

CITY OF TAMPA STORMWATER DEPARTMENT
STANDARD DETAILS GENERAL NOTES

1. ALL DRAINAGE STRUCTURES (MANHOLES, INLETS, OUTFALL STRUCTURES AND OTHERS) SHALL INCLUDE A 6" THICK COMPACTED #37 AGGREGATE FOUNDATION, WRAPPED COMPLETELY WITH FILTER FABRIC MEETING FOOT STANDARD SPECIFICATIONS 441-2.3.
2. ALL PIPE JOINTS (ROUND, ELLIPTICAL AND BOX CULVERTS) SHALL BE WRAPPED COMPLETELY WITH FILTER FABRIC MEETING FOOT STANDARD SPECIFICATIONS 441-2.3. FABRIC SHALL EXTEND ONE FOOT ONTO EACH PIPE SECTION (JOINT) AND SHALL OVERLAP A MINIMUM OF ONE FOOT CIRCUMFERENTIALLY. FABRIC SHALL BE HELD IN PLACE WITH RUST-PROOF METAL STRAPPING.

City Of Tampa Standard Details	
Schedule Of Castings	
Structure Type	
All Curb Inlets (Cover)	USF 1190 (85 lb.)
All Curb Inlets (Ring)	USF 1190
All Manholes (Cover)	USF Type A0 (100 lb.)
All Manholes (Standard Ring)	USF 575
All Manholes (Inverted Ring)	USF 1175
Type T Grate Inlets	USF 6208
Type E Grate Inlets	USF 6208
Type H Grate Inlets	USF 6208
Grate Seats	USF 710F
Notes:	
1. All castings are as above or equal.	
2. All castings outside City Of Tampa ROW or easements shall not include the words "City Of Tampa" nor the ship logo.	
3. Manhole covers shall include the text "Stormwater" as shown in the Standard Drawing.	

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29	Payment Limits & Jacked Crossing Details
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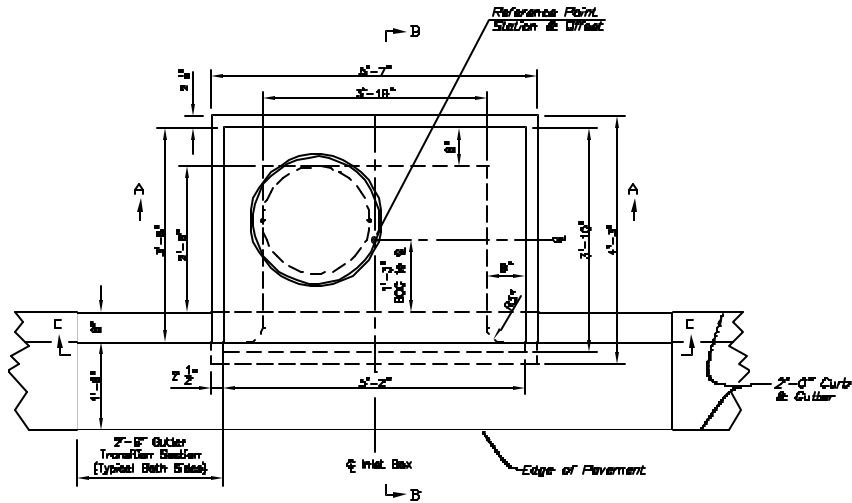
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DES: Storm
DRN: Storm
CHK:
DATE: 7/03

CITY of TAMPA
STORMWATER DEPARTMENT

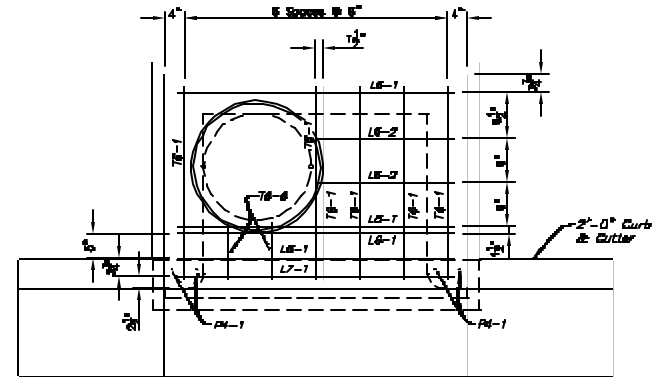
INDEX & GENERAL NOTES

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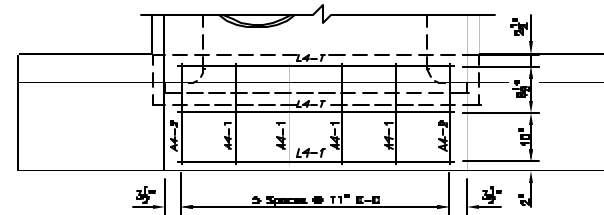


PLAN
Scale: 1/2" = 1'-0"

SCHEDULE OF REINFORCING STEEL BARS (FOR INLET TOP AND APRON ONLY)					
MARK	SIZE	QTY	LENGTH	WT EACH	TOTAL WT
TB-1	No. 8	8	5'-6"	5.752	30.736
TB-2	No. 8	2	1'-1"	1.827	3.253
L4-1	No. 4	3	4'-11"	3.283	9.859
LB-1	No. 8	1	4'-11"	7.290	29.041
LB-2	No. 8	2	2'-5 1/2"	3.882	7.384
L7-1	No. 7	1	4'-11"	10.030	10.030
AA-1	No. 4	4	7'-3"	1.188	4.678
AA-2	No. 4	2	2'-3 1/4"	1.387	3.702
PA-1	No. 4	4	1'-1 1/2"	0.782	3.028
TOTAL WEIGHT IN POUNDS					102.2167



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



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

1/2" = 1'-0"

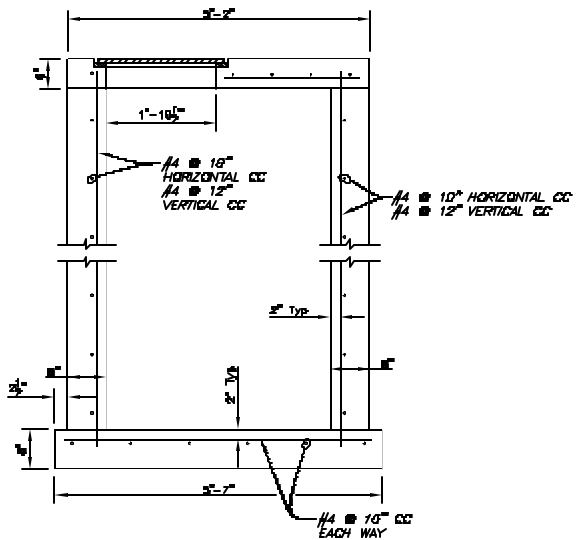
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DRN: Storm
CHK:
DATE: 7/03

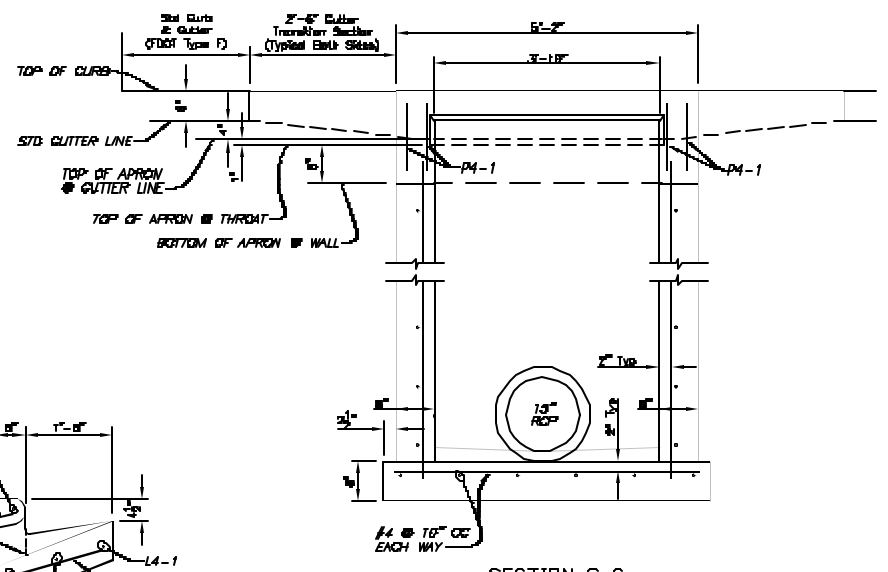
CITY of TAMPA
STORMWATER DEPARTMENT

STANDARD INLET DETAILS
TYPE I INLET

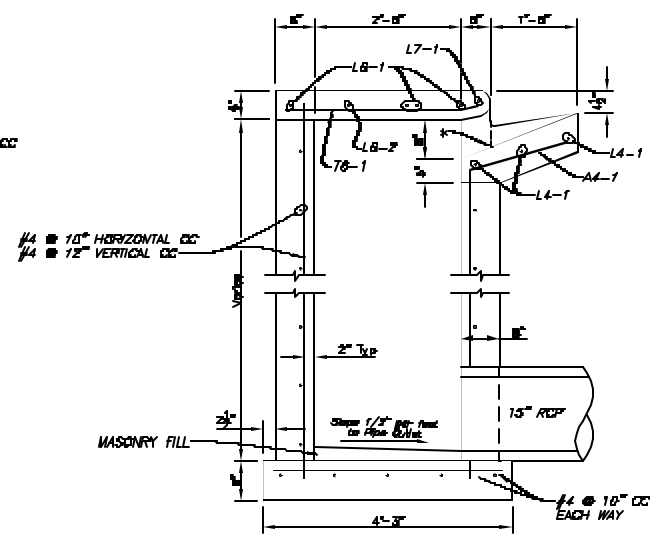
W.O.
SHEET
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OF 30



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



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



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

* LOCATION OF THROAT ELEVATION

1/2"

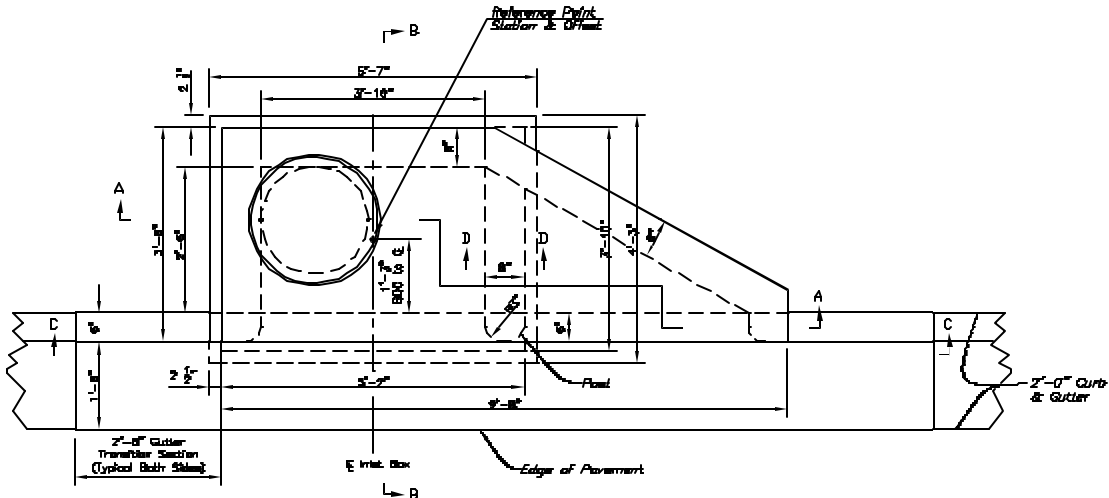
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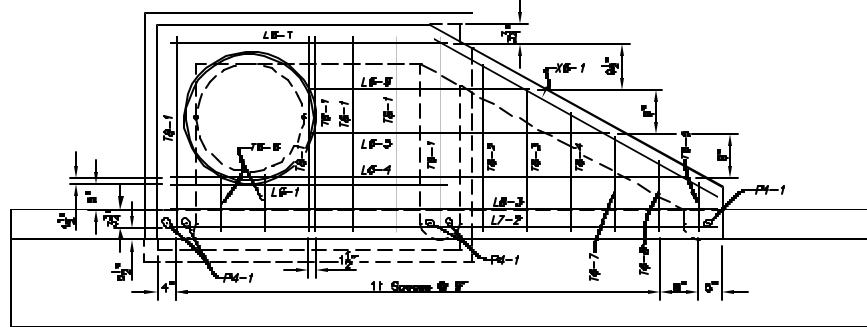
CITY of TAMPA
STORMWATER DEPARTMENT

STANDARD INLET DETAILS
TYPE I INLET

W.O.
SHEET
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OF 30



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



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

1/2"

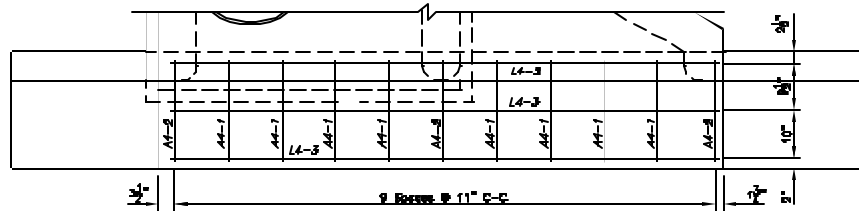
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DRN: Storm
CHK:
DATE: 7/03

CITY of TAMPA
STORMWATER DEPARTMENT

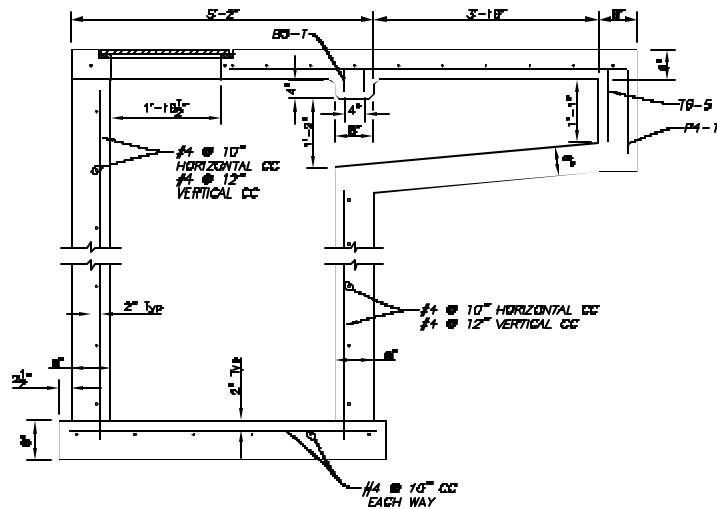
STANDARD INLET DETAILS
TYPE 2 INLET

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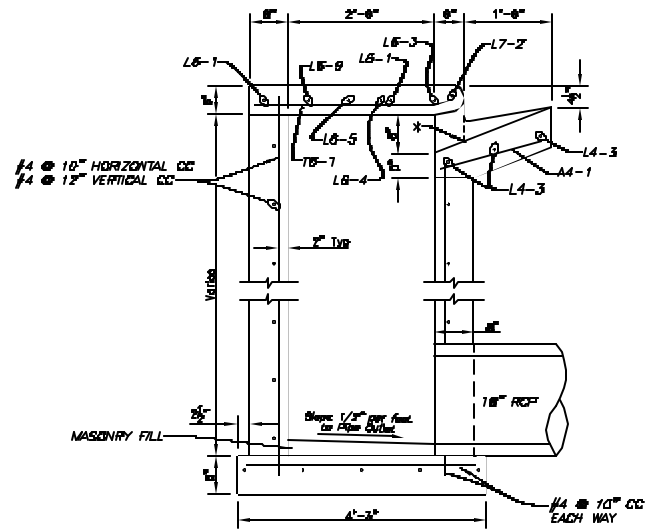
PLAN - APRON REINFORCEMENT

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



SECTION A-A

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



SECTION B-B

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

* = Location of
Throat Elevation

1/2" = 1'-0"

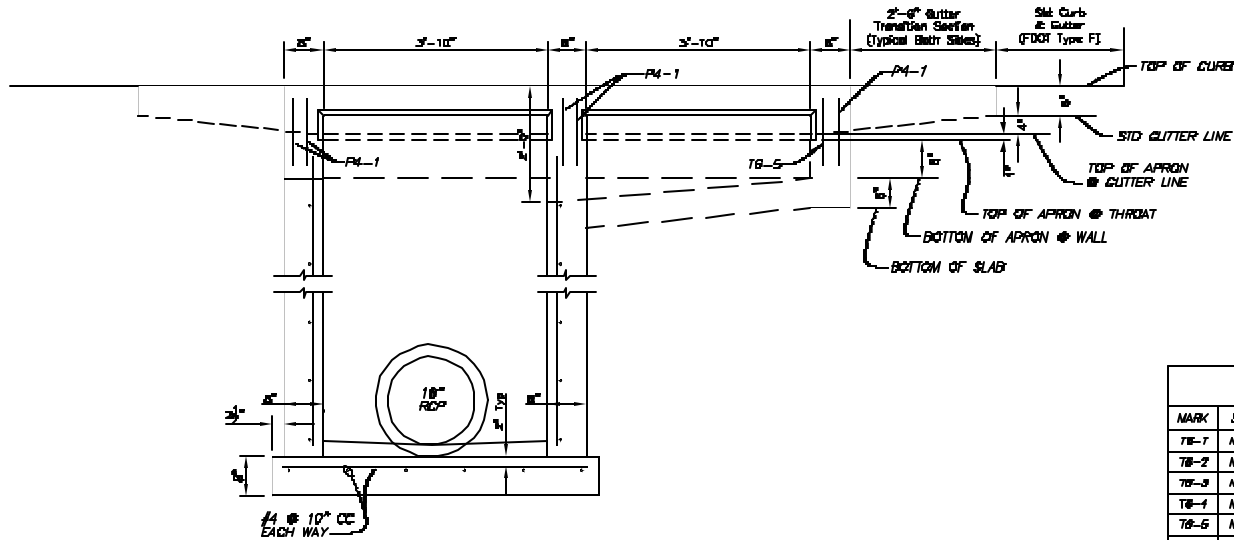
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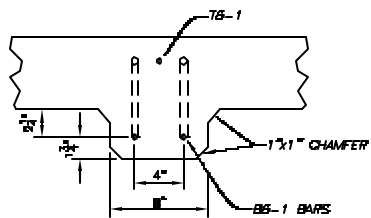
CITY of TAMPA
 STORMWATER DEPARTMENT

STANDARD INLET DETAILS
 TYPE 2 INLET

W.O.
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SECTION C-C
Scale: 1/2" = 1'-0"



SECTION D-D
Not To Scale

SCHEDULE OF REINFORCING STEEL BARS (FOR INLET TOP AND APRON ONLY)					
MARK	SIZE	QTY	LENGTH	WT EACH	TOTAL WT
TB-1	No 6	6	3' 4"	9.007	54.042
TB-2	No 6	1	3' 10 1/2"	4.318	4.318
TB-3	No 6	1	2' 6 1/2"	3.882	3.882
TB-4	No 6	1	2' 7 1/2"	3.887	3.887
TB-5	No 6	1	10"	1.252	1.252
TB-6	No 6	2	1' 1"	1.827	3.654
TB-7	No 6	1	1' 7 1/2"	2.441	2.441
TB-8	No 6	1	1' 2 1/2"	1.875	1.875
LB-1	No 6	2	4' 8"	7.136	14.268
LB-2	No 6	1	3' 4"	14.078	14.078
LB-3	No 6	1	6' 10 1/2"	13.330	13.330
LB-4	No 6	1	6' 1 3/4"	7.728	7.728
LB-5	No 6	1	3' 6 3/4"	6.728	6.728
L7-2	No 7	1	3' 4"	16.677	16.677
L1-3	No 1	3	3' 4"	6.258	18.774
AI-1	No 4	8	1' 8"	1.188	9.504
AI-2	No 4	3	2' 8 1/4"	1.851	5.553
PA-1	No 4	6	1' 1 1/2"	0.752	3.756
SB-1	No 6	2	3' 8 1/2"	9.970	11.140
XG-1	No 6	1	3' 8 1/2"	8.674	8.674
TOTAL WEIGHT IN POUNDS					181.108

1/2"

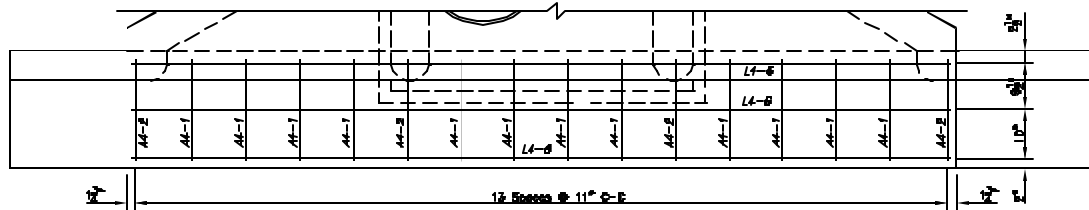
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CHK:
DATE: 7/03

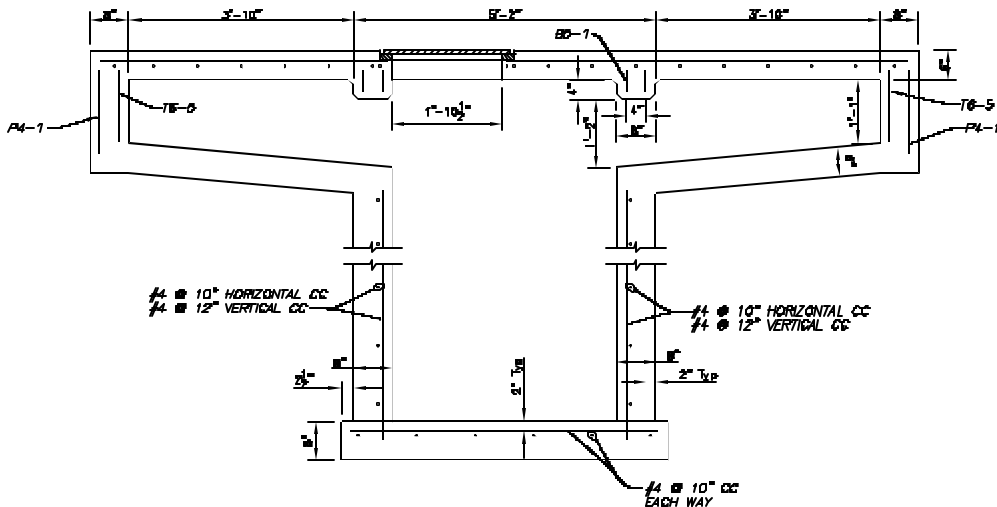
CITY of TAMPA
STORMWATER DEPARTMENT

STANDARD INLET DETAILS
TYPE 2 INLET

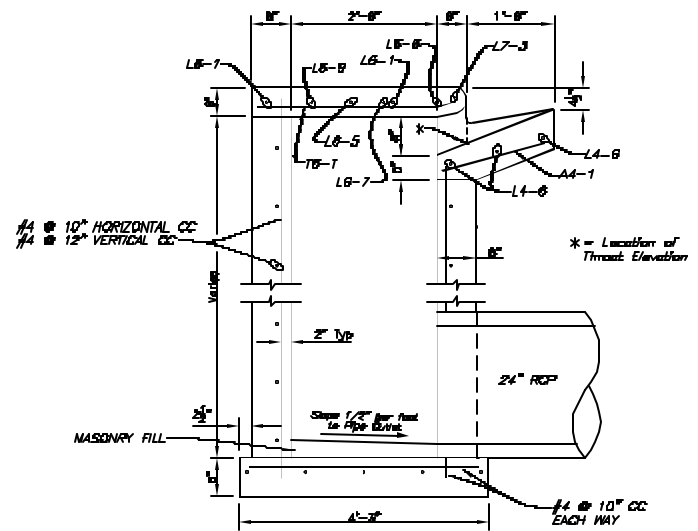
W.O.
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PLAN - APRON REINFORCEMENT
Scale: 1/2" = 1'-0"



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



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

1/2"

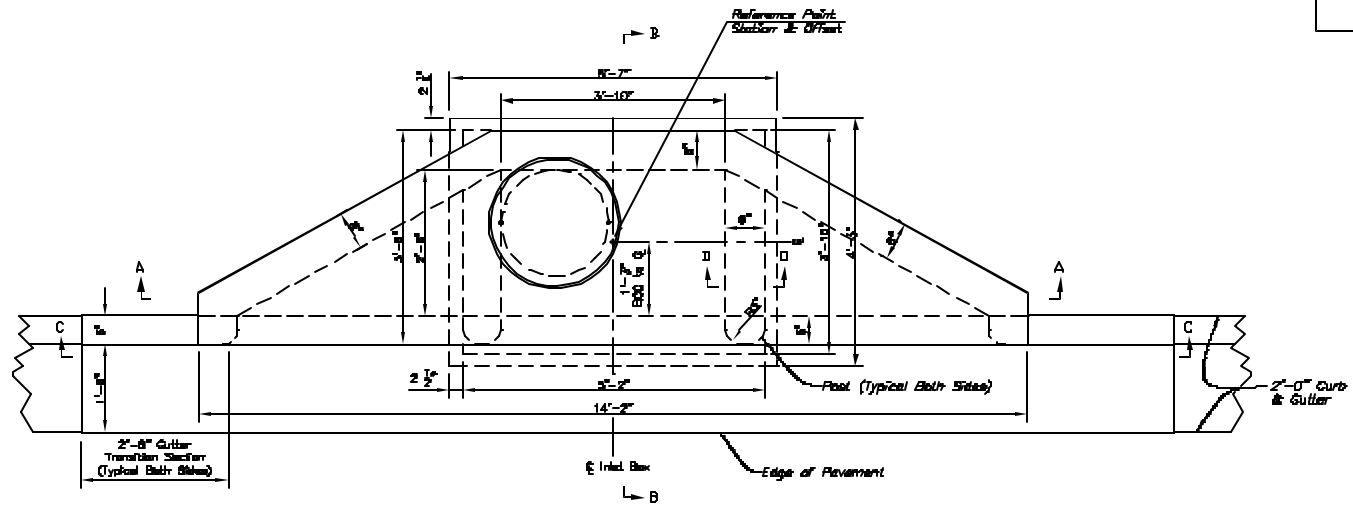
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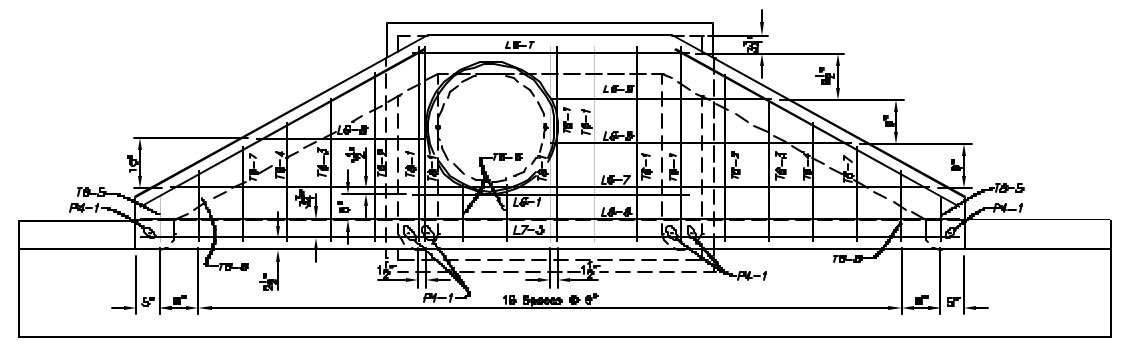
CITY of TAMPA
STORMWATER DEPARTMENT

STANDARD INLET DETAILS
TYPE 3 INLET

W.O.
SHEET
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PLAN
Scale: 1/2" = 1'-0"



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

1/2"

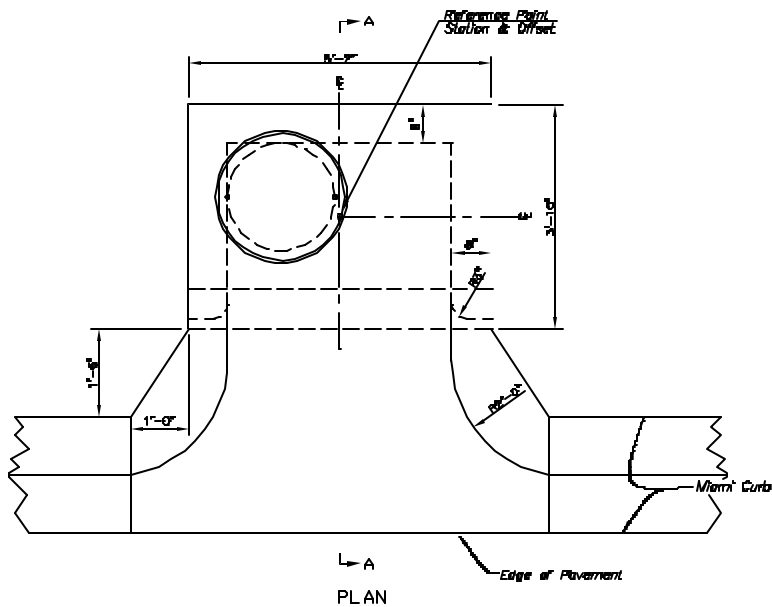
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CHKD:
DATE: 7/03

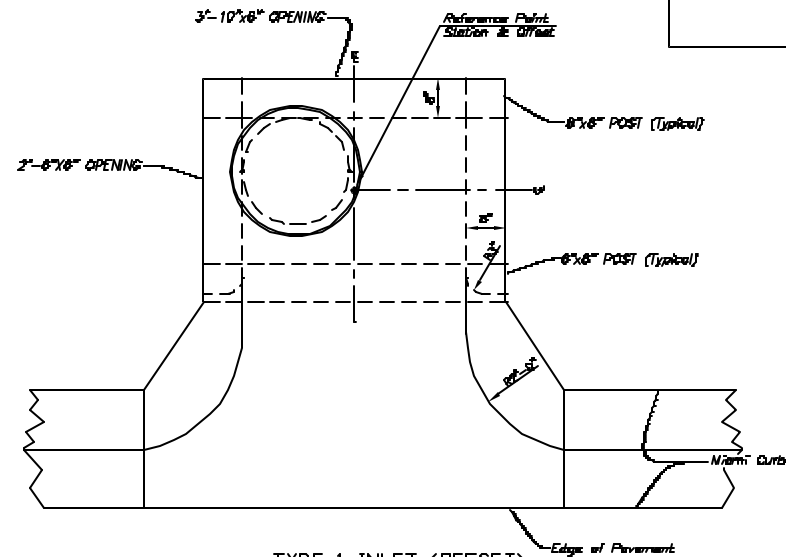
CITY of TAMPA
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STANDARD INLET DETAILS
TYPE 3 INLET

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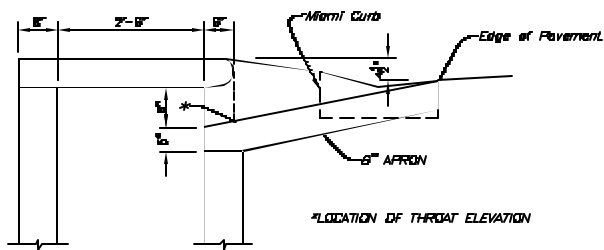


PLAN



TYPE 1 INLET (OFFSET)
WITH SIDE AND/OR BACK OPENINGS

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



SECTION A-A

TYPE 1 INLET (OFFSET)

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 carryway 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 1:3-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. (Observe 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 effecting 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 effecting 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 opening(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.

DATE: 7/03

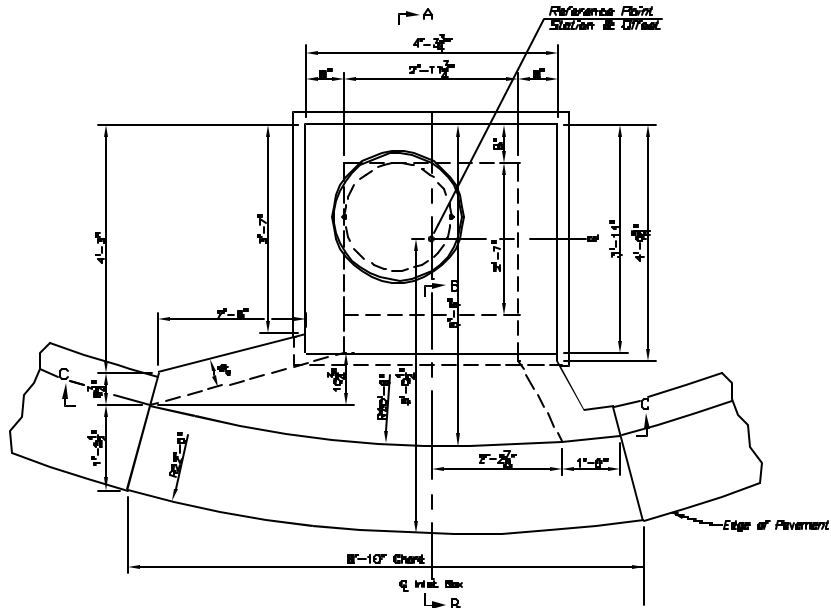
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CHKD:
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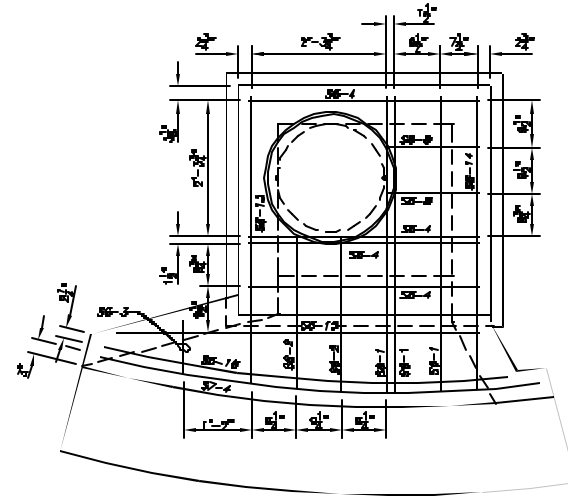
CITY of TAMPA
STORMWATER DEPARTMENT

STANDARD INLET DETAILS
TYPE I INLET MODIFIED

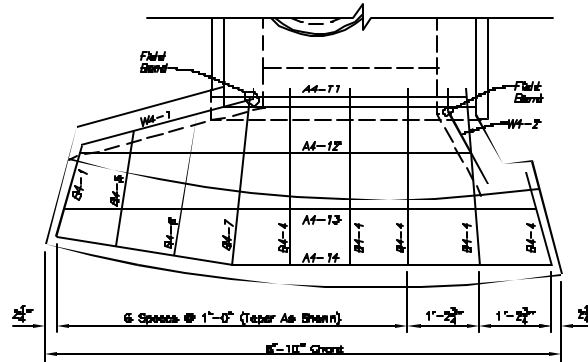
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PLAN
Scale: 1/2" = 1'-0"



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



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

1/2"

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

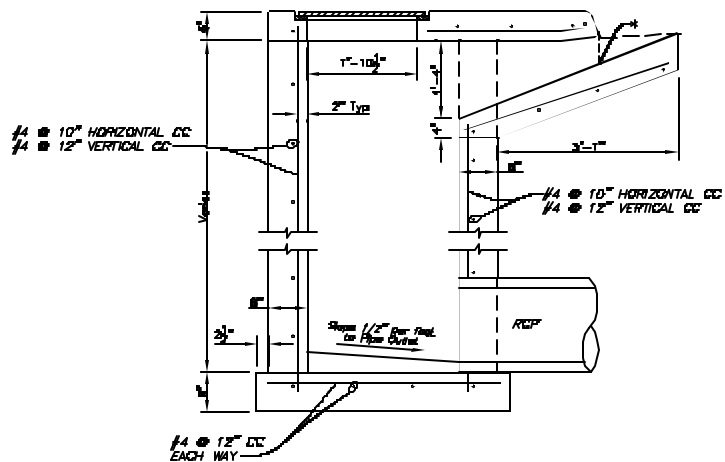
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CKD:
DATE: 7/03

CITY of TAMPA
STORMWATER DEPARTMENT

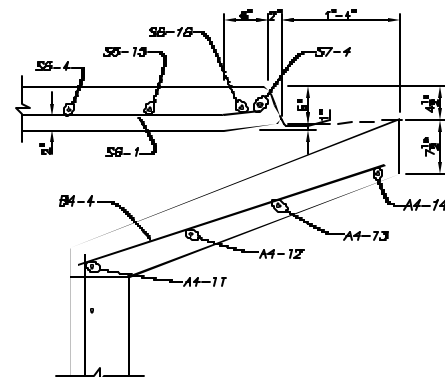
STANDARD INLET DETAILS
TYPE BR-2 CURB INLET

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* LOCATION OF THROAT ELEVATION

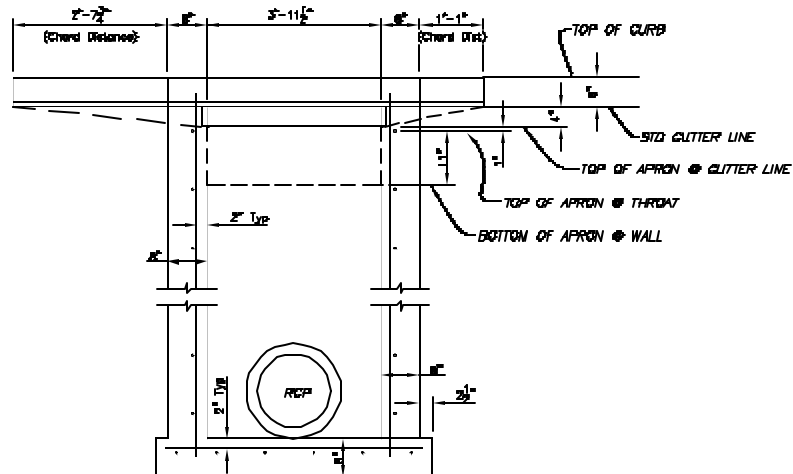


SECTION A-A
Scale: 1/2" = 1'-0"



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
AA-11	No 4	1	4' 2"	2.784	2.784	BA-3	No 8	1	1' 2 1/2"	1.814	1.814
AA-12	No 4	1	6' 11"	4.887	4.887	SB-4	No 8	4	3' 11 3/4"	5.876	23.508
AA-13	No 4	1	28' 1"	5.388	5.388	SB-5	No 8	2	1' 7 1/2"	2.441	4.882
AA-14	No 4	1	8' 5"	3.823	3.823	SB-13	No 8	7	5' 1 1/2"	7.888	7.888
BA-1	No 4	2	2' 8"	1.887	3.674	SB-14	No 8	1	3' 2 1/2"	7.822	7.822
BA-4	No 4	3	3' 8 3/4"	2.380	7.140	SB-15	No 8	7	8' 4 1/2"	8.973	62.811
BA-5	No 4	1	3' 3 1/2"	2.188	2.188	SB-16	No 8	1	7' 8"	11.216	11.216
BA-6	No 4	1	4' 0 3/4"	2.714	2.714	SB-4	No 7	1	7' 8 3/4"	18.873	18.873
BA-7	No 4	1	4' 10 1/2"	3.297	3.297	BA-1	No 4	2	3' 8"	2.338	4.676
SB-1	No 8	3	3' 3"	7.883	23.657	BA-2	No 4	2	2' 1"	1.381	2.762
SB-2	No 8	2	2' 11"	4.387	8.774						
TOTAL WEIGHT IN POUNDS											188.471



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

1/2"

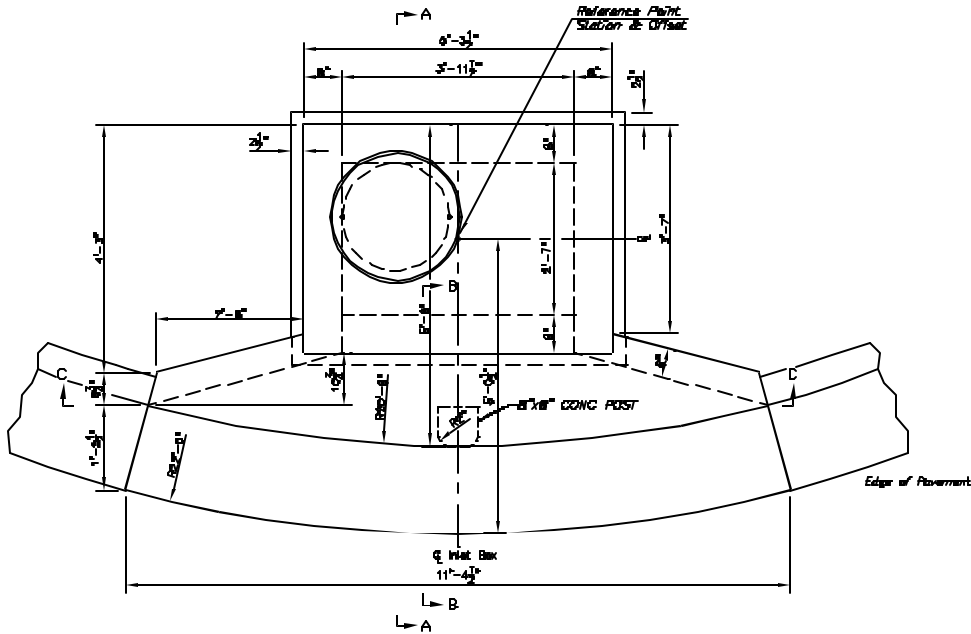
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DRN: Stamm
CHK:
DATE: 7/03

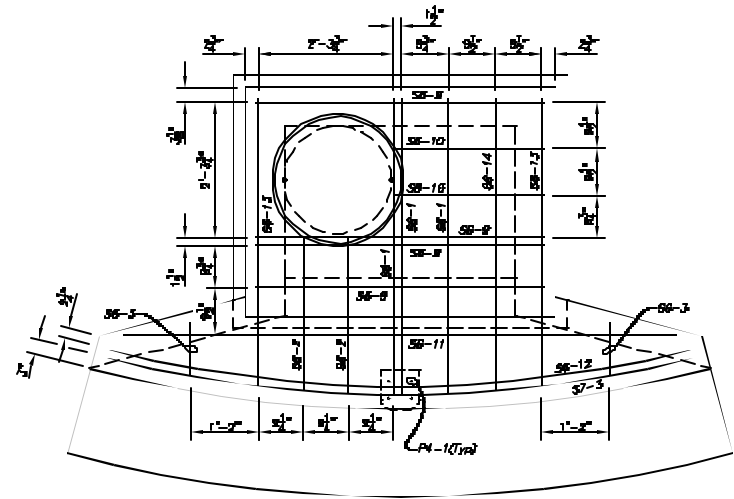
CITY of TAMPA
STORMWATER DEPARTMENT

STANDARD INLET DETAILS
TYPE BR-2 CURB INLET

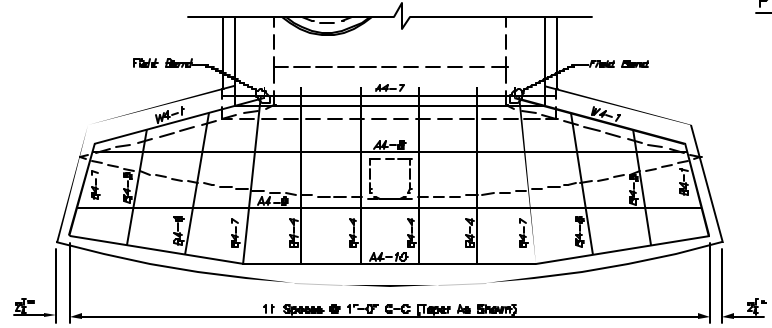
W.O.
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PLAN
Scale: 1/2" = 1'-0"



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



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

1/2" = 1'-0"

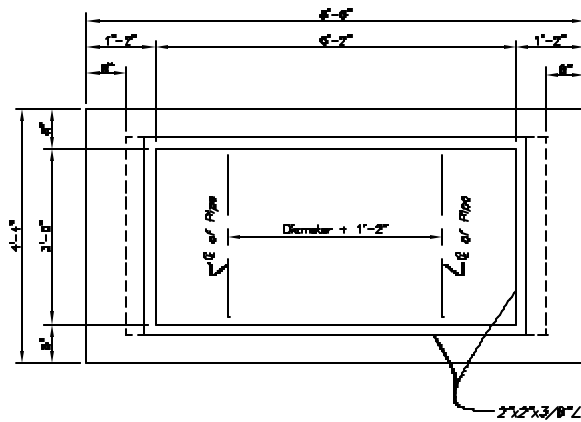
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DRN: Storm
CKD:
DATE: 7/03

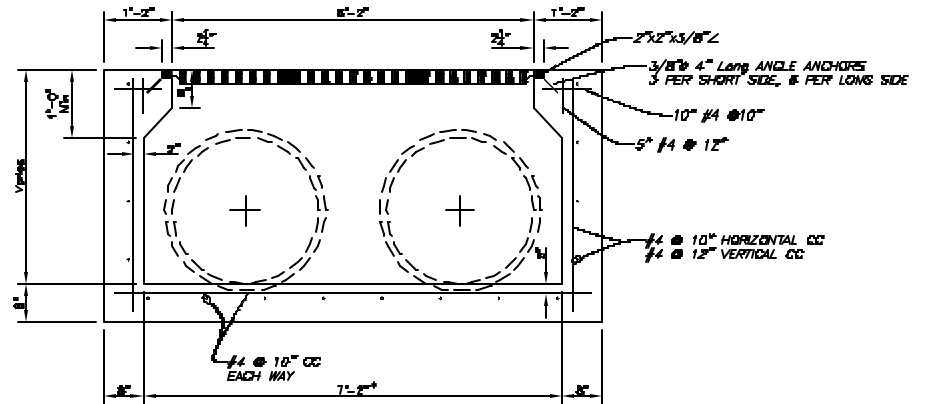
CITY of TAMPA
STORMWATER DEPARTMENT

STANDARD INLET DETAILS
TYPE BR-1 CURB INLET

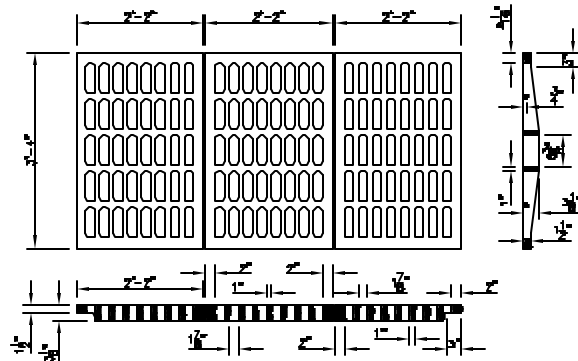
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PLAN



SECTION



CAST IRON GRATING
Traffic Bearing

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"

1/2"

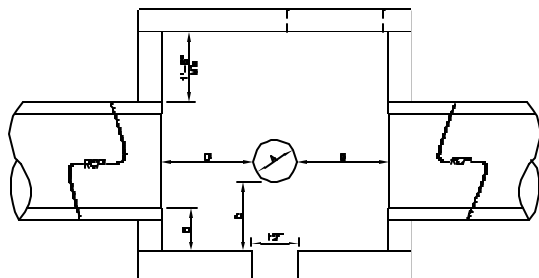
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DATE: 7/03

CITY of TAMPA
STORMWATER DEPARTMENT

STANDARD INLET DETAILS
TYPE H GRATE INLET

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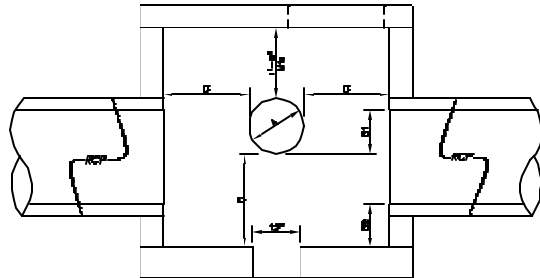
1/4" GALVANIZED
HARDWARE CLOTH

No. 4 COARSE AGGREGATE
2 1/2" x 2"

FILTER FABRIC

$\frac{D-1}{2}$ MINIMUM
(Use the greater of the two)

CONFLICT AT MID-POINT
Not To Scale



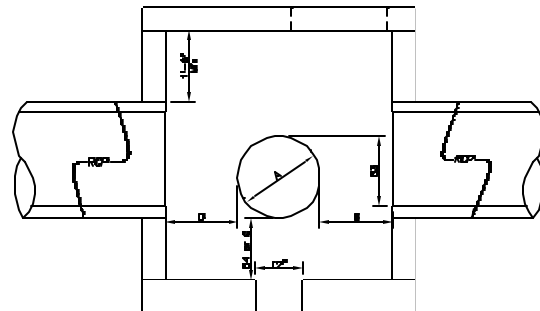
1/4" GALVANIZED
HARDWARE CLOTH

No. 4 COARSE AGGREGATE
2 1/2" x 2"

FILTER FABRIC

$\frac{D-1}{2}$ MINIMUM
(Use the greater of the two)

CONFLICT AT CROWN
Not To Scale



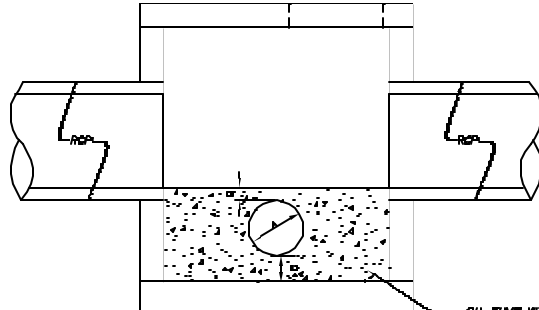
1/4" GALVANIZED
HARDWARE CLOTH

No. 4 COARSE AGGREGATE
2 1/2" x 2"

FILTER FABRIC

$\frac{D-1}{2}$ MINIMUM
(Use the greater of the two)

CONFLICT AT FLOWLINE
Not To Scale



$\frac{D-1}{2}$

CONFLICT BELOW FLOWLINE
WITH INSUFFICIENT CLEARANCE

Not To Scale

NOTES

1. Conflict manhole shop drawings shall be submitted to the Engineer for approval prior to fabrication or beginning of any work on the conflict manhole.
 2. The structural design shall be consistent with FDOT Index 2003 and as approved by the Engineer.
 3. Conflicting sanitary sewer pipes shall be sleeved in accordance with DSS standards.
 4. Conflicting water mains shall be sleeved if a joint in the pipeline falls within the conflict structure.
 5. Filter fabric shall meet FDOT Standard Specification 441-2.3.
- A = Outside diameter of the conflicting utility line or sleeve.
 D = 2'-0" or 1/2(A) whichever is greater.

1/2" 48111/11/2010 10:41 AM

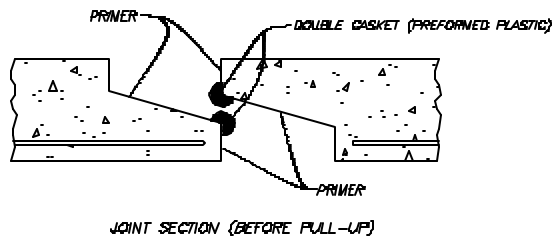
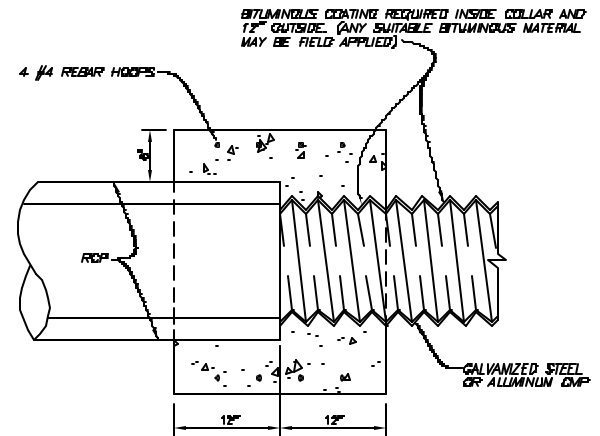
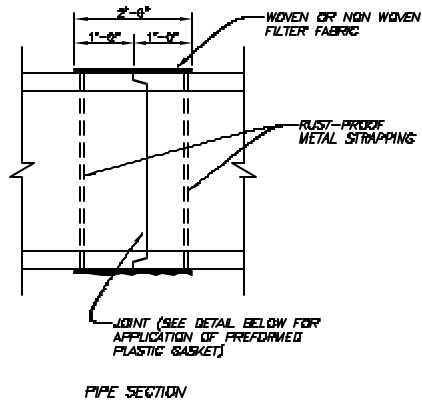
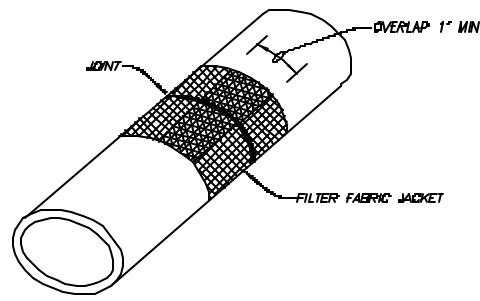
No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1	12/08/84	ADDED CONFLICT BELOW FLOW LINE	4		

DES: Slamm
 DRN: Slamm
 CHK:
 DATE: 7/03

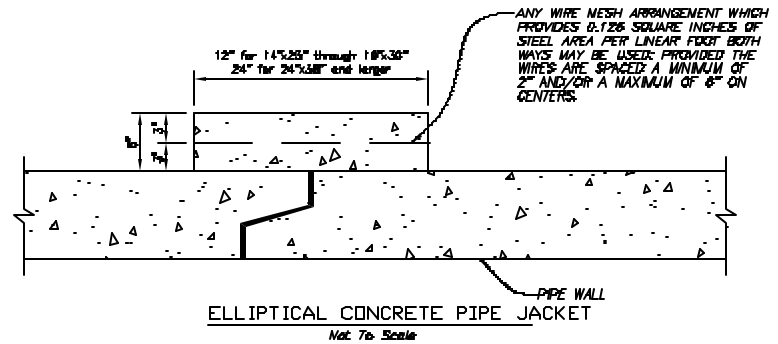
CITY of TAMPA
STORMWATER DEPARTMENT

GUIDELINES FOR CONFLICT MANHOLES

W.O.
 SHEET
23
 OF 30



ELLIPTICAL CONCRETE PIPE JOINTS
Not To Scale

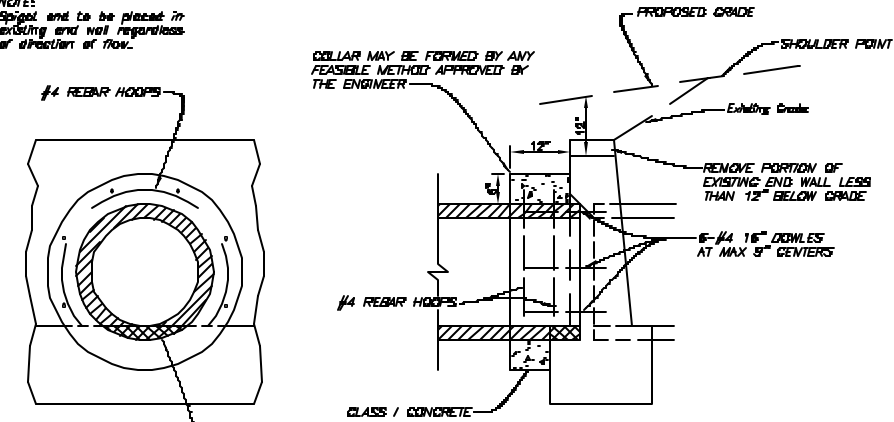


NOTES:

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 and 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.

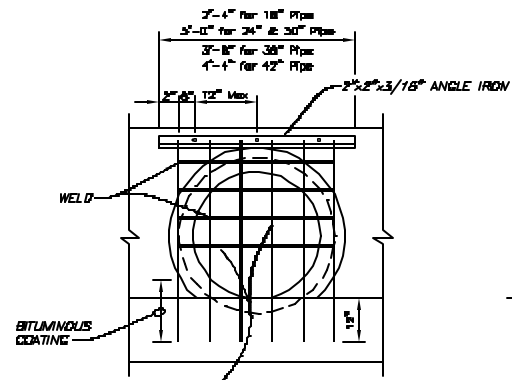
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5/8" 174 3/4" 174 7/8" 175" 175 1/8" 175 1/4" 175 3/8" 175 1/2" 175 5/8" 175 3/4" 175 7/8" 176" 176 1/8" 176 1/4" 176 3/8" 176 1/2" 176 5/8" 176 3/4" 176 7/8" 177" 177 1/8" 177 1/4" 177 3/8" 177 1/2" 177 5/8" 177 3/4" 177 7/8" 178" 178 1/8" 178 1/4" 178 3/8" 178 1/2" 178 5/8" 178 3/4" 178 7/8" 179" 179 1/8" 179 1/4" 179 3/8" 179 1/2" 179 5/8" 179 3/4" 179 7/8" 180" 180 1/8" 180 1/4" 180 3/8" 180 1/2" 180 5/8" 180 3/4" 180 7/8" 181" 181 1/8" 181 1/4" 181 3/8" 181 1/2" 181 5/8" 181 3/4" 181 7/8" 182" 182 1/8" 182 1/4" 182 3/8" 182 1/2" 182 5/8" 182 3/4" 182 7/8" 183" 183 1/8" 183 1/4" 183 3/8" 183 1/2" 183 5/8" 183 3/4" 183 7/8" 184" 184 1/8" 184 1/4" 184 3/8" 184 1/2" 184 5/8" 184 3/4" 184 7/8" 185" 185 1/8" 1

NOTE:
Spigot end to be placed in
existing end wall regardless
of direction of flow.

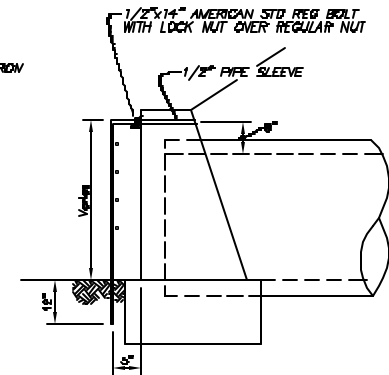


CONCRETE COLLAR FOR EXTENSION
OF EXISTING PIPE CULVERT
Not To Scale

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



GUARD AT PIPE ENDS
Not To Scale



CUT EXISTING END WALL
FOOTING TO FIT PIPE

#4 REBAR HOOPS

COLLAR MAY BE FORMED BY ANY
FEASIBLE METHOD APPROVED BY
THE ENGINEER

PROPOSED GRADE

SHOULDER POINT

Existing Grade

REMOVE PORTION OF
EXISTING END WALL LESS
THAN 12\"/>

6-#4 16\"/>

#4 REBAR HOOPS

CLASS 1 CONCRETE

2\"/>

3\"/>

4\"/>

5\"/>

2\"/>

WELD

BITUMINOUS
COATING

BARs 16\"/>

Max Diameter = 1/2
Diameter of Main Line
Pipe (or 1/2 height of
Elliptical Main Line Pipe)

#2 REBAR RING

PROPOSED STUB PIPE

CLASS 1 CONCRETE

CUT PIPE STEEL AND BEND

SMOOTH INSIDE JOINT
WITH MORTAR

PROPOSED MAIN LINE PIPE
(ROUND OR ELLIPTICAL)

CONCRETE COLLAR FOR JOINING
MAINLINE PIPE AND STUB PIPE
Not To Scale

1/2\"/>

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

DES: Storm
DRN: Storm
CHK:
DATE: 7/03

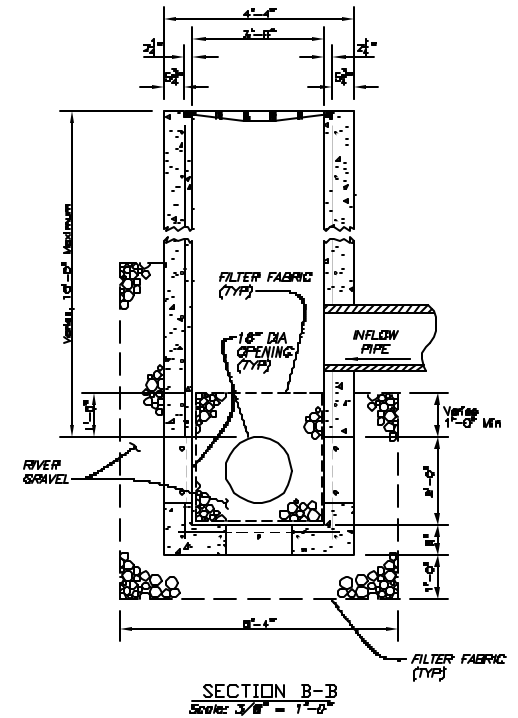
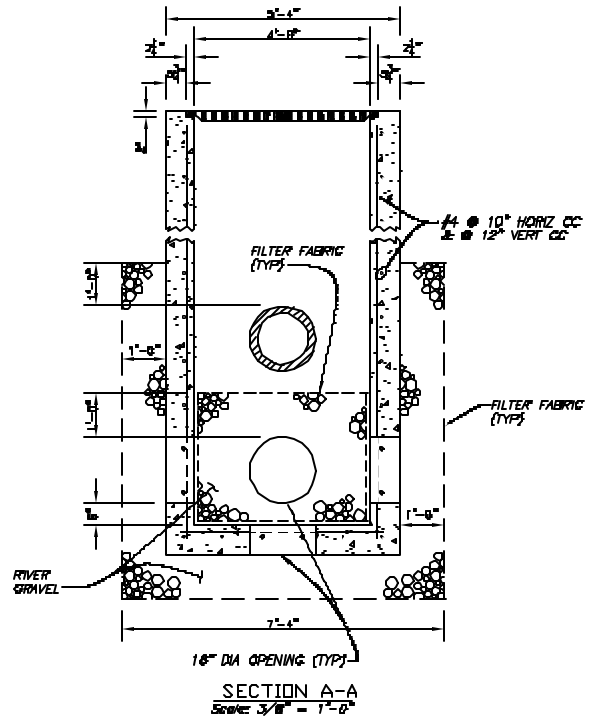
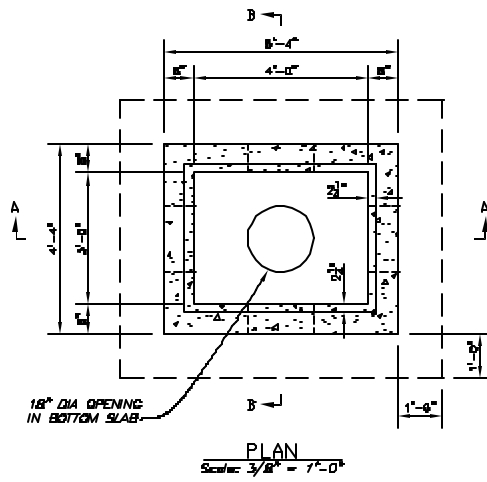
CITY of TAMPA
STORMWATER DEPARTMENT

MISCELLANEOUS DETAILS

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SHEET
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OF 30

NOTE:

1. Open-bottom inlet shown herein is intended to be used at portable-pump locations (see temporary fence main and pumping standards). For other open-bottom inlet applications, refer to FDOT Index #261 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.



DATE: 7/03

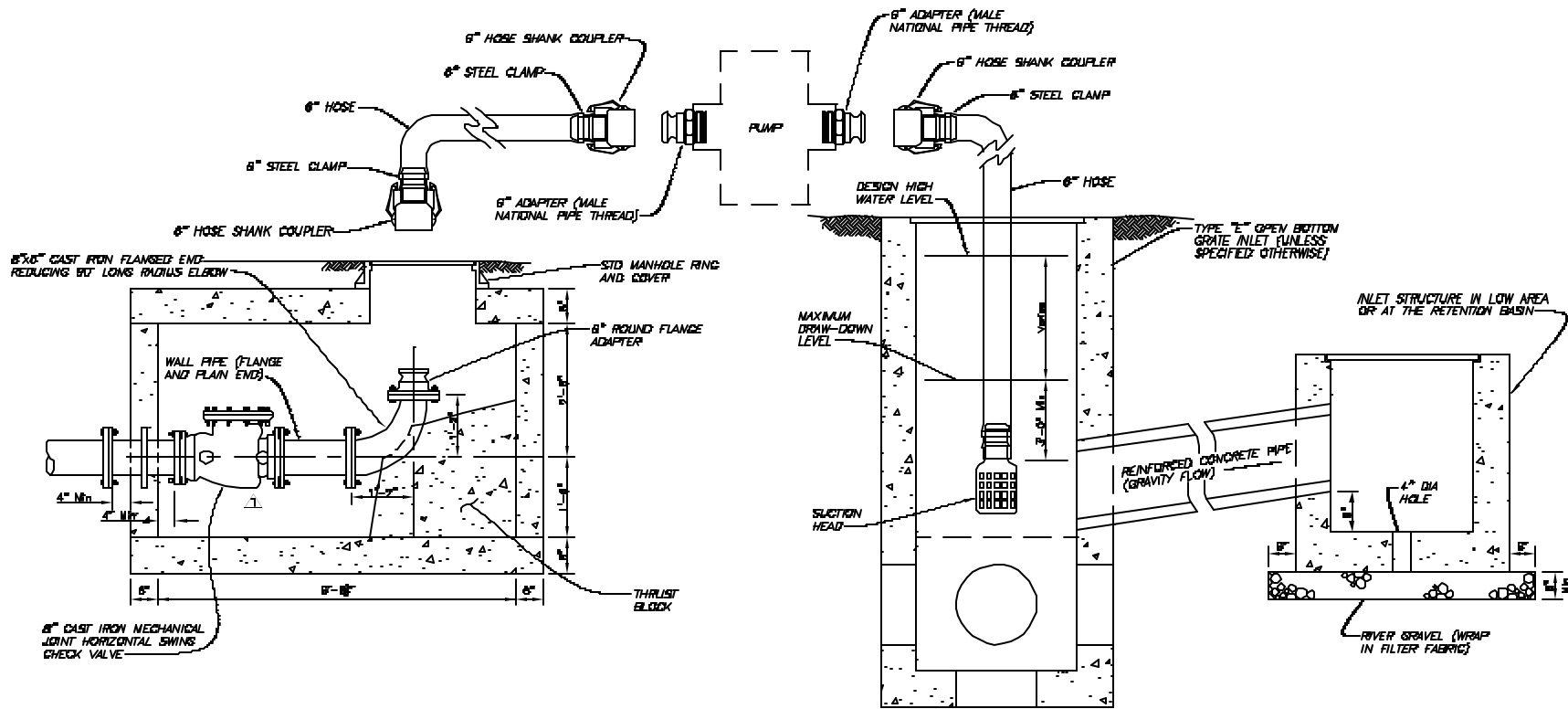
No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1			4		

DES: Storm
DRN: Storm
CHK:
DATE: 7/03

CITY of TAMPA
STORMWATER DEPARTMENT

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

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

1/2" 11/15/84/11/15/84/11/15/84

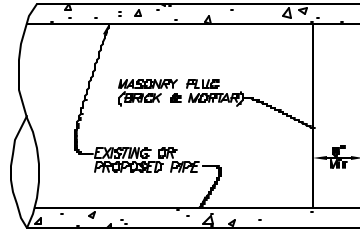
No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1	12/08/84	INCLUDED VALVE IN VAULT	4		

DES: Storm
DRN: Storm
CHK:
DATE:

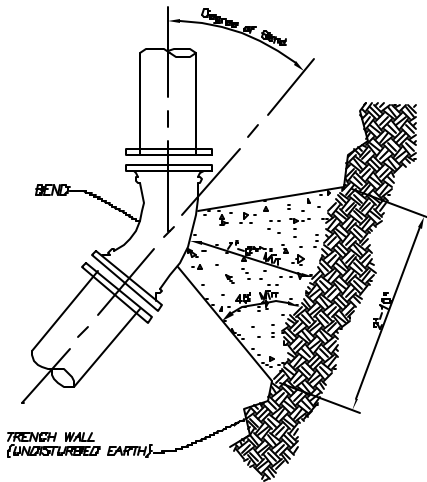
CITY of TAMPA
STORMWATER DEPARTMENT

TEMPORARY FORCE MAIN AND PUMPING STANDARDS

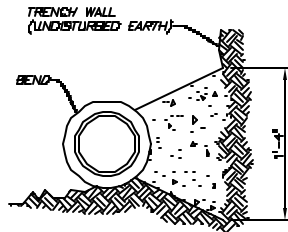
W.O.
SHEET
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PIPE PLUG
Not To Scale

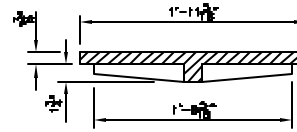


THRUST BLOCK
Not To Scale

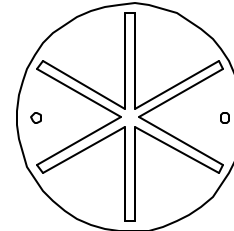


NOTES:

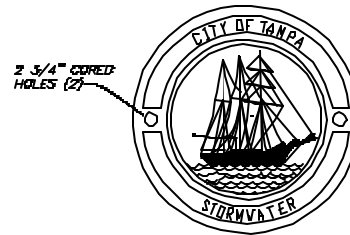
1. Concrete shall be kept at sufficient distance from joints for removal of all joint accessories including bolts.
2. All bearing surfaces are to be carried to undisturbed soil.
3. Poor soil (city soils, clay, mud or peat) will require larger thrust blocks.



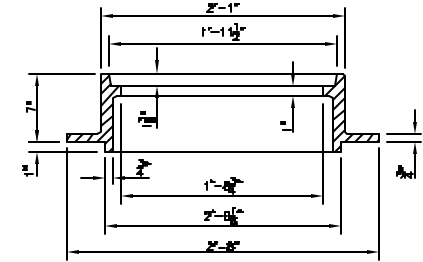
COVER SECTION



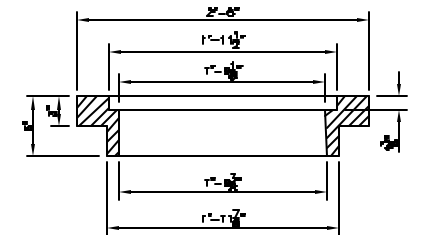
COVER BACK



COVER FACE



STANDARD FRAME SECTION



INVERTED FRAME SECTION

MANHOLE FRAMES & COVER
Not To Scale

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

1/2\"/>

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

DES: Storm
DRN: Storm
CHK:
DATE: 7/03

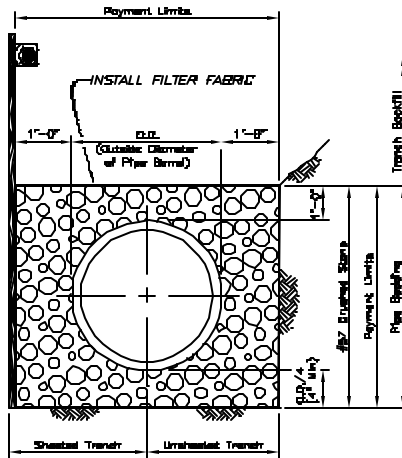
CITY of TAMPA
STORMWATER DEPARTMENT

MISCELLANEOUS DETAILS

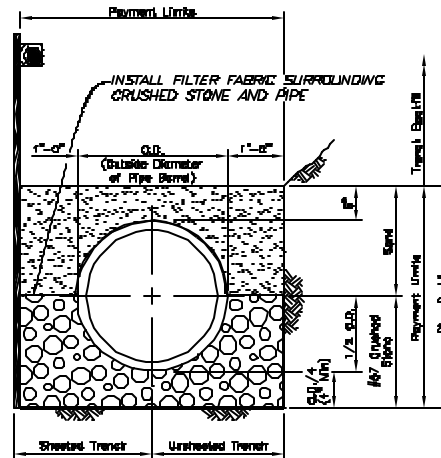
W.O.
SHEET
28
OF 30

Notes:

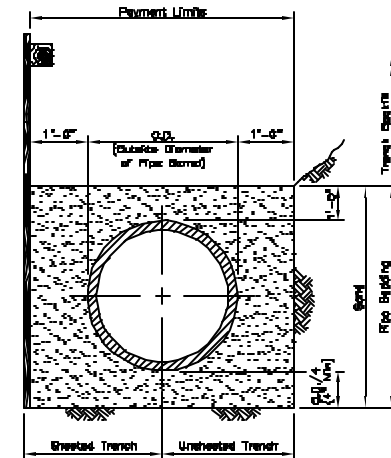
1. All types of pipe bedding shall extend to undisturbed earth at sides and bottom of the trench.
2. Sand and crushed stone pipe bedding shall be placed and compacted in accordance with specifications.
3. Bedding materials shall meet project specifications for Class B and Class C Bedding.
4. Filter fabric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



CLASS B-I BEDDING



CLASS B BEDDING



CLASS C BEDDING

M.P.S. DESIGN

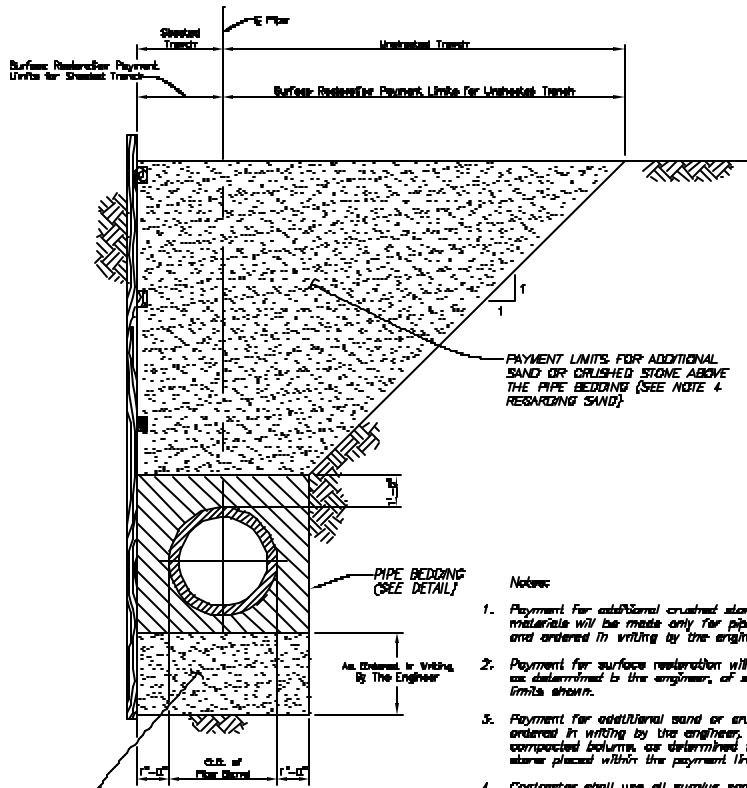
No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1	12/08/04	NEW SHEET	4		

DES: STORM
 DRN: STORM
 CKD:
 DATE:

CITY of TAMPA
STORMWATER DEPARTMENT

BEDDING DETAILS

W.O.
 SHEET
 29
 OF 30

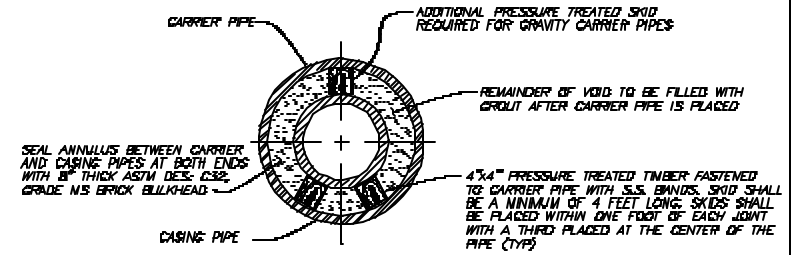


PAYMENT LIMITS FOR ADDITIONAL SAND OR CRUSHED STONE ABOVE THE PIPE BEDDING (SEE NOTE 4 REGARDING SAND)

PAYMENT LIMITS FOR ADDITIONAL SAND OR CRUSHED STONE BELOW THE PIPE BEDDING (SEE NOTE 4 REGARDING SAND)

Notes:

1. Payment for additional crushed stone of Class B 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 by the engineer, of surface restored within the payment limits shown.
3. Payment for additional sand or crushed stone for trench stabilization, ordered in writing by the engineer, will be made for the actual compacted volume, 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 supplying sand from other sources. Payment for additional sand will be made only for sand supplied from sources other than excavations in this contract. See specifications for material requirements.



Notes:

1. Skirtless steel casing spacers as manufactured by Cascade or equal may be used rather than a timber skirt system.
2. All casing pipes shall be welded steel pipe conforming to ASTM SPEC A133 Grade B or ASTM SPEC A53 Grade B, having a minimum flange 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										
MINIMUM INSIDE DIAMETER OF CARRIER PIPE (INCHES)	18"	18"	24"	30"	36"	42"	48"	54"	66"	72"
MINIMUM INSIDE DIAMETER OF CASING PIPE (INCHES)	30"	36"	42"	50"	54"	66"	78"	84"	90"	108"

DETAIL OF JACKED CROSSINGS
Not To Scale

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										
MINIMUM INSIDE DIAMETER (INCHES)	18"	18"	24"	30"	36"	42"	48"	54"	66"	72"
CUBIC YARDS OF CONCRETE PER LINEAR FOOT OF PIPE IN CONCRETE ENGAGEMENT	0.208	0.208	0.285	0.473	0.688	0.885	1.287	1.623	1.827	1.278
CUBIC YARDS OF CONCRETE PER LINEAR FOOT OF PIPE IN CLASS A BEDDING (CONCRETE SPALLS)	0.228	0.195	0.282	0.208	0.284	0.389	0.488	0.514	0.574	0.842
CUBIC YARDS OF CRUSHED STONE PER LINEAR FOOT OF PIPE IN CLASS B-1 BEDDING	0.264	0.242	0.478	0.488	0.781	0.836	1.163	1.281	1.471	1.673
CUBIC YARDS OF CRUSHED STONE PER LINEAR FOOT OF PIPE IN CLASS B BEDDING	0.111	0.143	0.207	0.382	0.381	0.473	0.578	0.582	0.810	0.836

No.	DATE	REVISIONS	No.	DATE	REVISIONS
3			6		
2			5		
1	12/08/04	NEW SHEET	4		

DES: STORM
DRN: STORM
CHK:
DATE:

CITY of TAMPA
STORMWATER DEPARTMENT

PAYMENT LIMITS & JACKED CROSSINGS

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