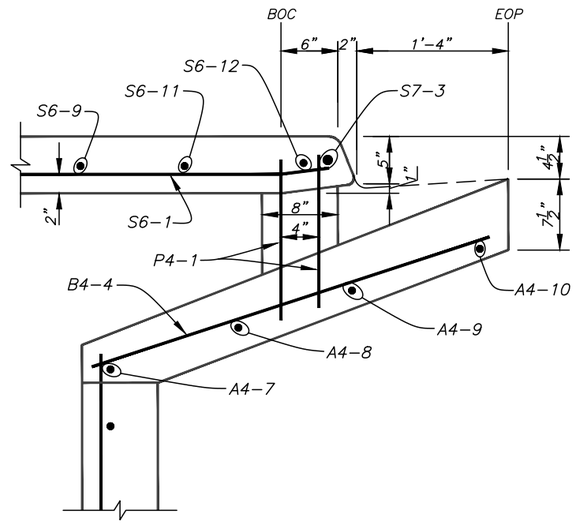
SW



*LOCATION OF THROAT ELEVATION

SECTION A-A

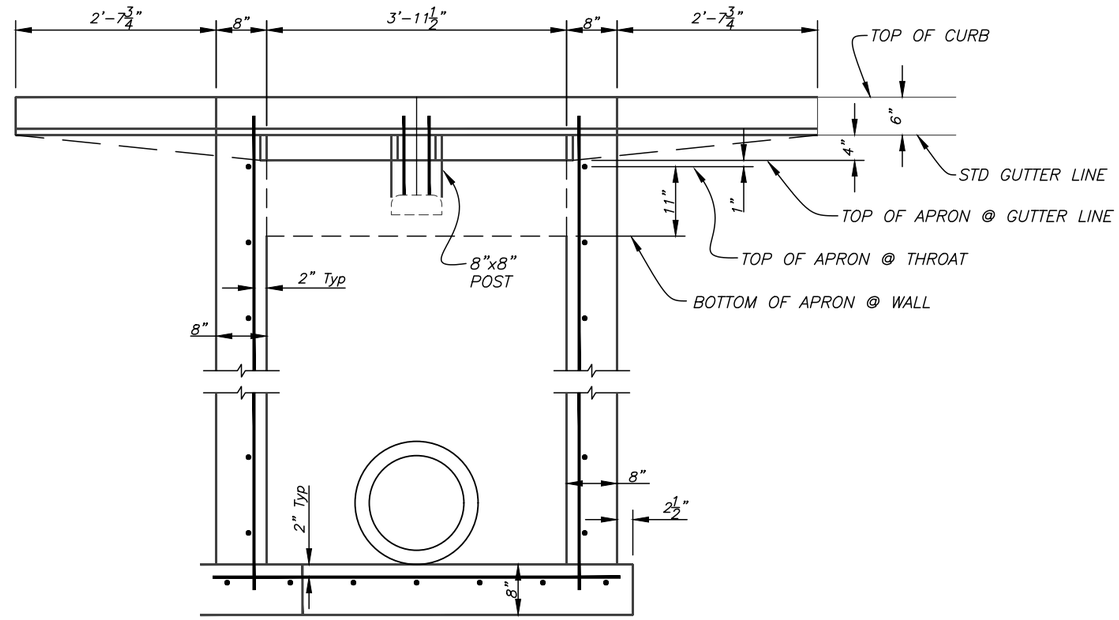
Scale: 1/2" = 1'-0"



SECTION B-B

Scale: 3/4" = 1'-0"

SCHEDULE OF REINFORCING STEEL BARS (FOR INLET TOP AND APRON ONLY)											
MARK	SIZE	COUNT	LENGTH	WT EACH	TOTAL WT	MARK	SIZE	COUNT	LENGTH	WT EACH	TOTAL WT
A4-7	No 4	1	5' 4"	3.562	3.562	S6-1	No 6	3	5' 3"	7.886	23.657
A4-8	No 4	1	10' 3 1/2"	6.875	6.875	S6-2	No 6	2	2' 11"	4.381	8.763
A4-9	No 4	1	10' 9 1/2"	7.209	7.209	S6-3	No 6	2	1' 2 1/2"	1.814	3.629
A4-10	No 4	1	11' 2 1/2"	7.487	7.487	S6-9	No 6	4	4' 11 1/2"	7.447	29.788
B4-1	No 4	2	2' 9"	1.837	3.674	S6-10	No 6	2	2' 6"	3.755	7.510
B4-4	No 4	4	3' 6 3/4"	2.380	9.520	S6-11	No 6	1	9' 7"	14.394	14.394
B4-5	No 4	2	3' 3 1/2"	2.199	4.398	S6-12	No 6	1	10' 2"	15.271	15.271
B4-6	No 4	2	4' 0 3/4"	2.714	5.428	S6-13	No 6	2	5' 1 1/2"	7.698	15.396
B4-7	No 4	2	4' 10 1/2"	3.257	6.513	S6-14	No 6	1	5' 2 1/2"	7.822	7.822
P4-1	No 4	4	1' 3"	0.835	3.340	S7-3	No 7	1	10' 4 3/4"	21.249	21.249
						W4-1	No 4	4	3' 6"	2.338	9.352
TOTAL WEIGHT IN POUNDS											214.837



SECTION C-C

Scale: 1/2" = 1'-0"

No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1			4		

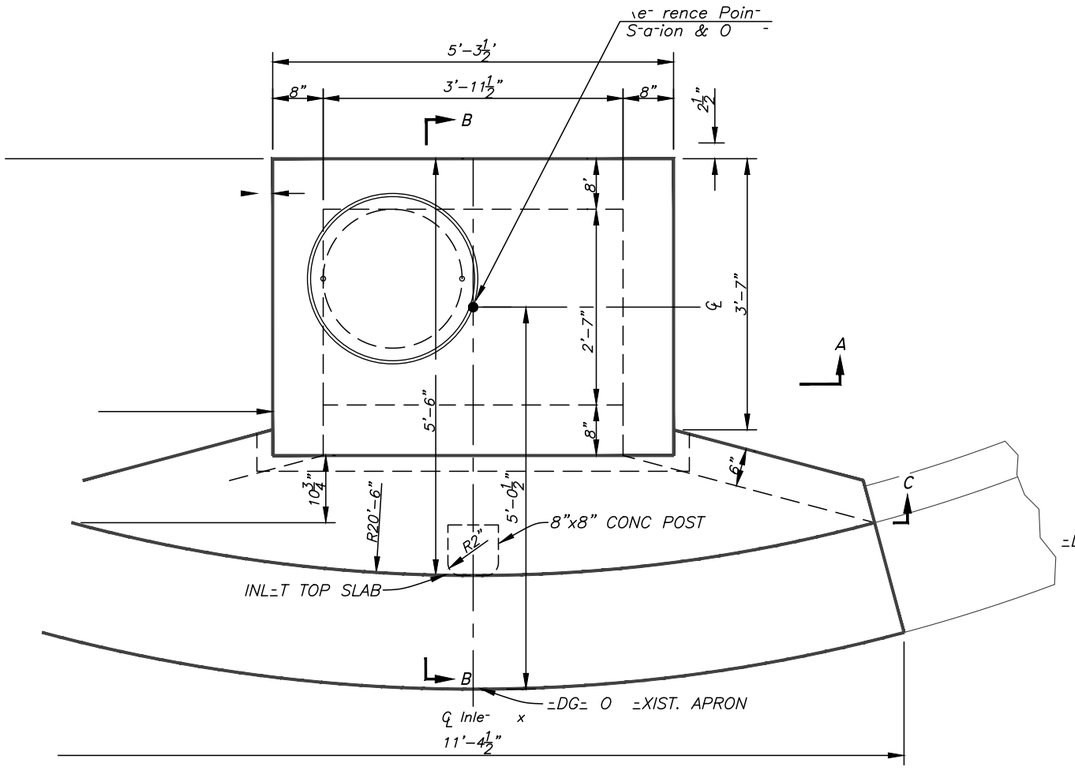
DES: STORM
DRN: STORM
CKD:
DATE: 7/03

CITY of TAMPA
Department of Transportation and Stormwater Services
Stormwater Engineering Division

STANDARD INLET DETAILS TYPE BR-I CURB INLET

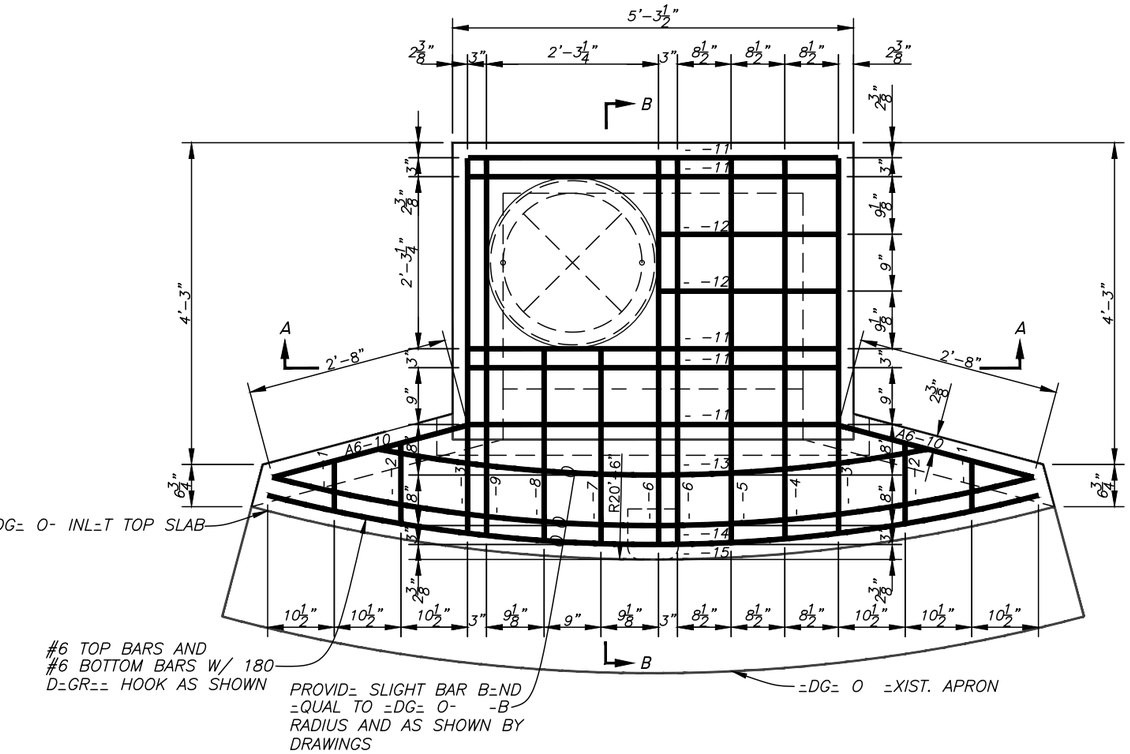
SHEET 17 OF 40

SW



PLAN - EXIST. INLET

Scale: 1/2" = 1'-0"



PLAN - NEW TOP SLAB REINFORCEMENT

Scale: 1/2" = 1'-0"

No- :
ALL BARS SHALL HAV=
180 D=GR== HOOKS
(TYPICAL)

	No.	DATE	REVISIONS
	6		
	5		
	4		

DES: STORM
DRN: STORM
CKD:
DATE: 9/23/13

CITY of TAMPA
Department of Transportation and Stormwater Services
Stormwater Engineering Division

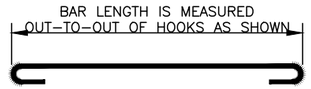
STANDARD INLET DETAILS
HS-20 RATED TYPE BR-I CURB INLET

SHEET 18 OF 40

SCHEDULE OF REINFORCING #6 STEEL BARS (INLET TOP ONLY)					
MARK	SIZE	COUNT	LENGTH	WT EACH	TOTAL WT
A5–1	No 5	2	7 15/16"	.69	1.38
A5–2	No 5	2	1'–0 3/4"	1.15	2.30
A5–3	No 5	2	4'–11 1/4"	5.19	10.38
A5–4	No 5	1	5'–0 1/8"	5.23	5.23
A5–5	No 5	1	5'–0 11/16"	5.29	5.29
A5–6	No 5	2	5'–1"	5.31	10.62
A5–7	No 5	1	2'–6 7/8"	2.69	2.69
A5–8	No 5	1	2'–6 3/8"	2.65	2.65
A5–9	No 5	1	4'–11 9/16"	5.16	5.16
A5–10	No 5	2	2'–8"	2.78	5.56
A5–11	No 5	5	4'–10 1/2"	5.09	25.45
A5–12	No 5	2	2'–4 1/2"	2.48	4.96
A5–13	No 5	1	7'–3	7.56	7.56
A5–14	No 5	1	10'–1 7/8"	10.60	10.60
A5–15	No 5	1	10'–3 7/16"	10.73	10.73
TOTAL WEIGHT IN POUNDS FOR TOP BARS					110.56

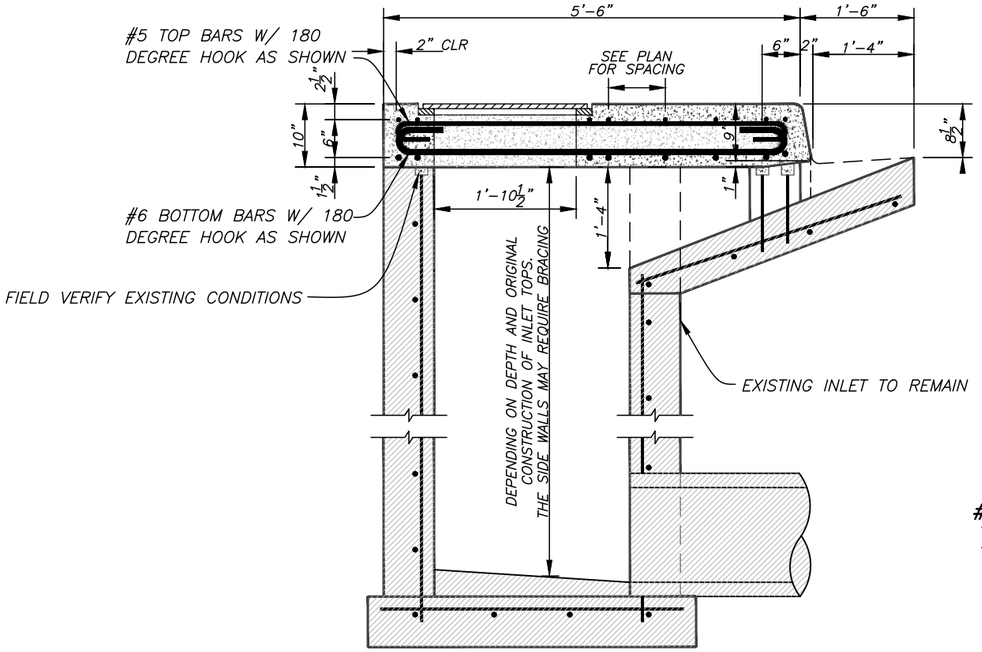
SCHEDULE OF REINFORCING #6 STEEL BARS (INLET TOP ONLY)					
MARK	SIZE	COUNT	LENGTH	WT EACH	TOTAL WT
A6–1	No 6	2	7 15/16"	1.0	2.0
A6–2	No 6	2	1'–0 3/4"	1.65	3.30
A6–3	No 6	2	4'–11 1/4"	7.5	15
A6–4	No 6	1	5'–0 1/8"	7.53	7.53
A6–5	No 6	1	5'–0 11/16"	7.61	7.61
A6–6	No 6	2	5'–1"	7.66	15.32
A6–7	No 6	1	2'–6 7/8"	3.91	3.91
A6–8	No 6	1	2'–6 3/8"	3.88	3.88
A6–9	No 6	1	4'–11 9/16"	7.51	7.51
A6–10	No 6	2	2'–8"	4.13	8.26
A6–11	No 6	5	4'–10 1/2"	7.36	36.8
A6–12	No 6	2	2'–4 1/2"	3.75	7.5
A6–13	No 6	1	7'–3	10.81	10.81
A6–14	No 6	1	10'–1 7/8"	15.17	15.17
A6–15	No 6	1	10'–3 7/16"	15.51	15.51
TOTAL WEIGHT IN POUNDS FOR BOTTOM BARS					160.11

NOTE 1)



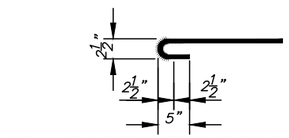
NOTE 2)

BAR LENGTH AND ASSOCIATED WEIGHT PROVIDED DOES NOT INCLUDE THE BAR HOOK LENGTH AND WEIGHT.



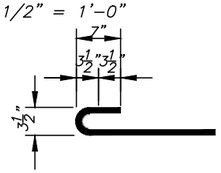
SECTION B-B

Scale: 1/2" = 1'–0"



#5 - 180 DEGREE HOOK DETAIL

Scale: 1/2" = 1'–0"



#7 - 180 DEGREE HOOK DETAIL

Scale: 1/2" = 1'–0"

SECTION A-A

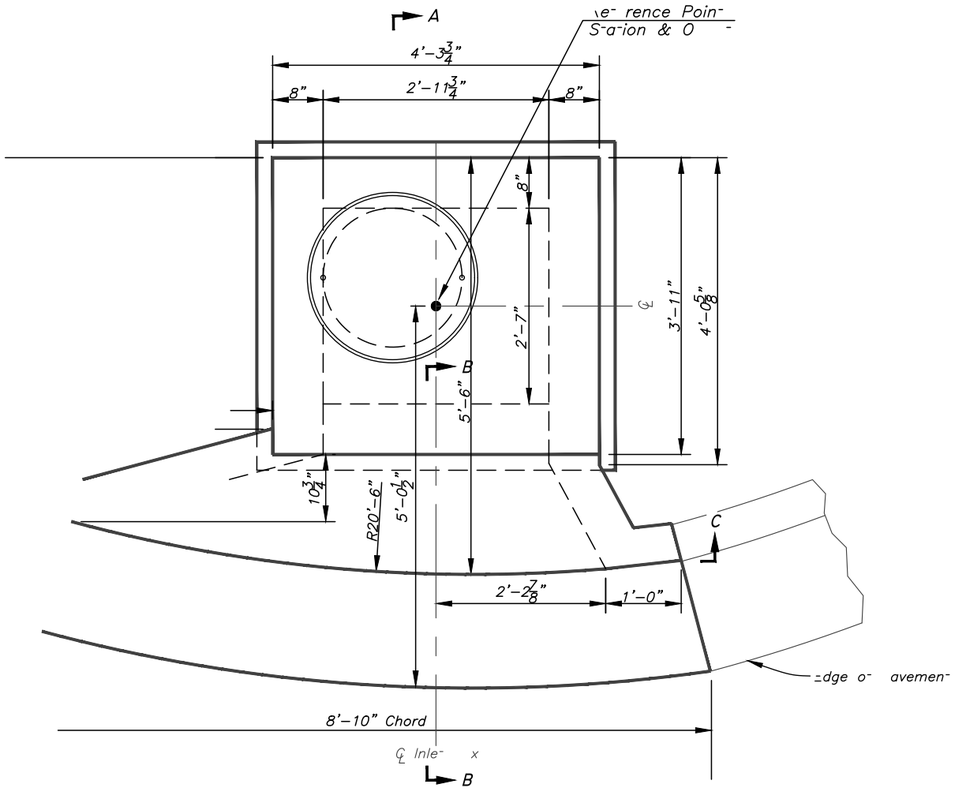
Scale: 1/2" = 1'–0"

No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1	03/31/16	NEW SHEET	4		

DES: STORM
DRN: STORM
CKD:
DATE: 9/23/13

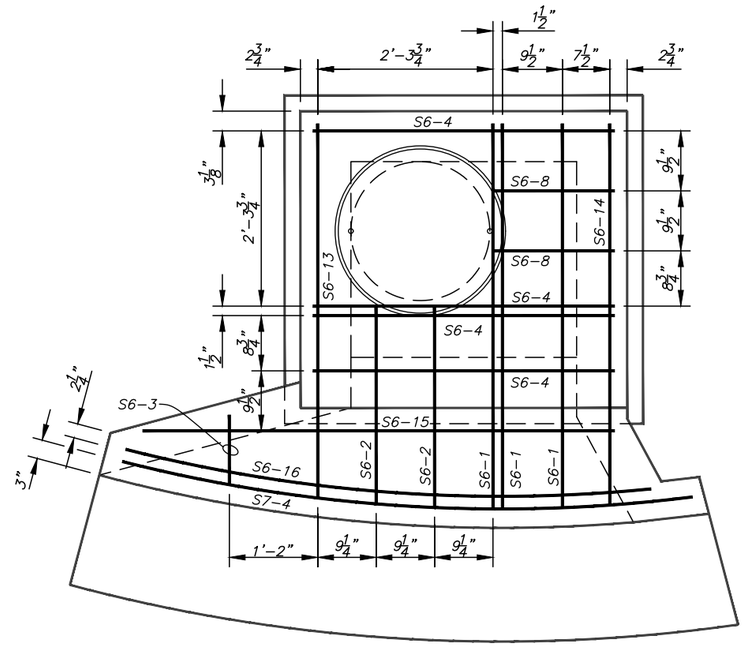
CITY of TAMPA
Department of Transportation and Stormwater Services
Stormwater Engineering Division

STANDARD INLET DETAILS
HS-20 RATED TYPE BR-I CURB INLET



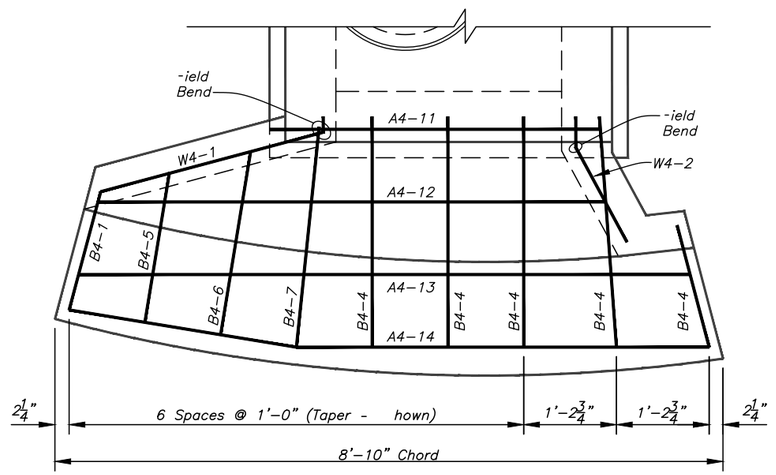
PLAN

Scale: 1/2" = 1'-0"



PLAN - TOP SLAB REINFORCEMENT

Scale: 1/2" = 1'-0"



PLAN - APRON REINFORCEMENT

Scale: 1/2" = 1'-0"

	No.	DATE	REVISIONS
	6		
	5		
	4		

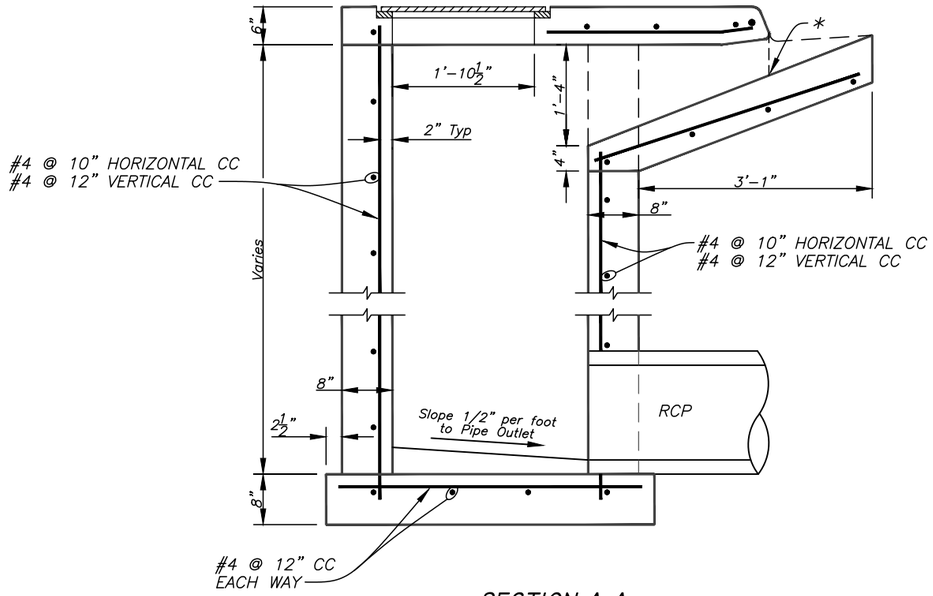
DES: STORM
DRN: STORM
CKD:
DATE: 7/03

CITY of TAMPA
Department of Transportation and Stormwater Services
Stormwater Engineering Division

STANDARD INLET DETAILS TYPE BR-2 CURB INLET

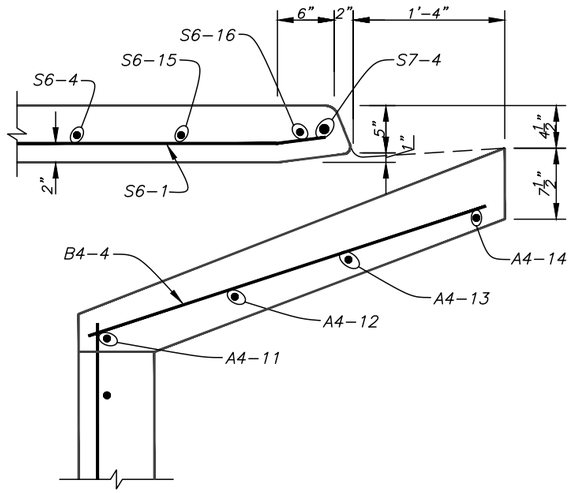
SHEET 20 OF 40

*LOCATION OF THROAT ELEVATION



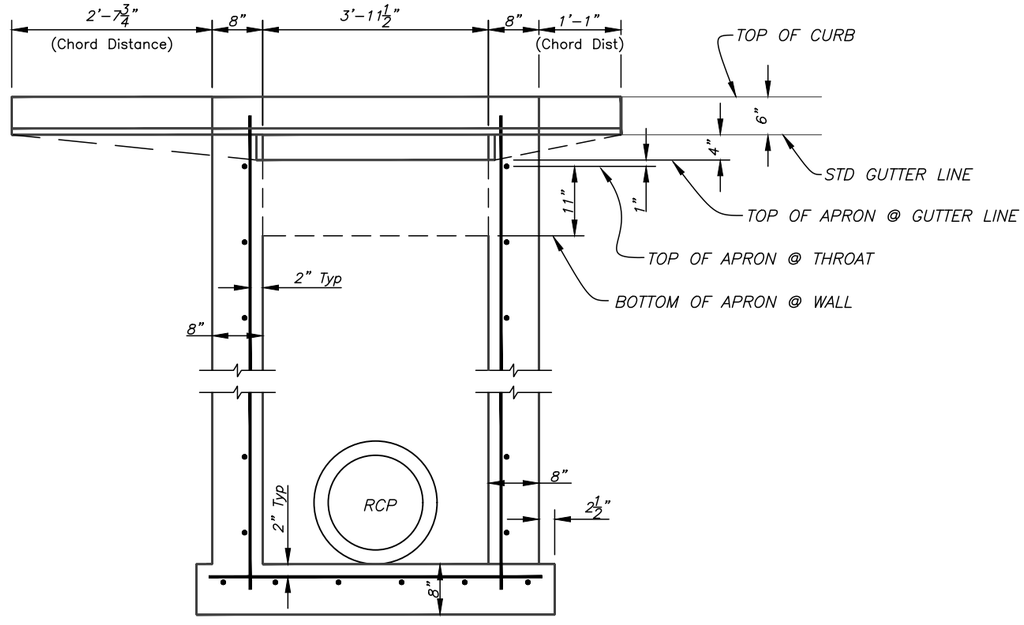
SECTION A-A

Scale: 1/2" = 1'-0"



SECTION B-B

Scale: 3/4" = 1'-0"



SECTION C-C

Scale: 1/2" = 1'-0"

SCHEDULE OF REINFORCING STEEL BARS (FOR INLET TOP AND APRON ONLY)

MARK	SIZE	COUNT	LENGTH	WT EACH	TOTAL WT	MARK	SIZE	COUNT	LENGTH	WT EACH	TOTAL WT
A4-11	No 4	1	4' 2"	2.784	2.784	S6-3	No 6	1	1' 2 1/2"	1.814	1.814
A4-12	No 4	1	6' 11"	4.621	4.621	S6-4	No 6	4	3' 11 3/4"	5.976	23.906
A4-13	No 4	1	8' 1"	5.399	5.399	S6-8	No 6	2	1' 7 1/2"	2.441	4.882
A4-14	No 4	1	8' 5"	5.623	5.623	S6-13	No 6	1	5' 1 1/2"	7.698	7.698
B4-1	No 4	2	2' 9"	1.837	3.674	S6-14	No 6	1	5' 2 1/2"	7.822	7.822
B4-4	No 4	3	3' 6 3/4"	2.380	7.140	S6-15	No 6	1	6' 4 1/2"	9.575	9.575
B4-5	No 4	1	3' 3 1/2"	2.199	2.199	S6-16	No 6	1	7' 8"	11.516	11.516
B4-6	No 4	1	4' 0 3/4"	2.714	2.714	S7-4	No 7	1	7' 9 3/4"	15.970	15.970
B4-7	No 4	1	4' 10 1/2"	3.257	3.257	W4-1	No 4	2	3' 6"	2.338	4.676
S6-1	No 6	3	5' 3"	7.886	23.657	W4-2	No 4	2	2' 1"	1.391	2.783
S6-2	No 6	2	2' 11"	4.381	8.763						
TOTAL WEIGHT IN POUNDS					160.471						

No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1			4		

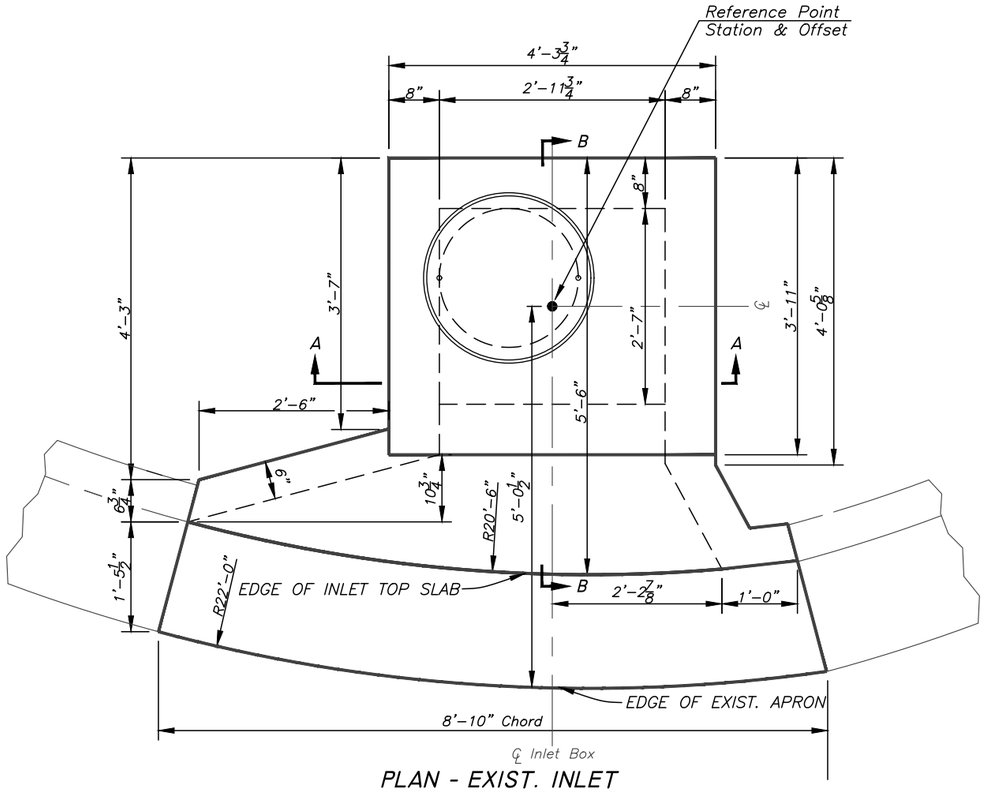
DES: STORM
DRN: STORM
CKD:
DATE: 7/03

CITY of TAMPA
Department of Transportation and Stormwater Services
Stormwater Engineering Division

STANDARD INLET DETAILS TYPE BR-2 CURB INLET

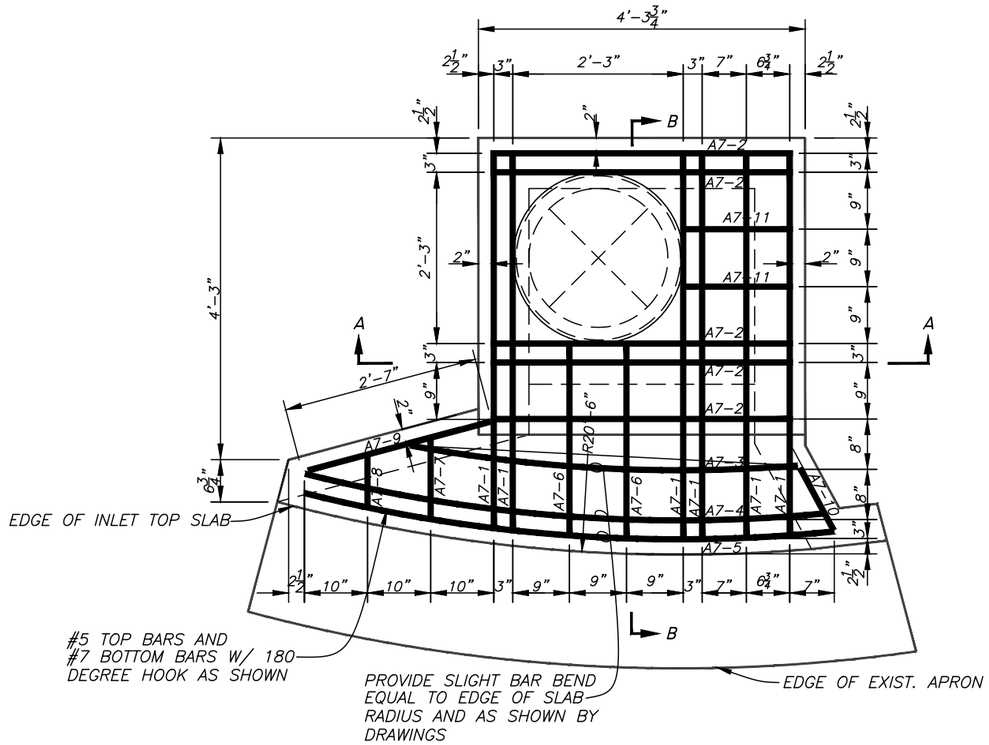
SHEET 21 OF 40

SW



PLAN - EXIST. INLET

Scale: 1/2" = 1'-0"



PLAN - NEW TOP SLAB REINFORCEMENT

Scale: 1/2" = 1'-0"

Note:
ALL BARS SHALL HAVE
180 DEGREE HOOKS
(TYPICAL)

No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1	03/31/16	NEW SHEET	4		

DES: STORM
DRN: STORM
CKD:
DATE: 9/23/13

CITY of TAMPA
Department of Transportation
and Stormwater Services
Stormwater Engineering Division

STANDARD INLET DETAILS
HS-20 RATED TYPE BR-2 CURB INLET

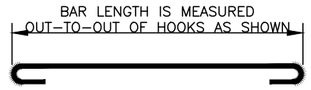
SHEET 22 OF 40

SW

SCHEDULE OF REINFORCING #5 STEEL BARS (INLET TOP ONLY)					
MARK	SIZE	COUNT	LENGTH	WT EACH	TOTAL WT
A5–1	No 5	6	5'–1 1/4"	5.424	32.544
A5–2	No 5	5	3'–11 3/4"	4.172	20.86
A5–3	No 5	1	5'–1 1/2"	5.5	5.5
A5–4	No 5	1	6'–11"	7.3	7.3
A5–5	No 5	1	7'–0 1/2"	7.40	7.40
A5–6	No 5	2	2'–6 7/8"	2.72	5.44
A5–7	No 5	1	1'–1"	1.147	1.147
A5–8	No 5	1	8 1/2"	.78	.78
A5–9	No 5	1	2'–5 7/8"	2.575	2.575
A5–10	No 5	1	11"	.956	.956
A5–11	No 5	2	1'–5 1/2"	1.56	3.12
TOTAL WEIGHT IN POUNDS FOR TOP BARS					87.622

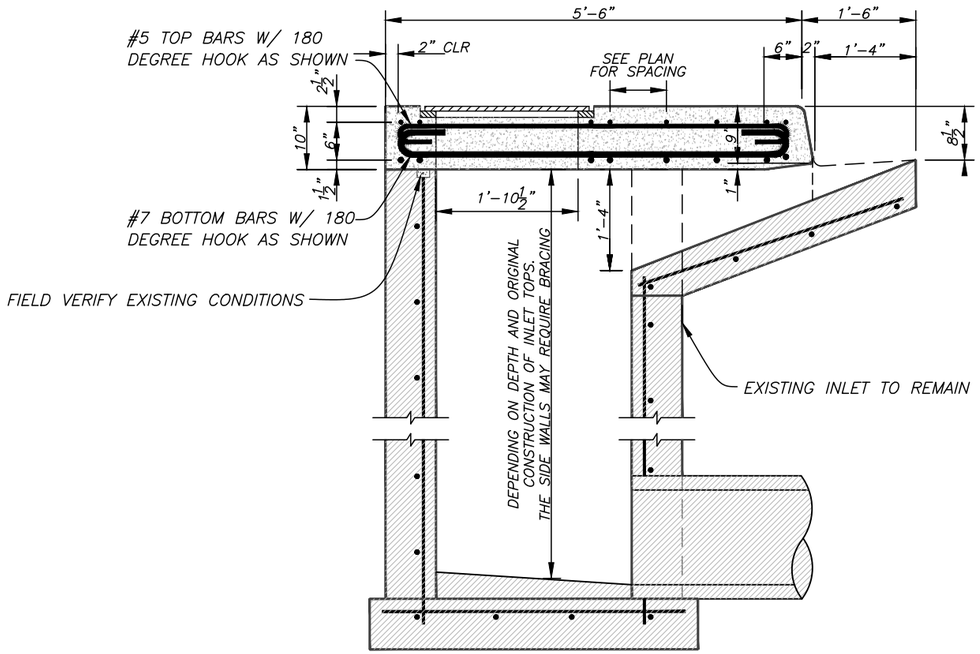
SCHEDULE OF REINFORCING #7 STEEL BARS (INLET TOP ONLY)					
MARK	SIZE	COUNT	LENGTH	WT EACH	TOTAL WT
A7–1	No 7	6	5'–1 1/4"	10.25	61.5
A7–2	No 7	5	3'–11 3/4"	8.176	40.88
A7–3	No 7	1	5'–1 1/2"	10.25	10.25
A7–4	No 7	1	6'–11"	14.3	14.3
A7–5	No 7	1	7'–0 1/2"	14.5	14.5
A7–6	No 7	2	2'–6 7/8"	5.32	10.64
A7–7	No 7	1	1'–1"	2.25	2.25
A7–8	No 7	1	8 1/2"	1.65	1.65
A7–9	No 7	1	2'–5 7/8"	5.11	5.11
A7–10	No 7	1	11"	1.874	1.874
A7–11	No 7	2	1'–5 1/2"	3.0	6.0
TOTAL WEIGHT IN POUNDS FOR BOTTOM BARS					168.954

NOTE 1)



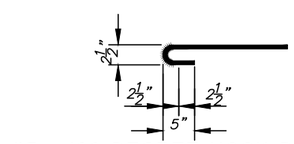
NOTE 2)

BAR LENGTH AND ASSOCIATED WEIGHT PROVIDED DOES NOT INCLUDE THE BAR HOOK LENGTH AND WEIGHT.



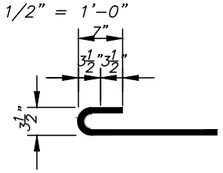
SECTION B-B

Scale: 1/2" = 1'–0"



#5 - 180 DEGREE HOOK DETAIL

Scale: 1/2" = 1'–0"



#7 - 180 DEGREE HOOK DETAIL

Scale: 1/2" = 1'–0"

SECTION A-A

Scale: 1/2" = 1'–0"

No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1	03/31/16	NEW SHEET	4		

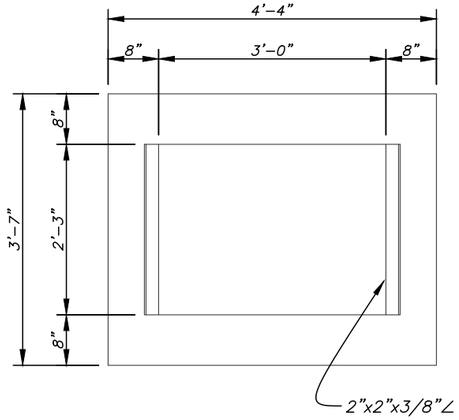
DES: STORM
DRN: STORM
CKD:
DATE: 9/23/13

CITY of TAMPA
Department of Transportation and Stormwater Services
Stormwater Engineering Division

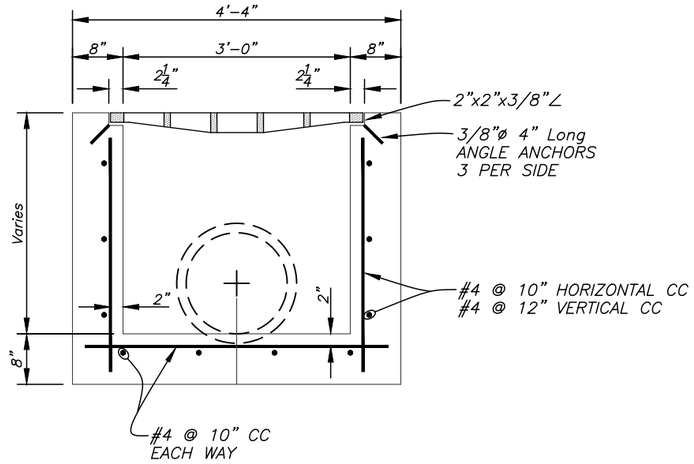
STANDARD INLET DETAILS
HS-20 RATED TYPE BR-2 CURB INLET

SHEET 23 OF 40

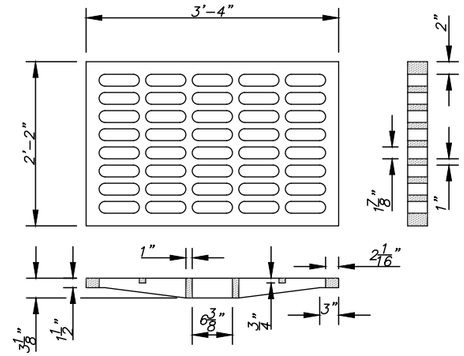
SW



PLAN



SECTION

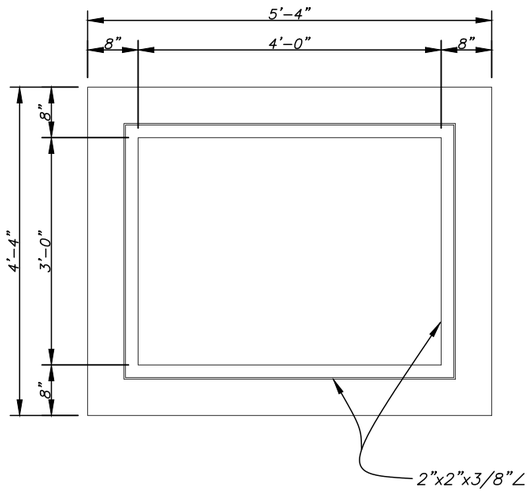


CAST IRON GRATING

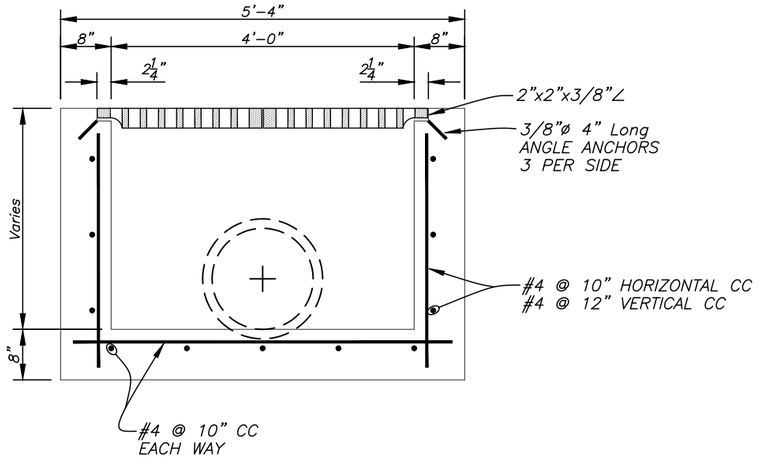
Traffic Bearing

TYPE "T" GRATE INLET

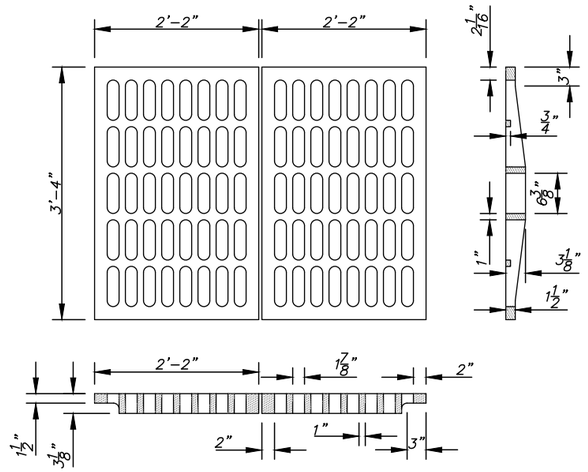
Scale: 1/2" = 1'-0"



PLAN



SECTION



CAST IRON GRATING

Traffic Bearing

TYPE "E" GRATE INLET

Scale: 1/2" = 1'-0"

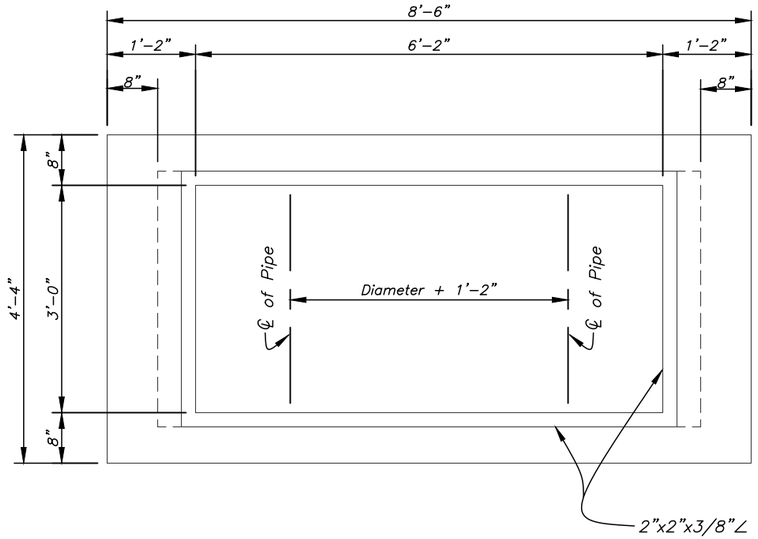
No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1			4		

DES: STORM
DRN: STORM
CKD:
DATE: 7/03

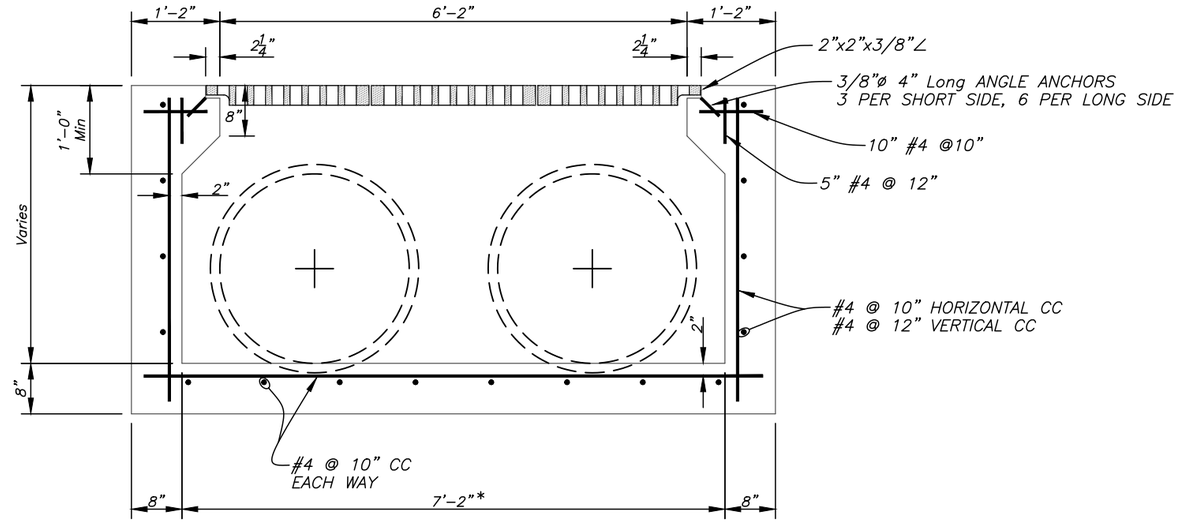
CITY of TAMPA
Department of Transportation and Stormwater Services
Stormwater Engineering Division

STANDARD INLET DETAILS TYPE "T" & "E" GRATE INLET

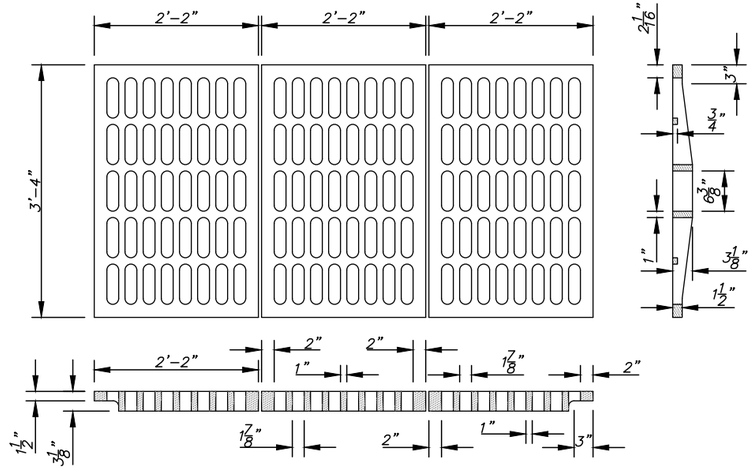
SHEET 24 OF 40



PLAN



SECTION



CAST IRON GRATING

Traffic Bearing

* WHEREVER POSSIBLE. 6'–2"x3'–0" INSIDE DIMENSION BOX MAY BE USED WITH THE ENGINEER'S APPROVAL.

NOTE:
IF SIDE OPENINGS (SLOTS) ARE DESIRED IN GRATE INLETS, OPENINGS SHALL BE DESIGNED ON A CASE–BY–CASE BASIS, AND SHALL ACCOUNT FOR SUPPORT OF THE CAST IRON GRATE ABOVE THE OPENING.

TYPE "H" GRATE INLET

Scale: 1/2" = 1'–0"

No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1			4		

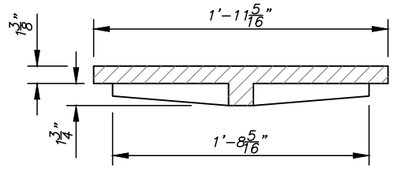
DES: STORM
DRN: STORM
CKD:
DATE: 7/03

CITY of TAMPA
Department of Transportation and Stormwater Services
Stormwater Engineering Division

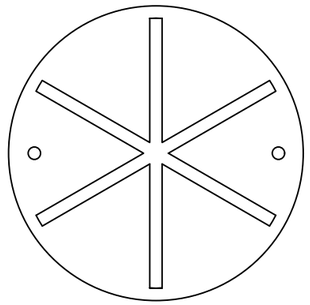
STANDARD INLET DETAILS
TYPE H GRATE INLET

SHEET 25 OF 40

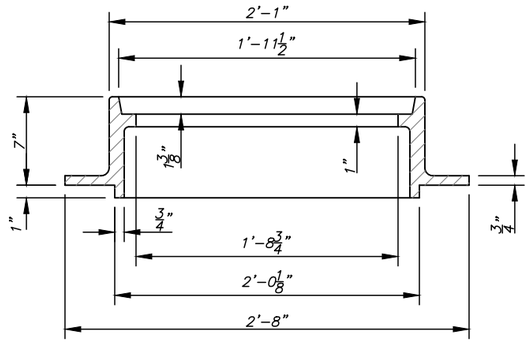
SW



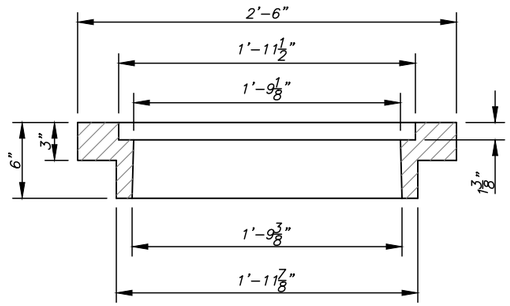
COVER SECTION



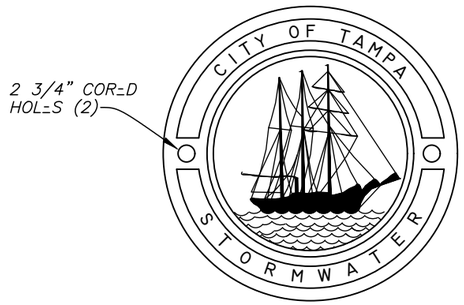
COVER BACK



STANDARD FRAME SECTION



INVERTED FRAME SECTION



COVER FACE

MANHOLE FRAMES & COVER

No- To Scale

NOTE: Manhole structures shall be per - T Standard Index #200.

FOR CLOSED BASINS

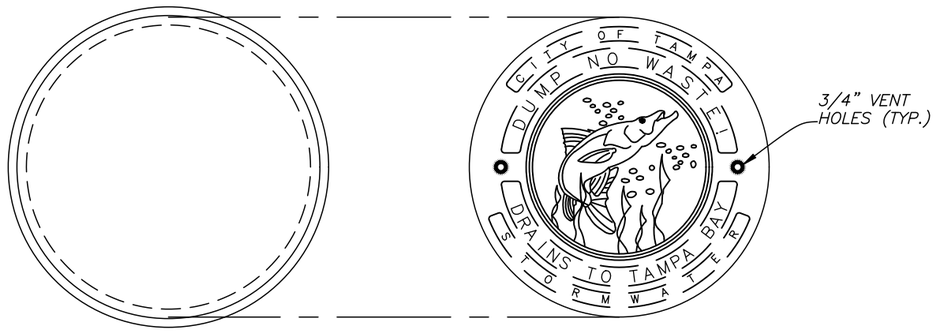
	No.	DATE	REVISIONS
	6		
	5		
	4		

DES: STORM
DRN: STORM
CKD:
DATE: 7/03

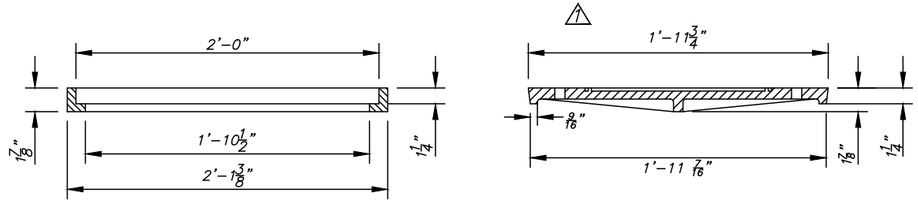
CITY of TAMPA
Department of Transportation and Stormwater Services
Stormwater Engineering Division

STANDARD MANHOLE DETAILS

SHEET 26 OF 40



PLAN



SECTION

STANDARD CAST IRON INLET RING AND COVER

Scale: 1" = 1'-0"

CURB INLET CONSTRUCTION NOTES
TYPES 1,2,3 AND BS-1, BV-1, BR-1, BR-2

1. Concrete for top slabs, bottom slabs, walls, aprons and curb-and-gutter transition sections shall be Class II Concrete, conforming to Section 346 of the project specifications, with reinforcing bars placement and spacing as indicated herein. Top slabs shall not be poured until all reinforcing bars have been placed, inspected and approval obtained.

2. Curb inlets are typically designed with the outlet pipe at the front wall of the structure. Otherwise, maximum pipe size that will fit the side wall of any standard curb inlet is 24 inches. Larger pipe sizes and 24-inch pipes meeting the side wall at an angle other than 90 degrees require a larger substructure. Curb inlets may be modified to utilize inlet risers and tops meeting City inlet standards with substructures meeting FDOT standards for structure bottoms (Index #200). Design of these non-standard inlet structures shall be on case-specific basis.

3. Refer to FDOT Standard Index #200 for reinforcing steel requirements at pipe openings. Any portion of the pipe protruding beyond the inside wall surface of the box shall be broken off and mortared to a smooth finish flush with the inside wall surface.

4. At the discretion of the Engineer, boxes may be constructed of solid clay or portland cement concrete brick and mortar. The inside surface of all brick walls shall be plastered with one-half inch minimum thickness of 1:2 mix sand-cement mortar and left with a smooth finish.

5. Minimum brick wall thickness shall be 7½ inches when the distance (depth) from the rim of the cast ring and cover to the top of the bottom slab does not exceed 8 feet, and shall be 12 inches when such depth exceeds 8 feet. Brick shall be laid in stretcher courses with every sixth course a header course.

6. Minimum clearance for all reinforcing bars shall be 1½ inches from the nearest surface of the concrete member. Top slab reinforcement shall be 2 inches from the bottom of the slab. Other minimum clearances are as shown in drawings.

7. Wing for inlet Types 2, BS-1 and BR-2 shall be placed on the upstream side of the center of box, with plan reversed if necessary because of the direction of gutter flow.

8. Curb transition sections shall be included in the contract price of the inlet, and no separate payment shall be made.

9. Top slab of all curb inlets shall be sloped at 2 percent toward the street.

10. Dimensions shown for inlet types BR-1 and BR-2 are for the indicated curb radius only. Chord dimensions at the curb shall remain constant for other curb radii. Contractor shall adjust other inlet dimensions and reinforcing steel quantities to fit actual curb radius shown in the project plans.

11. Reinforcing steel shall be ASTM Grade 60. Ring and cover material shall be ASTM-A48 Class 30 B Gray Iron.

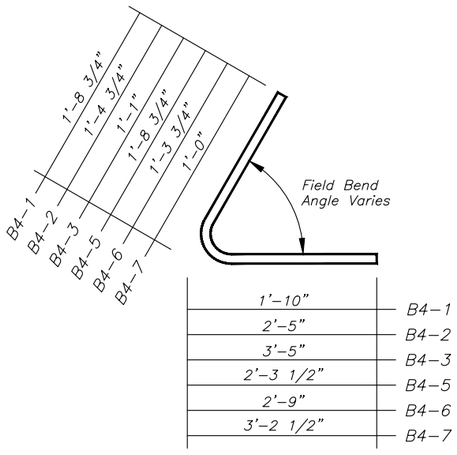
12. Inlet cover weight is 85 lbs. (approximate).

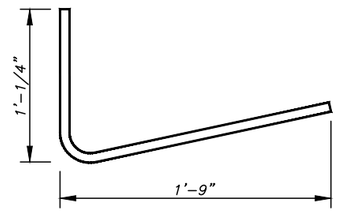
13. All construction joints shall follow FDOT Standard Index #201.

14. Side openings (slots) for curb inlets are to be used on Type 1 inlets (offset) only. Rear openings (slots) may be used on any curb inlet type. Refer to Sheet 10 for guidance.

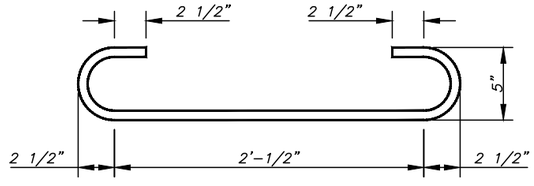
15. Refer to Section 425 of the project specifications for additional requirements.

NOTE TO ENGINEER:
Inlet types BS-1 and BV-1 shall be the preferred types for application on tangents. Inlet types 1, 2 and 3 shall only be used when dictated by conditions that would preclude the use of types BS-1 and BV-1.

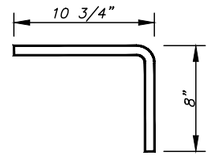




A4-2



B6-1



T6-5

BENDING DIAGRAMS

Not To Scale

No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1	12/09/04	REVISED COVER DIMENSIONS	4		

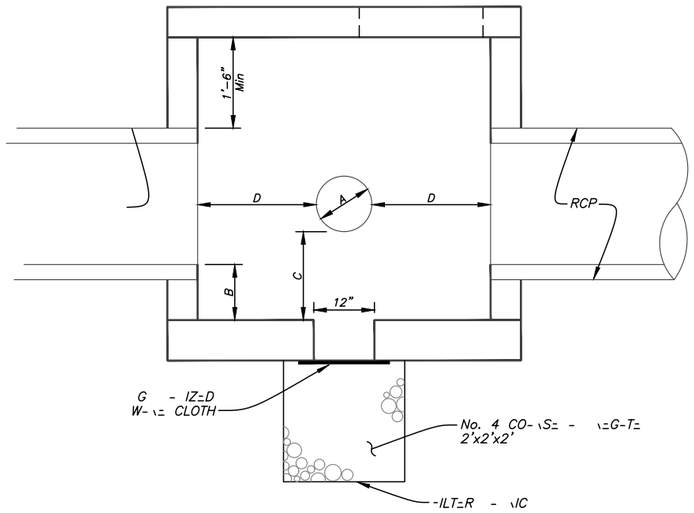
DES: STORM
DRN: STORM
CKD:
DATE: 7/03

CITY of TAMPA
Department of Transportation and Stormwater Services
Stormwater Engineering Division

STANDARD INLET DETAILS WITH NP (SNOOK) LID

SHEET 27 OF 40

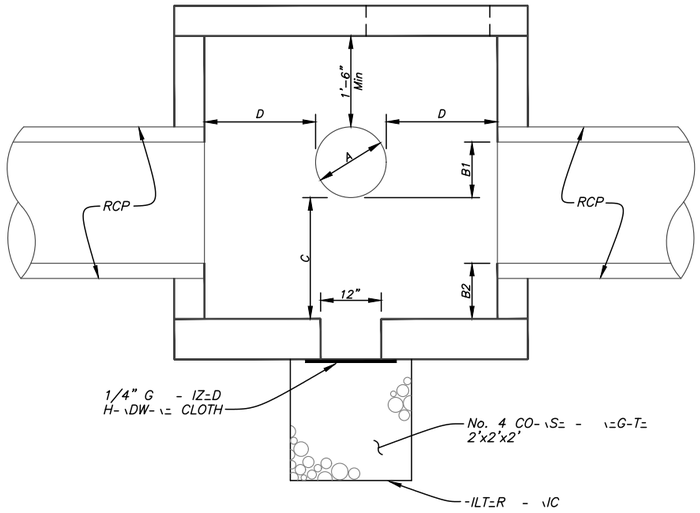
SW



B=-
C=1'-6" Minimum
(Use -he grea- r o -he -

CONFLICT AT MID-POINT

No- To Scale



=B1
=1'-6" Minimum
(Use -he grea- r o -he -

CONFLICT AT CROWN

No- To Scale

be submi- d -h
a-ion or beginning o-

- n- i-h - T Index
er.

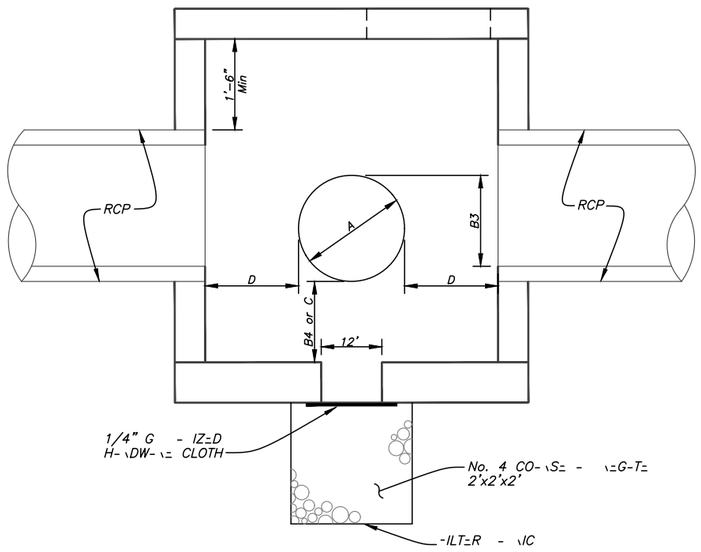
be sleeved in

ved i- a join- in -he
- ire.

-d Specifica-ion 441-2.3.

u-ili- line or sleeve.

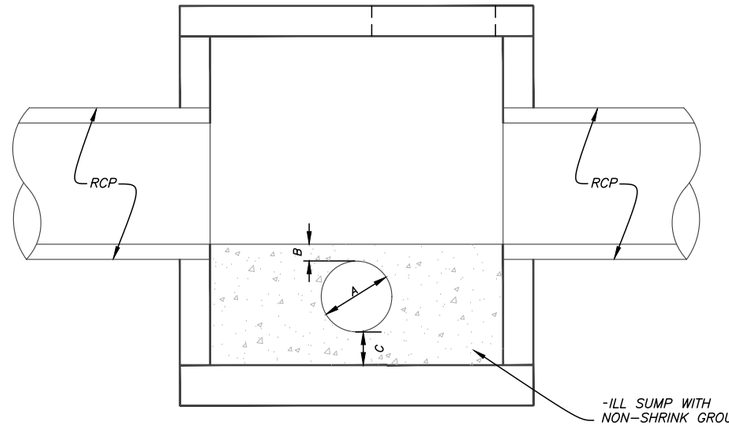
- r.



B4=B3
=1'-6" Minimum
(Use -he grea- r o -he -

CONFLICT AT FLOWLINE

No- To Scale



C=B

CONFLICT BELOW FLOWLINE
⚠1 WITH INSUFFICIENT CLEARANCE

No- To Scale

	No.	DATE	REVISIONS
	6		
	5		
- IN=	4		

DES: STORM
DRN: STORM
CKD:
DATE: 7/03

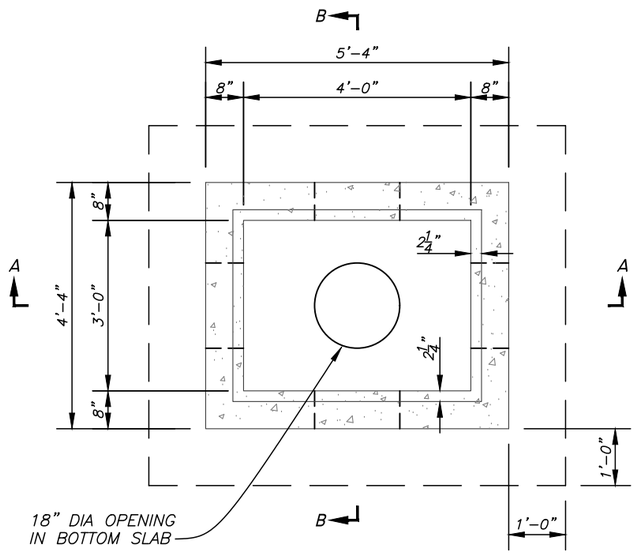
CITY of TAMPA
Department of Transportation
and Stormwater Services
Stormwater Engineering Division

GUIDELINES FOR CONFLICT MANHOLES

SHEET 28 OF 40

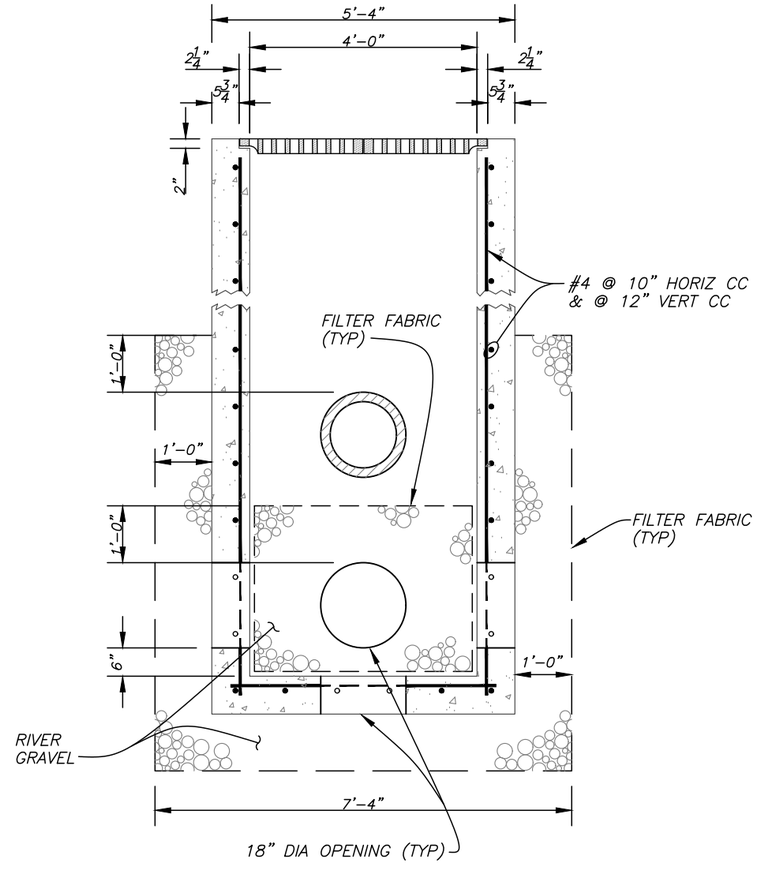
NOTE:

1. Open–bottom inlet shown herein is intended to be used at portable–pump locations (see temporary force main and pumping standards). For other open–bottom inlet applications, refer to FDOT Index #201 for guidance.
2. Follow Type "E" grate inlet standard for steel reinforcement of concrete.
3. For grate type and dimensions see Type "E" grate inlet standard.
4. A similar open–bottom substructure may be used in conjunction with City of Tampa curb type open–bottom inlets.
5. River gravel shall be clean and conform to D.O.T. specifications under Section 901–2 and shall meet ASTM size no. 4 gradation (1–1/2" to 3/4" size).
6. All exposed concrete corners and edges shall be chamfered 3/4".
7. Filter fabric shall meet FDOT Standard Specification 441–2.3.



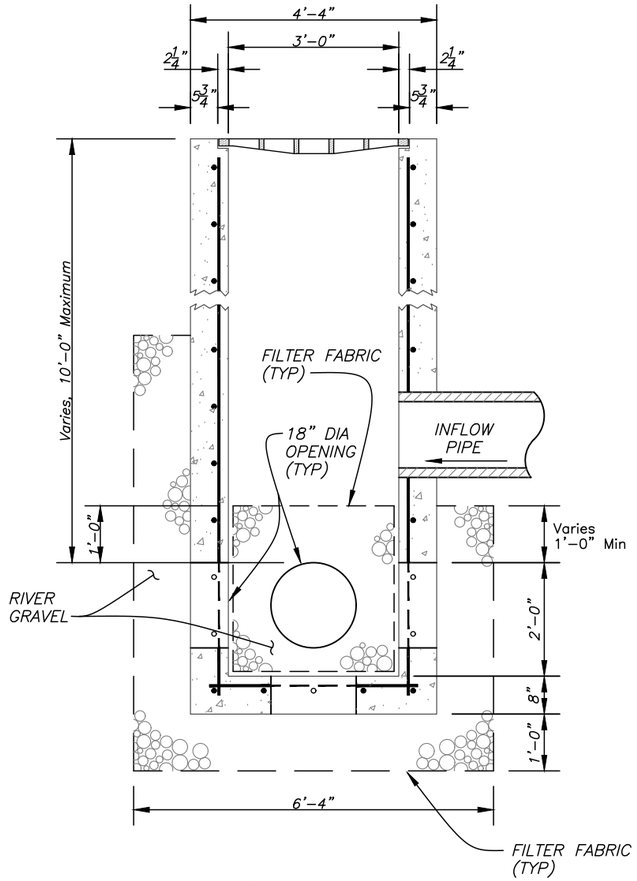
PLAN

N.T.S.



SECTION A-A

N.T.S.



SECTION B-B

N.T.S.

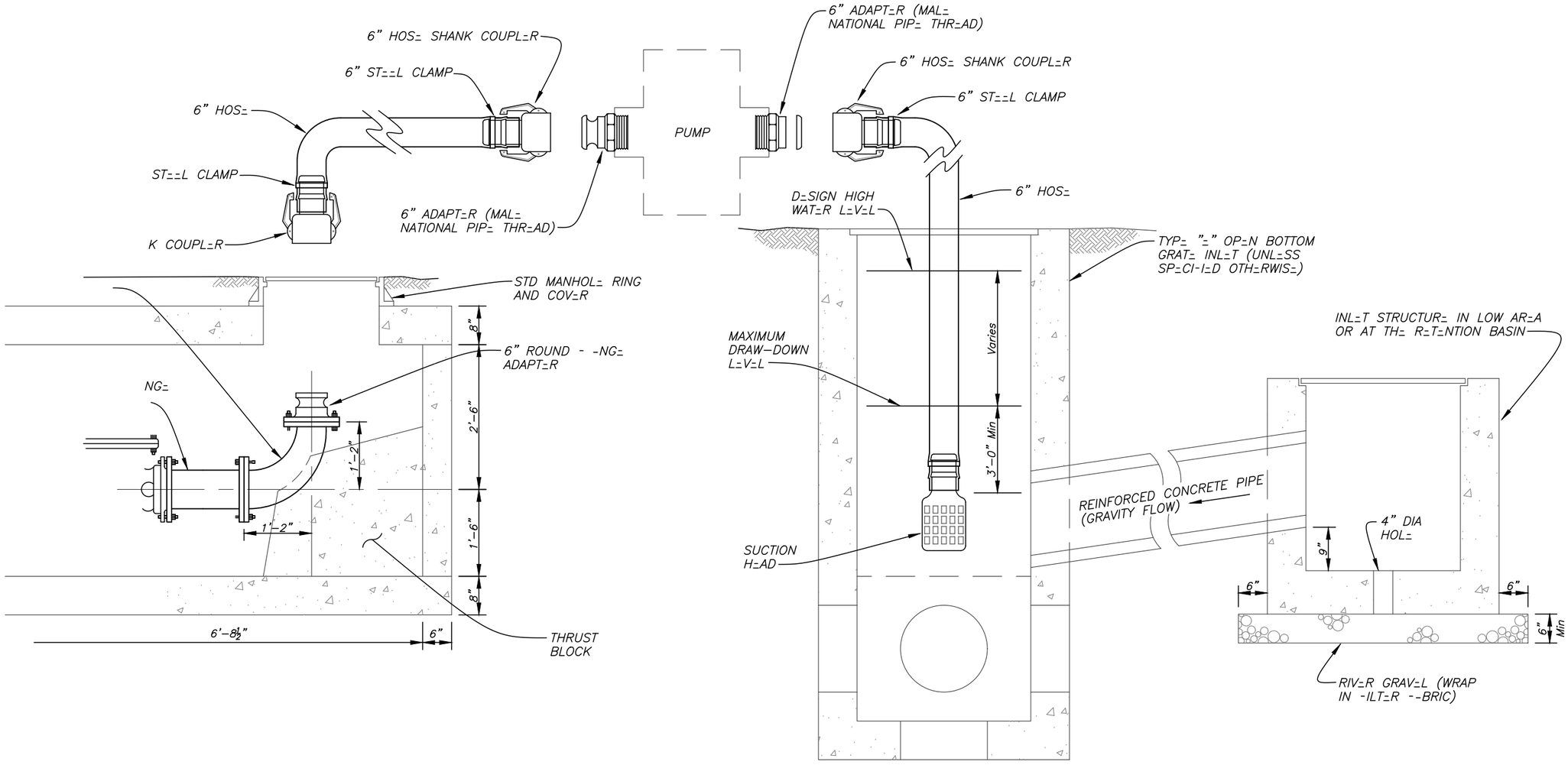
No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1			4		

DES: STORM
DRN: STORM
CKD:
DATE: 7/03

CITY of TAMPA
Department of Transportation and Stormwater Services
Stormwater Engineering Division

STANDARD INLET DETAILS
OPEN BOTTOM INLET (TYPE "E")

SHEET 29 OF 40



SECTION

Scale: 1/2" = 1'-0"

	No.	DATE	REVISIONS
	6		
	5		
	4		

DES: STORM
DRN: STORM
CKD:
DATE:

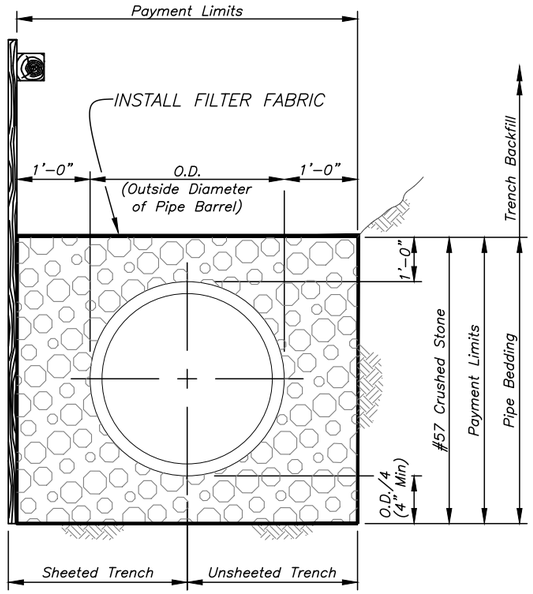
CITY of TAMPA
Department of Transportation and Stormwater Services
Stormwater Engineering Division

TEMPORARY FORCE MAIN AND PUMPING STANDARDS

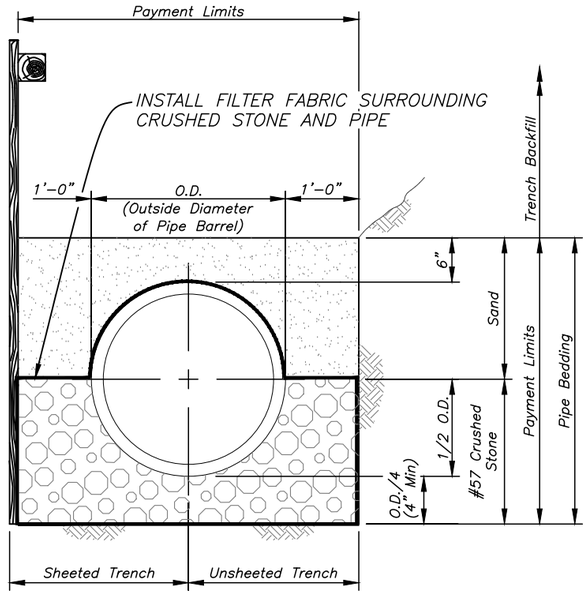
SHEET 30 OF 40

Notes:

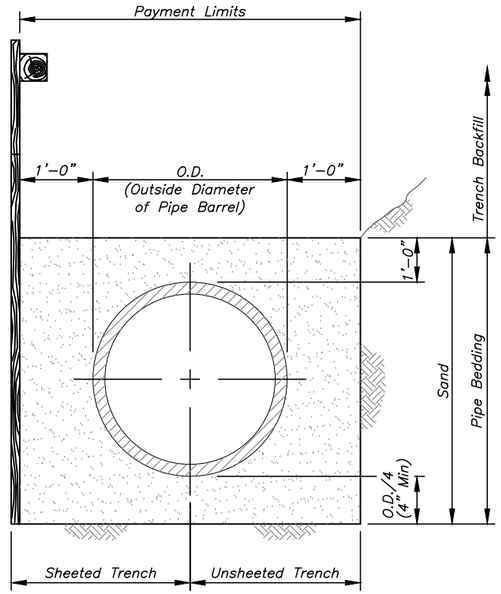
1. All types of pipe bedding shall extend to undisturbed earth at sides and bottom of the trench.
2. Sand and crushed stone pipe bedding shall be placed and compacted in accordance with specifications.
3. Bedding materials shall meet project specifications for Class B and Class C Bedding.
4. Filter fabric shall meet FDOT Standard Specification 441–2.3.



CLASS B-I BEDDING



CLASS B BEDDING



CLASS C BEDDING

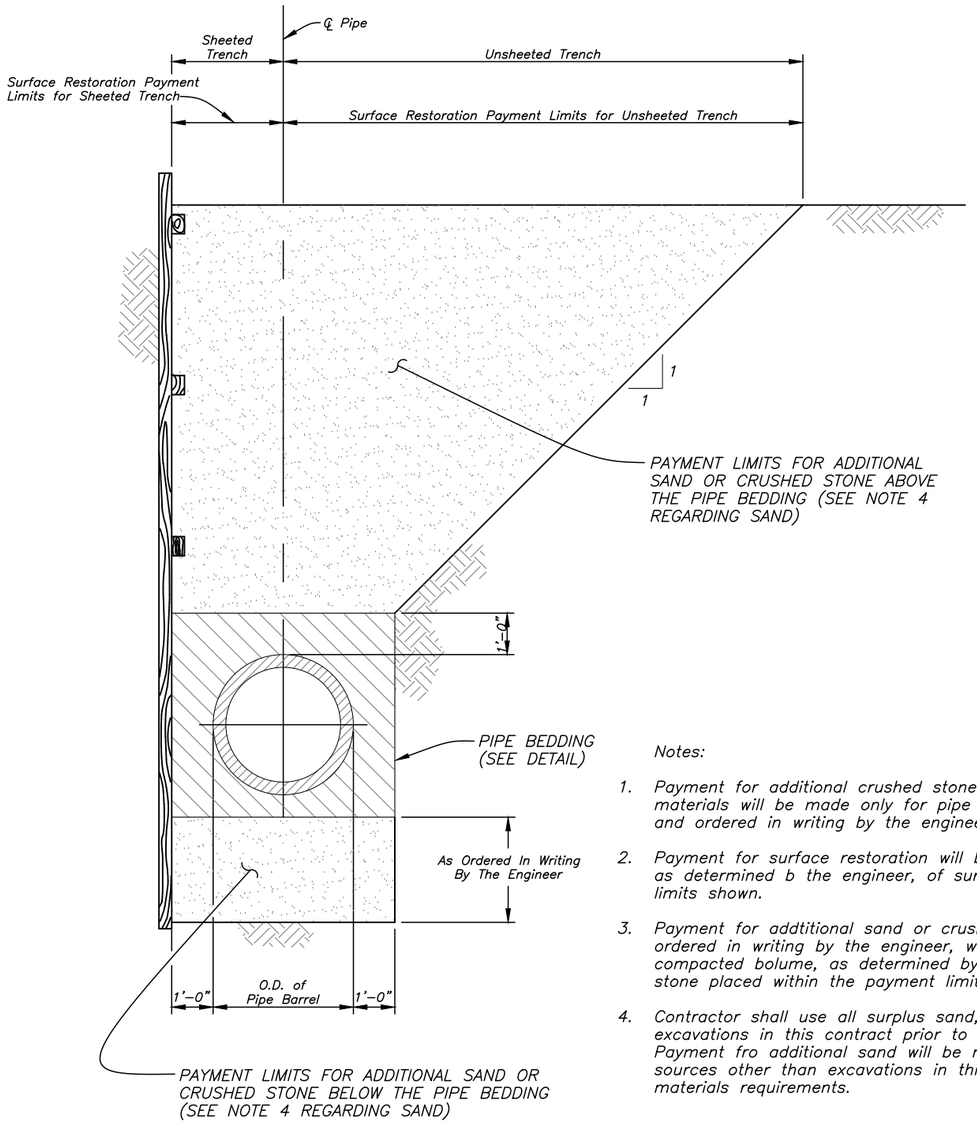
No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1	12/09/04	NEW SHEET	4		

DES: STORM
DRN: STORM
CKD:
DATE:

CITY of TAMPA
Department of Transportation and Stormwater Services
Stormwater Engineering Division

BEDDING DETAILS

SHEET 31 OF 40



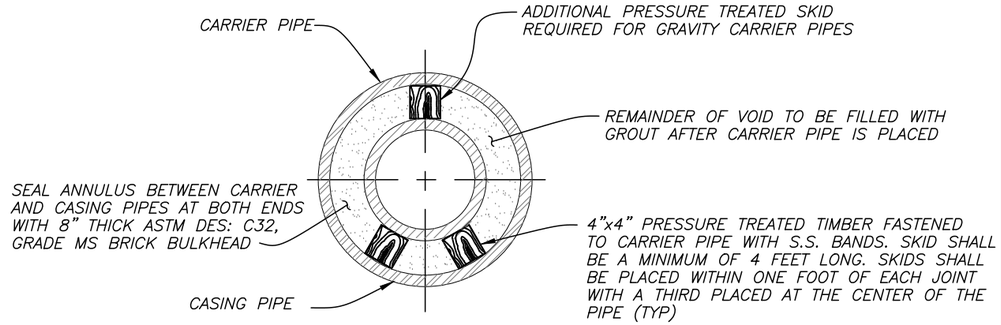
Notes:

1. Payment for additional crushed stone of Class D concrete pipe bedding materials will be made only for pipe bedding not shown in the plans and ordered in writing by the engineer.
2. Payment for surface restoration will be made for the actual quantities, as determined b the engineer, of surface restored within the payment limits shown.
3. Payment for addtitional sand or crushed stone fro trench stabilization, ordered in writing by the engineer, will be made for the actual compacted bolume, as determined by the engineer, of sand or crushed stone placed within the payment limits shown,
4. Contractor shall use all surplus sand, approved as suitable, from excavations in this contract prior to suppling sand from other sources. Payment fro additional sand will be made only for sand supplied from sources other than excavations in this contract. See specifications for materials requirements.

PAYMENT LIMITS FOR SURFACE RESTORATION AND ADDITIONAL SAND OR CRUSHED STONE FOR TRENCH STABILIZATION

Not To Scale

QUANTITIES FOR PAYMENT FOR ADDITIONAL PIPE BEDDING MATERIALS ORDERED IN WRITING BY THE ENGINEER											
NOMINAL INSIDE DIAMETER (INCHES)	15	18	24	30	36	42	48	54	60	66	72
CUBIC YARDS OF CONCRETE PER LINEAR FOOT OF PIPE IN CONCRERE ENCASEMENT	0.258	0.299	0.383	0.472	0.588	0.690	0.797	0.909	1.027	1.150	1.279
CUBIC YARDS OF CONCRETE PER LINEAR FOOT OF PIPE IN CLASS A BEDDING (CONCRETE CRADLE)	0.128	0.150	0.192	0.236	0.294	0.345	0.399	0.455	0.514	0.514	0.640
CUBIC YARDS OF CRUSHED STONE PER LINEAR FOOT OF PIPE IN CLASS B-1 BEDDING	0.304	0.362	0.479	0.608	0.781	0.936	1.103	1.281	1.471	1.673	1.887
CUBIC YARDS OF CRUSHED STONE PER LINEAR FOOT OF PIPE IN CLASS B BEDDING	0.111	0.143	0.207	0.280	0.381	0.475	0.578	0.590	0.810	0.939	1.078



Notes:

1. Stainless steel casing spacers as manufactured by Cascade or equal may be used rather than a timber skid system.
2. All casing ipes shall be welded steel pipe conforming to ASTM DES A139 Grade B or ASTMDES A53 Grade B, having a minimum inside diameter as indicated on plans. The minimum wall thickness shall be 3/8" or thicker if so indicated on the plan and profile drawings.

CORRESPONDING CARRIER AND CASING PIPE SIZES											
NOMINAL INSIDE DIAMETER OF CARRIER PIPE (INCHES)	15	18	24	30	36	42	48	54	60	66	72
MINIMUM INSIDE DIAMETER OF CASING PIPE (INCHES)	30	36	48	60	60	66	78	84	90	96	102

DETAIL OF JACKED CROSSINGS

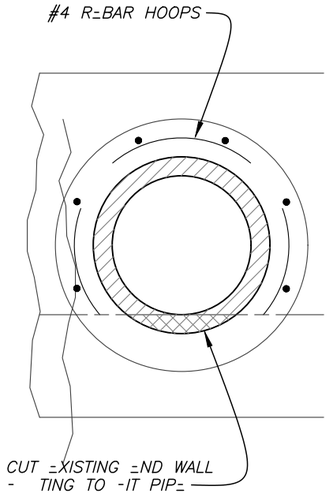
Not To Scale

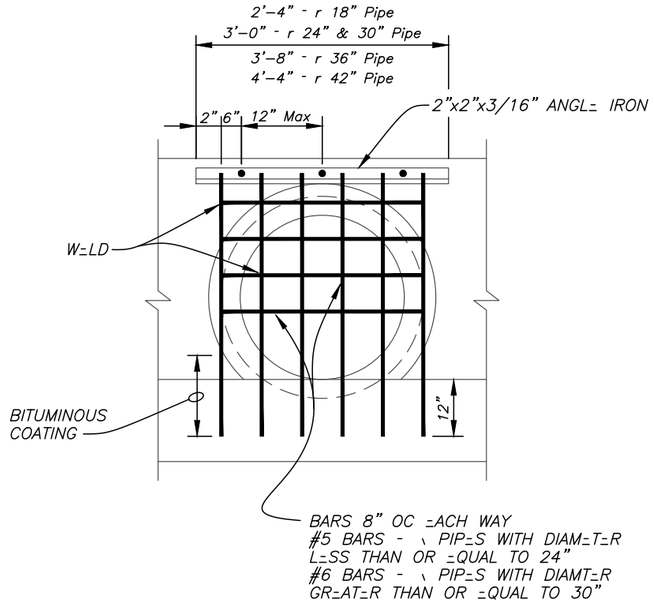
No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1	12/09/04	NEW SHEET	4		

DES: STORM
DRN: STORM
CKD:
DATE:

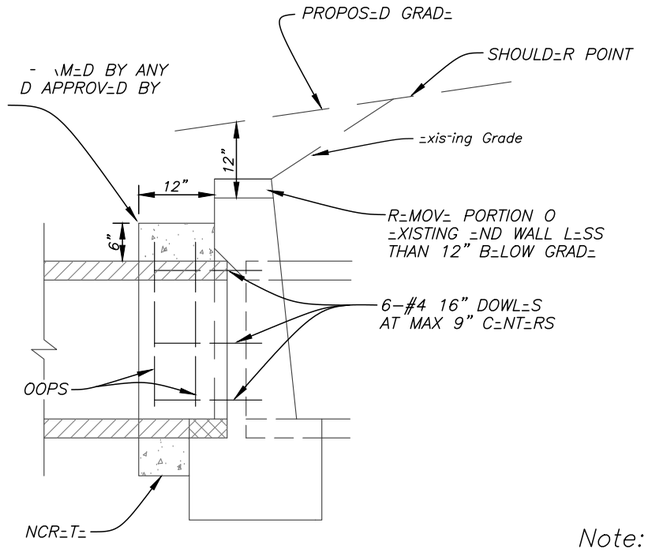
CITY of TAMPA
Department of Transportation and Stormwater Services
Stormwater Engineering Division

PAYMENT LIMITS & JACKED CROSSINGS





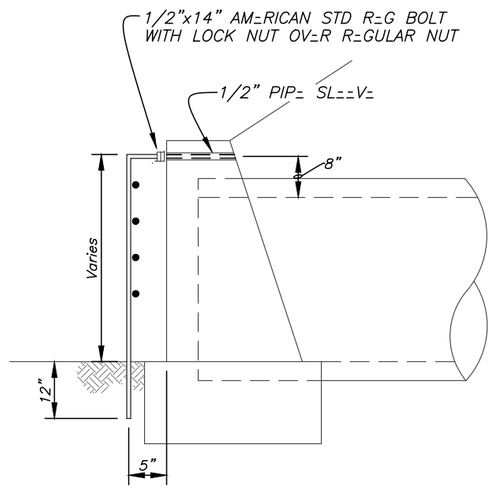
Note:
Guards to be constructed only at locations specified in detail plans



CRETE COLLAR FOR EXTENSION OF EXISTING PIPE CULVERT

No- To Scale

Note:
Stormwater Engineering does not allow blind conections to existing or proposed pipes.



GUARD AT PIPE ENDS

No- To Scale

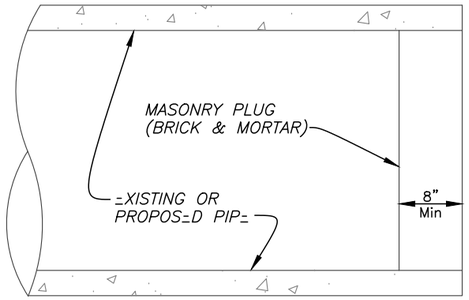
	No.	DATE	REVISIONS
	6		
	5		
	4		

DES: Storm
DRN: Storm
CKD:
DATE: 6/19

CITY of TAMPA
Department of Transportation and Stormwater Services
Stormwater Engineering Division

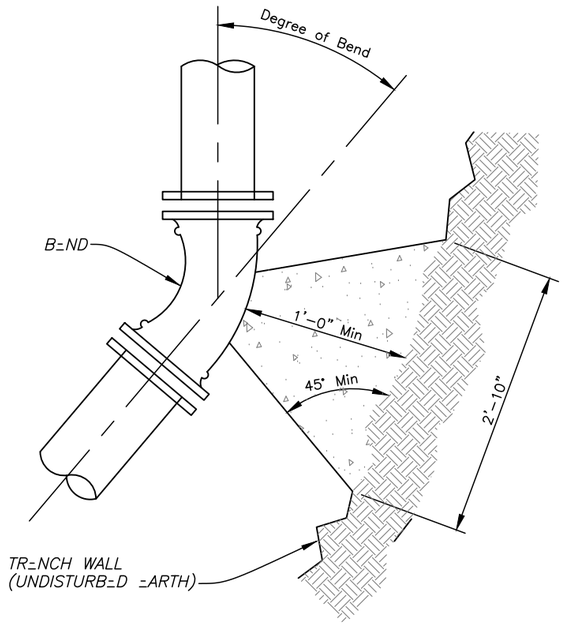
MISCELLANEOUS DETAILS

SHEET 33 OF 40



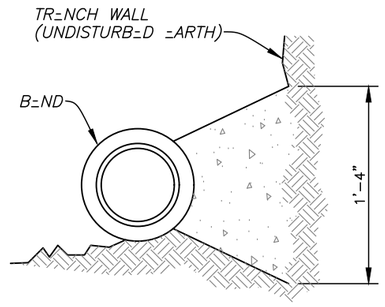
PIPE PLUG

No- To Scale



THRUST BLOCK

- To Scale



Notes:

1. Concrete shall be kept at sufficient distance from joints for removal of all joint accessories including bolts.
2. All bearing surfaces are to be carried to undisturbed soil.
3. Poor soil (silty soils, clay, muck or peat) will require larger thrust blocks.

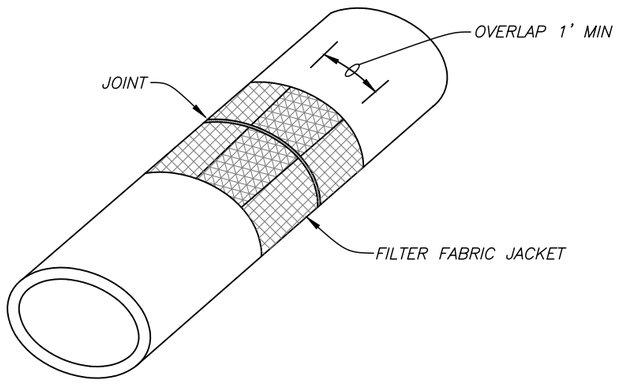
	No.	DATE	REVISIONS
	6		
	5		
	4		

DES: STORM
DRN: STORM
CKD:
DATE: 7/03

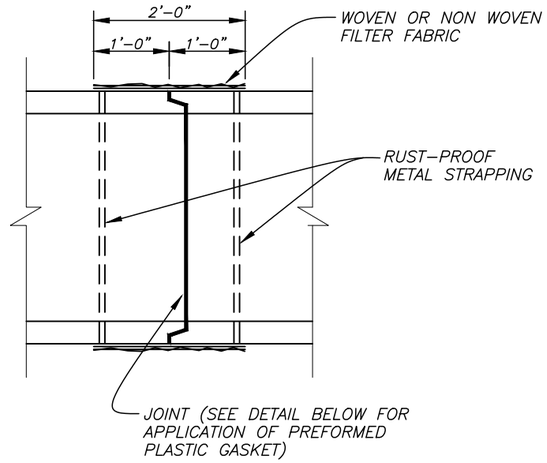
CITY of TAMPA
Department of Transportation and Stormwater Services
Stormwater Engineering Division

MISCELLANEOUS DETAILS

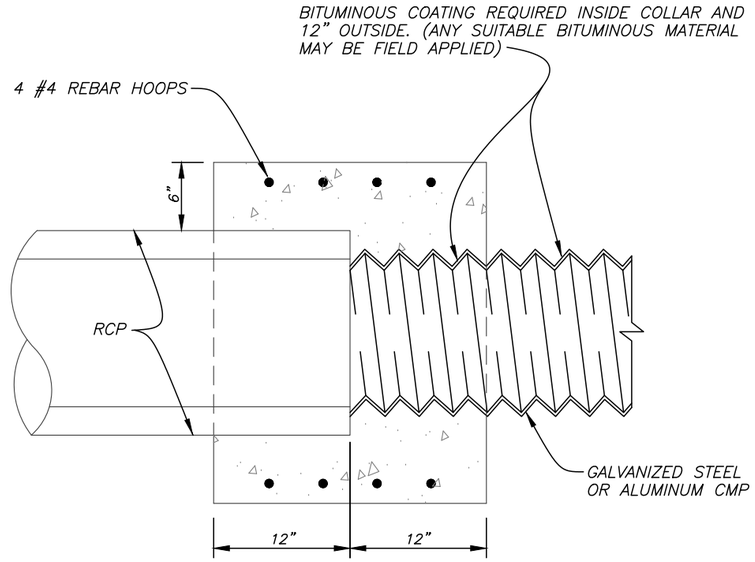
SHEET 34 OF 40



ISOMETRIC VIEW

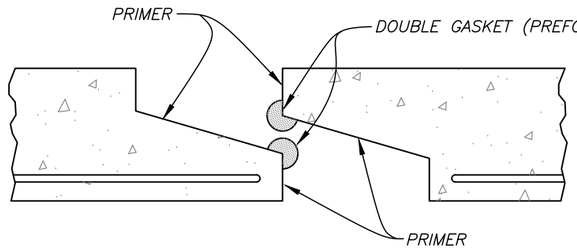


PIPE SECTION



CONCRETE JACKET FOR CONNECTING DISSIMILAR TYPES OF PIPES

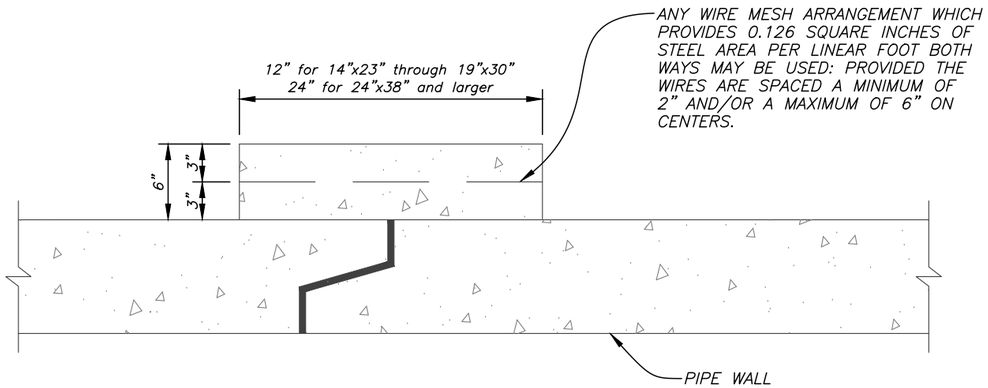
Not To Scale



JOINT SECTION (BEFORE PULL-UP)

ELLIPTICAL CONCRETE PIPE JOINTS

Not To Scale



ELLIPTICAL CONCRETE PIPE JACKET

Not To Scale

NOTES:

1. Either filter fabric or concrete jacket shall be provided at any single joint (not both).
2. Concrete jacket shall be provided at least at the last two joints before the outfall end if the pipe is not secured by an end wall. Engineer may specify concrete jacket at other joints.
3. Cost of concrete jacket and filter fabric jacket are to be included in the cost of elliptical pipe culverts.
4. Filter fabric shall meet FDOT Standard Specification 441-2.3.

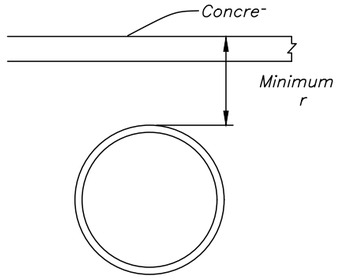
No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1			4		

DES: STORM
DRN: STORM
CKD:
DATE: 7/03

CITY of TAMPA
Department of Transportation and Stormwater Services
Stormwater Engineering Division

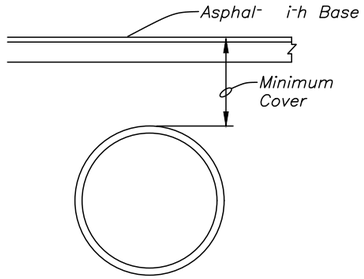
MISCELLANEOUS DETAILS

SHEET 35 OF 40



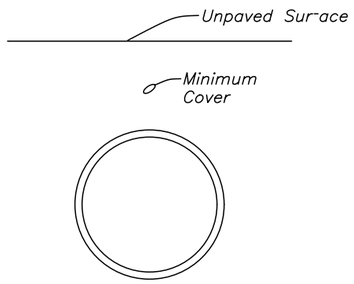
CONCRETE APRON *

CULVERT PIPE	MINIMUM COVER
Class III RCP	12"
Class IV RCP	9"
Corruga- d HDP=	12"
C-900 PVC	12"



ASPHALT APRON *

CULVERT PIPE	MINIMUM COVER
Class III RCP	15"
Class IV RCP	12"
Corruga- d HDP=	15"
C-900 PVC	15"



UNPAVED APRON *

CULVERT PIPE	MINIMUM COVER
Class III RCP	15"
Class IV RCP	12"
Corruga- d HDP=	15"
C-900 PVC	15"

NIMUM COVER FOR CULVERT SIZES UP TO " ROUND AND 24" X 38" ELLIPTICAL PIPE

rger Sizes Require Stormwater Department Approval)

ROUND PIPE TO ELLIPTICAL PIPE CONVERSION	
ROUND PIPE	ELLIPTICAL PIPE (Concre- nly)
15"	12" x 18"
18"	14" x 23"
24"	19" x 30"
30"	24" x 38"

ROUND PIPE TO TRENCH DRAIN CONVERSION	
ROUND PIPE	CROSS-SECTIONAL AREA (- r Trench Drain Conversions)
15"	1.2 S.-.
18"	1.8 S.-.
24"	3.1 S.-.
30"	4.9 S.-.

* WHEN MINIMUM COVER COULD NOT BE ACHIEVED; TRENCH DRAIN MUST BE USED. (NO SWALED D/W'S)

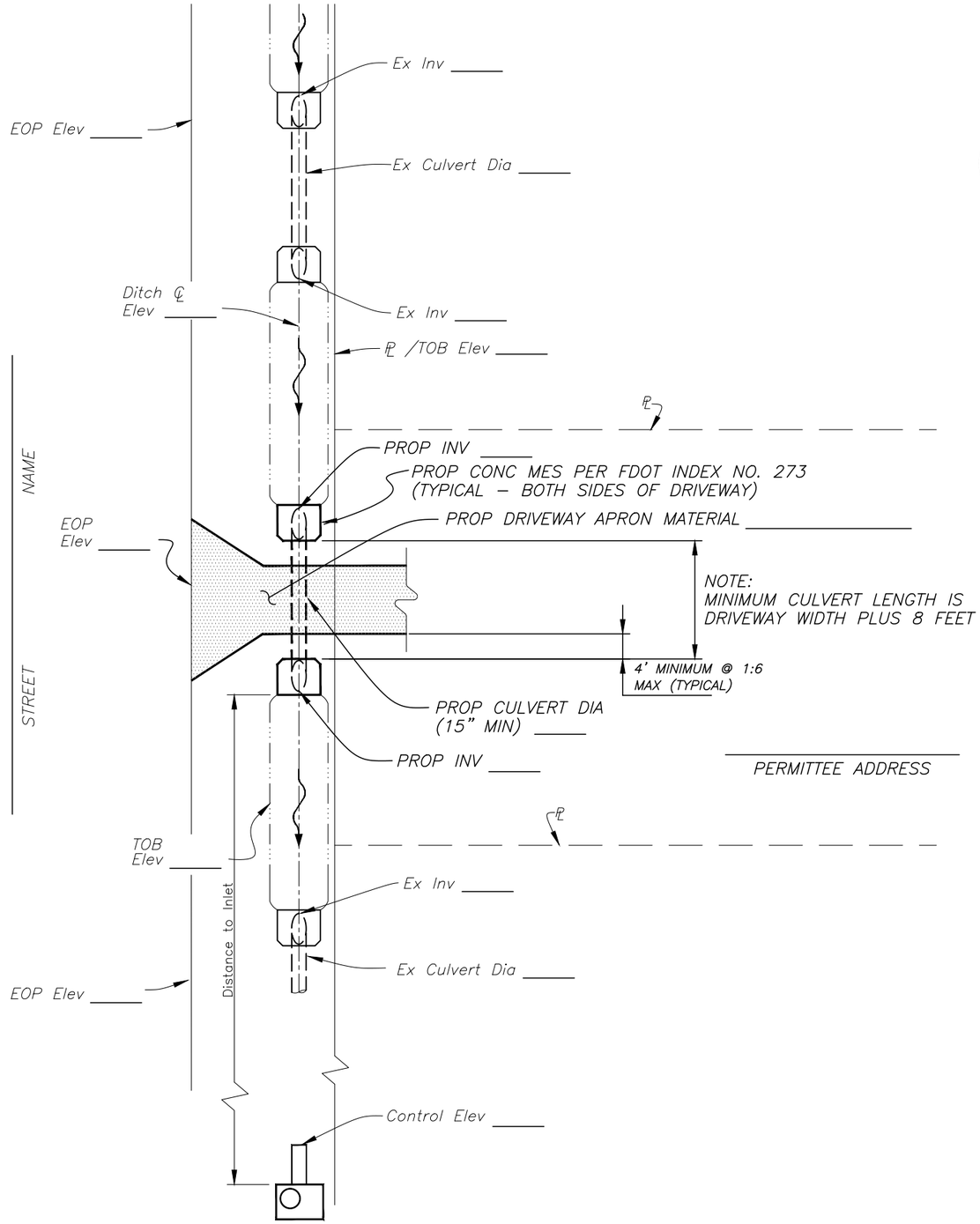
	No.	DATE	REVISIONS
	6		
	5		
	4		

DES: STORM
DRN: STORM
CKD:
DATE:

CITY of TAMPA
Department of Transportation and Stormwater Services
Stormwater Engineering Division

RESIDENTIAL DRIVEWAY CULVERT STANDARDS

SW



PROVIDE NORTH ARROW

Not To Scale

PROP – PROPOSED
EX – EXISTING
EOP – EDGE OF PAVEMENT
℄ – PROPERTY LINE
℄ – CENTERLINE
TOB – TOP OF BANK
INV – INVERT ELEVATION
ELEV – ELEVATION
DIA – DIAMETER OF PIPE/CULVERT
DIRECTION OF DRAINAGE FLOW

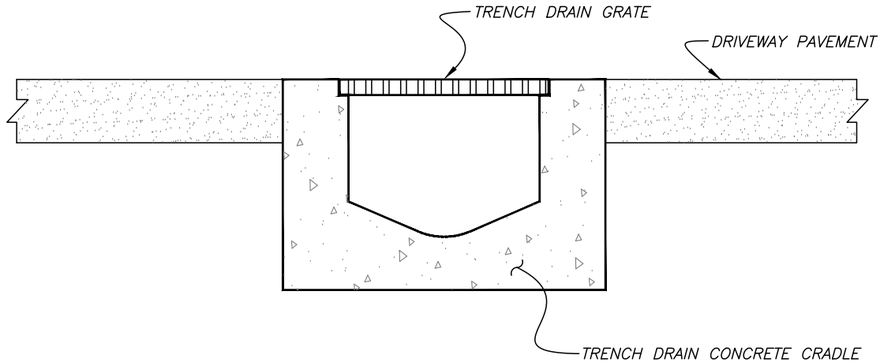
No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1	12/09/04	NEW SHEET	4		

DES: STORM
DRN: STORM
CKD:
DATE:

CITY of TAMPA
Department of Transportation and Stormwater Services
Stormwater Engineering Division

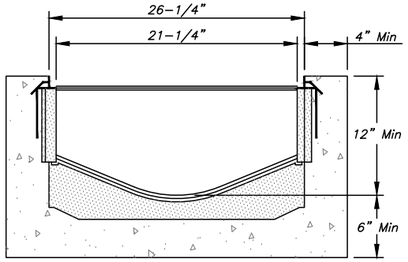
RESIDENTIAL DRIVEWAY CULVERT STANDARDS

SHEET 37 OF 40



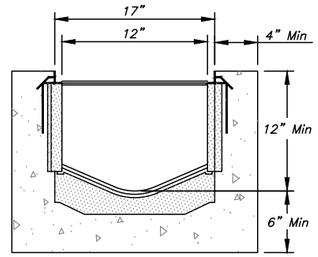
TYPICAL TRENCH DRAIN

Not to Scale



LARGER THROAT EXAMPLE

Not to Scale



12" MIN THROAT EXAMPLE

Not to Scale

TRENCH DRAIN SUBSTITUTION FOR CULVERT IN LOW-COVER CONDITIONS

Use Cross-Sectional Area Chart to convert from pipe size
Swaled driveways are not permitted – use trench drains

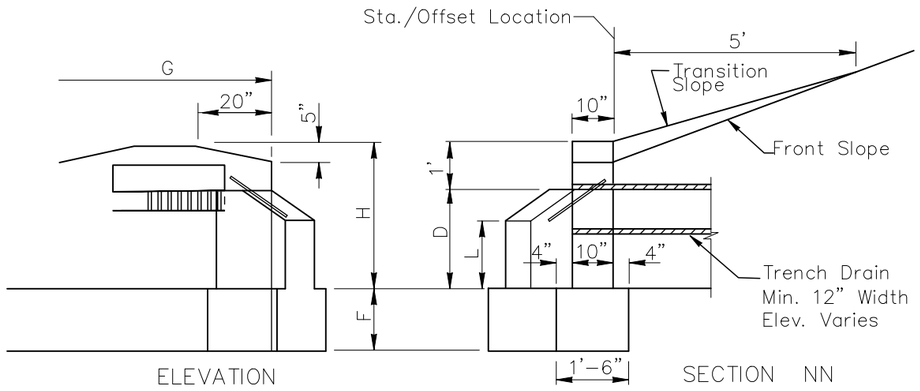
No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1	03/31/16	NEW SHEET	4		

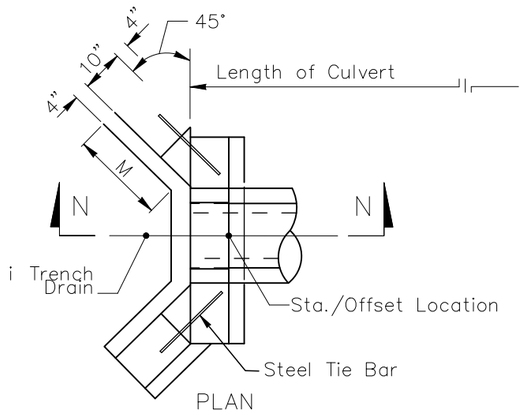
DES: STORM
DRN: STORM
CKD:
DATE:

CITY of TAMPA
Department of Transportation and Stormwater Services
Stormwater Engineering Division

RESIDENTIAL DRIVEWAY
TRENCH DRAIN EXAMPLES

SHEET 38 OF 40





CONCRETE ENDWALL WITH 45° WINGS FOR TRENCH DRAINS

GENERAL NOTES

1. Winged concrete endwalls are intended for use outside the clear zone.
2. Chamfer all exposed edges ¾".
3. Concrete shall be Class I, except ASTM C478 (4000 psi) Concrete may be substituted for precast items manufactured in plants meeting the requirements of Section 449 of the Specifications.
4. Endwall to be paid for under the contract unit price for Class I Concrete.
5. Sodding to be in accordance with Index No. 281, and paid for under the contract unit price for Performance Turf, SY.
6. Refer to FDOT Index 430-040 for specifications.

	No.	DATE	REVISIONS
	6		
	5		
	4		

DES: STORM
DRN: STORM
CKD:
DATE: 05/18

CITY of TAMPA
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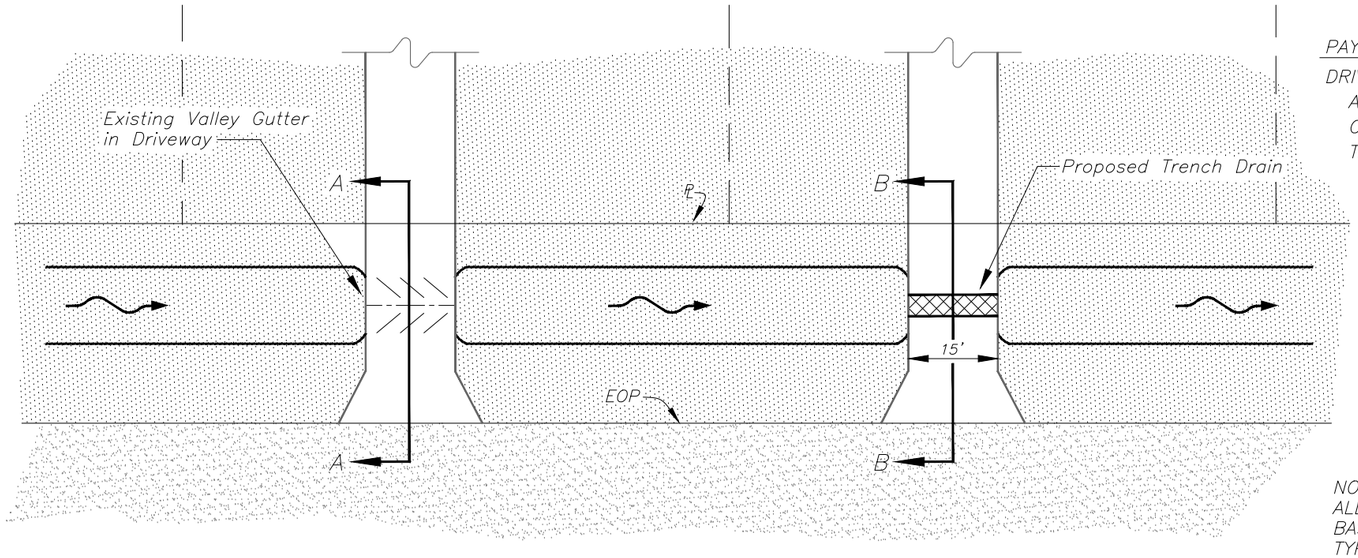
Stormwater Engineering Division

MODIFIED HEADWALL
FDOT INDEX 430-040

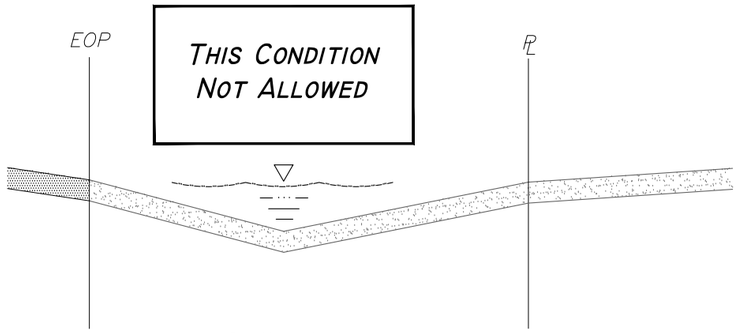
SHEET 39 of 40



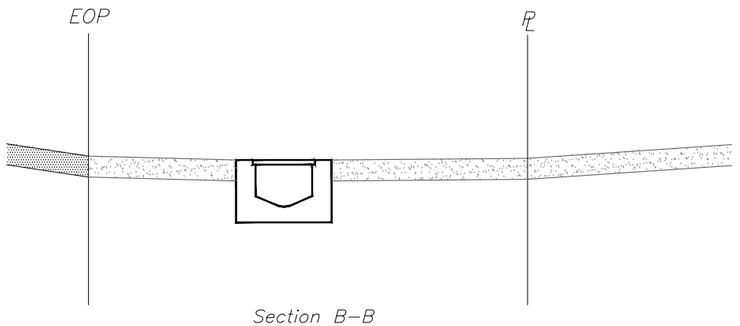
PAY ITEMS

DRIVEWAY RESORATION:
- ASPHALT
- CONCRETE
- TRENCH DRAIN

NOTE:
ALL PAY ITEMS ARE BASED ON A 70' TYPICAL LOT WIDTH



Section A–A
Existing Valley Gutter
In Driveway
Not to Scale



Section B–B
Proposed Trench Drain
Not to Scale

No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1	12/09/04	NEW SHEET	4		

DES: STORM
DRN: STORM
CKD:
DATE: 12/04

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VALLEY DRIVEWAY TO FLAT DRIVEWAY - NO PIPE RELIC DITCH SYSTEMS

SHEET 40 OF 40