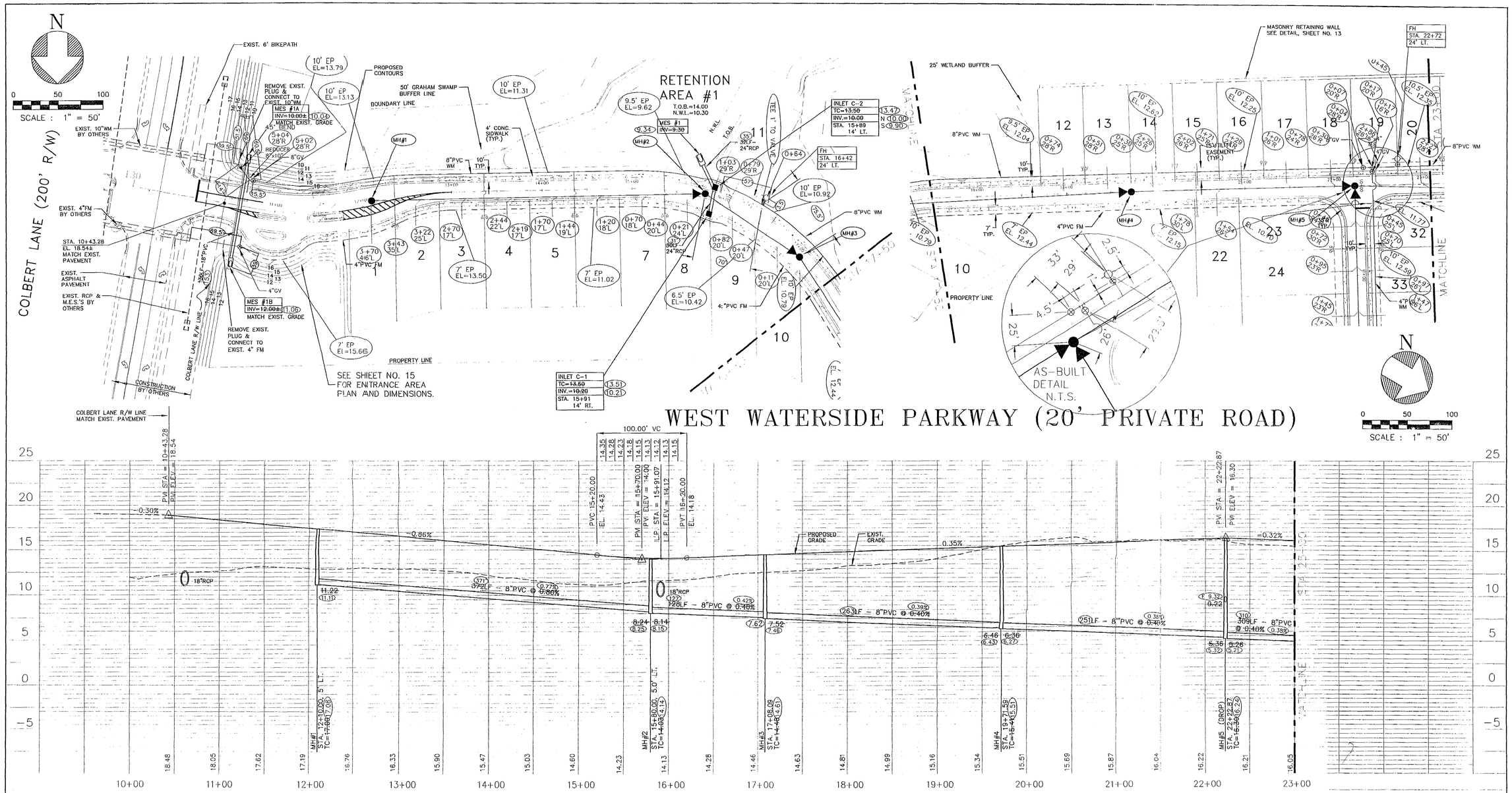
25995-3

8

1723

Oversized Drawings

1723



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- PROPOSED SPOT GRADE AT TOP OF RETAINING WALL
- PROPOSED STORM DRAIN W/INLET
- PROPOSED MITERED END SECTION
- PROPOSED SAN. SEWER W/ MANHOLE
- PROPOSED WATERMAIN & VALVE
- PROPOSED WATER SERVICE
- PROPOSED SEWER SERVICE
- PROPOSED FIRE HYDRANT
- PROPOSED STREET LIGHT
- WETLAND IMPACT AREA

Orig.
PDS

RECEIVED
JAN 21 2003
259953 PAL

SLIGER & ASSOCIATES, INC.
PROFESSIONAL LAND SURVEYORS
LICENSED BUSINESS CERTIFICATION # 3019
3921 SOUTH NOVA ROAD
PORT ORANGE, FL. 32127
(904) 761-5383

SURVEYOR'S NOTES

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AS-BUILT SURVEY OF:

SANITARY SEWER GRAVITY LINE & SERVICES

STORM SEWER STRUCTURES

SANITARY SEWER FORCE MAIN & FITTINGS

ELEVATIONS REFER TO SITE DATUM
(○) INDICATES AS-BUILT INFORMATION

AS-BUILT SURVEY 4/29/99
LAST FIELD DATE

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STEPHEN B. SLIGER, P.L.S. NO. 3794
J.E. ZAPURT, P.L.S. NO. 4046
STEVEN T. KRUGER, P.L.S. NO. 4722

5/4/99
SIGNED DATE

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THE CROSSINGS AT GRAND HAVEN
PHASE I – AS-BUILT
WEST WATERSIDE PARKWAY

FLAGLER COUNTY, FLORIDA

ZEV COHEN & ASSOCIATES, INC
55 Seton Trail, Ormond Beach, Florida, 32176
(904) 677-2482 FAX 677-2505
ENGINEERS • PLANNERS • SURVEYORS • LANDSCAPE ARCHITECTS
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DESIGNED BY: MEB	DRAFTED BY: TMZ	CHECKED BY: MEB			1-1
SCALE:	HORI. 1" = 50' VERT. 1" = 5'	SHEET: 7	OF 15		FILE LOCATION

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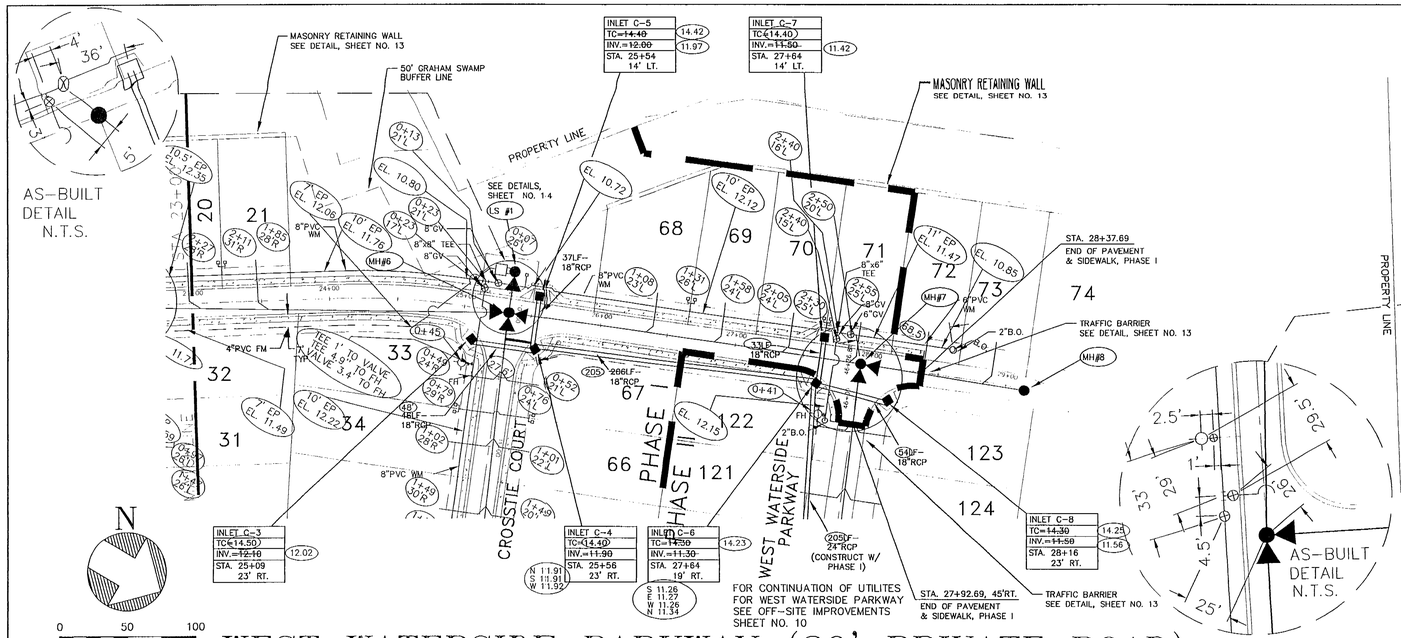
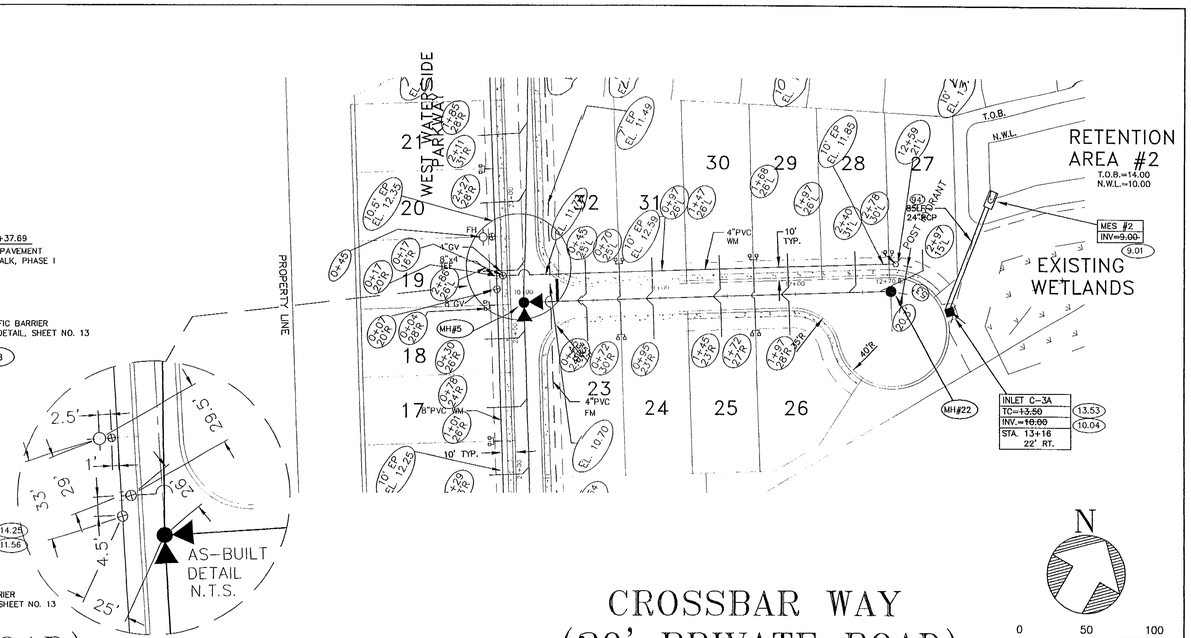
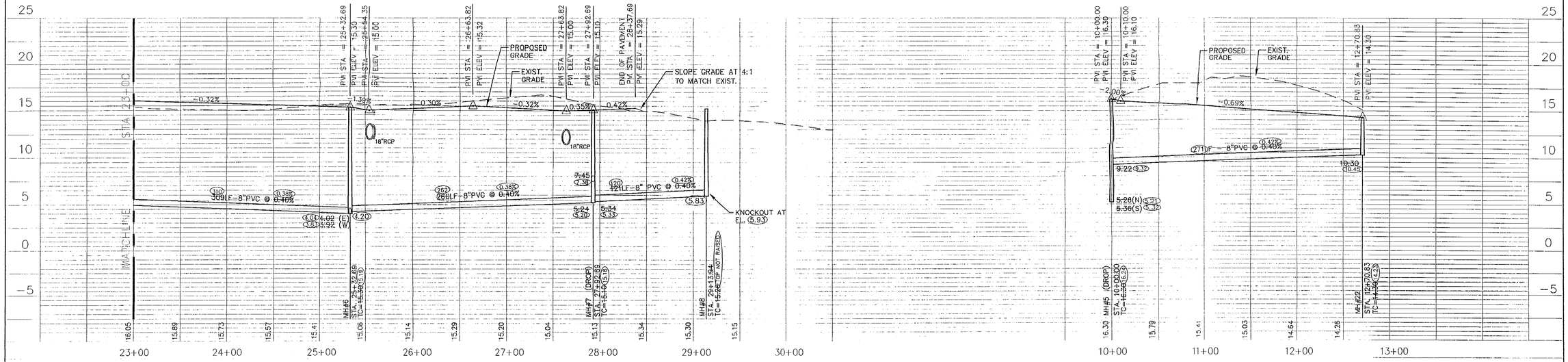


WEST WATERSIDE PARKWAY (20' PRIVATE ROAD)



CROSSBAR WAY (20' PRIVATE ROAD)



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PROFESSIONAL LAND SURVEYORS
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3401 SOUTH NOVA ROAD
PORT ORANGE, FL. 32127
(904) 761-5385

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THE CROSSINGS AT GRAND HAVEN PHASE I – AS-BUILT

WEST WATERSIDE PARKWAY & CROSSBAR WAY

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SCALE:	HORI. 1" = 50' VERT. 1" = 5'	SHEET: 8	OF	15	FILE LOCATION

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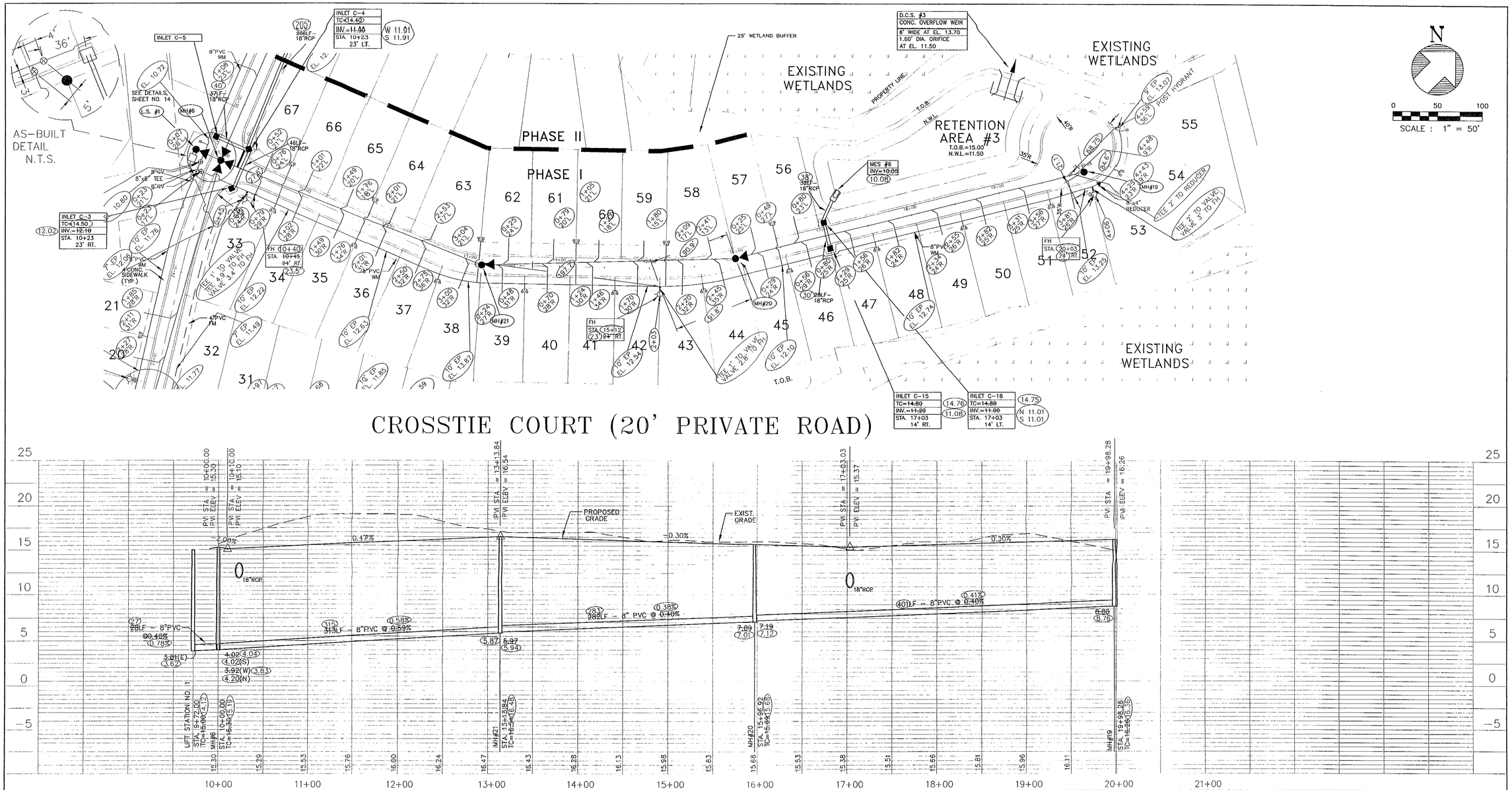

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PHASE I - AS-BUILT
CROSSTIE COURT
FLAGLER COUNTY, FLORIDA

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ENGINEERS • PLANNERS • SURVEYORS • LANDSCAPE ARCHITECTS
(EB 4518) (LB 4518) (LC 62)

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SCALE:	HORI. 1" = 50' VERT. 1" = 5'	SHEET: 9	OF 15		FILE LOCATION

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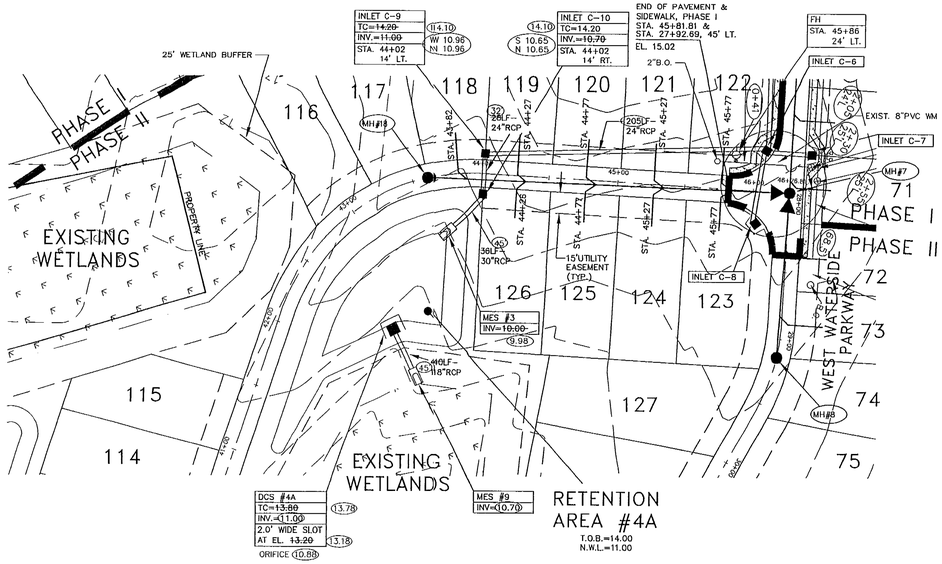
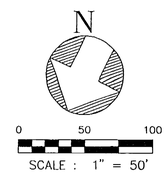
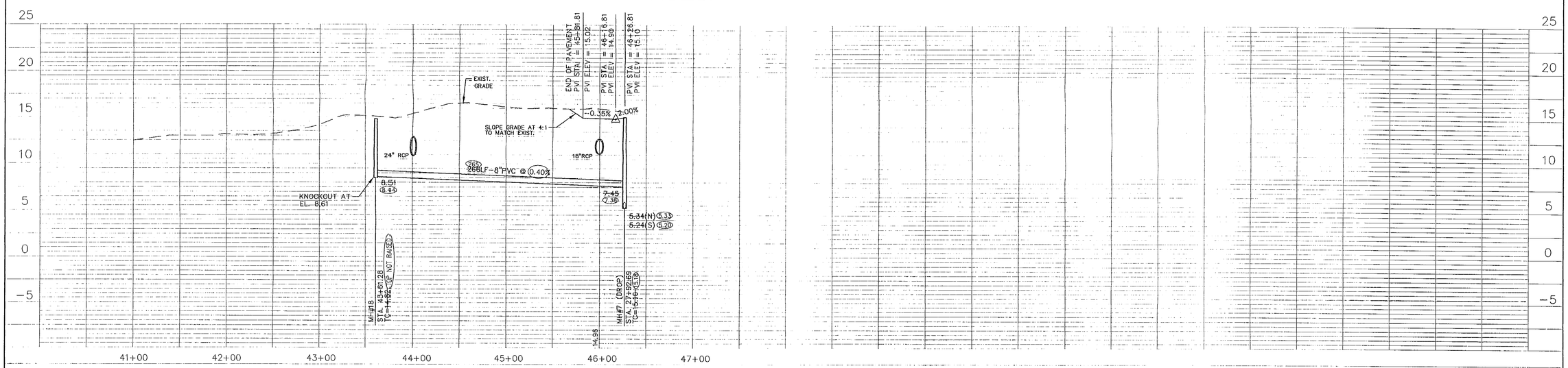




WEST WATERSIDE PARKWAY
OFF-SITE SANITARY SEWER & STORM WATER



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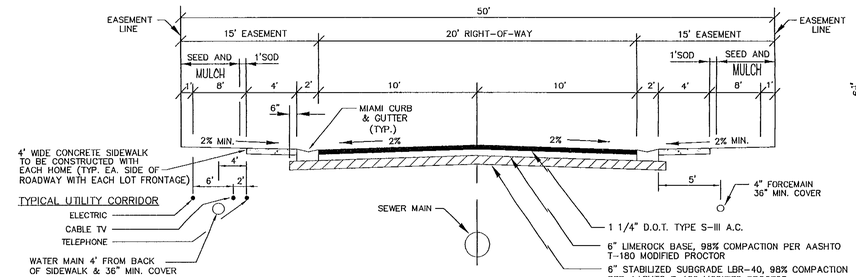
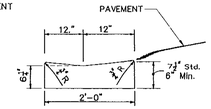
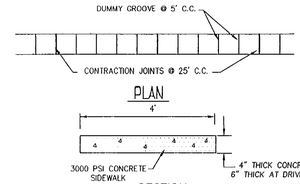


TYPICAL ROADWAY SECTION
N.T.S.

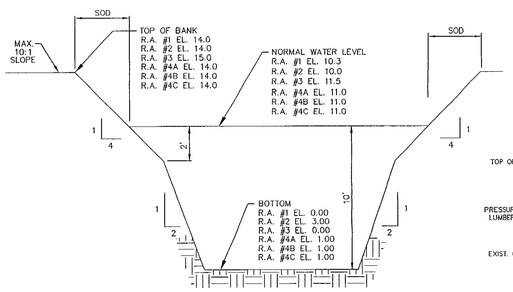


MIAMI CURB
N.T.S.

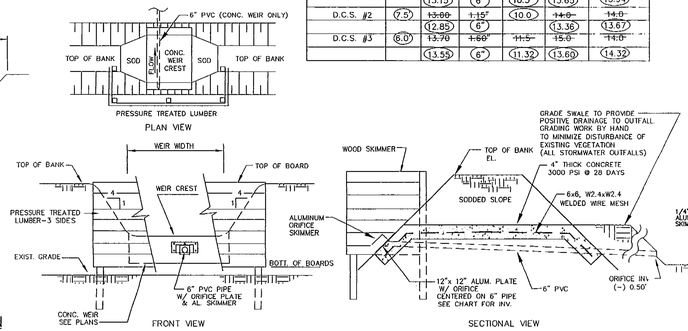


SECTION
TYPICAL SIDEWALK DETAIL
N.T.S.

NOTE:
1. ALL DISTURBED AREAS SHALL BE SEEDED & MULCHED. ALL AREAS WHERE SOD HAS BEEN DISTURBED OR REMOVED SHALL BE SODDED TO SATISFACTION OF OWNER.
2. USE OF RECYCLED ASPHALTIC CONCRETE OR CRUSHED CONCRETE BASE IS NOT PERMITTED.

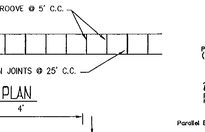


TYPICAL WET DETENTION AREA CROSS-SECTION
N.T.S.

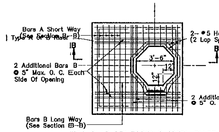


CONCRETE OVERFLOW WEIR DETAIL
N.T.S.

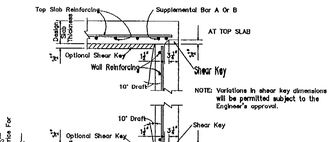
CONC. OVERFLOW WEIR	WEIR WIDTH	WEIR CREST	ORIFICE SIZE	ORIFICE INV.	T.O.B. EL.	TOP OF BOARD'S EL.
D.S.C. #1	(4.0)	~~13.20~~ (13.15)	~~7.5"~~ (6")	~~10.3~~ (10.5)	~~14.0~~ (13.65)	~~14.0~~ (13.94)
D.C.S. #2	(7.5)	~~13.00~~ (12.85)	~~1.5"~~ (6")	(10.0)	~~14.0~~ (13.36)	~~14.0~~ (13.67)
D.C.S. #3	(6.0)	~~13.70~~ (13.55)	~~1.50~~ (6")	~~11.5~~ (11.32)	~~15.6~~ (13.60)	~~14.0~~ (14.32)



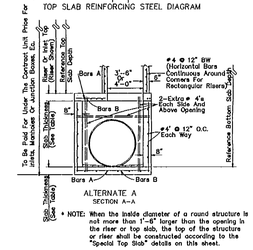
TOP SLAB REINFORCING STEEL DIAGRAM



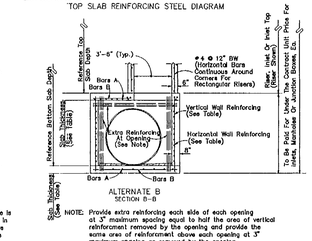
TOP SLAB REINFORCING STEEL DIAGRAM



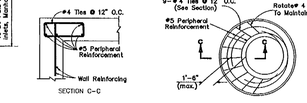
SLAB TO WALL DETAILS FOR PRECAST ALTERNATE



* NOTE: When the inside diameter of a round structure is not more than 1'-6" larger than the opening in the riser or top slab, the top of the structure or riser shall be constructed according to the "Special Top Slab" details on this sheet.



NOTE: Provide extra reinforcing each side of each opening at 3" maximum spacing equal to half the area of vertical reinforcement removed by the opening and provide the same area of reinforcement above each opening at 3" maximum spacing as removed by the opening.

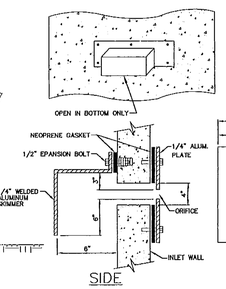


SPECIAL TOP SLAB*

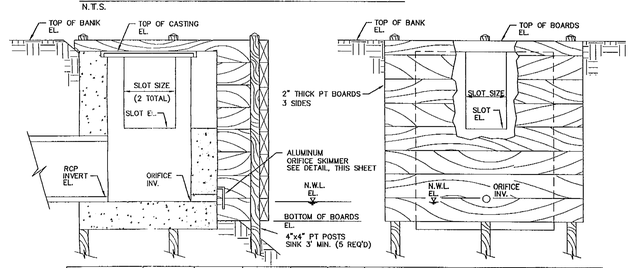
GENERAL NOTES

1. Standard structure bottoms 4'-0" diameter and smaller (Alt. A) and 3'-6" square (Alt. B) are designated Type P. Larger standard structure bottoms are designated Type J. Risers are permitted for all structures.
2. Walls of circular structures (Alternate A) constructed in place may be of non-reinforced concrete or brick or reinforced concrete. Precast and rectangular structures (Alternate B) shall be constructed of reinforced concrete only.
3. Wall thickness and reinforcement are for either reinforced cast-in-place or precast concrete units except that precast circular units may be furnished with walls in accordance with either A.S.T.M. C-478 (up to 96" diameter) or A.S.T.M. C-76, Class ~~~~, B. Wall modified where the elliptical steel cage area is placed in the center one-third of the wall.
4. Top and floor slab thickness and reinforcement are for precast and cast in place construction. Top and floor slabs shall be of Class ~~~~ concrete. Concrete as specified in A.S.T.M. C-478 (14000 psi) may be used in lieu of Class ~~~~ concrete in precast items manufactured in plants which are under the 'Standard Operating Procedures' for the inspection of precast drainage products.
5. All reinforcement shall be A.S.T.M. A615, Grade 60 or 65 KSI welded wire fabric, either smooth or deformed.
6. Structure bottoms may be used in conjunction with curb inlet tops Types 1, 2, 3, 4, 5, 6, 9, and 10, and any manhole or junction box unless otherwise shown in the plans or other standard drawings. Alt. B structure bottoms may be used in conjunction with curb inlet Types 7 & 8, or any ditch bottom inlet unless otherwise shown in the plans or other standard drawings.
7. Rectangular structures may be rotated as directed by the Engineer in order to facilitate connections between the structure walls and storm sewer pipes.
8. Except when ACI hooks are specifically required, embedment hooks in the top and bottom slabs may be replaced with straight embedments or peripheral reinforcement in accordance with the reinforcement detail shown under 'Rebar Straight End Embedment Or Peripheral Reinforcement In Lieu of ACI Standard Hooks For Top And Bottom Slabs', Index No. 201, Sheet 3 of 6.
9. All steel bars shall have 1" minimum cover unless otherwise shown. Horizontal steel in rectangular structures shall be lapped a minimum of 24 bar diameters at corners.
10. The corner fillets shown are necessary for rectangular structures used with circular risers and inlet throats and used on skew with rectangular risers, inlet and inlet throats. Fillets will be required in lieu of the bottom slab of the Alt. B riser when used with the Alt. A box. Each fillet shall be reinforced with 2- # 5 bars.
11. Inlet throats, riser or manhole tops shall be secured to structures as shown on Index No. 201.
12. Structures with depths over 14' are to be checked for flotation by designer of project drainage.
13. Units larger than specified standard may be substituted at the contractor's option when these units will not cause or increase the severity of utility conflicts. Such larger units shall be furnished at no additional cost to the Department. Larger Alternate A units cannot replace Alternate B units without approval of the Engineer. This note applies to this Index only.
14. For manhole and junction box tops, for frames and covers, and, for supplementary details see Index No. 201.

STRUCTURE BOTTOMS TYPE "J" AND "P"
N.T.S.

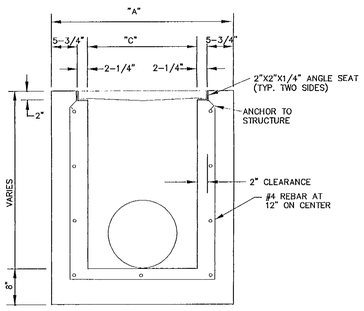


ALUMINUM ORIFICE SKIMMER AND PLATE DETAILS
N.T.S.

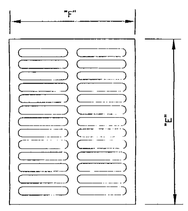


DRAINAGE CONTROL STRUCTURES	F.D.O.T. TYPE STRUCTURE	TOP OF CASTING EL.	TOP OF BOARDS EL.	PIPE SIZE	PIPE INV. EL.	SLOT SIZE	SLOT EL.	N.W.L. EL.	BOTTOM OF BOARDS EL.	ORIFICE DIA.	ORIFICE INV.
D.(C.S. #4A	"C" INLET	13.80	14.00	18"RCP	11.00	2.0'	13.20	11.00	10.50	2.0"	11.0
D.(C.S. #4B	"C" INLET	13.90	14.00	18"RCP	11.00	4.0'	13.20	11.00	10.50	2.0"	11.0
D.C.S #WL	"C" INLET	13.00	13.50	18"RCP	10.00	---	---	11.00	10.50	---	---
D.C.S. #4	"C" INLET	12.65	13.15	18"RCP	10.80	---	---	11.00	12.15	4.1"	11.0

TYPICAL DRAINAGE CONTROL STRUCTURE
N.T.S.

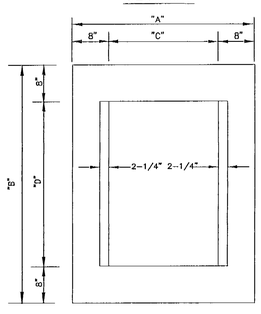


SECTION



CAST IRON GRATE

GRATE-END VIEW



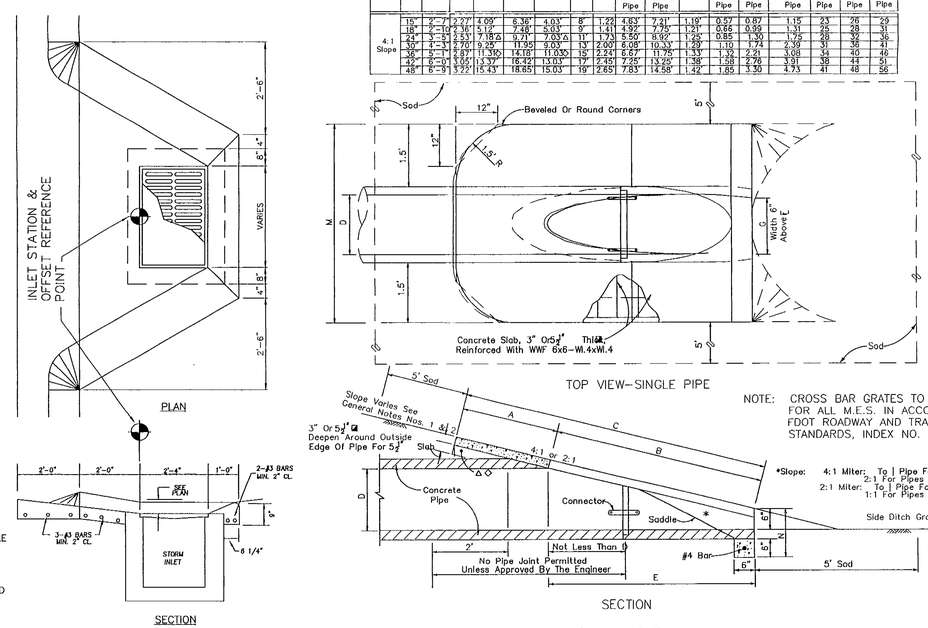
PLAN

INLET TYPE	DIMENSIONS					
	A	B	C	D	E	F
"C"	3'-4"	4'-5"	2'-0"	3'-1"	3'-0"	2'-4"
"E"	4'-4"	5'-10"	3'-0"	4'-6"	4'-4"	3'-4"

GENERAL NOTES:

1. ALL EXPOSED EDGES AND CORNERS TO BE CHAMFERED 3/4".
2. CAST IRON GRATES TO BE IN ACCORDANCE WITH FLORIDA D.O.T. SPECS.
3. TYPE "E" MODIFIED INLET IS A TYPE "E" TURNED 90° TO RECEIVE R.C.P.'S UP TO 48" DIA. INLETS RECEIVING R.C.P.'S LARGER THAN 48" DIA. SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO INSTALLATION.
4. INLET WALLS AND FOOTINGS MAY BE EITHER POURED-IN-PLACE 2500 LB. CONCRETE OR PRECAST CLASS "A" 3000 LB. CONCRETE OR STANDARD MANHOLE BRICK (NO BLOCK) WITH 1/2" PLASTER (NO LIME) W/ 8" PRECAST CAP.
5. GRATES FOR TYPE "E" AND "E" MOD. ARE TO BE CAST IN TWO SECTIONS.
6. STEEL REINFORCING SHALL BE DESIGNED BY A FLA. REG. P.E., AND BE DESIGNED FOR EACH SPECIFIC STRUCTURE.
7. SHOP DRAWINGS FOR ALL STRUCTURES SHALL BE SUBMITTED TO AND APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.

TYPE "C" AND "E" INLET DETAIL
N.T.S.



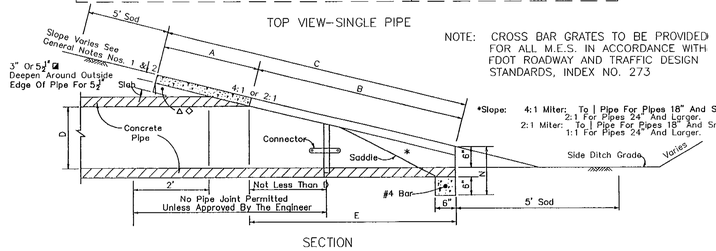
CONCRETE APRON DETAIL
N.T.S.

DIMENSIONS AND QUANTITIES

	D	X	A	B	C	E	F	G	M Single Pipe	M Double Pipe	N	5" CONCRETE SLAB (CY) Single Pipe	5" CONCRETE SLAB (CY) Double Pipe	5" CONCRETE SLAB (CY) Triple Pipe	SODDING (SQ. YDS.) Single Pipe	SODDING (SQ. YDS.) Double Pipe	SODDING (SQ. YDS.) Triple Pipe
4:1 Slope	15"	2'-7"	2.27'	4.09'	6.36'	4.03'	8'	1.22	4.83'	7.21'	1.19'	0.57	0.87	1.15	23	26	29
	18"	2'-10"	2.36'	5.12'	7.48'	5.03'	9'	1.41	4.92'	7.73'	1.21'	0.65	0.99	1.31	25	28	31
	24"	3'-5"	2.53'	7.18Ø	9.71'	7.03Ø	11'	1.73	5.50	8.92'	1.26	0.85	1.30	1.75	28	32	36
	30"	4'-3"	2.70'	9.25'	11.95'	9.03'	13'	2.00	6.08'	10.33'	1.29'	1.10	1.74	2.39	31	36	41
	36"	5'-1"	2.87'	11.30'	14.18'	11.03'	15'	2.24	6.67'	11.75'	1.33'	1.32	2.21	3.08	34	40	46
	42"	6'-0"	3.05'	13.37'	16.42'	13.03'	17'	2.45	7.25'	13.25'	1.38'	1.58	2.76	3.91	38	44	51
	48"	6'-9"	3.22'	15.43'	18.85'	15.03'	19'	2.65	7.83'	14.58'	1.42'	1.85	3.30	4.73	41	48	56

TOP VIEW-SINGLE PIPE

NOTE: CROSS BAR GRATES TO BE PROVIDED FOR ALL M.E.S. IN ACCORDANCE WITH FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS, INDEX NO. 273



*Slope: 4:1 Miter: To 1 Pipe For Pipes 18" And Smaller.
2:1 For Pipes 24" And Larger.
2:1 Miter: To 1 Pipe For Pipes 18" And Smaller.
1:1 For Pipes 24" And Larger.

SECTION

MITERED END SECTION DETAIL
N.T.S.

ABBREVIATIONS:
INV. = INVERT
EL. AND ELEV. = ELEVATION
M.E.S. = MITERED END SECTION
R.C.P. = REINFORCED CONCRETE PIPE
MAINT. = MAINTENANCE
P.V.C. = POLY VINYL CHLORIDE
C.L. = CENTERLINE OF ROAD
B.O.C. = BACK OF CURB
D.C.S. = DRAINAGE CONTROL STRUCTURE
GV = GATE VALVE
WV = WATER VALVE
PH = FIRE HYDRANT
W.M. = WATER MAIN
F.M. = FORCE MAIN
S.S.F. = SANITARY
LOC = LIP OF CURB
TYP = TYPICAL
CONC. = CONCRETE
EL. = ELEVATION
LF = LINEAR FEET

SLIGER & ASSOCIATES, INC.
PROFESSIONAL LAND SURVEYORS
LICENSED BUSINESS CERTIFICATION # 3019
3921 SOUTH NOVA ROAD
PORT ORANGE, FL. 32127
(904) 761-5385

SURVEYOR'S NOTES

NOTICE: THERE MAY BE ADDITIONAL RESTRICTIONS AND/OR OTHER MATTERS THAT ARE NOT SHOWN ON THIS PLAT OF SURVEY/SKETCH OF DESCRIPTION THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.THIS SURVEY/SKETCH PREPARED WITHOUT BENEFIT OF AN ABSTRACT.
DIMENSIONS ARE SHOWN IN FEET AND DECIMALS THEREOF.
UNLESS OTHERWISE SHOWN, RECORD DISTANCES AND DIRECTIONS AND FIELD MEASURED DISTANCES AND DIRECTIONS ARE THE SAME.
UNDERGROUND FOUNDATIONS, IF ANY, NOT LOCATED.

AS-BUILT SURVEY OF:

STORM SEWER STRUCTURES

ELEVATIONS REFER TO SITE DATUM
—INDICATES AS-BUILT INFORMATION

AS-BUILT SURVEY 1/29/99
LAST FIELD DATE

SURVEYOR'S CERTIFICATE

I HEREBY CERTIFY THAT THIS PLAT MEETS THE MINIMUM TECHNICAL STANDARDS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL LAND SURVEYORS IN CHAPTER 61G17-6, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.

STEPHEN B. SLIGER, P.L.S. NO. 3794
JO. ZAPPITI, P.L.S. NO. 4040
STEVEN T. KRUGER, P.L.S. NO. 4722
5/14/99
SIGNED DATE

"NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER."

THE CROSSINGS AT GRAND HAVEN PHASE I
PAVING AND DRAINAGE AS-BUILT
FLAGLER COUNTY, FLORIDA

ZEV COHEN & ASSOCIATES, INC
55 Seton Trail, Ormond Beach, Florida, 32176
(904) 677-2482 FAX 677-2505
ENGINEERS • PLANNERS • SURVEYORS • LANDSCAPE ARCHITECTS
(EB 4516) (LB 4516) (LC 62)

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DESIGNED BY:	MEB	DRAFTED BY:	TMZ	CHECKED BY: MDD	1-1
SCALE:	AS SHOWN	RECEIVED	SHEET 13 OF 14		FILE LOCATION

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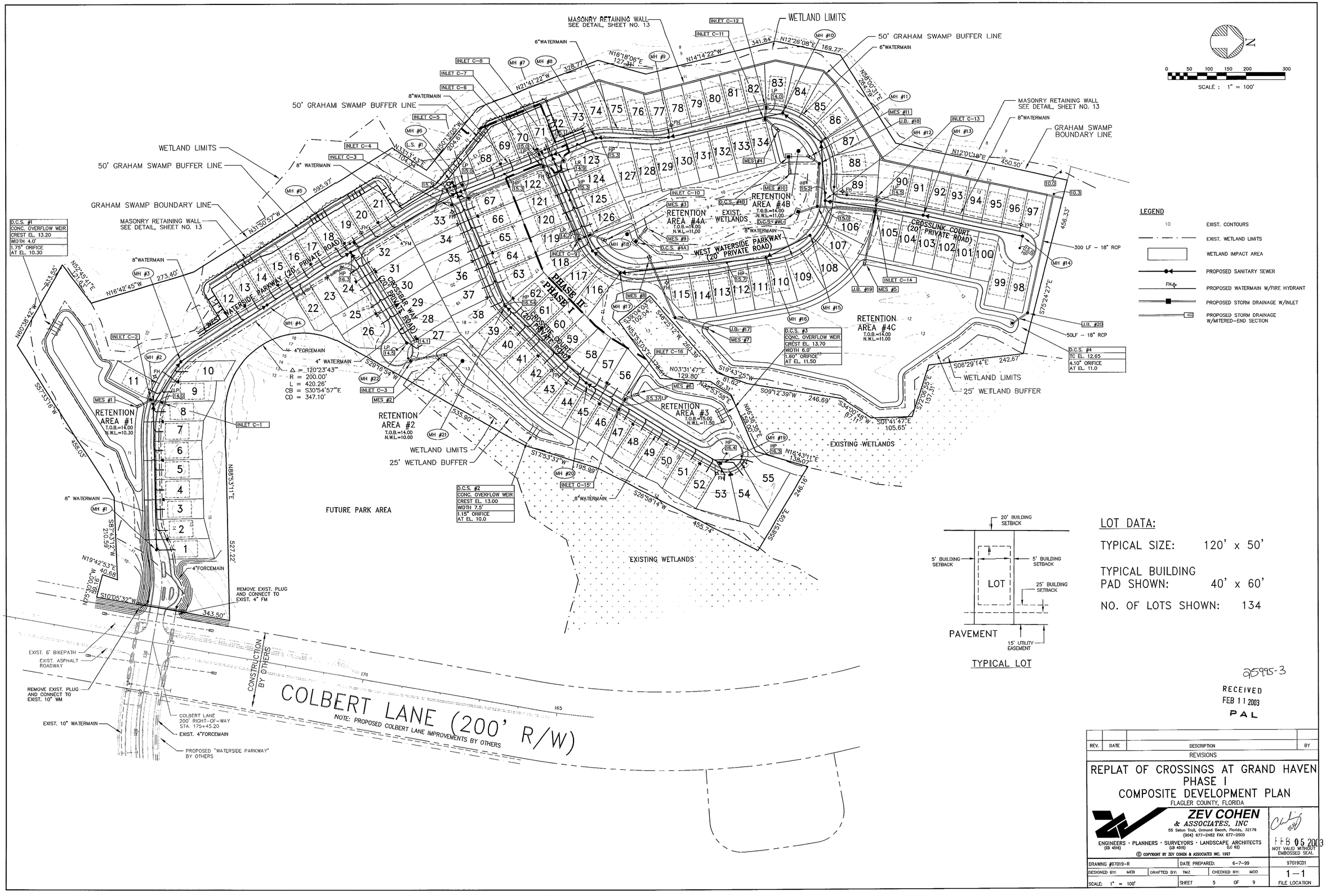

LOT DATA:

TYPICAL SIZE: 120' x 50'

TYPICAL BUILDING PAD SHOWN: 40' x 60'

NO. OF LOTS SHOWN: 134

95995-3

RECEIVED
FEB 11 2003
PAL

REV.	DATE	DESCRIPTION	BY
		REVISIONS	

REPLAT OF CROSSINGS AT GRAND HAVEN PHASE I
COMPOSITE DEVELOPMENT PLAN
FLAGLER COUNTY, FLORIDA

ZEV COHEN & ASSOCIATES, INC
55 Seton Trail, Ormond Beach, Florida, 32176
(904) 677-2482 FAX 677-2505
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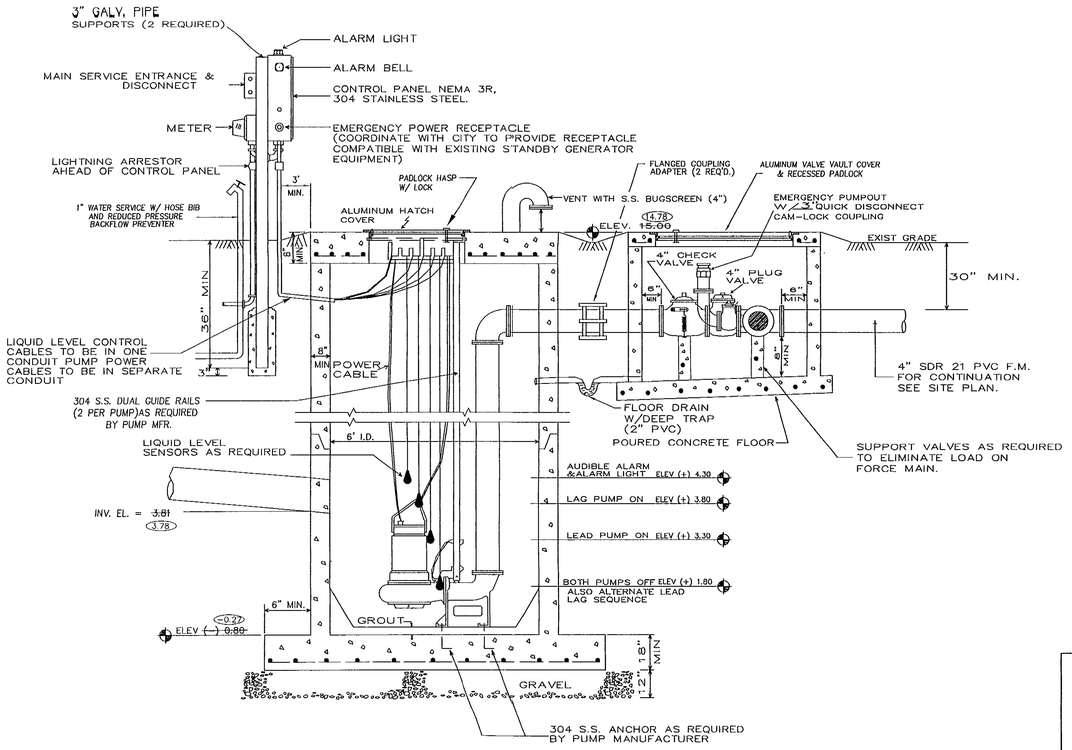

SECTION A–A

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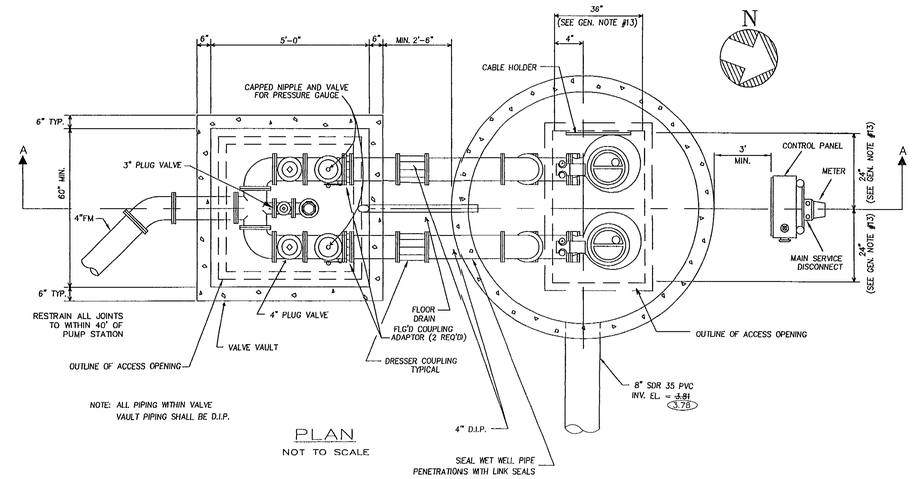
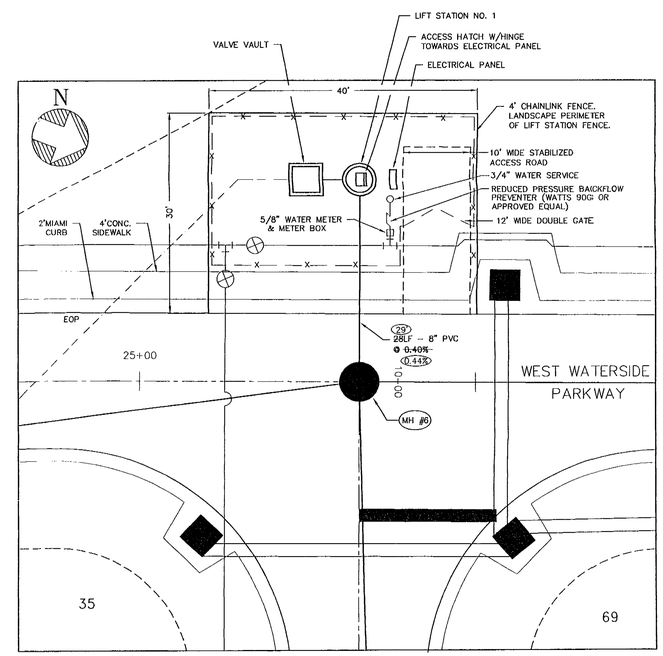


PLAN

NOT TO SCALE



LIFT STATION SITE PLAN

SCALE: 1" = 10'

GENERAL NOTES:

1. PUMPS SHALL BE FLYGT MODEL 4"-CP-3102 WITH #435 IMPELLER, 5.0 HP, 230 V, 3Ø, CAPABLE OF DELIVERING 116 GPM @ 47 FT. T.D.H. CONTRACTOR SHALL VERIFY AVAILABLE ELECTRICAL SUPPLY WITH POWER COMPANY PRIOR TO ORDERING PUMP OR CONTROLS. IF VOLTAGE AND PHASE SPECIFIED ABOVE ARE NOT AVAILABLE, CONTACT OWNER AND ENGINEER FOR REVISED PUMP ELECTRICAL CHARACTERISTICS.
2. WET WELL AND VALVE VAULT SHALL BE COATED INSIDE AND OUT WITH COAL TAR EPOXY.
3. BASE AND FIRST RISER UNIT TO BE CAST MONOLITHIC.
4. VALVE VAULT AND ACCESS COVERS SHALL BE SIZED TO PERMIT EASY REMOVAL OF CHECK VALVE
5. VALVE VAULT SHALL HAVE SEALED FLOOR W/DRAIN TO WET WELL – TRAP REQUIRED.
6. ALL LOCATIONS WHERE PIPES ENTER OR LEAVE THE WET WELL OR VALVE VAULT SHALL BE MADE WATERTIGHT WITH WALL SLEEVE OR BOOT.
7. PUMP LIFTING DEVICE SHALL BE 304 SS CHAIN, OR 304 SS LIFTING CABLE.
8. THERE SHALL BE NO ELECTRICAL JUNCTION BOXES IN WET WELL OR VALVE VAULT.
9. CHECK VALVES SHALL BE OUTSIDE WEIGHT & LEVER.
10. WET WELL & VALVE VAULT COVERS SHALL BE ALUMINUM WITH 304S.S. HARDWARE, AS RECOMMENDED AND REQUIRED BY PUMP MANUFACTURER(LOADING 300 PSF).
11. CONTROL PANEL SHALL BE AS MANUFACTURED BY FLYGHT PUMP OR APPROVED EQUAL.
12. WET WELL INSIDE DIAMETER SHALL BE 6' NOMINAL.
13. ACCESS HATCH DIMENSIONS ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE PUMPING EQUIPMENT, PIPING AND CONCRETE STRUCTURES TO ENSURE ADEQUATE ACCESS OPENINGS FOR INSTALLATION, OPERATION AND MAINTENANCE OF ALL EQUIPMENT.
14. FURNISH AND INSTALL GENERATOR RECEPTACLE COMPATABLE WITH PALM COAST UTILITY COMPANY EQUIPMENT.

ABBREVIATIONS:

INV. = INVERT	GV = GATE VALVE
EL. AND ELEV. = ELEVATION	WV = WATER VALVE
T.C. = TOP COVER	FH = FIRE HYDRANT
M E S = MITERED END SECTION	W.M. = WATER MAIN
RCP = REINFORCED CONCRETE PIPE	F.M. = FORCE MAIN
MAINT = MAINTENANCE	SAN = SANITARY
EOP = EDGE OF PAVEMENT	LOC = LIP OF CURB
PVC = POLY VINYL CHLORIDE	TYP = TYPICAL
CL = CENTERLINE OF ROAD	CONC. = CONCRETE
BOC = BACK OF CURB	B.O. = BLOW OFF
DCS = DRAINAGE CONTROL STRUCTURE	LF = LINEAR FEET

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PROFESSIONAL LAND SURVEYORS
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2601 SOUTH NOVA ROAD
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(904) 761-5355

SURVEYOR'S NOTES

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UNDERGROUND FOUNDATIONS, IF ANY, NOT LOCATED.

AS-BUILT SURVEY OF:

SANITARY SEWER GRAVITY LINE & SERVICES

SANITARY SEWER FORCE MAIN & FITTINGS

ELEVATIONS REFER TO SITE DATUM

—INDICATES AS-BUILT INFORMATION

AS-BUILT SURVEY 4/29/99
LAST FIELD DATE

SURVEYOR'S CERTIFICATE

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STEPHEN A. SLIGER, P.L.S. NO. 3794
J.E. CARPENT, P.L.S. NO. 4046
STEVEN T. SLIGER, P.L.S. NO. 4722

5/4/99
SIGNED DATE

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THE CROSSINGS AT GRAND HAVEN PHASE I
LIFT STATION NO. 1 DETAILS AS-BUILT

FLAGLER COUNTY, FLORIDA

ZEV COHEN & ASSOCIATES, INC
55 Seton Trail, Ormond Beach, Florida, 32176
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DESIGNED BY: MEB	DRAFTED BY: TMZ	CHECKED BY: MDD	1-1
SCALE:	SHEET 14 OF 15		FILE LOCATION

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