# TOWN OF REDINGTON BEACH

# TOWN STANDARD DETAILS MANUAL



February 24, 2020

SUBSTANTIAL EFFORT HAS BEEN MADE TO ENSURE THE INFORMATION CONTAINED IN THESE STANDARDS IS ACCURATE. HOWEVER, THE TOWN OF REDINGTON BEACH CANNOT ACCEPT RESPONSIBILITY FOR ANY ERRORS OR OVERSIGHTS IN THE USE OF THE MATERIAL OR IN THE PREPARATION OF THE ENGINEERING PLANS. THIS PUBLICATION IS INTENDED FOR USE BY PROFESSIONAL PERSONNEL COMPETENT TO EVALUATE THE SIGNIFICANCE AND LIMITATIONS OF ITS CONTENTS AND BE ABLE TO ACCEPT RESPONSIBILITY FOR THE APPLICATION OF THE MATERIAL IT CONTAINS.

THE DESIGNER MUST RECOGNIZE THAT NO HANDBOOK OR CODE CAN SUBSTITUTE FOR EXPERIENCED ENGINEERING JUDGEMENT. SOME OF THE RECOMMENDATIONS ARE UNDER FURTHER REVIEW AND MAY BE UPDATED LATER. USERS OF THESE STANDARDS ARE ENCOURAGED TO OFFER COMMENTS TO TOWN OF REDINGTON BEACH PUBLIC WORKS DEPT ON THE CONTENTS OF THIS PUBLICATION AND SUGGESTIONS FOR CHANGES IN FUTURE EDITIONS.

THESE STANDARDS ARE UNDER CONSTANT REVIEW AND ARE SUBJECT TO CHANGES APPROVED BY THE TOWN BUILDING OFFICIAL. THE TOWN BUILDING OFFICIAL SHALL INTERPRET THESE STANDARDS, AS NEEDED, FOR APPLICATION AND RESOLUTION OF CONFLICTS.

NOTE: ALL CONSTRUCTION AND STANDARDS REFERENCED WITHIN

SHALL MEET OR EXCEED F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS (LATEST REVISION) AND F.D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST REVISION), UNLESS OTHERWISE NOTED.

TOV	VN OF F	REDINGTON BEACH	DICCLAIMED	
REV.BY	DATE		DISCLAIMER SHEET	1.0
		DATE OF ADOPTION		

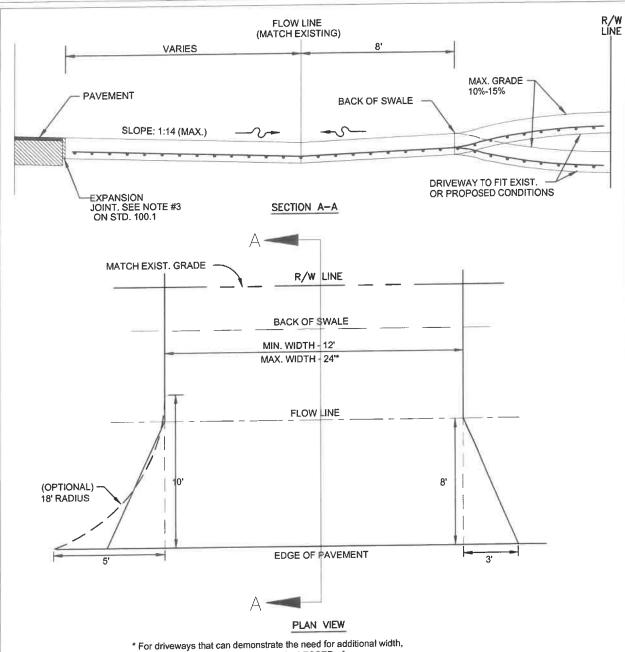
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900	RESERVED		900.0
TOWN OF	REDINGTON BEACH		
REV.BY DATE		GENERAL INDEX	2.0
	DATE OF ADOPTION		

# DRIVEWAYS INDEX

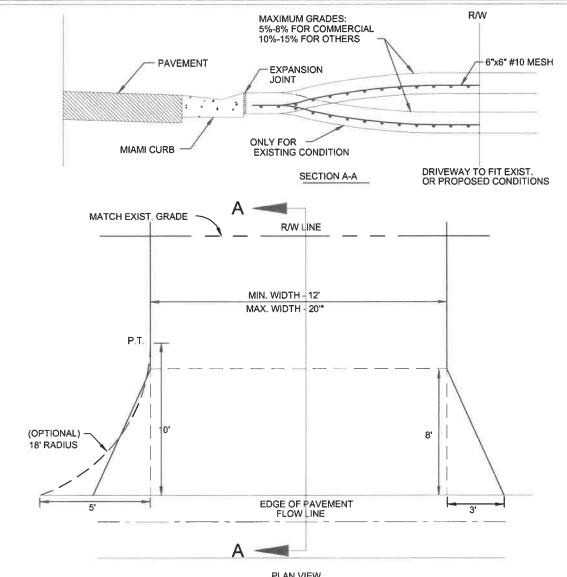
	SHEET NO.
100 DRIVEWAYS	100.0
A. RESIDENTIAL DRIVEWAY - SWALE	101.0
B. RESIDENTIAL DRIVEWAY - CURB	101.1
C. CURB CUT & TRANSITION W/T- FLARE FOR RESIDENTIAL DRIVEWAY	101.2
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TOW	N OF	REDINGTON BEACH		
REV.BY	DATE		DRIVEWAY INDEX	100.0
		DATE OF APPROVAL		



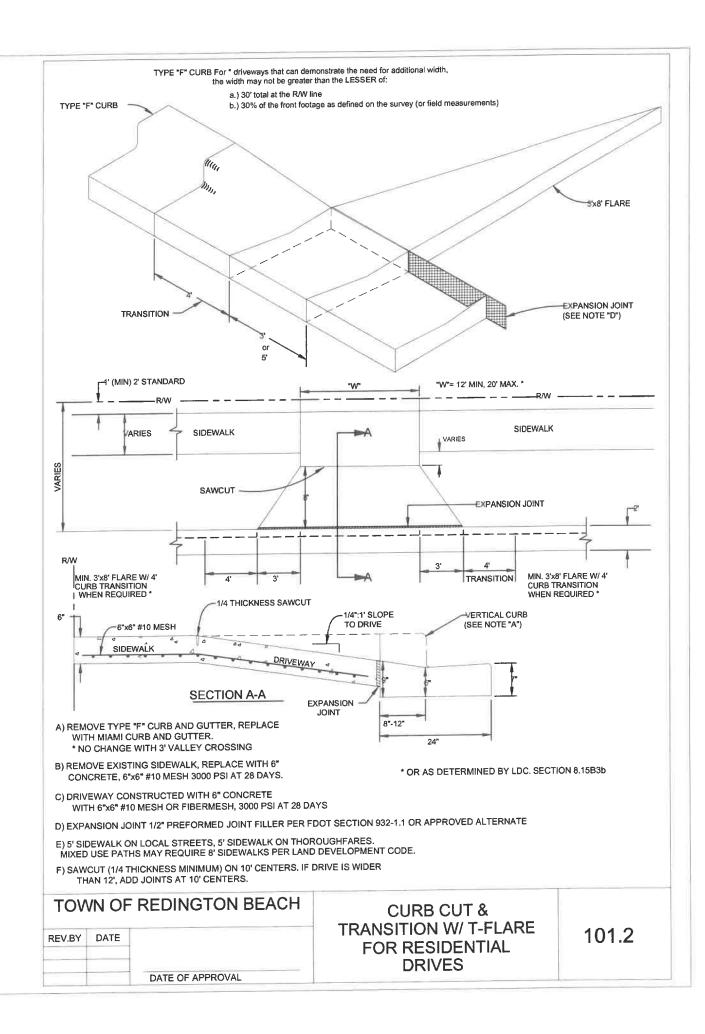
- \* For driveways that can demonstrate the need for additional width, the width may not be greater than the LESSER of:
  - a.) 30' total at the R/W line
  - b.) 30% of the front footage as defined on the survey (or field measurements, 36' max,)
- (A) CONSTRUCT WITH 6" REINFORCED CONCRETE (3,000 psi @ 28 DAYS) WITH 6"x6" #10 MESH OR FIBERMESH FROM EDGE OF PAVEMENT TO THE RIGHT-OF-WAY LINE.
- (B) DRIVEWAYS ADJACENT TO A PAVED ROADWAY MUST HAVE THE APRON CONSTRUCTED IN COMPLIANCE WITH THE NOTE (A) ABOVE.
- (C) EXISTING DRAINAGE FLOWLINE TO BE MAINTAINED. PIPING MAY BE REQUIRED AT THE COUNTY'S DISCRETION.
- (D) 3'x8' FLARED APRON IS MINIMAL, OR 18' RADIUS.
- (E) TOWN ENGINEER A=OR SUPERINTENDENT OF PUBLIC WORKS MAY APPROVE THE USE OF A SWALE DRIVE, IF ON-SITE CONDITIONS ARE FAVORABLE.

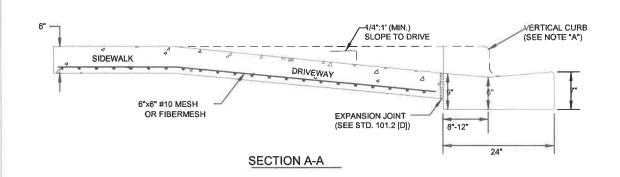
TOV	/N OF	REDINGTON BEACH	RESIDENTIAL	
REV.BY	DATE		(SWALE DRIVE)	101.0
		DATE OF APPROVAL		



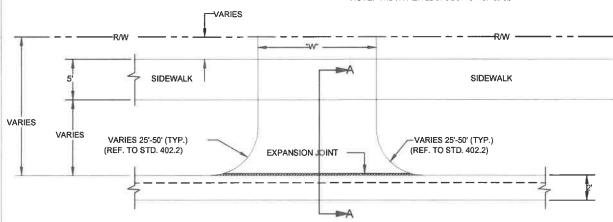
- PLAN VIEW
- \* For driveways that can demonstrate the need for additional width, the width may not be greater than the LESSER of:
  - a.) 30' total at the R/W line
  - b.) 30% of the front footage as defined on the survey (or field measurement, 36' max.)
- \* OR AS OTHERWISE DETERMINED BY LDC. SECTION 8.15.B.3.b
- (A) CONSTRUCT WITH 6" REINFORCED CONCRETE 3000 PSI @ 28 DAYS, 6"x6" #10 WIRE MESH FROM BACK OF CURB- TO R/W LINE.
- (B) DRIVEWAYS ADJACENT TO A PAVED ROADWAY MUST HAVE THE APRON CONSTRUCTED IN COMPLIANCE WITH THE NOTE (A) ON PREVIOUS PAGE (STD. 101.0)
- (C) MAINTAIN EXISTING DRAINAGE FLOWLINE. FOR PIPING SPECIFICATIONS REFER TO F.D.O.T. STANDARD SPECIFICATIONS SECTION 430. SEE NOTE 4, PAGE 100.1. SEE SECTION 200- DRAINAGE (STD. 200.0, 202.5).
- (D) 3'x8' FLARE OR 18' RADIUS WITH CURB TRANSITION (TRANSITION FROM TYPE "F" CURB TO MIAM! CURB) SEE STD. 102.2 NO CHANGE WITH 3' VALLEY CROSSINGS SEE STDS. 201.0, 201.1, 201.2,
- (E) EXPANSION JOINT 0.50" PREFORMED JOINT FILLER OR APPROVED ALTERNATE, DRIVES WIDER THAN 12' (BEYOND FLARE) PLACE JOINT ON 10' CENTER.
- (F) LATERAL ALIGNMENT 45 DEGREES FOR DOUBLE DRIVE PER LOT, 90 DEGREES FOR SINGLE DRIVE, OFF CENTER LINE.

TOW	/N OF	REDINGTON BEACH		
REV.BY	DATE		RESIDENTIAL (CURB DRIVE)	101.1
		DATE OF APPROVAL	(00.13 3.1112)	





NOTE: WIDTH PER LDC. SECTION 8.15B3b



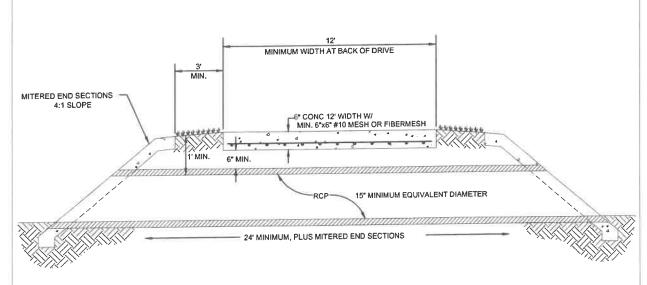
#### PLAN VIEW

- A) IF REPLACING VERTICAL CURB AND GUTTER, REPLACE WITH MIAMI CURB AND GUTTER.

  \* NO CHANGE WITH 3' VALLEY CROSSING
- B) SIDEWALK, CONSTRUCT WITH 6" CONCRETE, 6"X6" #10 MESH OR FIBERMESH, 3000 PSI AT 28 DAYS.
- C) DRIVEWAY CONSTRUCTED WITH 6" CONCRETE WITH 6"X6" #10 MESH OR FIBERMESH, 3000 PSI AT 28 DAYS.
- D) EXPANSION JOINT 1/2" PREFORMED JOINT FILLER PER FDOT SECTION 932-1.1 OR APPROVED ALTERNATE.

  \* IF DRIVE IS WIDER THAN 12', ADD JOINTS AT 10' CENTERS
- E) 5' SIDEWALK ON LOCAL STREETS, 5' SIDEWALK ON THOROUGHFARES.
  (MIXED USE PATHS MAY REQUIRE 8' SIDEWALKS PER LAND DEVELOPMENT CODE.)

TOV	/N OF	REDINGTON BEACH	COMMERCIAL &	
REV.BY	DATE		INDUSTRIAL DRIVE	101.3
		DATE OF APPROVAL		



## TYPICAL DRIVEWAY

VARIABLES: C.M.P. WILL NOT BE ALLOWED WITHIN THE RIGHT-OF-WAY.
R.C.P. WILL REQUIRE A MINIMUM 6" OF COVER BENEATH BOTTOM OF DRIVEWAY, FOR A
TOTAL OF 1' OF COVER. HDPE PIPE IS ACCEPTABLE IN LIEU OF RCP.
ALTERNATIVE DRIVEWAY MATERIALS MAY BE UTILIZED IN ACCORDANCE WITH THESE STANDARDS.

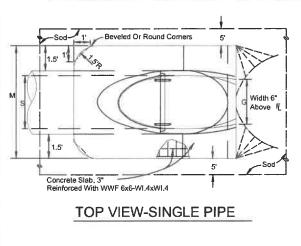
NOTE: 1) GRADES AND LOCATIONS MUST BE REVIEWED AND APPROVED BY PUBLIC WORKS FOR ALL PIPE INSTALLATIONS

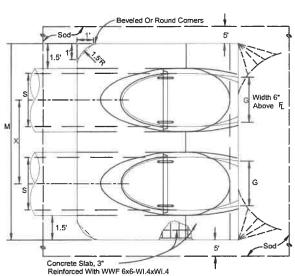
- 2) ACTUAL REQUIRED PIPE DIAMETER WILL BE BASED ON THE FLOW RATE REQUIRED TO PASS THROUGH PIPE SO AS NOT TO IMPOUND WATER UPSTREAM.
- 3) PIPE SIZE TO BE DETERMINED AND APPROVED BY PUBLIC WORKS.

TOV	VN OF	REDINGTON BEACH	TYPICAL DRIVEWAY	
REV.BY	DATE		PIPE CROSS SECTION	102.0
		DATE OF APPROVAL		

#### **ELIPTICAL PIPE**

				DII	MENSIO	NS & (	QUANTIT	IES					
											М		
	Rise R	Span S	Х	A	В	С	E	F	G	Single Pipe	Double Pipe	Triple Pipe	Quad Pipe
	12"	18"	2'-10"	1.97'	1.62'	3.59'	1.56'	4'	1.50'	4.92	7.75'	10.58	13.42'
	14"	23"	3'-4"	2.01'	1.99'	4.00'	1.89'	5'	1.90'	5.38'	8.71'	12.04'	15.38'
	19"	30"	4'-0"	2.11'	2.92'	5.03'	2.73'	6'	2.37'	6.04	10.04'	14.04'	18.04
	24"	38"	5'-0"	2.20'	3.85'	6.05'	3.56'	7'	2.85'	6.79'	11.79'	16.79'	21.79'
0.4	29°	45"	5'-11"	2.34'	4.79'	7.13'	4.39'	8'	3.19'	7.50'	13.42'	19.33'	25.25'
2:1	34"	53"	7'-0"	2.43'	5.72'	8.15'	5.23'	9'	3.57'	8.25'	15.25'	22.25'	29.25'
Slope	38"	60*	7'-10"	2.52'	6.46'	8.98'	5.89'	9'	3.95'	8.92'	16.75'	24.58'	32.42'
	43*	68"	8'-11"	2.62'	7.39'	10.011	6.73	10'	4.28'	9.67'	18.58'	27.50'	36.42'
	48"	76"	9'-11"	2.71'	8.33'	11.04'	7.56'	11'	4.59'	10.42	20.33'	30.25'	40.17'
	53"	83"	10'-8"	2.80'	9.26'	12.06'	8.39'	12'	4.77'	11.08'	21.75'	32.42'	43.08'
	58"	91"	11'-8"	2.90'	10.19'	13.09'	9.23	13'	5.01'	11.83'	23.50'	35.17'	46.83'
	12"	18"	2'-10"	2.36'	3.06	5.42'	3.03'	5'	1.50'	4.92	7.75'	10.58'	13.42
	14"	23"	3'-4"	2.44'	3.75'	6.19'	3.70'	6'	1.90	5.38'	8.71'	12.04	15.38'
	19"	30"	4'-0"	2.62'	5.47'	8.09'	5.36	8'	2.37'	6.04	10.04'	14.04'	18.04
	24"	38"	5'-0"	2.79	7.18	9.97'	7.03'	10'	2.85'	6.79'	11.79'	16.79'	21.79'
4:1	29"	45°	5'-11"	3.05'	8.90'	11.95'	8.70'	12'	3.19'	7.50'	13.42'	19.33'	25.25'
Slope	34"	53"	7'-0"	3.22'	10.62*	13.84'	10.36'	13'	3.57'	8.25'	15.25'	22.25'	29.25'
	38"	60"	7'-10"	3.39'	11.99'	15.38'	11.70'	15'	3.95'	8.92'	16.75'	24.58	32.42'
	43"	68"	8'-11"	3.56'	13.71'	17.27'	13.36'	17'	4.28'	9.67'	18.58'	27.50'	36.42'
	48"	76"	9'-11"	3.73'	15.43'	19.16'	15.03'	19'	4.59'	10.42'	20.33	30.25'	40.17'
	53"	83"	10'-8"	3.91'	17.15'	21.06'	16.70'	20'	4.77'	11.08'	21.75'	32.42	43.08'
	58"	91"	11'-8"	4.08'	18.87'	22.95'	18.36'	22'	5.01'	11.83'	23.50'	35.17'	46.83'





2:1 Miter: To Major Axis For Pipes 29"x45" And Smaller.

1:1 For Pipes 34"x53" And Larger.

# No Pipe Joint Permitted Unless Approved By The Engineer Paid For As Pipe Culvert Pipe To Be Included Under Unit Price For Mittered End Section ) Reinforced With WWF 6x6-WI.4xWI.4 TOP VIEW-MULTIPLE PIPE 4:1 or 2:1 B Connector Saddle B Connector Fige Connector Saddle B Ditch Grade \*Slope: 4:1 Miter: To Major Axis For Pipes 24\*x38\* And Smaller. 2:1 For Pipes 29\*x45\* And Larger.

**SECTION** 

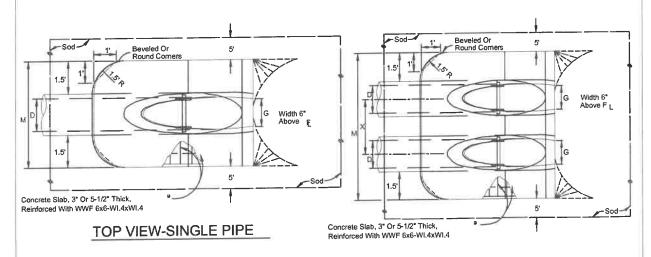
## TOWN OF REDINGTON BEACH

REV.BY	DATE		
		DATE OF APPROVAL	

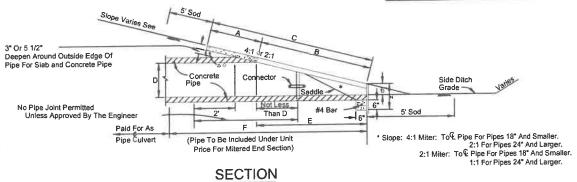
MITERED END SECTION FOR ELIPTICAL, SINGLE, AND MULTIPLE PIPES

## **ROUND PIPE**

				DIM	ENSIONS	AND QU	IANTITIE	ES	,,			
										М		
	D	l x	A	В	С	E	F	G	Single	Double	Triple	Quad
	D	^		-	_	_			Pipe	Pipe	Pipe	Pipe
-	15"	2'-7"	1.92'	2.18'	4.10'	2.06'	5'	1.22'	4.63'	7.21'	9.79'	12.37
1	18"	2'-10"	1.97'	2.74'	4.71'	2.56'	6'	1.41'	4.92'	7.75'	10.58'	13.42
-	24"	3'-5"	2.06	3.85'	5.91'	3.56'	7'	1.73'	5.50'	8.92'	12.33*	15.75
- 1	30"	4'-3"	2.15'	4.95'	7.10	4.56'	8'	2.00'	6.08'	10.33'	14.58'	18.83
-	36"	5'-1"	2.15	6.08'	8.33'	5.56'	9'	2.24'	6.67'	11.75'	16.83'	21.92
2:1		6'-0"	2.34'	7.21'	9.55'	6.56'	10'	2.45'	7.25'	13.25	19.25'	25.25'
Slope	48"	6'-9"	2.43'	8.33'	10.76	7.56'	11'	2.65'	7.83'	14.58'	21.33'	28.08
		7'-8"	2.43	9.44'	11.96'	8.56'	12'	2.83'	8.42'	16.08'	23.75*	31.42
	54" 60"	8'-6"	2.62'	10.56'	13.18'	9.56'	14'	3.00'	9.00	17.50'	26.00'	34.50
- 1		9'-2"	2.71'	11.68'	14.39'	10.56'	15'	3,18'	9.58'	18.75'	27.92'	37.08
	66" 72"	10'-0"	2.80	12.80'	15.60'	11.56'	16'	3.30'	10.16'	20.16'	30.16'	40.16
		1	-	4.09'	6.36'	4.03'	8'	1.22'	4.63'	7.21'	9.79'	12.37
-	15"	2'-7"	2.27'		7.48'	5.03	9,	1.41'	4.92'	7.75'	10.58'	13.42
-	18"	2'-10"	2.36'	5.12'	9.71'	7.03' A	11'	1.73'	5.50'	8.92'	12.33'	15.75
-	24"	3'-5"	2.53'	7.18' A	11.95'	9.03'	13'	2.00'	6.08'	10.33'	14.58'	18.83
4:1	30"	4'-3"	2.70'	9.25'	14.18'	11.03'	15'	2.24'	6.67'	11.75'	16.83"	21.92
Slope	36"	5'-1"	2.87'	11.31' 🔷	16.42'	13.03'	17'	2.45'	7.25'	13.25'	19.25*	25.25
Siohe	42"	6'-0"	3.05'	13.37' 15.43'	18.65'	15.03'	19'	2.65'	7.83'	14.58'	21.33*	28.08
- 1	48"	6'-9"	3.22*		20.88'	17.03'	21'	2.83'	8.42'	16.08'	23.75	31.42
-	54*	7'-8"	3.39	17.49' 19.55'	23.11'	19.03'	23'	3.00'	9.00'	17,50'	26.00'	34.50
-	60"	8'-6"	3.56'	21.62'	25.35'	21.03'	25'	3.18'	9.58'	18.75'	27.92'	37.08
- 1	66" 72"	9'-2"	3.73'	22.68'	26.59'	23.03'	27'	3.30'	10.16'	20.16'	30.16'	40.16



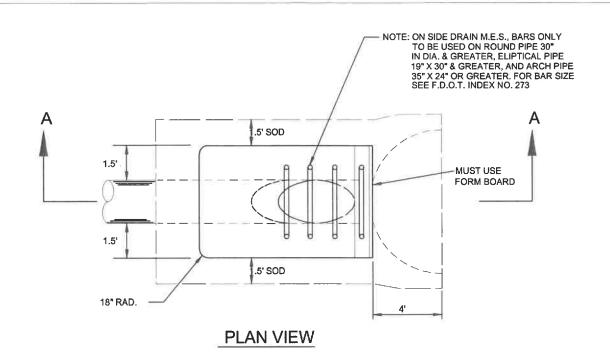
## TOP VIEW-MULTIPLE PIPE

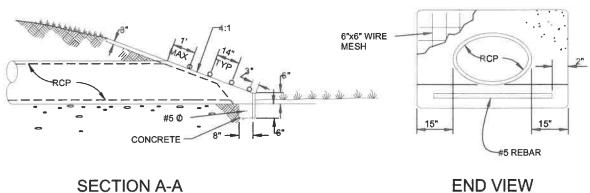


# TOWN OF REDINGTON BEACH

REV.BY	DATE		
		DATE OF APPROVAL	

# MITERED END SECTION FOR ROUND, SINGLE & MULTIPLE PIPES



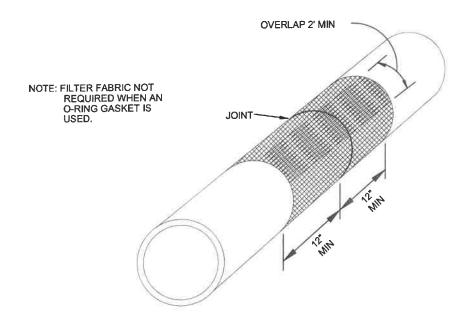


**END VIEW** 

SOD TO BE PLACED 1.5 FT AROUND THE PERIMETER OF THE WALL, SOD TO BE BAHIA; ST. AUGUSTINE SOD WHERE THERE IS TIDAL, HEAVY CONCENTRATION OF SALT, OR SURROUNDING PROPERTY IS ST. AUGUSTINE.

# TOWN OF REDINGTON BEACH REV.BY DATE DATE OF APPROVAL

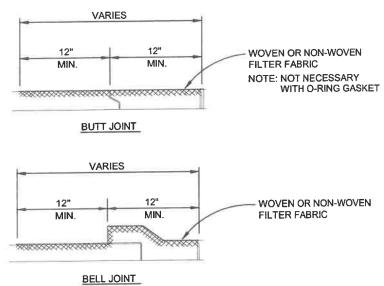
**DRIVEWAY AND ROAD PIPE MITERED END SECTION** 



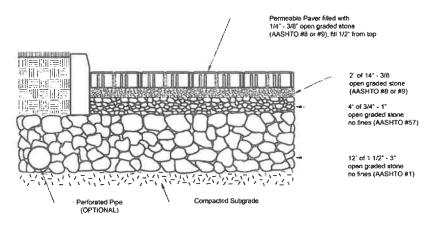
# ISOMETRIC VIEW

NOTE: FILTER FABRIC MATERIAL MUST MEET THE FOLLOWING ASTM REQUIREMENTS:

ASTM D 4595 ASTM D 4632 ASTM D 4533 ASTM D 4833 ASTM D 4491



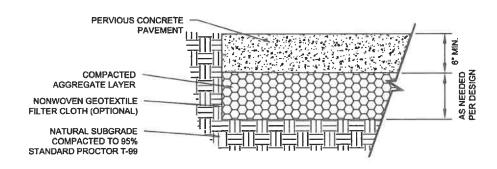
TO	NN OI	REDINGTON BEACH		
REV.BY	DATE		FILTER FABRIC JACKET	104.0
		DATE OF APPROVAL	JAONET	



- 1. 6" POURED CONCRETE BOND BAND SHALL BE INSTALLED WHERE CURB IS NOT PRESENT WITH 3/4" REVEAL AT EDGE OF TRAVEL WAY.
- 6" POURED CONCRETE BOND BAND SHALL BE INSTALLED ON ALL OUTSIDE EDGES WHERE NO EXISTING OR NEW SOLID STRUCTURE IS PRESENT TO HOLD PAVERS IN PLACE.
- 3. ALL PAVERS WITHIN TRAFFIC AREAS MUST BE TRAFFIC BEARING.
- 4. A RIGHT OF WAY USE PERMIT AND AN APPROVED LICENSE AGREEMENT MUST BE OBTAINED IF PAVERS ARE TO BE INSTALLED IN CITY RIGHT OF WAY.
- PAVER INSTALLATION SPECIFICATIONS APPLY TO PUBLIC AND PRIVATE IMPROVEMENTS EXCEPT FOR NON-TRAFFIC BEARING SIDEWALKS CONSTRUCTED ENTIRELY ON PRIVATE PROPERTY.
- DRIVEWAY REPAIRS DUE TO FUTURE RIGHT OF WAY UTILITY AND/OR ROAD WORK ARE THE FULL RESPONSIBILITY OF THE OWNER.

#### PERMEABLE PAVER INSTALLATION DETAIL

N.T.S



- 1. FOR USE IN PARKING AREAS AND LOW VOLUME ACCESSWAYS ONLY.
- ENGINEER OF RECORD SHALL SUBMIT PERVIOUS PAVEMENT DESIGN AND SPECIFICATIONS BASED ON THE SITE SPECIFIC SOIL CONDITIONS, STORMWATER STORAGE REQUIREMENTS AND THE ANTICIPATED TRAFFIC LOADINGS.
- 3. PERVIOUS CONTRACTORS SHALL BE NRMCA CERTIFIED CRAFTSMEN.
- PERVIOUS PRODUCER/SUPPLIERS AND TESTING FIRMS SHALL USE NRMCA CERTIFIED TECHNICIANS.
- 5. POROUS ASPHALT MAY BE USED AS AN ALTERNATIVE MATERIAL AS DESIGNED BY THE EOR.
- A RIGHT OF WAY USE PERMIT AND AN APPROVED LICENSE AGREEMENT MUST BE OBTAINED.IF PAVERS ARE TO BE INSTALLED IN CITY RIGHT OF WAY.
- DRIVEWAY REPAIRS DUE TO FUTURE RIGHT OF WAY UTILITY AND/OR ROAD WORK ARE THE FULL RESPONSIBILITY OF THE OWNER

#### PERVIOUS CONCRETE PAVEMENT DETAIL

N.T.S.

TOW	N OF F	REDINGTON BEACH		
REV.BY	DATE		PAVER AND PREVIOUS CONCRETE	105.0
		DATE OF APPROVAL		

# CURB & GUTTER AND DRAINAGE STRUCTURES & PIPE INDEX

SHEET NO.

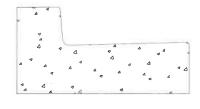
200 CURB & GUTTER, DRAINAGI	E	200.0
A. CURB & GUTTER (CONTRO	OL SHEET)	201.0
1. TYPE "A" MIAMI CURB &	GUTTER	201.1
2. TYPE "F"		201.2
3. MODIFIED TYPE "AB"		201.3
4. TYPE "D"		201.4
5. INVERTED CROWN GUT	TER	201.5
6. VALLEY CROSSING		201.6
B. DRAINAGE (CONTROL SHE	EET)	202.0
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2. CURB INLET		202.2
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<ol> <li>ACCESS COVER FOR ST JUNCTION BOX (PUBL)</li> </ol>	ORMWATER IC)	203.1
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10. UNDERDRAIN TYPICAL L	AYOUT	204.1
11. UNDERDRAIN CLEANOU	TS (FLEXIBLE & RIGID)	204.2
12. STORM SEWER PIPE - G	ENERAL NOTES	205.0
13. CONCRETE BLOCK HEAI	DWALL	205.1
TOWN OF REDINGTON BEACH	CURB & GUTTER, DRAINAGE STRUCTURES	200.0
DATE OF APPROVAL	& PIPE INDEX	



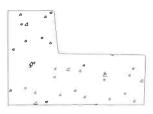
TYPE "A"

MIAMI CURB & GUTTER

STD. 201.1



TYPE "F"
CURB & GUTTER
STD. 201.2



TYPE "AB"

MODIFIED CURB & GUTTER

STD. 201.3



TYPE "D" CURB STD. 201.4

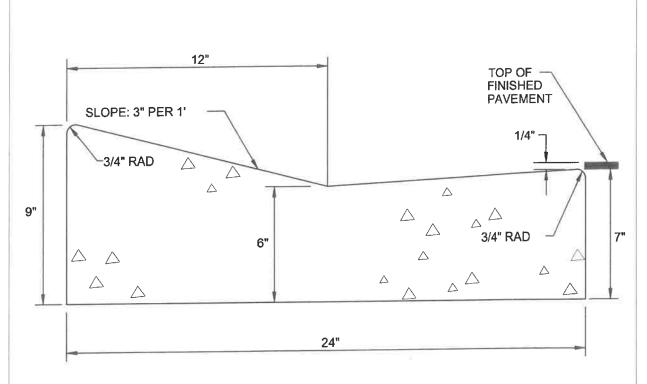


INVERTED CROWN CURB & GUTTER STD. 201.5

- 1. ALL CURB & GUTTER SHALL PROVIDE A 0.125" TO 0.25" CONTRACTION JOINT AT 10' CENTERS.
- 2. ALL CURB & GUTTER SHALL BE CONSTRUCTED IN COMPLIANCE WITH FLORIDA D.O.T. STANDARD SPECIFICATIONS PER F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS INDEX NO. 300, LATEST REVISION.
- 3. TOP OF FINISHED PAVEMENT SHALL BE 0.25" ABOVE LIP OF GUTTER, LOW SIDE.

TOV	VN OF	REDINGTON BEACH
REV.BY	DATE	
		DATE OF APPROVAL

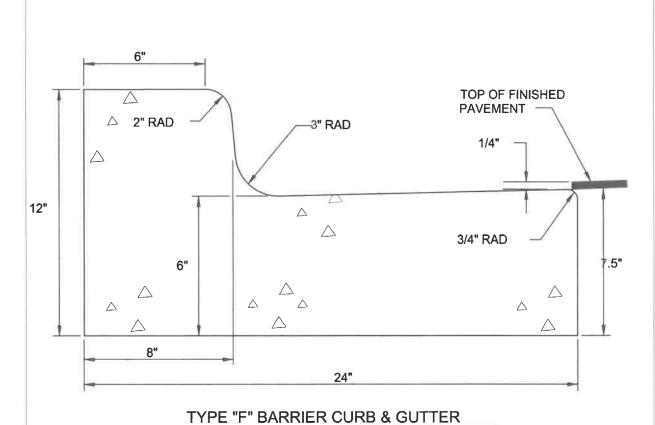
CURB & GUTTER CONTROL SHEET



# TYPE "A" MIAMI CURB & GUTTER

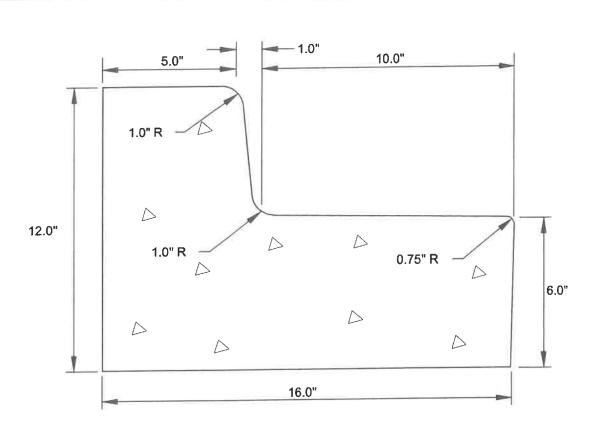
- A) CLASS 1 CONCRETE 3,000 P.S.I. AT 28 DAYS.
- B) CURB AND GUTTER SHALL MEET THE SPECIFICATIONS ESTABLISHED BY FLORIDA D.O.T. STANDARD SPECIFICATIONS PER F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS INDEX NO. 300, LATEST REVISION.

TOV	VN OF	REDINGTON BEACH	TYPE A	
REV.BY	DATE		MIAMI CURB & GUTTER	201.1
		DATE OF APPROVAL		



- A) CLASS 1 CONCRETE 3,000 P.S.I. AT 28 DAYS.
- B) CURB AND GUTTER SHALL MEET THE SPECIFICATIONS ESTABLISHED BY FLORIDA D.O.T. STANDARD SPECIFICATIONS PER F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS INDEX NO. 300, LATEST REVISION.

TOW	/N OF	REDINGTON BEACH	TYPE F	
REV.BY	DATE		CURB & GUTTER	201.2
		DATE OF APPROVAL		

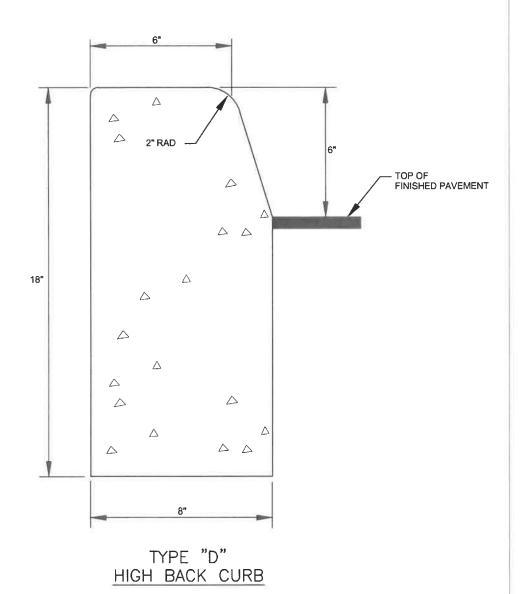


# TYPE "AB" MODIFIED CURB & GUTTER

- A) CLASS 1 CONCRETE 3,000 PSI AT 28 DAYS.
- B) CURB AND GUTTER SHALL MEET THE SPECIFICATIONS ESTABLISHED BY FLORIDA D.O.T. STANDARD SPECIFICATIONS PER F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS STANDARDS INDEX NO. 300, LATEST REVISION.

TOV	VN OF	REDINGTON BEACH
REV.BY	DATE	
		DATE OF APPROVAL

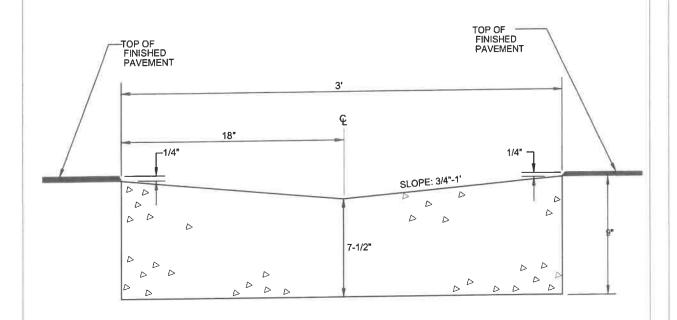
TYPE "AB" MODIFIED CURB & GUTTER



A) CLASS 1 CONCRETE, 3,000 P.S.I. AT 28 DAYS.

B) CURB SHALL MEET THE SPECIFICATIONS ESTABLISHED BY F.D.O.T. STANDARD SPECIFICATIONS PER F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS INDEX NO. 300, LATEST REVISION.

TOW	/N OF	REDINGTON BEACH		
REV.BY	DATE		TYPE D CURB	201.4
		DATE OF APPROVAL		



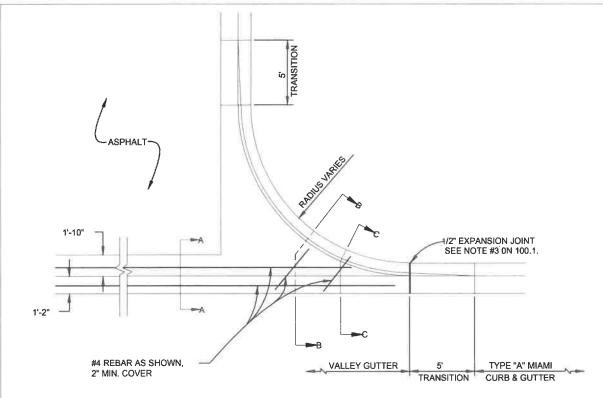
# INVERTED CROWN GUTTER

- A) CLASS 1 CONCRETE, 3,000 P.S.I. AT 28 DAYS.
- B) CURB SHALL MEET SPECIFICATIONS ESTABLISHED BY FLORIDA D.O.T. STANDARD SPECIFICATIONS, PER F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS INDEX NO. 300, LATEST REVISION.
- C) SEE SHEET 401.9 FOR INVERTED CROWN APPLICATION.

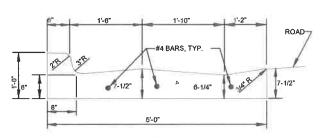
THIS TYPICAL SECTION SHALL BE NOTE: CONSIDERED FOR PRIVATE ROAD

USAGE ONLY! IT MUST BE APPROVED THRU THE PLANNING & TRANSPORTATION DEPARTMENTS, JOINTLY.

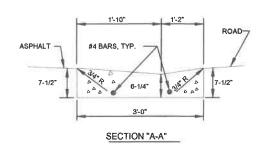
TOW	N OF	REDINGTON BEACH		
REV.BY	DATE		INVERTED CROWN	201.5
		DATE OF APPROVAL		

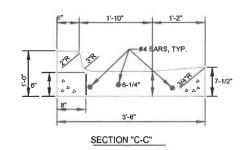


PLAN VIEW



SECTION "B-B"





# 3' VALLEY CROSSING

\* CLASS 1 CONCRETE, 3,000 P.S.I. AT 28 DAYS.

TOV	/N OF	REDINGTON BEACH		
REV.BY	DATE		VALLEY CROSSING	201.6
		DATE OF APPROVAL		

#### **GENERAL NOTES**

- 1. ALL REFERENCED STANDARDS SHALL BE LATEST REVISION.
- 2. CONCRETE SHALL BE CLASS "1" AS SPECIFIED IN SECTION 345 OF F.D.O.T. SPECIFICATIONS
- 3. SEE SECTION 425-2.2 "MORTAR" OF FLORIDA D.O.T. SPECIFICATIONS.
- 4. IRON CASTING SHALL BE AS SPECIFIED IN SECTION 962-8 OF F.D.O.T. SPECIFICATIONS. SEE SECTION 425-5.
- 5. ALL REINFORCEMENT STEEL SHALL BE AS SPECIFIED IN SECTIONS 415 & 931.1 OF F.D.O.T. SPECIFICATIONS.
- 6. SEE FLORIDA D.O.T. SPECIFICATIONS FOR GRATINGS.
- 7. SEE FLORIDA D.O.T. SPECIFICATIONS FOR SECTION 125 "EXCAVATION FOR STRUCTURES."
- 8. PRECAST TOP AND BOTTOM TO BE F.D.O.T. STANDARDS WITH MINIMUM TRAFFIC BEARING 8" THICKNESS.
- 9. ALL STORMWATER PIPE SHALL BE INSTALLED BEHIND THE CURB OR EDGE OF PAVEMENT AND WITHIN THE RIGHT OF WAY AND WITHIN THE DRAINAGE EASEMENTS.
- 10. THE FOLLOWING IS THE DRAINAGE STRUCTURE WALL MINIMUM THICKNESS:

PRECAST

BLOCK

NON-TRAFFIC 6"

8" EITHER WAY

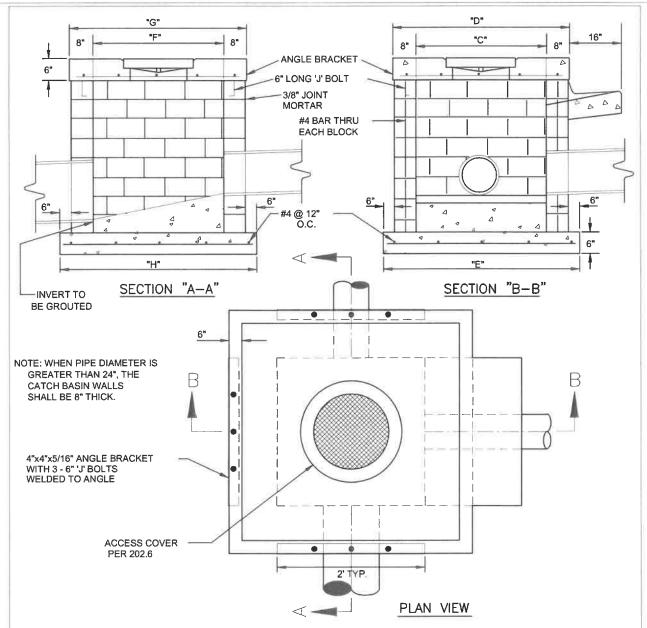
NOTE: FOR DRAINAGE STRUCTURES WITH PIPE DIAMETERS UP TO AND INCLUDING 24". 6" PRECAST WALLS ARE ACCEPTABLE FOR TRAFFIC BEARING.

#### DIMENSION INDEX

		DIMENS	SION INDE				
PIPE SIZE	TYPE	"C"	"D"	"E"	"F"	"G"	"H"
15"	RCP	2'8"	4'	5'	4'	5'4"	6'4"
12"x18"	RCP		"	н	n	"	11
18"	RCP	93	н	"	**	п	н
14"x23"	RCP	н	п	п	88	н	11
24"	RCP	3'4"	4'8"	5'8"	**	и	*
19"x30"	RCP	4'	5'4"	6'4"	77	517	,
30"	RCP	89	11	88	**	*1	u
24"x38"	RCP	5'	6'4"	7'4"	**	u	н
36"	RCP	5'	6'4"	11	**	O O	н
66"	RCP	8'5"	9'9"	10'9"	4'8"	6'0"	7'0"
TOWN OF	REDINGTO	ON BEACH		DRA	INAGE		
EV.BY DATE				ONTO	SI OLIF		202.0

REV.BY	DATE		
		DATE OF APPROVAL	

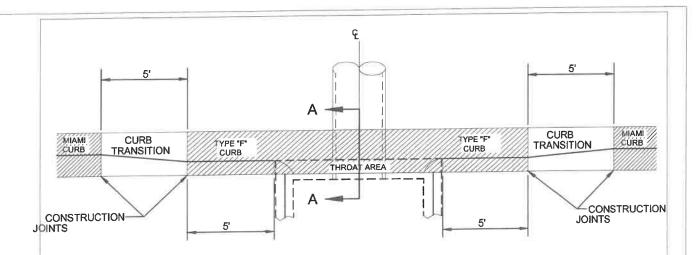
**CONTROL SHEET** 



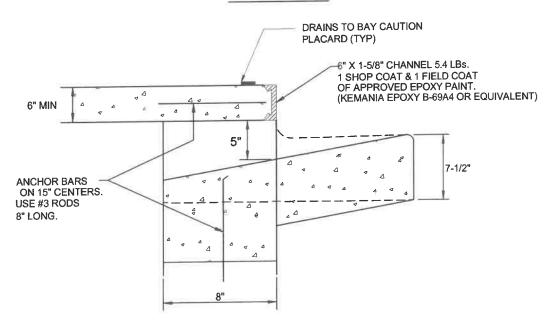
NOTE: DIMENSIONS PER SECTION 202.0

- A) THE FOLLOWING MATERIALS TO BE AS SPECIFIED IN THE FLORIDA D.O.T. SPEC'S. 1991, SECTION 346 CONCRETE, SECT. 962-8 IRON CASTING, SECT. 931-1 REINFORCEMENT STEEL, SECT. 425 INLETS, MANHOLES & JUNCTION BOXES.
- B) FILL BLOCKS WITH 3,000 psi CONCRETE, USE #4 ROD IN EACH BLOCK, 16" O/C.
- C) 2" MINIMUM COVER ON ALL REBAR.
- D) USE #4 REBARS ON 6" CENTERS BOTH WAYS ON LID; NO.4 REBARS ON 12" CENTERS BOTH WAYS ON FLOOR SLAB.
- E) SEE SHEET 202.0 FOR GENERAL NOTES AND DIMENSION INDEX.
- F) ALL EXPOSED CORNERS AND EDGES TO BE CHAMFERED 3/4".
- G) PRECAST BOXES AS SPECIFIED IN F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS (2000)
  ARE AN ACCEPTABLE ALTERNATIVE AS APPROVED BY THE TRANSPORTATION DIRECTOR OR HIS DESIGNEE.
- H) ALL PIPE ENTRIES TO CATCH BASIN TO BE GROUTED AND SEALED.

TOWN OF REDINGTON BEACH			TYPICAL CONC.	
REV.BY	DATE		BLOCK BOX	202.1
		DATE OF APPROVAL		



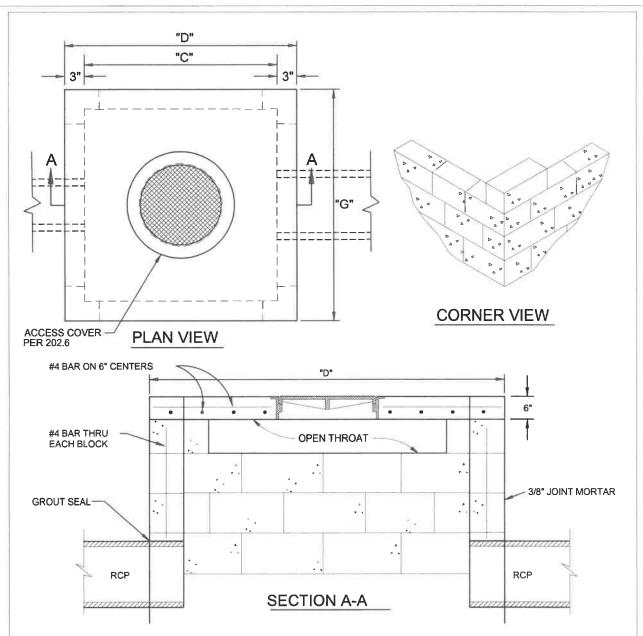
# **PLAN VIEW**



# SECTION A-A

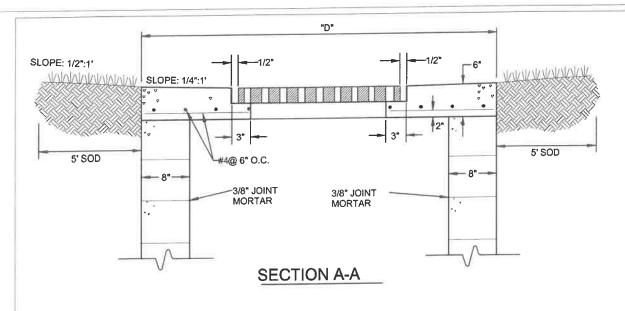
- A) USE STANDARD CATCH BASIN & JUNCTION BOX DIMENSION INDEX (SHEET # 202.0) DETAILS AND COVER (SHEET # 202.6).
- B) SEE CURB & GUTTER INDEX (SHEET # 201.0) FOR APPLICABLE CURB TYPE.
- C) SEE SHEET # 202.0 "GENERAL NOTES" FOR APPLICABLE INFORMATION.
- D) PRECAST BOXES AS SPECIFIED IN F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS (2006) ARE AN ACCEPTABLE ALTERNATIVE AS APPROVED BY THE DIRECTOR OR HIS DESIGNEE.
- E) ANGLE BRACKETS SHOWN ON 202.1 NOT REQUIRED.

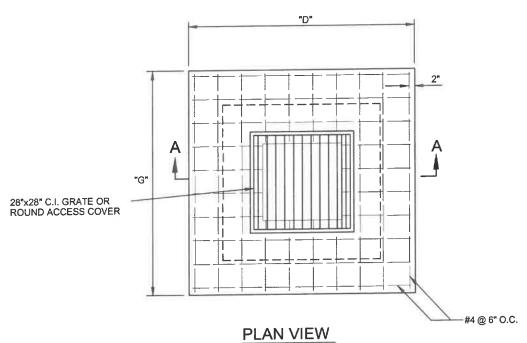
TOW	/N OF	REDINGTON BEACH		
REV.BY	DATE		CURB INLET	202.2
		DATE OF APPROVAL		



- A) DROP INLET IS NOT DESIGNED TO BE SUBJECTED TO VEHICULAR TRAFFIC.
- B) NUMBER OF SIDES OPEN FOR DRAINAGE DEPENDS UPON FLOW VOLUME REQUIREMENTS.
- C) THE FOLLOWING MATERIALS SHALL BE AS SPECIFIED IN FLORIDA D.O.T. SPEC'S., 2000. SEC 346 CONCRETE, SEC 962-8 IRON CASTING, SEC 931-1 REINFORCED STEEL.
- D) FILL BLOCKS WITH 3,000 P.S.I. CONCRETE (EACH CELL), USE #4 ROD IN EACH BLOCK, 16" O/C.
- E) USE #4 ROD ON 6" CENTERS BOTH WAYS ON LID.
- F) SEE SHEET # 202.0 GENERAL NOTES AND DIMENSIONS INDEX, ALSO SHEET 202.1 TYP. CONC. BOX.
- G) PRECAST BOXES TO F.D.O.T. SPECIFICATIONS ARE AN ACCEPTABLE ALTERNATE.
- H) INVERT TO BE GROUTED (SEE 202.1).
- I) PRECAST BOXES AS SPECIFIED IN F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS ARE AN ACCEPTABLE ALTERNATIVE AS APPROVED BY THE TRANSPORTATION DIRECTOR OR HIS DESIGNEE.
- J) ANGLE BRACKETS SHOWN ON 202.1 NOT REQUIRED.

TOW	/N OF	REDINGTON BEACH	THROAT DETAIL
REV.BY	REV.BY DATE		FOR DROP INLET
		DATE OF APPROVAL	101(0)(0) 11(221

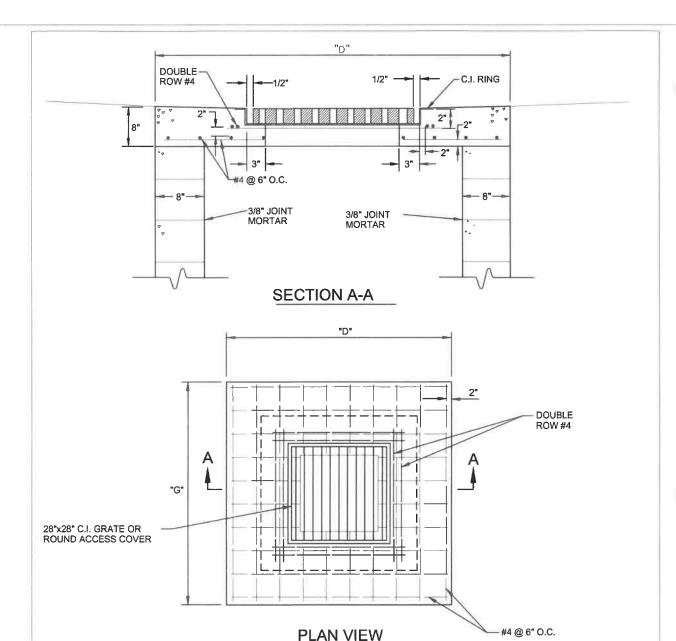




NOTE: DIMENSIONS "D" & "G" PER SECTION 202.0

- A) ALTERNATE C.I. GRATES, 18"X 24", 24"X 24", 28"X 36".
- B) SOD TO BE PLACED A MINIMUM OF 5' AROUND BOX.
- C) THE FOLLOWING MATERIALS SHALL BE AS SPECIFIED IN FLORIDA D.O.T. SPEC'S., 2000. SEC 346 CONCRETE, SEC 962-8 IRON CASTING, SEC 931-1 REINFORCED STEEL.
- D) FILL BLOCKS WITH 3,000 P.S.I. CONCRETE (EACH CELL), USE # 4 ROD IN EACH BLOCK, 16" O/C.
- E) USE #4 ROD ON 6" CENTERS BOTH WAYS ON LID.
- F) SEE SHEET # 202.0 GENERAL NOTES AND DIMENSIONS INDEX, ALSO SHEET 202.1 TYP. CONC. BOX.
- G) PRECAST BOXES AS SPECIFIED IN F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS ARE AN ACCEPTABLE ALTERNATIVE AS APPROVED BY THE TRANSPORTATION DIRECTOR OR HIS DESIGNEE.
- H) ANGLE BRACKETS SHOWN ON 202.1 NOT REQUIRED.

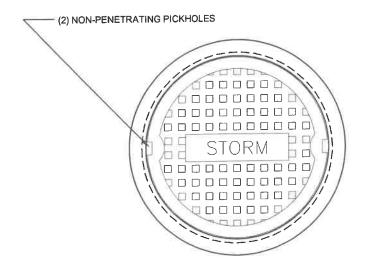
TOW	N OF	REDINGTON BEACH	NON-TRAFFIC	
REV.BY	DATE	BEARING	202.4	
		DATE OF APPROVAL	BOX LID	

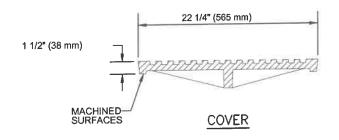


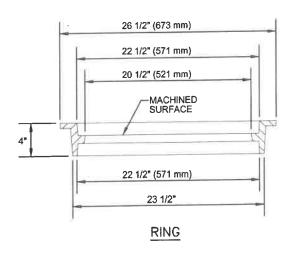
NOTE: DIMENSIONS "D" & "G" PER SECTION 202.0

- A) ALTERNATE C.I. GRATES, 18"X 24", 24"X 24", 28"X 36" OR ACCESS COVER (202.6).
- B) 8" TRAFFIC BEARING LID W/ REINFORCING C.I. RING & DOUBLE ROW OF #4 REBAR.
- C) FOLLOWING MATERIALS ARE SPECIFIED IN FLORIDA D.O.T. SPEC'S., 2000. SEC 346 CONCRETE, SEC 962-8 IRON CASTING, SEC 931-1 REINFORCED STEEL.
- D) FILL BLOCKS WITH 3,000 P.S.I. CONCRETE (EACH CELL), USE #4 ROD IN EACH BLOCK, 16" O/C.
- E) USE #4 ROD ON 6" CENTERS BOTH WAYS ON LID. (SEE 202.3 E)
- F) SEE SHEET # 202.0 GENERAL NOTES AND DIMENSIONS INDEX, ALSO SHEET 202.1 TYP. CONC. BOX.
- G) INVERT TO BE GROUTED (SEE 202.1).
- H) PRECAST BOXES AS SPECIFIED IN F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS ARE AN ACCEPTABLE ALTERNATIVE AS APPROVED BY THE TRANSPORTATION DIRECTOR OR HIS DESIGNEE.
- I) ANGLE BRACKETS SHOWN ON 202.1 NOT REQUIRED.

TOW	/N OF	REDINGTON BEACH	TRAFFIC BEARING	
REV.BY	DATE	TE	BOX LID	202.5
		DATE OF APPROVAL	2 0 / \ 1.0	







#### USF 1110 RING & PROPOSED COVER

#### NOTE:

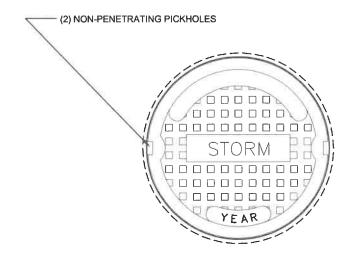
- 1 MATERIAL; ASTM-A48 CLASS 30B GRAY IRON.
- 2 COVER WEIGHT: 105 LBS. APPROX.
- 3 RING WEIGHT: 90 LBS. APPROX.

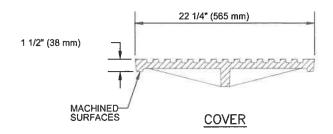
TOWN	OF	<b>REDI</b>	<b>NGT</b>	ON	<b>BEAC</b>	H
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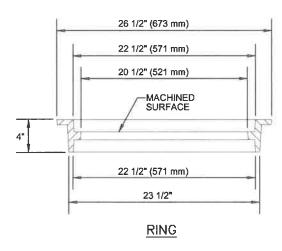
REV.BY DATE

DATE OF APPROVAL

ACCESS COVER FOR STORMWATER JUNCTION BOX (PRIVATE)





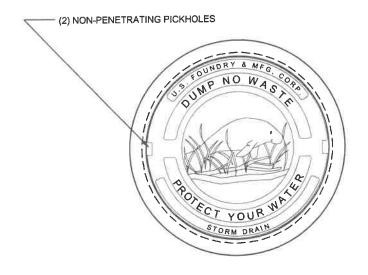


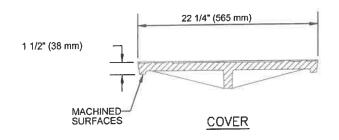
USF 1110 RING & PROPOSED COVER

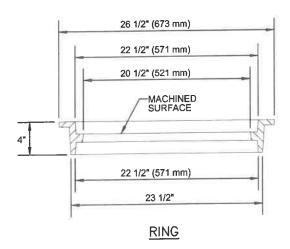
#### NOTE:

- 1 MATERIAL; ASTM-A48 CLASS 30B GRAY IRON.
- 2 COVER WEIGHT: 105 LBS. APPROX.
- 3 RING WEIGHT: 90 LBS. APPROX.

TOV	VN OF	REDINGTON BEACH	ACCESS COVER	
REV.BY	DATE		FOR STORMWATER JUNCTION BOX	203.1
		DATE OF APPROVAL	(PUBLIC)	







#### USF 1110 RING & PROPOSED COVER

## NOTE:

- 1 MATERIAL; ASTM-A48 CLASS 30B GRAY IRON.
- 2 COVER WEIGHT: 105 LBS. APPROX.
- 3 RING WEIGHT: 90 LBS. APPROX.

TOWN	OF	<b>REDINGTOI</b>	N BEACH
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F	REV.BY	DATE	
F			
H			DATE OF APPROVAL

ACCESS COVER FOR CATCH BASIN & THROAT INLET (PUBLIC)

#### **UNDERDRAIN**

1. CORRUGATED POLYETHYLENE TUBING

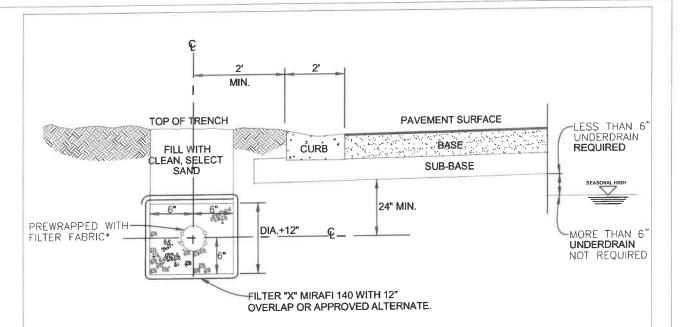
CORRUGATED POLYETHYLENE TUBING WITH A FILTER FABRIC WRAP, UNLESS OTHERWISE NOTED, MAY BE USED FOR UNDERDRAIN APPLICATIONS ASSOCIATED WITH ROADWAY CONSTRUCTION PROVIDING THE FOLLOWING SPECIFICATIONS ARE MET:

- A) THE CORRUGATED POLYETHYLENE TUBING SHALL MEET THE REQUIREMENTS OF ASTM F-405.
- B) THE CORRUGATED POLYETHYLENE TUBING SHALL HAVE A FILTER FABRIC SOCK MEETING F.D.O.T. SPEC. 948-3, LATEST REVISION. IF PERFORATIONS IN PIPE ARE LESS THAN 3/4", THEN FILTER FABRIC SOCK MAY BE OMITTED.
- C) THE ENVELOPE MATERIAL SURROUNDING THE TUBING SHALL BE CRUSHED STONE OR WASHED SHELL. THE THICKNESS OF THE ENVELOPE MATERIAL SHALL BE EQUAL TO OR GREATER THAN THE DIAMETER OF THE TUBING, PLUS 12".
- D) CORRUGATED POLYETHYLENE TUBING SHALL NOT BE ACCEPTABLE UNDER ROADWAYS.
- E) EXTRA CARE SHALL BE TAKEN DURING PLACEMENT TO MAINTAIN PROPER LINE AND GRADE, TO BE PLACED W/ SLOPE OF ROAD.
- F) A CLEAN-OUT SHALL BE CONSTRUCTED AT THE END OF EACH RUN OF UNDER-DRAIN. MAXIMUM SPACING EVERY 100 FEET.
- G) SOD 3' AROUND 18" CONC. SQUARE.

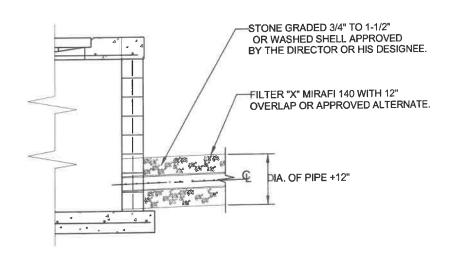
\*NOTE: TRANSPORTATION DIRECTOR OR HIS DESIGNEE'S APPROVAL IS REQUIRED FOR THE USE OF FLEXIBLE UNDERDRAIN PIPE.

TOW	/N OF	REDINGTON BEACH
REV.BY	DATE	
		DATE OF APPROVAL

UNDERDRAIN
GENERAL NOTES



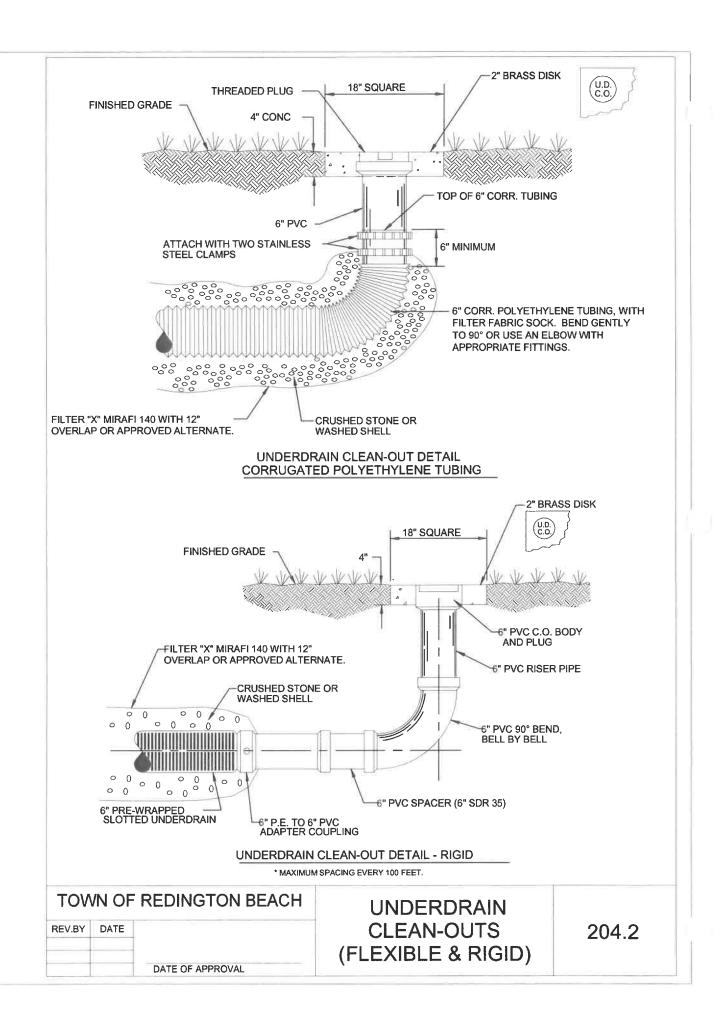
## UNDERDRAIN PLACEMENT



#### UNDERDRAIN TIE TO INLET

- A) LOCATION OR NEED FOR UNDERDRAIN TO BE APPROVED BY THE DIRECTOR OR HIS DESIGNEE.
- B) UNDERDRAIN SHALL BE AS SPECIFIED IN SECTION 440 OF FLORIDA DEPT. OF TRANSPORTATION SPEC. (2000 OR LATEST REVISION).
- C) 6" TO 8" PERFORATED PIPE AS REQUIRED.
- D) BACKFILL WITH CLEAN, SELECT SAND TO LINES SHOWN ON PLANS.
- \* IF PIPE PERFORATIONS ARE SMALLER THAN 3/4", THEN FILTER FABRIC SOCK MAY OMITTED.

TOW	N OF	REDINGTON BEACH	TYPICAL	
REV.BY	DATE		UNDERDRAIN	204.1
			LAYOUT	
		DATE OF APPROVAL		



# METAL STORM SEWER PIPE, GENERAL NOTES

- A. SHALL MEET REQUIREMENTS OF SECTION 430 AND 943 OF THE F.D.O.T.'S LATEST REVISION/UPDATE SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND ITS SUPPLEMENT. ALL PIPE SHALL BE TYPE 'A', FULLY BITUMINOUS COATED.
- B. SHALL HAVE GASKETED WATER TIGHT JOINTS AT ALL LOCATIONS.
- C. SHALL HAVE THE PROJECT SITE TESTED BY A CERTIFIED LAB FOR pH, RESISTIVITY, SULFATES AND CHLORIDES. TESTS SHALL BE IN ACCORDANCE WITH FLORIDA METHOD OF TEST FM 5-550, 551, 552 & 553 AND SUBMITTED TO THE TRANSPORTATION DEPARTMENT FOR REVIEW.
- D. SHALL HAVE A MINIMUM COVER OF 18".
- E. SHALL NOT BE ALLOWED WITHIN THE ROAD RIGHT-OF-WAY OR CARRY RIGHT-OF-WAY RUNOFF.
- F. ALL STORMWATER PIPE SHALL BE INSTALLED BEHIND THE CURB OR EDGE OF PAVEMENT AND WITHIN THE RIGHT OF WAY.

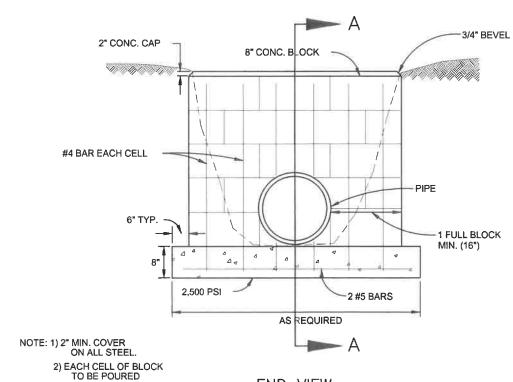
# HDPE STORM SEWER PIPE GENERAL NOTES

- A. HDPE SHALL MEET CURRENT F.D.O.T. STANDARD SPECIFICATIONS.
- B. MINIMUM COVER 9" (TOP OF PIPE TO BOTTOM OF RIDGED PAVEMENT OF DRIVEWAY) 15" (TOP OF PIPE TO BOTTOM OF FLEXIBLE BASE OF DRIVEWAY)
- C. SIZES ARE LIMITED TO CURRENT F.D.O.T. STANDARD SPECIFICATIONS UNLESS OTHERWISE APPROVED BY CITY ENGINEER OR SUPERINTENDENT OF PUBLIC WORKS.
- D. HDPE PIPE IS NOT ALLOWED UNDER ROADWAY. UNLESS OTHERWISE APPROVED BY CITY ENGINEER OR SUPERINTENDENT OF PUBLIC WORKS.

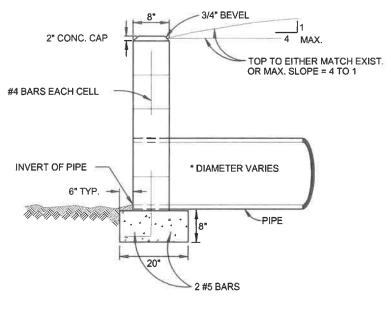
# FIBER OR WIRED REINFORCED CONC. PIPE, GENERAL NOTES

- A. FRCP SHALL MEET CURRENT F.D.O.T. STANDARD SPECIFICATIONS. UNLESS OTHERWISE APPROVED BY CITY ENGINEER OR SUPERINTENDENT OF PUBLIC WORKS.
- B. SIZES LIMITED TO F.D.O.T. CURRENT STANDARD SPECIFICATIONS.

TOW	/N OF	REDINGTON BEACI	STORM SEWER PIPE
REV.BY	DATE		GENERAL NOTES
		DATE OF APPROVAL	



END VIEW



# SECTION A-A

TOWN OF REDINGTON BEACH			CONCRETE BLOCK
REV.BY	DATE		HEADWALL
		DATE OF APPROVAL	

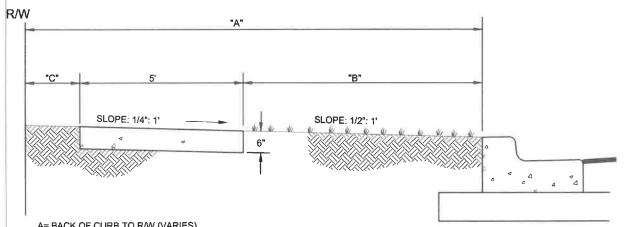
# SIDEWALKS INDEX

	SHEET NO.
300 SIDEWALKS	300.0
1. SIDEWALK REQUIREMENTS	301.1
2. HANDICAPPED RAMP SHEET #1	302.1
3. HANDICAPPED RAMP SHEET #2	302.2
4 CURB RAMP DETECTABLE WARNINGS	302.3

TOWN OF REDINGTON BEACH					
REV.BY	DATE				

DATE OF APPROVAL

SIDEWALKS INDEX

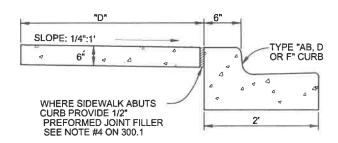


A= BACK OF CURB TO R/W (VARIES)

B= UNPAVED AREA (VARIES). REFER TO
F.D.O.T. GREEN BOOK, TABLE 3-12, LATEST REVISION.

C= VARIES, SEE 401 SERIES

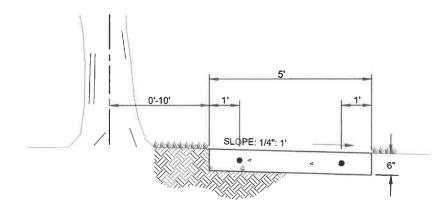
### TYPICAL SIDEWALK LOCATION



D= SIDEWALK WIDTH SHALL BE 6' STANDARD, WHERE WALK ABUTS TYPE "AB, D OR F" CURB. WHERE SPEED LIMIT IS 25 MPH OR LESS, WIDTH CAN BE 5'-6".

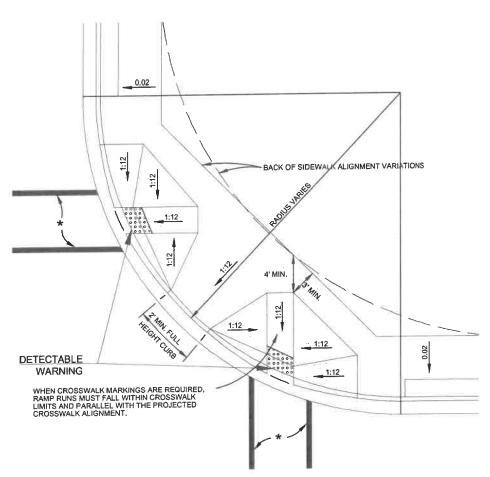
\* SEE SHEET 300.1 "GENERAL NOTES" FOR FURTHER INFORMATION

### ALTERNATE SIDEWALK LOCATION



### SIDEWALK LOCATION CLOSE TO TREES

TOV	/N OF	REDINGTON BEACH	SIDEWALK	
REV.BY	Y DATE		REQUIREMENTS	301.1
		DATE OF APPROVAL		

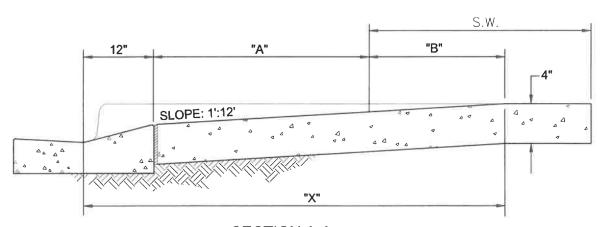


- CROSSWALK WIDTHS AND CONFIGURATION VARY; MUST CONFORM TO FDOT INDEX NO. 17344 AND 17346.
- 1) CURB CUT RAMPS ARE TO BE LOCATED AS SHOWN ON PLANS.
- 2) SEE SHEETS # 300.1 "GENERAL NOTES" & # 301.2 "HANDICAPPED RAMP" SHT 2 FOR FURTHER REQUIREMENTS.
- 3) RADIUS OF CURB VARIES AS FOLLOWS:
  - A) 25' RAD. LOCAL STREET WITH ALLEY.
  - B) 25' RAD. LOCAL STREET WITH LOCAL STREET.
  - C) 35' RAD. LOCAL STREET WITH THOROUGHFARE OR COLLECTOR.
  - D) 50' RAD. THOROUGHFARE WITH THOROUGHFARE
- 4) CURB RADIUS SHOULD BE A MINIMUM OF 50' WHERE INDUSTRIAL AND BUS TRAFFIC (5% OR MORE) IS ANTICIPATED ON LOWER CLASSIFICATION ROADWAYS.
- 5) BOTH LOCATION OPTIONS FOR HANDICAPPED RAMP ARE SHOWN. ENGINEER MAY SELECT EITHER, WHICHEVER FITS THE SITUATION.

NOTE: FOR COMPLETE HANDICAP, PUBLIC SIDEWALK AND CURB RAMP DETAILS, SEE F.D.O.T. DESIGN STANDARDS, 2006 EDITION, INDEX 304, SHEETS 1 THROUGH 6.

TOV	/N OF	REDINGTON BEACH
REV.BY	DATE	
		DATE OF APPROVAL

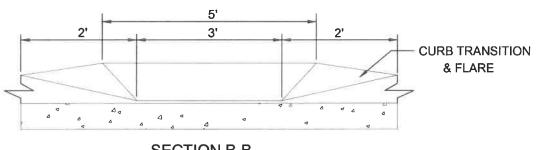
HANDICAPPED RAMP SHEET 1



### **SECTION A-A**

(SEE SHEET 301.0)

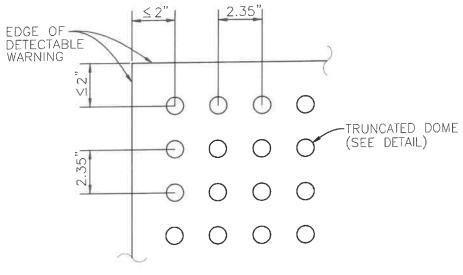
S.W.= SIDEWALK	"A"	S.W.+ A + 10"	"X"	"B"
5'	0 ~	5.8'	5.8'	5'
6'	0	6.8'	6.8'	6'
7'	0	7.8'	7.3' —	6.5'
8'	0	8.8'	7.3'	6.5'
5' 5'	2' 2.5'	7.8' ——— 8.3'	7.8' — 8.1'	—— 5' 4.8'
5'	3'	8.8'	8.2' —	4.4'
5'	3.5'	9.3'	8.4'	4.1'
5'	— 4' —	9.8'	8.6' —	3.8'
5'	4.5'	10.3'	8.7'	3.4'
5'	5'	10.8'	9.1' —	3.1'



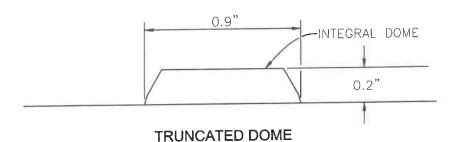
SECTION B-B (SEE SHEET 301.0)

NOTE: FOR COMPLETE HANDICAP, PUBLIC SIDEWALK AND CURB RAMP DETAILS, SEE F.D.O.T. DESIGN STANDARDS, 2006 EDITION, INDEX 304, SHEETS 1 THROUGH 6.

TOV	VN OF	REDINGTON BEACH	HANDICAPPED	
REV.BY	DATE		RAMP SHEET 2	302.2
		DATE OF APPROVAL		



### PLAN VIEW



### CURB RAMP DETECTABLE WARNING DETAIL

### NOTES:

### DETECTABLE WARNINGS ON WALKING SURFACES

THE DETECTABLE WARNING SHALL EXTEND THE FULL WIDTH AND DEPTH OF THE CURB RAMP.

DETECTABLE WARNINGS SHALL CONSIST OF RAISED TRUNCATED DOMES WITH A DIAMETER OF NOMINAL 0.9 INCH, A HEIGHT OF NOMINAL 0.2 INCH AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 INCH AND SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT.

THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE. DETECTABLE WARNINGS USED ON INTERIOR SURFACES SHALL DIFFER FROM ADJOINING WALKING SURFACES IN RESILIENCY OR SOUND-ON-CANE CONTACT.

THE MATERIAL USED TO PROVIDE CONTRAST SHOULD CONTRAST BY AT LEAST 70%. CONTRAST IN PERCENT IS DETERMINED BY:

CONTRAST = [(B1-B2)/B1] x 100

WHERE B1 = LIGHT REFLECTANCE VALUE (LRV) OF THE LIGHTER AREA AND B2 = LIGHT REFLECTANCE VALUE (LRV) OF THE DARKER AREA.

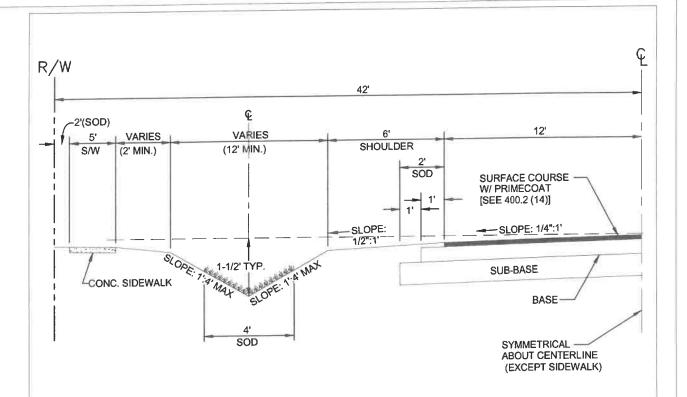
NOTE THAT IN ANY APPLICATION BOTH WHITE AND BLACK ARE NEVER ABSOLUTE; THUS, B1 NEVER EQUALS 100 AND B2 IS ALWAYS GREATER THAN 0.

TOV	VN OF	REDINGTON BEACH	CURB RAMP	
REV.BY	DATE		DETECTABLE	302.3
		DATE OF APPROVAL	WARNINGS	

# ROAD STANDARD INDEX

	SHEET NO.
400 ROAD STANDARDS	400
A. GENERAL NOTES	
1. RESERVED	401.0
2. RESERVED	401.1
3. RESERVED	401.2
4. RESERVED	401.3
5. RESERVED	401.4
6. RESERVED 7. RESERVED	401.5 401.6
8. TYPICAL LOCAL RESIDENTIAL SWALE CROSSING	401.6
9. TYPICAL LOCAL RESIDENTIAL CURB CROSSING	401.8
10. TYPICAL LOCAL SHELL ROAD	401.9
11. RESIDENTIAL & INDUSTRIAL CUL-DE-SAC	401.10
12. RESIDENTIAL & INDUSTRIAL CUL-DE-SAC WITH MEDIAN	401.11
13. MINIMUM CURB RADIUS	402.0
14. MINIMUM CLEAR ZONE WIDTHS	402.1
15. MEDIAN REQUIREMENTS	402.2
16. LOCAL STREET TO THOROUGHFARE SEPARATION REQUIREMENTS	402.3
17. RESERVED	402.4
18. DRIVEWAY SETBACK DISTANCE	402.5
B. SOIL CEMENT SPECIFICATIONS	403.0
C. CEMENT TREATED BASE	403.1
D. UTILITY ROAD CUT REPLACEMENT	403.2
E. ROAD CONNECTION DETAIL	403.3
G. TYPICAL RESIDENTIAL STREET ROUNDABOUT	404.0
H. SPEED TABLE DETAIL	405.0

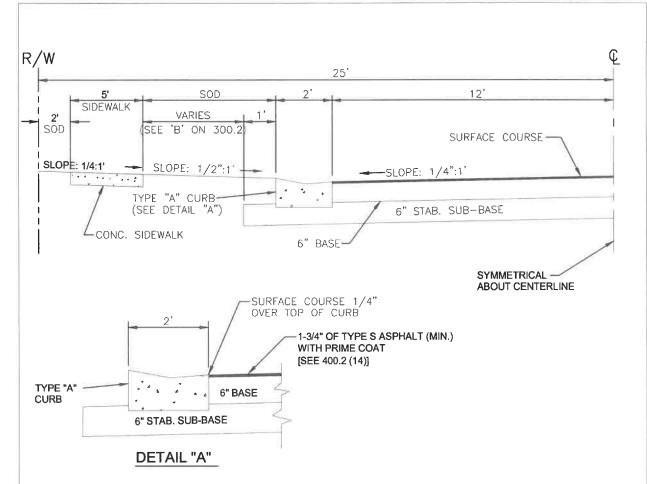
TOW	N OF	REDINGTON BEACH	DOAD OTANDADDO	
REV.BY	DATE		ROAD STANDARDS INDEX	400.0
		DATE OF APPROVAL		



### NOTES:

- A) Asphaltic concrete surface course 1-3/4" minimum thickness (Type S). Two lifts of asphalt shall be considered acceptable, however a performance bond shall be required if second lift is delayed. The first lift shall be 1" of S-I, the second lift shall be 3/4" of S-III.
- B) Base Course shall consist of 4-1/2" compacted sand asphalt (1200 lbs. stabilized), 6" base course 600 lbs. per square yard limrock compacted to 98% AASHTO T-180 density, or 6" soil cement\* (6" Caloosahatchee Shell LBR 100).
- C) 6" stabilized sub-base shell marl blended with sandy sub-base minimum LBR 40, 98% T180 AASHTO.
- D) Shoulder, slopes and ditch bottom to have a minimum of 2" topsoil, bottom 4' of area to be sodded, and the balance is to be seeded and mulched per section 400.1 (8)
- E) The slope of contiguous property may not exceed 1' to 4'.
- F) 12" cover on storm sewers, no portion of pipe to be into sub-base.
- G) Laboratory tests are required to substantiate structural section design. Specifications shown on this sheet are minimum.
- \* Or approved equal, meeting same structural number.

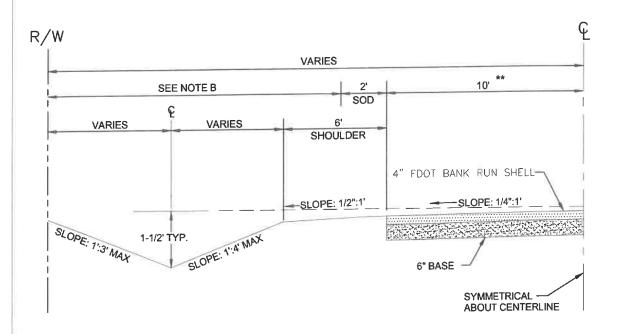
TOV	VN OF	REDINGTON BEACH	LOCAL	
REV.BY	DATE		RESIDENTIAL SWALE CROSSING	401.7
		DATE OF APPROVAL		



### NOTES:

- A) Asphaltic concrete surface course shall be layed in two lifts. The first lift shall be 1" Type S-I or S-III. The second lift shall be 3/4" Type S-III. A performance bond shall be required if the second lift is delayed beyond acceptance of the road.
- B) Base course shall consist of 4-1/2" compacted sand asphalt base (1200 lbs. stab.) or 6"
  Caloosahatchee shell compacted to 98% AASHTO T-180 density LBR 100 or 6" soil cement.\*
- C) 6" stabilized sub-base shell marl blended with sandy sub-grade minimum LBR 40, 98% T180 AASHTO.
- D) On new construction, sanitary sewer may be placed on centerline of R/W if desired. All laterals to be installed at the same time as sanitary sewer main line.
- E) See section 201.0 for curb and gutter types.
- F) No portion of drainage pipe shall be allowed in sub-base. 12"minimum cover is required on storm drain.
- G) Sidewalk shall be 1'or 2' inside R/W line, with 2' preferable. To be constructed per section 300.1
- H) Laboratory tests are required to substantiate structural section design. Specifications shown on this sheet are minimum requirements.
- I) If sidewalks are not required, only 2' of sod is required back of curb. Hydromulch balance of right-of-way.
- J) Sodding shall be installed per section 400.1 (8)
- \* Or approved equal, meeting same structural number.

TOWN OF REDINGTON BEACH			LOCAL	
REV.BY	DATE	DATE OF APPROVAL	RESIDENTIAL CURB CROSSING	401.8



Note: These roads may only be approved for use in Ag-rural designated areas on rights-of-way dedicated prior to Oct. 15, 1990.

Roads will be classified as "Emergency Maintained Only."

Local residents are required to per

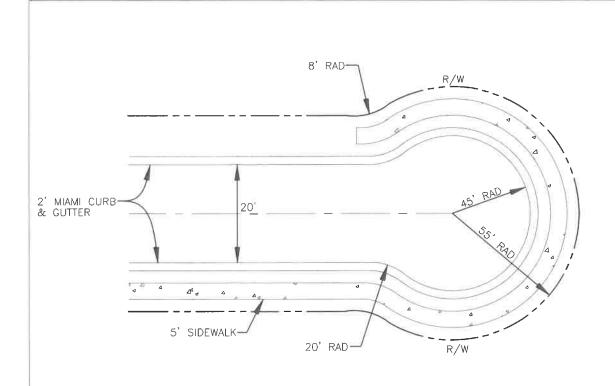
### NOTES:

- \*A) Clean, stabilized 6" base. Minimum LBR 40, 98% T180 AASHTO. This requires raking and removal of plant material before compaction, if plant material exists within the right of way.
- B) Road shall be finished with 4" FDOT bank run shell, then leveled and compacted.
- C) Side 2' of road shoulder shall be sodded and if there is no substantial existing grass, remaining shoulder, slopes and ditch bottom shall have a minimum of 2" topsoil, and shall be seeded and mulched. Areas susceptable to erosion must be sodded.
- D) The slope of contiguous property may not exceed 3' to 1'.
- E) 12" cover on storm sewers, no portion of pipe allowed in base.
- F) Laboratory tests are required to substantiate structural section design. Specifications shown on this sheet are minimum requirements.
- \* Or approved equal.
- \*\* Road may be 12' in width, (6' half width) on non-through roads (Dead Ends) serving 4 or fewer lots. Shoulders shall be a minimum of 6' in width and constructed of a stabilized or compacted soil with a minimum LBR OF 40.

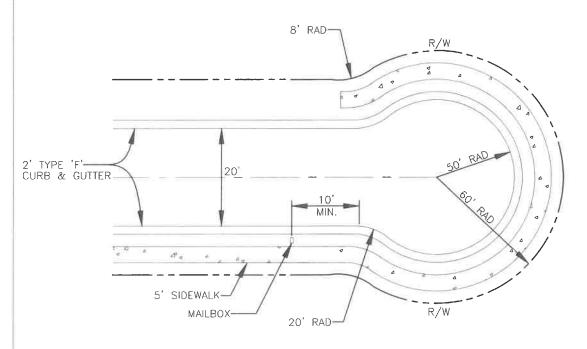
The Transportation Director may allow variance to the road standards for certain circumstances.

\*\* Road may be 16' in width (8' half width) on non-through roads (Dead Ends) serving 5 to 8 lots.

TOWN OF REDINGTON BEACH			LOCAL SHELL	
REV.BY	DATE		ROAD	401.9
		DATE OF APPROVAL		



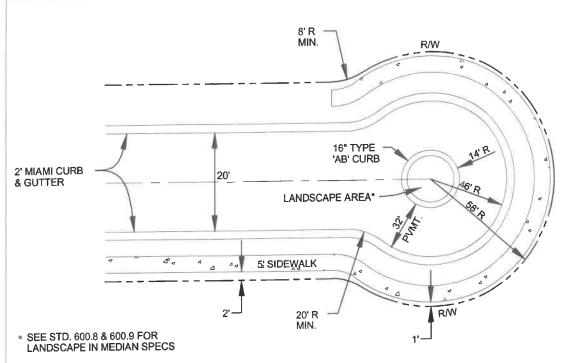
### RESIDENTIAL CUL-DE-SAC



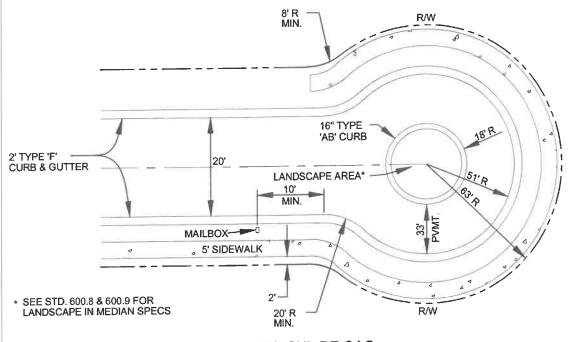
### INDUSTRIAL CUL-DE-SAC

TOV	VN OF	REDINGTON BEACH
REV.BY	DATE	
		DATE OF APPROVAL

RESIDENTIAL AND INDUSTRIAL CUL-DE-SAC



### **RESIDENTIAL CUL-DE-SAC**



### INDUSTRIAL CUL-DE-SAC

ALTERNATE:

TRUCK COLLAR DESIGN MAY BE USED BETWEEN RADIUS OF 16-1/2' AND 30' (SEE 404.2).

TOW	N OF	REDINGTON BEACH	AND INDUSTRIAL	
REV.BY	DATE	DATE OF APPROVAL	CUL-DE-SAC WITH MEDIAN	401.11
		BAIL OF ATTROVIL		

MINIMUM FACE OF CURB RADIUS FOR INTERSECTING ROADS

LOCAL RESIDENTIAL (URBAN & RURAL)         (URBAN & RURAL)         (URBAN & RURAL)         MAJOR COLLECTOR         MAJOR COLLECTOR         A           LOCAL RESIDENTIAL (URBAN & RURAL)         40°         35°         35°         35°           INDUSTRIAL (URBAN & RURAL)         40°         50°         50°         50°           MINOR COLLECTOR         35°         50°         50°         50°           MAJOR COLLECTOR         35°         50°         50°         50°           ARTERIAL         35°         50°         50°         50°			V	RC	ROAD CLASSIFICATION		
SIDENTIAL         25°         40°         35°           NL         40°         50°         50°           RURAL)         35°         50°         50°           NLLECTOR         35°         50°         50°           NLLECTOR         35°         50°         50°           35°         50°         50°			LOCAL RESIDENTIAL (URBAN & RURAL)	INDUSTRIAL (URBAN & RURAL)	MINOR COLLECTOR	MAJOR COLLECTOR	ARTERIAL
RURAL)         40'         50'         50'           LLECTOR         35'         50'         50'           ALECTOR         35'         50'         50'           35"         50'         50'	1	LOCAL RESIDENTIAL (URBAN & RURAL)	25°	40'	35'	35'	35'
LLECTOR 35' 50' 50' 1.LECTOR 35' 50' 50' 50'		INDUSTRIAL (URBAN & RURAL)	40,	50'	50.	50'	50'
35° 50° 30° 35° 35° 50° 35° 50° 50°		MINOR COLLECTOR	35	50,	50,	50'	50'
35* 50' 50'		MAJOR COLLECTOR	35	50'	50'	50'	50'
		ARTERIAL	35**	50,	50'	50,	50,

INCREASE PER MPO FREIGHT MANAGEMENT STUDY

\* WITHOUT TURN LANE = 50"

TOV	VN OF	REDINGTON BEACH	MINIMUM	
REV.BY	DATE		CURB RADIUS	402.0
		DATE OF APPROVAL		

ROAD CLASSIFICATION

# MINIMUM WIDTH OF CLEAR ZONE

				DESIGN SPEED (MPH)	(MPH)			
TYPE OF FACILITY	25 AND BELOW	30	35	40	45	50	55	60 AND ABOVE
				MINIMUM CLEAR ZONE (FEET)	ONE (FEET)			
	9	6 LOCAL	6 LOCAL	10 COLLECTORS	14 ARTERIALS AND COLLECTORS ADT < 1500	14 ARTERIALS AND COLLECTORS ADT < 1500	18 ARTERIALS AND COLLECTORS ADT < 1500	18 ARTERIALS AND COLLECTORS ADT < 1500
RURAL •		10 COLLECTORS	10 COLLECTORS	14 ARTERIALS				
		14 ARTERIALS	14 ARTERIALS		18 ARTERIALS AND COLLECTORS ADT > 1500	18 ARTERIALS AND COLLECTORS ADT > 1500	24 ARTERIALS AND COLLECTORS ADT > 1500	30 ARTERIALS AND COLLECTORS ADT > 1500
URBAN *	1-1	4 ***	4**	4 **	4**	N/A ••	N/A	N/A ••

- FROM FACE OF CURB.
- ON PROJECTS WHERE THE 4' MINIMUM OFFSET CANNOT BE REASONABLY OBTAINED AND OTHER ALTERNATIVES ARE DEEMED IMPRACTICAL, THE MINIMUM MAY BE REDUCED TO 1-1/2'.
- USE RURAL FOR URBAN FACILITIES WHEN NO CURB AND GUTTER IS PRESENT. MEASURED FROM THE EDGE OF THROUGH TRAVEL LANE ON RURAL SECTION.
- CURB AND GUTTER NOT TO BE USED ON FACILITIES WITH DESIGN SPEED > 45 MPH.

NOTE: ADT IN TABLE REFERS TO DESIGN YEAR ADT

TOWN OF REDINGTON BEACH

REV.BY DATE

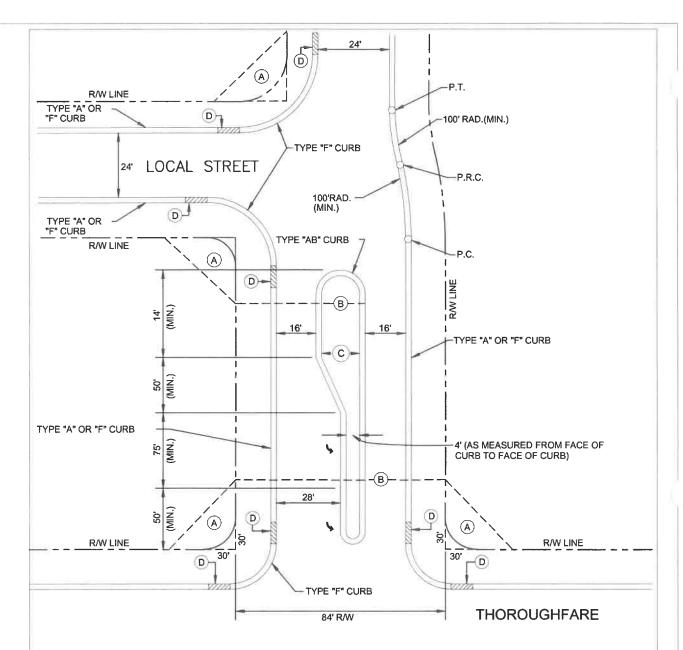
DATE OF APPROVAL

MINIMUM

CLEAR ZONE

WIDTHS

A02.1



- \* (A) VISIBILITY TRIANGLE, 30' X 30' AREA PERMITTING NO OBSTRUCTION (1.0 FT. DIA. OR LESS) HIGHER THAN 2' NOR LOWER THAN 8.5', TO ASSURE PROPER VISIBILITY. (SEE L.D.C. 713).
  - (B) EXTENSION OF VISIBILITY TRIANGLE ACROSS MEDIAN STRIP TO COMPLY WITH STANDARD ABOVE.
  - © MEDIAN STRIP MINIMUM WIDTH 19.33' FROM BACK OF CURB TO BACK OF CURB, LENGTH 300' MAX NOT EXTENDING BEYOND P.C. OF PAVEMENT INTERSECTION RADIUS OR R/W LINE OF INTERSECTING STREET.
  - (D) MINIMUM 5' CURB TRANSITION.

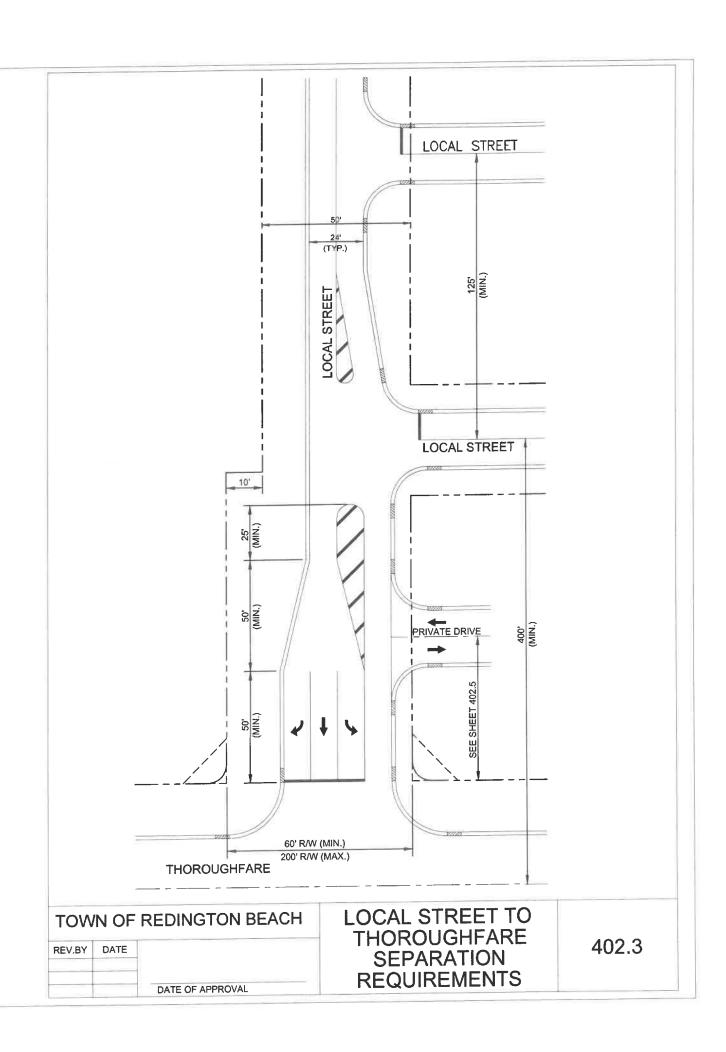
SEE SECTION 200 "CURB & GUTTER" SHEET 201.0 FOR CURB TYPE.

SEE SHEET 400.1 "GENERAL NOTES"

RADIUS AS REQUIRED BY ROAD DESIGNATION, LOCAL TO LOCAL 25' R., LOCAL TO THOROUGHFARE 35' R., THOROUGHFARE TO THOROUGHFARE 50' R.

\* 30' IS A MINIMUM, MAY BE GREATER, VISIBILITY TRIANGLE TO BE DESIGNED PER F.D.O.T. MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONST. & MAIN. FOR STREETS & HIGHWAYS (GREEN BOOK), LATEST REVISION.

TOV	VN OF	REDINGTON BEACH	MEDIANI	
REV.BY	DATE		MEDIAN REQUIREMENTS	402.2
		DATE OF APPROVAL		



# DRIVEWAY SETBACK DISTANCE

PRINCIPAL USE OF LOT SERVICED	HIGHEST CLASSIFICATION OF INTERSECTING STREETS	MINIMUM REQUIRED DISTANCE (FEET)
RESIDENTIAL	ARTERIAL - THOROUGHFARE	60'
	MAJOR COLLECTOR - THOROUGHFARE	40'
	MINOR COLLECTOR - THOROUGHFARE	30'
	LOCAL	30'
ALL OTHER USES	ARTERIAL - THOROUGHFARE	75'
	MAJOR COLLECTOR - THOROUGHFARE	60'
	MINOR COLLECTOR - THOROUGHFARE	50'
7 - 5	LOCAL	50'

TOW	N OF	REDINGTON BEACH	DRIVEWAY	
REV.BY	DATE		SETBACK DISTANCE	402.5
		DATE OF APPROVAL		

### SOIL CEMENT SPECIFICATIONS

### 1. DESIGN MIX:

- A.) 300 P.S.I. (7 DAYS) LAB DESIGN.
- B.) CEMENT CONTENT BY WEIGHT MUST BE A MINIMUM OF 5% AND A MAXIMUM OF 8%.
- C.) SOIL, CEMENT AND WATER SHALL BE CENTRAL PLANT MIX ONLY.

### 2. PROJECT TEST SAMPLES:

- A.) THE PILLS CAST FROM PROJECT OPERATIONS MUST BREAK AT 200 P.S.I. OR HIGHER AT 7 DAYS.
- B.) CORES MAY BE TAKEN AT 14 DAYS TO PROVIDE ADDITIONAL INFORMATION REGARDING A SOIL CEMENT SECTION.
- C.) CORE BREAKS BELOW 150 P.S.I. WILL NOT BE ACCEPTABLE.
- D.) IN PLACE DENSITY TESTS SHALL BE MADE IN THE SUB-BASE AND BASE COURSE. FREQUENCY OF TESTING SHALL BE AT LEAST ONE TEST FOR EVERY 500 L.F. OF PAVEMENT. IF PROJECT IS LESS THAN 500 L.F., THEN A MINIMUM OF TWO DENSITY TESTS SHALL BE TAKEN.
- E.) ALL CORES SHALL BE 6" DIAMETER.
- F.) SUB-BASE TO BE A MINIMUM OF LBR 40 (UNLESS OTHERWISE NOTED).

### 3. CONSTRUCTION METHODS:

A.) CONSTRUCTION METHODS SHALL IN ACCORDANCE WITH F.D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONTRUCTION, 2000 EDITION, SECTION 270 EXCLUDING SUB-SECTION 270-4.3.1 ("MIX IN PLACE"). ALL OTHER SUB-SECTIONS OF SECTION ARE APPLICABLE.

\*NOTE: SOIL CEMENT CAN ONLY BE USED WITH SPECIFIC APPROVAL OF DIRECTOR.

IOW	IN OF	REDINGTON BEACH
REV.BY	DATE	

TOWN OF PEDINGTON REACH

DATE OF APPROVAL

# SOIL CEMENT SPECIFICATIONS

### CEMENT TREATED BASE CONSTRUCTION

### **GENERAL:**

- 1.1 THE CONSTRUCTION OF THE CEMENT TREATED BASE SHALL IN ACCORDANCE WITH F.D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2000 EDITION, SECTION 270 EXCLUDING SUB-SECTION 270-4.3.1 ("MIX IN PLACE"). ALL OTHER SUB-SECTIONS OF SECTION ARE APPLICABLE.
- 1.2 THE SUBGRADE IS TO BE CONSTRUCTED TO F.D.O.T. SPECIFICATION SECTION 270-4, 2000 EDITION AND BE COMPACTED TO 98 PERCENT AASHTO T-180 DENSITY. THE SUB-BASE TO BE CONSTRUCTED OF MATERIAL HAVING A MINIMUM LBR OF 40.
- 1.3 THE CEMENT TREATED BASE IS TO HAVE A MINIMUM LABORATORY CURED FIELD MIX 7-DAY COMPRESSIVE STRENGTH OF 200 PSI, BY BAG SAMPLE
- 1.4 SHELL MATERIAL SHALL BE MIXED WITH A MINIMUM CEMENT CONTENT BY WEIGHT OF 2%, BUT NOT TO EXCEED 4%. THE INTENT OF A 2% MIX IS NOT PRIMARILY TO GENERATE STRENGTH BUT TO ENHANCE A SHELL BASE WITH THE RESILENCY AND WATER RESISTANCE CHARACTERISTICS OF SOIL CEMENT, WITHOUT GENERATING THE PROBLEMATIC CRACKING CHARACTERISTICS GENERALLY ASSOCIATED WITH NORMAL SOIL CEMENT MIXES. THEREFORE, THE CONTRACTOR IS INSTRUCTED TO GENERATE A MIX CAPABLE OF ACHIEVING A FIELD TEST 7-DAY COMPRESSIVE STRENGTH IN THE RANGE OF 200 PSI TO 300 PSI, BY BAG SAMPLE.
- 1.5 BASE MATERIAL SHALL BE F.D.O.T. SHELL AND HAVE A MINIMUM LBR OF 100 AND +/-2% OPTIMUM MOISTURE PRIOR TO MIXING WITH CEMENT.
- 1.6 ANY AREA REPRESENTED BY A 400 PSI 7-DAY BREAK OR GREATER IS SUBJECT TO REJECTION BY THE OWNER OR OWNER'S REPRESENTATIVE AFTER OBSERVATION, EVALUATION AND TESTING. VALUES FROM 300 PSI TO 400 PSI SHALL BE SUBJECT TO REVIEW AND COMPARISON TO THE DESIGN MIX.
- 1.7 IT SHOULD BE NOTED THAT MOISTURE CONTENT, RAPIDITY OF COMPACTION EFFORT AND FINAL COMPACTION RESULTS HAVE AS MUCH, IF NOT MORE, INFLUENCE ON THE COMPRESSIVE STRENGTH AS DOES THE CEMENT CONTENT. IN ORDER TO GIVE THE CONTRACTOR A REFERENCED ACCEPTANCE STANDARD, LOWER AND UPPER VALUES OF 200 PSI AND 300 PSI HAVE BEEN ESTABLISHED. THESE VALUES ARE ALSO GIVEN SOME SUBJECTIVE LEEWAY IN THE INSPECTION OF THE FINAL PRODUCT.
- 1.8 ALL MATERIAL SHALL BE COLLECTED BY THE SACK METHOD, TRANSPORTED TO LAB IN SEALED/MOISTURE RETAINING ENCLOSURE AND TESTED WITHIN 2 HOURS OF FIELD SAMPLING.

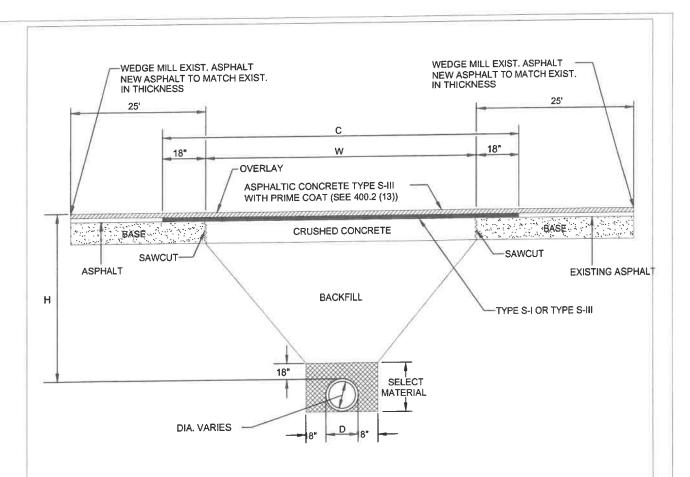
### **TESTING AND INSPECTION:**

- 2.1 ALL TESTING AND INSPECTION SHALL BE PERFORMED BY AN INDEPENDENT LABORATORY APPROVED BY THE ENGINEER/COUNTY.
- 2.2 THE CONTRACTOR SHALL MAKE AVAILABLE ALL MATERIALS TO THE LABORATORY FOR THE PURPOSE OF PERFORMING ROUTINE TESTS AS SPECIFIED. THIS INCLUDES SAMPLES FOR CEMENT TREATED BASE MIXTURE DESIGN, MAXIMUM DENSITY DETERMINATION, SIEVE ANALYSIS OR OTHER TESTS AS DIRECTED BY THE ENGINEER.
- 2.3 THE PILLS CAST FROM PROJECT OPERATIONS MUST BREAK AT 200 PSI OR HIGHER AT 7 DAYS.
- 2.4 TEST SAMPLES MAY BE TAKEN AT 14 DAYS TO PROVIDE ADDITIONAL INFORMATION REGARDING A CEMENT TREATED SECTION. SAMPLES SHALL BE SAWCUT, FULL DEPTH AND BE A MINIMUM OF 12"x12".
- 2.5 SAMPLE BREAKS BELOW 150 PSI WILL NOT BE ACCEPTABLE. ALL CORES SHALL BE 6 INCHES IN DIAMETER.
- 2.6 IN PLACE DENSITY TESTS SHALL BE MADE IN THE SUB-BASE AND BASE COURSE. FREQUENCY OF TESTING SHALL BE AT LEAST ONE TEST FOR EVERY 500 L.F. OF PAVEMENT. IF PROJECT IS LESS THAN 500 L.F., THEN A MINIMUM OF TWO DENSITY TESTS SHALL BE TAKEN. A MINIMUM OF TWO STRENGTH TEST VALUE SPECIMENS SHALL BE TAKEN EACH DAY (ONE IN THE MORNING, AND ONE IN THE AFTERNOON)
- 2.7 TEST RESULTS SHALL BE REPORTED IN WRITING TO THE COUNTY.
- 2.8 F.D.O.T. SHELL BASE MATERIALS WILL BE ONLY BASE MATERIAL ACCEPTED.
- 2.9 CRUSHED CONCRETE BASE MATERIAL REQUIRES DIRECTOR'S APPROVAL.

IOW	N OF	REDINGTON BEACH
REV.BY	DATE	
		DATE OF APPROVAL

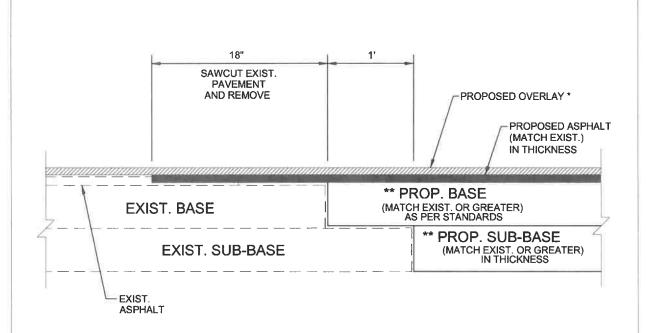
TOWAL OF DEDINIOTON DEVOL

CEMENT TREATED BASE



- A. CRUSHED CONCRETE BASE SHALL BE A MINIMUM OF 8" THICK AND A MINIMUM OF "W" IN WIDTH, OR GREATER, WHERE DISTURBED AREA IS GREATER THAN "W" FROM EQUATION: W=(2 X H) + D + (2 X 18"). SAND ASPHALT BASE WILL BE AN ACCEPTABLE ALTERNATE.
- B. BACKFILL, AASHTO M145-66 SHALL BE PLACED IN LAYERS NOT TO EXCEED 6", EACH LAYER WILL BE THOROUGHLY TAMPED AND/OR ROLLED TO 98% OF MODIFIED PROCTOR MAXIMUM DENSITY (AASHTO T-180). NON-SHRINK, HIGH SLUMP, 1,500 PSI CONC. BACKFILLL MAY BE USED AS AN ALTERNATIVE IF APPROVED BY TRANSPORTATION DEPARTMENT.
- C. SELECT MATERIAL, AASHTO M-146-70, SHALL BE PLACED ON BOTH SIDES OF THE PIPE SIMUTANEOUSLY, COMPACT AREA UNDER HAUNCHES OF THE PIPE W/ MECHANICAL TAMPERS, AND THROUGHOUT THE REMAINDER OF THE SELECT MATERIAL.
- D. ASPHALTIC CONCRETE FRICTION COURSE, SHALL BE THE SAME DEPTH AND TYPE AS EXISTING OR A MINIMUM OF ONE INCH, WHICHEVER IS GREATER. C = W+36
- E. "H" = THE DEPTH FROM TOP OF PIPE TO THE CENTERLINE OF THE ROAD (MINIMUM OF 36") MINIMUM OF 30" UNDER FLOWLINE OF SIDE DITCHES.
- F. RESTORE EXISTING SIGNAGE & MARKING WITH THERMOPLASTIC PER F.D.O.T. STANDARDS.

TOW	/N OF	REDINGTON BEACH	UTILITY ROAD	
REV.BY	DATE		CUT REPLACEMENT	403.2
		DATE OF APPROVAL		



\* NOTE: LIMITS OF OVERLAY - EDGE OF PAVEMENT TO EDGE OF PAVEMENT AND 25' BEYOND LIMITS OF CONSTRUCTION.

\*\* NOTE: CONNECTION TO OLDER (SUBSTANDARD THICKNESS) ROADS MAY REQUIRE THICKER PROPOSED BASE AND SUB-BASE TO MEET CURRENT STANDARDS.

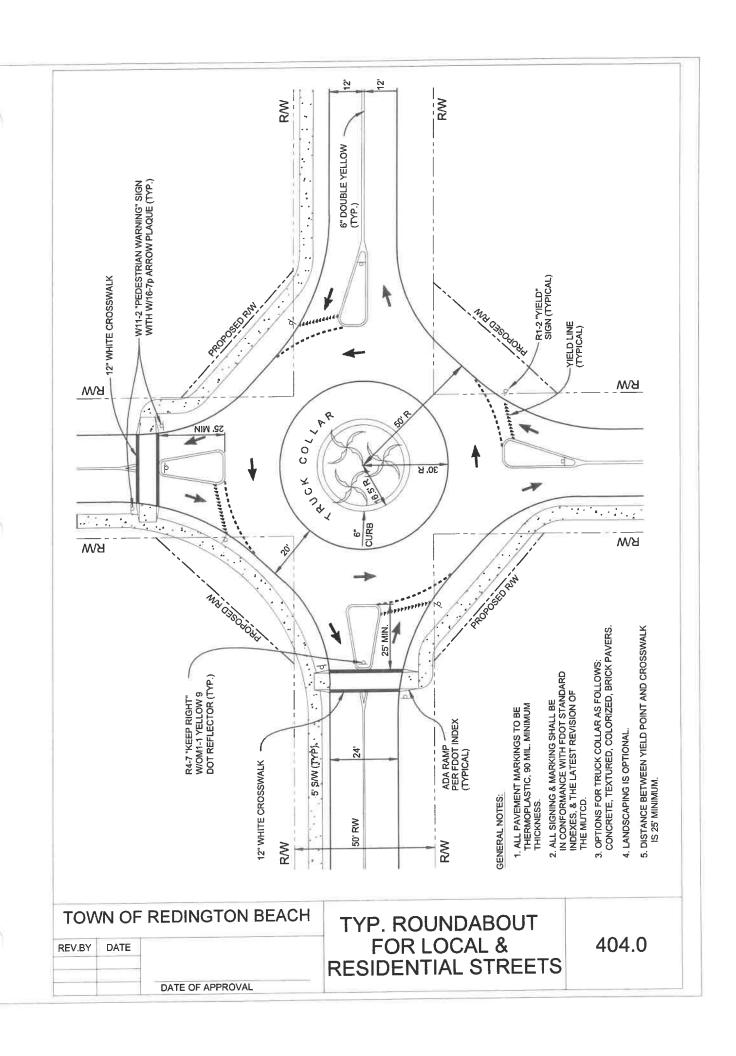
SIGNAGE AND MARKING PLAN SHALL ACCOMPANY CONSTRUCTION PLAN.

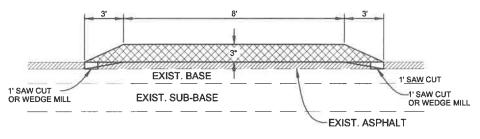
# **ROAD CONNECTION DETAIL**

N.T.S.

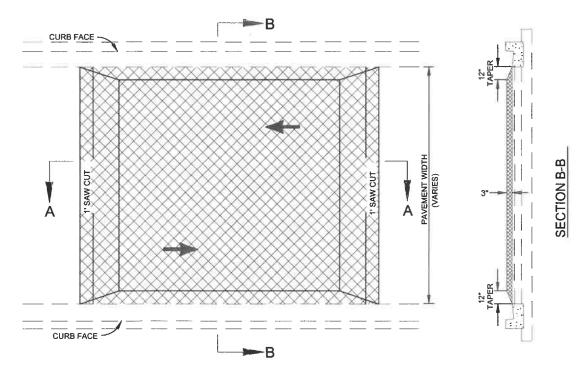
(NEW CONSTRUCTION TO EXISTING FOR WIDENING OR EXTENSION)

TOV	VN OF	REDINGTON BEACH	ROAD CONNECTION	
REV.BY	DATE		DETAIL	403.3
		DATE OF APPROVAL	<i>5217</i> ((2	



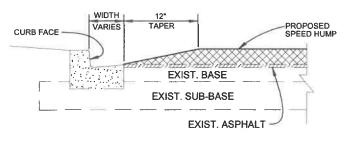


### SECTION A-A



### **PLAN VIEW**

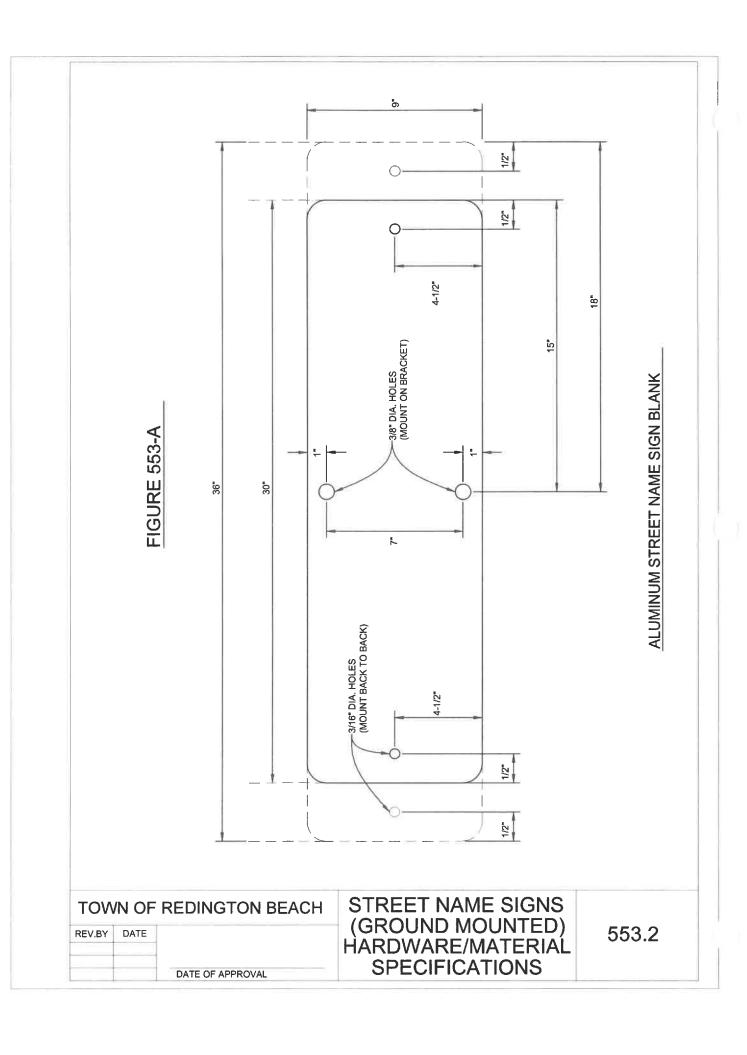
NOTE: ALL PAVEMENT MARKINGS PER MUTCD.
DETAIL IS FOR APPLICATION TO EXISTING ROAD.

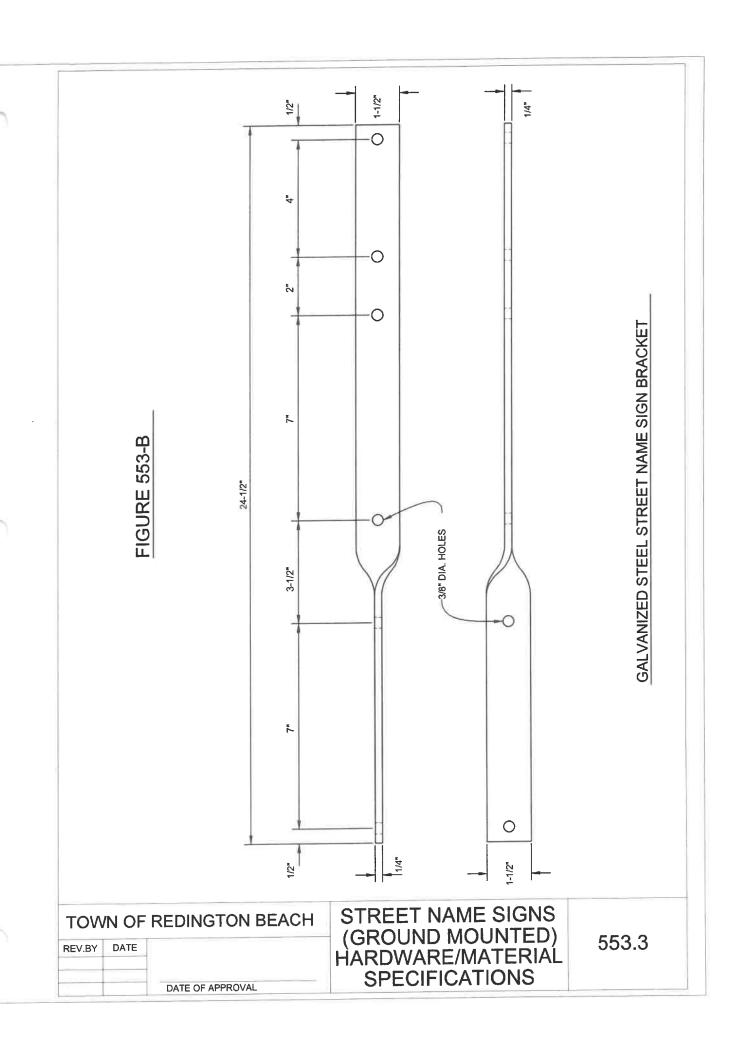


### SPEED HUMP TAPER AT CURB

TOW	N OF	REDINGTON BEACH	ODEED TABLE	
REV.BY	DATE		SPEED TABLE DETAIL	405.0
		DATE OF APPROVAL		

	INDEX	
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23) RESERVED	556.0	
24) RESERVED	557.0	
25) RESERVED		557.1
TOWN OF REDINGTON BEACH  EV.BY DATE  DATE OF APPROVAL	TRAFFIC SUPPLEMENTAL SPECIFICATIONS	500.1





# WASTOP VALVE INDEX

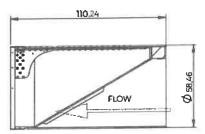
		SHEET NO.
600 WASTOP VALVES		600.0
A. WASTOP INSTALLATION, GEN	ERAL NOTES	601.0
B. WASTOP INSTALLATION, GEN	ERAL NOTES	601.1
C. WASTOP INSTALLATION, GEN	ERAL NOTES	601.2
D. WASTOP INSTALLATION, GEN	ERAL NOTES	601.3
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K. WASTOP VALVE PVC INLINE IN	NSTALLATION	608.0
TOWN OF REDINGTON BEACH REV.BY DATE DATE OF APPROVAL	WASTOP VALVE INDEX	600.0
DATE OF AFTROME		1

### WASTOP DETAILED INSTRUCTIONS

The following Installation Guide is designed to provide the customers of Wapro with sufficient information to successfully install our WaStop check valve. Typically, our customers were provided with Shop Drawings prior to manufacture for both review and authorization to manufacture. These documents alone, however, may not provide all the guidance needed to install the WaStop.

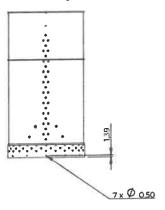
### Orientation

The WaStop should always be installed with the 'spine' of the membrane upwards. Depending on the dimension the WaStop could be pushed in place by hand or using lifting equipment and slings.



### **Fastener**

Wapro recommends the use of concrete anchor bolts or threaded rods secured with chemical anchors. Bolted into the non-shrink grout, or concrete surrounding the WaStop valve body.



### Sealant

A WaStop secured by expansion bolts through the pre-drilled holes in the bell of the WaStop is sealed by applying non-shrink grout between the id of the host pipe and the od of the WaStop valve body.

TOW	N OF	REDINGTON BEACH	WASTOP	004
REV.BY	DATE		INSTALLATION	601
		DATE OF APPROVAL	GENERAL NOTES	

### Installation

This section aims to outline the steps of the installation method when the WaStop is sealed by non-shrinking grout and secured with concrete anchors. WaPro supplies neither grout nor anchors and the respective manufacturers recommendation should be followed.

The steps installing a WaStop with this method are:

- 1) Clean out the host pipe and inspect for irregularities.
- 2) Position the WaStop: flow direction as well as 'this side up' is noted on the label of the WaStop.
- Apply non-shrink grout underneath the WaStop using spacers to create about 1" space between the WaStop and the host pipe, remove the spacer and fil up the rest of the area around the WaStop and allow the grout to set. It is recommended to form at least a 10" long 1/2" thick lining around the WaStop with grout. Mixing the grout to a semi-solid to plastic consistency will ease application.
- Once the grout has set, secure the WaStop utilizing concrete anchor bolts.

If the bolts can be anchored in place prior to applying grout it's recommended to do so. It will allow for a thrust nut to be used providing an adjustable surface against which the valve body will rest. Adjust the nut leaving about ½" space between the valve body and the host pipe before applying the grout.

Installation method using flange or angle brackets for grooved pipes.

### Introduction

The following Installation Guide is designed to provide the customers of Wapro with sufficient information to successfully install our WaStop check valve. Typically, our customers were provided with Shop Drawings of their WaStops prior to manufacture for both review and authorization to manufacture. These documents alone, however, may not provide all the guidance needed to install the WaStop.

### The WaStop

Regardless of dimension all WaStop share some features, and there are two main methods of installing a WaStop in grooved pipes; inside the pipe with angle brackets and sealant or with a flange. The dimension of the bolt holes is noted on the shop drawings.

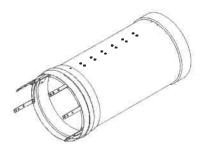
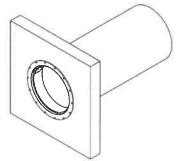


fig 1. Angle brackets and rubber seal.



**NOTES** 

fig 2. Flange

	WASTOP	TOWN OF REDINGTON BEACH			
2	INSTALLATION		F		
100000	GENERAL NOTE	DATE OF APPROVAL	F		

### Orientation

The WaStop should always be installed with the 'spine' of the membrane upwards. Depending on the dimension the WaStop could be pushed in place by hand or using lifting equipment and slings.

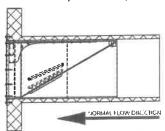


fig 3. Orientation and flow direction.

### **Fastener**

Wapro recommends the use of concrete anchor bolts or threaded rods secured with chemical anchors when flange is used. Different applications might warrant other fasteners.

Wapro recommends bolted connection trough the grooved pipe when fastening inside the grooved pipe using angle brackets. Material of the bolt, washer, screw and nut should be AISI 316 / EN1.4404.

### Sealant

WaStop with angle brackets and rubber seal comes with the rubber seal fitted on the WaStop. Damaged, out of round or otherwise irregular pipes might require additional sealing material.

WaStop with flange do generally <u>not</u> include any sealing material due to the variations of sealants different installations require.

Recommended sealant depends on the application, guidelines:

- 1) If the concrete wall is in good shape with no cracks, flush and otherwise not damaged it's usually enough with epdm tape, silicone sealant or similar attached to the flange to seal between the flange and the concrete mounting surface.
- 2) If the Concrete has minor irregularities: hydrophilic systems; swellable profiles or sealants such as sikaswell are recommended which can fill up minorcracks.
- 3) If the concrete has cracks or irregularities a non-shrinking grout is recommended to fill up the voids between the flange and the concrete wall.
- 4) If the rubber seal does not seal properly and there is a gap between inner pipe and rubber seal, sealant such as Sikaswell is recommended.

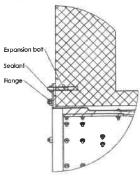


fig 4. Flange with applied sealant fastened with expansion bolt.

TOW	'N OF	REDINGTON BEACH	WASTOP	004.0
REV.BY	DATE	TE	INSTALLATION GENERAL NOTES	601.2
		DATE OF APPROVAL	GENERAL NOTES	

### Angle brackets and rubber seal

The rubber seal should be positioned half way up the collar of the valve body, creating a step (diameter increase).

In case of cracks or out of round pipes, there might be need for additional sealant according to section 'Sealants'.

Angle brackets should be close to the inner surface of the grooved pipe and attached with bolted connection through the pipe, preferable on the smaller outside diameter.

### **Flange**

Larger WaStops are installed using flanges. Once the host pipe is cleaned out and inspected for irregularities, the following steps outlines an installation.

- 1) Position the WaStop. The first step in installing a WaStop is to position the valve. Flange bolt holes are sized to allow anchor bolts to pass through the flange to the mounting surface.
- 2) Place Anchors. If threaded rod is to be used for anchors, install stainless steel threaded rods cut to appropriate length using a two-part epoxy glue to secure the rods in the concrete. Allow time to set, according to the manufacturer's recommendation. Expansion anchors are installed according to the manufacturer's recommendation.
- 3) In the case of an irregular mounting surface, a thrust nut can be used to provide an adjustable surface against which the flange will rest (see fig. 5). Adjust the nut leaving about 10mm space between the flange and the mounting surface. In case of a flush surface apply sealant and push flange firmly against the mounting surface.
- 4) Place jam nut on each anchor, then firmly tighten jam nuts to permanently secure the gate.
- 5) In case of voids between the mounting surface and the flange; mix a non-shrinking grout and fill the space between the mounting surface and the flange that make a seal.

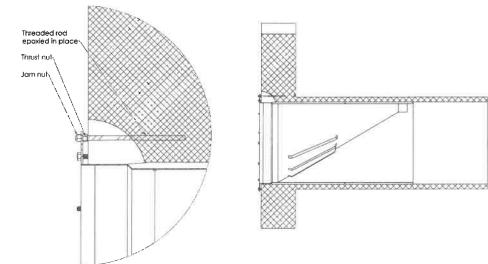
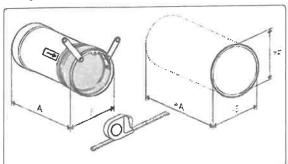


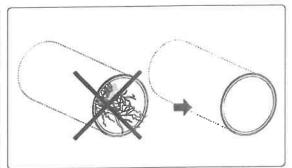
fig 5. WaStop with flange, mounting surface with crack.

TOV	VN OF	REDINGTON BEACH	
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		DATE OF APPROVAL	

WASTOP INSTALLATION GENERAL NOTES

# **Preparation for Installation**

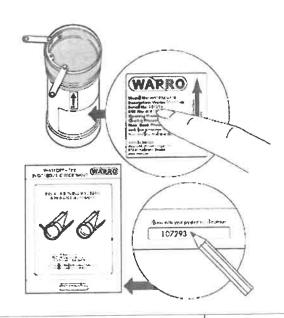




# **Note Opening Pressure**



# **Document Serial Number**



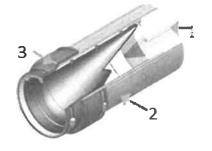
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REV.BY	DATE		
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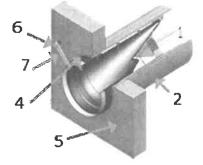
WASTOP INSTALLATION PREPARATION

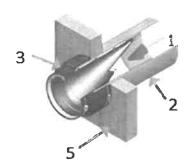
# Membrane Spine Must Be Installed Upwards

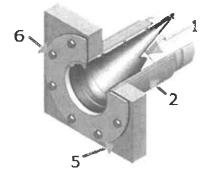


Components: 1) Flow Direction 2) Existing Pipe 3) Flexible Coupling 4) Rubber Seal 5) Head Wall/Chamber 6) Bolts 7) Flat Iron







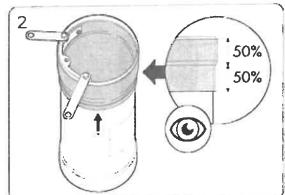


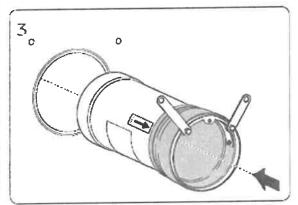
TOW	/N OF	REDINGTON BEACH
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		DATE OF APPROVAL

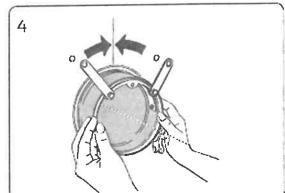
WASTOP VALVE GENERAL INFORMATION

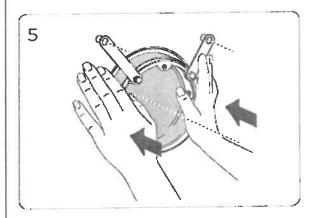
# OUTLET INSTALLATION STAINLESS STEEL (INLET INTO CHAMBER)

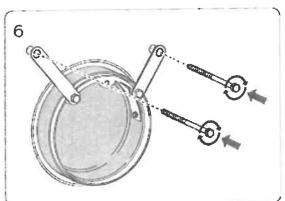












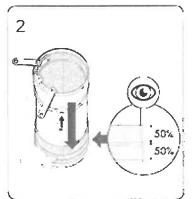
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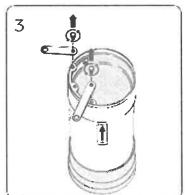
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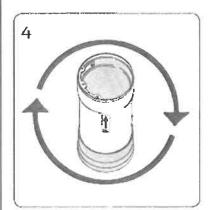
WASTOP INSTALL INLET INTO CHAMBER

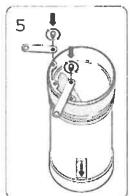
# INLET INSTALLATION STAINLESS STEEL (OUTLET FROM CHAMBER)

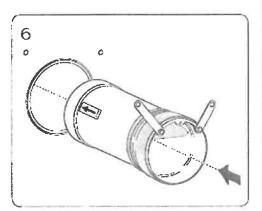


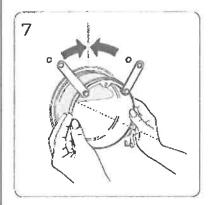


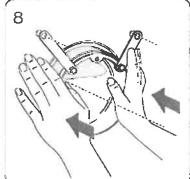


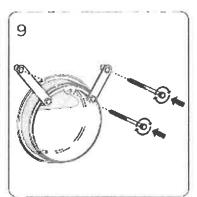












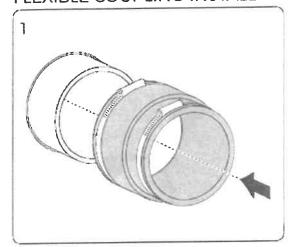
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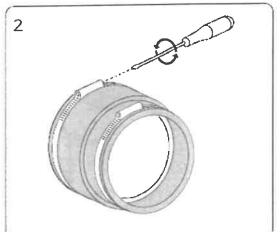
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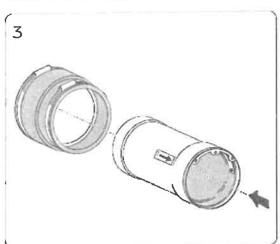
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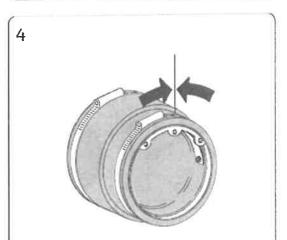
WASTOP INSTALL OUTLET FROM CHAMBER

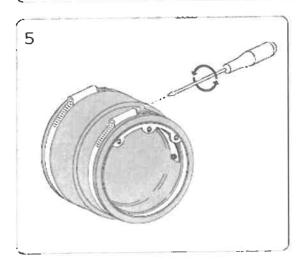
# FLEXIBLE COUPLING INSTALLATION











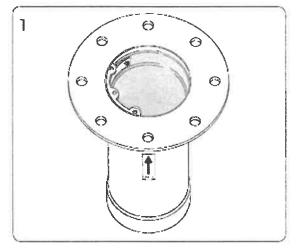
TOWN OF REDINGTON BEACH

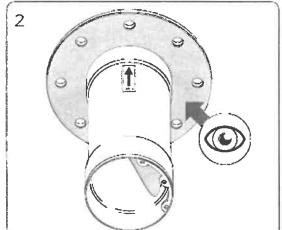
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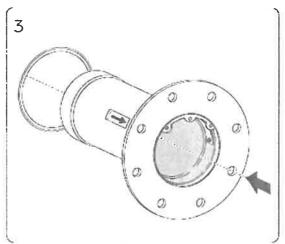
DATE OF APPROVAL

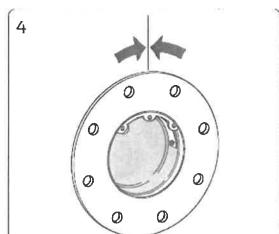
WASTOP FLEXIBLE COUPLING INSTALL

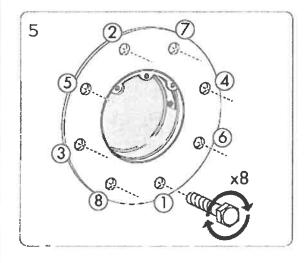
### FLANGE INSTALLATION STAINLESS STEEL

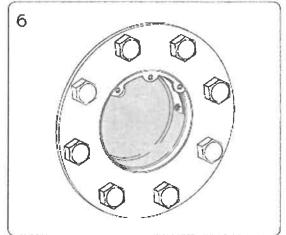












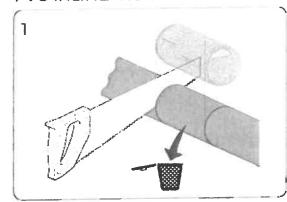
# TOWN OF REDINGTON BEACH

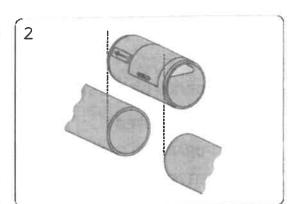
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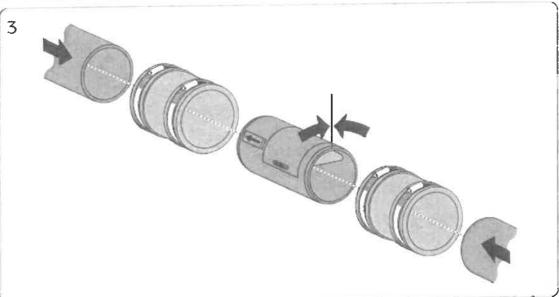
DATE OF APPROVAL

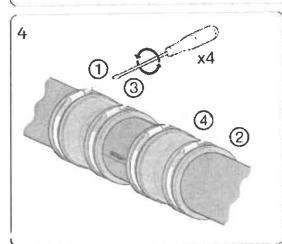
WASTOP FLANGE INSTALLATION

### PVC INLINE INSTALLATION









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WASTOP PVC INLINE INSTALLATION

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### LOT DRAINAGE INDEX

	SHEET NO.
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4) RESERVED	700.4
5) LOT GRADING RECORD DRAWING/AS-BUILT CERTIFICATION	700.5
6) TYPICAL INFILTRATION TRENCH (NTS)	700.6
7) HEAVY DUTY INFILTRATION TRENCH (NTS)	700.7
8) TYPICAL SWALE DETAIL	700.8

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		DATE OF APPROVAL	III DEX	

#### **GENERAL NOTES:**

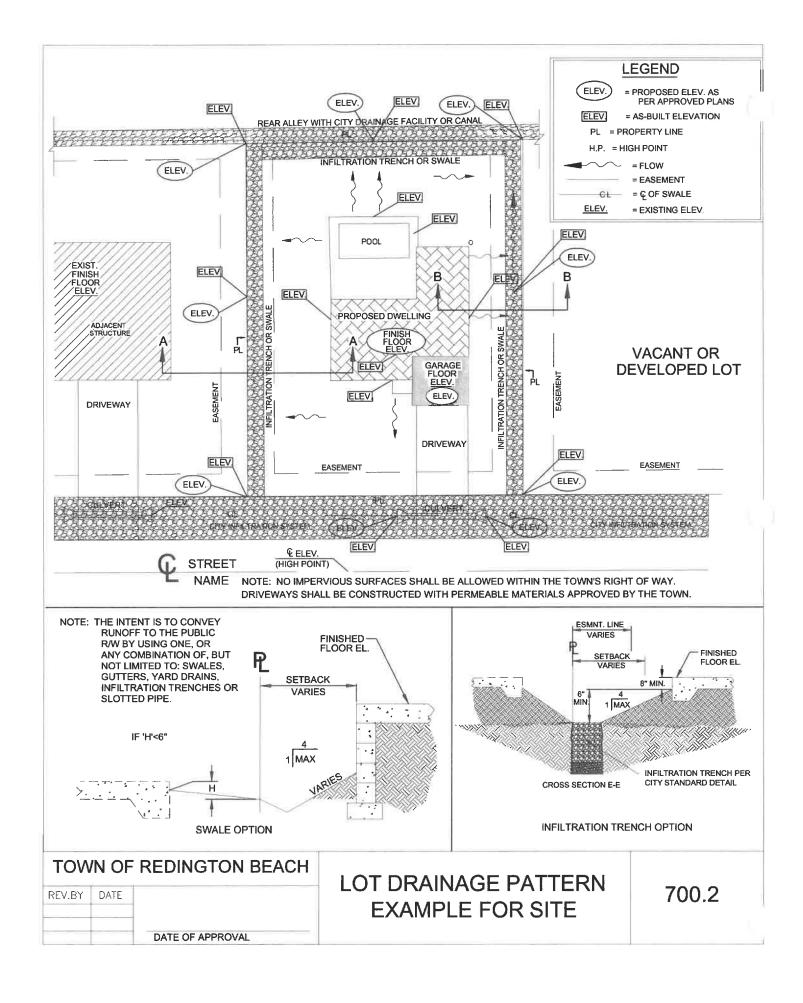
- 1.) FOR CLOSED DRAINAGE, SHOW CURBS, GUTTERS AND SIDEWALKS, IF APPLICABLE.
- 2.) EXISTING DRAINAGE SHALL BE MAINTAINED OR IMPROVED.
- 3.) MINIMUM DRIVEWAY RISE FROM CURB TO GARAGE IS 1%.
- 4.) SHOW ALL EASEMENTS.
- 5.) MINIMUM GRADE SLOPES ARE AS FOLLOWS: FRONT YARD 2.0%; REAR AND SIDE YARDS 1.5%; SWALES 1.0%.
- 6.) MINOR MODIFICATIONS TO ACCOMMODATE SPECIAL CONDITIONS SUCH AS TREES MAY BE APPROVED BY THE ACCESS/DRAINAGE INSPECTOR.
- 7.) LOTS WITH SPECIAL CONDITIONS MAY HAVE SLOPES BASED ON AN ENGINEER'S DETAILED DESIGN APPROVED BY THE TRANSPORTATION DIRECTOR OR A DESIGNEE.
- 8.) DEVIATIONS DUE TO EXISTING TREES, VEGETATION OR OTHER EXTENUATING CIRCUMSTANCES MAY BE APPROVED. DIFFICULTIES ARISING FROM SUCH DEVIATIONS ARE THE RESPONSIBILITY OF THE PROPERTY OWNER TO SATISFACTORILY RESOLVE.
- 9.) LOT SLOPES APPLY TO A 75' RADIUS FROM THE EDGE OF HOUSE. THE INTENT IS TO ALLOW FLEXABILITY ON LARGER LOTS.
- 10.) ALL CONFLICTS SHALL BE REMEDIED TO THE SATISFACTION OF THE PUBLIC WORKS DEPARTMENT.
- 11.) PERMITTEE SHALL SUBMIT A COPY OF THE APPROVED SUBDIVISION DRAINAGE PLAN. SIZE REQUIREMENTS ARE 8-1/2"x11", 8-1/2"x14" OR 11"x17" AT A SCALE OF 1"=100' OR 1"=200' FOR LOTS OF 5 ACRES OR MORE.

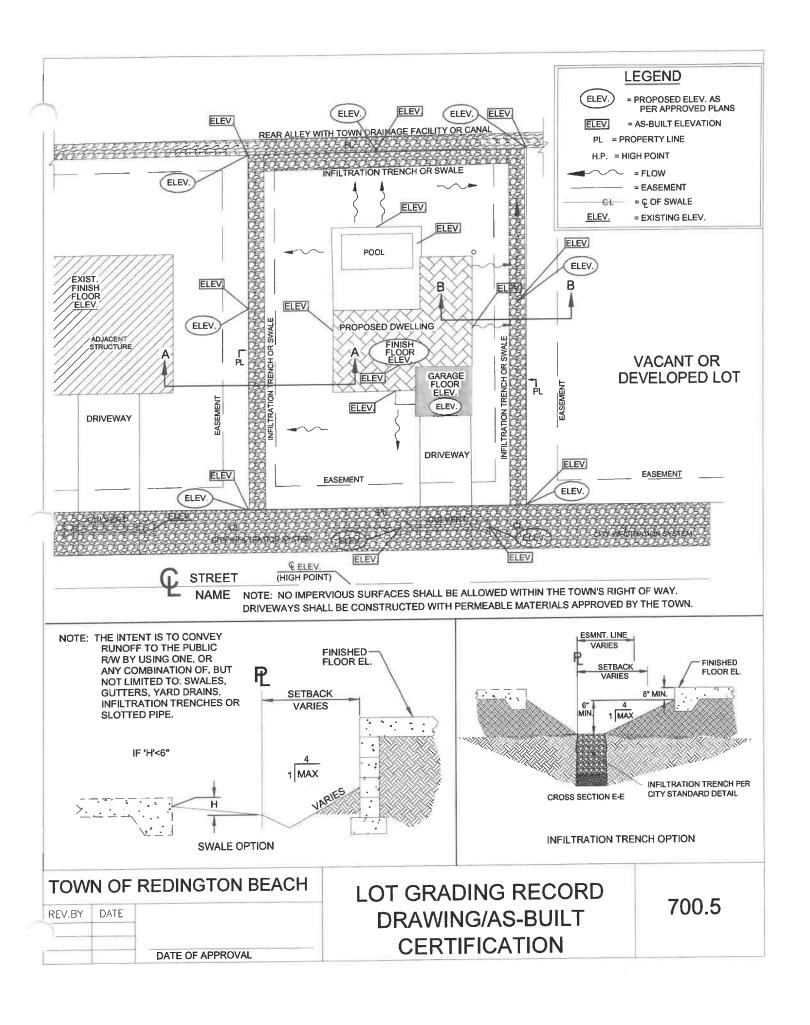
TOWN OF REDINGTON BEACH	-
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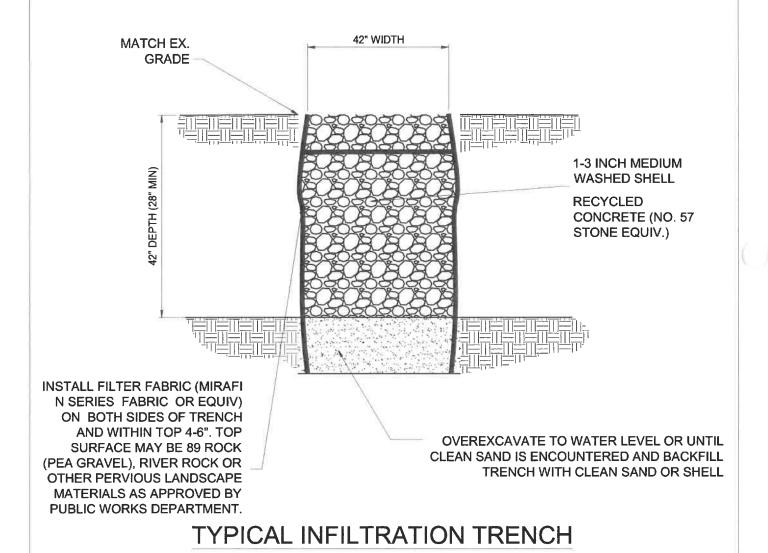
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		DATE OF ARROWAL	
		DATE OF APPROVAL	-

LOT DRAINAGE GENERAL NOTES

700.1







**NTS** 

**TYPICAL** 

INFILTRATION TRENCH

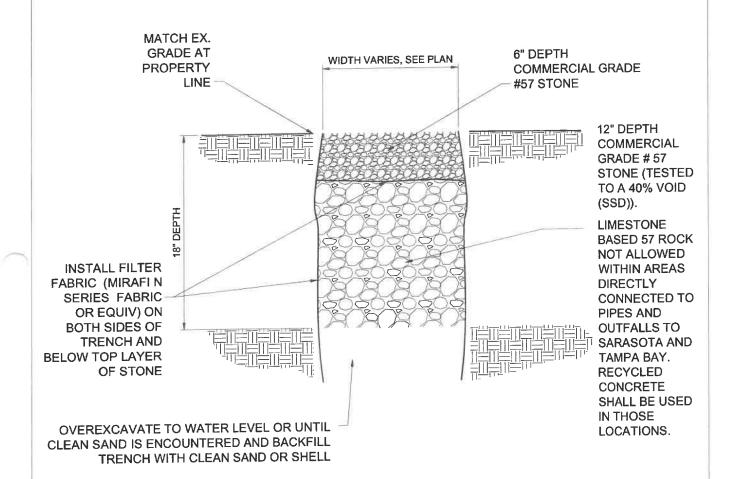
700.6

TOWN OF REDINGTON BEACH

DATE OF APPROVAL

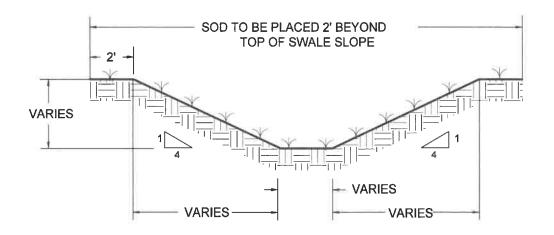
REV.BY

DATE



# HEAVY DUTY INFILTRATION TRENCH NTS

TOWN OF REDINGTON BEACH			HEAVY DUTY	700 7
REV.BY DATE			INFILTRATION TRENCH	700.7
			INFILIRATION TRENCH	
		DATE OF APPROVAL		



### TYPICAL SWALE SECTION

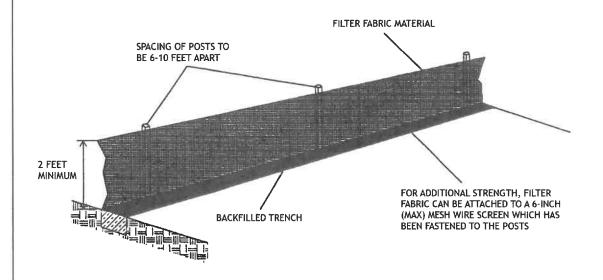
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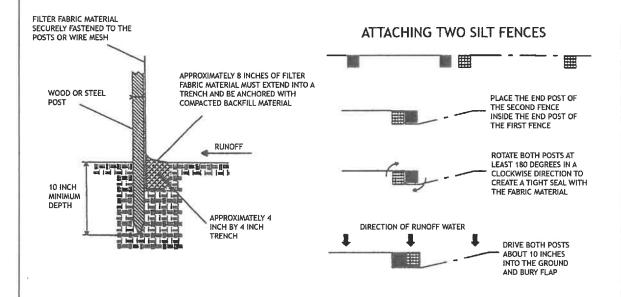
TOW	TOWN OF REDINGTON BEACH		TVDICAL	
REV.BY	DATE		TYPICAL SWALE DETAIL	700.8
		DATE OF APPROVAL		

## **EROSION & SEDIMENT CONTROL INDEX**

	SHEET NO.
800 EROSION AND SEDIMENT CONTROL	800.0
1. SILT FENCE INSTALLATION	801.0
2. DEWATERING/FILTER BAG	802.0
3. RESERVED	803.0
4 RESERVED	804.0

TOWN OF REDINGTON BEACH			EROSION & SEDIMENT	
REV.BY DATE	DATE	ATE	INDEX	800.0
		DATE OF APPROVAL		





TOW	N OF REDINGTON BEACH		SILT FENCE
REV.BY	DATE		0.2
			INSTALLATIO
		DATE OF APPROVAL	

801.0

