

NOTES:

1. HALF ROUND PLATE TO BE WELDED TO TOP FOR POLLUTION RETARDANT BASIN.
2. THE HALF ROUND PIPE SHALL BE ONE SIZE LARGER THAN DISCHARGE PIPE.
3. FOR STRUCTURE'S CONSTRUCTION DIMENSIONS AND SPEC'S., SEE PRECAST CATCH BASIN DETAIL.

POLLUTION RETARDANT CATCH BASIN

REVISIONS			
No.	Date	Description	By

Date: 6/9/09

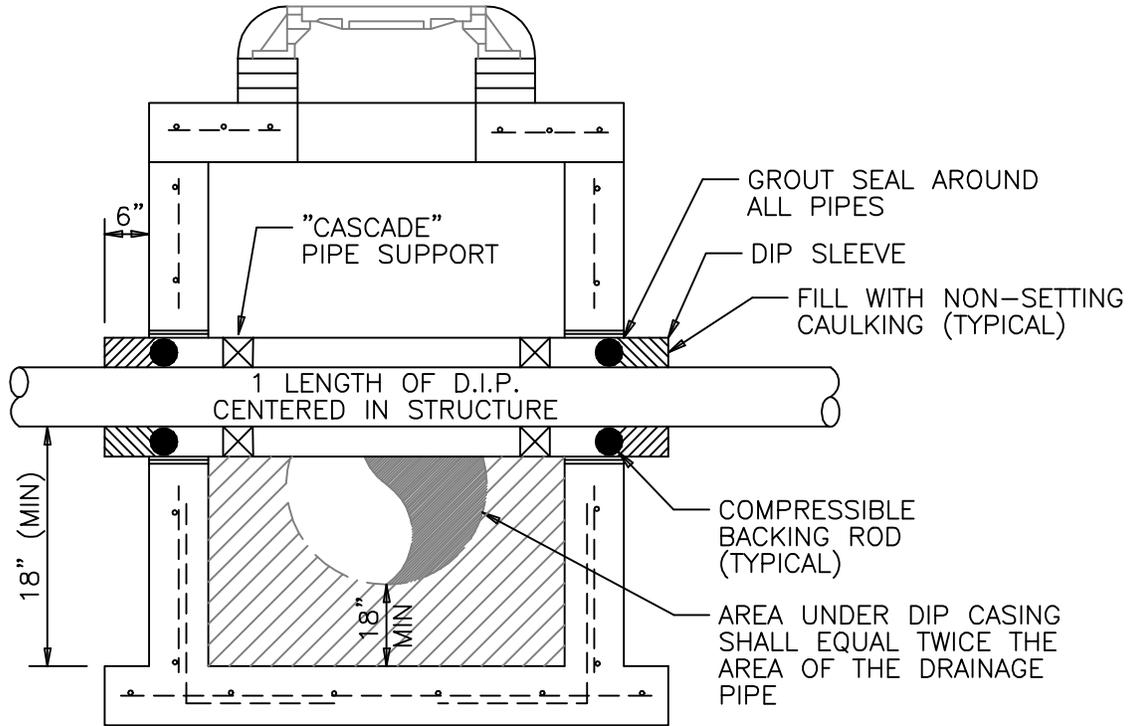
POLLUTION RETARDANT
 CATCH BASIN

Seal:

STANDARD DETAILS

FIGURE DR-1

CITY OF TAMARAC, BROWARD COUNTY, FLORIDA



CONFLICT MANHOLE

REVISIONS		
No.	Date	Remarks

Date: 4/20/09

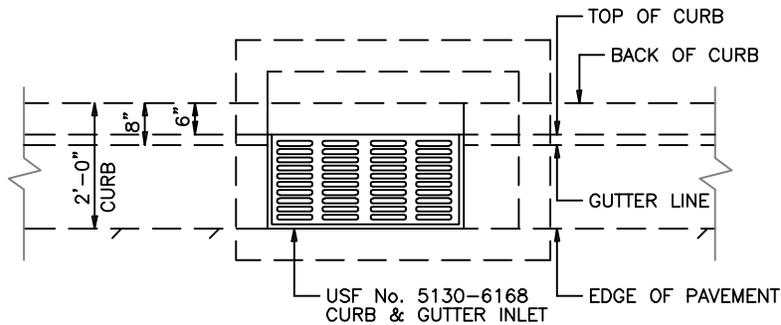
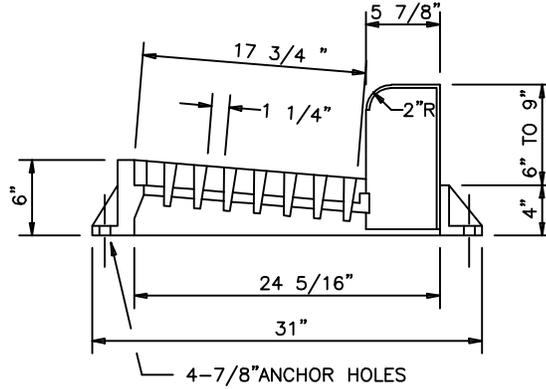
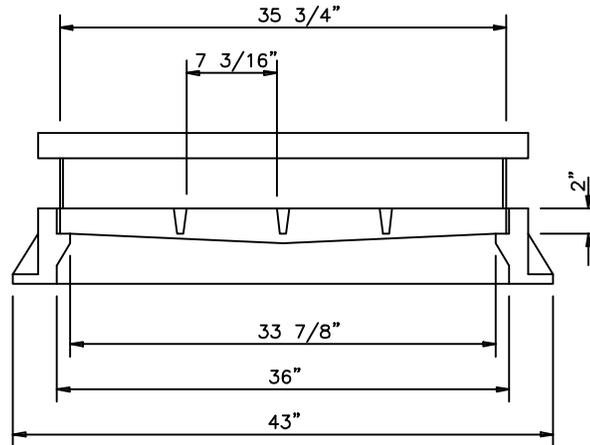
Seal:

CONFLICT
MANHOLE

STANDARD DETAILS

FIGURE DR-2

CITY OF TAMARAC, BROWARD COUNTY, FLORIDA



CURB & GUTTER INLET

(USF 5130-6168)

REVISIONS		
No.	Date	Description

Date: 4/20/09

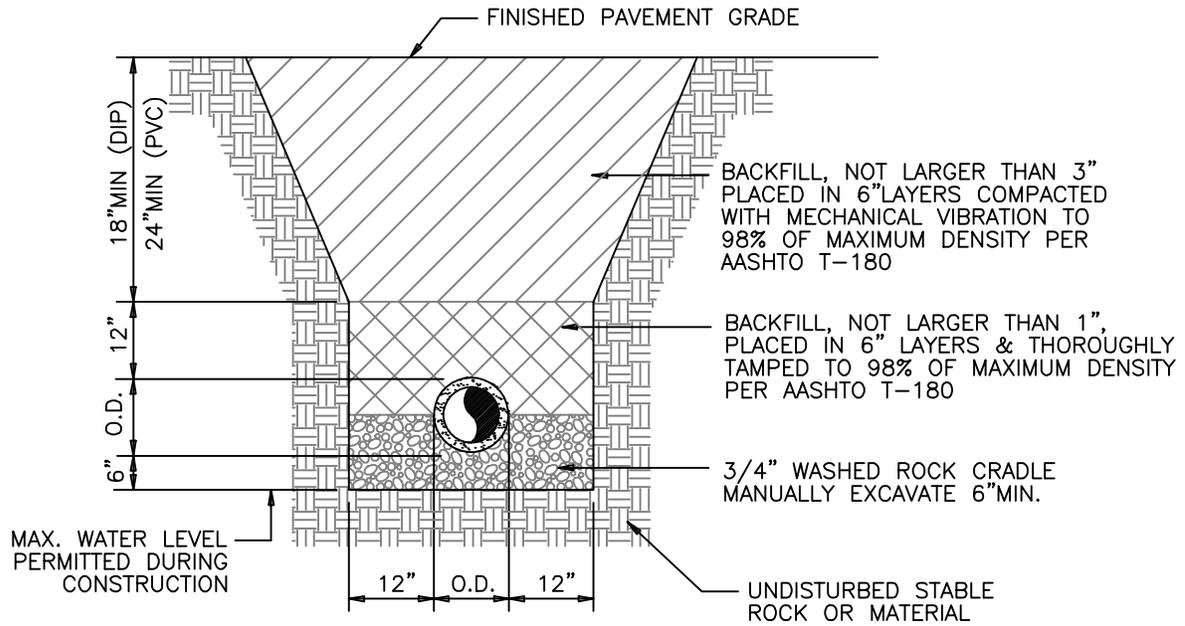
Seal:

CURB AND GUTTER INLET

STANDARD DETAILS

FIGURE DR-3

CITY OF TAMARAC, BROWARD COUNTY, FLORIDA



TYPICAL TRENCH DETAIL

REVISIONS			
No.	Date	Description	By

Date: 4/20/09

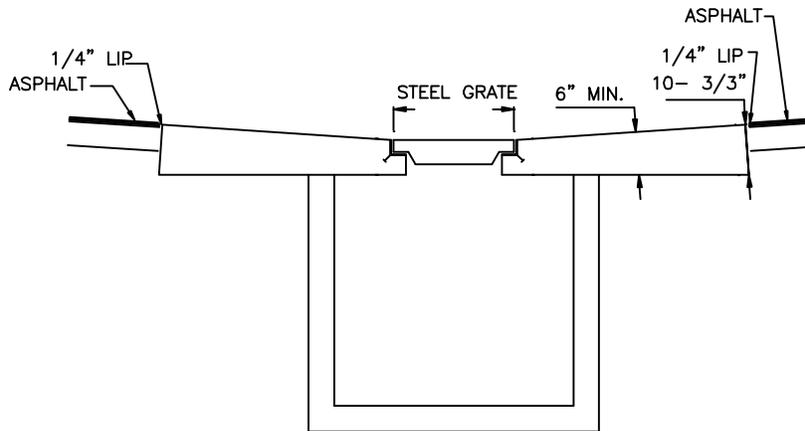
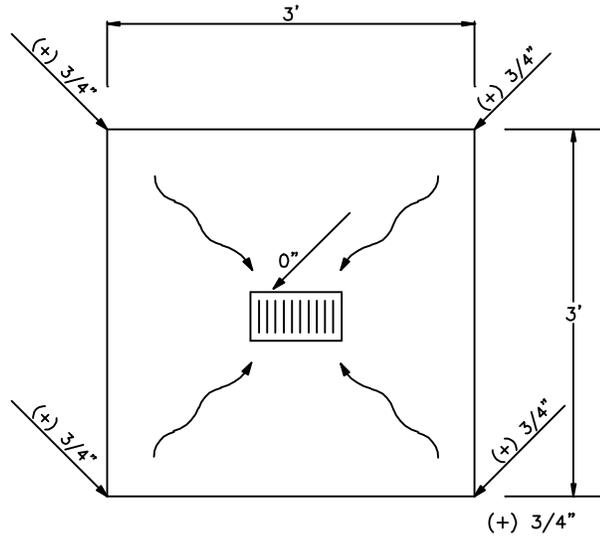
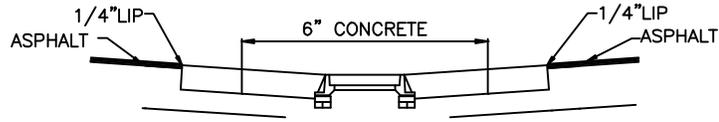
TYPICAL TRENCH

Seal:

STANDARD DETAILS

FIGURE DR-4

CITY OF TAMARAC, BROWARD COUNTY, FLORIDA



GENERAL APRON NOTES:

1. CONCRETE SHALL BE 3000 PSI STRENGTH @ 28 DAYS.

TYPICAL APRON DETAIL

REVISIONS		
No.	Date	Description

Date: 4/20/09

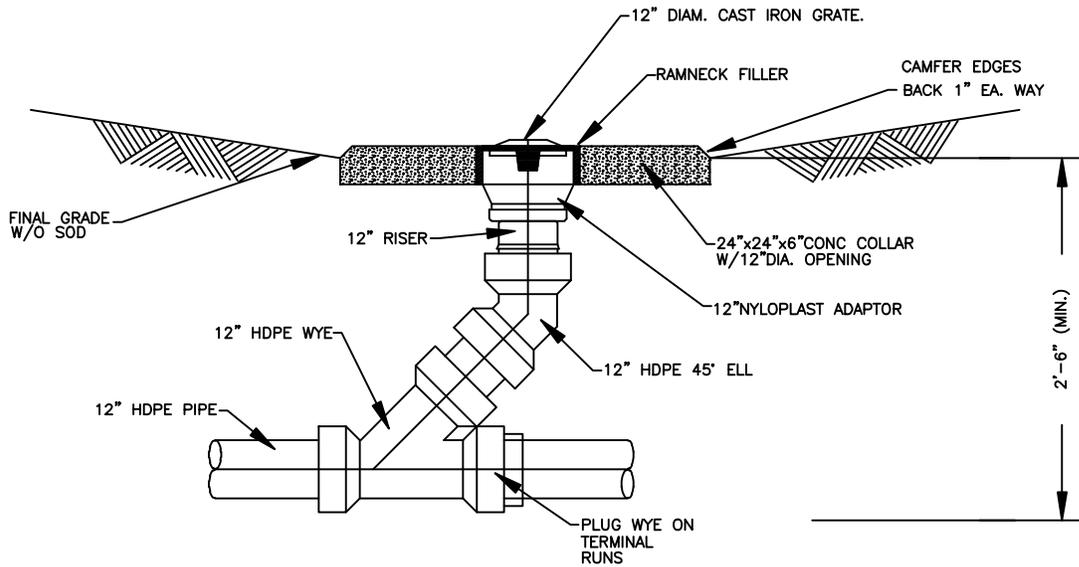
Seal:

CONCRETE
APRON

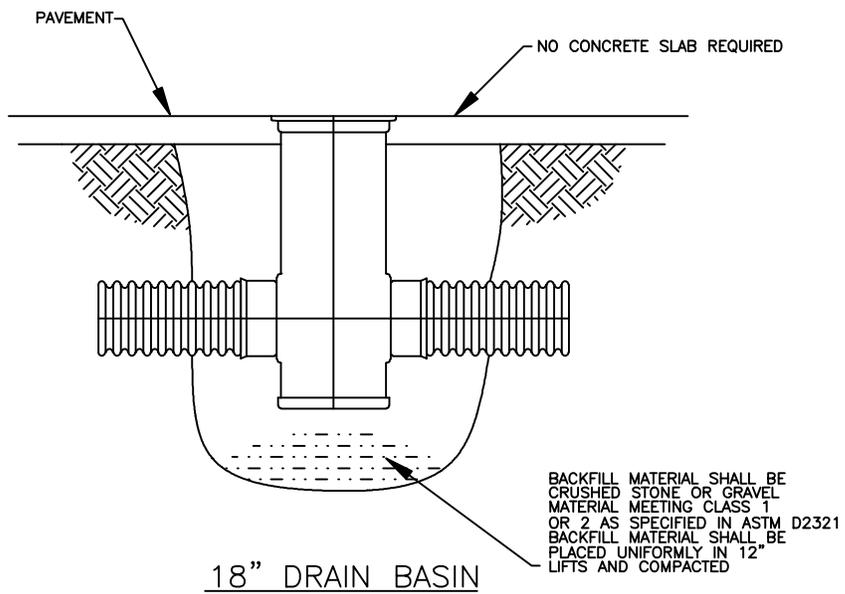
STANDARD DETAILS

FIGURE DR-5

CITY OF TAMARAC, BROWARD COUNTY, FLORIDA



NOTE: YARD DRAINS SHALL BE HIGH DENSITY POLYETHYLENE (HDPE) N-12 (ADVANCED DRAINAGE SYSTEMS) OR EQUAL.



YARD INLET DETAIL (NYLOPLAST OR EQUAL)

REVISIONS		
No.	Date	Description

Date: 4/20/09	Seal:
YARD INLET	

STANDARD DETAILS
 FIGURE DR-6
 CITY OF TAMARAC, BROWARD COUNTY, FLORIDA

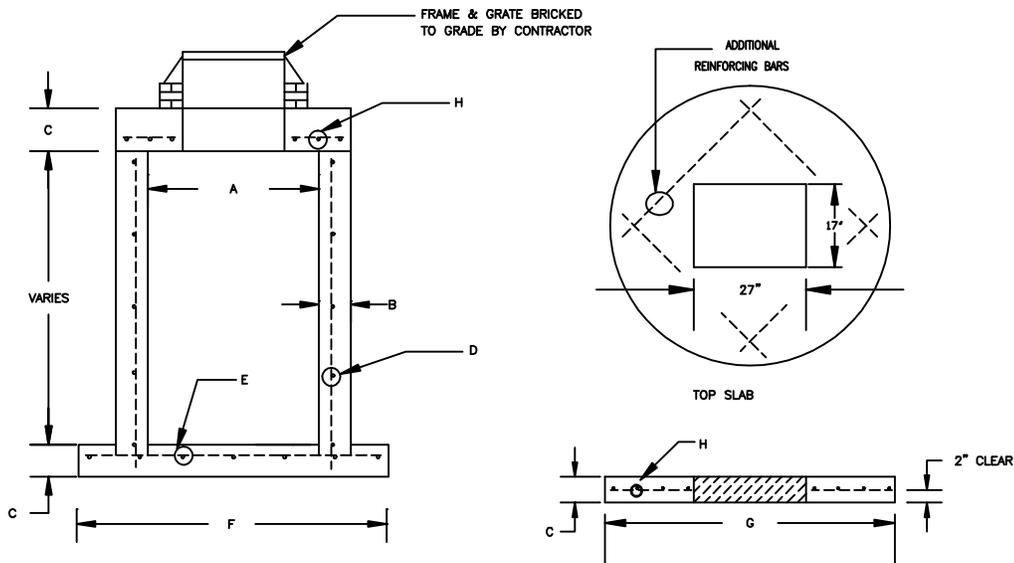
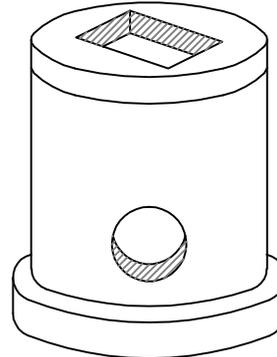
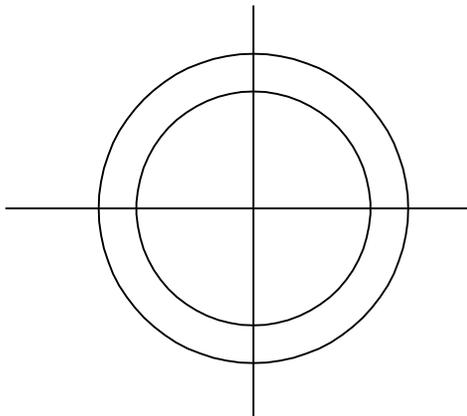


TABLE OF DIMENSIONS									
A#	B	C	D	E* C.C.E.W.	F#	G#	H* C.C.E.W.	HOLDING CAPACITY (gal./cft.)	
3'-6"	8"	8"	ASTM C-478	#4 AT 12"	4'-8"	4'-2"	#4 AT 6"	72	
3'-6"	8"	8"	ASTM C-478	#4 AT 12"	5'-0"	4'-6"	#4 AT 6"	72	
4'-0"	8"	8"	ASTM C-478	#4 AT 12"	6'-0"	5'-0"	#4 AT 6"	94	
4'-0"	8"	8"	ASTM C-478	#4 AT 12"	6'-4"	5'-4"	#4 AT 6"	94	
5'-0"	8"	8"	ASTM C-478	#5 AT 12"	7'-4"	6'-4"	#5 AT 6"	147	
6'-0"	6"	8"	ASTM C-478	#5 AT 6"	8'-0"	7'-0"	#5 AT 6"	211	
6'-0"	8"	8"	ASTM C-478	#5 AT 6"	8'-4"	7'-4"	#5 AT 6"	211	
7'-0"	8"	8"	ASTM C-478	#5 AT 6"	9'-4"	8'-4"	#5 AT 6"	288	
8'-0"	10"	10"	ASTM C-478	#5 AT 6"	10'-8"	9'-8"	#6 AT 6"	376	
10'-0"	12"	12"	ASTM C-478	#5 AT 6"	12'-0"	12'-0"	#6 AT 6"	587	

*GRADE 40, OR FOR EQUIVALENT STEEL DESIGNS.

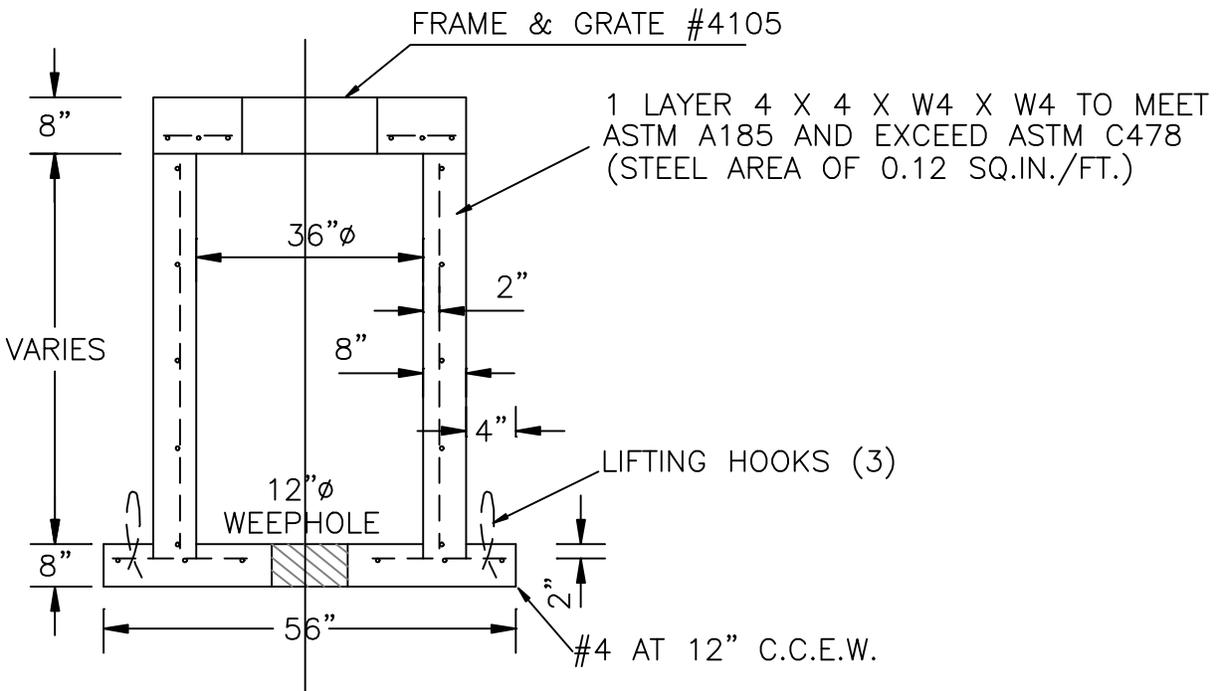
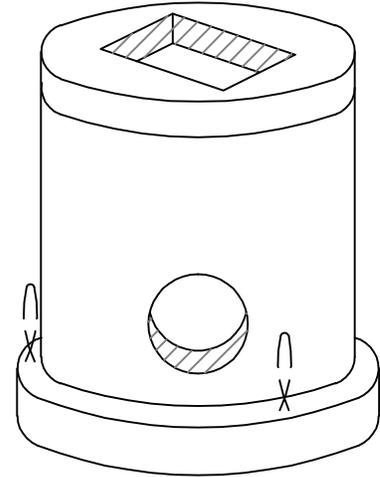
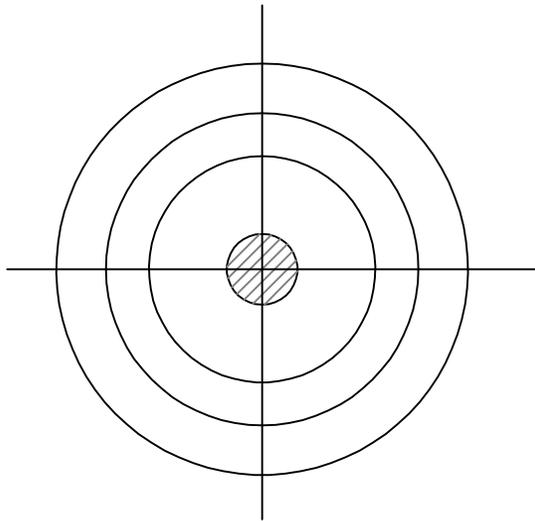
TYPE "C" CATCH BASINS 42"Ø - 120"Ø

REVISIONS		
No.	Date	Remarks

Date: 4/20/09
By: _____
TYPE "C"
CATCH BASIN

Seal: _____

STANDARD DETAILS
FIGURE DR-7
CITY OF TAMARAC, BROWARD COUNTY, FLORIDA



36" ROUND STRUCTURE

REVISIONS		
No.	Date	By

Date: 4/20/09

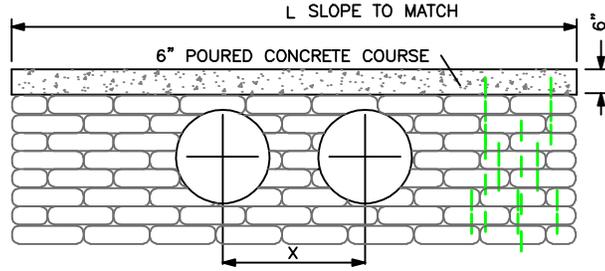
36" ROUND DRAINAGE
STRUCTURE

Seal:

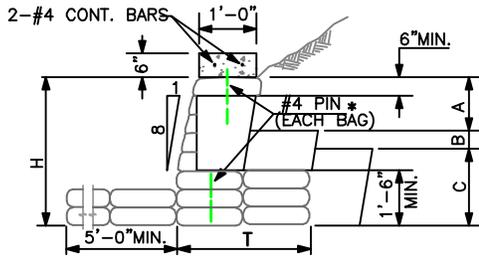
STANDARD DETAILS

FIGURE DR-9

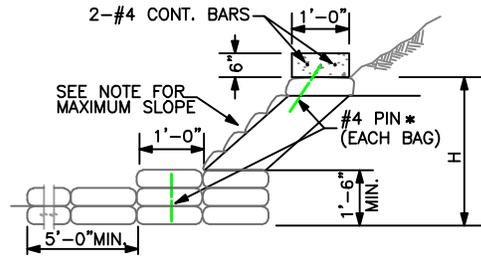
CITY OF TAMARAC, BROWARD COUNTY, FLORIDA



FRONT ELEVATION



TYPICAL SECTION
STRAIGHT END PIPE



TYPICAL SECTION
BEVEL END PIPE

		TABLE OF DIMENSIONS									
PIPE SIZE	H	T	A	B	C	X	L	ONE PIPE	TWO PIPES	THREE PIPES	FOUR PIPES
								L	L	L	L
24"	4'-5"	2'-0"	2'-0"	2'-5"	0'-0"	3'-5"	9'-8"	13'-1"	16'-6"	19'-11"	
30"	5'-0"	2'-0"	2'-0"	3'-0"	0'-0"	4'-3"	11'-3"	15'-6"	19'-9"	24'-0"	
36"	5'-7"	2'-0"	2'-0"	3'-7"	0'-0"	5'-1"	12'-11"	18'-0"	23'-1"	28'-2"	
42"	6'-3"	3'-0"	2'-0"	2'-0"	2'-3"	6'-0"	14'-7"	20'-7"	26'-7"	32'-7"	
48"	6'-10"	3'-0"	2'-0"	2'-0"	2'-10"	6'-9"	16'-3"	23'-0"	29'-9"	36'-6"	
54"	7'-6"					7'-8"	18'-0"	25'-8"	33'-4"	41'-0"	
60"	8'-2"					8'-6"	19'-9"	28'-3"	36'-9"	45'-3"	
66"	8'-7"						21'-7"				
72"	9'-3"						22'-6"				
84"	10'-7"						24'-6"				
96"	11'-11"						26'-6"				
108"	13'-3"						28'-6"				
120"	14'-7"						30'-6"				
132"	15'-11"						32'-6"				
144"	17'-3"						34'-6"				

NOTE:

BEVEL SLOPE SHALL NOT BE GREATER THAN 1:1 FOR SINGLE TIER CONSTRUCTION. WHEN THE PIPE BEVEL IS GREATER THAN 1:1, HEADWALLS SHALL BE CONSTRUCTED AS REQUIRED FOR STRAIGHT END PIPES.

STRAIGHT SAND-CEMENT RIP RAP HEADWALL

REVISIONS		
No.	Date	Remarks

Date: 4/20/09

Seal:

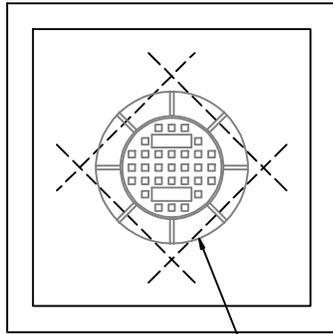
STRAIGHT SAND-CEMENT
RIP-RAP HEADWALL

Seal:

STANDARD DETAILS

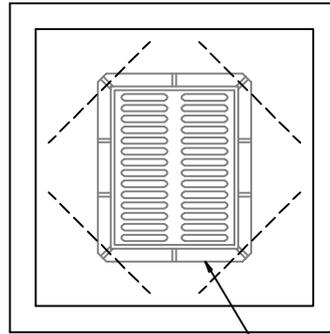
FIGURE DR-10

CITY OF TAMARAC, BROWARD COUNTY, FLORIDA



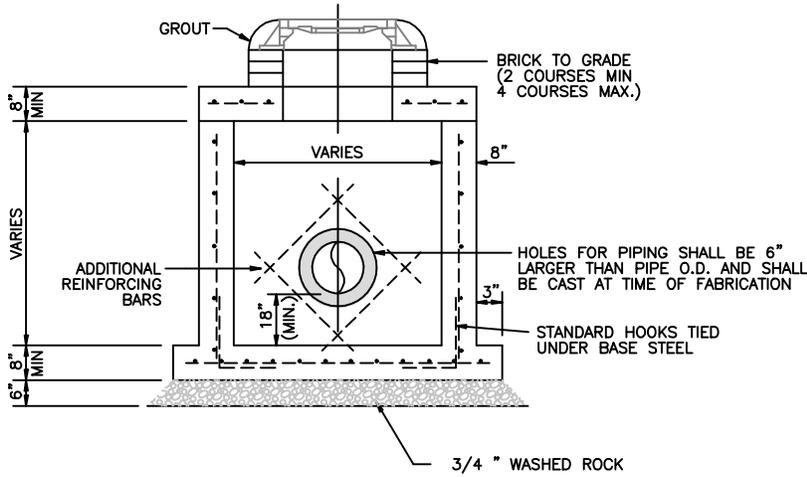
U.S. FOUNDRY FRAME & GRATE
 DRAWING No.420-B
 LABELED "STORM SEWER"
 (OR APPROVED EQUAL)

PLAN



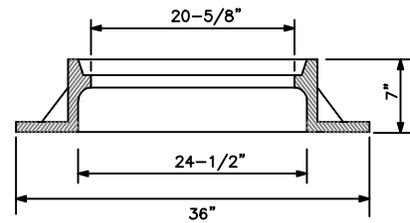
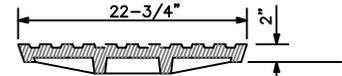
U.S. FOUNDRY FRAME & GRATE
 DRAWING No.4155-6212
 (OR APPROVED EQUAL)

IN GRASS AREAS, ALL GRATES
 SHALL HAVE A 2' CONCRETE
 APRON ALL AROUND.



SECTION

PRECAST DRAINAGE MANHOLE



MANHOLE FRAME & LID

USF# 420 C

REVISIONS			
No.	Date	Description	By

Date: 4/20/09

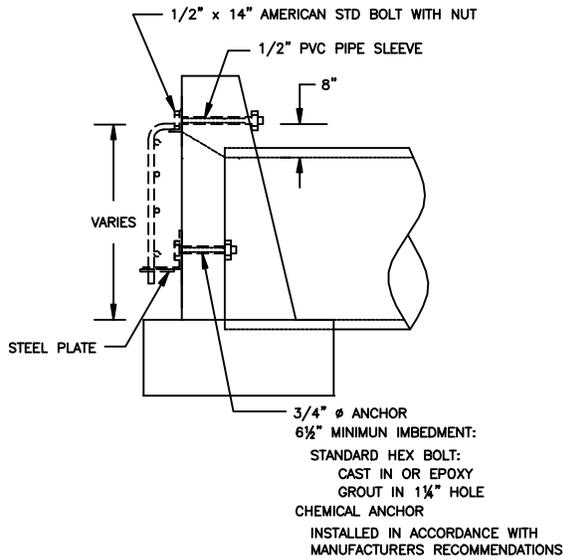
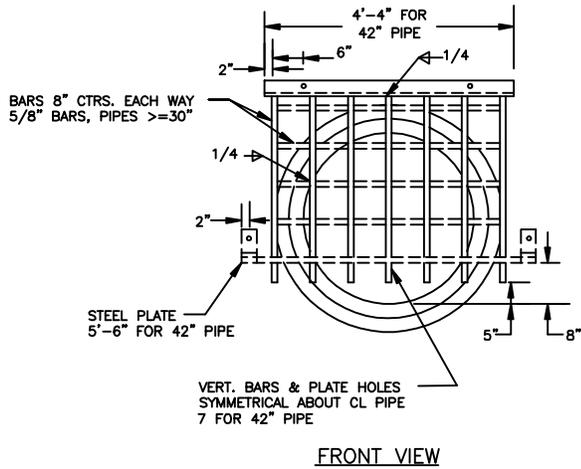
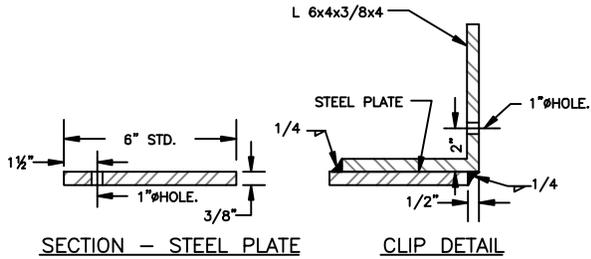
PRECAST DRAINAGE
 MANHOLE

Seal:

STANDARD DETAILS

FIGURE DR-12

CITY OF TAMARAC, BROWARD COUNTY, FLORIDA



SIDE VIEW

PIPE DIA	18"	24"	30"	36"	42"
GRATE (Lbs)	48	58	74	90	111

NOTE:

1. GUARDS TO BE CONSTRUCTED ONLY AT LOCATIONS SPECIFICALLY CALLED FOR IN PLANS. GUARD, PLATE &
2. FOR OTHER SIZES CHECK FDOT INDEX NO. 280

GUARD AT PIPE ENDS

REVISIONS		
No.	Date	Description

Date: 4/20/09

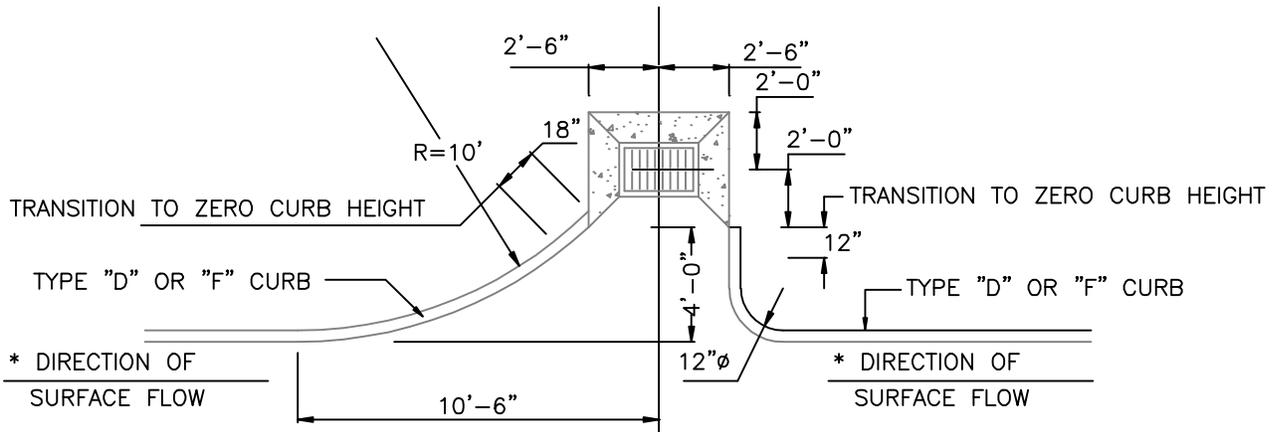
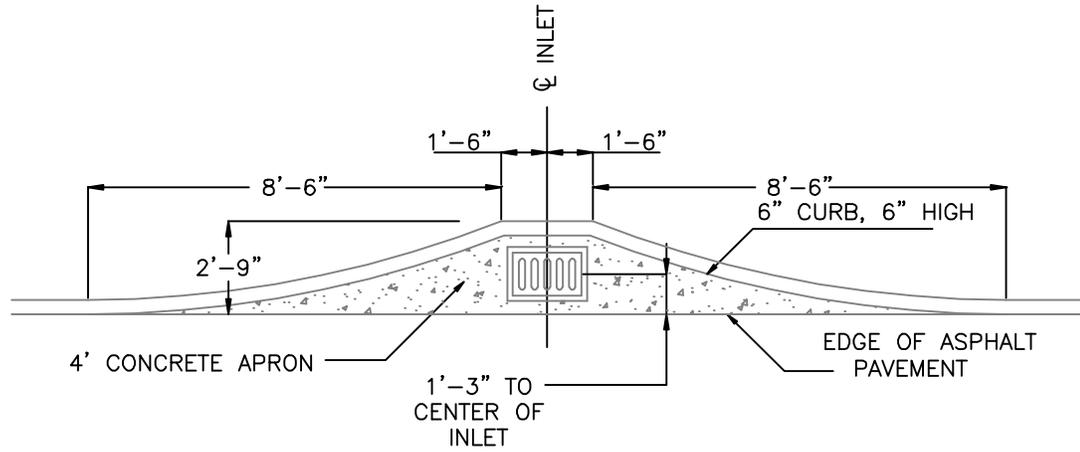
Seal:

GUARD AT PIPE END
PER FDOT INDEX N° 280

STANDARD DETAILS

FIGURE DR-13

CITY OF TAMARAC, BROWARD COUNTY, FLORIDA



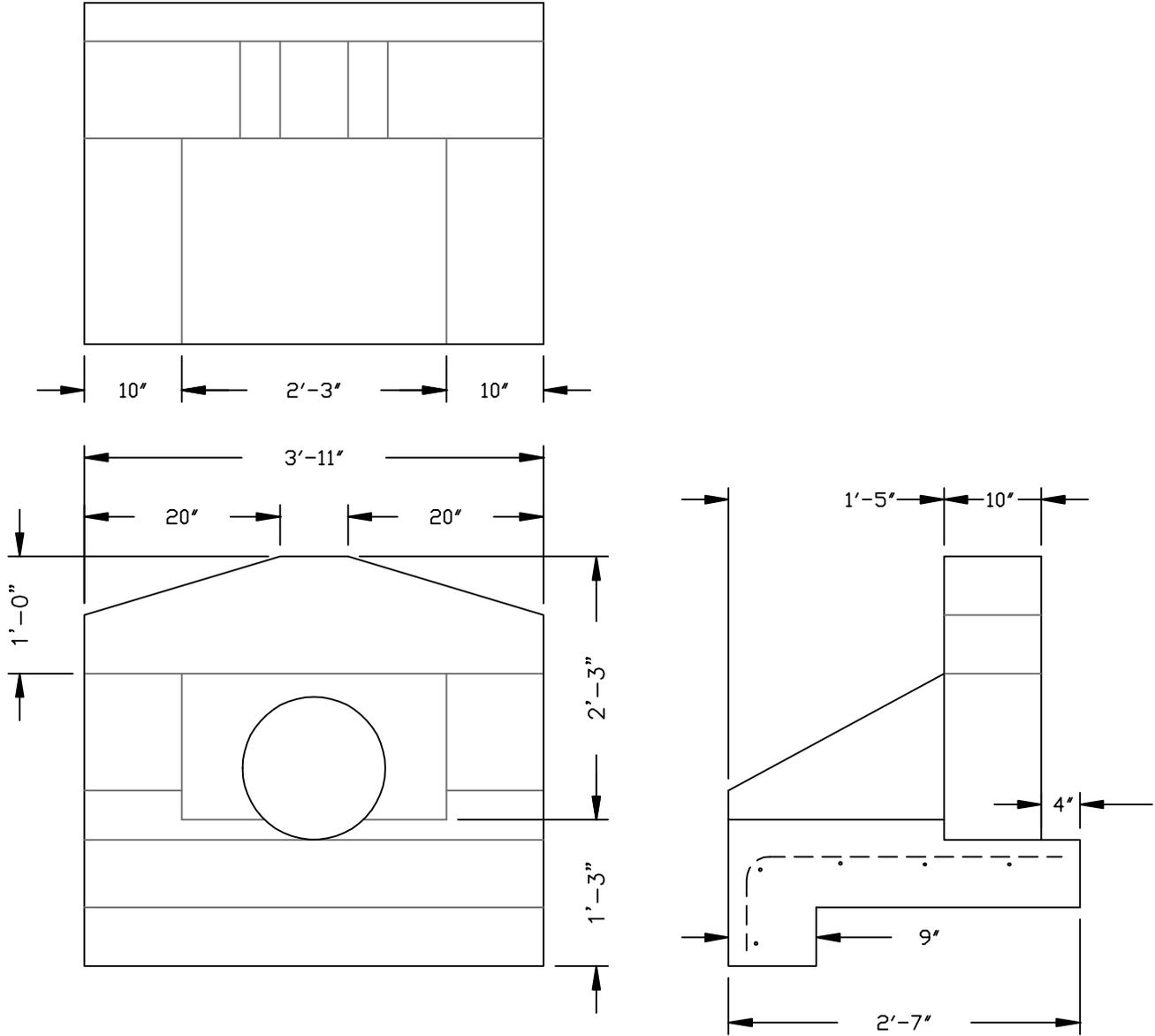
NOTE:
 WHEN SURFACE FLOW IS TOWARDS INLET
 FROM BOTH SIDES, CONSTRUCT 10' RADIUS
 CURB ON EACH SIDE OF INLET.

FLUME DETAIL

REVISIONS		
No.	Date	Description

Date: 4/20/09	Seal:
DRAINAGE FLUME	

STANDARD DETAILS
FIGURE DR-14
CITY OF TAMARAC, BROWARD COUNTY, FLORIDA



F.D.O.T. TYPE U-ENDWALL WITH WINGS

REVISIONS		
No.	Date	Description

Date: 4/20/09

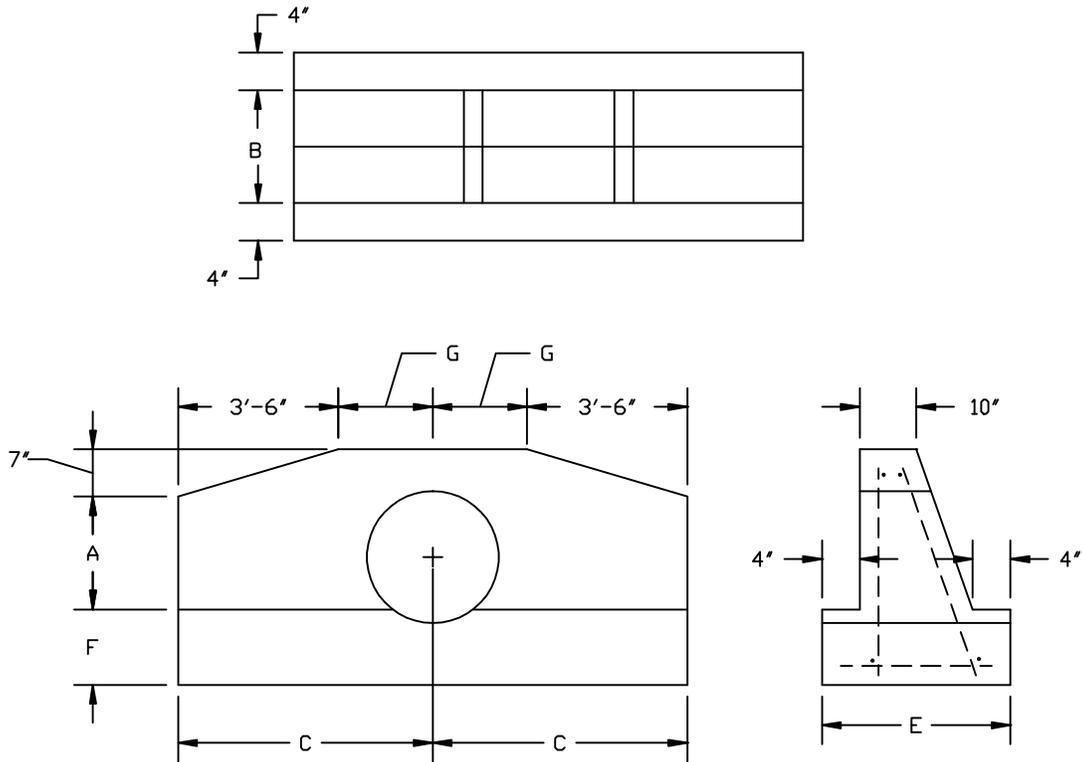
Seal:

F.D.O.T. TYPE U-ENDWALL
 WITH WINGS

STANDARD DETAILS

FIGURE DR-15

CITY OF TAMARAC, BROWARD COUNTY, FLORIDA



PIPE SIZE	A	B	C	E	F	G
15"	1'-11"	1'-2"	4'-0"	1'-10"	1'-2"	0'-6"
18"	2'-2"	1'-3"	4'-6"	1'-11"	1'-3"	1'-0"
24"	2'-8"	1'-4"	5'-0"	2'-0"	1'-4"	1'-6"

F.D.O.T. TYPE STRAIGHT ENDWALL

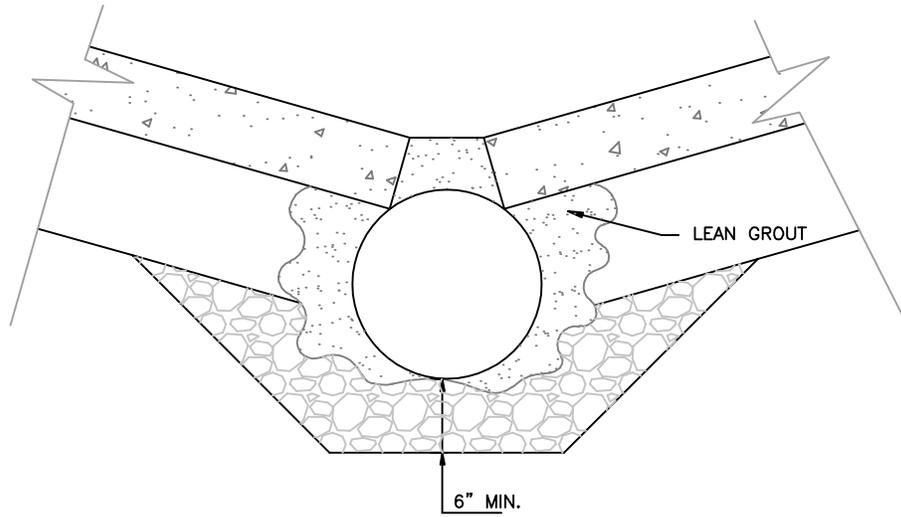
REVISIONS		
No.	Date	By

Date: 4/20/09
 STRAIGHT CONCRETE ENDWALL
 (FDOT INDEX N° 250)

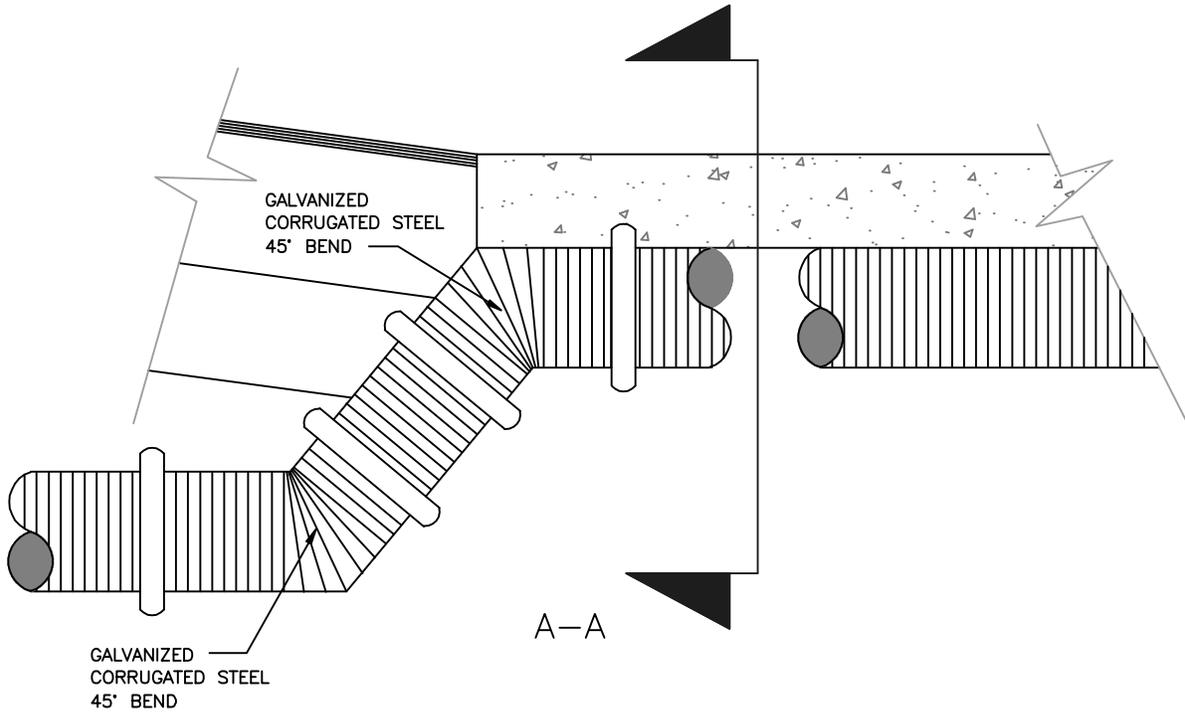
Seal:

STANDARD DETAILS

FIGURE DR-16
 CITY OF TAMARAC, BROWARD COUNTY, FLORIDA



SECTION "A-A"



WATER RATED SLOTTED DRAIN

REVISIONS		
No.	Date	Description

Date: 4/20/09

WATER RATED
SLOTTED DRAIN

Seal:

STANDARD DETAILS

FIGURE DR-17

CITY OF TAMARAC, BROWARD COUNTY, FLORIDA

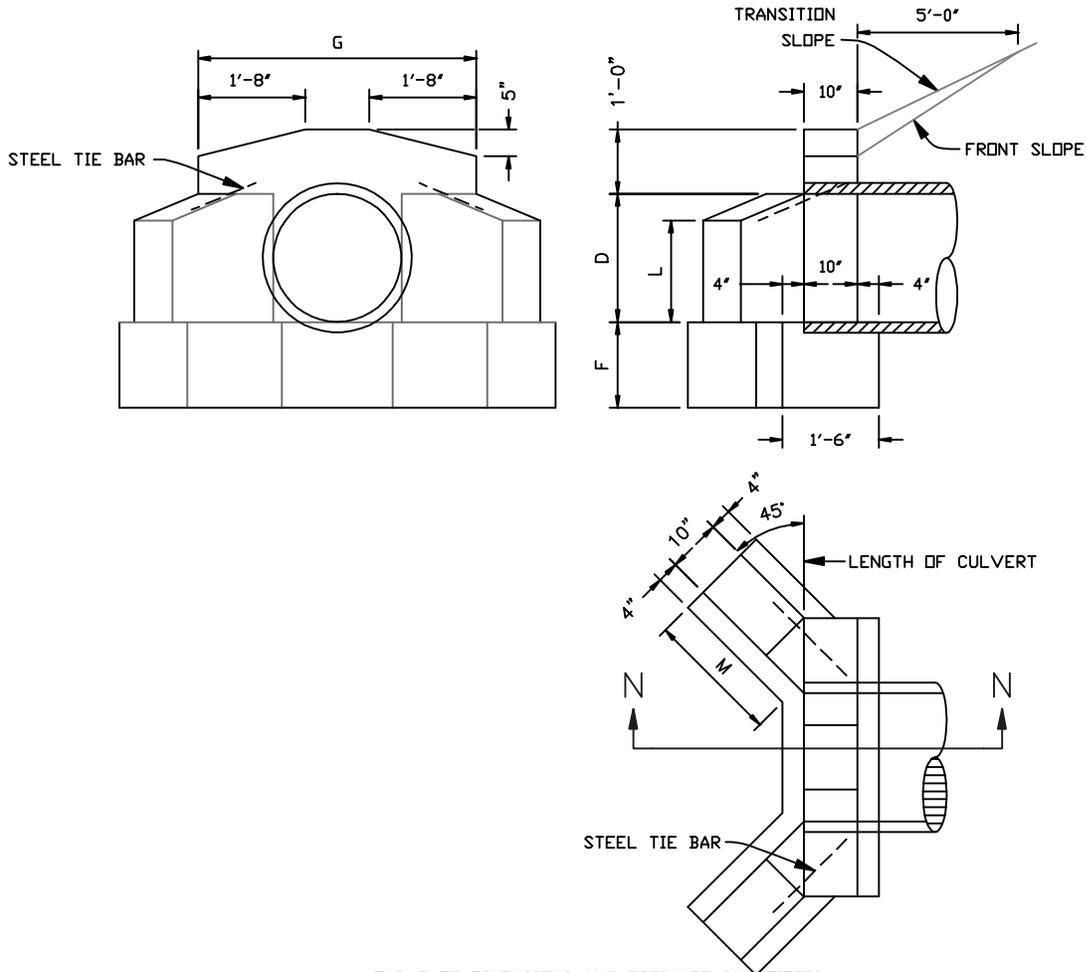


TABLE OF DIMENSIONS AND ESTIMATE QUANTITIES
PIPE CULVERT ENDWALLS WITH 45° WINGS

DIMENSIONS							QUANTITIES IN ONE ENDWALL			
OPENING		WALL				FOOTING	CONCRETE, CLASS I			STEEL TIE BARS
D	AREA (S.F.)	H	G	L	M	F	TOTAL (C.Y.)			
							CONC. PIPE	C.M. PIPE	C.I. PIPE	
15"	1.2	2'-3"	3'-7"	1'-0"	1'-3"	1'-3"	0.56	0.59	0.59	NONE
18"	1.8	2'-6"	3'-10"	1'-2"	1'-7"	1'-3"	0.74	0.77	0.77	NONE
24"	3.1	3'-0"	4'-4"	1'-5"	2'-1"	1'-4"	1.01	1.06	1.06	2- 3/4"Ø x 2'-0"
30"	4.9	3'-6"	4'-10"	1'-9"	2'-5"	1'-6"	1.32	1.40	1.39	2- 3/4"Ø x 2'-0"
36"	7.1	4'-0"	5'-4"	2'-0"	2'-11"	1'-8"	1.72	1.83	1.82	2- 3/4"Ø x 3'-0"
42"	9.6	4'-6"	5'-10"	2'-3"	3'-6"	2'-0"	2.34	2.47		2- 3/4"Ø x 3'-0"
48"	12.6	5'-0"	6'-4"	2'-6"	4'-0"	2'-0"	2.74	2.90		2- 3/4"Ø x 3'-0"

CONCRETE ENDWALL WITH 45° WINGS

REVISIONS		
No.	Date	By

Date: 4/20/09

Seal:

CONCRETE ENDWALL
WITH 45° WINGS

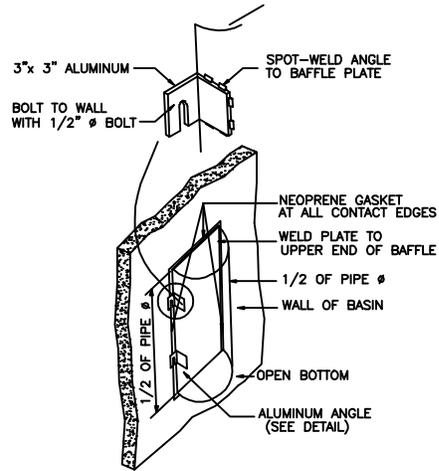
STANDARD DETAILS

FIGURE DR-18

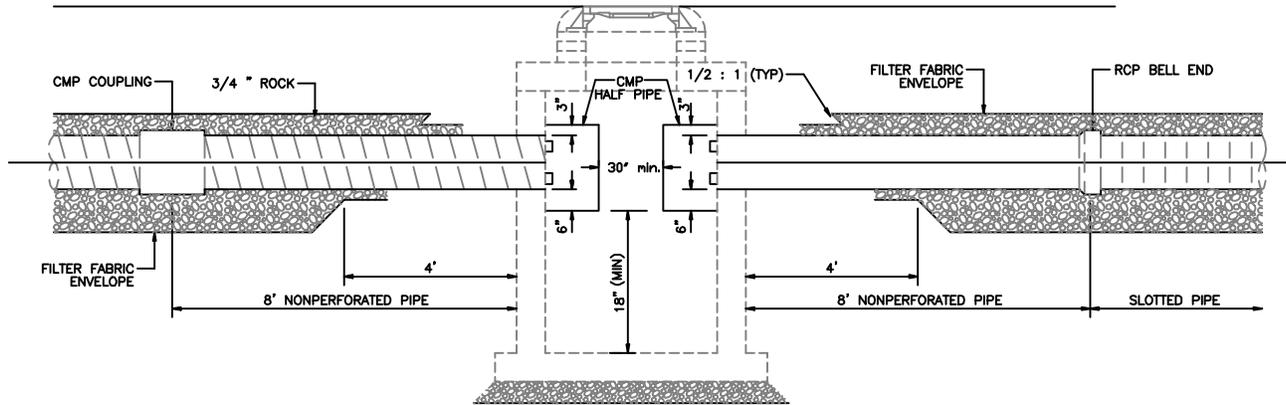
CITY OF TAMARAC, BROWARD COUNTY, FLORIDA

NOTES:

1. HALF ROUND PLATE TO BE WELDED TO TOP FOR POLLUTION RETARDANT BASIN.
2. THE HALF ROUND PIPE SHALL BE ONE SIZE LARGER THAN DISCHARGE PIPE.
3. FOR STRUCTURE'S CONSTRUCTION DIMENSIONS AND SPEC'S., SEE PRECAST CATCH BASIN DETAIL.
4. WEEP HOLES ARE NOT PERMITTED IN WELLFIELD AREAS.



CMP HALF PIPE WITH GASKET



TYPICAL EXFILTRATION TRENCH LONGITUDINAL SECTION

REVISIONS			
No.	Date	Description	By

Date: 4/20/09

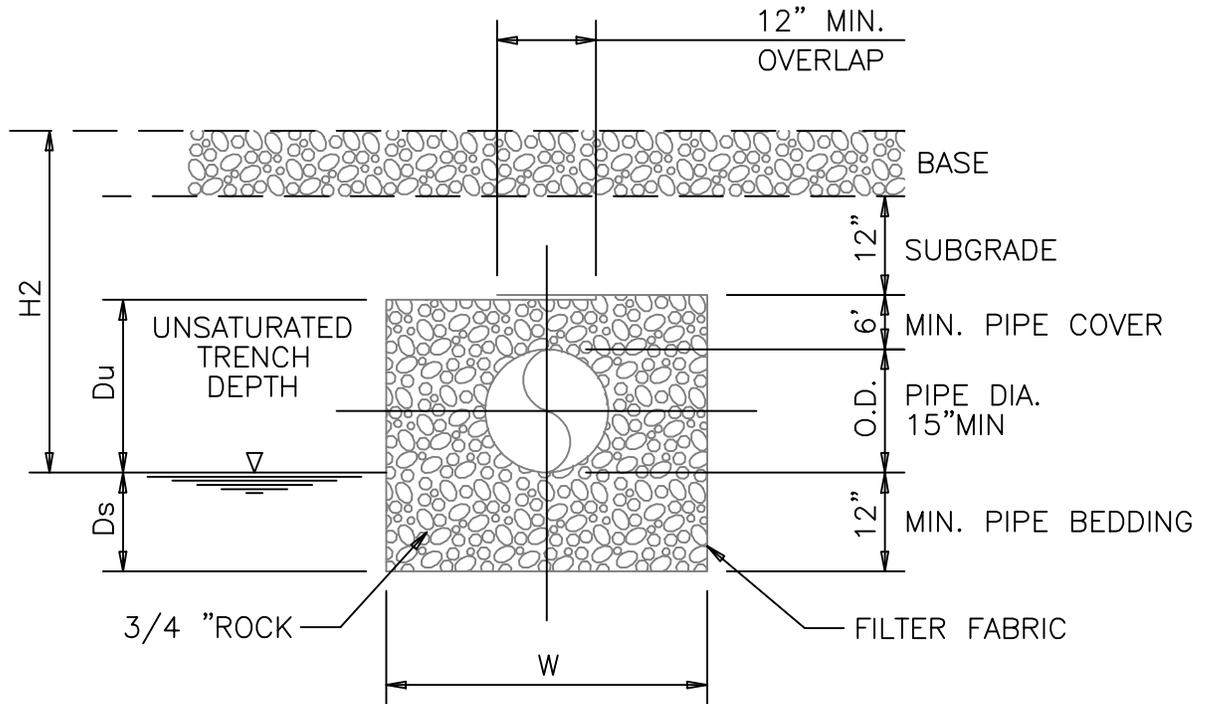
EXFILTRATION TRENCH LONGITUDINAL SECTION

Seal:

STANDARD DETAILS

FIGURE DR-19

CITY OF TAMARAC, BROWARD COUNTY, FLORIDA



- L= LENGTH OF TRENCH REQUIRED (FEET)
- V= VOLUME TREATED (ACRE - INCHES)
- W= TRENCH WIDTH (FEET)
- K= HYDRAULIC CONDUCTIVITY (CFS/FT²- FT. HEAD)
- H₂= DEPTH TO WATER TABLE (FEET)
- D_u= NON-SATURATED TRENCH DEPTH (FEET)
- D_s= SATURATED TRENCH DEPTH (FEET)

TYPICAL EXFILTRATION TRENCH

REVISIONS		
No.	Date	Remarks

Date: 4/20/09

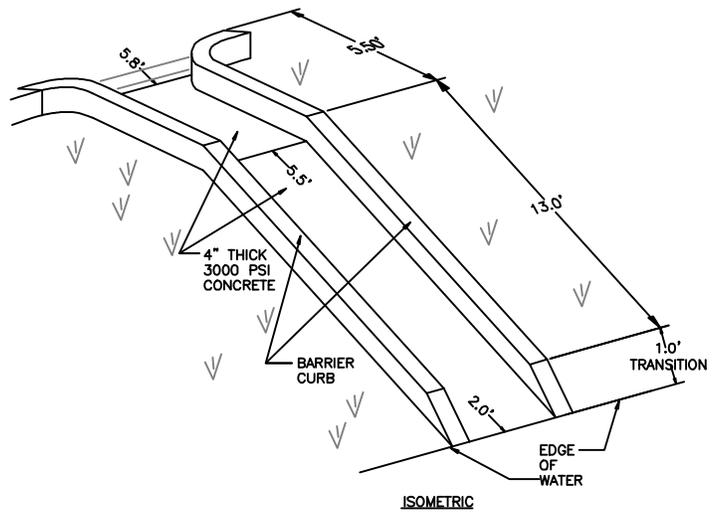
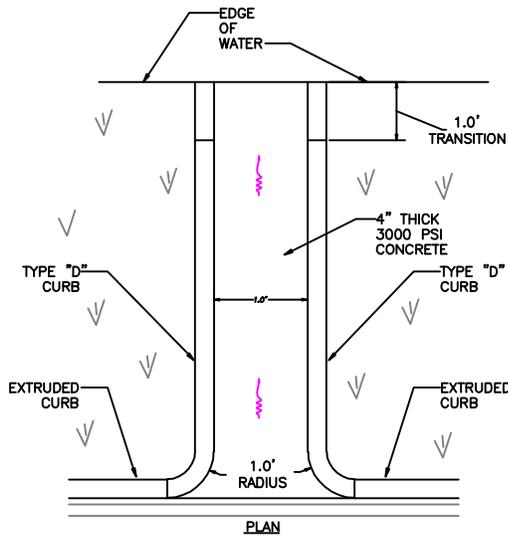
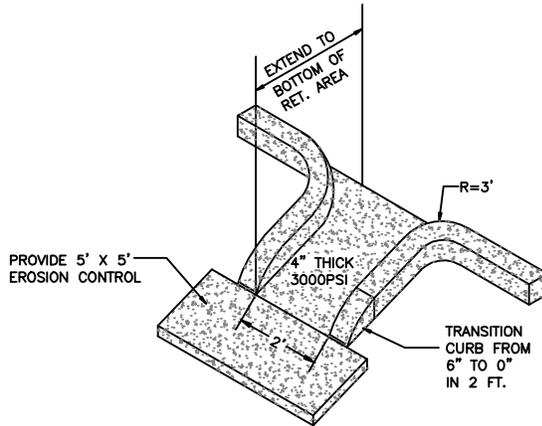
Seal:

TYPICAL EXFILTRATION TRENCH

STANDARD DETAILS

FIGURE DR-20

CITY OF TAMARAC, BROWARD COUNTY, FLORIDA



CONCRETE FLUME

REVISIONS			
No.	Date	Description	By

Date: 4/20/09

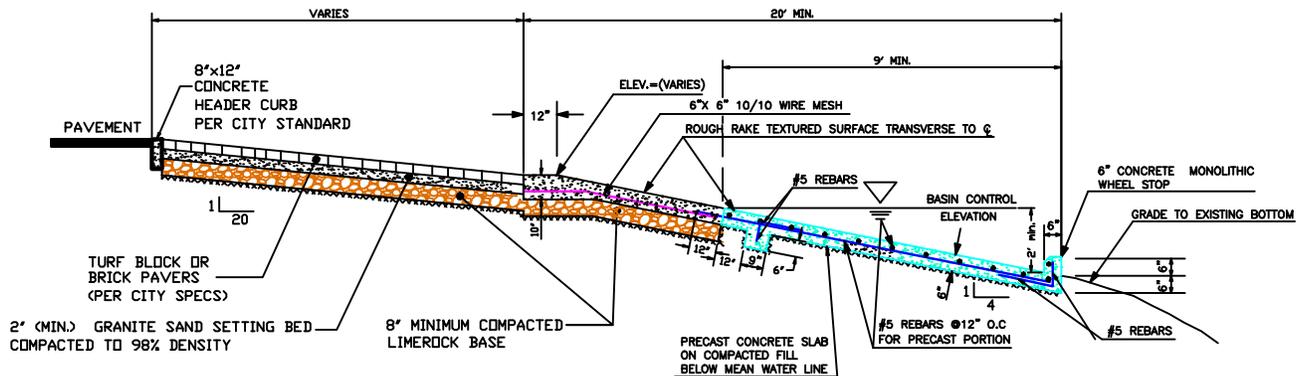
Seal:

CONCRETE
FLUME

STANDARD DETAILS

FIGURE DR-21

CITY OF TAMARAC, BROWARD COUNTY, FLORIDA



NOTES:

1. LOCATION OF BOAT RAMP(S) MUST BE IDENTIFIED, INSPECTED AND APPROVED BY THE CITY OF TAMARAC, ENGINEERING DIVISION PRIOR TO CONSTRUCTION.
2. THE BOAT RAMP(S) SHALL BE MINIMUM 12 FEET WIDE WITH #5 REBARS @12" O.C.E.W. AND REBARS SHALL EXTEND 12" BEYOND THE PRECAST STRUCTURE.
3. PROVIDE CONCRETE HEADER CURB AT PAVEMENT WHERE APPLICABLE.
4. CONTRACTOR/ ENGINEER SHALL PROVIDE TOPOGRAPHIC SURVEY INFORMATION OF BANK AND SUBAQUEOUS SURFACE TO ENSURE CONSTRUCTABILITY.
5. CONCRETE FOR SLAB TO BE MINIMUM OF 3,000 PSI AT 28 DAYS.
6. SIX (6)-INCHES THICK CONCRETE SLAB ON 8-INCHES LIME ROCK BASE. LIME ROCK BASE TO BE PROVIDED ABOVE MEAN WATER LINE.
7. RAMP SHALL EXTEND 2 FEET BELOW MEAN WATER LINE
8. ALL REINFORCING STEEL SHALL HAVE TWO (2) INCHES MINIMUM COVER

**SECTION THROUGH BOAT RAMP
 FOR BRICK PAVERS OR TURF BLOCK**

REVISIONS			
No.	Date	Description	By

Date: 4/20/09

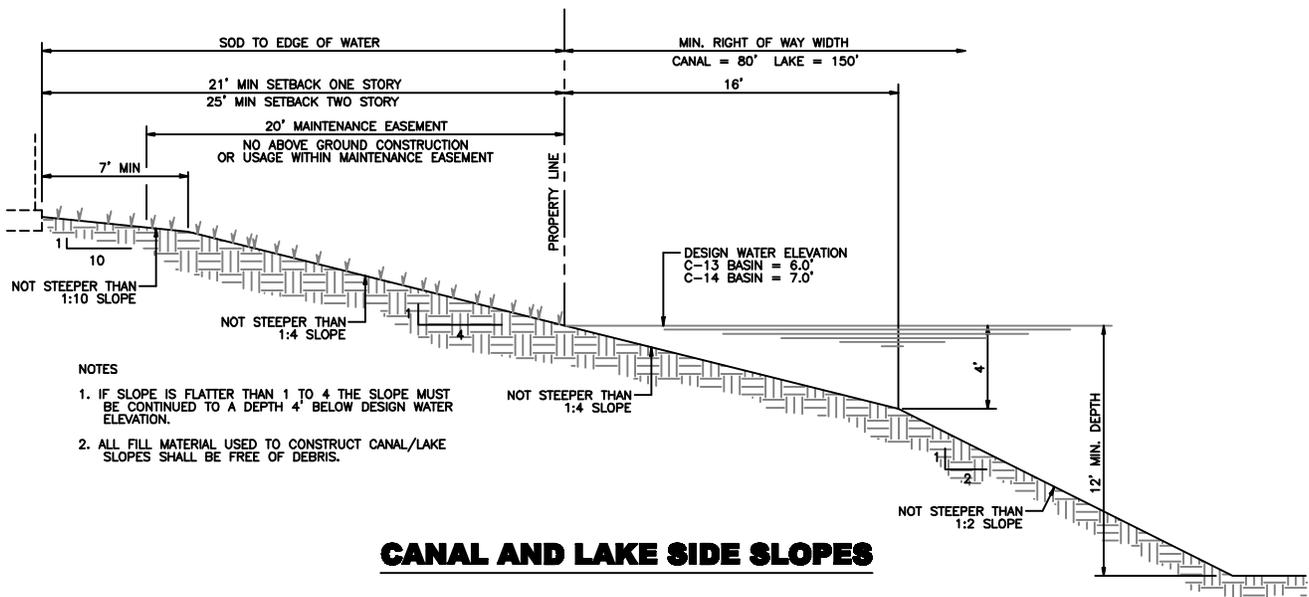
Seal:

SECTION THROUGH
 BOAT RAMP

STANDARD DETAILS

FIGURE DR-22

CITY OF TAMARAC, BROWARD COUNTY, FLORIDA



NOTES

1. IF SLOPE IS FLATTER THAN 1 TO 4 THE SLOPE MUST BE CONTINUED TO A DEPTH 4' BELOW DESIGN WATER ELEVATION.
2. ALL FILL MATERIAL USED TO CONSTRUCT CANAL/LAKE SLOPES SHALL BE FREE OF DEBRIS.

CANAL AND LAKE SIDE SLOPES

REVISIONS			
No.	Date	Description	By

Date: 4/20/09

Seal:

CANAL AND LAKE
SIDE SLOPES

STANDARD DETAILS

FIGURE DR-23

CITY OF TAMARAC, BROWARD COUNTY, FLORIDA



NOTES:

*GEOWEB SPECIFICATIONS GW20V – 100 MM (4 IN) DEPTH
 (BY PRESTO PRODUCTS OR EQUAL)*

BASE MATERIAL:

- POLYMER – POLYETHYLENE WITH DENSITY OF 0.935–0.965 G/CM³
- COLOR – BLACK
- STABILIZER – CARBON BLACK CONTENT 1.5%–2.0% BY WEIGHT
- MINIMUM ESCR – 3000 HR

STRIP PROPERTIES:

SURFACE TREATMENT

PERFORMANCE – THE POLYETHYLENE STRIPS SHALL BE TEXTURED AND PERFORATED SUCH THAT THE PEAK FRICTION ANGLE BETWEEN THE SURFACE OF THE TEXTURED/PERFORATED PLASTIC AND A # 40 SILICA SAND AT 100% RELATIVE DENSITY SHALL BE NO LESS THAN 85% OF THE PEAK FRICTION ANGLE OF THE SILICA SAND IN ISOLATION WHEN TESTED BY THE DIRECT SHEAR METHOD PER ASTM D 5321. THE QUANTITY OF PERFORATIONS SHALL REMOVE 13.8% ±2.1 % OF THE CELL WALL AREA. MATERIAL – THE POLYETHYLENE STRIPS SHALL BE TEXTURED WITH A MULTITUDE OF RHOMBOIDAL (DIAMOND SHAPE) INDENTATIONS. THE RHOMBOIDAL INDENTATIONS SHALL HAVE A SURFACE DENSITY OF 22–31 PEN SQUARE CENTIMETER (140–200 PER SQUARE INCH). IN ADDITION, THE STRIPS SHALL BE PERFORATED WITH HORIZONTAL ROWS OF 10 MM (0.391 IN.) DIAMETER HOLES. PERFORATIONS WITHIN EACH ROW SHALL BE 19 MM (0.75 IN.) ON-CENTER. HORIZONTAL ROWS SHALL BE STAGGERED AND SEPARATED 12 MM (0.50 IN.) RELATIVE TO THE HOLE CENTERS. OUTER PERFORATION CENTERS SHALL BE 12 MM (0.50 IN.) FROM THE STRIP EDGES AND 25 MM (1.0 IN.) FROM THE CELL WELD POINTS.

CELL AND SEAM PROPERTIES:

CELL DETAILS

- DEPTH – 100 MM (4 IN.)
- LENGTH – 224 MM (8.8 IN.)
- WIDTH – 259 MM (10.2 IN.)
- DENSITY PER SQUARE METER (SQUARE YARD) – 36.4 (28.9)
- NOMINAL AREA ± 1 % – 289 SQUARE CENTIMETER (44.8 SQUARE INCHES)

SHORT-TERM SEAM PEEL STRENGTH

- CELL DEPTH – 75 MM (3 IN.)
- MINIMUM CERTIFIED CELL SEAM STRENGTH – 1420 N (320 LBF)

SEAM HANG STRENGTH TEST

A 100 MM (4 IN.) WIDE SEAM SHALL SUPPORT A 72.5 KG. (160 LB) LOAD FOR 7 DAYS MINIMUM IN A TEMPERATURE-CONTROLLED ENVIRONMENT UNDERGOING A TEMPERATURE CHANGE ON A 1-HOUR CYCLE FROM AMBIENT ROOM TO 54° C (130° F). AMBIENT ROOM TEMPERATURE PER ASTM E 41.

ALTERNATIVE SEAM HANG STRENGTH TEST

A 100 MM (4 IN.) WIDE SEAM SHALL SUPPORT A 72.5 KG. (160 LB) LOAD FOR 30 DAYS IN AN AMBIENT ROOM TEMPERATURE ENVIRONMENT. AMBIENT ROOM TEMPERATURE PER ASTM E 41.

SECTION PROPERTIES:

SECTION DIMENSIONS

- SECTION WIDTH (VARIABLE) 2.3 M (7.7 FT.) TO 2.8 M (9.2 FT.)
- SECTION LENGTH RANGE – MINIMUM 3.7 M (12.0 FT.) MAXIMUM 9.8 M (32.2 FT.)

REVISIONS		
No.	Date	Description

Date: 4/20/09	Seal:
GEOWEB SPECIFICATIONS	

STANDARD DETAILS

FIGURE DR-24

CITY OF TAMARAC, BROWARD COUNTY, FLORIDA

