

ENGINEERING PLANS AND SPECIFICATIONS FOR HAMMOCK RIDGE MARTIN COUNTY, FLORIDA LYING IN THE HANSON GRANT

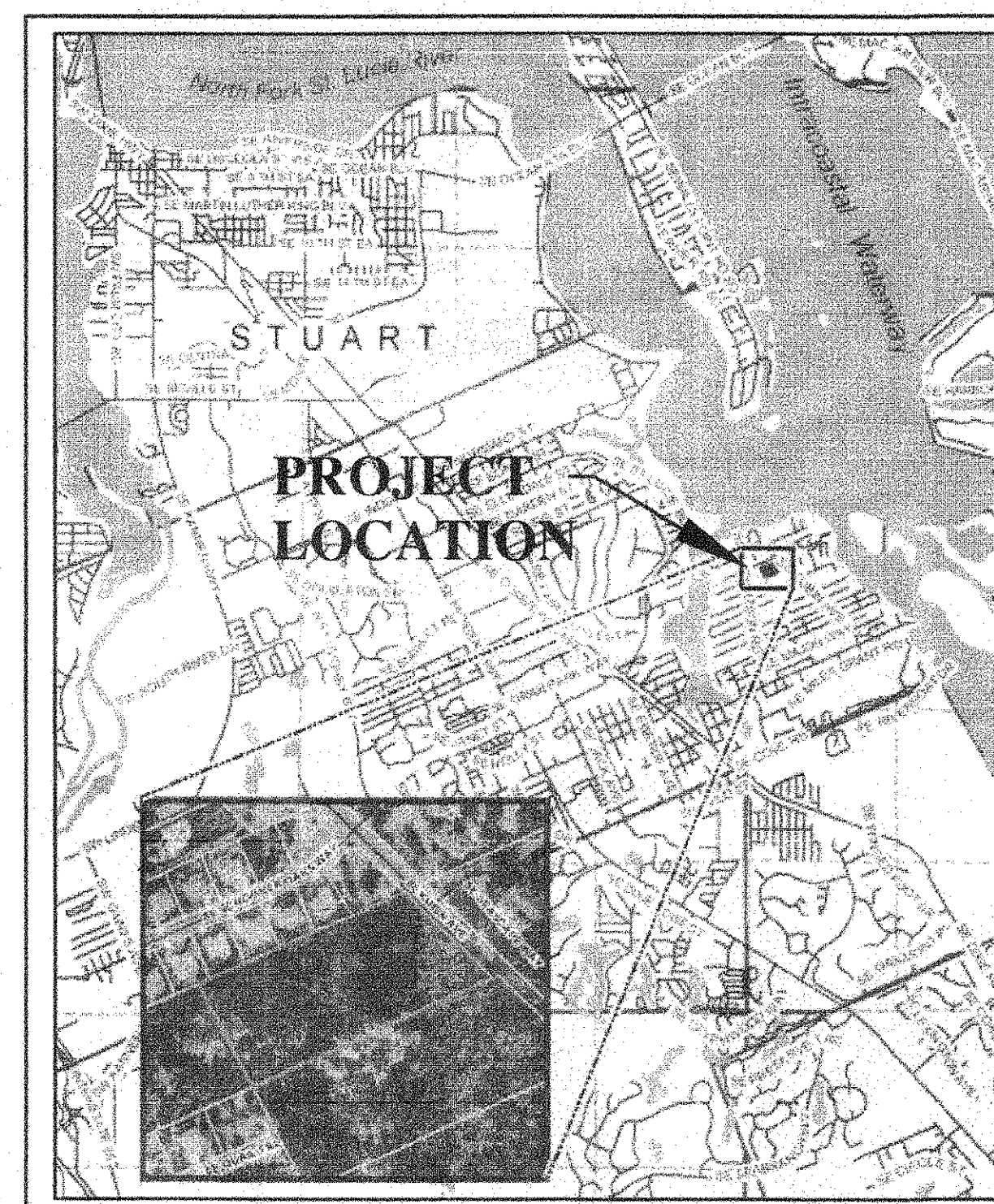
MARTIN COUNTY ENVIRONMENTAL SERVICES
☒ NO EXCEPTION TAKEN ☐ APPROVED WITH CORRECTIONS
☐ REJECTED ☐ RESUBMIT ☐ VERIFY & MAKE CORRECTIONS

Our limited review is only for compliance with the design concept and information given in the submittal. Contractor is solely responsible for dimensions, quantities, performance, safety, coordination with other work and all other requirements of the Contract Documents. Review does not authorize changes to the Minimum Design & Construction Standards unless stated specifically in a separate letter or change order. Code compliance rests with the Design Engineer.

Reviewed by: *E. McElhin* Date: 8-1-07
 QC by: *[Signature]* Date: 8-1-07

SHEET INDEX

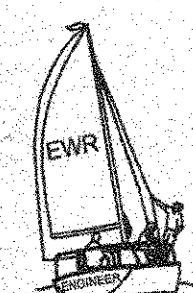
SHEET NUMBER	SHEET TITLE/DESCRIPTION
1	COVER
2	LEGEND & ABBREVIATIONS
3	PAVING & GRADING PLAN /EROSION CONTROL
4	WATER & SEWER PLAN
5	DRAINAGE DETAILS
6	LAND CLEARING
MC1 - MC12	MARTIN COUNTY DETAILS



LOCATION MAP

No.	Date	Revision	By
1	2-14-06	REVISED PER ADELPHI CABLE COMMENTS	A.T.
2	3-23-06	REVISED PER SPWMD COMMENTS	J.B.
3	3-30-06	REVISED PER MARTIN COUNTY UTILITIES, & SPWMD COMMENTS	J.B.
4	4-19-06	REVISED PER MARTIN COUNTY STAFF REPORT	A.T.
5	6-19-06	REVISED PER SITE PLAN REVISIONS	J.B.
6	9-08-06	REVISED PER SPWMD COMMENTS	J.B.
7	12-7-06	REVISED PER MARTIN COUNTY UTILITIES	D.W.
8	12-19-06	REVISED PER SPWMD COMMENTS	D.W.

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TRANSMITTAL
 JUN 13 2007
 DATE

RECEIVED
 JUL 16 2007
 GROWTH MANAGEMENT
 DEPARTMENT

[Signature]
 Melissa G. Corbett, PE
 JUN 13 2007
 No. 59292

LEGEND

	PROPERTY LINE
	RIGHT-OF-WAY
	CENTER LINE
	LOT LINE
	SWALE CL
	EDGE OF PAVEMENT
	TYPE 'F' CURB & GUTTER
	FENCE (CHAINLINK)
	FENCE
	IMPERMEABLE BARRIER
	BUILDING
	SETBACK LINE
	EASEMENT
	FORCE MAIN
	WATER MAIN
	SANITARY SEWER
	RAW WATER MAIN
	IRRIGATION QUALITY WATER MAIN
	DRAINAGE (RCP)
	DRAINAGE (HDPE)
	DRAINAGE (OTHER)
	STORM PIPE - MITERED END SECTION
	STORM PIPE - STRAIGHT ENDWALL
	STORM PIPE W/FLOW DISSIPATOR
	STORM PIPE - 'U' TYPE ENDWALL
	OVERHEAD ELECTRIC
	1 FT. CONTOUR
	5 FT. CONTOUR
	UNDER GROUND ELECTRIC
	UNDER GROUND TELEPHONE
	UNDERGROUND CABLE
	MATCH LINE
	BRIDGE
	STORM INLET
	MANHOLE
	SANITARY SEWER LATERAL (SINGLE SERVICE)
	SANITARY SEWER LATERAL (DOUBLE SERVICE)

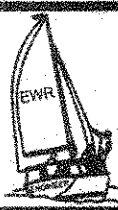
	CONCRETE
	EARTH
	GRAVEL/RIP-RAP
	SAND
	WETLAND
	WETLAND BUFFER
	OTHER SURFACE AREA
	WATER QUALITY SWALE
	DRAINAGE FLOW ARROW (IMPERVIOUS AREA)
	DRAINAGE FLOW ARROW (PERVIOUS AREA)
	POWER POLE
	SIGN
	PROPOSED FINISH FLOOR ELEVATION
	PROPOSED LOT NUMBER
	SPOT ELEVATION (NGVD 1929)
	WATER METER (SINGLE SERVICE)
	WATER METER (DOUBLE SERVICE)
	GATE VALVE
	CHECK VALVE
	FIRE HYDRANT
	SECTIONAL CALL OUT
	DETAIL CALL OUT

ELEVATIONS REFERENCED TO
NATIONAL GEODETIC VERTICAL
DATUM 1929 (NGVD 1929)

ABBREVIATIONS

ACP	ASBESTOS CEMENT PIPE
ASPH	ASPHALTIC CONCRETE
BFP	BACK FLOW PREVENTER
BOC	BACK OF CURB
CB	CATCH BASIN
CIP	CAST IRON PIPE
CMP	CORRUGATED METAL PIPE
CM	CONCRETE MONUMENT
CORR	CORRUGATED
DE	DRAINAGE EASEMENT
DIP	DUCTILE IRON PIPE
DR	DRIVEWAY
ELEC	ELECTRICAL
EL/ELEV	ELEVATION
EOP	EDGE OF PAVEMENT
EOW	EDGE OF WATER
EXIST	EXISTING
FF	FINISH FLOOR
FH	FIRE HYDRANT
FM	FORCE MAIN
G	GAS MAIN
HOR	HORIZONTAL
HDPE	HIGH DENSITY POLYETHYLENE
INT	INTAKE
INV	INVERT
IQ	RECLAIM WATER/IRRIGATION
IRC	IRON ROD & CAP
LF	LINEAR FEET
MES	MITERED END SECTION
MH	MANHOLE
OC	ON CENTER
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION
PT	POINT OF TANGENT
PVC	POINT OF VERTICAL CURVATURE
PV1	POINT OF VERTICAL INTERSECTION
RCP	REINFORCED CONCRETE PIPE
ROW	RIGHT-OF-WAY
RWM	RAW WATER MAIN
SD	STORM DRAIN
SS/SAN	SANITARY SEWER
SW	SIDEWALK
TOC	TOP OF CURB
TOB	TOP OF BANK
UC	UNDERGROUND CABLE
UGE	UNDERGROUND ELECTRIC
UE	UTILITY EASEMENT
UFP	UNDERGROUND FIBER OPTICS
UT	UNDERGROUND TELEPHONE
VCP	VITRIFIED CLAY PIPE
WM	WATER MAIN
WS	WATER SERVICE
WV	WATER VALVE

No.	Date	Revision	By	No.	Date	Revision	By	Designed by:	M.C.	11/16/05	Scale: NONE
1				1				Drawn by:	C.C.	11/16/05	Date: NOV., 2005
2				2				Checked by:	M.C.	11/16/05	Project: B1101
3	3-30-06	REVISED PER MARTIN COUNTY UTILITIES, & SFMD COMMENTS	J.B.	3				Approved by:	M.C.	11/16/05	File: B1101BASE



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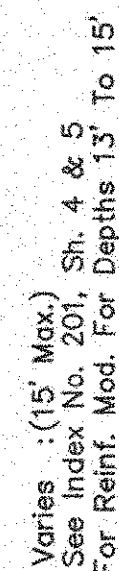
HAMMOCK RIDGE
MARTIN COUNTY, FLORIDA

LEGEND & ABBREVIATIONS

Sheet No.

2

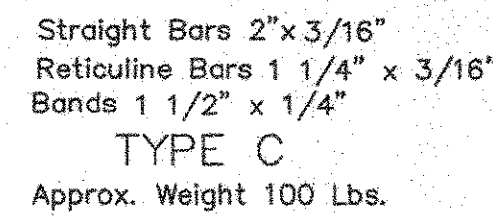
Melissa G. Corbett, PE
JUN 13 2007
No. 59292



5 3/4" 3'-4" 2'-0" 5 3/4" 5/8" 2" Cl. Grate Eye Bolt See Index 201 #4 Bars @ 12" Ctrs. 12" Ø WEEPHOLE W/ROCK/FILTER FABRIC

NOTE: FOR INLETS IN GRASSED AREAS, INSTALL USF 4160-6210 FRAME AND GRATE.
FOR INLETS IN CURB & GUTTER, INSTALL USF 5130-6168 FRAME AND GRATE.
FOR INLETS IN VALLEY GUTTER, INSTALL USF 5112-6143 FRAME AND GRATE.

TYPE-C INLET 34
PER FDOT INDEX NO. 232 -

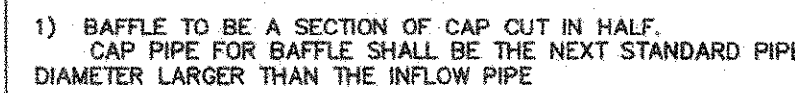


Technical drawing of a rectangular box with dimensions and internal structure. The drawing includes a top view, a side view, and a cross-section view. The top view shows a rectangle with overall dimensions of 3'-0" by 2'-4". The side view shows a rectangle with overall dimensions of 3'-0" by 2'-4". The cross-section view shows a rectangle with overall dimensions of 3'-0" by 2'-4". The drawing includes various internal dimensions and features, such as a central rectangular area with a width of 11" and a height of 2'-4". The drawing also shows a series of horizontal lines within the central area, possibly representing a grate or a partition. The drawing is labeled with dimensions in feet and inches, and includes a scale bar at the bottom.

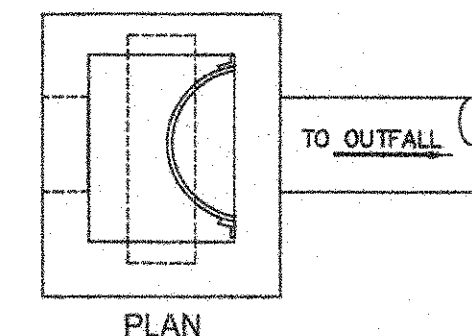
TYPE C
Approx. Weight 235 Lbs.



SECTION
(MODIFIED FDOT TYPE 'C' INLET)
CONTROL STRUCTURE



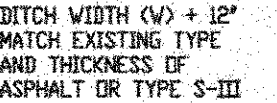
BAFFLE DETAIL



TOB 9.10' VARIES - SEED & MULCH/SOD TOB 9.10'

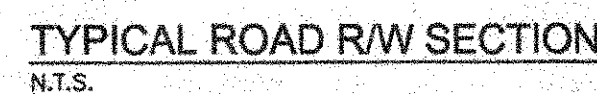
4:1 BOTTOM EL. 6.82 4:1

DRY DETENTION SECTION (E)

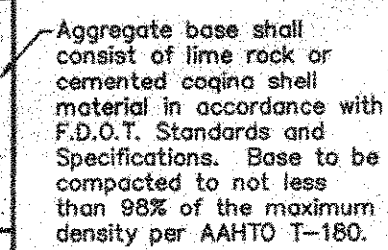


OPEN CUT DETAIL

MARTIN COUNTY PAVEMENT RESTORATION DETAIL
(ASPHALT)



SECTION



SUBGRADE, BASE AND ASPHALT MATERIAL (D)

TESTING:

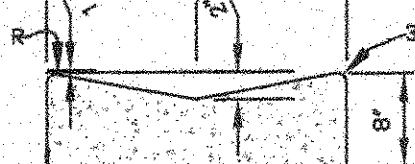
SUBGRADE - DENSITY COMPACTION TEST SHALL BE PERFORMED AT RANDOMLY SELECTED LOCATIONS WITHIN 300 FOOT INTERVALS (MAXIMUM).

ROCK BASE - DENSITY COMPACTION TEST SHALL BE PERFORMED AT RANDOMLY SELECTED LOCATIONS WITHIN 300 FOOT INTERVALS (MAXIMUM).



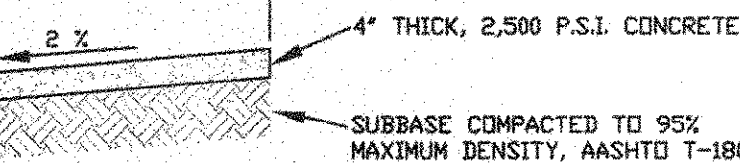
SPECIAL NOTICE PER FAC 61G15-30.003:

NOTED DETAIL WERE PREPARED AND REQUIRED TO BE PLACED ON THE DRAWINGS BY MARTIN COUNTY. ACCORDINGLY, ENGINEERING & WATER RESOURCES, INC. IS PROVIDING THEM FOR INFORMATION ONLY AND DOES NOT ACCEPT RESPONSIBILITY FOR ITS ELEMENTS.



2'-0" VALLEY GUTTER (B)

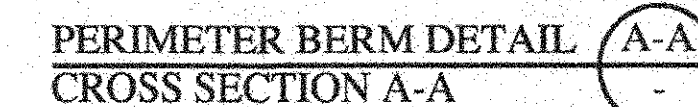
1. THE CONCRETE FOR CURBS SHALL BE COMPRESSIVE STRENGTH OF 3000 PSI.
2. ALL CURBS SHALL HAVE CONTRACTION JOINTS AND SHALL BE CONSTRUCTED AT INTERVALS NOT TO EXCEED 10' - 0" ON CENTERS FOR ALL CURBS.



CONCRETE SIDEWALK (C)

NOTES:

1. 3/4"x4" PREMOLDED EXPANSION MATERIALS AROUND P.P. OR OTHER STRUCTURES IN WALK.
2. EXPANSION JOINTS MAXIMUM DISTANCE = 100', USED 3/4"x4" PREMOLDED EXPANSION MATERIAL.
3. CONTRACTION JOINTS MAXIMUM DISTANCE = 21', SAW CUT 2" DEEP AND FILL WITH HOT POURED SEALER.
4. SAW CUT JOINTS WITHIN 24 HOURS.
5. AT DRIVEWAY CROSSING CONSTRUCTION SHALL BE 6' THICK WITH 6"x6" NO. 10 WIRE MESH REINFORCING



\\B1101\DWG\CONCEPT\B1101WSDETAIL1-3.dwg, PRINTED BY: joer ON Wed, Jun 13 2007

No.	Date	Revision	By	No.	Date	Revision	By	Designed by:	M.C.	11/16/05	Scale: NONE
Δ				Δ				Drawn by:	C.C.	11/16/05	Date: NOV., 2005
3	3-23-06	REVISED PER SFYMD COMMENTS	A.T.					Checked by:	M.C.	11/16/05	Project: B1101
3	3-30-06	REVISED PER MARTIN COUNTY UTILITIES, & SFYMD COMMENTS	J.B.	Δ	12-19-06	REVISED PER SFYMD COMMENTS	D.W.	Approved by:	M.C.	11/16/05	File: B1101WSDETAL

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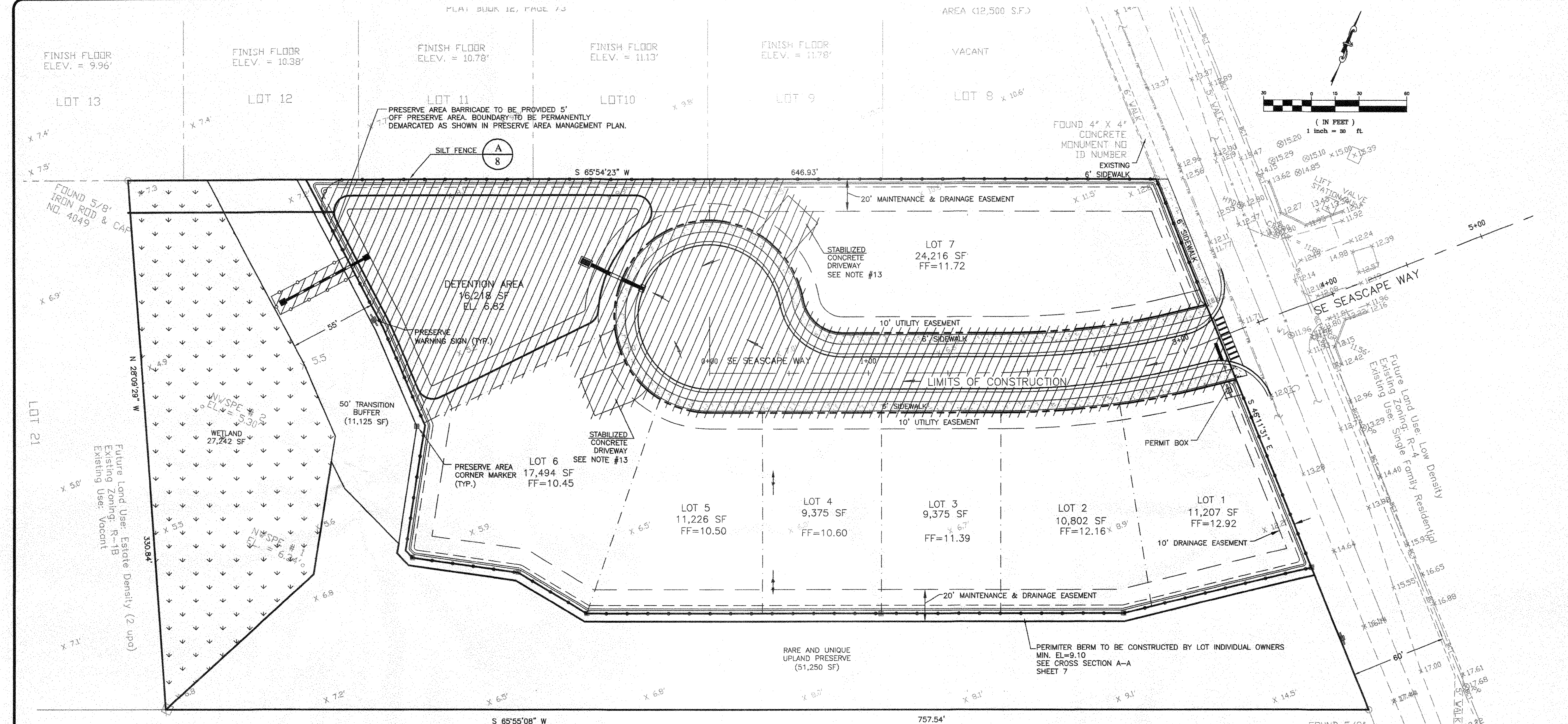
HAMMOCK RIDGE

MARTIN COUNTY, FLORIDA

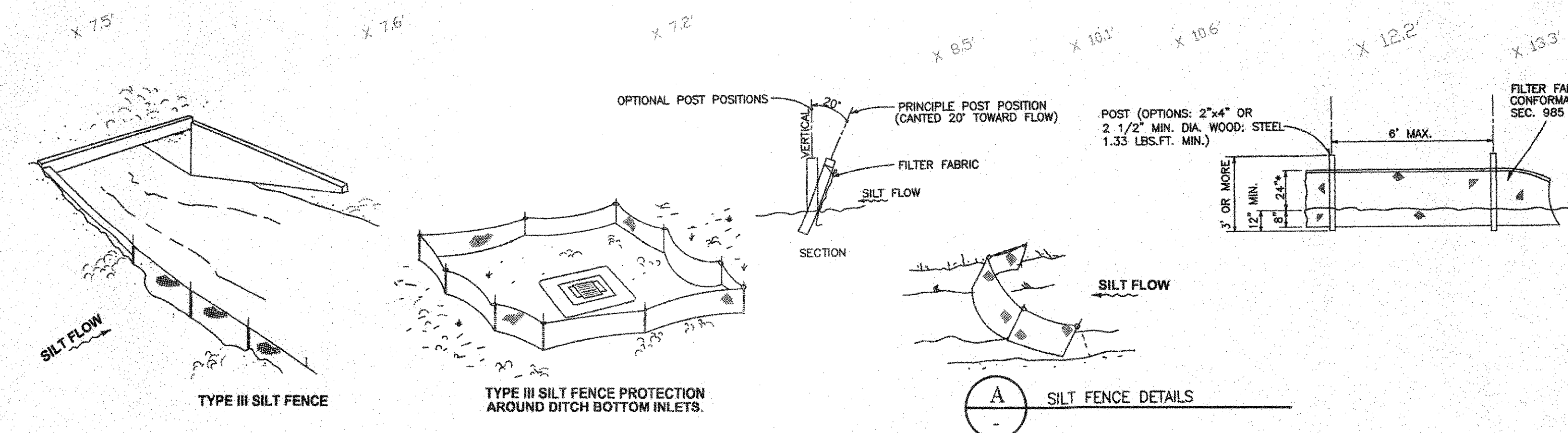
DRAINAGE DETAILS

Sheet No.

5



- NOTES:
1. SILT FENCE DEPICTS AREA TO BE CLEARED.
 2. NO LOT CLEARING. A LAND CLEARING PERMIT IS REQUIRED.
 3. NO CLEARING, INCLUDING THE INSTALLATION OF EROSION CONTROL DEVICES, IS AUTHORIZED UNTIL THE PERMIT FOR THE INSTALLATION OF EROSION CONTROL DEVICES AND PRESERVE AREA BARRICADE HAS BEEN ISSUED.
 4. PROPERTY CORNERS SHALL BE LOCATED BY A LICENSED LAND SURVEYOR AND CLEARLY MARKED IN THE FIELD PRIOR TO THE ENGINEERING DEPARTMENT'S PRE MEETING FOR SITE DEVELOPMENT.
 5. AUTHORIZATION TO INSTALL EROSION CONTROL DEVICES AND PRESERVE BARRICADES WILL BE GRANTED AT THE PRE MEETING. THIS AUTHORIZATION SHALL BE POSTED ON THE SITE, IN THE PERMIT BOX, ITS LOCATION SHOWN ELSEWHERE ON THIS PAGE.
 6. NO ADDITIONAL LAND CLEARING SHALL COMMENCE UNTIL A SATISFACTORY INSPECTION OF THE REQUIRED CONTROL STRUCTURES AND BARRICADES HAS BEEN OBTAINED.
 7. A LAND CLEARING PERMIT MAY BE OBTAINED SUBSEQUENT IT THE SATISFACTORY INSPECTION OF THE CONTROL STRUCTURES AND BARRICADES. THIS PERMIT SHALL BE POSTED IN THE PERMIT BOX, ITS LOCATION SHOWN ELSE WHERE ON THIS PAGE.
 8. ALL CONSTRUCTION BARRICADES AND SILT FENCE WILL REMAIN IN PLACE AND BE MONITORED FOR COMPLIANCE BY THE PERMIT HOLDER DURING THE PERMITTED DEVELOPMENT ACTIVITIES.
 9. SOIL STABILIZATION SHALL BE COMPLETE WITHIN 30 DAYS OF VEGETATION REMOVAL.
 10. FOLLOWING CERTIFICATION OF OCCUPANCY FOR THE DEVELOPMENT, ALL BARRICADES AND EROSION CONTROL DEVICES SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR.
 11. DO NOT DEPLOY IN A MANNER THAT SILT FENCES WILL ACT AS A DAM ACROSS PERMANENT FLOWING WATERCOURSES. SILT FENCES ARE TO BE USED AT UPLAND LOCATIONS AND TURBIDITY BARRIERS USED AT PERMANENT BODIES OF WATER.
 12. THE CONTRACTOR SHALL PROVIDE SILT SCREENS, HAY BALES OR OTHER SUCH SEDIMENT CONTROL MEASURES DURING CONSTRUCTION. THE SELECTED SEDIMENT CONTROL MEASURES SHALL BE INSTALLED LANDWARD OF THE UPLAND BUFFER ZONES AROUND ALL PROTECTED WETLANDS. ALL AREAS SHALL BE STABILIZED AND VEGETATED IMMEDIATELY AFTER CONSTRUCTION TO PREVENT EROSION INTO THE WETLANDS AND UPLAND BUFFER ZONES.
 13. THE FIRST 30' OF THE DRIVEWAY LOCATED ON LOTS 6 & 7 SHALL BE DESIGNED AND CONSTRUCTED TO CARRY A 32 TON LIVE LOAD FOR EMERGENCY VEHICLES TURN AROUND.



No.	Date	Revision	By	No.	Date	Revision	By
1	3-23-06	REVISED PER SPWM COMMENTS	A.T.	2	3-23-06	REVISED PER SITE PLAN REVISIONS	J.B.
3	3-30-06	REVISED PER MARTIN COUNTY UTILITIES, & SPWM COMMENTS	J.B.				
4	4-18-06	REVISED PER MARTIN COUNTY STAFF REPORT	A.T.				

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HAMMOCK RIDGE
MARTIN COUNTY, FLORIDA

CALL 48 HOURS BEFORE YOU DIG
IT'S THE LAW!
1-800-432-4770
SUNSHINE STATE ONE CALL OF FLORIDA, INC.

Melissa G. Corbett, P.E.
JULY 13, 2007
No. 59292

FOR THE PURPOSE OF THE GENERAL NOTES BELOW, THE TERM DEPARTMENT SHALL MEAN "MARTIN COUNTY UTILITIES DEPARTMENT".

- ALL CONNECTIONS TO EXISTING MAINS SHALL BE OBSERVED BY THE DEPARTMENT. VALVES ON EXISTING MAINS SHALL BE OPERATED BY DEPARTMENT PERSONNEL OR UNDER THEIR DIRECT SUPERVISION. TAPPING SLEEVE AND VALVE SHALL BE PRESSURE TESTED PRIOR TO TAPPING. IF THE TAPPING OPERATION REQUIRES THE CUSTOMER TO BE PRESENT, THE CUSTOMER SHALL BE GIVEN NOTICE TO MAKE NECESSARY NOTIFICATIONS. THE CONTRACTOR MAY BE REQUIRED TO ASSIST IN NOTIFICATIONS. IN THIS EVENT, CONTRACTOR SHALL BE READY TO PROCEED WITH AS MUCH AS POSSIBLE WORK DURING THE CUSTOMER'S PRESENCE. IF THE CUSTOMER'S PRESENCE INTERRUPTS THE DEPARTMENT WILL POSTPONE A SERVICE CUT OFF IF THE CONTRACTOR IS NOT READY TO PROCEED ON SCHEDULE. SUCH CONNECTIONS SHALL BE MADE AT NIGHT TO MINIMIZE EFFECTS UNLESS OTHERS ARE REQUESTED BY THE DEPARTMENT. NO CUSTOMER SHOULD BE WITHIN THE WORK AREA MORE THAN FOUR HOURS.

LOCAL CHLORINATION WILL BE REQUIRED FOR ALL PIPE AND FITTINGS USED TO COMPLETE CONNECTIONS WITH POTABLE WATER.

2. THE CONTRACTOR SHALL HAVE AVAILABLE AT THE JOB SITE AT ALL TIMES ONE COPY OF MARTIN COUNTY UTILITIES MINIMUM DESIGN AND CONSTRUCTION STANDARDS, ONE COPY OF THE CONTRACT DOCUMENTS, INCLUDING PLANS, SPECIFICATIONS AND SPECIAL PROVISIONS, AND COPIES OF ANY REQUIRED CONSTRUCTION PERMITS.
3. THE CONTRACTOR SHALL CONTACT ALL CONCERNED UTILITIES AT LEAST 48 HOURS IN ADVANCE OF CONSTRUCTION OPERATIONS.
4. THE LOCATION AND SIZE OF ALL EXISTING UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE AND ARE BASED ON THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITIES BY ELECTRONIC METHOD AND BY HAND EXCAVATION IN COORDINATION WITH ALL UTILITY COMPANIES PRIOR TO BEGINNING ANY CONSTRUCTION OPERATIONS. ANY AND ALL CONFLICTS OF EXISTING UTILITIES WITH PROPOSED CONSTRUCTION OPERATIONS SHALL BE RESOLVED BY THE ENGINEER AND DEPARTMENT PRIOR TO BEGINNING ANY CONSTRUCTION OPERATIONS. THIS WORK BY THE CONTRACTOR SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.
5. LOCATION OF PROPOSED FACILITIES WILL BE STAKED BY CONTRACTOR. CONTRACTOR MUST GIVE 48 HOURS NOTICE TO THE DEPARTMENT IN ADVANCE OF LAYOUT.

8. PROJECT SUPERINTENDENT: THE CONTRACTOR SHALL PROVIDE A QUALIFIED SUPERINTENDENT TO REMAIN ON THE JOB SITE AT ALL TIMES WHEN WORK IS BEING PERFORMED. THE SUPERINTENDENT SHALL BE PRESENT AT THE PRE-CONSTRUCTION MEETINGS. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT BY LETTER PRIOR TO THE PRE-CONSTRUCTION MEETING OF THE SUPERINTENDENT'S NAME, ADDRESS AND PHONE NUMBER, INCLUDING REFERENCES SHOWING QUALIFICATIONS. IN THE EVENT THE SUPERINTENDENT WILL NOT BE PRESENT FOR ANY PERIOD OF TIME DURING CONTRACT WORK THE CONTRACTOR SHALL PROVIDE 48 HOURS NOTICE IN WRITING TO THE DEPARTMENT. UPON THE APPOINTMENT OF A QUALIFIED REPLACEMENT SUPERINTENDENT, THE CONTRACTOR WILL BE PRESENT DURING THE CONSTRUCTION. WORK SHALL NOT BE ALLOWED TO PROCEED UNLESS THE ASSIGNED SUPERINTENDENT IS PRESENT.

7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE HIS COMPLETE FAMILIARITY WITH THE PROJECT SITE AND COMPONENTS TO INCLUDE SUBSURFACE CONDITIONS OF SOIL AND GROUNDWATER TABLE.

WARNING: EXACT LOCATION OF UNDERGROUND UTILITIES IS NOT KNOWN NOR IS THIS DRAWING TO BE CONSTRUED AS DEPICTING THE LOCATION OF ALL UNDERGROUND UTILITIES OR STRUCTURES. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINATION OF LOCATION PRIOR TO COMMENCEMENT OF WORK. THE CONTRACTOR IS RESPONSIBLE, THEREFORE, FOR ALL DAMAGE AND REPAIR COSTS.

8. DENSITY TESTS OF TRENCH BACKFILL MATERIAL SHALL BE REQUIRED AT INTERVALS OF NOT MORE THAN 500 FEET. DENSITY TESTS OF PAVEMENT OPEN-OUT AREAS INCLUDING CRACKS, POLES, AND OTHER DISCONTINUITIES SHALL BE REQUIRED AT INTERVALS OF NOT MORE THAN 50 FEET. ALL TESTS SHALL COMMENCE AT THE TOP OF CONDUIT AND SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR HIGHWAY MARTIN COUNTY UTILITIES CONSTRUCTION STANDARDS "TYPICAL TRENCH DETAIL" AND "FLEXIBLE PAVEMENT REPLACEMENT DETAIL". FLORIDA BEARING TESTS FOR THE STABILITY OF EXISTING SUBGRADE SHALL BE REQUIRED AT INTERVALS OF NOT MORE THAN 500 FEET. A BEARING TEST MIGHT BE NECESSARY IN THE EVENT OF VARIATIONS IN THE STRATA. A CERTIFIED COPY OF THE BEARING TEST REPORT SHALL BE SUBMITTED TO THE COUNTY ENGINEER. THE COUNTY ENGINEER, TRANSPORTATION OR MARTIN COUNTY ENGINEERING DEPARTMENT DEPENDING ON JURISDICTION, CONTRACTORS BID PRICE SHALL INCLUDE PAYMENT FOR ALL TESTS CONDUCTED BY AN

9. ANY LANDSCAPING DISTURBED, UNLESS OTHERWISE SHOWN ON THE PLANS, SHALL BE REPLACED BY THE CONTRACTOR TO THE SATISFACTION OF THE DEPARTMENT AT THE CONTRACTORS EXPENSE.
10. ANY WALK, CURB AND GUTTER OR PAVEMENT DISTURBED, UNLESS OTHERWISE SHOWN ON PLANS, SHALL BE REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE. ALL CONSTRUCTION SHALL MEET ADA REQUIREMENTS.
11. ALL SOD IS TO BE PLACED FOR THE FULL WIDTH DISTURBED AT THE PER LINE FOOT UNIT PRICE FOR SOD. SOD SHALL BE REPLACED TO MATCH EXISTING KIND UNLESS OTHERWISE SHOWN ON PLANS.
12. CONTRACTOR SHALL PROVIDE PROPER BENDS TO MAINTAIN REQUIRED DEPTH AND AVOID BEING CUT. COST OF BENDS NOT DESIGNATED ON PLANS SHALL BE INCLUDED WITH THE UNIT PRICE FOR PIPE.
13. ANY TREES AND/OR SCRUB OR OTHER VEGETATION NOT TO BE REPLACED SHALL BE REMOVED FROM THE PROJECT AT THE CONTRACTOR'S EXPENSE.
14. ALL RUBBLE AND UNSUITABLE MATERIAL MUST BE REMOVED FROM THE PROJECT AND DISPOSED OF PROPERLY BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
15. MAILBOXES MUST BE CAPABLE OF RECEIVING MAIL AT ALL TIMES.
16. DEFLECT PIPE AS NECESSARY TO OBTAIN THE REQUIRED ALIGNMENT. USE APPROPRIATE FITTINGS WHEN DEFLECTION EXCEEDS 75% OF MANUFACTURER'S RECOMMENDED MAXIMUM DEFLECTION.
17. ALL FITTINGS SHALL BE MECHANICALLY RESTRAINED. REFER TO MARTIN COUNTY UTILITIES DEPARTMENT MINIMUM DESIGN & CONSTRUCTION STANDARDS (LATEST EDITION, JUNE 2002).
18. A CONSTRUCTION Dewatering (WELL POINTS, SUMPS, ETC.) WILL REQUIRE A Dewatering PERMIT FROM SOUTH FLORIDA WATER MANAGEMENT DISTRICT. THIS SHALL BE OBTAINED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE PRIOR TO BEGINNING OF CONSTRUCTION.
19. THE "TRENCH SAFETY ACT" SHALL BE INCORPORATED INTO THIS CONTRACT AS ENACTED BY THE LEGISLATURE OF THE STATE OF FLORIDA TO BE IN EFFECT AS OF OCTOBER 1, 1990.
20. A U-2 PERMIT IS REQUIRED FOR ALL WORK WITHIN COUNTY RIGHT-OF-WAY. THIS PERMIT IS TO BE OBTAINED BY THE CONTRACTOR FROM THE MARTIN COUNTY ENGINEERING DEPARTMENT. ALL COSTS PAYABLE BY THE CONTRACTOR. A COPY OF THIS PERMIT MUST BE MAINTAINED ON THE PROJECT SITE AT ALL TIMES DURING CONSTRUCTION.
21. ALL CONCRETE AND ASPHALT DRIVES MUST BE REPLACED FROM SAW CUT TO EDGE OF PAVEMENT.
22. LOCATIONS OF FIRE HYDRANTS AND AIR RELEASE VALVES ARE APPROXIMATE ONLY. FINAL LOCATIONS WILL BE DETERMINED BY DEPARTMENT PERSONNEL IN FIELD.

23. MAXIMUM LENGTH OF WATER MAIN AND FORCE MAIN PRESSURE TEST SHALL BE 1500 FEET. WATER SOURCE FOR FLUSHING, FILLING AND PRESSURE TESTING THE WATER MAIN SHALL BE FROM A TREATED SOURCE APPROVED BY THE DEPARTMENT.

24. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION AND RESTORATION (IF DAMAGED) OF ALL EXISTING STRUCTURES WITHIN THE CONSTRUCTION LIMITS OF THE PROJECT, INCLUDING BUT NOT LIMITED TO WALLS, FENCES, POWER POLES, MAIL BOXES, DRAINAGE PIPES AND STRUCTURES, ETC..

25. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING WATER SERVICES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL PROTECT THE EXISTING WATER SERVICES FROM DAMAGE AND REPAIR ANY BREAKS IMMEDIATELY.
26. "RECORD DRAWINGS" SHALL INCLUDE FURNISHING MARTIN COUNTY UTILITIES DEPARTMENT WITH ALL INFORMATION NECESSARY FOR A COMPLETE SET OF RECORD DRAWINGS AS REQUIRED BY MARTIN COUNTY UTILITIES DEPARTMENT MINIMUM DESIGN AND CONSTRUCTION STANDARDS (DATED NOVEMBER, 2004).
27. MECHANICALLY RESTRAIN THREE (3) FULL LENGTHS EACH SIDE OF ALL BENDS AND AS INSTRUCTED IN MARTIN COUNTY UTILITIES DEPARTMENT SPECIFICATIONS. MECHANICAL RESTRAINTS SHALL BE EITHER MED-A-LUG, TYLER OR UNIFLANGE. THE CONTRACTORS BID SHALL INCLUDE THE COST OF ALL BOLDS AND FITTINGS ASHED MECHANICAL RESTRAINT.
28. THE CONTRACTOR SHALL PROTECT EXISTING UTILITIES FROM DAMAGE DURING CONSTRUCTION OPERATIONS. THE CONTRACTOR SHALL SUPPORT UTILITIES AND SHORE TREES AS REQUIRED TO PROTECT AND MAINTAIN EXISTING UTILITIES. THE CONTRACTOR SHALL NOTIFY EACH UTILITY PRIOR TO ATTEMPTING TO SUPPORT THEIR FACILITIES. IF THE UTILITY REQUIRES THE CONTRACTOR TO PROTECT THEIR FACILITIES, THEN IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO COORDINATE WORK AND PAY THE UTILITY FOR THEIR EXPENSES IF REQUIRED. ALL COSTS FOR THIS WORK SHALL BE AT THE CONTRACTORS EXPENSE AND INCLUDED IN THE CONTRACTORS BID PRICE.
29. ALL PRESSURE TESTS SHALL BE IN ACCORDANCE WITH AWWA STANDARDS.
30. AIR RELEASE VALVE VAULT COVERS SHALL BE CONSTRUCTED PER DETAIL "STANDARD ALUMINUM COVER" AS SHOWN IN THE DEPARTMENTS MINIMUM DESIGN AND CONSTRUCTION STANDARDS. MINIMUM COVER SIZE TO MATCH VAULT INSIDE WALL DIMENSIONS.
31. ALL WATER SERVICES SHALL BE MECHANICALLY PUSHED UNDER PAVEMENT.
32. VALVE STEM RISER SHALL BE REQUIRED WHERE OPERATING NUT DEPTH EXCEEDS 4 FEET. THE RISER PIPE SHALL BE BOLDED TO GATE VALVE. THE RISER AND GATE VALVE SHALL BE APPROVED BY THE DEPARTMENT. COST FOR THIS WORK SHALL BE INCLUDED IN THE CONTRACTORS BID UNIT PRICE FOR GATE VALVES.
33. THE CONTRACTOR SHALL CLEAN MAINS USING APPROVED POLYURETHANE PIG(S). TEMPORARY CLEANING STATIONS SHALL BE CONSTRUCTED BY THE CONTRACTOR. THE CONTRACTOR SHALL PROVIDE A CLEANING PLAN SHOWING METHOD OF FILLING AND REMOVAL OF PIGS AND FACTORS TO BE CONSIDERED. THE CLEANING PLAN SHALL BE APPROVED BY THE DEPARTMENT PRIOR TO CONSTRUCTION. ALL COSTS FOR FILLING AND CLEANING SHALL BE AT THE CONTRACTORS EXPENSE.
34. A FLORIDA DEPARTMENT OF TRANSPORTATION PERMIT IS REQUIRED FOR ALL WORK WITHIN THE STATE RIGHT-OF-WAY. A COPY OF THIS PERMIT MUST BE MAINTAINED ON THE PROJECT SITE AT ALL TIMES DURING CONSTRUCTION.
35. THE CONTRACTOR SHALL INSTALL TESTING POINTS FOR PRESSURE TESTING MAINS. THE CONTRACTOR SHALL INSTALL AND REMOVE AND PLUG COR. STOPS PER MARTIN COUNTY UTILITIES DEPARTMENT DETAIL "TEST POINT DETAIL". THE LOCATION OF TEST POINTS SHALL BE APPROVED BY THE DEPARTMENT.

36. WATER MAIN DISINFECTION SHALL BE IN ACCORDANCE WITH CURRENT AWWA, BULLETIN C-651.
37. WATER MAINS AND APPURTENANCES SHALL BE IN ACCORDANCE WITH CURRENT AWWA AND NSF STANDARDS.
38. MINIMUM COVER TO FINISHED GRADE OVER WATER MAINS SHALL BE 30 INCHES UP TO 8" DIAMETER; 10" OR LARGER SHALL HAVE 36" COVER OR GREATER TO PROVIDE A MINIMUM 18" COVER OVER OPERATING NUT OF GATE VALVES.
39. ALL MAINS SHALL BE TESTED FOR LEAKAGE. WATER SHALL BE SUPPLIED TO THE MAIN AND PUMPED TO THE REQUIRED 150 PSI PRESSURE. THE MAIN TESTED SHALL EITHER BE ISOLATED FROM PRESENTLY POTABLE LINES OR PROTECTED FROM LEAKAGE BY A DOUBLE VALVE ARRANGEMENT.
40. NEWLY CONSTRUCTED FIRE HYDRANTS THROUGHOUT THE PROJECT SHALL HAVE A RED "OUT OF SERVICE" DISK (JOSEPH G. POLLARD CO. OR EQUAL) ATTACHED TO 4" WATER MAIN NOZZLE CAP. DISK IS TO BE REMOVED AFTER WATER SYSTEM HAS BEEN APPROVED FOR SERVICE BY THE DEPARTMENT.

THE DEPARTMENT SHALL BE NOTIFIED AT LEAST 48 HOURS IN ADVANCE OF ANY TESTING PROCEDURES. AFTER FLUSHING IS COMPLETED, LINE PRESSURE SHALL BE APPLIED TO THE WATER SYSTEM TO DETERMINE IF ANY MAJOR DEFECTS ARE PRESENT. THE COMPLETE WATER SYSTEM SHALL THEN BE TESTED AT A PRESSURE OF 150 PSI FOR A PERIOD OF NOT LESS THAN TWO HOURS. THE DEPARTMENT MAY, AT ITS DISCRETION, INCREASE THE PERIOD OF FOUR HOURS. IF THE SYSTEM IS SUCCESSFULLY TESTED AT ONE TIME, SHALL NOT EXCEED 1500 LINEAL FEET. AN OIL FILLED PRESSURE GAUGE SHALL BE USED AT 2 POUND INCREMENTS SHALL BE USED FOR ALL PRESSURE TESTS. NO VISIBLE MOVEMENT OF THE SYSTEM SHALL OCCUR AND LEAKAGE SHALL NOT EXCEED:

$$L = \frac{ND \cdot P}{7400}$$

WHERE: L= LEAKAGE IN GALLONS
 N= NUMBER OF JOINTS IN TEST SECTION
 P= TEST PRESSURE IN PSI.
 D= DIAMETER OF PIPE IN INCHES

NOTE: MARTIN COUNTY UTILITIES DEPARTMENT'S MINIMUM DESIGN AND CONSTRUCTION STANDARDS (LATEST EDITION MAY, 2006), ARE TO BE ADHERED TO AND WILL BE ENFORCED TO AT LEAST THESE MINIMUM STANDARDS.

48 HOURS BEFORE DIGGING
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STANDARD WATER/SEWER SEPARATION STATEMENT

62-955.316 LOCATION OF PUBLIC WATER SYSTEM MAINS

FOR THE PURPOSE OF THIS SECTION, THE PHASES "WATER MAINS" SHALL MEAN MAINS, INCLUDING TREATMENT PLANT PROCESS PIPING, CONVEYING EITHER RAW, PARTIALLY TREATED, OR FINISHED DRINKING WATER; FIRE HYDRANT LEADS; AND SERVICE LINES ARE UNDER THE CONTROL OF A PUBLIC WATER SYSTEM AND THAT HAVE AN INSIDE DIAMETER OF THREE INCHES OR GREATER.

(1) HORIZONTAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAIN, RECLAIMED WATER PIPELINES, AND ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS.

(A) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-600, F.A.C.

(B) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER.

(C) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST SIX FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE-TYPE SANITARY SEWER.

(D) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST TEN FEET, FROM ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-600, F.A.C. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY-TYPE SANITARY SEWERS SHALL BE REDUCED TO THREE FEET WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER.

(E) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST TEN FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND ALL PARTS OF ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM" AS DEFINED IN SECTION 581.000(2), F.S., AND RULE 64C-6.002, F.A.C.

(2) VERTICAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAIN, AND RECLAIMED WATER PIPELINES.

(A) NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY- OR VACUUM-TYPE SANITARY SEWER OR STORM SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES, ABOVE OR AT LEAST 12 INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.

(B) NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER SHALL BE LAID TO THE OUTSIDE OF THE WATER MAIN IS AT LEAST 12 INCHES ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.

(C) AT THE UTILITY CROSSING DESCRIBED IN PARAGRAPH (A) AND (B) ABOVE, ONE FINAL LENGTH OF WATER MAIN PIPE SHALL BE CROSSED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATIVELY, AT SUCH CROSSINGS, THE PIPES SHALL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORMWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-600, F.A.C., AND AT LEAST SIX FEET FROM ALL JOINTS IN PRESSURE-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-600, F.A.C.

(3) SEPARATION BETWEEN WATER MAINS AND SANITARY OR STORM SEWER MANHOLES.

(A) NO WATER MAIN SHALL PASS THROUGH, OR COME INTO CONTACT WITH, ANY PART OF A SANITARY SEWER MANHOLE.

(B) EFFECTIVE AUGUST 28, 2003, WATER MAINS SHALL NOT BE CONSTRUCTED OR ALTERED TO PASS THROUGH, OR COME INTO CONTACT WITH, ANY PART OF A STORM SEWER MANHOLE OR INLET STRUCTURE, WHERE IT IS NOT TECHNICALLY FEASIBLE OR ECONOMICALLY SENSIBLE TO COMPLY WITH THIS REQUIREMENT (I.E., WHERE THERE IS A CONFLICT IN THE ROUTING OF A WATER MAIN AND A STORM SEWER WHERE ALTERNATIVE ROUTING OF THE WATER MAIN OR THE STORM SEWER IS NOT TECHNICALLY FEASIBLE OR IS NOT ECONOMICALLY SENSIBLE). THE DEPARTMENT SHALL ALLOW EXCEPTIONS TO THIS REQUIREMENT (I.E., THE DEPARTMENT SHALL ALLOW CONSTRUCTION OF CONFLICT MANHOLES, BUT SUPPLIES OF WATER OR PIPING PERTAINING TO CONFLICT CONFLICT MANHOLES MUST FIRST OBTAIN A SPECIFIC PERMIT FROM THE DEPARTMENT IN ACCORDANCE WITH PART V OF THIS CHAPTER AND MUST PROVIDE IN THE PRELIMINARY DESIGN REPORT OR DRAWINGS, SPECIFICATIONS, AND DESIGN DATA ACCOMPANYING THEIR PERMIT APPLICATION THE FOLLOWING INFORMATION:

1. TECHNICAL OR ECONOMIC JUSTIFICATION FOR EACH CONFLICT MANHOLE.

2. A STATEMENT IDENTIFYING THE PARTY RESPONSIBLE FOR MAINTAINING EACH CONFLICT MANHOLE.

3. A DESCRIPTION OF COMPLIANCE WITH THE DESIGN AND CONSTRUCTION REQUIREMENTS IN SUB-PARAGRAPHS A, THROUGH D, BELOW.

A. EACH WATER MAIN PASSING THROUGH A CONFLICT MANHOLE SHALL HAVE A FLEXIBLE, WATER-TIGHT JOINT ON EACH SIDE OF THE MANHOLE TO ACCOMMODATE DIFFERENTIAL SETTLEMENT BETWEEN THE MAIN AND THE MANHOLE.

B. WITHIN EACH CONFLICT MANHOLE, THE WATER MAIN PASSING THROUGH THE MANHOLE SHALL BE INSTALLED IN A WATER-TIGHT CASING PIPE HAVING HIGH IMPACT STRENGTH (I.E., HAVING AN IMPACT STRENGTH AT LEAST EQUAL TO THAT OF 0.25-INCH-THICK DUCTILE IRON PIPE).

C. EACH CONFLICT MANHOLE SHALL HAVE AN ACCESS OPENING, AND SHALL BE SIZED, TO ALLOW FOR EASY CLEANING OF THE MANHOLE.

D. GRATINGS SHALL BE INSTALLED AT ALL STORM SEWER INLET STRUCTURES OF EACH CONFLICT MANHOLE TO PREVENT LARGE OBJECTS FROM ENTERING THE MANHOLE.

(4) SEPARATION BETWEEN FIRE HYDRANT DRAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORMWATER FORCE MAIN, RECLAIMED WATER PIPELINES, AND ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS. NEW OR RELOCATED FIRE HYDRANTS WITH UNDERGROUND DRAINS SHALL BE LOCATED SO THAT THE DRAINS ARE AT LEAST THREE FEET FROM ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-600, F.A.C., AT LEAST THREE FEET, AND PREFERABLY TEN FEET, FROM ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER, AT LEAST SIX FEET, AND PREFERABLY TEN FEET, FROM ANY EXISTING OR PROPOSED GRAVITY- OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-600, F.A.C., AND AT LEAST TEN FEET FROM ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM" AS DEFINED IN SECTION 581.000(2), F.S., AND RULE 64C-6.002, F.A.C.

(5) EXCEPTIONS WHERE IT IS NOT TECHNICALLY FEASIBLE OR ECONOMICALLY SENSIBLE TO COMPLY WITH THE REQUIREMENTS IN SUBSECTION (1) OR (2) ABOVE, THE DEPARTMENT SHALL ALLOW CONSTRUCTION OF CONFLICT MANHOLES, BUT SUPPLIES OF WATER OR PIPING PERTAINING TO CONFLICT CONFLICT MANHOLES MUST FIRST OBTAIN A SPECIFIC PERMIT FROM THE DEPARTMENT IN ACCORDANCE WITH PART V OF THIS CHAPTER AND MUST PROVIDE IN THE PRELIMINARY DESIGN REPORT OR DRAWINGS, SPECIFICATIONS, AND DESIGN DATA ACCOMPANYING THEIR PERMIT APPLICATION THE FOLLOWING INFORMATION:

(A) WHERE AN UNDERGROUND WATER MAIN IS BEING LAID LESS THAN THE REQUIRED MINIMUM HORIZONTAL DISTANCE FROM ANOTHER PIPELINE AND WHERE AN UNDERGROUND WATER MAIN IS CROSSING ANOTHER PIPELINE AND JOINTS IN THE WATER MAIN ARE BEING LOCATED LESS THAN THE REQUIRED MINIMUM DISTANCE FROM JOINTS IN THE OTHER PIPELINE.

1. USE OF PRESSURE-RATED PIPE CONFORMING TO THE AMERICAN WATER WORKS ASSOCIATION STANDARDS INCORPORATED INTO RULE 62-955.350, F.A.C., FOR THE OTHER PIPELINE IF IT IS A GRAVITY- OR VACUUM-TYPE PIPELINE.

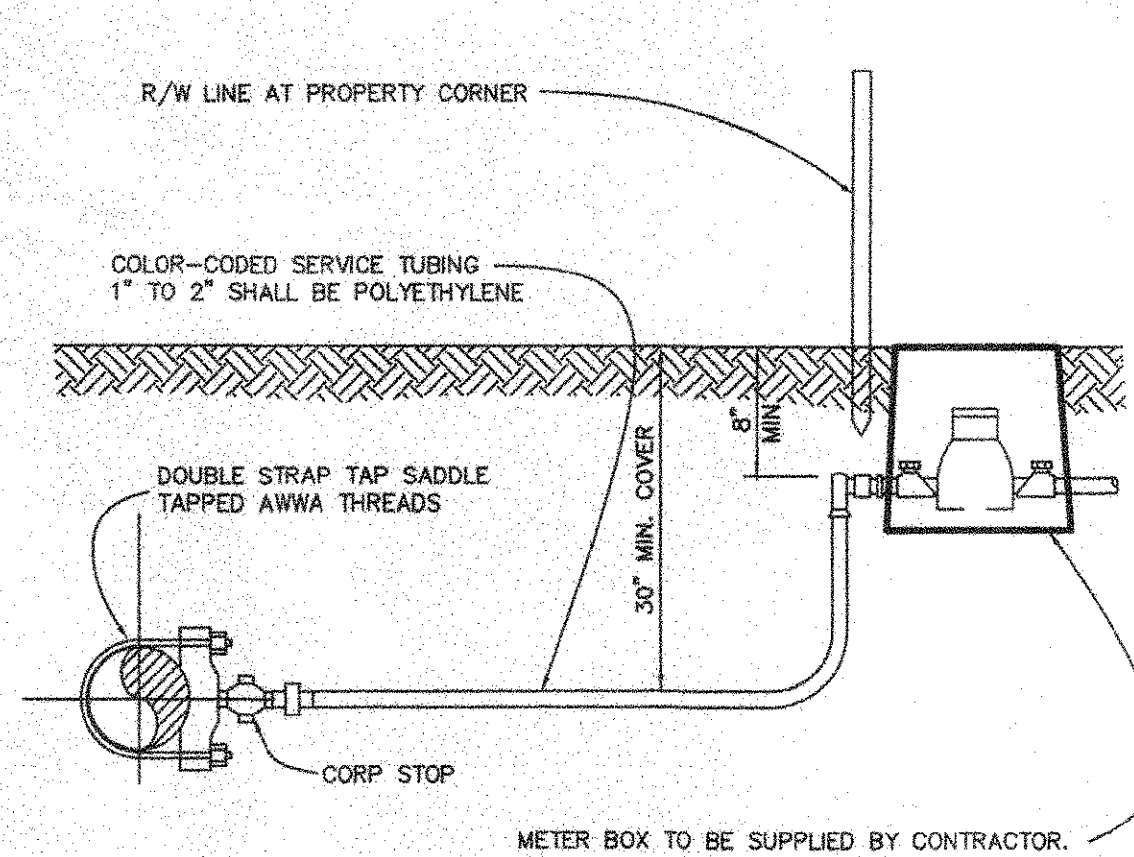
2. USE OF WELDED, IRON, OR OVERSIZED REINFORCED CONCRETE FOR EITHER THE WATER MAIN OR THE OTHER PIPELINE; OR

3. USE OF WATER-TIGHT CASING PIPE OR CONCRETE ENCASMENT AT LEAST FOUR INCHES THICK FOR EITHER THE WATER MAIN OR THE OTHER PIPELINE.

(B) WHERE AN UNDERGROUND WATER MAIN IS BEING LAID LESS THAN THREE FEET HORIZONTALLY FROM ANOTHER PIPELINE AND WHERE AN UNDERGROUND WATER MAIN IS CROSSING ANOTHER PIPELINE AND IS BEING LAID LESS THAN THE REQUIRED MINIMUM VERTICAL DISTANCE FROM THE OTHER PIPELINE.

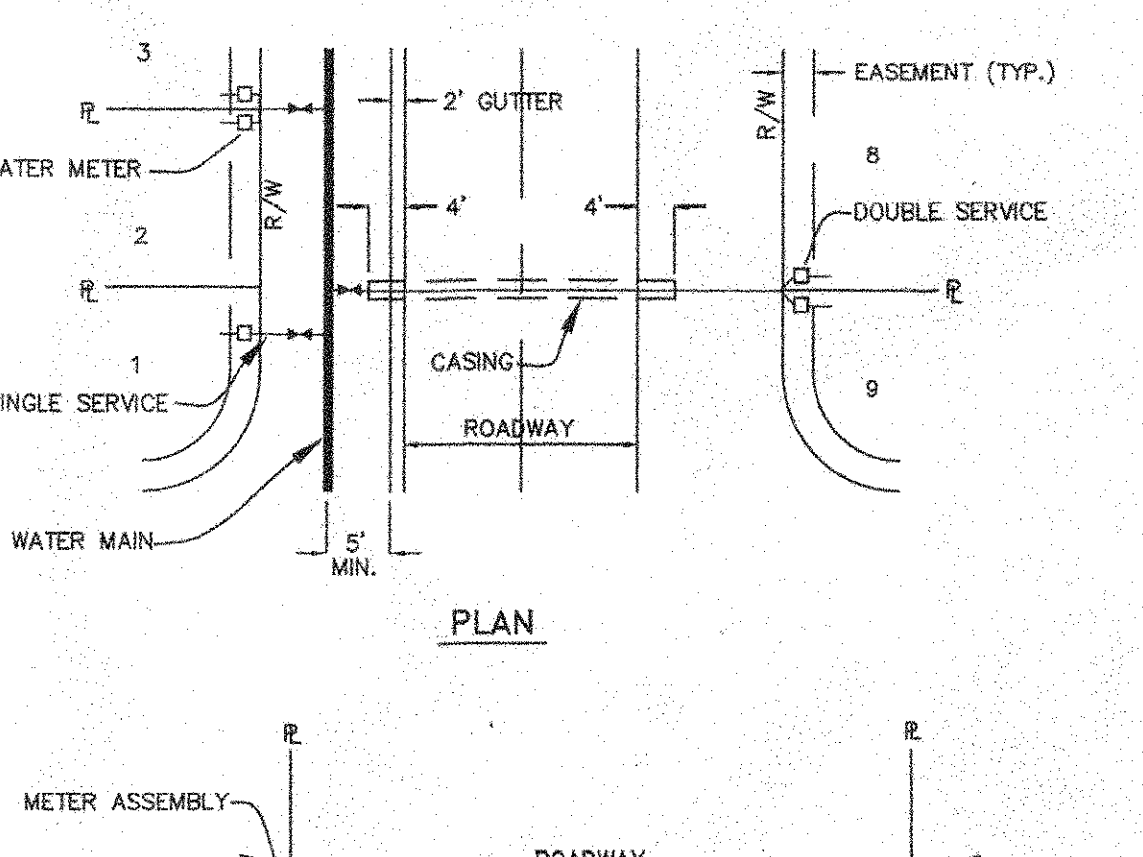
1. USE OF IRON, OR CASING PIPE, HAVING HIGH IMPACT STRENGTH (I.E., HAVING AN IMPACT STRENGTH AT LEAST EQUAL TO THAT OF 0.25-INCH-THICK DUCTILE IRON PIPE) OR CONCRETE ENCASMENT AT LEAST FOUR INCHES THICK FOR THE WATER MAIN; AND

2. USE OF IRON, OR CASING PIPE, HAVING HIGH IMPACT STRENGTH (I.E., HAVING AN IMPACT STRENGTH AT LEAST EQUAL TO THAT OF 0.25-INCH-THICK DUCTILE IRON PIPE) OR CONCRETE ENCASMENT AT LEAST FOUR INCHES THICK FOR THE OTHER PIPELINE IF IT IS NEW AND IS CONVEYING WASTEWATER OR RECLAIMED WATER.



NOTES:

- MIN. SERVICE LINES SHALL BE AS FOLLOWS: 1" FOR SINGLE AND DOUBLE SERVICES WHERE METER SIZE IS 5/8", 2" FOR SINGLE AND DOUBLE SERVICES WHERE METER SIZE IS 1".
- COMPRESSION FITTINGS SHALL BE SUITABLE FOR TUBING USED AND REQUIRE METAL (S.S.) INSERTS.
- DOUBLE SERVICES REQUIRE "U" BRANCH WITH ANGLE CURB STOPS.
- POLYETHYLENE SHALL BE AS DEFINED BY A.S.T.M. D2737 SDR9 AND A.W.W.A. 901, LATEST EDITION, AND BE PRESSURE RATED FOR 200 PSI AND SHALL BE "ENDURE" BY ENDOT INDUSTRIES, INC., ROCKAWAY, N.J.
- TUBING SHALL BE MARKED WITH SIZE, MANUFACTURER NAME, WORKING PRESSURE, NATIONAL SANITATION FOUNDATION APPROVAL, A.S.T.M. SPECIFICATION AND PRODUCTION CODE. TUBING SHALL HAVE AN OUTSIDE DIAMETER EQUIVALENT TO THE OUTSIDE DIAMETER OF COPPER TUBING.
- SERVICE LOCATOR WIRE SHALL BE LAID IN THE TRENCH WITH ALL SERVICES, CONNECTED TO THE MAIN WIRE AND WRAPPED AROUND THE SERVICE PIPING OR TUBING. WIRE FOR POTABLE WATER SHALL BE BLUE IN COLOR.
- TUBING SHALL BE ENDOT ENDUROPUR OR APPROVED EQUAL.



NOTES:

- HOUSE SERVICE LATERAL UNDER PAVEMENT SHALL BE INSTALLED THROUGH A 2" BLACK IRON PIPE OR PVC SCH. 80 CASING.
- TAPPING SADDLE AND CORPORATION STOP MUST BE PLACED IN ACCESSIBLE AREAS, OUT FROM UNDER ANY PAVED AREAS.
- SERVICE LOCATOR WIRE SHALL BE LAID IN THE TRENCH WITH ALL SERVICES, CONNECTED TO THE MAIN WIRE AND WRAPPED AROUND THE SERVICE PIPING OR TUBING. WIRE FOR POTABLE WATER SHALL BE BLUE IN COLOR.

TYPICAL MULTIPLE SERVICE SIZES

No. of UNITS	LINE SIZES
3 -12	2"

NOTES:

1. LARGER SIZE SERVICE PIPING OTHER THAN THAT NOTED WILL NOT BE ACCEPTED

2. CONTRACTOR TO BUILD ALL METER MANFOLDS.

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SERVICE CONNECTION DETAIL

5/8" OR 1" METER

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WATER SERVICE CONNECTIONS (SINGLE OR DOUBLE)

PLAN / PROFILE

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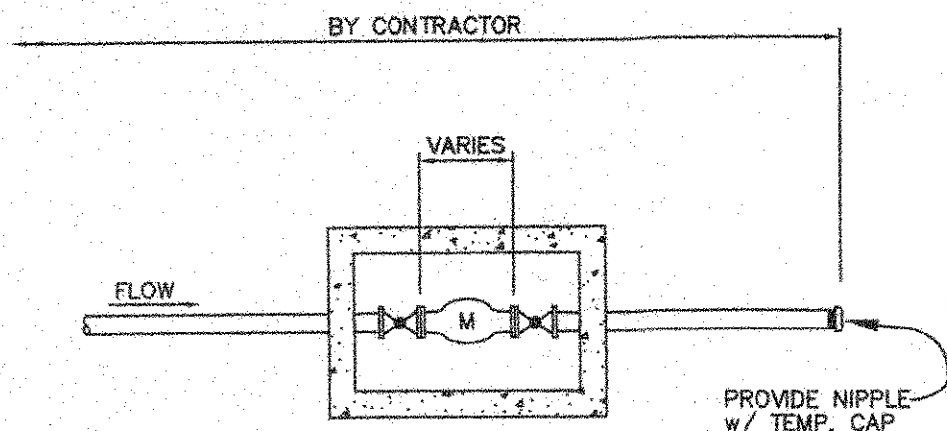
TYPICAL CONNECTION FOR MULTIPLE SERVICES

(THREE OR MORE)

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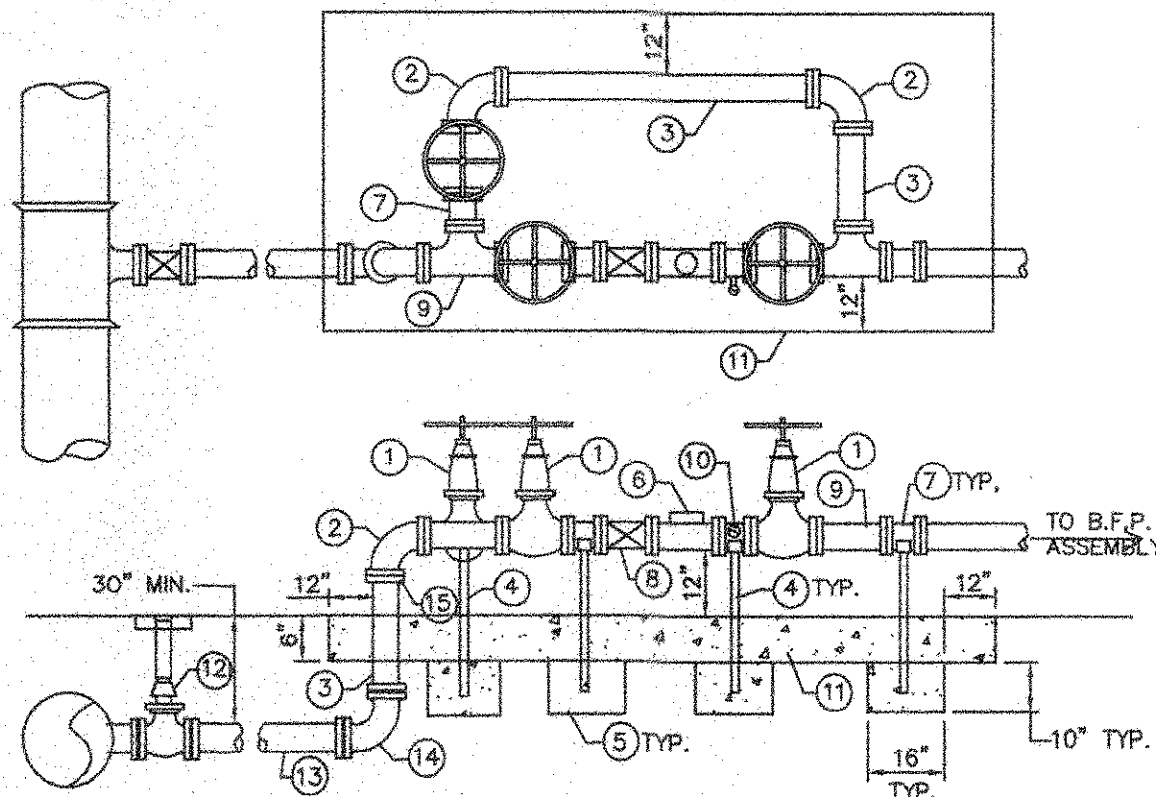
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	SPECIAL NOTICE PER FAC 6(G)15-30.00(3); NOTED DETAILS WERE PREPARED AND REQUIRED TO BE PLACED ON THE DRAWINGS BY MARTIN COUNTY. ENGINEERING & WATER RESOURCES, INC., IS PROVIDING THEM FOR INFORMATION ONLY AND DOES NOT ACCEPT RESPONSIBILITY FOR ITS ELEMENTS.	Engineering & Water Resources, Inc. 7881 S.W. Ellipse Way, Stuart, Florida 34997 Phone: (772)781-6408 Fax: (772) 781-6409 Web: www.enwr.com Certificate of Authorization: 00006586 	WATER & SEWER DETAILS HAMMOCK RIDGE MARTIN COUNTY, FLORIDA					Sheet No.		MC-1					
No.	Date:			Revision:	By	Filing: Project BT 101	Dated NOV., 2005	Approved:	Checked:		C.C.	Drafted:	M.G.C.	Designed:	
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CALL 48 HOURS BEFORE YOU DIG IT'S THE LAW! 1-800-432-4770 FLORIDIAN STATE ONE CALL OF FLORIDA, INC.															
JUN 13 2007 Melissa G. Corbett; PE No. 59292															



NOTES:

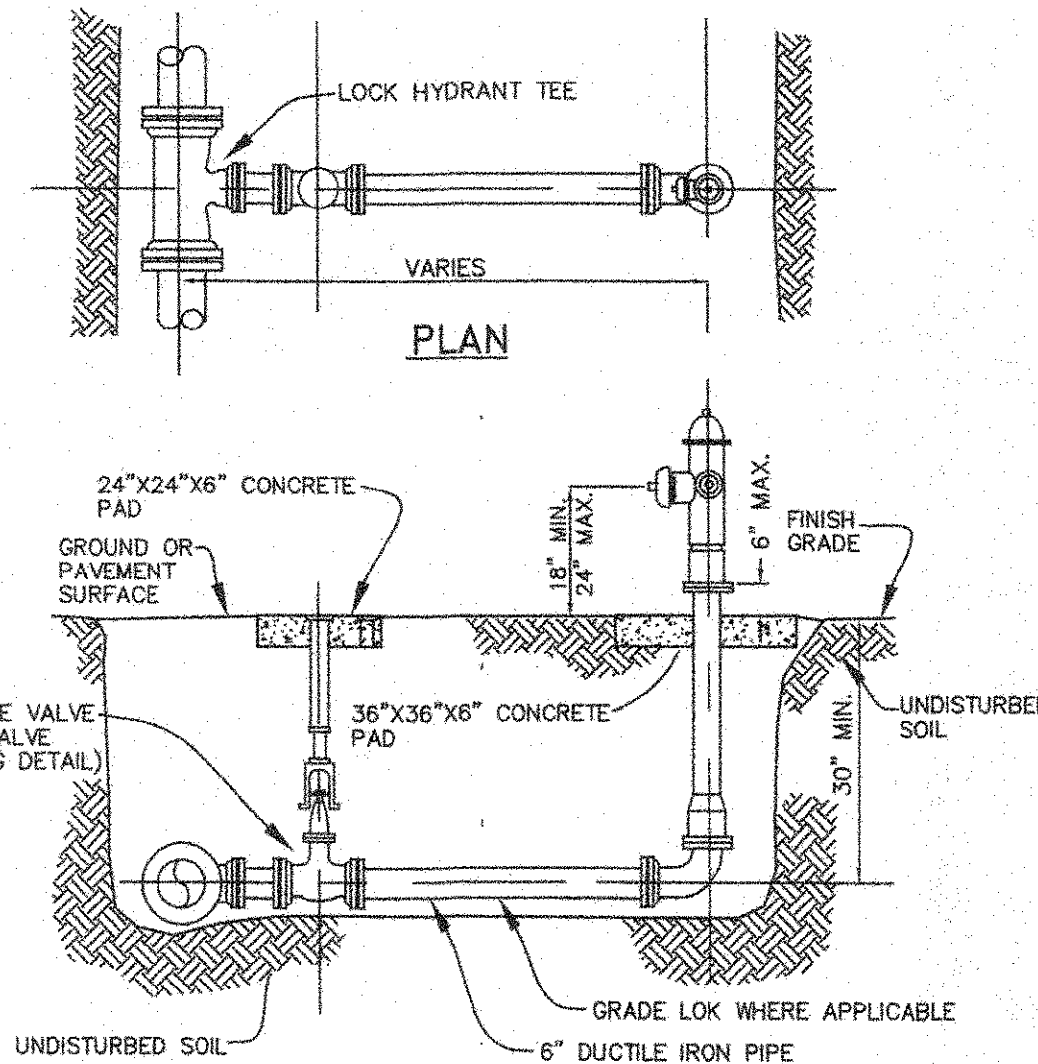
- ALL VALVES TO BE STRAIGHT 2" BALL VALVES WITH LOCK-WING. (FLANGE AT METER) FORD OR APPROVED EQUAL.
- SEE TYPICAL SERVICE DETAIL FOR MAIN CONNECTION.
- METER BOX SHALL BE POLYMER CONCRETE AND FIBER REINFORCED POLYESTER.
- PIPING SHALL BE 2" HDPE, DR 9 WITH BRONZE COMPRESSION FITTINGS.



MATERIALS

ITEM	QUANTITY	DESCRIPTION
1	3	4", 6", 8" VALVE, GATE, C.I., FLANGE - FLANGE
2	3	4", 6", 8" BEND - 90°, FLANGE - FLANGE
3	VARIES	4", 6", 8" PIPE, DUCTILE IRON, FLANGE - FLANGE
4	4	2" IRON PIPE
5	4	16"x16"x18" CONC. FOUNDATION, 2500# PSI
6	1	3", 4", 6", 8" METER, FLANGE - FLANGE
7	4	4", 6", 8" D.I. SPOOL PIECE, 12" MIN. LENGTH, F - F
8	1	4", 6", 8" WATER METER STRAINER, FLANGE - FLANGE
9	2	D.I. BYPASS TEE, FLANGE - FLANGE, (SIZE VARIES)
10	1	2" TAP WITH LOCKING BALL VALVE
11	*	CONC. SLAB, 2500# PSI
12	1	4", 6", 8" VALVE, GATE, M.J.
13	VARIES	4", 6", 8" PIPE
14	1	4", 6", 8" BEND-90°, M.J.-M.J. W/ RETAINER GLANDS
15	1	4", 6", 8" ADAPTER, FLANGE, DIP

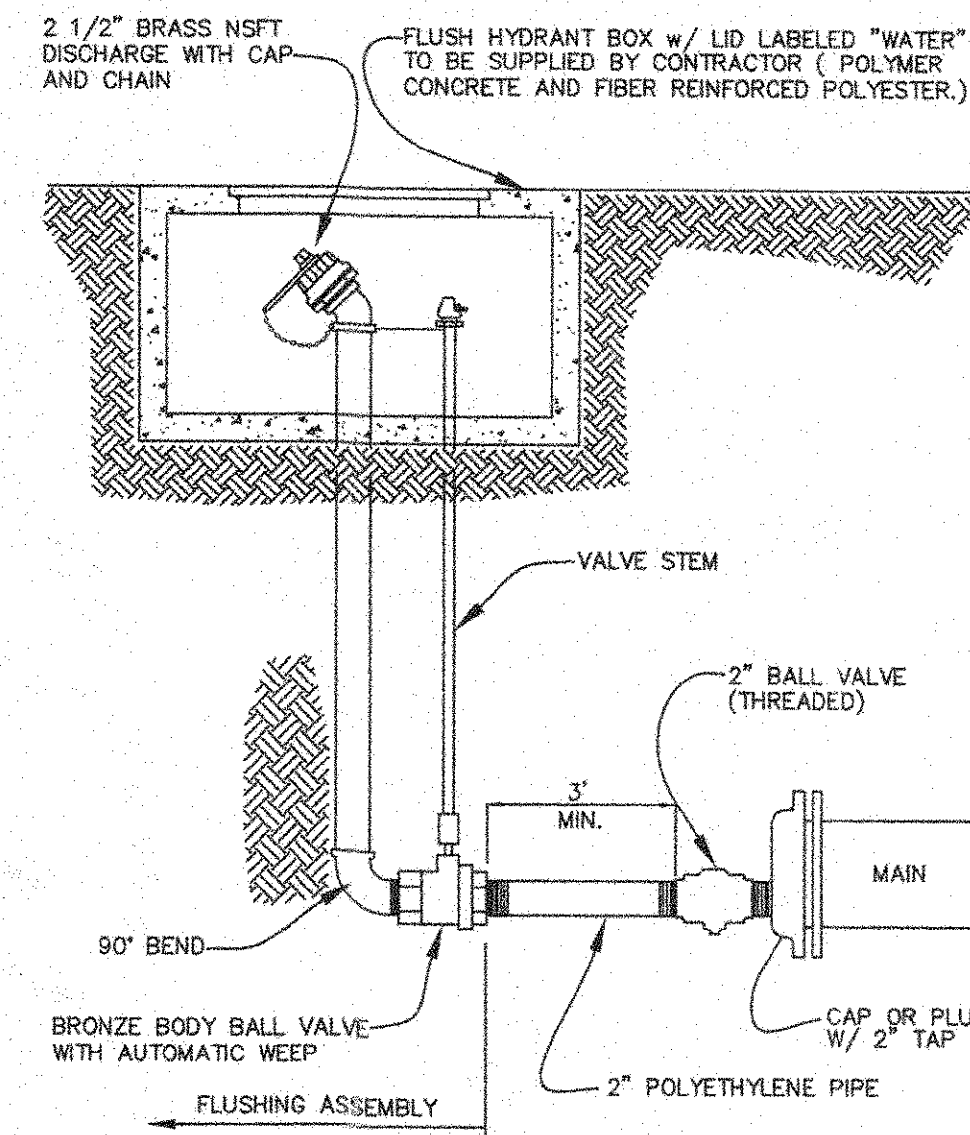
- NOTES:
- ALL ABOVE GRADE PIPING SHALL BE DUCTILE IRON WITH FLANGED ENDS.
 - FOR 3" METER, USE 4" D.I. PIPE WITH 4"x3" REDUCER WITH FLANGED ENDS ON BOTH SIDES OF THE METER.
 - FIELD ADJUST AND CUT D.I. PIPE TO THE PROPER LENGTH AS REQUIRED.
 - METER BYPASS SHALL BE A MIN. OF 4" DIA. AND SIZED TO MEET REQUIRED FLOWS.
 - ALL EXPOSED DUCTILE IRON PIPING AND FITTINGS SHALL BE PAINTED "BLUE". PAINT SPECIFICATIONS MUST BE SUBMITTED TO MARTIN COUNTY UTILITIES PRIOR TO APPLICATION.



ELEVATION

NOTES:

- HYDRANTS SHALL BE INSTALLED PLUMB AND TRUE.
- VALVES SHALL BE PLACED ADJACENT TO MAIN, AND TIED TO TEE.
- ANCHOR TEES ARE REQUIRED.
- ALL HYDRANTS SHALL BE TIED OFF OF MAIN.
- HYDRANTS SHALL NOT BE PLACED IN SIDEWALK, ROADWAYS OR BIKEPATHS.
- PIPE FROM VALVE TO HYDRANT SHALL BE RESTRAINED.
- HYDRANT BARREL COLOR TO BE OSHA YELLOW AND BONNET OSHA WHITE.
- THE CONNECTOR PIPE SHALL BE CEMENT UNED DUCTILE IRON, CLASS 350 AND POSITIONED BETWEEN THE FIRE HYDRANT AND GATE VALVE.
- THE CONNECTOR PIPE SHALL HAVE AN ANCHORING FEATURE AT BOTH ENDS SO THAT WHEN USED WITH M.J. SPLIT GLANDS A RESTRAINED JOINT IS PROVIDED.
- HYDRANT EXTENSIONS SHALL NOT BE ALLOWED.
- NEWLY CONSTRUCTED FIRE HYDRANTS THROUGHOUT THE PROJECT SHALL HAVE A RED "OUT OF SERVICE" DISK (JOSEPH G. POLLARD CO. OR EQUAL) ATTACHED TO 6" PUMPER NOZZLE CAP. DISK TO BE REMOVED AFTER WATER SYSTEM HAS BEEN APPROVED FOR SERVICE BY THE DEPARTMENT.



NOTES:

- FLUSHING HYDRANT ASSEMBLY SHALL BE QIL INDUSTRIES, AQUARIUS ONE-O-ONE OR WATER PLUS V62000 2" POST FLUSHING HIDDEN HYDRANT.
- MAIN TO BE RESTRAINED FOR THREE FULL LENGTHS.

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MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

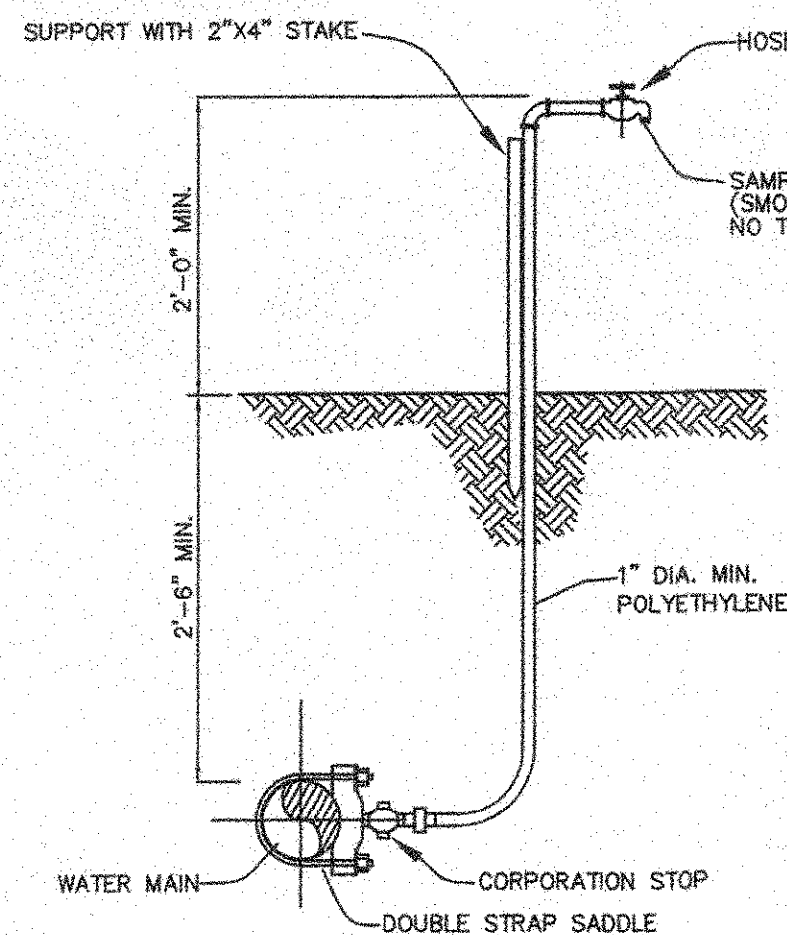
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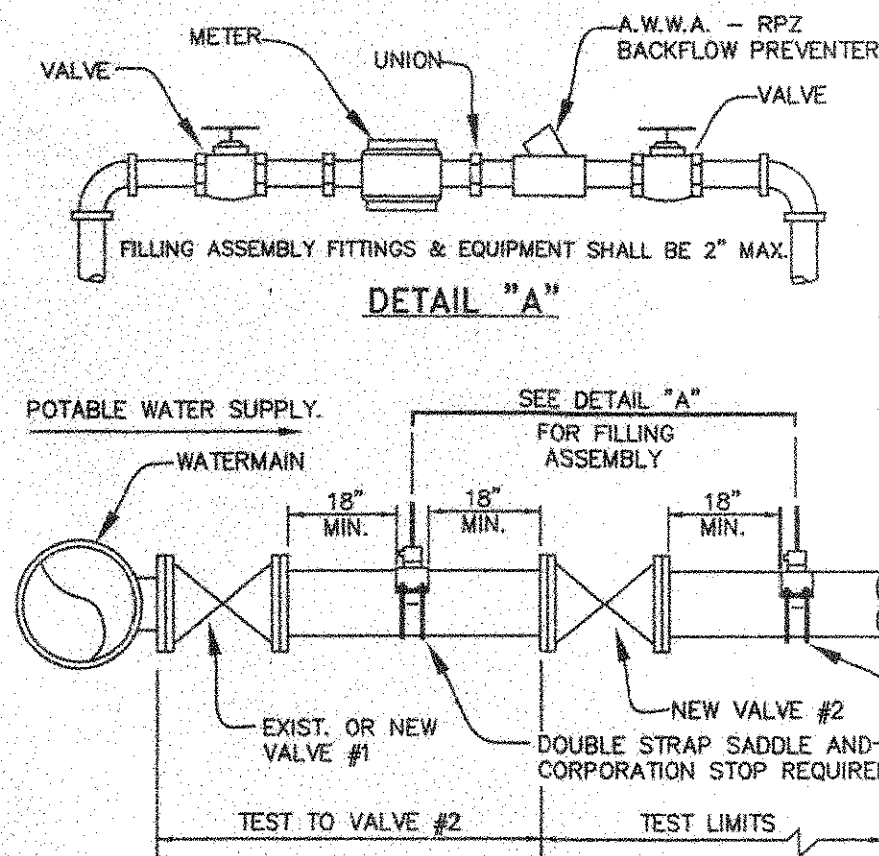
MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

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JULY, 2006	POTABLE WATER FLUSHING HYDRANT	8



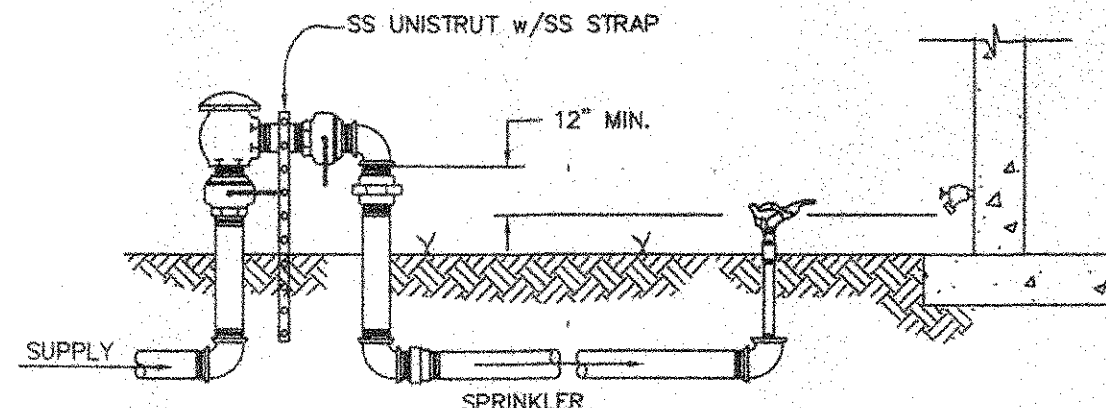
NOTES:

- SAMPLE POINT SHOULD BE A SERVICE LINE OR FIRE HYDRANT IF POSSIBLE.
- AFTER SAMPLING IS COMPLETED AND APPROVED, SHUT OFF CORP. STOP, REMOVE TUBING, PLUG WITH BRASS PLUG AND LOCATE FOR RECORD DRAWINGS.
- MOUNT METAL OR PLASTIC TAG INDICATING "SAMPLE POINT - DO NOT TURN OFF"



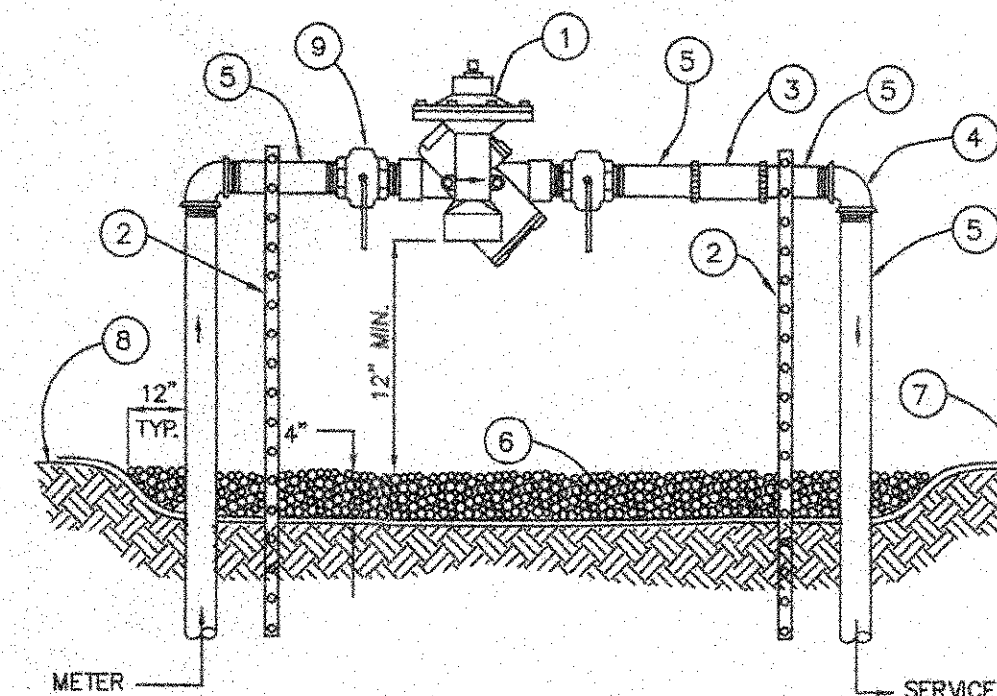
NOTES:

- BOTH VALVES SHALL BE KEPT CLOSED EXCEPT FOR FILLING, FLUSHING, AND BACTERIOLOGICAL TESTING PURPOSES.
- DEPARTMENT SHALL BE NOTIFIED BEFORE FILLING AND FLUSHING.
- AFTER BACTERIOLOGICAL CLEARANCE, SECOND VALVE IS TO BE LEFT OPEN WITHOUT VALVE BOX.
- PRESSURE TEST PUMP CONNECTS TO SERVICE LINE OR BLOWOFF. NO EXTRA TAPS ARE PERMITTED UNLESS PRECEDING ARE NOT PRESENT IN TEST SECTION.
- PRESSURE GAUGE TO BE LOCATED IN VICINITY OF TEST PUMP CONNECTION.
- GAUGE AND RISER TO BE REMOVED AFTER PRESSURE TEST.
- REMOVE TEMPORARY CONNECTION AT CORPORATION STOPS AFTER FILLING & FLUSHING HAS BEEN COMPLETED.
- NEW VALVE MAY BE REMOVED AT UTILITIES OPTION.
- INJECT CHLORINE ON PROJECT SIDE OF BACKFLOW PREVENTER.
- CONTRACTOR TO PROVIDE AN RPZ CERTIFICATION (LESS THAN 1 YEAR) PRIOR TO INSTALLATION.



NOTES:

- THE PRESSURE VACUUM BREAKER (P.V.B.) CANNOT BE INSTALLED WHERE IT WILL BE SUBJECTED TO BACK PRESSURE. IT PROVIDES PROTECTION AGAINST BACK-SIPHONAGE OF BOTH POLLUTANTS AND CONTAMINANTS.
- EACH P.V.B. SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION TO FACILITATE INSPECTION AND SERVICING.
- EACH P.V.B. SHALL BE INSTALLED ON THE MAIN LINE TO THE IRRIGATION SYSTEM AND AT LEAST 12 INCHES ABOVE THE HIGHEST SPRINKLER HEAD OR OUTLET. (VALVES MAY BE LOCATED DOWNSTREAM FROM THE DEVICE).
- ALL ABOVE GROUND PIPING WILL BE TYPE "K" OR "L" COPPER TUBING WITH SWEAT FITTINGS.
- IF CHEM FEED IS USED IN IRRIGATION LINE, THEN USE RPZ. RPZ MAY BE USED IN LIEU OF PRESSURE VACUUM BREAKER.



ITEM	QUANT.	DESCRIPTION
1	1	2" BACKFLOW PREVENTER
2	2	1" UNISTRUT w/STEEL STRAPS
3	1	2" COUPLING - COMPRESSION
4	2	2" X 90° ELBOW
5	4	2" X 6" NIPPLES
6		PEA GRAVEL
7		FILTER FABRIC
8		FINISHED GRADE
9	2	BALL VALVE

NOTES:

- INSTALLATION SHOWN ABOVE IS FOR A 2" SERVICE. CHANGE PIPING MATERIALS ACCORDINGLY FOR SERVICE SIZE.
- USE COPPER, BRASS OR STAINLESS STEEL FOR FITTINGS AND PIPE MATERIAL.

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION		PAGE No.
JULY, 2006	SAMPLE POINT DETAIL	9

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION		PAGE No.
JULY, 2006	DOUBLE VALVE DETAIL AND FILLING AND FLUSHING CONNECTION	10

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION		PAGE No.
JULY, 2006	PRESSURE - TYPE VACUUM BREAKER (P.V.B.) (IRRIGATION SYSTEM)	11

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION		PAGE No.
JULY, 2006	REDUCED PRESSURE BACKFLOW PREVENTER SINGLE SERVICE 3/4", 1", 1-1/2" AND 2"	12

DESIGNED: M.G.C. 11-16-05
 DRAWN: C.C. 11-16-05
 CHECKED: M.G.C. 11-16-05
 APPROVED: M.G.C. 11-16-05
 DATE: NOV. 2005
 PROJECT: B1101
 FILE: MC1-MC12 2006.dwg
 BY: [Signature]
 DATE: [Blank]
 REVISION: [Blank]
 NO. [Blank]

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 IT'S THE LAW!
 1-800-433-4770
 SUSTAINING STATE ONE CALL OF FLORIDA, INC.

SPECIAL NOTICE PER FAC 61G15-30.003:
 WATER MAIN, SEWER, AND IRRIGATION ARE REQUIRED TO BE PLACED ON THE DRAWINGS BY MARTIN COUNTY ENGINEERING & WATER RESOURCES, INC. IS PROVIDING THEM FOR INFORMATION ONLY AND DOES NOT ACCEPT RESPONSIBILITY FOR ITS ELEMENTS.

Engineering & Water Resources, Inc.
 7881 S.W. Ellipse Way, Stuart, Florida 34997
 Phone: (772) 761-0408 Fax: (772) 761-6008
 Certificate of Authorization: 00005566

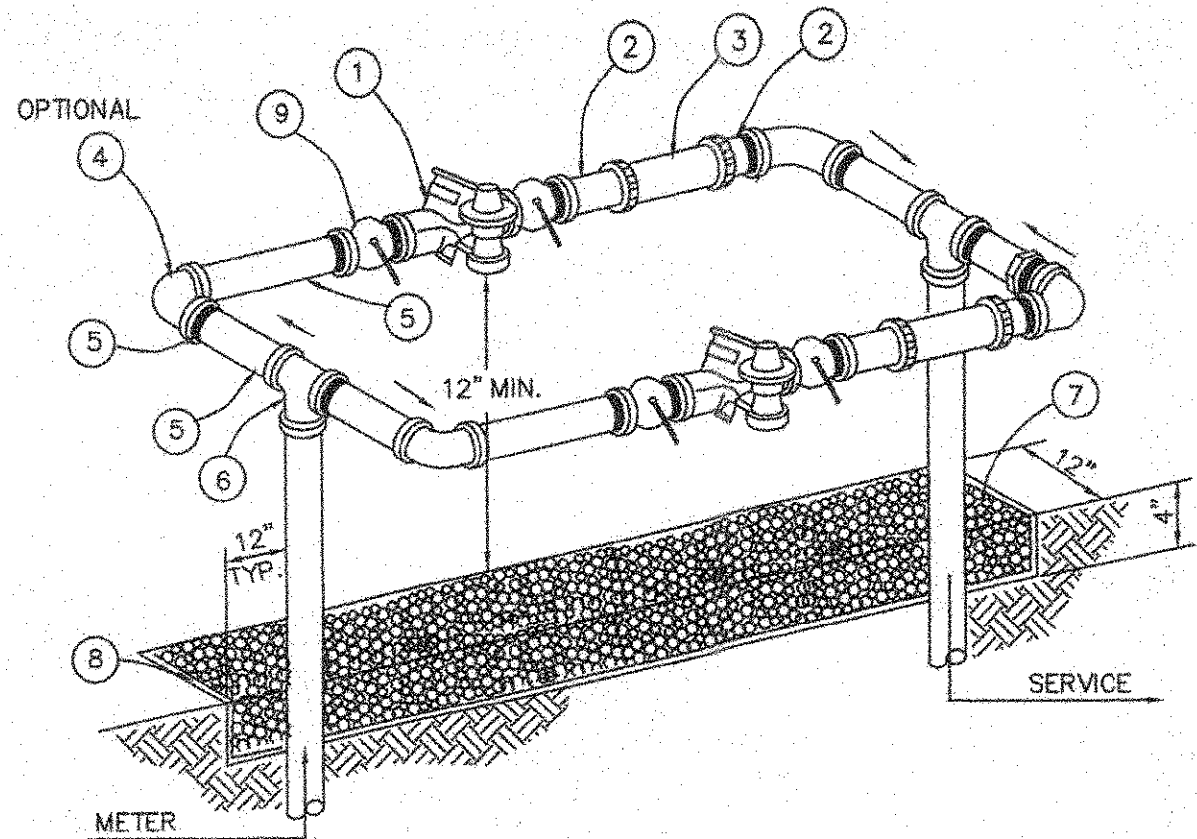
WATER & SEWER DETAILS

HAMMOCK RIDGE

MARTIN COUNTY, FLORIDA

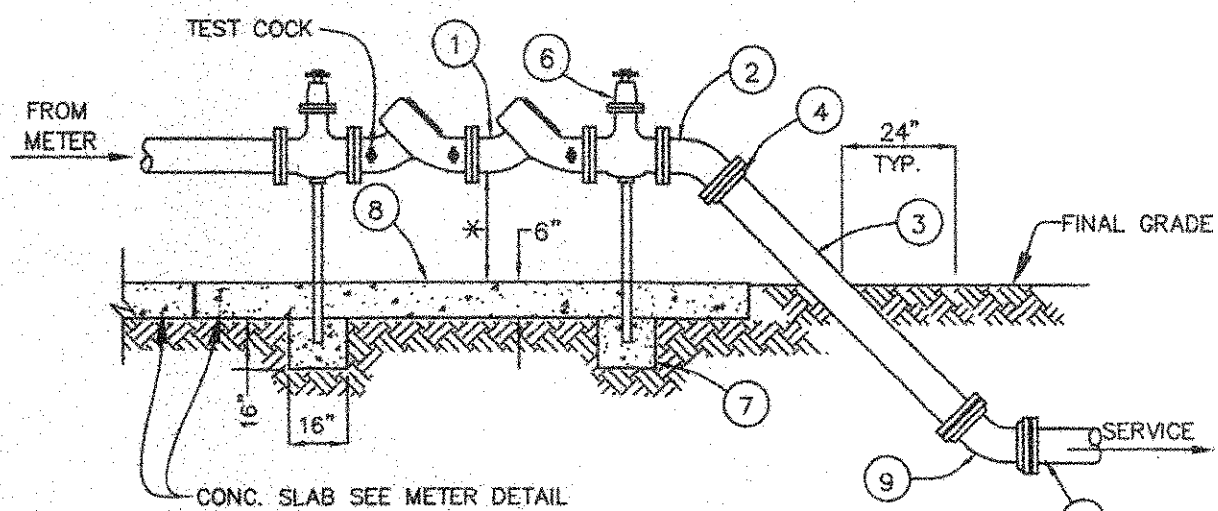
Sheet No.

MC-2



MATERIALS		
ITEM	QUANT.	DESCRIPTION
1	2	2" BACKFLOW PREVENTER
2	4	2" X 6" NIPPLES
3	2	2" X 90° ELBOW
4	4	2" X 4" NIPPLES
5	14	2" X 4" NIPPLES
6	2	2" TEE
7	*	PEA GRAVEL
8	*	FILTER FABRIC
9	4	BALL VALVES

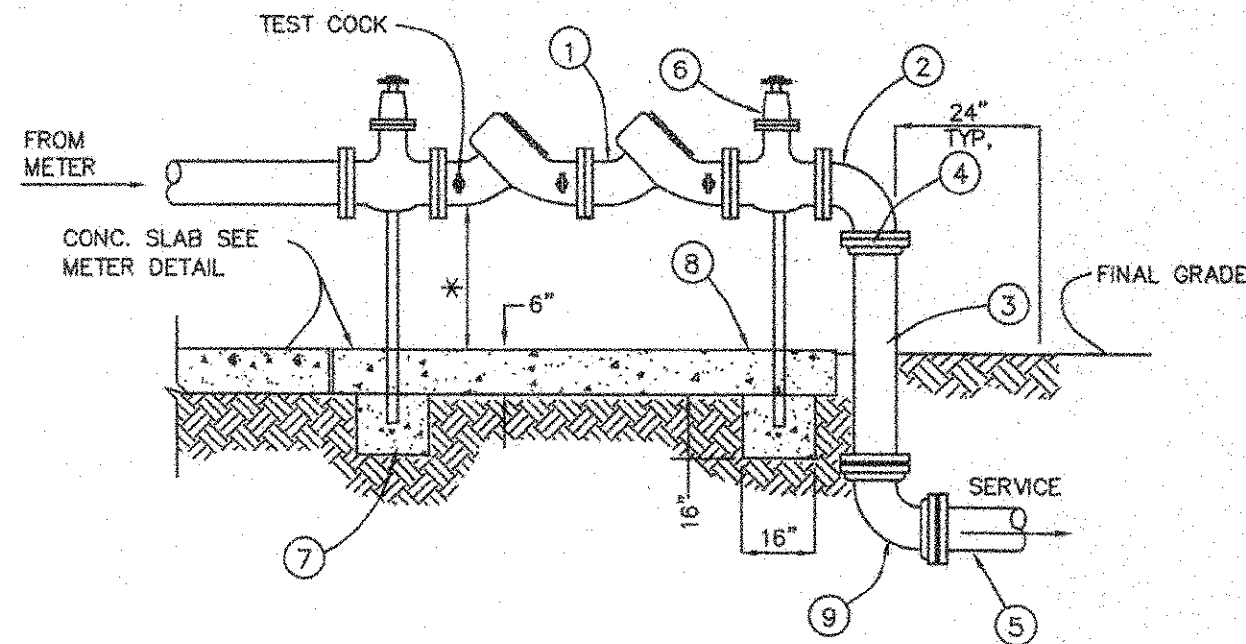
- NOTES:
1. INSTALLATION SHOWN ABOVE IS FOR A 2" SERVICE. CHANGE PIPING MATERIALS ACCORDINGLY FOR SERVICE SIZE.
 2. USE COPPER, BRASS OR STAINLESS STEEL FOR FITTINGS AND PIPE MATERIAL.



* BACKFLOW TO BE THE SAME DISTANCE ABOVE GRADE AS METER

MATERIAL		
ITEM	QUANT.	DESCRIPTION
1	1	4", 6", 8" VALVE, O.C. BACKFLOW PREVENTER
2	2	4", 6", 8" BEND - 45° (FLANGE-FLANGE)
3	*	4", 6", 8" PIPE, DUCTILE IRON (CLASS 350)
4	2	4", 6", 8" ADAPTER, FLANGE, D.I.P.
5	2	4", 6", 8" PIPE, P.V.C. (DR-18)
6	2	4", 6", 8" GATE VALVE, C.I., (FLANGE-FLANGE)
7	2	2" IRON PIPE / CONCRETE FOUNDATION
8	1	6" CONCRETE SLAB
9	2	BEND - 45° (MJ-MJ)

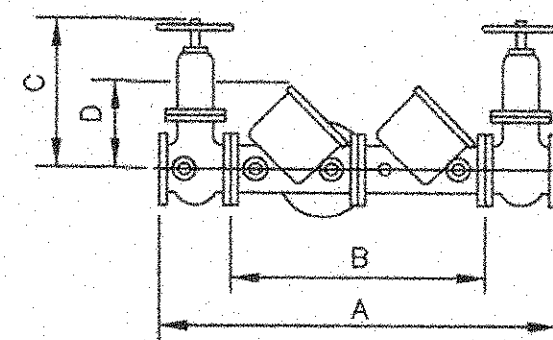
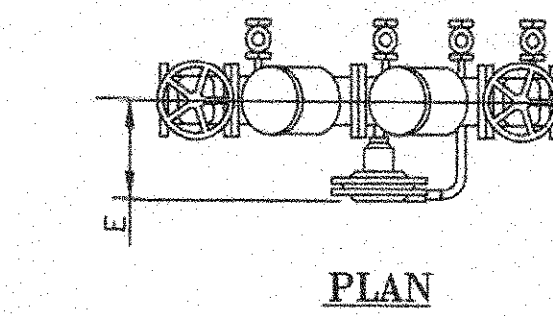
- NOTE:
1. FIELD ADJUST AND CUT ITEM 3 TO PROPER LENGTH. THIS TYPE OF CONSTRUCTION IS DESIGNED FOR LIMITED WORKING AREA.
 2. ALL EXPOSED DUCTILE IRON PIPES AND FITTINGS SHALL BE PAINTED "BLUE". PAINT SPECIFICATIONS MUST BE SUBMITTED TO MARTIN COUNTY UTILITIES PRIOR TO APPLICATION.



* BACKFLOW TO BE THE SAME DISTANCE ABOVE GRADE AS METER

MATERIAL		
ITEM	QUANT.	DESCRIPTION
1	1	4", 6", 8" VALVE, O.C. BACKFLOW PREVENTER
2	2	4", 6", 8" BEND - 90° (FLANGE-FLANGE)
3	*	4", 6", 8" PIPE, DUCTILE IRON (CLASS 350)
4	2	4", 6", 8" ADAPTER, FLANGE, D.I.P.
5	2	4", 6", 8" PIPE, P.V.C. (DR-18)
6	2	4", 6", 8" GATE VALVE, C.I., (FLANGE-FLANGE)
7	2	2" IRON PIPE / CONCRETE FOUNDATION
8	1	6" CONCRETE SLAB
9	2	BEND - 90° (MJ-MJ)

- NOTE:
1. FIELD ADJUST AND CUT ITEM 3 TO PROPER LENGTH. THIS TYPE OF CONSTRUCTION IS DESIGNED FOR LIMITED WORKING AREA.
 2. ALL EXPOSED DUCTILE IRON PIPES AND FITTINGS SHALL BE PAINTED "BLUE". PAINT SPECIFICATIONS MUST BE SUBMITTED TO MARTIN COUNTY UTILITIES PRIOR TO APPLICATION.



- KEY TO TABLE OF DIMENSIONS
- A = FACE TO FACE, OUTSIDE
 - B = FACE TO FACE, INSIDE
 - C = CENTER TO TOP OF GATE VALVE
 - D = CENTER TO TOP OF MAIN VALVE BODY
 - E = CENTER TO FACE OF RELIEF VALVE ASSEMBLY

SIZE INCHES	DIA. OF FLANGE	FLANGE THICK.	DIMENSIONS (INCH) AND WEIGHT (LBS)				
			A	B	C	D	E
4	9	15/16	50-7/16	32-5/16	17-3/8	11	12-1/2
6	11	1	59-11/16	38-9/16	21-1/4	14	14
8	13-1/2	1-1/8	67-3/16	46-1/16	26	18	15
10	16	1-3/16	84-3/16	58-1/16	30	22	18

SIZE OF ALL FITTINGS LISTED INDICATES NOMINAL INSIDE DIAMETER OF PORT

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	REDUCED PRESSURE BACKFLOW PREVENTER DUAL SERVICE 3/4", 1", 1-1/2" AND 2"	PAGE No.
JULY, 2006		13

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

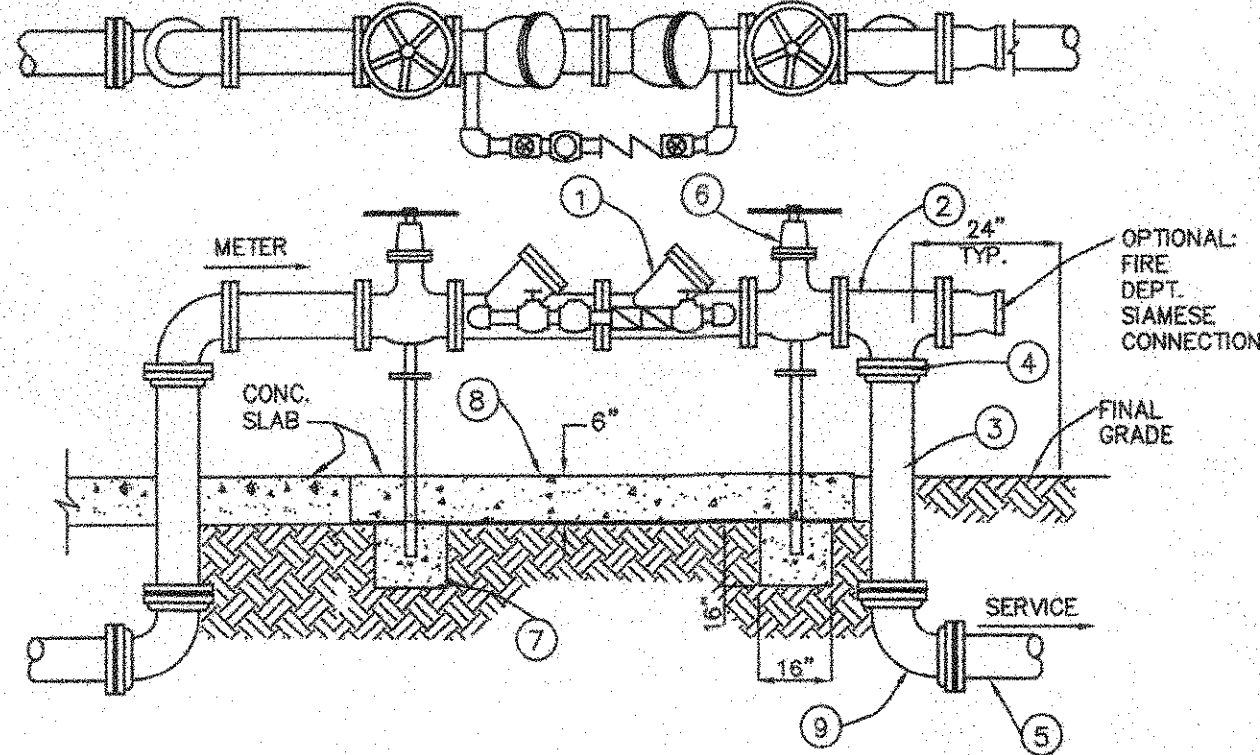
REVISION	BACKFLOW PREVENTER SINGLE SERVICE 4", 6" AND 8" (45 ELL)	PAGE No.
JULY, 2006		14

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	BACKFLOW PREVENTER SINGLE SERVICE 4", 6" AND 8" (90 ELL)	PAGE No.
JULY, 2006		14A

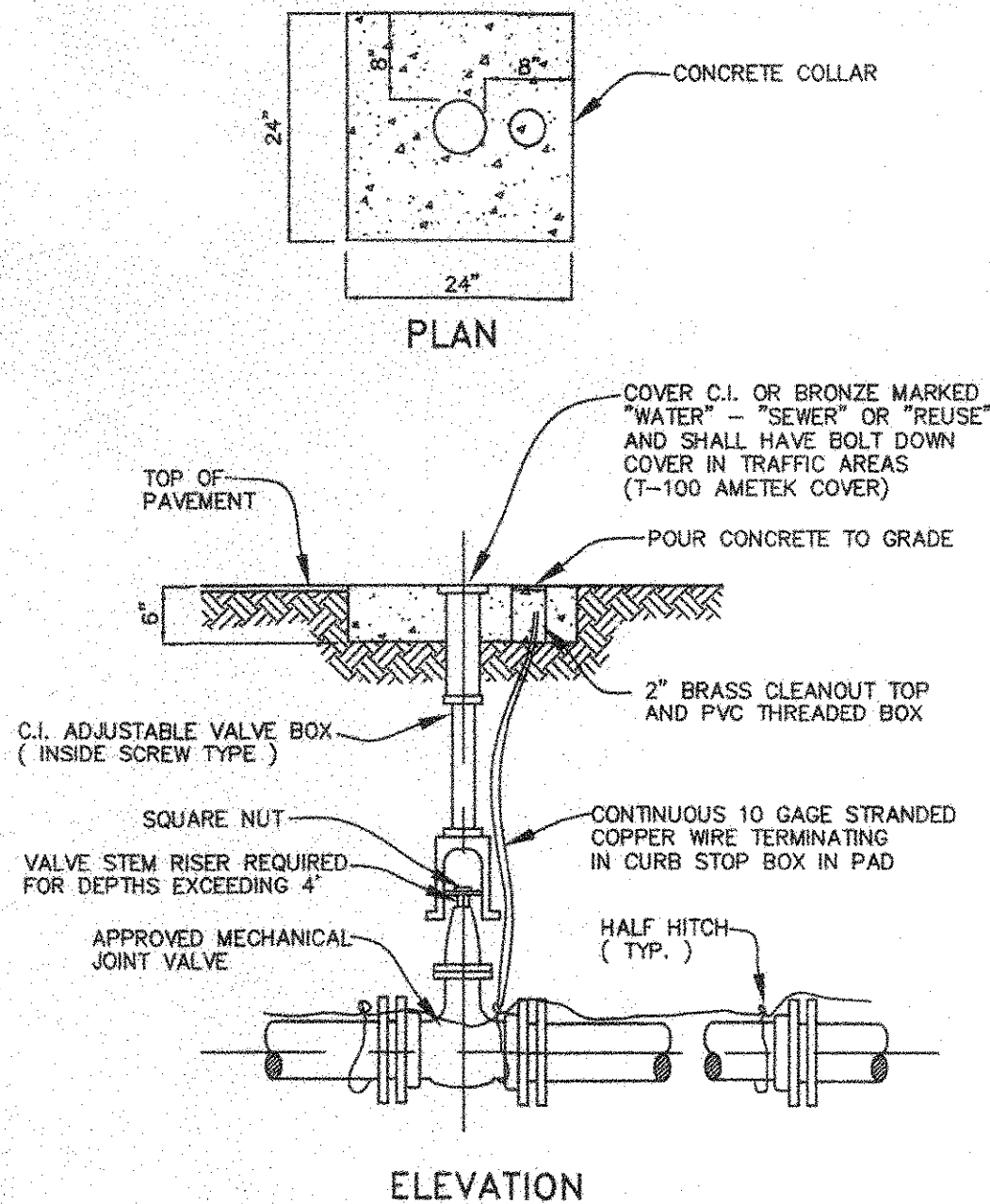
MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	BACKFLOW PREVENTER ASSEMBLIES (4 INCH TO 10 INCH DIA.)	PAGE No.
JULY, 2006		15



MATERIAL		
ITEM	QUANT.	DESCRIPTION
1	1	2", 4", 6", 8" VALVE, O.C. BACKFLOW PREVENTER
2	2	2", 4", 6", 8" BEND - 45° (FLANGE-FLANGE)
3	*	2", 4", 6", 8" PIPE, DUCTILE IRON (CLASS 350)
4	2	2", 4", 6", 8" ADAPTER, FLANGE, D.I.P.
5	2	2", 4", 6", 8" PIPE
6	2	2", 4", 6", 8" GATE VALVE, C.I., (FLANGE-FLANGE)
7	2	2" IRON PIPE / CONCRETE FOUNDATION
8	1	6" CONCRETE SLAB
9	3	BEND - 90° (MJ-MJ)

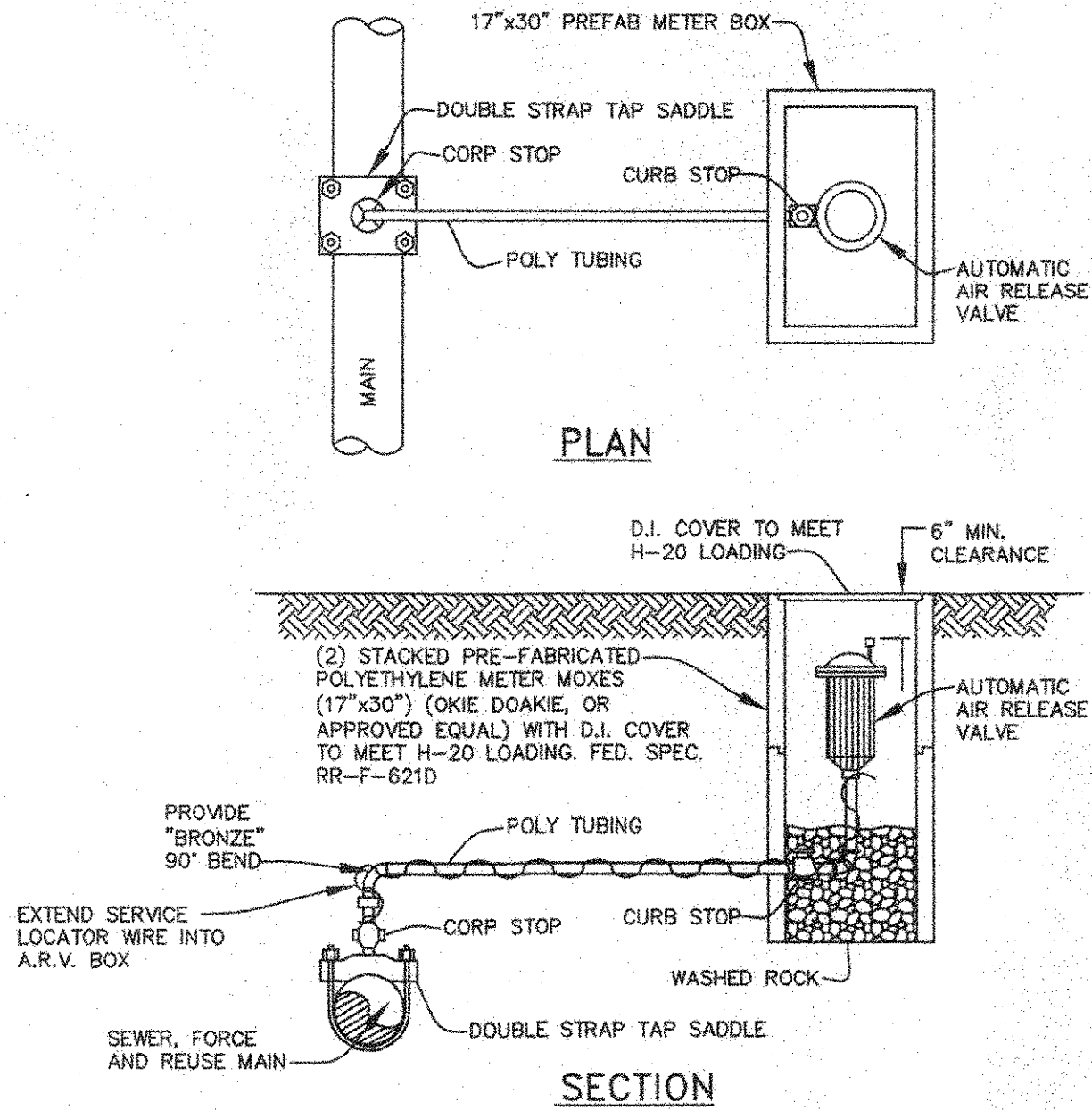
- NOTE:
1. FIELD ADJUST AND CUT ITEM 3 TO PROPER LENGTH. THIS TYPE OF CONSTRUCTION IS DESIGNED FOR LIMITED WORKING AREA.
 2. ALL EXPOSED DUCTILE IRON PIPES AND FITTINGS SHALL BE PAINTED "RED". PAINT SPECIFICATIONS MUST BE SUBMITTED TO MARTIN COUNTY UTILITIES PRIOR TO APPLICATION.



ELEVATION

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	VALVE SETTING DETAIL	PAGE No.
JULY, 2006		17

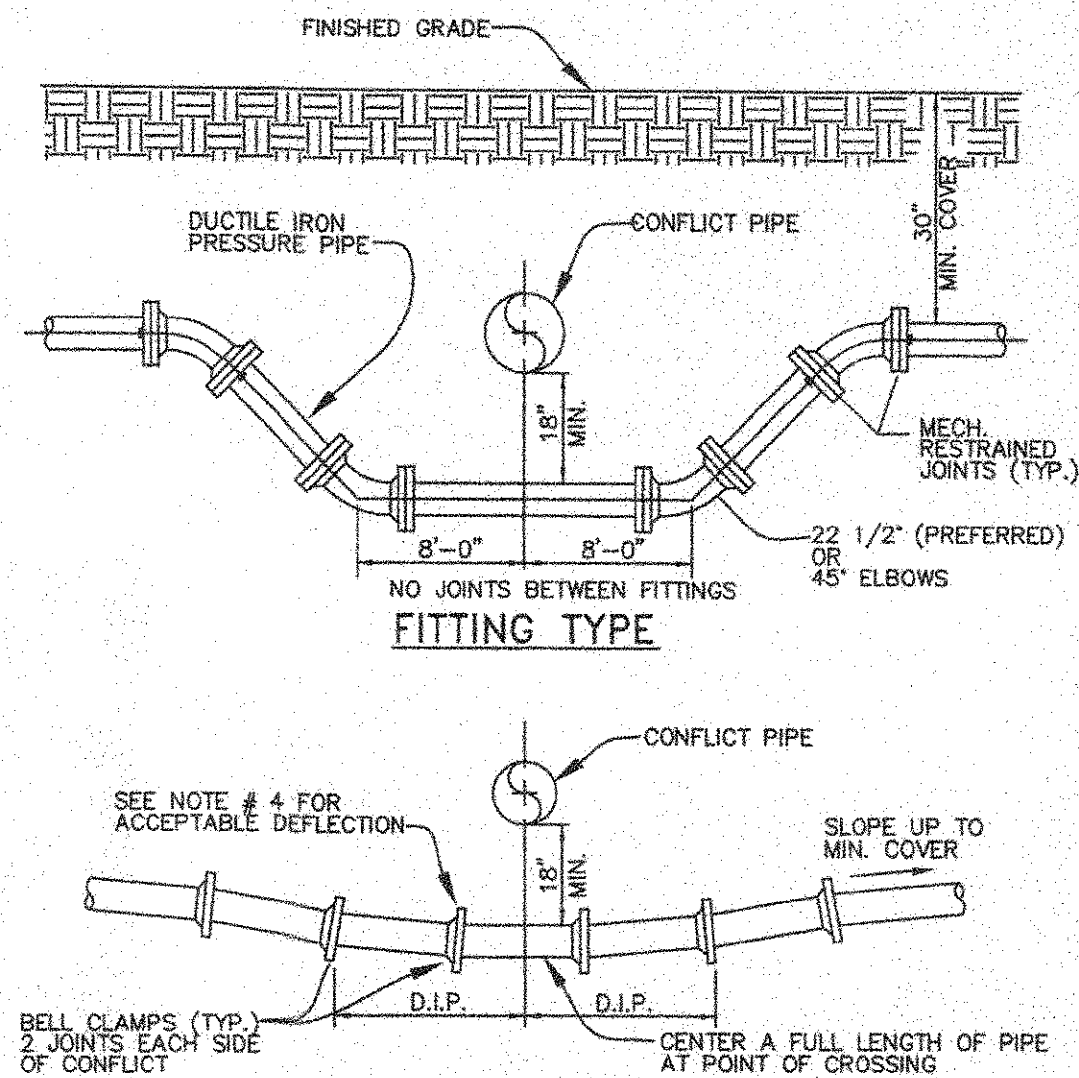


SECTION

- NOTE:
1. AIR RELEASE VALVE SHALL BE TYPE AND SIZE APPROPRIATE FOR SERVICE INTENDED.
 2. POLYETHYLENE SHALL BE AS DEFINED BY A.S.T.M. D2737 SD9 AND AWWA 901, LATEST EDITION, AND BE PRESSURE RATED FOR 200 PSI.
 3. TUBING SHALL BE MARKED WITH SIZE, MANUFACTURER'S NAME, WORKING PRESSURE, NATIONAL SANITATION FOUNDATION APPROVAL, A.S.T.M. SPECIFICATION AND PRODUCTION CODE. TUBING SHALL HAVE AN OUTSIDE DIAMETER EQUIVALENT TO THE OUTER DIAMETER OF COPPER TUBING.
 4. COMPRESSION FITTINGS SHALL BE SUITABLE FOR TUBING USED AND REQUIRE METAL (S.S.) INSERTS.
 5. FOR MINIMUM PIPING AND AIR RELEASE VALVE SIZES, REFER TO M.C.U. APPROVED PRODUCT LIST. ENGINEER OF RECORD SHALL BE RESPONSIBLE FOR SIZING.
 6. LOCATOR WIRE SHALL BE LAID IN THE TRENCH WITH ALL ARV'S CONNECTED TO THE MAIN WIRE AND WRAPPED AROUND THE ARV PIPING OR TUBING. WIRE FOR POTABLE WATER SHALL BE BLUE IN COLOR.

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	UNDERGROUND AIR RELEASE VALVE AND BOX	PAGE No.
JULY, 2006		18



DEFLECTION TYPE

- NOTES:
1. THESE METHODS ARE TO BE USED WHEN INSUFFICIENT COVER EXISTS TO ALLOW PRESSURE PIPE TO CROSS ABOVE CONFLICT PIPE WITH 6" VERTICAL SEPARATION AND MAINTAIN REQUIRED COVER TO FINISHED GRADE.
 2. FITTINGS SHALL BE RESTRAINED WITH RETAINER GLANDS.
 3. THE DEFLECTION TYPE CROSSING IS PREFERRED.
 4. DO NOT EXCEED 75% OF MANUFACTURER'S RECOMMENDED MAXIMUM JOINT DEFLECTION.

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	PRESSURE PIPE CONFLICT DETAIL	PAGE No.
JULY, 2006		19

Engineering & Water Resources, Inc.
7881 S.W. Ellipse Way, Stuart, Florida 34997
Phone: (772) 781-6408 Fax: (772) 781-6409 Web: www.ewr1.com
Certificate of Authorization: 00008586

WATER & SEWER DETAILS
HAMMOCK RIDGE
MARTIN COUNTY, FLORIDA

Sheet No.

MC-3

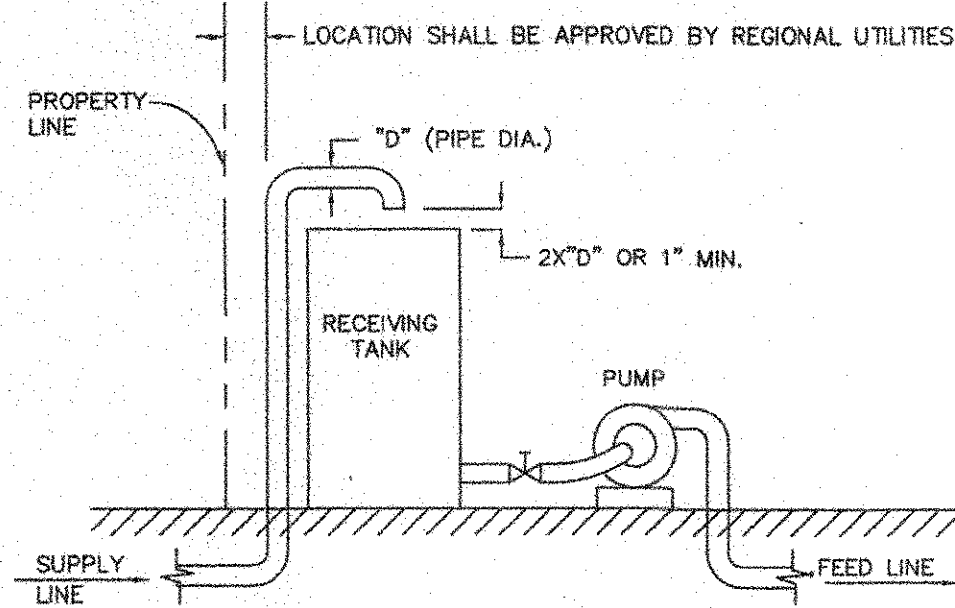
\\B1101\DWG\CONCEPT\MC1-MC12 2006.dwg, PRINTED BY: dmshew ON Tue, Jan 02 2007

MIN. LENGTH OF PIPE (FEET) TO BE RESTRAINED
(SOURCES: EBAA IRON RESTRAINT LENGTH CALCULATION PROGRAM FOR PVC PIPE, RELEASE 3.1,
AND DIPRA THRUST RESTRAINT FOR DUCTILE IRON PIPE, RELEASE 3.2)

FITTING TYPE		PIPE SIZE								
		4"	6"	8"	10"	12"	16"	20"	24"	
90° HORIZ. BEND		14	20	25	30	35	45	54	62	
45° HORIZ. BEND		6	8	11	13	15	19	22	26	
22.5° HORIZ. BEND		3	4	5	6	7	9	11	12	
11.25° HORIZ. BEND		1	2	3	3	4	4	5	6	
90° VERT. OFFSET	UPPER BEND	29	41	53	64	74	95	115	134	
	LOWER BEND	7	10	13	16	19	25	30	35	
45° VERT. OFFSET	UPPER BEND	12	19	24	29	34	39	48	56	
	LOWER BEND	3	4	6	7	8	10	12	15	
22.5° VERT. OFFSET	UPPER BEND	6	9	12	14	17	19	23	27	
	LOWER BEND	1	2	4	4	4	5	6	7	
11.25° VERT. OFFSET	UPPER BEND	3	4	6	7	8	9	11	13	
	LOWER BEND	1	1	1	2	2	2	3	3	
PLUG (DEAD END)		32	45	59	70	83	107	129	151	
IN-LINE VALVE		32	45	45	45	45	55	65	80	
TEE (BRANCH RESTRAINT)		4" X 6"	23	-	-	-	-	-	-	-
		6" X 6"	21	35	-	-	-	-	-	-
		8" X 6"	18	34	47	-	-	-	-	-
		10" X 6"	16	32	46	58	-	-	-	-
		12" X 6"	13	30	44	57	69	-	-	-
		16" X 6"	7	26	41	55	67	90	-	-
		20" X 6"	1	21	38	52	65	88	109	-
		24" X 6"	1	16	34	49	62	86	108	129
REDUCER (LARGER PIPE RESTRAINT)		30" X 6"	1	8	28	44	58	83	106	127
		36" X 6"	1	1	22	39	54	80	103	124
		42" X 6"	1	1	15	33	49	77	100	122
		48" X 6"	1	1	7	27	44	73	97	120
		6" X 8"	23	-	-	-	-	-	-	-
		8" X 8"	38	25	-	-	-	-	-	-
REDUCER (LARGER PIPE RESTRAINT)		10" X 8"	57	43	24	-	-	-	-	
		12" X 8"	72	60	44	41	-	-	-	-
		16" X 8"	99	90	78	75	45	-	-	-
		20" X 8"	123	116	107	105	81	45	-	-
		24" X 8"	146	140	132	131	111	82	45	-

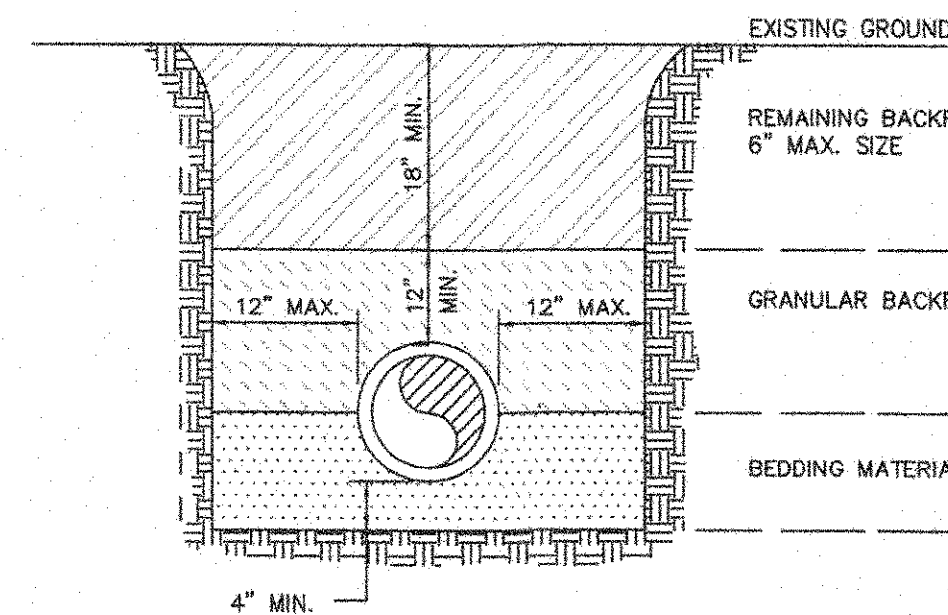
NOTES:

- THE DATA IN THE ABOVE TABLE ARE BASED UPON THE FOLLOWING INSTALLATION CONDITIONS:
SOIL TYPE-SAND TEST PRESSURE-150 PSI DEPTH OF BURY-3'
TRENCH TYPE-3 SAFETY FACTOR-1.5 VERTICAL OFFSET-3'
MINIMUM PIPE LENGTH ALONG TEE RUN-5'
- THE RESTRAINED PIPE LENGTHS APPLY TO DUCTILE IRON AND PVC PIPE.
- ALL JOINTS BETWEEN UPPER AND LOWER BENDS SHALL BE RESTRAINED.
- RESTRAINED PIPE LENGTHS APPLY TO PIPE ON BOTH SIDES OF VALVES AND FITTINGS.



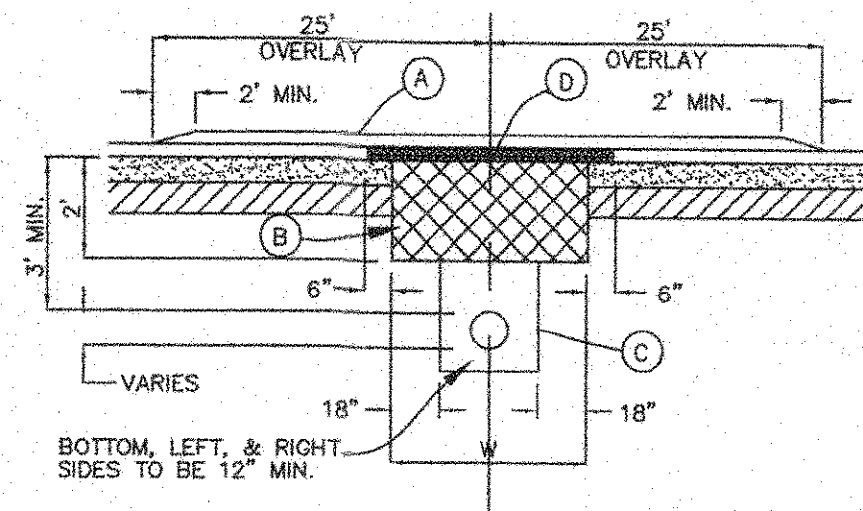
NOTES:

- AN AIR GAP SEPARATION MEANS THE UNOBSTRUCTED VERTICAL DISTANCE THROUGH THE FREE ATMOSPHERE BETWEEN THE LOWEST OPENING FROM ANY PIPE OR FAUCET SUPPLYING WATER TO A TANK, PLUMBING FIXTURE OR OTHER DEVICE AND THE FLOOD LEVEL OR OVERFLOW RIM OF THE RECEPABLE.
- THE "APPROVED AIR GAP SEPARATION" SHALL BE AT LEAST DOUBLE THE DIAMETER OF THE SUPPLY PIPE MEASURED VERTICALLY ABOVE THE OVERFLOW RIM OF THE VESSEL AND IN NO CASE SHALL THE GAP BE LESS THAN ONE (1) INCH IN DIAMETER.



NOTES:

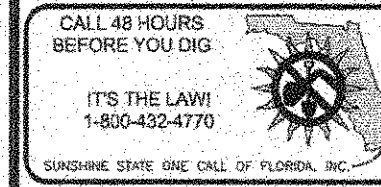
- BEDDING MATERIAL SHALL BE HAND PLACED IN 6" LIFTS AND SHALL CONSIST OF IN-SITU GRANULAR MATERIAL OR WASHED AND GRADED LIMEROCK 3/8"-7/8" SIZING, UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGER ROCK SHALL BE REMOVED.
- THE PIPE SHALL BE FULLY SUPPORTED FOR ITS ENTIRE LENGTH WITH APPROPRIATE COMPACTION UNDER THE PIPE HAUNCHES.
- THE PIPE SHALL BE PLACED IN A DRY TRENCH.
- BACKFILL SHALL BE DONE WITH APPROVED MATERIAL, CLEAN AND FREE OF ROCKS, MUCK AND OTHER DELETERIOUS MATTER AND COMPACTED BENEATH THE HAUNCHES OF THE PIPE USING MECHANICAL TAMPERS TO 100% MAXIMUM DENSITY AS DETERMINED BY AASHTO T-99.
- BACKFILL TO BE COMPACTED ALONG THE SIDES OF THE PIPE AND TO A POINT ONE FOOT ABOVE THE TOP OF THE PIPE TO 100% MAXIMUM DENSITY AS DETERMINED BY AASHTO T-99.
- A. WHERE PAVEMENT IS TO BE CONSTRUCTED OVER THE PIPE THE REMAINING BACKFILL SHALL BE COMPACTED IN 6 INCH LAYERS AND COMPACTED TO 95% MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.
B. WHERE "NO" PAVEMENT IS TO BE CONSTRUCTED OVER THE PIPE THE REMAINING FILL SHALL BE COMPACTED IN 6 INCH LAYERS TO A DENSITY 90% MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.
- CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL TRENCH SAFETY REGULATIONS



- OVERLAY 25.0 FROM CENTER LINE OF TRENCH, BOTH SIDES OF OPEN CUT WITH 1" MINIMUM TYPE S-III ASPHALT OR MATCH EXISTING SURFACE MATERIAL WHEN POSSIBLE.
- CONSTRUCT 2.0' DEEP X WIDTH AND LENGTH OF TRENCH WITH CEMENTED COQUINA OR LIMEROCK. SEE SPECIFICATIONS #2 BELOW FOR COMPACTION REQUIREMENTS.
- PROVIDE CLEAN BACKFILL. BACKFILL SHALL BE REPLACED IN 6" LAYERS. EACH LAYER SHALL BE MECHANICALLY COMPACTED TO A MINIMUM 100% DENSITY AS DETERMINED BY AASHTO T-99, METHOD "C".
- DITCH WIDTH (W)+12", MATCH EXISTING TYPE AND THICKNESS OF ASPHALT OR TYPE S-III.

NOTES:

- REPLACED BASE MATERIAL OVER DITCH SHALL BE AS SHOWN ABOVE. BASE MATERIAL SHALL BE PLACED IN 6" LAYERS OR AS OTHERWISE APPROVED AND EACH LAYER THOROUGHLY MECHANICALLY COMPACTED TO (98%) DENSITY AS DETERMINED BY AASHTO T-180.
- ASPHALT CONCRETE PAVEMENT JOINTS SHALL BE LAPPED AND FEATHERED.
- ALL PAVEMENT JOINTS SHALL BE MECHANICALLY SAWED.
- SURFACE MATERIAL WILL BE CONSISTENT WITH EXISTING SURFACE OR AS OTHERWISE DIRECTED (TYPE S-III) AND PLACED IN ACCORDANCE WITH FDOT REQUIREMENTS.
- A MINIMUM OF TWO DENSITY TESTS SHALL BE TAKEN FOR EACH SIX (6) INCH LIFT OF SUBGRADE AND EACH OPEN CUT CROSSING. WHEN THE SPECIFIED COMPACTED BASE IS GREATER THAN SIX AND ONE-HALF (6-1/2) INCHES THE BASE SHALL BE CONSTRUCTED IN TWO OR MORE COURSES. PROCTORS FOR MATERIALS USED IN BACK-FILLING SHALL BE OBTAINED BY A CERTIFIED LABORATORY. DENSITY TESTS SHALL BE CONDUCTED BY A CERTIFIED LABORATORY OR THE PERMITTEE'S CONSULTANTS. THE PERCENTAGE OF MAXIMUM DENSITY REQUIRED SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS. A COPY OF ALL COMPLETED AND ACCEPTED DENSITY TESTS SHALL BE FURNISHED TO THE COUNTY ENGINEER'S OFFICE PRIOR TO FINAL INSPECTION.



MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	MECHANICAL JOINT ANCHORING REQUIREMENTS	PAGE No.
JULY, 2006		20

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

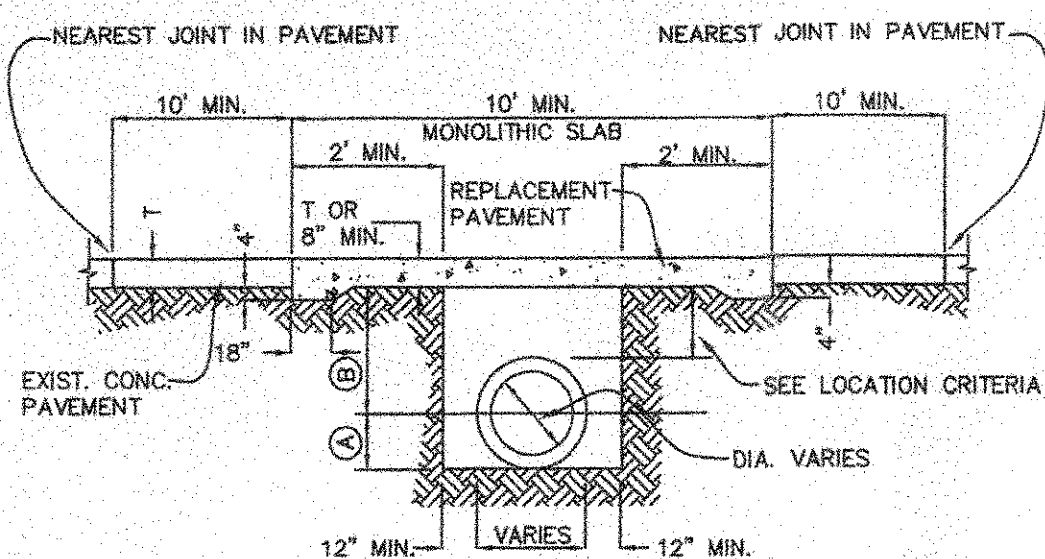
REVISION	AIR GAP SEPARATION	PAGE No.
JULY, 2006		21

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	TYPICAL TRENCH DETAIL	PAGE No.
JULY, 2006		22

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	FLEXIBLE PAVEMENT REPLACEMENT DETAIL	PAGE No.
JULY, 2006		23



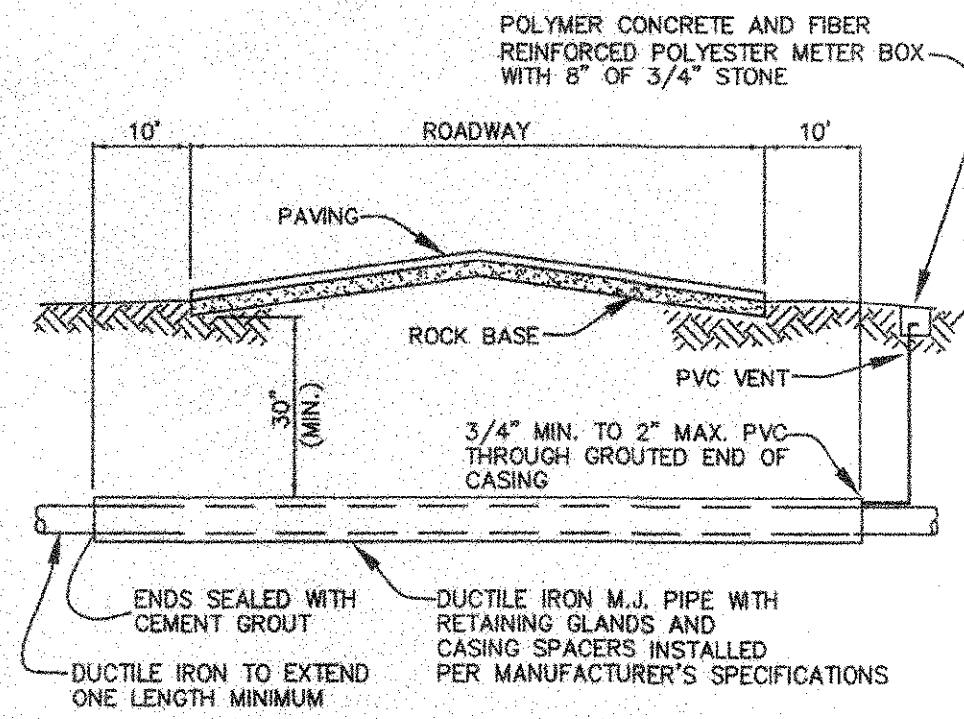
REPLACEMENT OF CONCRETE PAVEMENT FOR PERMITTED PAVEMENT CUT

DENSITY PROCEDURES:

- THE BACKFILL FOR (A) AND (B) SHALL BE PLACED IN 6" LAYERS (COMPACTED THICKNESS) AND SHALL BE COMPACTED TO 100% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-99 METHOD "C".
- (A) THE PERMITTEE SHALL PROVIDE ADEQUATE COMPACTED FILL BENEATH THE HAUNCHES OF THE PIPE, USING MECHANICAL TAMPERS SUITABLE FOR THIS PURPOSE. THIS COMPACTION APPLIES TO THE MATERIAL PLACED BENEATH THE HAUNCHES OF THE PIPE AND ABOVE ANY BEDDING REQUIRED.
- (B) THE PERMITTEE SHALL OBTAIN A WELL COMPACTED BED AND FILL ALONG THE SIDES OF THE PIPE AND TO A POINT INDICATING THE BOTTOM OF REPLACEMENT PAVEMENT.

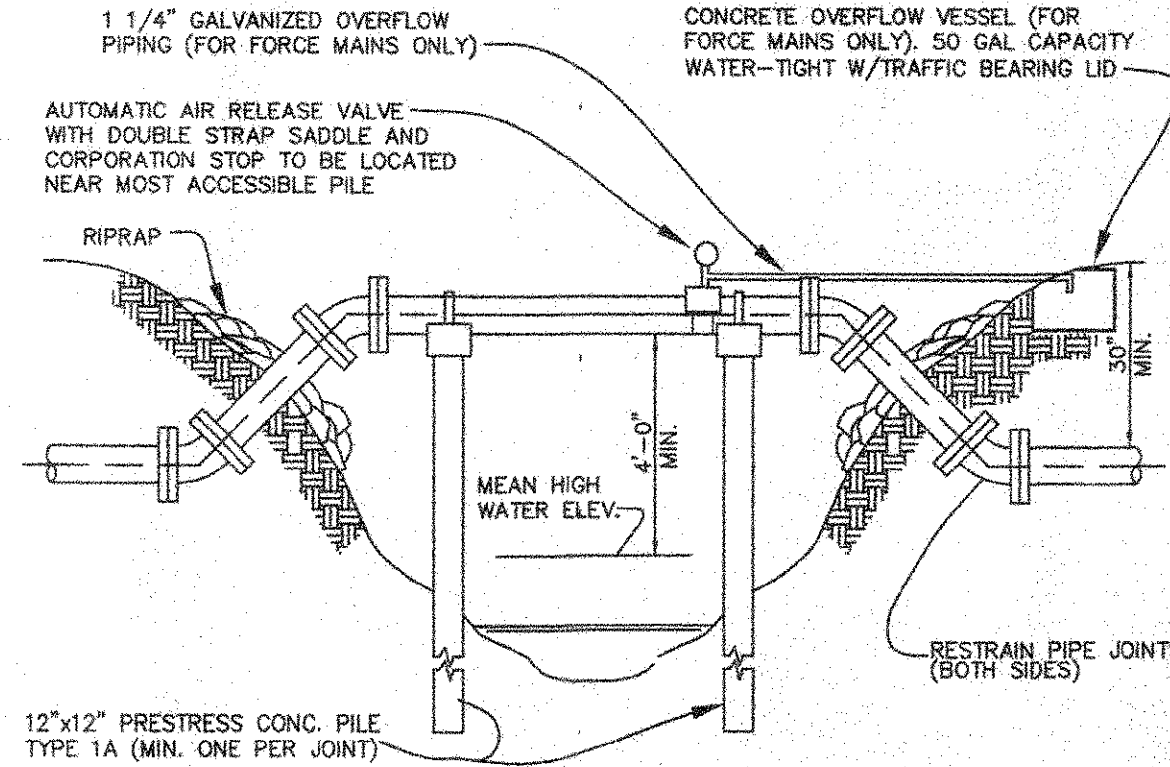
GENERAL NOTES:

- 3000 P.S.I. CONCRETE, BY USE OF HIGH EARLY STRENGTH CEMENT, TO BE USED FOR REPLACEMENT, OR OTHER APPROVED HIGH STRENGTH, FAST SET MATERIALS.
- CONCRETE PAVEMENT JOINTS SHALL BE MECHANICALLY SAWED TO CONFORM WITH ADJOINING SLABS.
- BACKFILL MATERIAL SHALL BE EITHER OF THE SAME TYPE AND COMPOSITION AS THE MATERIAL REMOVED, OR OF EQUAL OR GREATER STRUCTURAL ADEQUACY. MATERIALS CONTAMINATED WITH DELETERIOUS SUBSTANCES DURING EXCAVATION SHALL NOT BE USED.



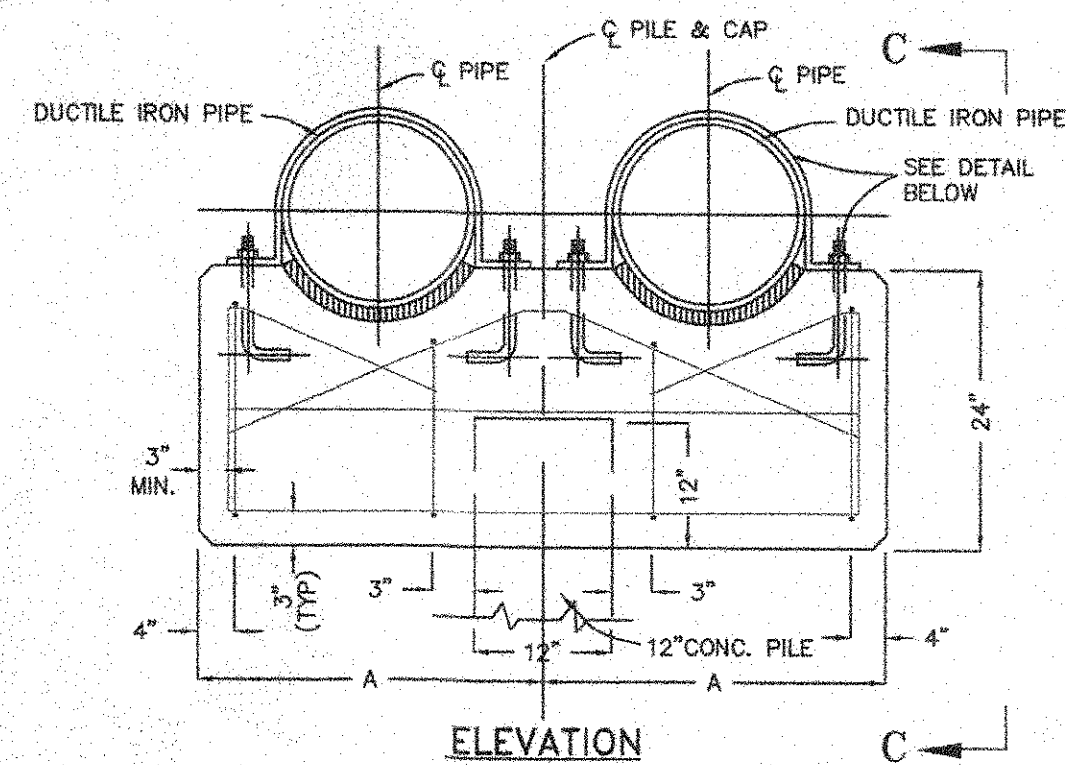
CARRIER PIPE SIZE	MINIMUM STEEL CASING	MINIMUM WALL THICKNESS
4"	12"	.250
6"	16"	.250
8"	18"	.312
10"	20"	.375
12"	24"	.375
16"	30"	.500
18"	30"	.500
20"	36"	.562
24"	36"	.562

NOTE: LOCATOR WIRE SHALL BE MIN. #8 GA. MULTI-STRAND WIRE FOR ALL BORE & JACKING AND HORIZONTAL DIRECTIONAL DRILLS.

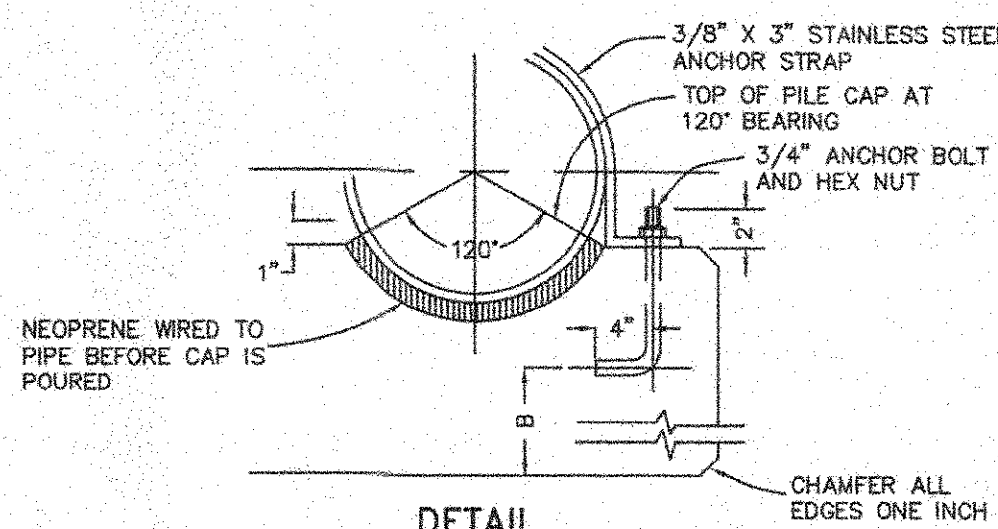


NOTES:

- ALL EXPOSED PIPES SHALL BE DUCTILE IRON WITH FLANGED FITTINGS. RETAINER GLANDS, UNFLANGE TYPE FITTINGS ARE NOT TO BE SUBSTITUTED FOR FLANGED FITTINGS.
- SPAN HEIGHT AS REQUIRED BY PERMITTING AGENCY.
- MAXIMUM SUPPORT SPACING SHALL BE IN ACCORDANCE TO MANUFACTURERS RECOMMENDATION.
- FAN GUARDS ARE REQUIRED, SEE STANDARD DETAIL.
- ALL EXPOSED PIPING, GUARDS AND FITTINGS SHALL BE PAINTED.
- PIPE SHALL BE CRADLED ON NEOPRENE.
- TIE-DOWN STRAPS MUST PROPERLY FIT AND SECURE PIPE IN CRADLE.
- FOR CONCRETE PILES SEE DETAILS.
- ALL PAINT SPECIFICATIONS MUST BE SUBMITTED AND APPROVED BY MARTIN COUNTY UTILITIES PRIOR TO APPLICATION.
- CONCRETE IN C.I.P. CAP SHALL HAVE A 28 DAY COMPRESSIVE STRENGTH OF 3,400 P.S.I.
- ALL REINFORCING STEEL SHALL BE ASTM A615 GRADE 60.
- THE PILES SHALL BE DRIVEN TO A MINIMUM PENETRATION OF 20'-0" UNLESS THE PRESENCE OF POOR SOILS (N<3) NECESSITATE A DEEPER PENETRATION.
- PROVIDE TWO FULL LENGTHS OF RESTRAINED D.I.P. BOTH SIDES OF CROSSING.
- CONTINUE LOCATOR WIRE ACROSS CANAL CROSSING.



- NOTE:
- ALL REINF. STEEL SHALL BE NO. 4 BARS.
 - ALL HARDWARE SHALL BE STAINLESS STEEL.
 - SEE SHEET 26A FOR ADDITIONAL DIMENSIONS.



MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	CONCRETE PAVEMENT REPLACEMENT DETAIL	PAGE No.
JULY, 2006		24

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	CASING INSTALLATION DETAIL	PAGE No.
JULY, 2006		25

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	TYPICAL UTILITIES CANAL CROSSING	PAGE No.
JULY, 2006		26

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	PILE CAP SUPPORT DETAIL DUAL PIPE (ELEVATION)	PAGE No.
JULY, 2006		27

SPECIAL NOTICE PER FAC 61G15-30.003.

NOTED DETAIL WERE PREPARED AND REQUIRED TO BE PLACED ON RECORD DRAWING. THE ENGINEER'S OFFICE IS PROVIDING THEM FOR INFORMATION ONLY AND DOES NOT ACCEPT RESPONSIBILITY FOR THESE ELEMENTS.

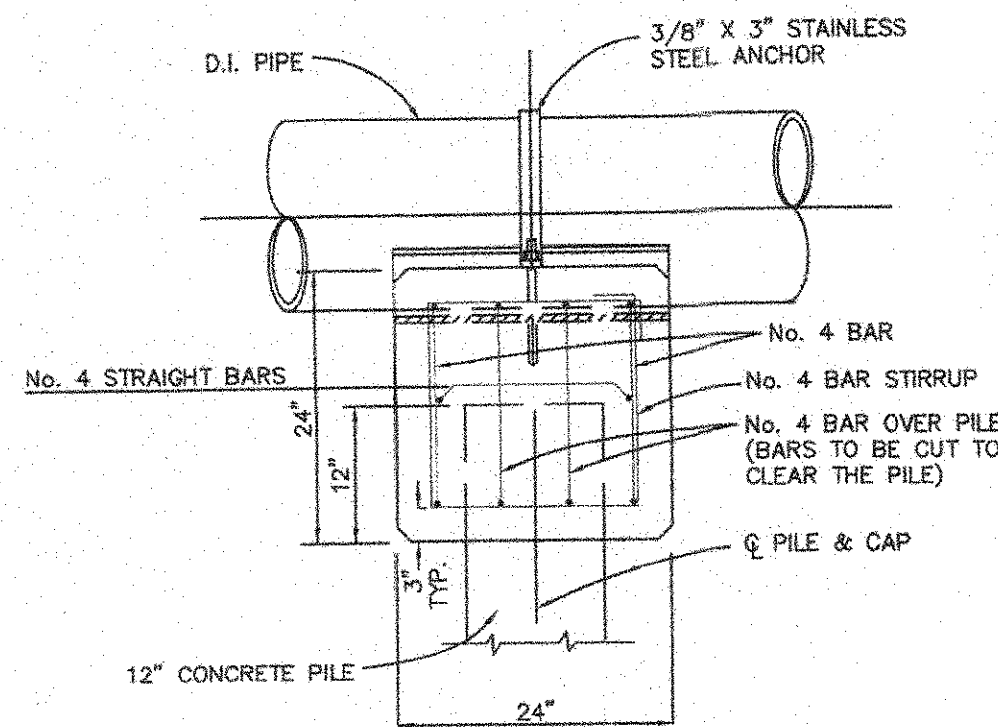
WATER & SEWER DETAILS

HAMMOCK RIDGE

Sheet No.

MC-4

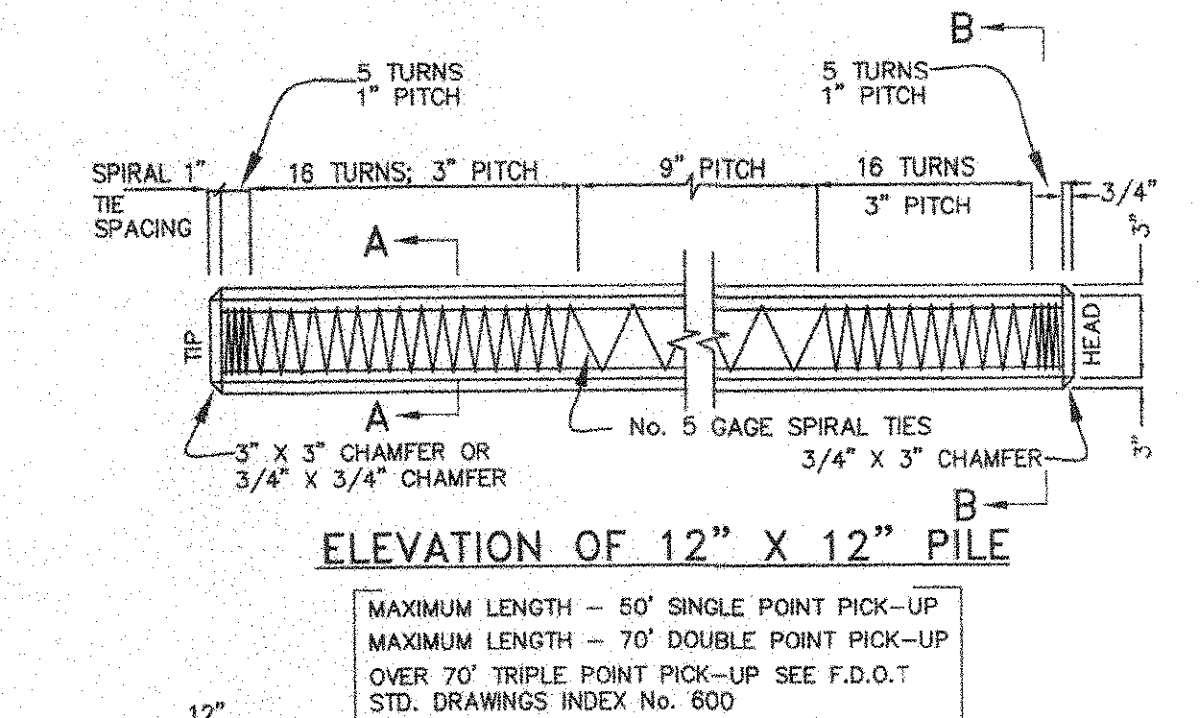
Engineering & Water Resources, Inc.
7881 S.W. Ellipse Way, Stuart, Florida 34997
Phone: (772) 701-6408 Fax: (772) 781-6408 Web: www.eawrt.com
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VIEW C-C

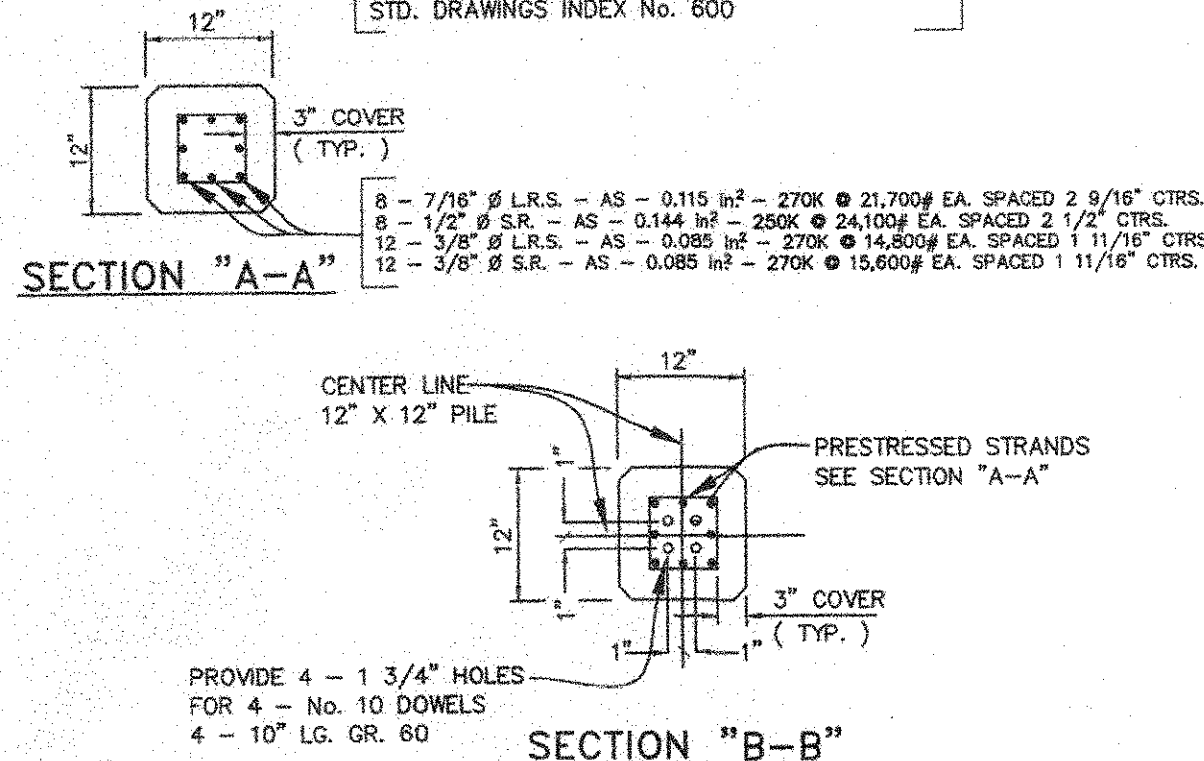
NOTE: ALL HARDWARE SHALL BE STAINLESS STEEL.

PIPE DIA.	PILE SIZE	DIMENSIONS	
		A	B
4"	12"x12"	16"	16"
8"	12"x12"	20"	16"
12"	12"x12"	26"	16"
16"	12"x12"	30"	16"



ELEVATION OF 12" X 12" PILE

MAXIMUM LENGTH - 50' SINGLE POINT PICK-UP
MAXIMUM LENGTH - 70' DOUBLE POINT PICK-UP
OVER 70' TRIPLE POINT PICK-UP SEE F.D.O.T.
STD. DRAWINGS INDEX No. 600

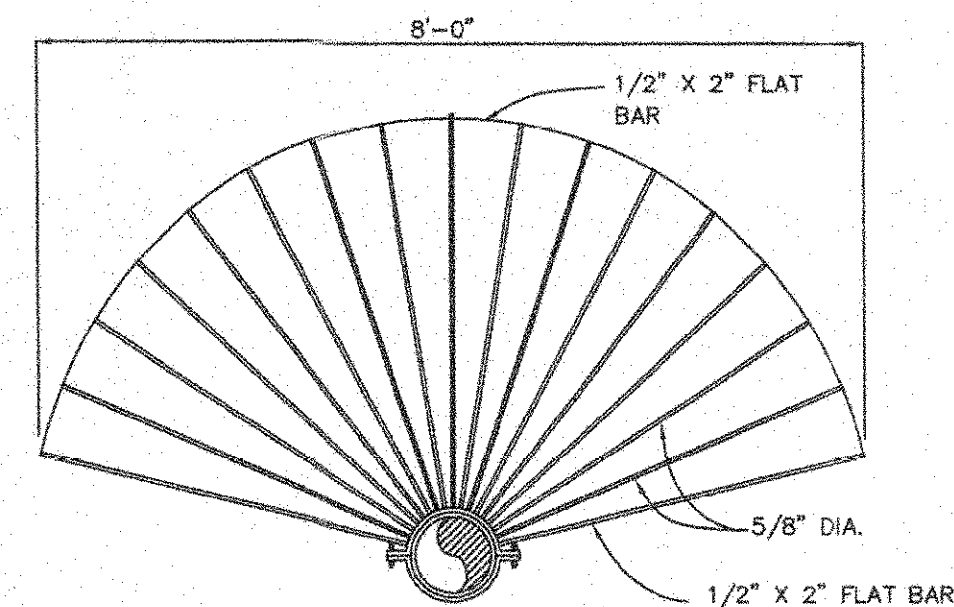


SECTION "A-A"

PROVIDE 4 - 1 3/4" HOLES
FOR 4 - No. 10 DOWELS
4 - 10" LG. GR. 60

NOTES:

- PILE BUILD-UP, WHEN REQUIRED, SHALL BE ACCOMPLISHED WITH 4 #10 DOWEL 3" LONG SET IN 1 3/4" DIA. DRILLED HOLES WITH EPOXY MORTAR. PROVIDE 4 #5 LONGITUDINAL BARS AS LONGITUDINAL REINFORCING. SPIRAL TIES SHALL BE #5 CONTINUOUS. SPIRALS SHALL BE TIED TO AT LEAST TWO LONGITUDINAL BARS FOR EACH WRAP.
- PILING AS PER F.D.O.T. STANDARD SPECIFICATION SECTION 455.
- SPIRAL TIES: EACH WRAP OF SPIRALS SHALL BE TIED TO AT LEAST TWO CORNER STRANDS. ONE TURN REQUIRED FOR SPIRAL SPICES. SPIRALS MAY BE MANUFACTURED FROM STOCK MEETING REQUIREMENTS OF ANY GRADE OF REINFORCING STEEL OR HARD DRAWN STEEL.
- CONCRETE CLASS: CONCRETE FOR ALL PILES SHALL BE CLASS V (SPECIAL). CLASS V (SPECIAL) CONCRETE SHALL CONFORM TO THE REQUIREMENTS FOR CLASS V CONCRETE EXCEPT FOR THE 28 DAY STRENGTH AS NOTED BELOW.
- CONCRETE STRENGTH: THE CYLINDER STRENGTH SHALL BE 6,000 p.s.i. MINIMUM AT 28 DAYS AND 4,000 p.s.i. MINIMUM AT TRANSFER OF THE PRESTRESSING FORCE.
- PILES SHALL BE MARKED AT PICK-UP POINTS TO INDICATE PROPER POINTS FOR ATTACHING HANDLING LINE.
- REINFORCING STEEL: ALL REINFORCING STEEL SHALL BE EITHER GRADE 40 OR 60. UNLESS OTHERWISE NOTED. SEE ENVIRONMENTAL REQUIREMENTS NOTE FOR SPICE REINFORCING ONLY (SPIRAL TIES AND PRESTRESSING STRAND ARE UNCOATED FOR ALL ENVIRONMENTAL CLASSES).
- STRAND NOMENCLATURE: S.R. = STRESS RELIEVED STRAND L.R.S. = LOW-R ELAXATION STRAND



NOTES:

- FAN GUARDS SHALL BE PLACED AT EACH END OF CANAL CROSSING.
- FAN GUARD AND ALL MOUNTING BRACKETS TO BE HOT DIP GALVANIZED AND MOUNTING HARDWARE TO BE STAINLESS STEEL.
- 1/2" THICK NEOPRENE PAD TO INSULATE PIPE FROM CONTACT WITH ALL MOUNTING HARDWARE, FAN GUARD HARDWARE, AND CONCRETE SURFACES.

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	PILE CAP SUPPORT DETAIL DUAL PIPE (VIEW C-C)	PAGE No.
JULY, 2006		27A

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

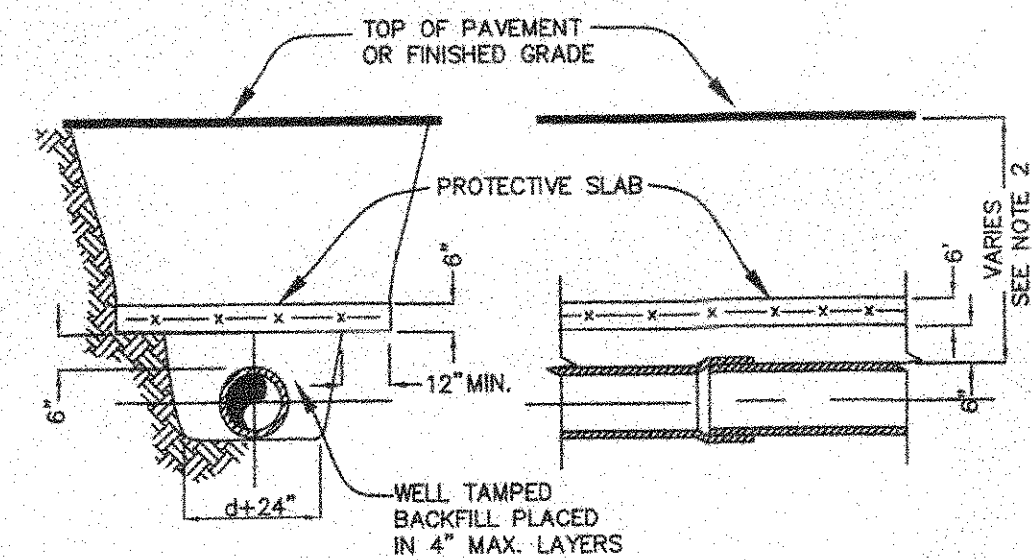
REVISION	CONCRETE PILE DETAIL	PAGE No.
JULY, 2006		27B

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	CONCRETE PILE NOTES	PAGE No.
JULY, 2006		27C

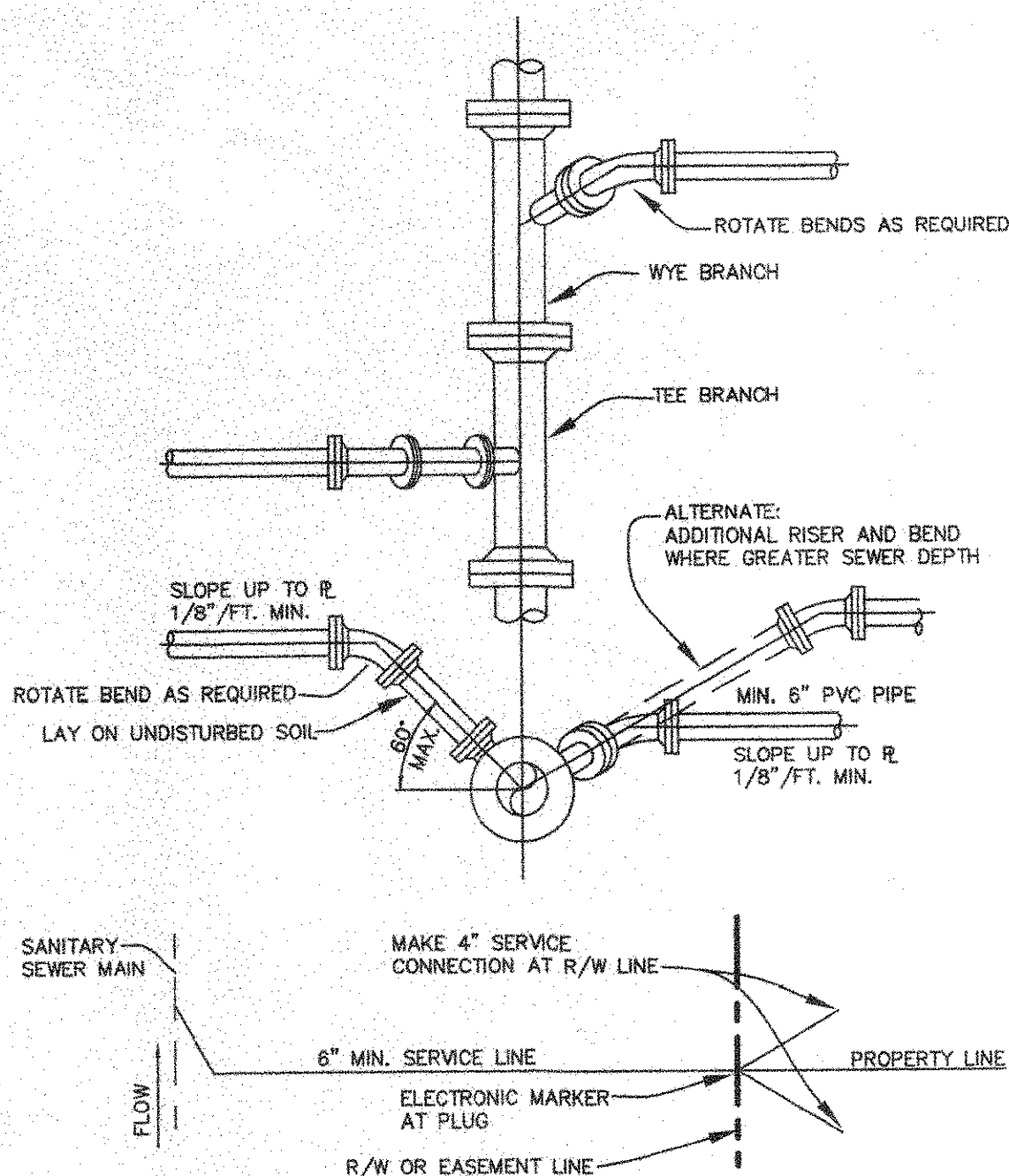
MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	FAN GUARD DETAIL	PAGE No.
JULY, 2006		28



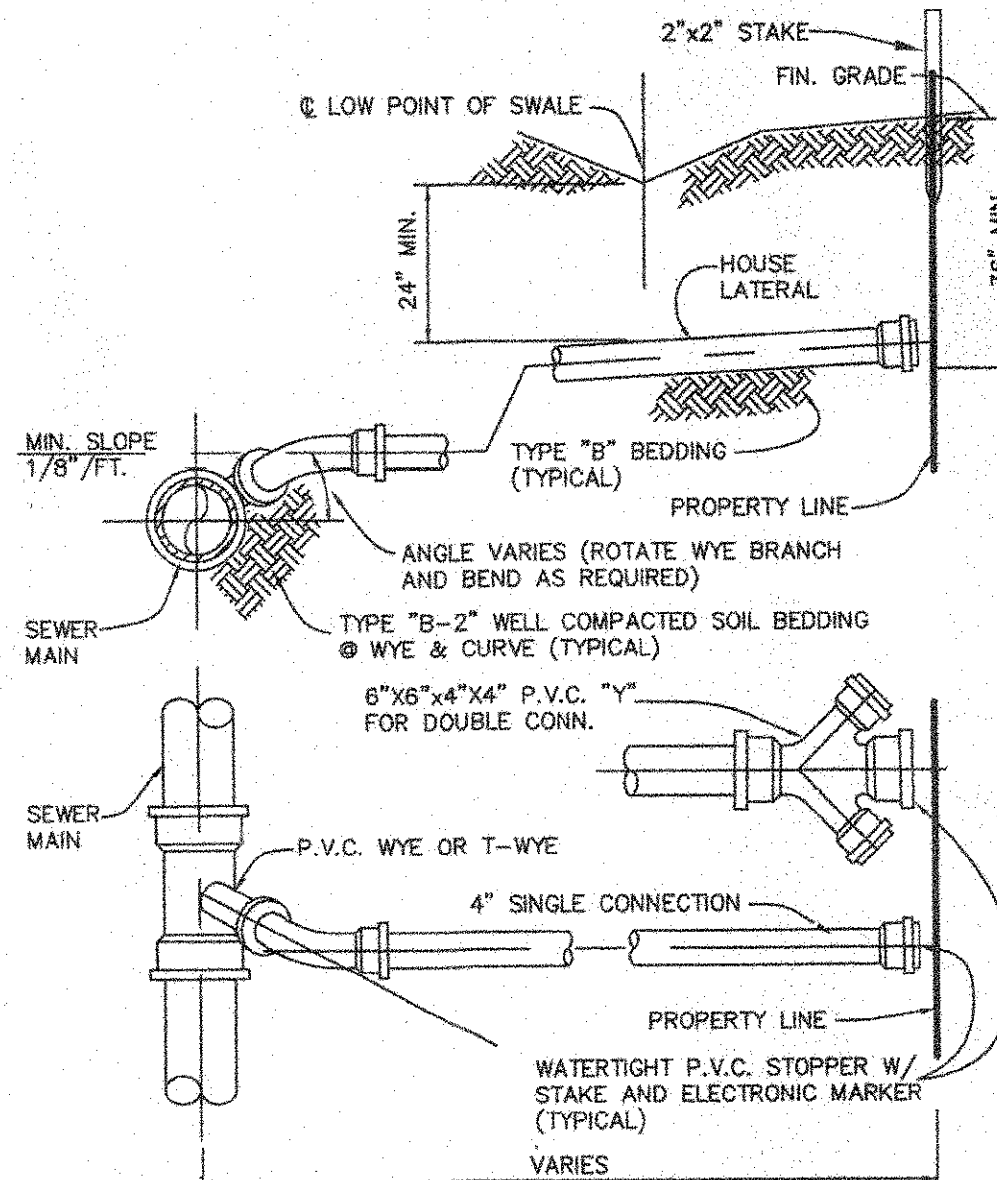
NOTES:

- CONCRETE PROTECTIVE SLAB SHALL BE 2500 P.S.I. WITH 6"x6"-10/10 W.W. MESH AND 12" MIN. BEARING EACH SIDE OF TRENCH.
- PROTECTIVE SLAB REQUIRED WHERE COVER FOR MAINS IS LESS THAN 30" AND LATERALS WHEN LESS THAN 24".



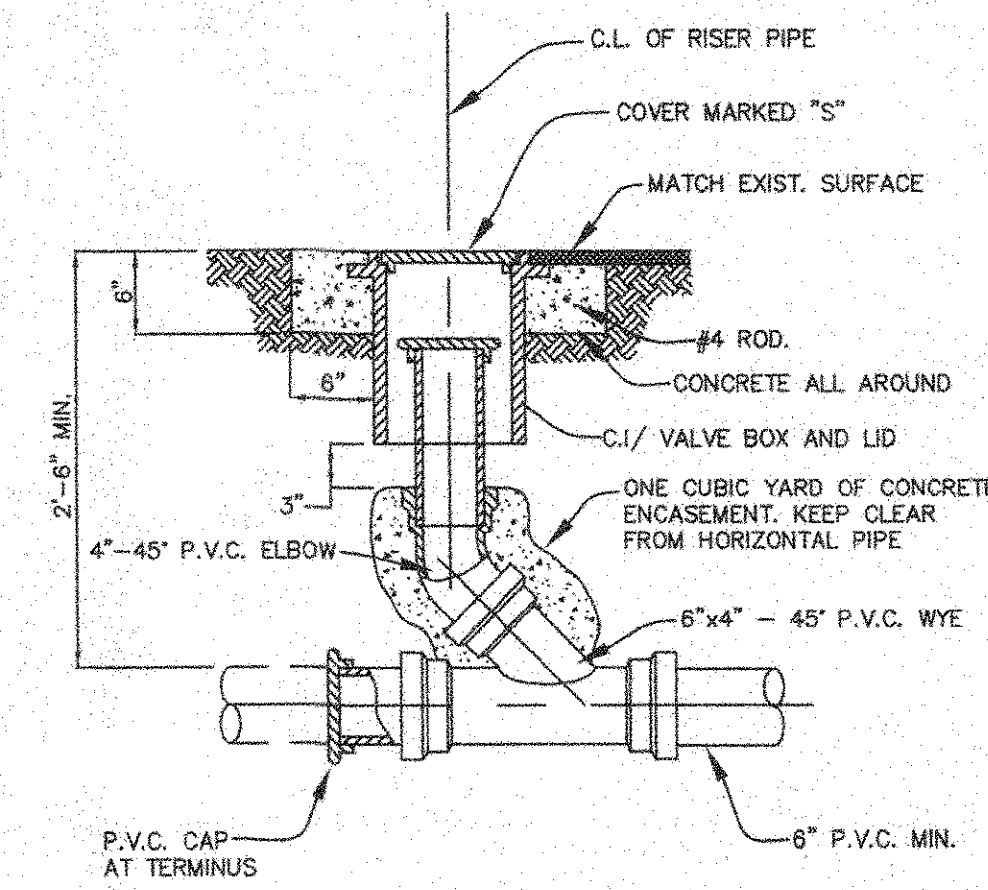
NOTE:

SERVICE LATERALS SHALL TERMINATE AT R. AT A DEPTH OF (3) FEET, PLUGGED WATER TIGHT AND MARKED WITH 2"x2" TREATED STAKE AND ELECTRONIC MARKER



NOTES:

- INVERT OF LATERAL TO BE 36" FROM FINISHED GRADE EXCEPT ON "WATER LINE SIDE" OF STREET R/W WHERE IT SHALL DROP TO 48" AS SOON AS DEPTH OF SEWER MAIN PERMITS.
- THIS DETAIL TO BE USED WHEN TOP OF SEWER MAIN IS LESS THAN 7'-0" DEEP.
- INSTALL MAGNETIC MARKERS AT THE END OF EACH SERVICE LINE OR OPPOSITE WYES AND RECORD LOCATION.



MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	PROTECTIVE SLAB FOR PIPE	PAGE No.
JULY, 2006		29

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

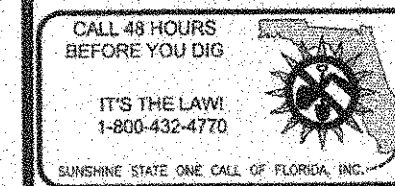
REVISION	TYPICAL SEWER SERVICE CONNECTION	PAGE No.
JULY, 2006		30

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	SANITARY SEWER LATERAL DETAIL	PAGE No.
JULY, 2006		31

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	SEWER SERVICE CLEANOUT (FOR TRAFFIC AREAS)	PAGE No.
JULY, 2006		32



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7881 S.W. Ellipse Way, Stuart, Florida 34987
Phone: (772) 781-8408 Fax: (772) 781-8409 Web: www.ewr1.com
SPECIAL NOTICE PER FAC 61G15-30.003:
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WATER & SEWER DETAILS

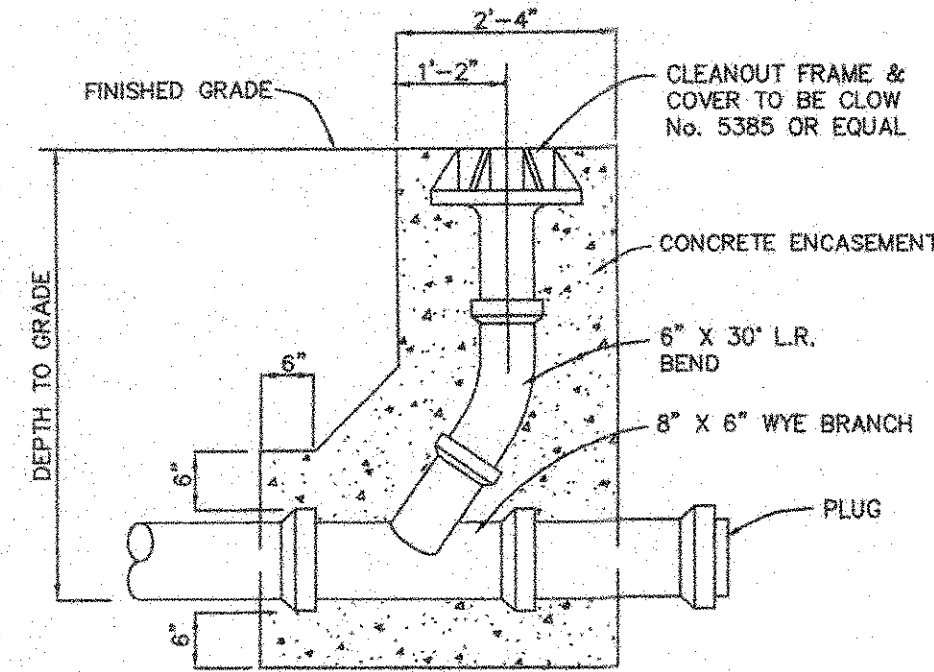
HAMMOCK RIDGE

MARTIN COUNTY, FLORIDA

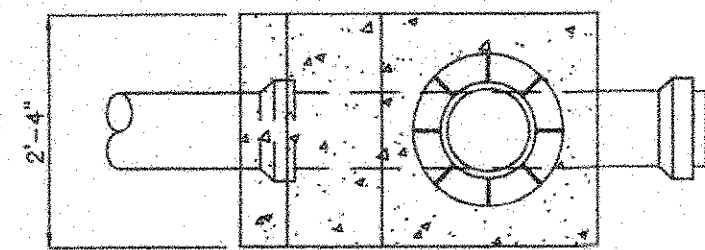
Sheet No.

MC-5

J:\B1101\DWG\CONCEPT\MCI-MC12.dwg, PRINTED BY: danielw ON Tue, Jan 02 2007

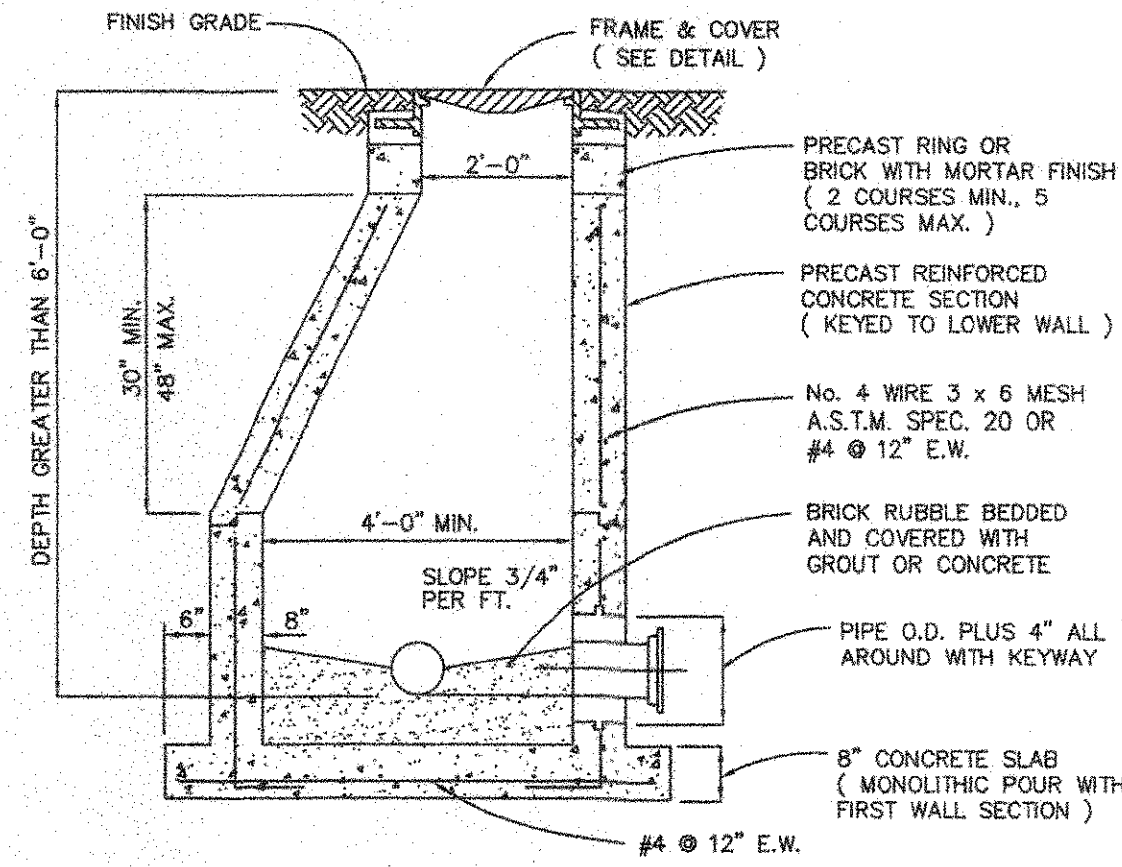


SECTION

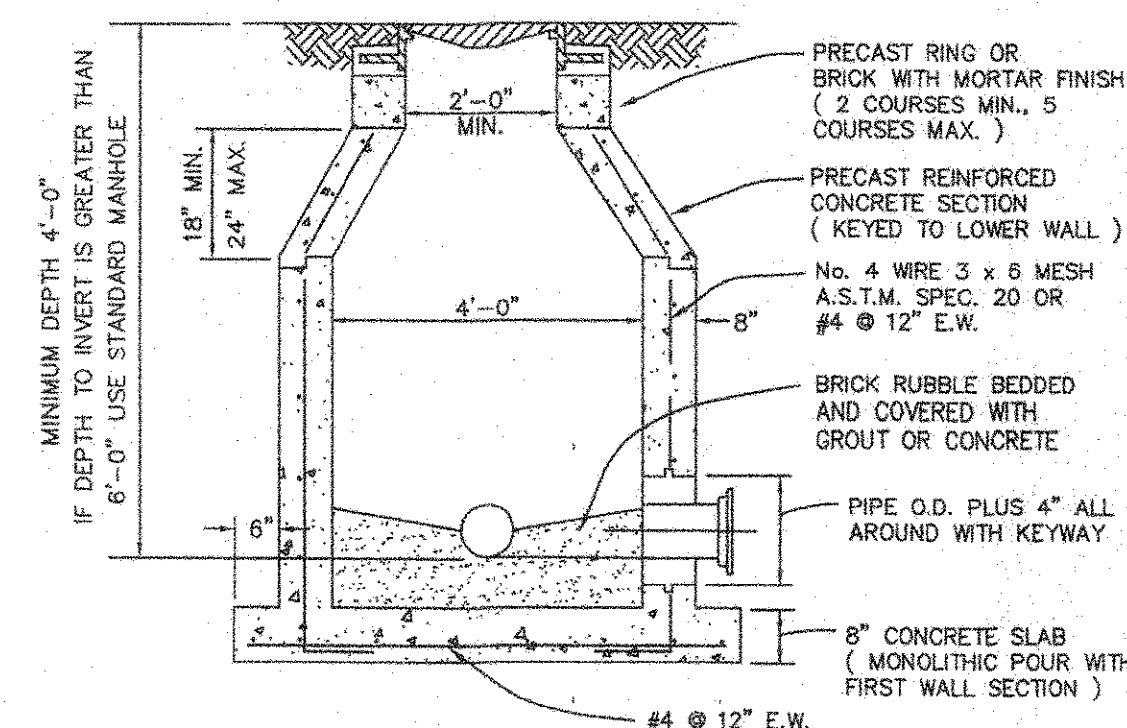


PLAN

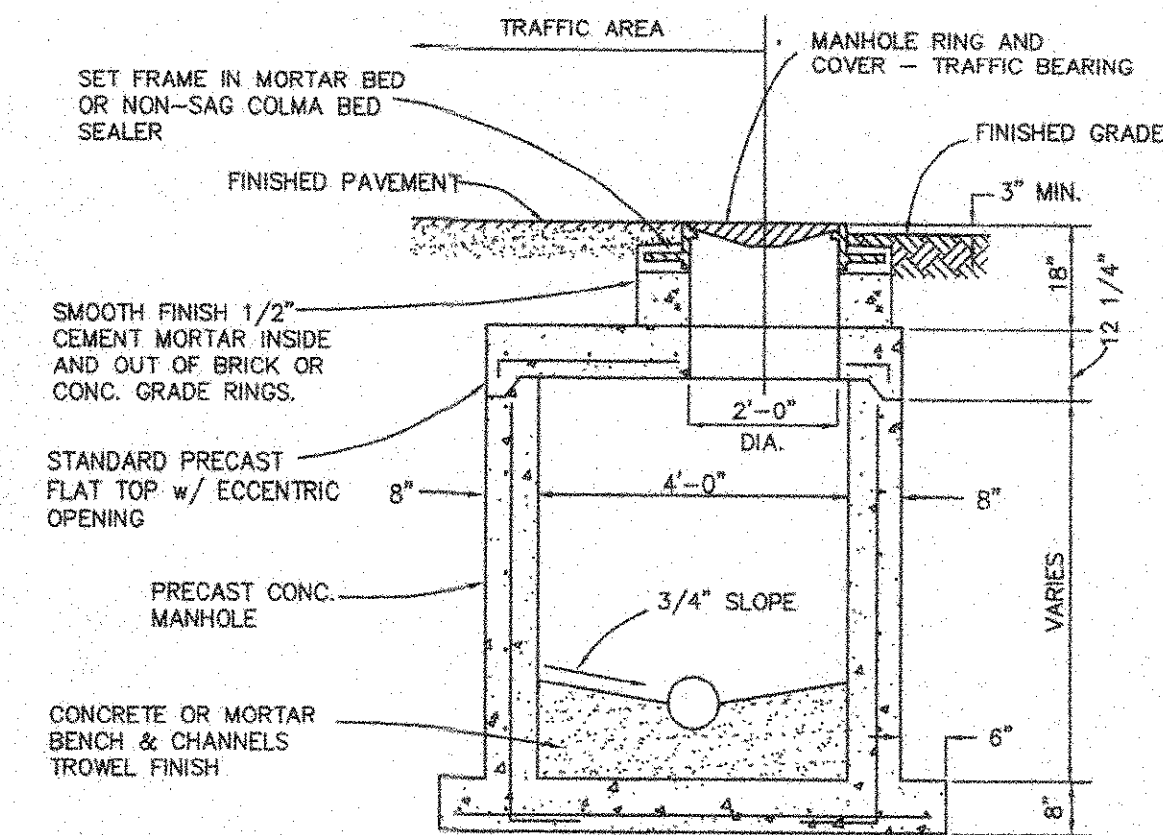
- NOTES:
1. ALL INVERT CHANNELS ARE TO BE CONSTRUCTED FOR SMOOTH FLOW WITHOUT OBSTRUCTION.
 2. PROPERLY SHAPED SPILLWAYS SHALL BE CONSTRUCTED BETWEEN PIPES WITH DIFFERENT INVERT ELEVATIONS TO PROVIDE FOR SMOOTH FLOWS.
 3. BRICK AND CONCRETE RUBBLE PERMITTED AS FLOW CHANNEL BUILDUP.
 4. SIDEWALLS OF FLOW CHANNEL SHALL BE AT LEAST HALF OF PIPE HEIGHT AT ALL POINTS.



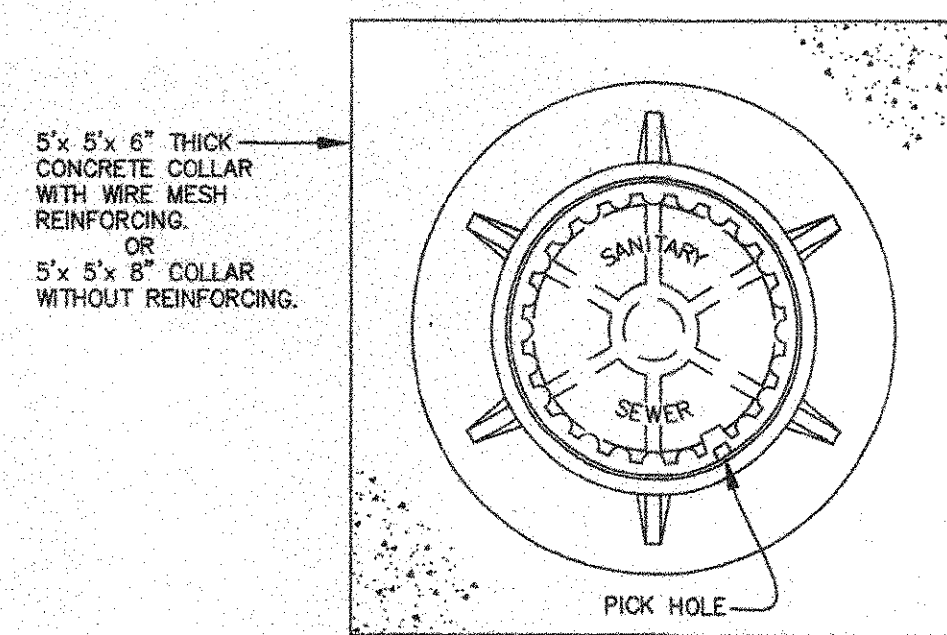
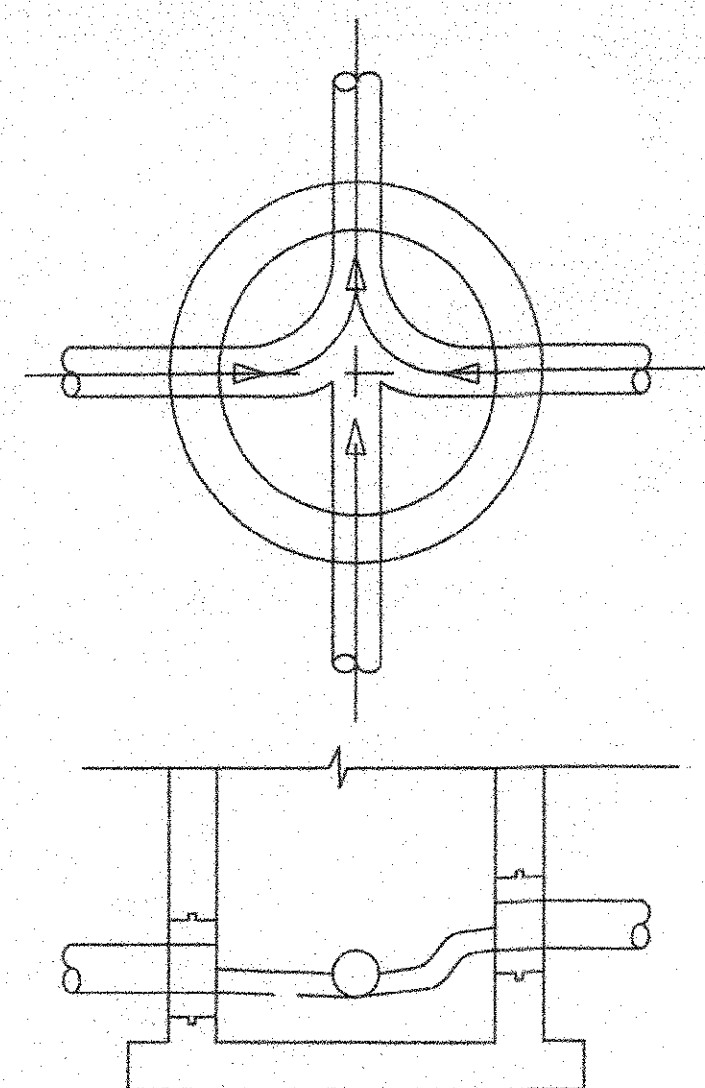
- NOTES:
1. PRECAST CONCRETE TYPE II, 4000 P.S.I.
 2. "RAMNEK" OR EQUAL AT ALL RISER JOINTS (1/2" THICK WITH WIDTH AT LEAST 1/2 THE WALL THICKNESS) WITH GROUT ON INSIDE AND OUTSIDE.
 3. ALL OPENINGS SHALL BE SEALED WITH A WATERPROOF NON-SHRINKING GROUT. (SEE DETAIL)
 4. FLOW CHANNELS SHALL BE CONSTRUCTED TO DIRECT INFLUENT INTO FLOW STREAM. (SEE DETAIL)
 5. LIFT HOLES ARE PERMITTED.
 6. ALL PIPE HOLES SHALL BE PRECAST OR CORE-DRILLED.
 7. A.C. COLLAR OR APPROVED RUBBER BOOT MUST BE USED WITH P.V.C. AND D.I.P. PIPE.
 8. M.H. TO RECEIVE 2 COATS COAL TAR EPOXY OR APPROVED EQUAL ON THE INTERIOR AND EXTERIOR.



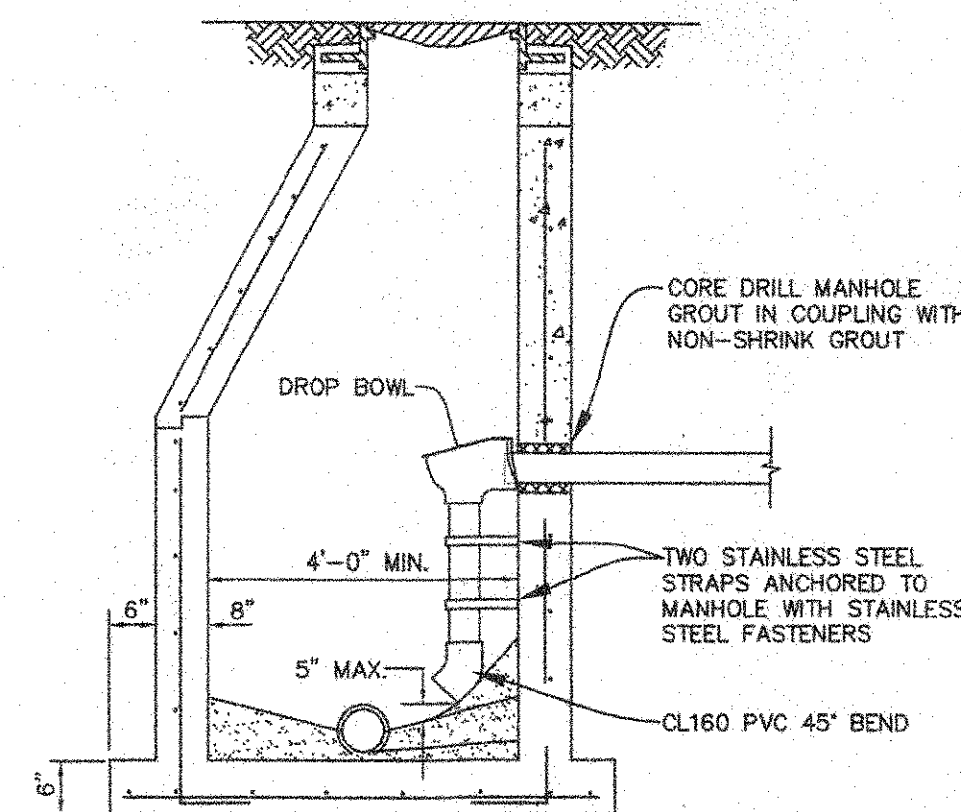
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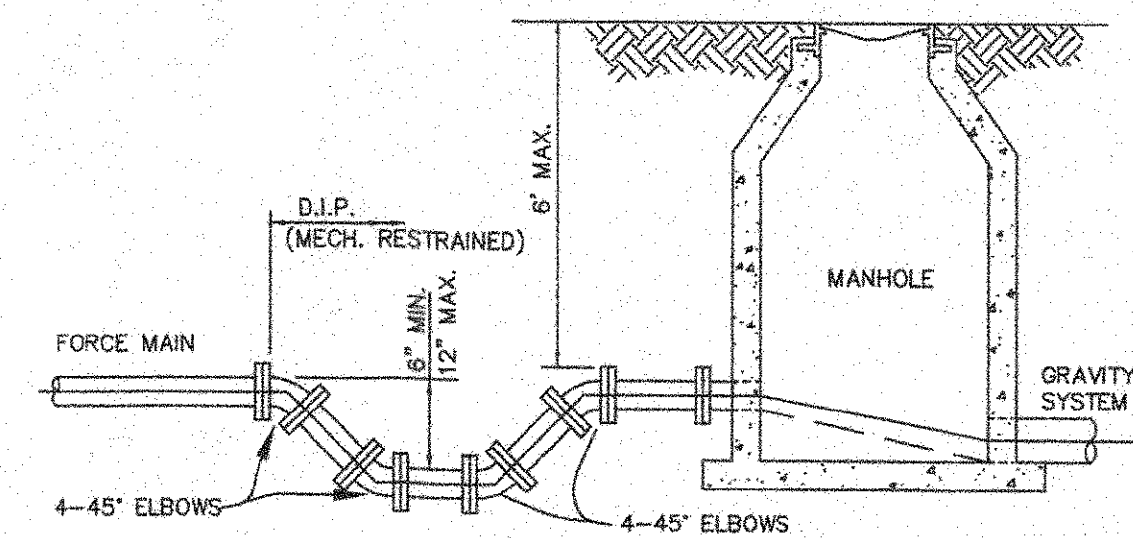
- NOTES:
1. PROVIDE 0.1" DROP THROUGH MANHOLE EXCEPT ON STRAIGHT RUNS.
 2. PRECAST CONCRETE MANHOLES SHALL CONFORM TO ASTM C478, SHALL BE TYPE II ACID RESISTANT CEMENT AND SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI IN 28 DAYS.
 3. USE ONLY WHERE APPROVED AND SPECIFIED ON PLANS.
 4. "RAMNEK" OR EQUAL AT ALL RISER JOINTS (1/2" THICK WITH WIDTH AT LEAST 1/2 THE WALL THICKNESS) WITH GROUT ON INSIDE AND OUTSIDE.
 5. ALL OPENINGS SHALL BE SEALED WITH A WATERPROOF NON-SHRINKING GROUT. (SEE DETAIL)
 6. FLOW CHANNELS SHALL BE CONSTRUCTED TO DIRECT INFLUENT INTO FLOW STREAM. (SEE DETAIL)
 7. LIFT HOLES ARE PERMITTED.
 8. ALL PIPE HOLES SHALL BE PRECAST OR CORE-DRILLED.
 9. A.C. COLLAR OR APPROVED RUBBER BOOT MUST BE USED WITH P.V.C. AND D.I.P. PIPE.
 10. M.H. TO RECEIVE 2 COATS COAL TAR EPOXY OR APPROVED EQUAL ON THE INTERIOR AND EXTERIOR.



- NOTES:
1. COLLAR IS REQUIRED ONLY WHEN MANHOLE IS OUT OF PAVEMENT.
 2. MINIMUM WEIGHTS: COVER - 165 LBS., FRAME - 240 LBS.
 3. FRAME AND COVER SHALL BE U.S. FOUNDRY NO. 420A OR VULCAN NO. 44 OR APPROVED EQUAL.
 4. MANHOLE COVER SHALL HAVE THE WORDS "SANITARY SEWER" CAST IN METAL.
 5. MANHOLE COVER SHALL MEET H-20 TRAFFIC LOADING.



- NOTES:
1. ALL DETAILS AND SPECIFICATIONS FOR STANDARD MANHOLES ARE APPLICABLE EXCEPT FOR REFERENCES TO DROP ASSEMBLY AND COATINGS.
 2. THE PRECAST BASE SHALL EXTEND FULLY UNDER THE DROP ASSEMBLY.
 3. MASONRY CONSTRUCTION ABOVE THE EXTENDED PRECAST BASE IS PERMISSIBLE IF FILLED WITH CONCRETE.
 4. BRICK AND CONCRETE RUBBLE ARE PERMITTED AS FILLER IN DROP ENCASEMENT.
 5. DROP CONNECTIONS SHALL BE REQUIRED WHENEVER AN INFLUENT INVERT IS LOCATED 2.0 FEET OR MORE ABOVE THE MAIN INVERT CHANNEL. DROP CONNECTIONS SHOULD NOT BE DESIGNED FOR LESS THAN A 24-INCH DROP.
 6. SOLVENT TYPE JOINT P.V.C. FITTINGS MAY BE UTILIZED IN THE DROP ASSEMBLY ONLY.
 7. EXTERIOR TO RECEIVE 2 COATS OF COAL TAR EPOXY AND INTERIOR TO RECEIVE COATING OF 120 MILS OF REZGLAD 1255-AR OR MIN. 1" SEMPER COAT.



- NOTES:
1. FORCE MAIN TO ENTER MANHOLE AS CLOSE AS POSSIBLE TO 180° TO GRAVITY OUTLET.
 2. THE INVERT LEVEL OF FORCE MAIN AT POINT OF ENTRY SHALL BE 6" ABOVE INVERT OF MANHOLE.
 3. CORE ENTRY ONLY INTO EXISTING MANHOLES.
 4. TRAP TO BE LOCATED PRIOR TO DROP INTO MANHOLE AND OUTSIDE OF PAVED AREAS.
 5. USE TWO 45° ELBOWS PAST TRAP IF ELEVATION DROP IS REQUIRED TO ENTER MANHOLE.
 6. FLOW CHANNEL REQUIRED.
 7. EXTERIOR TO RECEIVE 2 COATS OF COAL TAR EPOXY AND INTERIOR TO RECEIVE COATING OF 120 MILS OF REZGLAD 1255-AR OR MIN. 1" SEMPER COAT.

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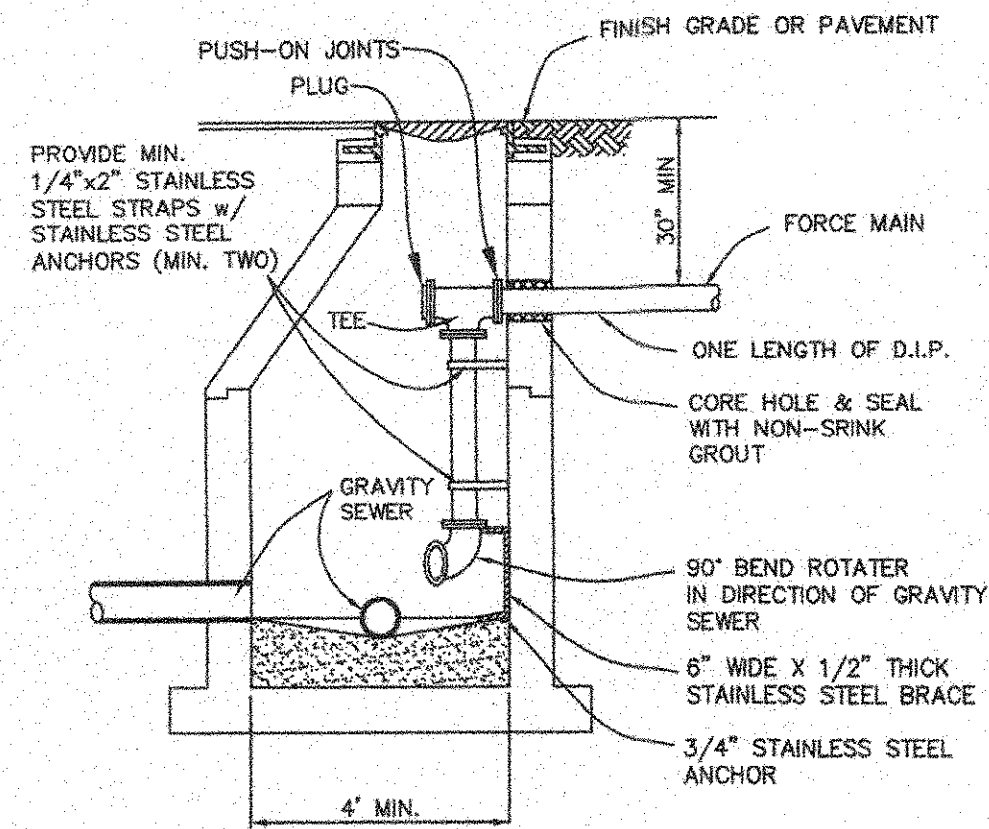
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WATER & SEWER DETAILS

HAMMOCK RIDGE
MARTIN COUNTY, FLORIDA

Sheet No.

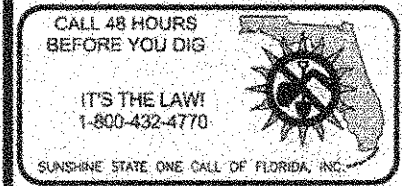
MC-6



- NOTES:
1. DROP PIPE AND FITTINGS MUST BE PVC.
 2. PRECAST CONCRETE TYPE II, 4000 P.S.I.
 3. "RAMNEK" OR EQUAL AT ALL RISER JOINTS (1/2" THICK WITH WIDTH AT LEAST 1/2 THE WALL THICKNESS) WITH GROUT ON INSIDE AND OUTSIDE.
 4. ALL OPENINGS SHALL BE SEALED WITH A WATERPROOF NON-SHRINKING GROUT.
 5. FLOW CHANNELS SHALL BE CONSTRUCTED TO DIRECT INFLUENT INTO FLOW STREAM. (SEE DETAIL)
 6. LIFT HOLES ARE PERMITTED.
 7. ALL PIPE HOLES SHALL BE PRECAST OR CORE-DRILLED.
 8. A.C. COLLAR OR APPROVED RUBBER BOOT MUST BE USED WITH P.V.C. AND D.I.P. PIPE.
 9. EXTERIOR TO RECEIVE 2 COATS OF COAL TAR EPOXY AND INTERIOR TO RECEIVE COATING OF 120 MILS OF REZCLAD 1255-AR OR MIN. 1" SEWPER COAT.

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	FORCE MAIN ENTERING DEEP MANHOLE	PAGE No.
JULY, 2006		42



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Phone: (772)781-6408 Fax: (772) 781-6409 Web: www.ewr1.com
Certificate of Authorization: 00006586

WATER & SEWER DETAILS

HAMMOCK RIDGE
MARTIN COUNTY, FLORIDA

Sheet No.

MC-7

DESIGNED BY: Melissa G. Corbett, PE
DATE: JUN 13 2007
NO.: 59252

Designed:	M.G.C.	11-16-05
Drawn:	C.C.	11-16-05
Checked:	M.G.C.	11-16-05
Approved:	M.G.C.	11-16-05
Date:	NOV., 2005	
Project:	D1101	
File:	MC1-MC12 2006.dwg	
By:		
Revisions:		
Date:		
No.		

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS REVISION JULY, 2006 TYPICAL LIFT STATION SITE PLAN LAYOUT PAGE No. 43	MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS REVISION JULY, 2006 TYPICAL LIFT STATION (SECTION) PAGE No. 44	MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS REVISION JULY, 2006 WET WELL SECTION RETAINER STRAP PAGE No. 45	MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS REVISION JULY, 2006 LIFT STATION TREMIE POUR DETAIL PAGE No. 46
MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS REVISION JULY, 2006 REQUIRED LIFT STATION INFORMATION PAGE No. 47 PUMP DATA: MANUFACTURER, _____ MOD. No. _____ IMP. No. _____ MOTOR, _____ HP, _____ RPM, _____ VOLTS, _____ PHASE, 60 HERTZ OPERATING CONDITIONS: _____ GPM AT _____ TDH. _____ % EFFICIENCY WET WELL: SIZED FOR MINIMUM PUMP CYCLE TIME OF 10 MINUTES AND A MAXIMUM OF 6 PUMP STARTS PER HOUR. WORKING DEPTH _____ FT. WORKING VOLUME _____ GALS. ELECTRICAL: FEEDERS AND CONDUIT _____ MAIN SWITCH _____ POLES _____ AMPS	MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS REVISION JULY, 2006 STANDARD ALUMINUM COVER PAGE No. 48 NOTES: - COVER TO BE ALUMINUM DIAMOND PLATE, HINGED, TRAFFIC BEARING WITH POSITIVE LOCKING ARM AND LOCKING HASP. - MINIMUM COVER DIMENSIONS - - - 30" x 48" (FOR A.R.V. - MATCH OPENING) - COVER SHALL BE CAST IN PLACE (BILCO TYPICAL) - SPLIT COVER IS ACCEPTABLE FOR LARGER SIZES. - RECESSED HASP IS REQUIRED IN WALKWAYS AND TRAFFIC AREAS. - LID TO BE H-20 LOADING. - HANDLE TO BE SECURED BY STAINLESS STEEL NUTS.	MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS REVISION JULY, 2006 FENCE DETAIL PAGE No. 49 NOTES: - GATE TO BE 12'-0" CLEAR OPENING. - VINYL COATED STEEL WOVEN WIRE FABRIC TO BE STRETCHED TAUT W/ STRETCHER BARS AND STRAPS AND FASTENED TOP & BOTTOM AND AT LINE POSTS WITH GALV. PIG RING TIES. - GATE TO BE SECURED OPEN WITH GATE STOP SET IN CONCRETE. - ALL RAILS, POSTS AND HARDWARE TO BE VINYL COATED.	MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS REVISION JULY, 2006 TYPICAL LIFT STATION CONTROL PANEL PAGE No. 50A NOTES: - ELECTRIC METER AND PRIMARY DISCONNECT MOUNTED ON BACK SIDE OF PANEL. - EMERGENCY GENERATOR RECEPTACLES: RUSSELL & STOLL, JRSB 1044FR (FOR 100 amp SERVICE), 2044FR (FOR 200 amp SERVICE). - ALL POWER AND CONTROL LINES SHALL BE CONTINUOUS (NO SPLICES). - POWER SUPPLY MECHANICALLY INTERLOCKED. - PHASE MONITOR ON ALL THREE PHASES (480 & 230 3Ø); VOLTAGE MONITOR REQUIRED ON 1Ø. - GROUND FAULT INTERRUPTER ON CONVENIENCE RECEPTACLE. 1.5 K.V.A. TRANSFORMER IN ALL CONTROL PANELS. - PANEL MOUNTED TO 5/8" UNI-STRUT BY WELDED TABS. - CONTROL PANEL SHALL BE UL LISTED AS A UNIT. - TELEMETRY CONDUIT SHALL BE INSTALLED BY THE CONTRACTOR WITH SWEEP 90 DEGREE BEND. - ALL HARDWARE, NUTS & BOLTS, AND APPURTENANCES ABOVE GROUND SHALL BE 316 STAINLESS STEEL. - ALL CONDUIT NOT ENTERING WETWELL SHALL BE SCHEDULE 80 P.V.C. - PANEL MOUNTING SHALL ALLOW FOR UNRESTRICTED VIEW OF ALARM LIGHT. - MOUNT RTU PANEL TO ALLOW FOR UNRESTRICTED LINE-OF-SIGHT TO ANTENNA FROM ALL DIRECTIONS.

Melissa G. Corbett, PE
 JUN 13 2007
 No. 59292

Designed: M.G.C. 11-16-05	Drawn: S.C. 11-16-05	Checked: M.G.C. 11-16-05	Approved: M.G.C. 11-16-05	Date: NOV. 2005	Project: B101	File: MC1-MC12 2006.dwg
By						Date
Revision:						No.

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Engineering & Water Resources, Inc.

7881 S.W. Ellipse Way, Stuart, Florida 34997

Phone: (772) 861-6408 Fax: (772) 781-6409 Web: www.enr1.com

Certificate of Authorization: 00009566

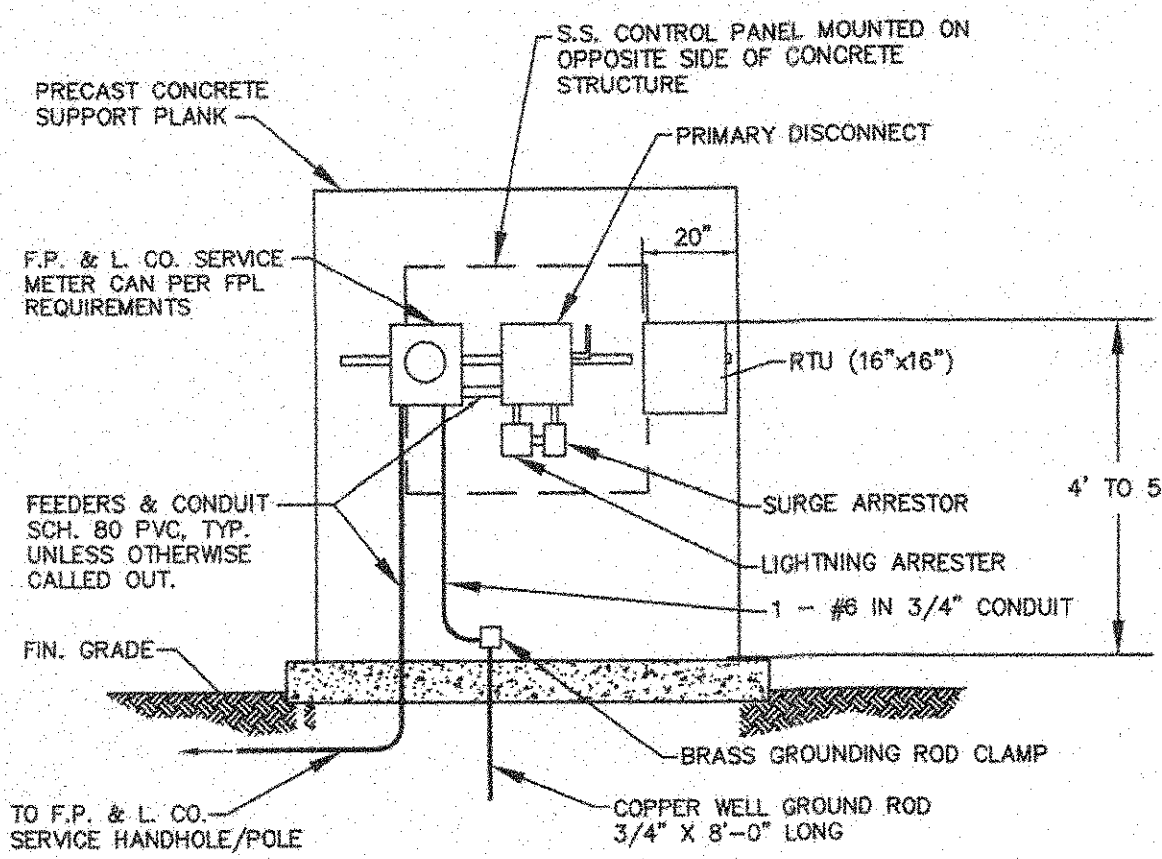
GRINDER PUMP DETAILS

HAMMOCK RIDGE

MARTIN COUNTY, FLORIDA

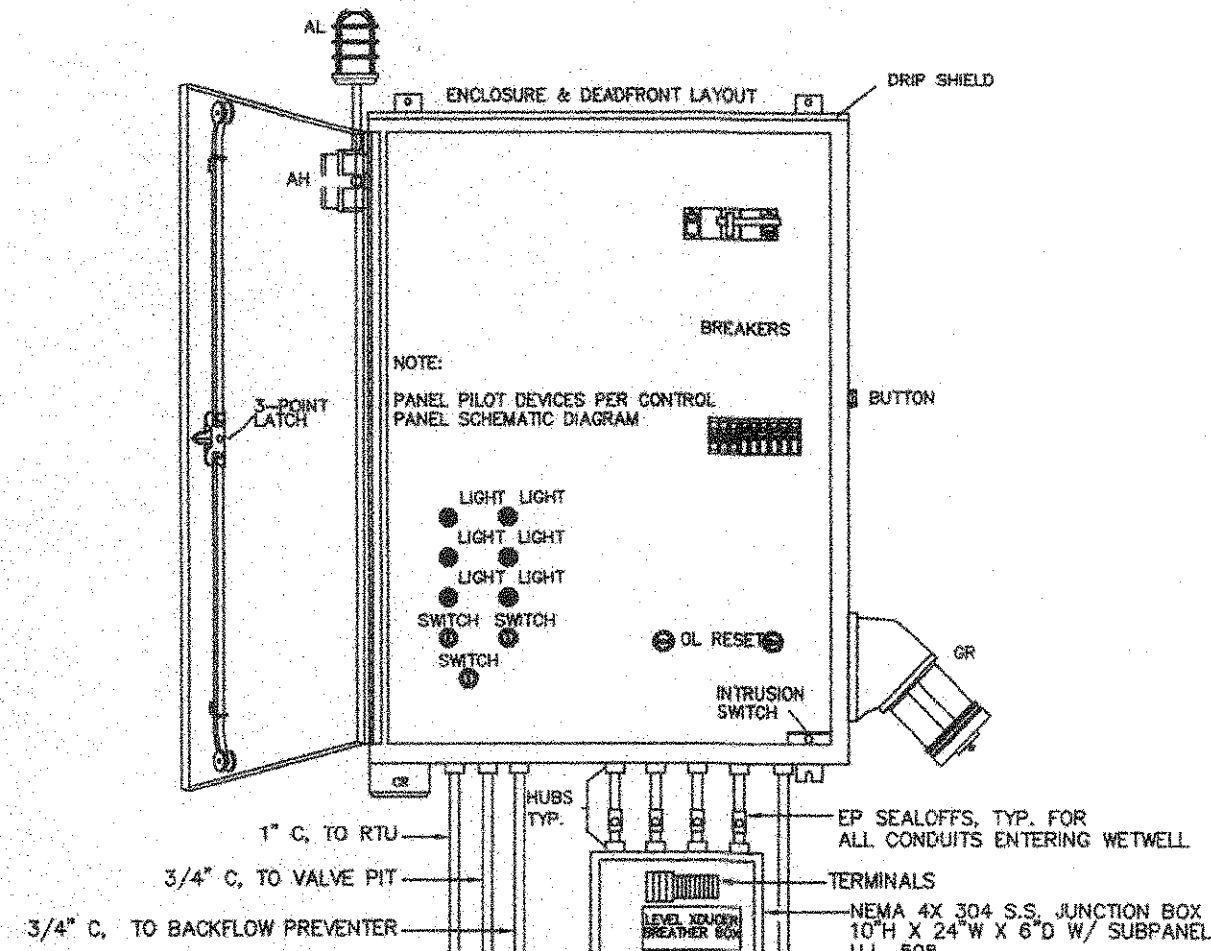
Sheet No.

MC-8

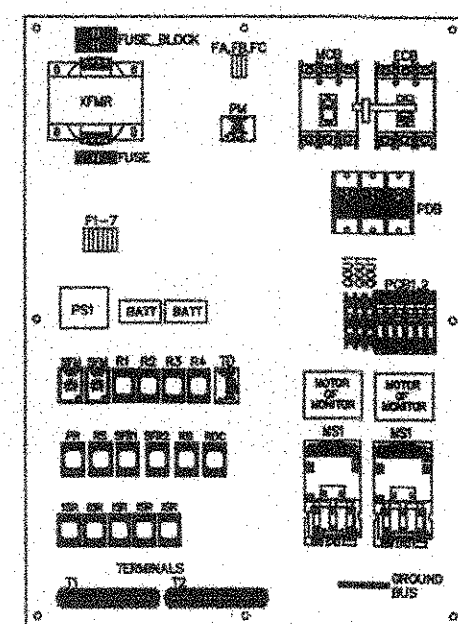


- NOTES:
1. NO PENETRATION THROUGH PANEL TOPS.
 2. TWENTY INCHES ON RIGHT SIDE OF SUPPORT PLANK (MEASURED FROM INSIDE EDGE OF RIGHT BEVEL) IS RESERVED FOR RTU AND ACCESSORIES.

BACK VIEW OF L.S. CONTROL PANEL



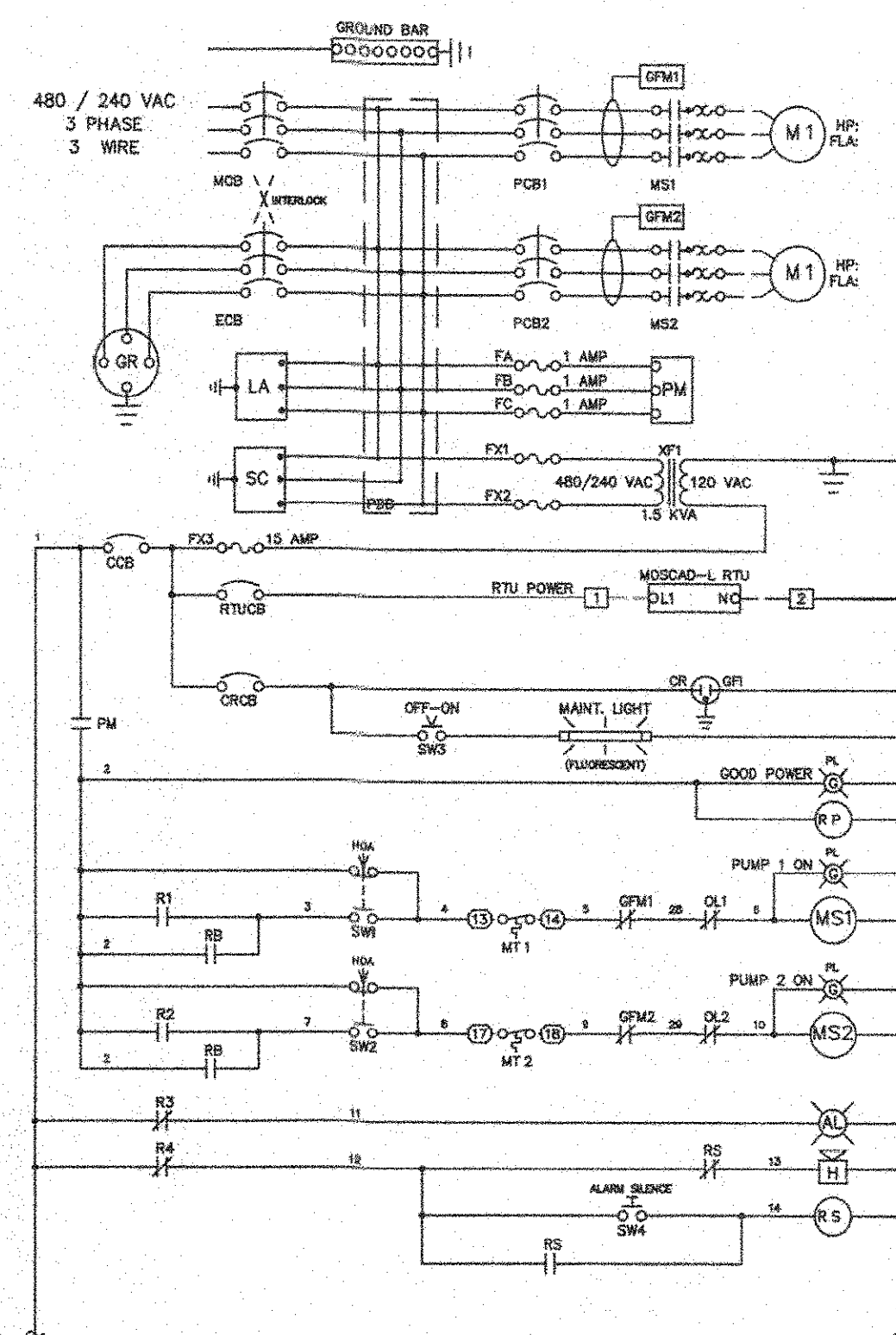
ENCLOSURE & DEADFRONT LAYOUT



BACKPLATE LAYOUT

LIFT STATION CONTROL PANEL NOTES

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND APPLICABLE LOCAL CODES. THE PANEL MAKER SHALL BE A U.L. LISTED SHOP.
2. THE CONTROL PANEL SHALL BE FURNISHED COMPLETELY ASSEMBLED AND WIRED WITH THE FOLLOWING MINIMUM FEATURES:
 - A. ENCLOSURE SHALL BE STAINLESS STEEL, MODIFIED NEMA 3R, 14 GAUGE, TYPE 304 SS, WITH WELDED SEAMS AND DRIP SHIELD. ALL HARDWARE SHALL BE STAINLESS STEEL. PROVIDE BLANK OUTSIDE DOOR WITH PIANO HINGE, NEOPRENE GASKET, 3 POINT CAPTIVE LATCH WITH NYLON ROLLERS OPERATED FROM A SINGLE PADLOCKABLE HANDLE, WITH DRAWING POCKET. PROVIDE ALUMINUM DEAD FRONT HINGED INNER DOOR FOR MOUNTING CONTROL COMPONENTS; EXTEND CIRCUIT BREAKER HANDLES, RESET BUTTONS, ETC. THROUGH THE DEAD FRONT INNER DOOR. PROVIDE SUB PLATE OF ENAMELED STEEL OR ALUMINUM.
 - B. MAIN BREAKER, MECHANICALLY INTERLOCKED WITH EMERGENCY BREAKER.
 - C. GROUND BUS.
 - D. SEPARATE CIRCUIT BREAKERS FOR THE CONTROL CIRCUITS ETC.
 - E. 20A DUPLEX RECEPTACLE, GFI, WITH SEPARATE BREAKER.
 - F. SURGE ARRESTER ON THE INCOMING POWER FEEDER
 - G. POWER MONITOR WHICH DISCONNECT THE CONTROL POWER FOR ABNORMAL POWER CONDITIONS INCLUDING VOLTAGE DEGRADATION OR PHASE LOSS AND WILL AUTOMATICALLY, WHEN POWER RETURNS, RETURN TO NORMAL. EQUAL TO DIVERSIFIED SLA SERIES.
 - H. PROVIDE SQD NEMA SIZED STARTER CONTROLLER WITH OVERCURRENT PROTECTION, SHORT CIRCUIT PROTECTION AND DISCONNECT FOR EACH MOTOR.
 - I. HOA, MAINT. LIGHT SW. AND PILOT LIGHTS
 - J. ALL SELECTOR SWITCHES, PUSH BUTTONS, AND PILOT LIGHTS SHALL BE THE HEAVY DUTY, OIL TIGHT, EQUAL TO SQD. TYPE 'K'. ALL PILOT LIGHTS SHALL NOT BE TRANSFORMER TYPE AND NOT BE PRESS TO TEST.
 - K. 120V/24V POWER SUPPLY FOR THE FLOAT TYPE LEVEL SWITCH RELAYS AND ANALOG SIGNAL.
 - L. SURGE CAPACITOR ON THE LOAD SIDE OF THE MAIN BREAKER EQUAL TO GE 9118BA301.
 - M. NUMBERED WIRES AND CORRESPONDING TERMINALS. COLOR CODED WIRING TO DISTINGUISH PANEL WIRING OF DIFFERING VOLTAGES AND INCOMING FOREIGN CIRCUITS.
 - N. CONTROL PANEL AND RTU SHALL BE PROVIDED AND CONFIGURED TO SEND & RECEIVE SIGNALS TO THE WTP COMPUTER SYSTEM USING THE OWNER'S AND I/O SYSTEM. ALL CONFIGURATION AT THE CONTROL COMPUTER SHALL BE PROVIDED SEPARATELY BY THE OWNER. CONFIGURATION, STARTUP, TESTING AND CHECK-OUT SHALL BE PROVIDED BY THE WELL CONTROL PANEL MANUFACTURER. CONTRACTOR SHALL PROVIDE AND INSTALL RADIO/MODEM AND I/O SYSTEM IN AGREEMENT WITH THE OWNER'S STANDARD
3. ALL CONDUITS ENTERING THE WETWELL SHALL PVC COATED RGS, SIZED PER PLANS, PERMACOAT, ROBROY OR AN APPROVED EQUAL.
4. ALL CONTROL CIRCUITS ENTERING WETWELL SHALL BE INSTALLED THROUGH INTRINSICALLY SAFE RELAYS, PHOENIX CONTACT OR TURCK, OR AN APPROVED EQUAL.
5. THE PUMP MOTOR CIRCUITS SHALL BE INSTALLED WITH GROUND FAULT MONITORS, AS MANUFACTURED BY BENDER OR AN APPROVED EQUAL.



CONTINUED ON 52B

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	LIFT STATION DETAILS (CONTROL CENTER)	PAGE No.
JULY, 2006		50B

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	LIFT STATION CONTROL PANEL	PAGE No.
JULY, 2006		51A

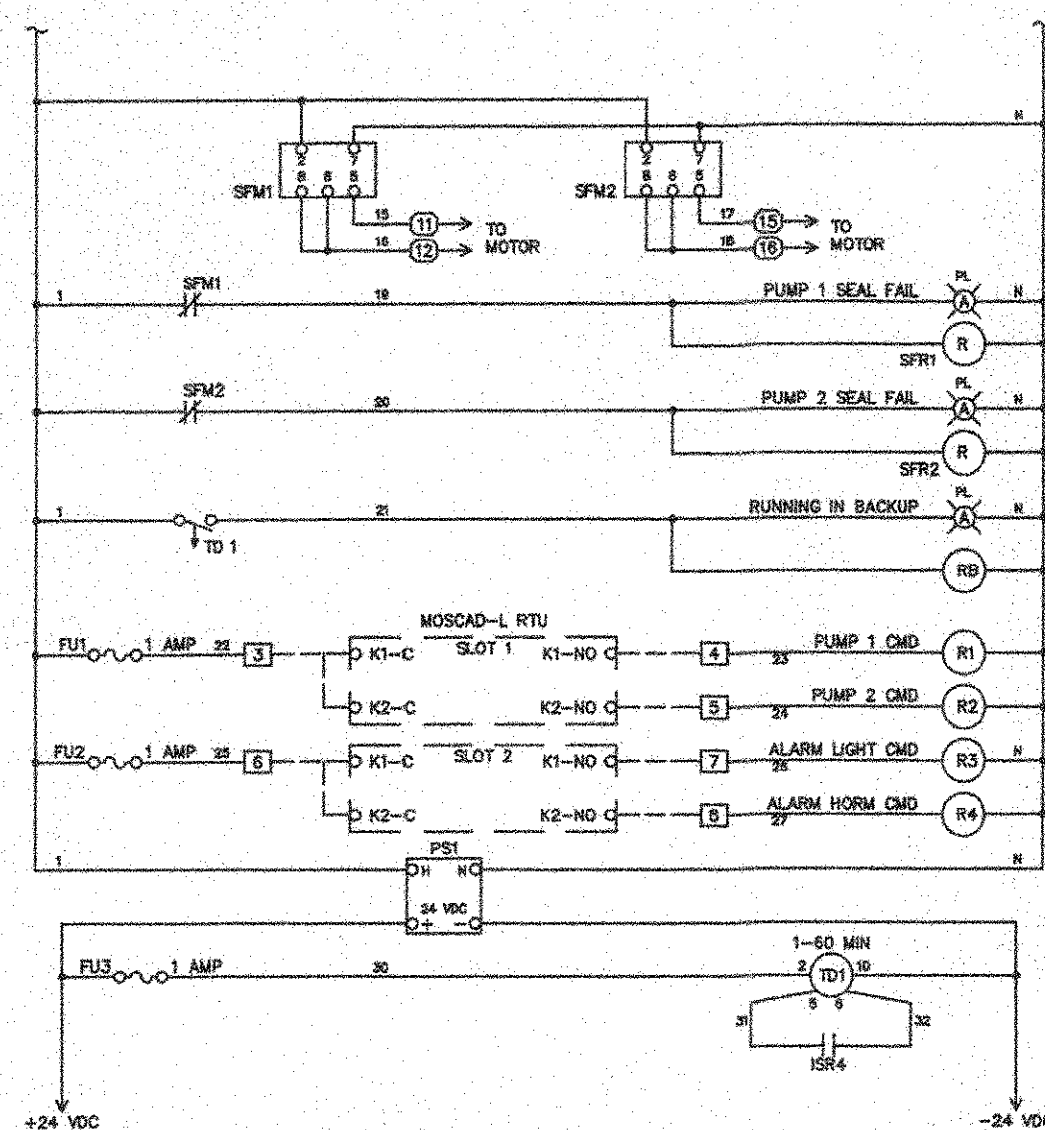
MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	LIFT STATION CONTROL PANEL NOTES	PAGE No.
JULY, 2006		51B

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

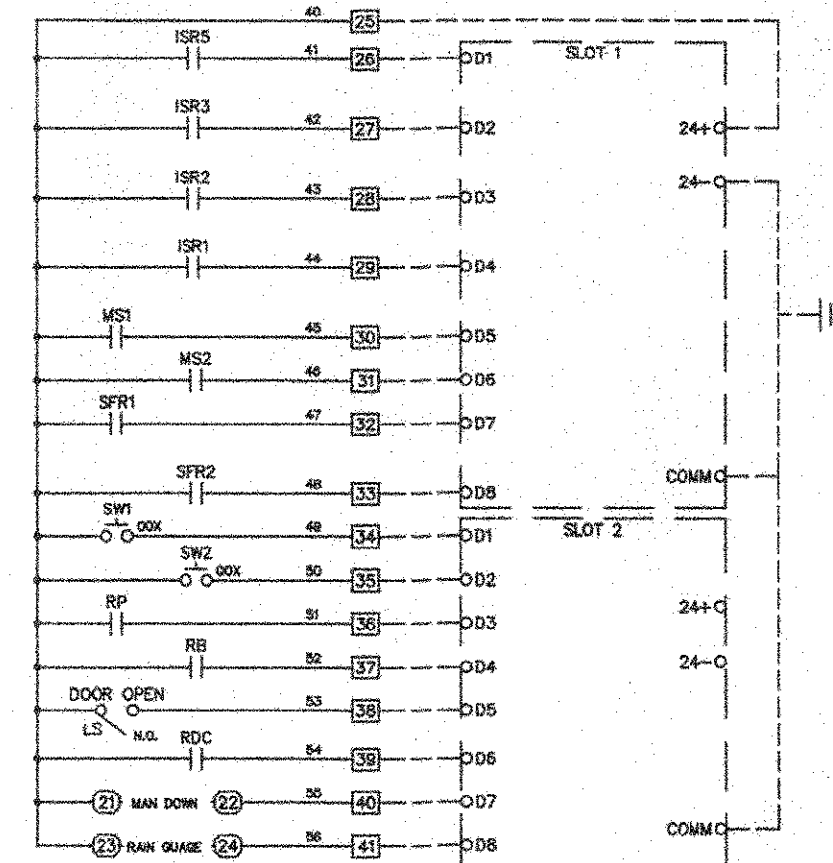
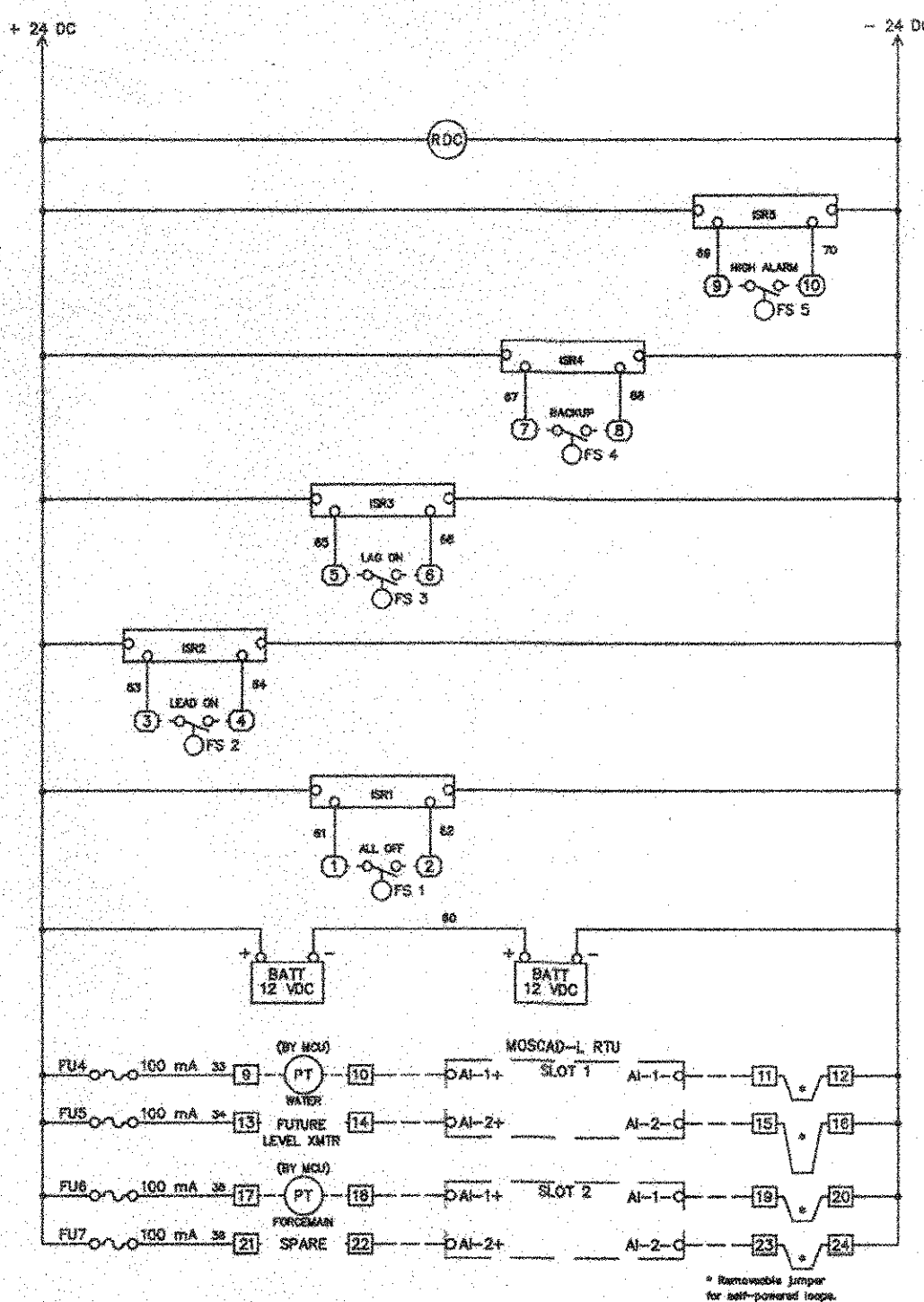
REVISION	LIFT STATION CONTROL PANEL WIRING DIAGRAM 480/240 VOLT, 3 PHASE, 3 WIRE	PAGE No.
JULY, 2006		52A

CONTINUED ON 52A



CONTINUED ON 52C

CONTINUED ON 52B



Wire #s 37-39, 57-59 not used

CONTROL PANEL PARTS LIST

Abbrev.	Description	Manufacturer	Part #
ENC	Enclosure,	Hoffman or equal	Custom, Nema 3R, 304SS, w/ Rainshield and 3 Pt. Latch
AL	Alarm Light	Tomar	490S-120
BATT	Battery	Vision	CP1228
CCB	Control Circuit Breaker	Square D	QOU1110
CR	Convenience Receptacle, GFI type	Hubbell	GFR522521A w/ weatherproof box
CRCB	Convenience Recept. CB	Square D	QOU1115
ECB	Emergency Circuit Breaker	Square D	Size as required
FA-FC	Fuse, Phase Monitor Power	Buss	AGC1
FX1, FX2	Fuse, Transformer Primary	Buss	FNQ5 (460 V) or FNQ8 (230 V)
FX3	Fuse, Transformer Secondary	Buss	FNM15
FU1-FU3	Fuse	Buss	GMC-1A
FU4-FU7	Fuse	Buss	GDB-100Ma
GFM1,2	Motor Ground Fault Monitor	Bender	RCM460/465 Series
GR	Generator Receptacle	Russell-Stoll	JRS1044FR or JRS2044FR (as required)
H	Horn	Federal	350-WB-120
ISR1-5	Intrinsically Safe Relays	Phoenix Contact	Process Interface ME Series (as required)
LA	Lightning Arrestor	Dietek	DTK-240-3CM or DTK-480-3CM (as required)
MCB	Main Circuit Breaker	Square D	Size as required
MS1, MS2	Motor Starters	Square D	Class 8336 NEMA series, size as required
PCB1,2	Pump Circuit Breaker	Square D	Size as required
PDB	Power Distribution Block	Square D	Class 9080 Type LB
PL	Pilot Light, color as noted	Square D	Class 9001 Type SK
PS1	Power Supply, 24 DC	Omron	S82K-01524
PM	Phase Monitor	Diversified	SLA-230-ASA or SUA-460-ASA (as required)
R1-R4	Control Relay	Omron	MK2PS-AC120
RB, RP, RS	Control Relay	Omron	MK2PS-AC120
RDC	Control Relay	Omron	MY2N-DC24
RTUCB	RTU Circuit Breaker	Square D	QOU1110
SFM1, SFM2	Seal Fail Monitor	SSAC	LC54BA
SFR1, SFR2	Control Relay, Seal Fail Relay	Omron	MK2PS-AC120
SW1, SW2, SW3	Switch	Square D	Class 9001 Type SK
SW4	Alarm Silence Pushbutton	Square D	Class 9001 Type SK
TB	Terminal Blocks	Wago	280 Series
TDL	Time Delay Relay	SSAC	TDBH-24D-L-1
XF1	Transformer	Square D	Class 9070 T1500-D1
SC	Surge Capacitor	GE	9118BA301

NO EXCEPTIONS will be allowed as to manufacturer of Generator Receptacle, Breakers or Motor Starters. Upon submittal and approval, substitution of other parts on an "As Equal" basis may be allowed if they are directly interchangeable with parts specified. APPROVAL OF A SUBMITTED ITEM AS AN "EQUAL" SHALL BE AT THE SOLE DISCRETION OF THE DEPARTMENT.

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	LIFT STATION CONTROL PANEL WIRING DIAGRAM 480/240 VOLT, 3 PHASE, 3 WIRE	PAGE No.
JULY, 2006		52B

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	LIFT STATION CONTROL PANEL WIRING DIAGRAM 480/240 VOLT, 3 PHASE, 3 WIRE	PAGE No.
JULY, 2006		52C

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	LIFT STATION CONTROL PANEL WIRING DIAGRAM 480/240 VOLT, 3 PHASE, 3 WIRE	PAGE No.
JULY, 2006		52D

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	CONTROL PANEL BILL OF MATERIALS 480/240 VOLT, 3 PHASE, 3 WIRE	PAGE No.
JULY, 2006		52E

DESIGNED: M.C.C. 11-16-05
DRAWN: C.C. 11-16-05
CHECKED: M.C.C. 11-16-05
DATE: NOV. 2005
PROJECT: 81101
FILE: MCT-1012 2006.dwg
BY: [Signature]
DATE: [Blank]
REVISION: [Blank]

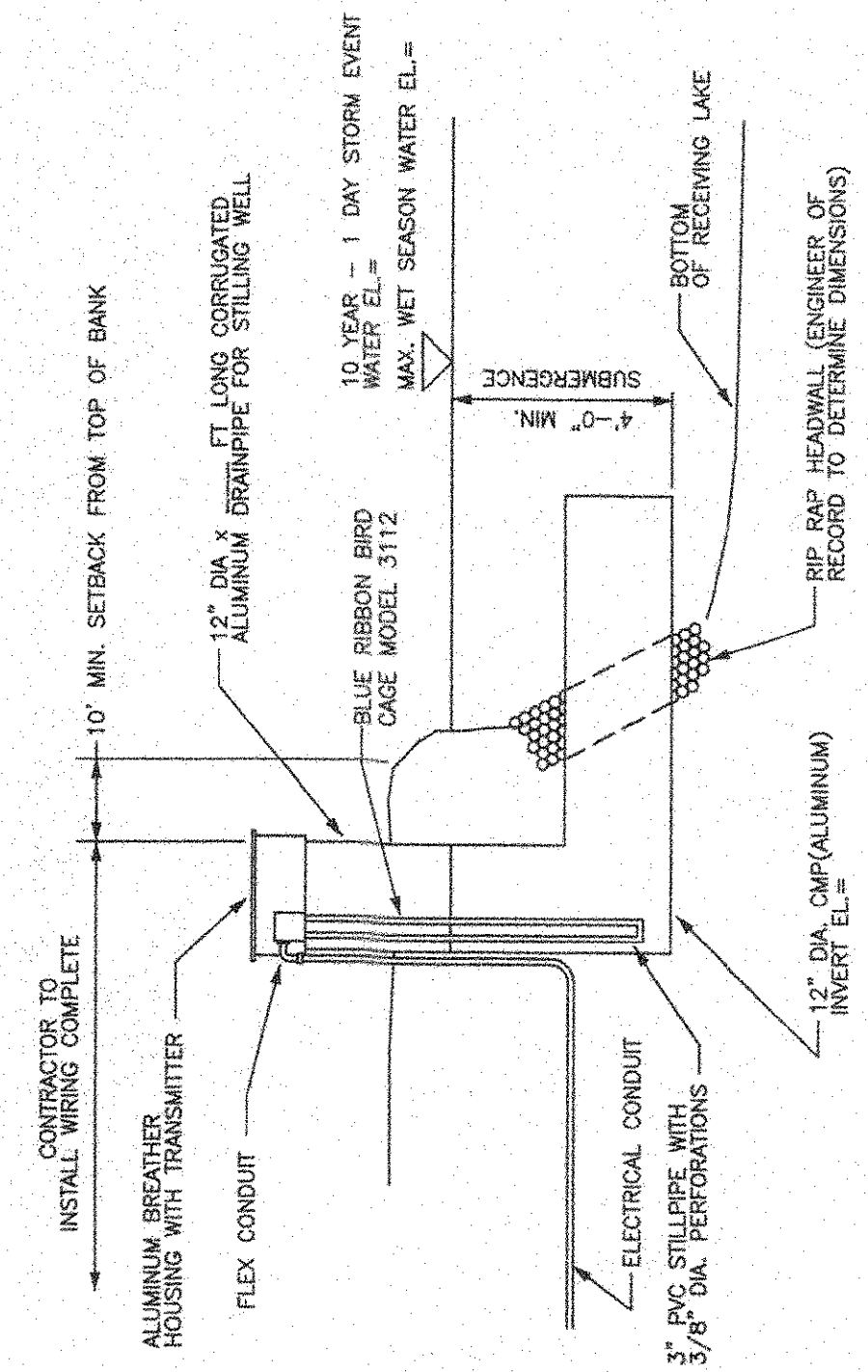
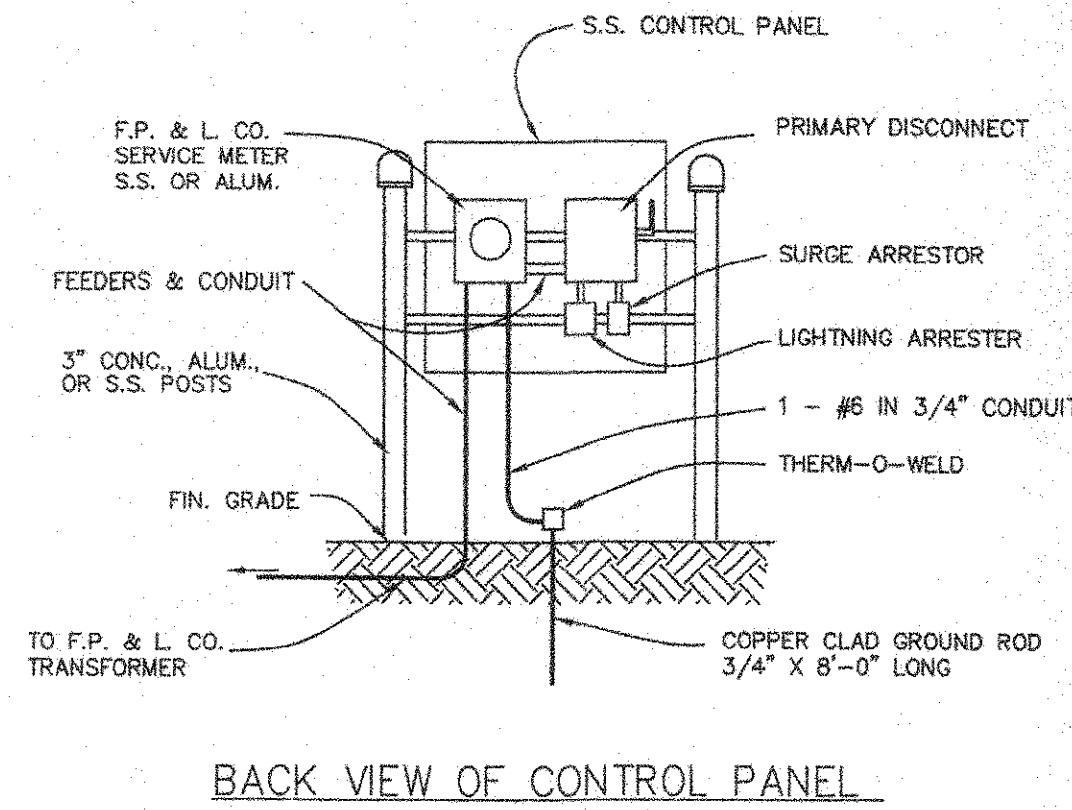
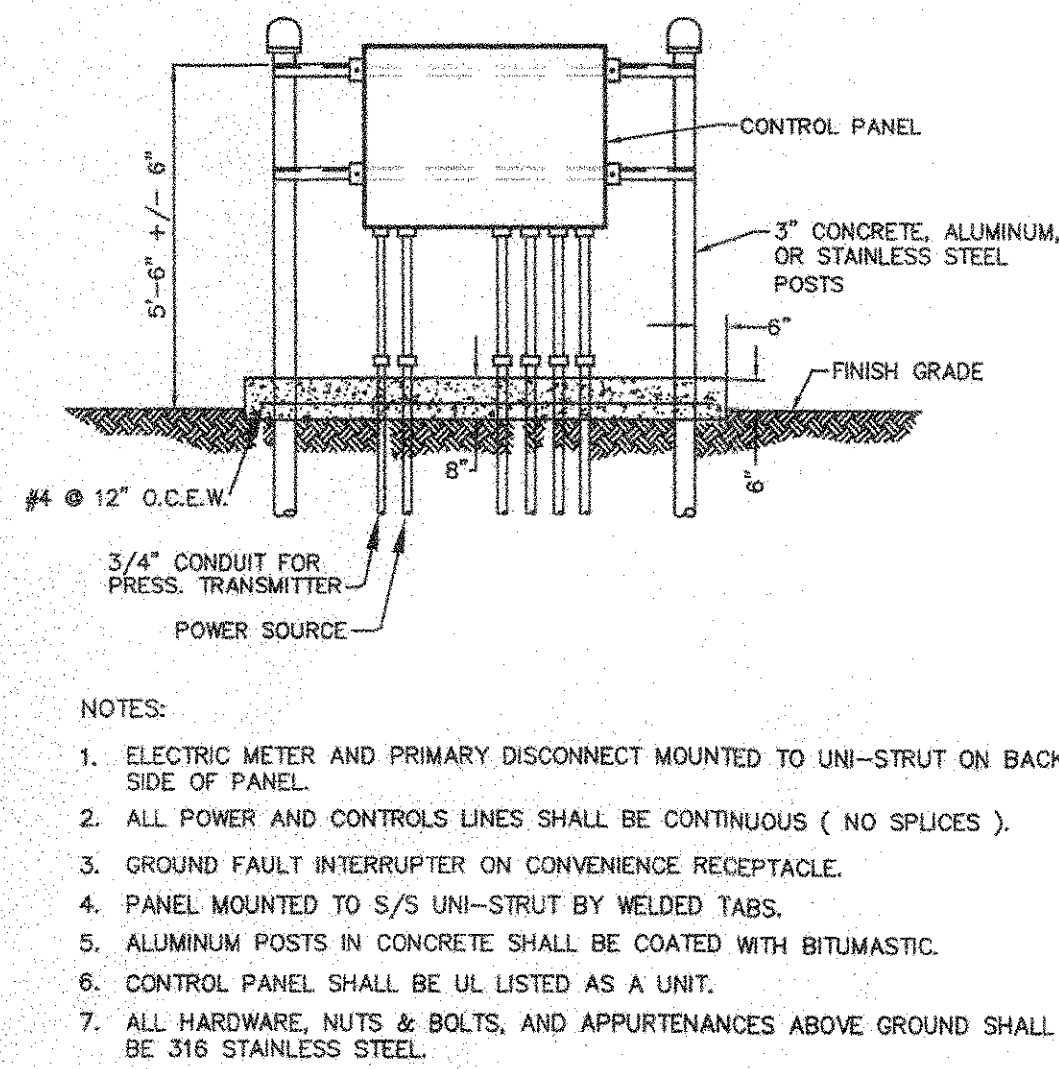
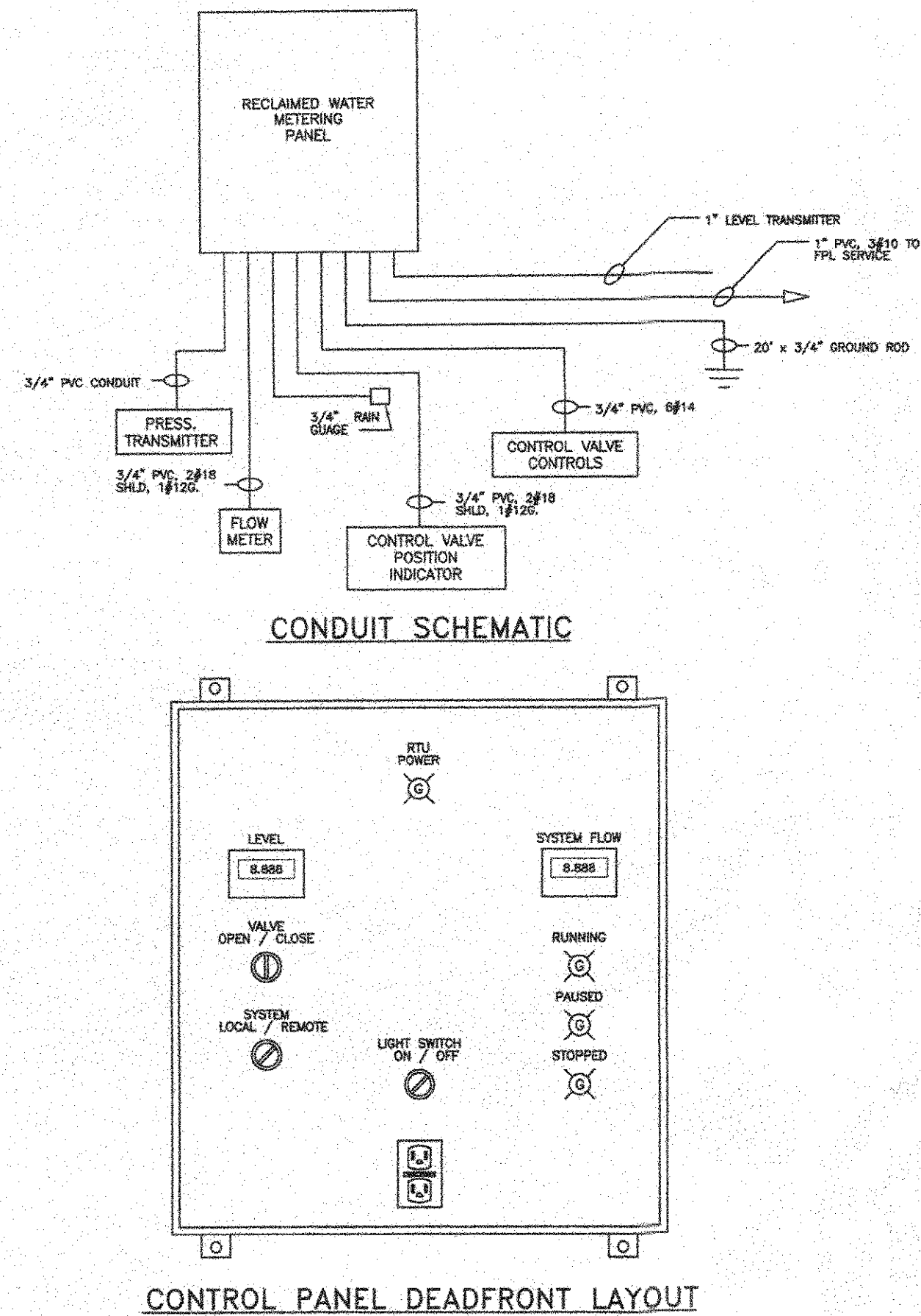
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Phone: (772) 781-6408 Fax: (772) 781-6409 Web: www.ewrt.com
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GRINDER PUMP DETAILS

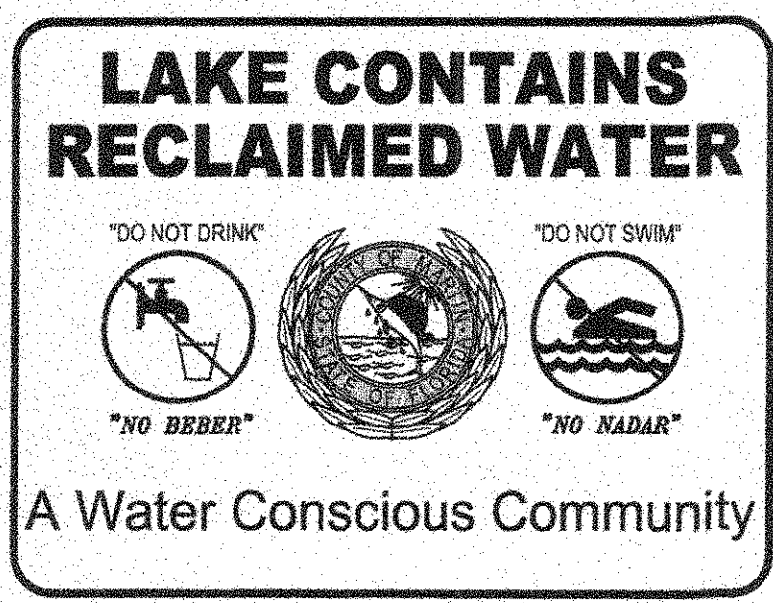
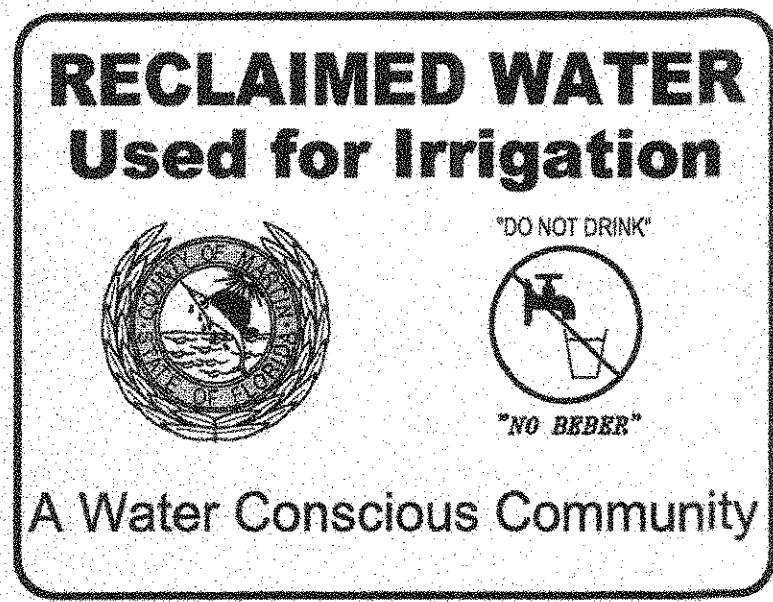
HAMMOCK RIDGE
MARTIN COUNTY, FLORIDA

Sheet No. **MC-9**



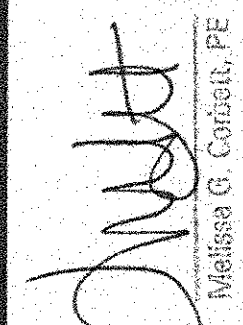
MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS			MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS			MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS			MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS		
REVISION	RECLAIMED WATER METERING FACILITY	PAGE No.	REVISION	RECLAIMED WATER METERING FACILITY	PAGE No.	REVISION	RECLAIMED WATER METERING FACILITY	PAGE No.	REVISION	RECLAIMED WATER METERING FACILITY	PAGE No.
JULY, 2006	CONTROL PANEL	64	JULY, 2006	CONTROL PANEL DETAILS	65	JULY, 2006	CONTROL PANEL (BACK VIEW)	66	JULY, 2006	LAKE STILLING WELL	67

NOTE: FOR POSTING IN AREAS THAT IRRIGATE WITH RECLAIMED WATER



NOTE: FOR POSTING AROUND STORAGE LAKES/PONDS THAT USE RECLAIMED WATER.

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS		
REVISION	RECLAIMED WATER SIGNAGE	PAGE No.
JULY, 2006		68



Melissa G. Collett, PE
 JUN 13 2007
 No. 59292

Designed:	M.G.C. 11-16-05	Drawn:	C.C. 11-16-05	Checked:	M.G.C. 11-16-05	Approved:	M.G.C. 11-16-05
Date:	NOV. 2005	Project:	81101	File:	MC1-MC12 2006.dwg	By:	
No.		Date:		Revision:			

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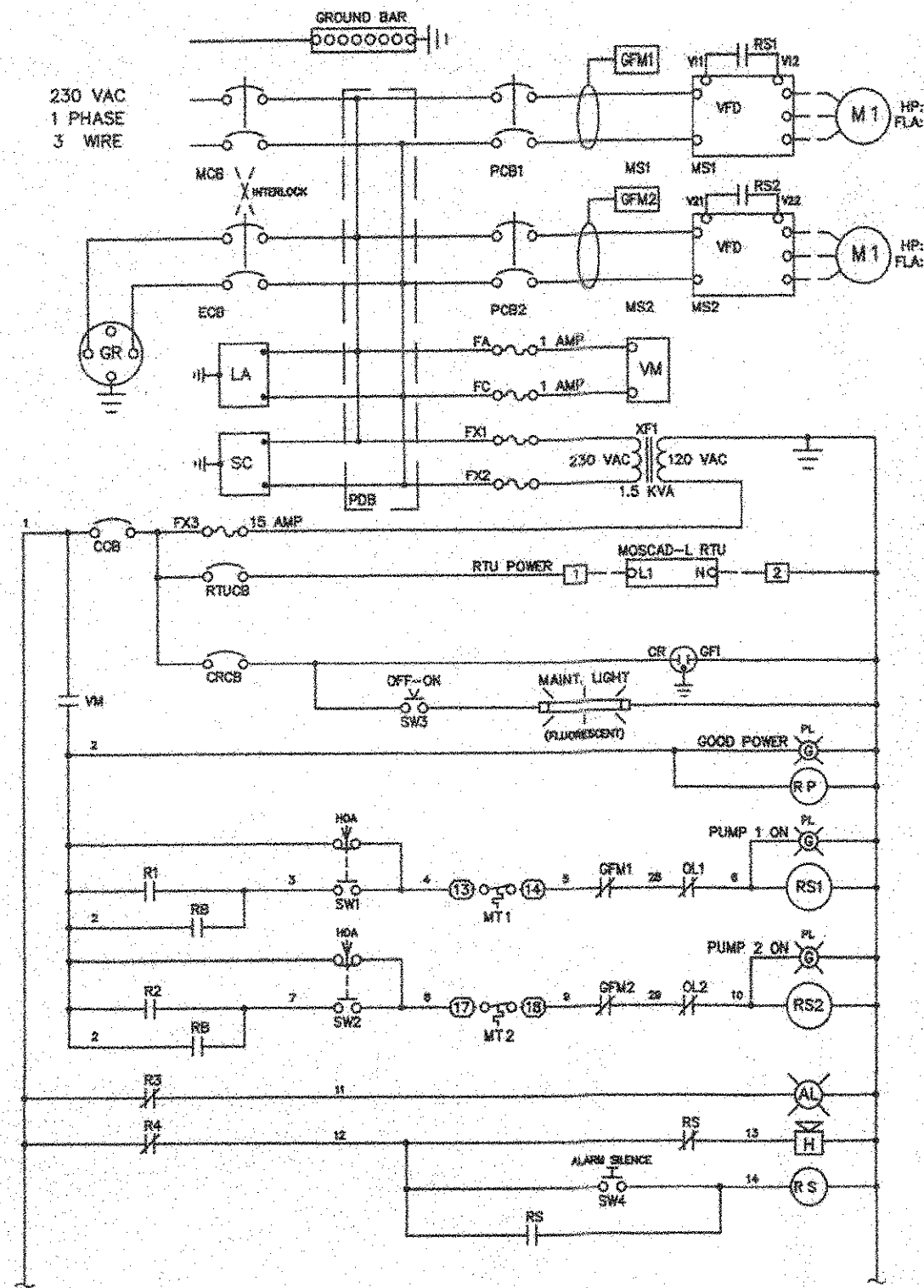
RECLAIMED WATER DETAILS

HAMMOCK RIDGE

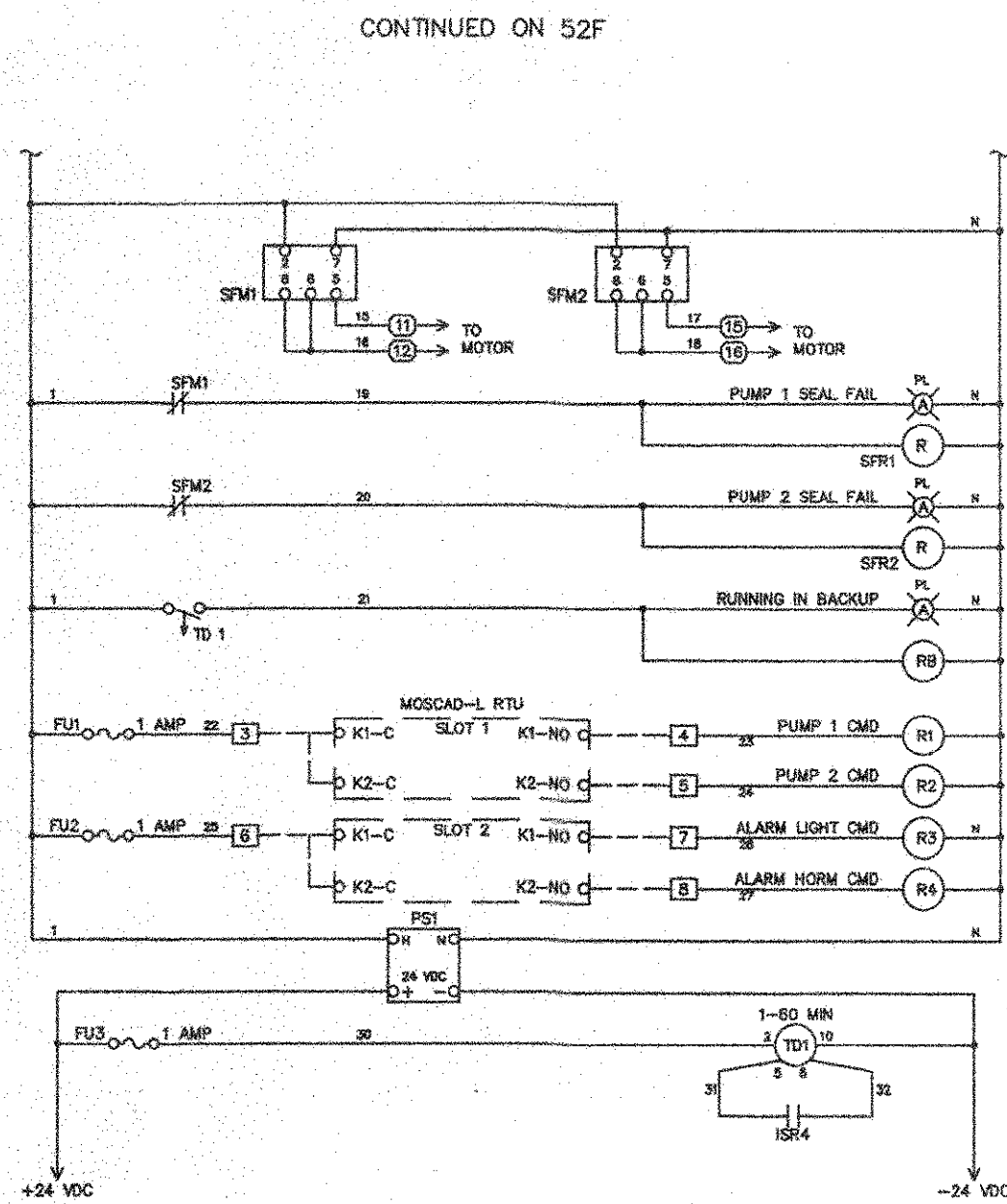
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Sheet No.

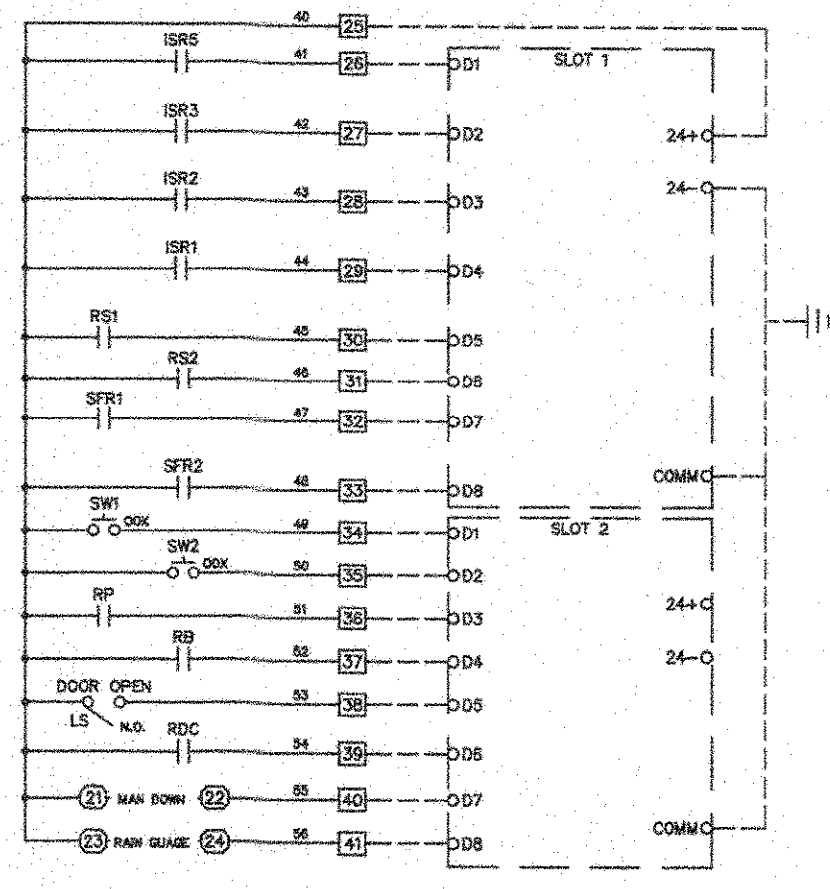
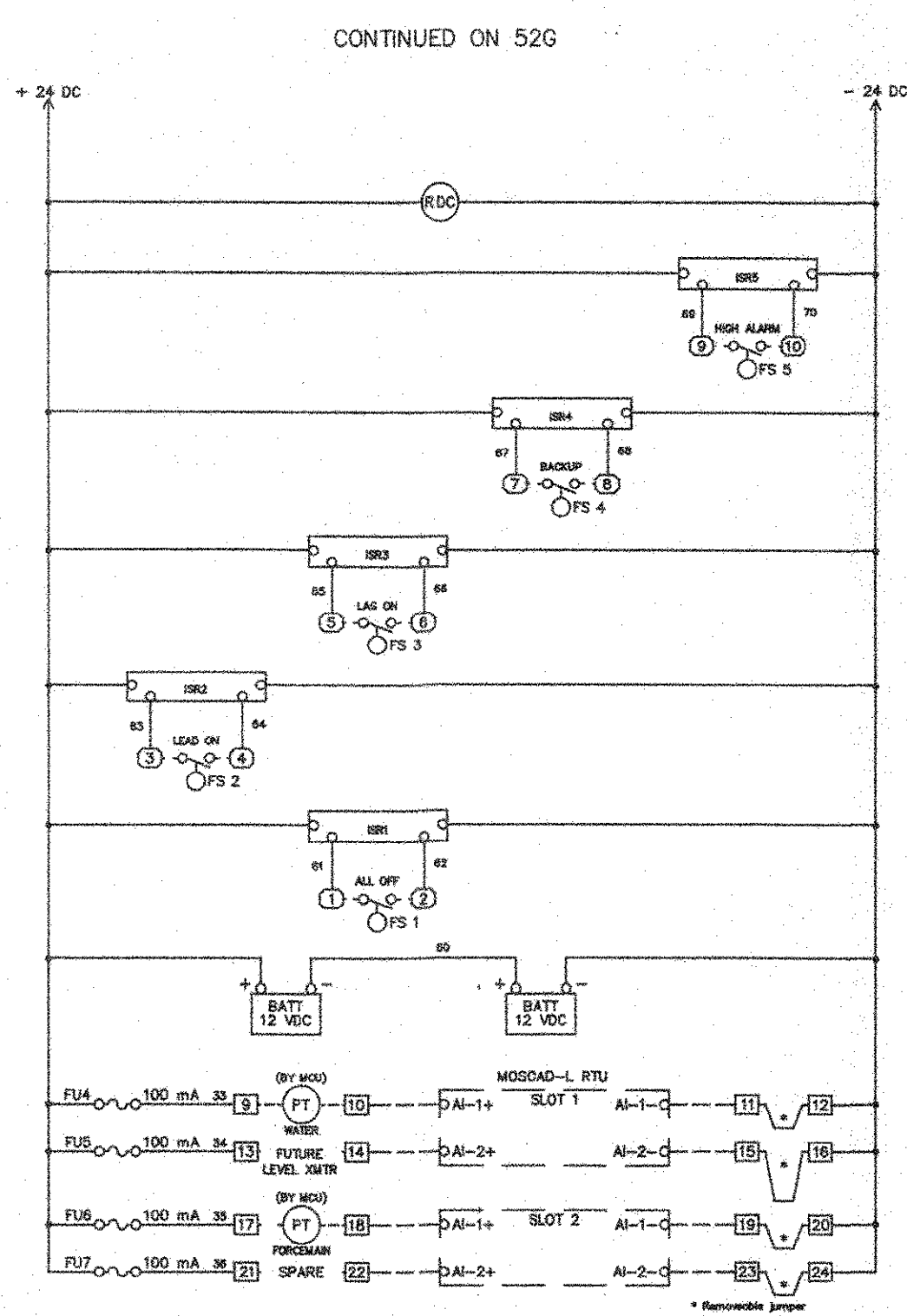
MC-12



CONTINUED ON 52G



CONTINUED ON 52H



Wires #s 37-39, 57-59 not used

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS			MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS			MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS			MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS		
REVISION	LIFT STATION CONTROL PANEL WIRING DIAGRAM	PAGE No.	REVISION	LIFT STATION CONTROL PANEL WIRING DIAGRAM	PAGE No.	REVISION	LIFT STATION CONTROL PANEL WIRING DIAGRAM	PAGE No.	REVISION	LIFT STATION CONTROL PANEL WIRING DIAGRAM	PAGE No.
JULY, 2006	230 VOLT, 1 PHASE, 3 WIRE	52F	MAY, 2006	230 VOLT, 1 PHASE, 3 WIRE	52G	MAY, 2006	230 VOLT, 1 PHASE, 3 WIRE	52H	MAY, 2006	230 VOLT, 1 PHASE, 3 WIRE	52I

CONTROL PANEL PARTS LIST

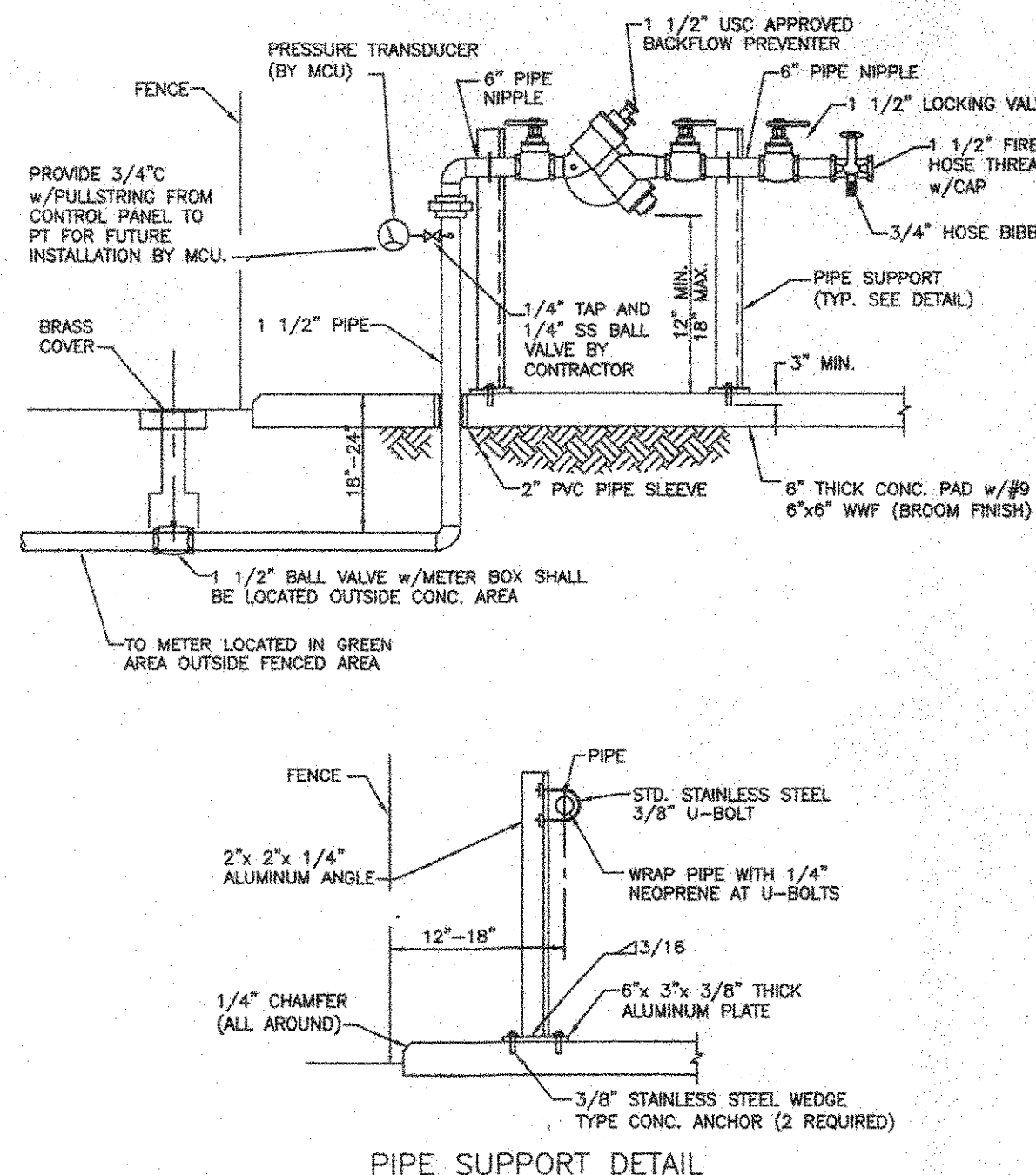
Abbrev.	Description	Manufacturer	Part #
ENC	Enclosure,	Hoffman or equal	Custom, Nema 3R, 304SS, w/ Rainshield and 3 Pt. latch
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CRCB	Convenience Recept. CB	Square D	QOU115
ECB	Emergency Circuit Breaker	Square D	Size as required
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FX1, FX2	Fuse, Transformer Primary	Buss	FNQ5 (460 V) or FNQ8 (230 V)
FX3	Fuse, Transformer Secondary	Buss	FNMI5
FU1-FU3	Fuse	Buss	GMC-1A
FU4-FU7	Fuse	Buss	GDB-100Ma
GFM1,2	Motor Ground Fault Monitor	Bender	RCM460/465 Series
GR	Generator Receptacle	Russell-Stoll	JRS1044FR or JRS2044FR (as required)
H	Horn	Federal	350-WB-120
ISR1-5	Intrinsically Safe Relays	Phoenix Contact	Process Interface ME Series
LA	Lighting Arrestor	Dietek	DTK-240-3CM
MCB	Main Circuit Breaker	Square D	Size as required
MS1, MS2	Motor Starters	Safronics	GP-10 Series, size as required
PCB1,2	Pump Circuit Breaker	Square D	Class 9080 Type LB
PDB	Power Distribution Block	Square D	Class 9001 Type SK
PL	Pilot Light, color as noted	Omron	S82K-01S24
PS1	Power Supply, 24 DC	Omron	MK2PS-AC120
RI-R4	Control Relay	Omron	MK2PS-AC120
RB, RP, RS	Control Relay	Omron	MY2N-DC24
RDC	Control Relay	Omron	QOU110
RTUCB	RTU Circuit Breaker	Square D	Class 9001 Type SK
SFM1, SFM2	Seal Fail Monitor	SSAC	LC54BA
SFR1, SFR2	Control Relay, Seal Fail Relay	Omron	MK2PS-AC120
SW1, SW2, SW3	Switch	Square D	Class 9001 Type SK
SW4	Alarm Silence Pushbutton	Square D	Class 9001 Type SK
TB	Terminal Blocks	Wago	280 Series
TD1	Time Delay Relay	SSAC	TD3H1-24D-L-D
VM	Voltage Monitor	Diversified	UOA-240-ALA
XF1	Transformer	Square D	Class 9070 T1500-D1
VFD	Variable Frequency Drive	Safronics	Size as Required
SC	Surge Capacitor	GE	9118BAB301

NO EXCEPTIONS will be allowed as to manufacturer of Generator Receptacle, Breakers or Motor Starters. Upon submittal and approval, substitution of other parts on an "As Equal" basis may be allowed if they are directly interchangeable with parts specified. APPROVAL OF A SUBMITTED ITEM AS AN "EQUAL" SHALL BE AT THE SOLE DISCRETION OF THE DEPARTMENT.

GENERAC DIESEL GENERATOR SPECIFICATION

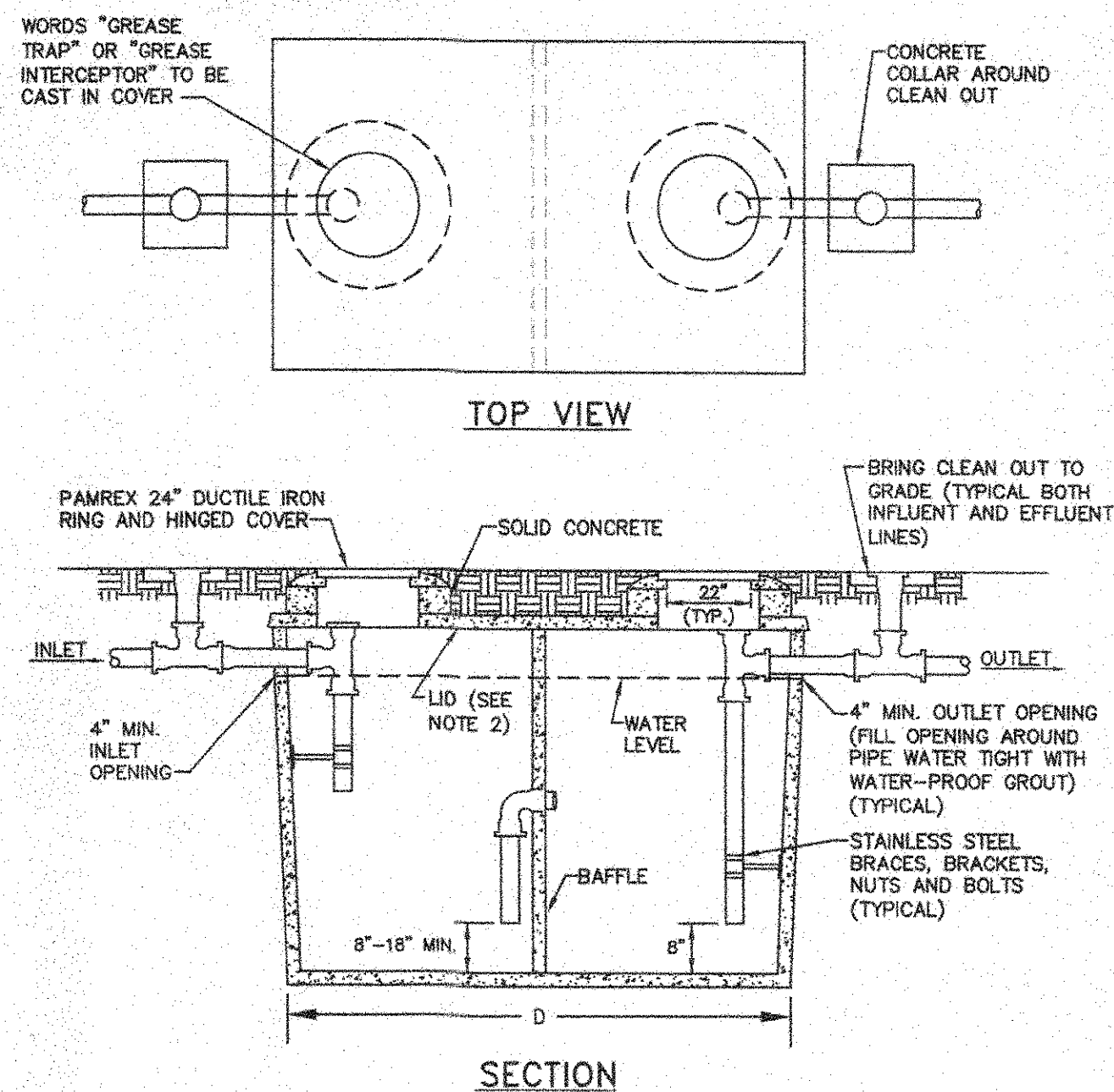
60 KW Standby, 54 KW Prime Rating

- Generator shall be at 1800 RPM Model SD0060 as manufactured by Generac.
- Synchronous alternator wired for 120/208 VAC 3 Phase, 60 HZ, with a 3-position voltage change over switch allowing the following voltages:
 - Three Phase: 208, 220, 230, 240, 416, 460, and 480 V
 - Single Phase: 120, 127, 139, 230, 240, 254, and 277 V
- Brushless Excitation
 - 1% voltage regulation
 - 100 amp thermal/magnetic circuit breaker for 480 volts
 - 250 amp thermal/magnetic circuit breaker for 208/240 volts
 - Two knock-outs for power cable access to circuit breakers
 - Three 50 amp receptacles, 125/250 volt, 4 wire, C56369
 - Three 50 amp Siemens BQ style circuit breakers
 - Two 20 amp GFCI receptacles
 - Two 20 amp push button type circuit breakers
 - 3kVA transformers to power 120 volt receptacles
- GenSet Control System
 - "E" option analog/digital control panel with:
 - AC volt, amp and frequency meters with phase selector switch
 - Emergency stop switch and audible alarm
 - Battery charger fuse and panel lamp
 - Programmable engine control and monitoring module with:
 - Manual, off, and auto switch
 - Four LED's to indicate generator ready, not in auto, alarm active, and generator running
 - Dim entry keypad with digital display for: oil pressure, coolant temperature, fuel level, DC battery voltage, and run time hours
 - Alarm indication for: high or low AC and battery voltage; high or low frequency; low or pre-low oil pressure; low water temperature and level; high and pre-high engine temperature; high, low, and critical low fuel levels; overspeed and overtemp; unit not in "automatic mode"; 2 user programmable analog channels; and 8 user programmable digital channels
 - Serial communication via RS232, RS 485, or external modem
 - Electronic isochronous governor with a 0.25% frequency regulation
- Level 2A sound attenuated 65 dBA at 23 feet weather protective tan enclosure with powder paint finish and integral critical grade muffler
- 90 AH, 700 CCA, 27F battery
- 2 amp automatic float battery charger
- Battery charging alternator
- Battery cables
- Batter tray
- Fuel shut-off solenoid valve
- Solenoid activated starter motor
- Fuel filter and water separator
- Air cleaner and oil filter with internal bypass
- Oil and antifreeze
- Air and radiator drain extensions
- Vibration isolators between engine/alternator and base frame
- Set of manuals to be delivered with the unit
- Standard flex exhaust
- Coolant heater
- Air duct adapter
- UL approved 150 gallon DW base tank with fuel level indicating gauge
- Emergency vent
- Alternator strip heater
- Two year standard warranty
- 7,000 lb dual axle trailer with hydraulic brakes on both axles, parking brakes, full ICC package, safety chains, combo hitch, 2-5/16 in. ball coupler, and retractable front jack stand
- 60 feet of Carol Super VU-TRON 2.3 type G-GC portable power cable (UL) 2000V DRY90C Wet 75C sun resistant CSC 9-40C0
- FT-59-7K-1230-40 MSHA
- One plug compatible with Russell Stoll #JRSB1044FR female connector



NOTES:

- ALL ABOVE GRADE PIPING SHALL BE BRASS. FITTINGS SHALL BE BRONZE.
- ALL JOINTS SHALL BE THREADED.
- FOR LIFT STATION TO BE OWNED BY M.C.E.S. USE RPZ BACKFLOW PREVENTER BY FEBCO MODEL 825Y, AMES SERIES 4000 SS (SILVER BULLET), OR APPROVED EQUAL.
- MIN. 24" CLEARANCE BETWEEN RPZ BACKFLOW PREVENTER AND CONTROL PANEL REQUIRED.
- THREADED AREAS OF CORROSION STOP AND OTHER FITTINGS SHALL BE SPIRAL WRAPPED WITH TWO WRAPS OF TEFLON TAPE.



NOTES:

- GREASE TRAPS (SEPTIC TANKS) SHALL BE MANUFACTURED BY FLORIDA SEPTIC INC., SEBRING SEPTIC, AVERETT SEPTIC, OR APPROVED EQUAL. STATEMENT: THIS CONCRETE STRUCTURE MEETS OR EXCEEDS ALL THE REQUIREMENTS FOR GREASE INTERCEPTORS/SEPTIC TANKS AS IN THE FLORIDA ADMINISTRATIVE CODE, CHAPTERS 64E-6.01380 & THE SHOP DRAWINGS (3 COPIES MINIMUM) SHALL THEN BE SIGNED AND SEALED BY THE ENGINEER-OF-RECORD AND FORWARDED TO THE DEPARTMENT FOR APPROVAL.
- LID TYPES:
 - 4" REGULAR LID
 - 8" TRAFFIC BEARING LID
- ALL INTERNAL COMPONENTS WILL BE CONSTRUCTED BY GREASE TRAP INSTALLER.
- TANK INSPECTIONS WILL OCCUR WITH TANK ABOVE GROUND.
- BAFFLE SHALL BE INSTALLED 1/2 (ONE HALF) TO 2/3 (TWO THIRDS) "D".

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS			MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS			MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS			MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS		
REVISION	CONTROL PANEL BILL OF MATERIALS	PAGE No.	REVISION	EMERGENCY GENERATOR SPECIFICATONS	PAGE No.	REVISION	WATER SERVICE DETAIL AT LIFT STATION	PAGE No.	REVISION	DOUBLE-COMPARTMENT GREASE TRAP AND OIL SEPARATOR	PAGE No.
MAY, 2006	230 VOLT, 1 PHASE, 3 WIRE	52J	JULY, 2006		52K	JULY, 2006		53	JULY, 2006		55

Designed: M.C.C. 11-16-05
 Drawn: C.C. 11-16-05
 Checked: M.C.C. 11-16-05
 Approved: M.C.C. 11-16-05
 Date: NOV. 2005
 Project: B1101
 File: MCT-MC12 2006.dwg
 No: 15029

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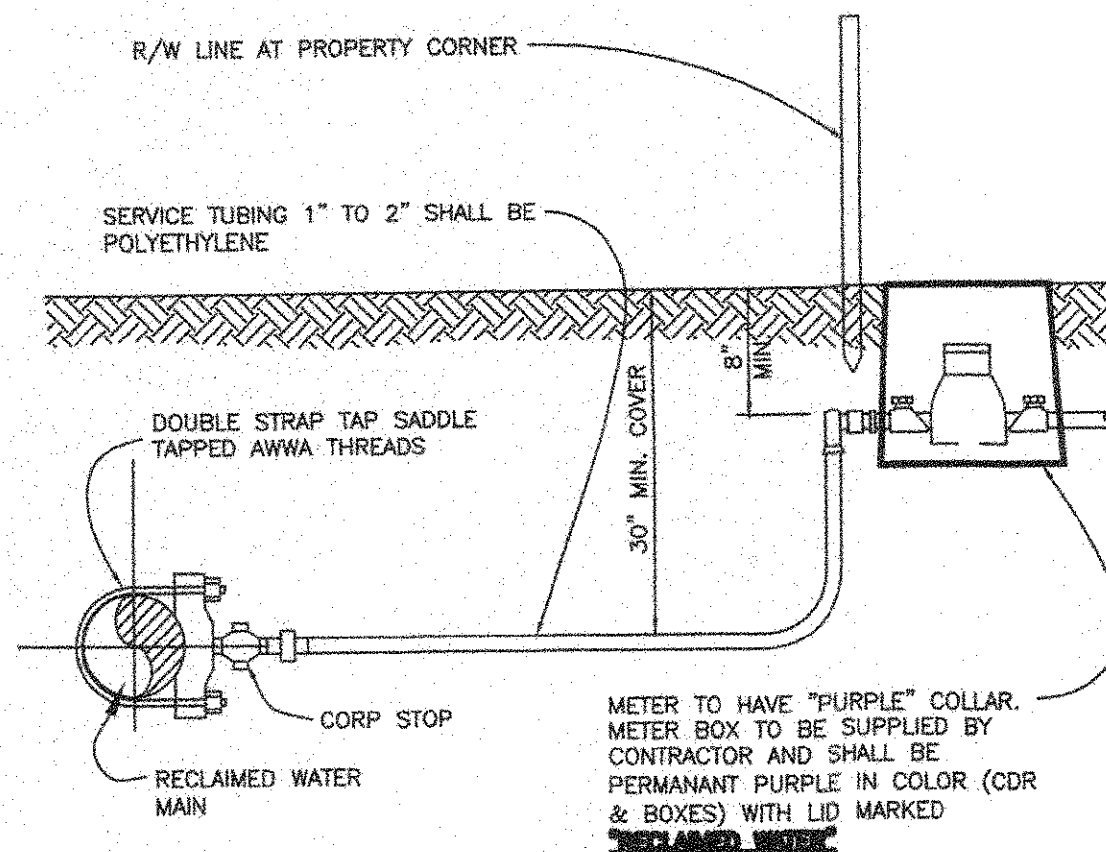
Engineering & Water Resources, Inc.
 7881 S.W. Ellipse Way, Stuart, Florida 34987
 Phone: (772) 781-6408 Fax: (772) 781-6409 Web: www.ewr.com
 Certificate of Authorization: 00006588

GRINDER PUMP DETAILS

HAMMOCK RIDGE
 MARTIN COUNTY, FLORIDA

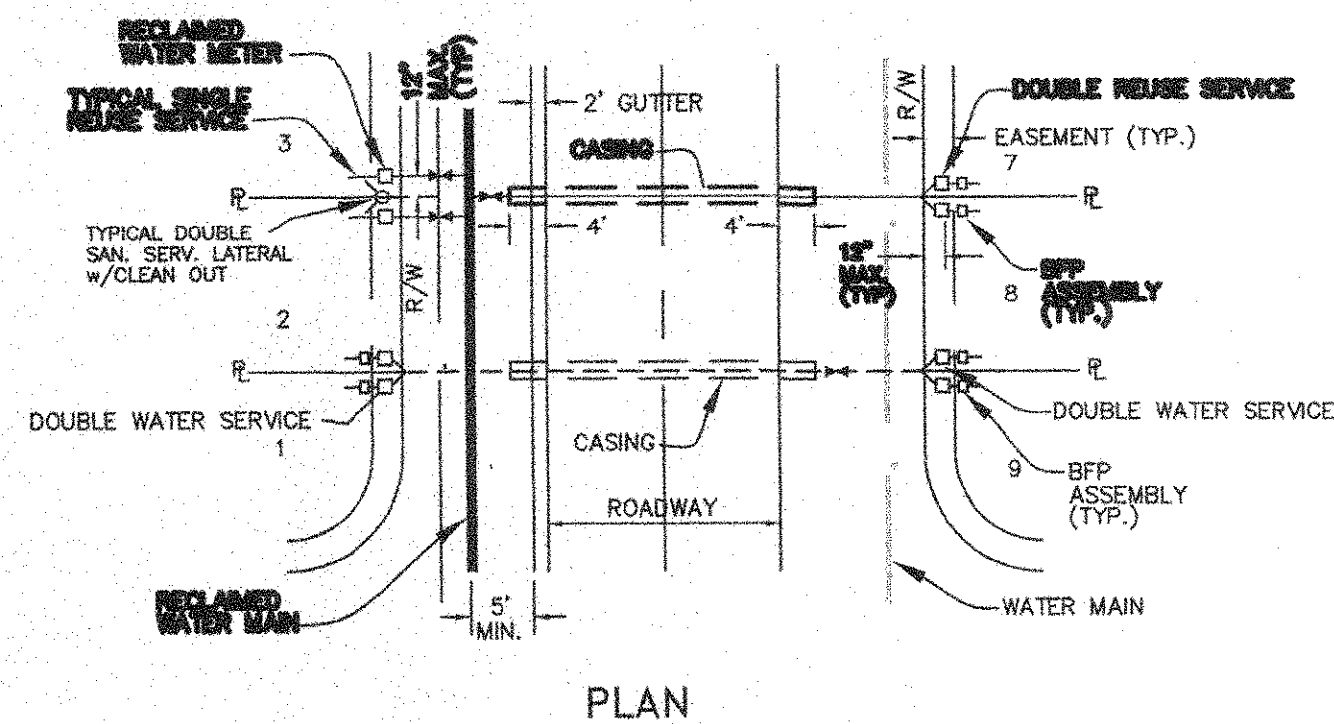
Sheet No.

MC-10

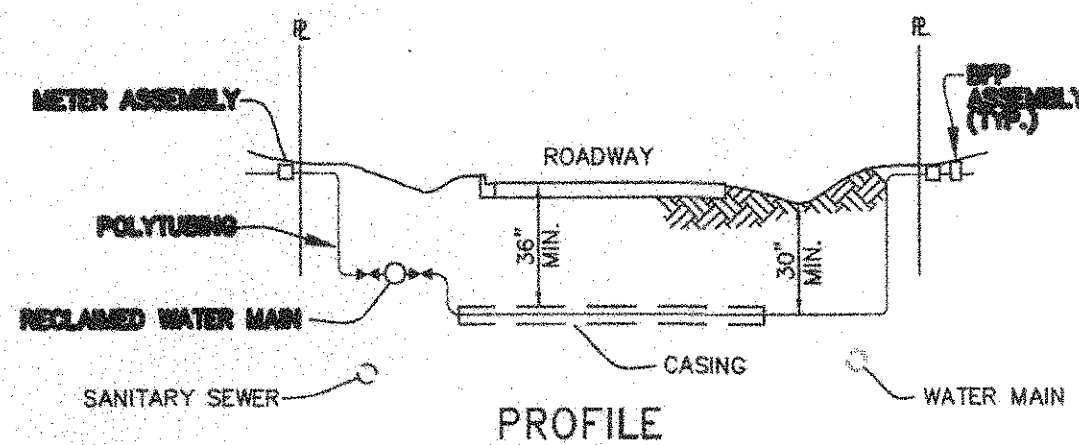


NOTES:

1. MIN. SERVICE LINES SHALL BE AS FOLLOWS: 1" FOR SINGLE AND DOUBLE SERVICES WHERE METER SIZE IS 5/8"; 2" FOR SINGLE AND DOUBLE SERVICES WHERE METER SIZE IS 1".
2. COMPRESSION FITTINGS SHALL BE SUITABLE FOR TUBING USED AND REQUIRE METAL (S.S.) INSERTS.
3. DOUBLE SERVICES REQUIRE "U" BRANCH WITH ANGLE CURB STOPS.
4. POLYETHYLENE SHALL BE AS DEFINED BY A.S.T.M. D2737 SDR9 AND A.W.W.A. 901, LATEST EDITION, AND BE PRESSURE RATED FOR 200 PSI. (COLORED PURPLE PANTONE 522).
5. TUBING SHALL BE MARKED WITH SIZE, MANUFACTURERS NAME, WORKING PRESSURE, NATIONAL SANITATION FOUNDATION APPROVAL, A.S.T.M. SPECIFICATION AND PRODUCTION CODE. TUBING SHALL HAVE AN OUTSIDE DIAMETER EQUIVALENT TO THE OUTER DIAMETER OF COPPER TUBING.
6. SERVICE LOCATOR WIRE SHALL BE LAID IN THE TRENCH WITH ALL SERVICES. CONNECTED TO THE MAIN WIRE AND WRAPPED AROUND THE SERVICE PIPING OR TUBING. WIRE FOR RECLAIMED WATER SHALL BE **PURPLE** IN COLOR.



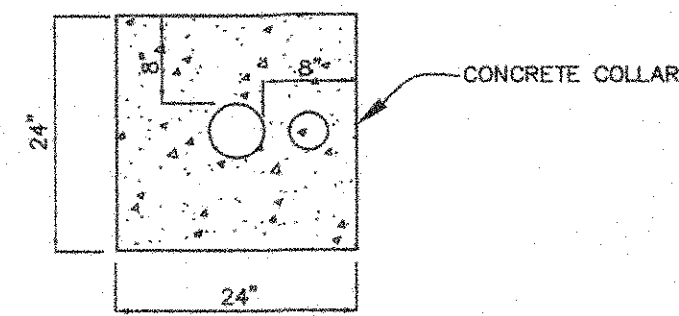
PLAN



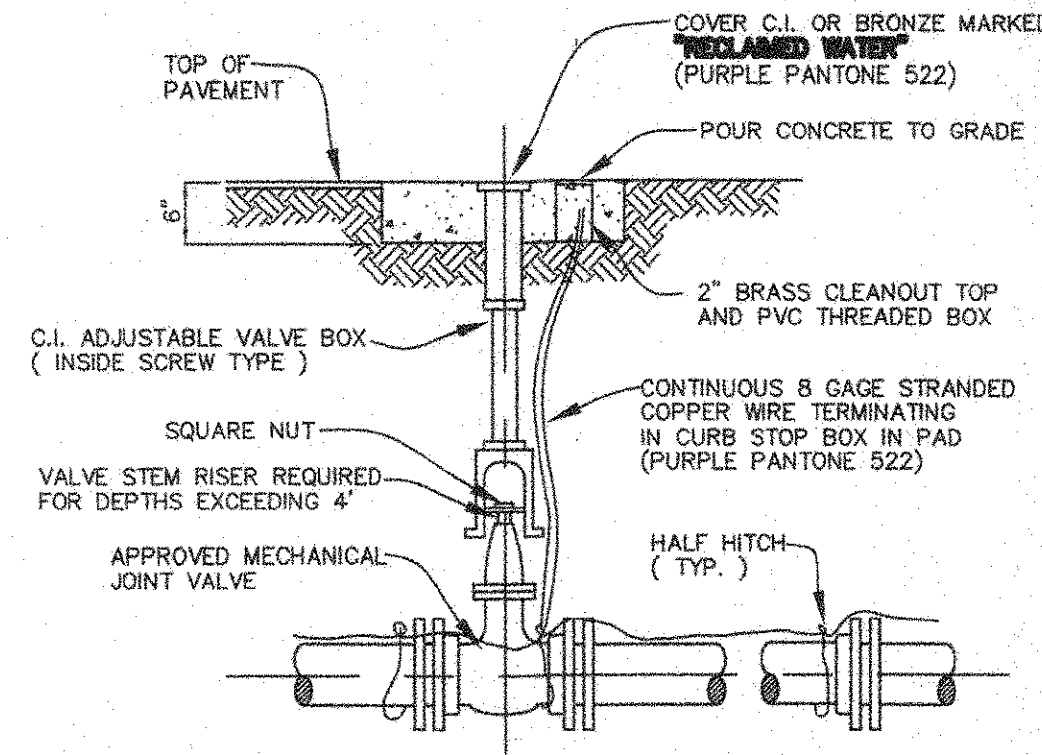
PROFILE

NOTES:

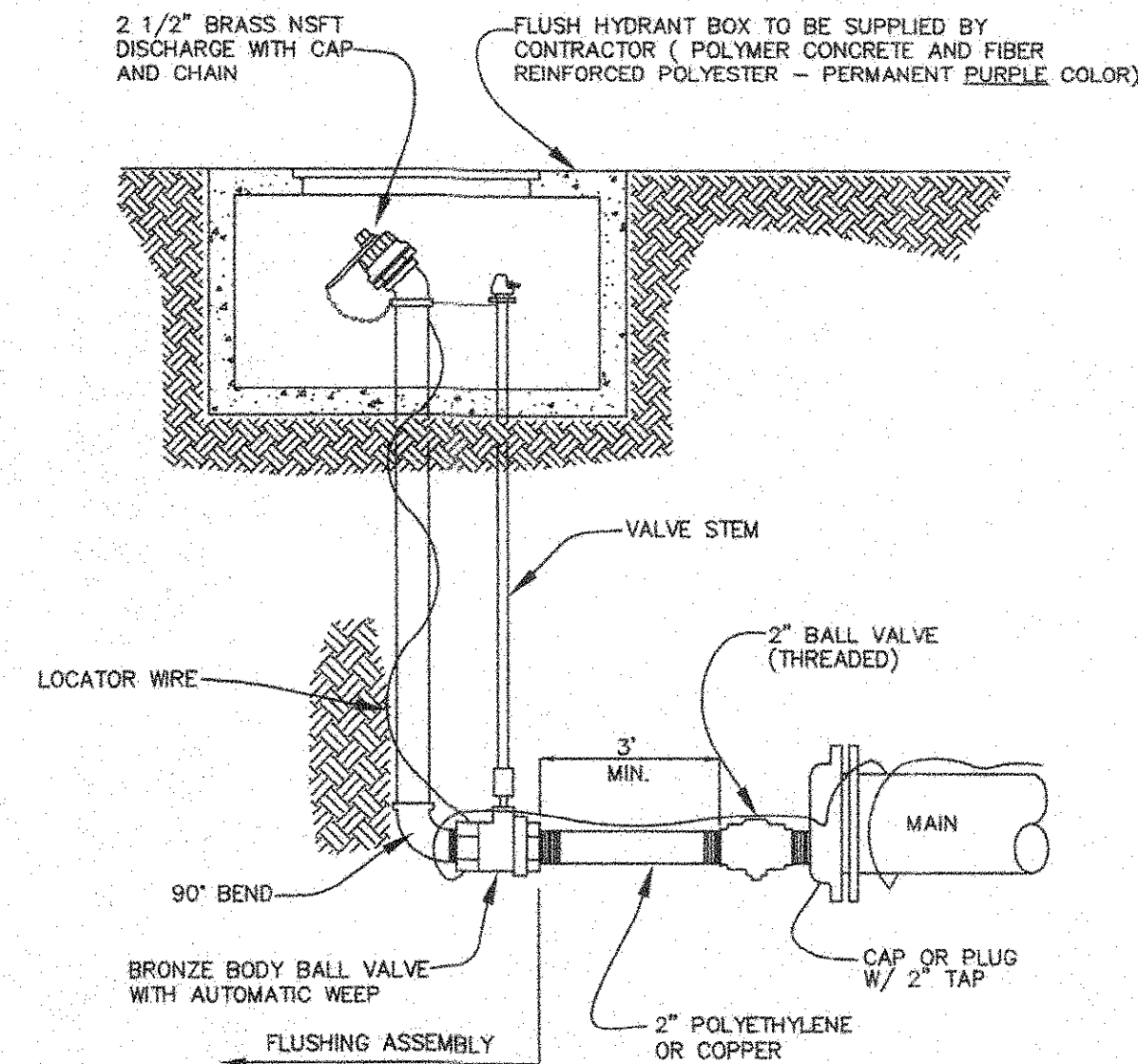
1. HOUSE SERVICE LATERAL UNDER PAVEMENT SHALL BE INSTALLED THROUGH A 2" BLACK IRON PIPE OR PVC SCH. 80 CASING.
2. TAPPING SADDLE AND CORPORATION STOP MUST BE PLACED IN ACCESSIBLE AREAS, OUT FROM UNDER ANY PAVED AREAS.
3. **RECLAIMED WATER SERVICE** TO BE LOCATED ADJACENT TO SANITARY SERVICE LOCATIONS.



PLAN



ELEVATION



NOTES:

1. FLUSHING HYDRANT ASSEMBLY SHALL BE GIL INDUSTRIES, AQUARIUS ONE-O-ONE 2" POST FLUSHING HIDDEN HYDRANT.
2. MAIN TO BE RESTRAINED FOR TWO FULL LENGTHS.
3. LID SHALL BE LOCKABLE AND MARKED **RECLAIMED WATER**.

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	RECLAIMED WATER SERVICE CONNECTION DETAIL	PAGE No.
JULY, 2006	5/8" OR 1" METER	56

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

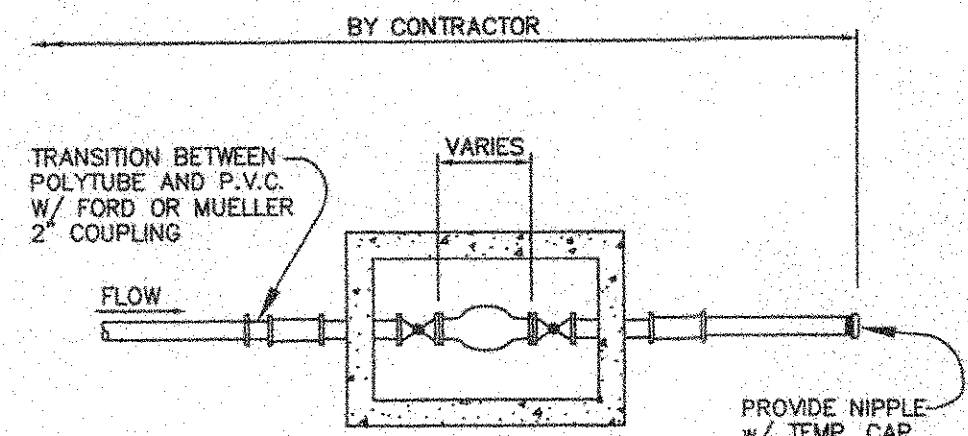
REVISION	RECLAIMED WATER SERVICE CONNECTIONS PLAN / PROFILE (SINGLE OR DOUBLE)	PAGE No.
JULY, 2006		57

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	RECLAIMED WATER VALVE SETTING DETAIL	PAGE No.
JULY, 2006		58

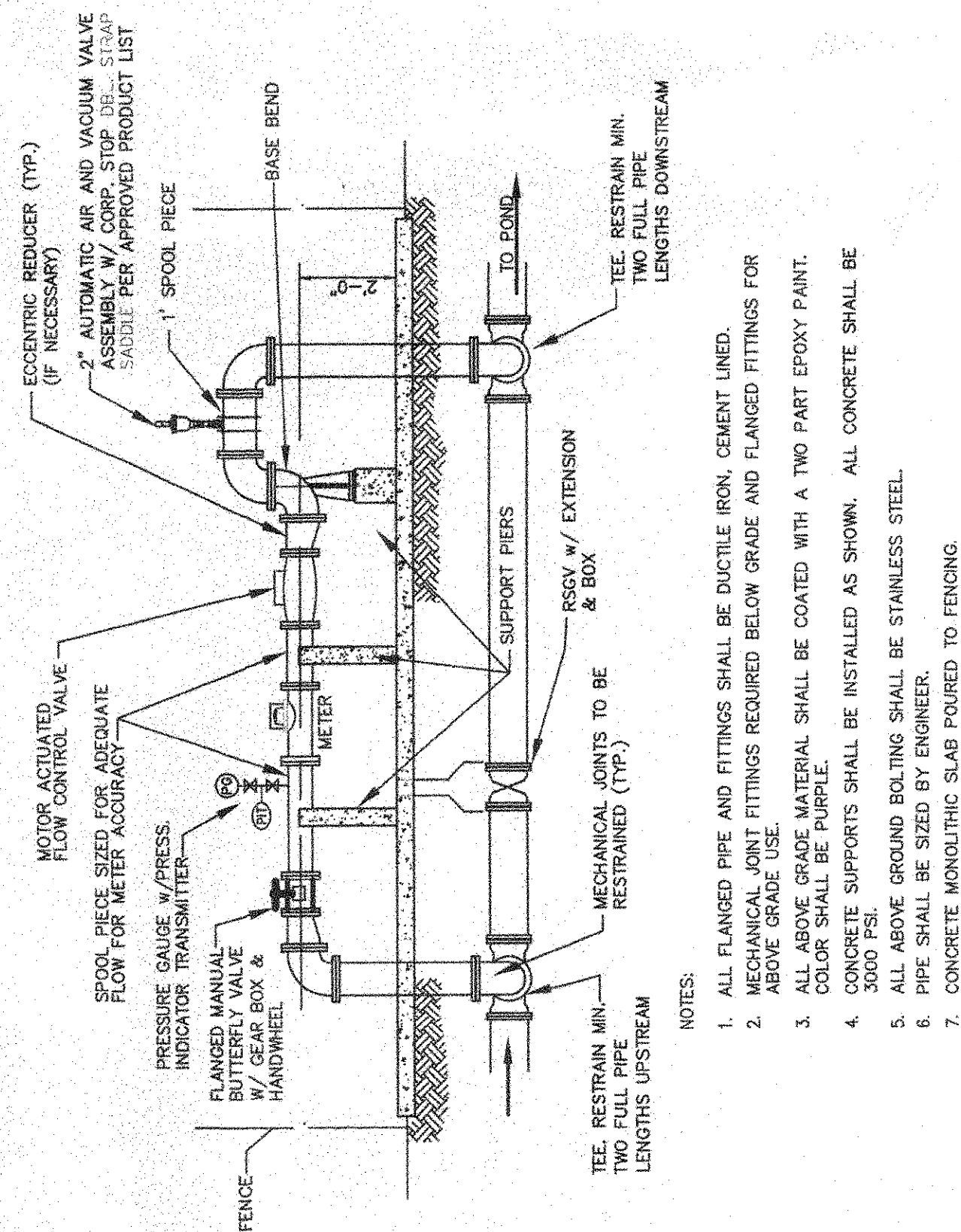
MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	RECLAIMED WATER FLUSHING HYDRANT	PAGE No.
JULY, 2006		59



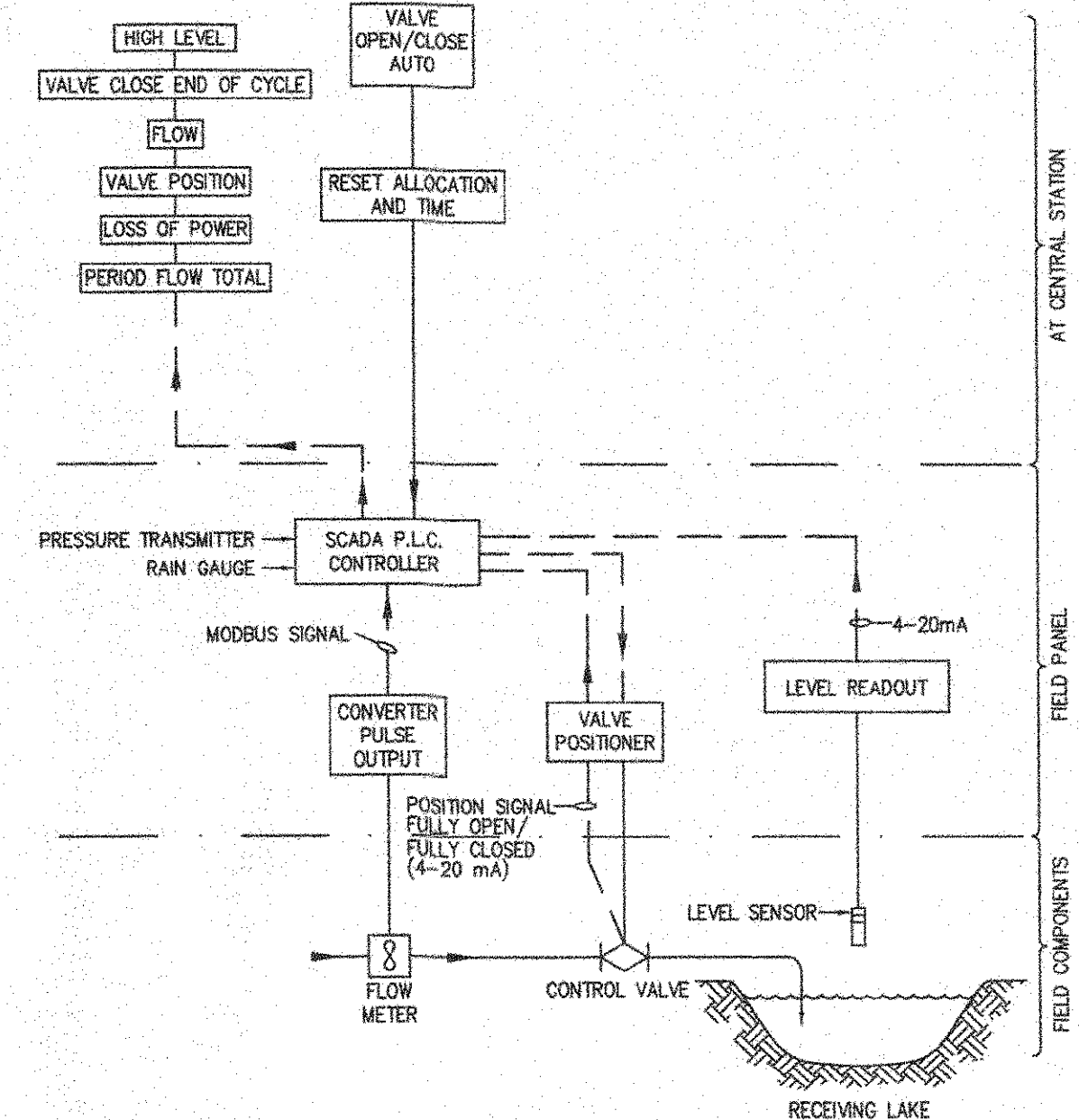
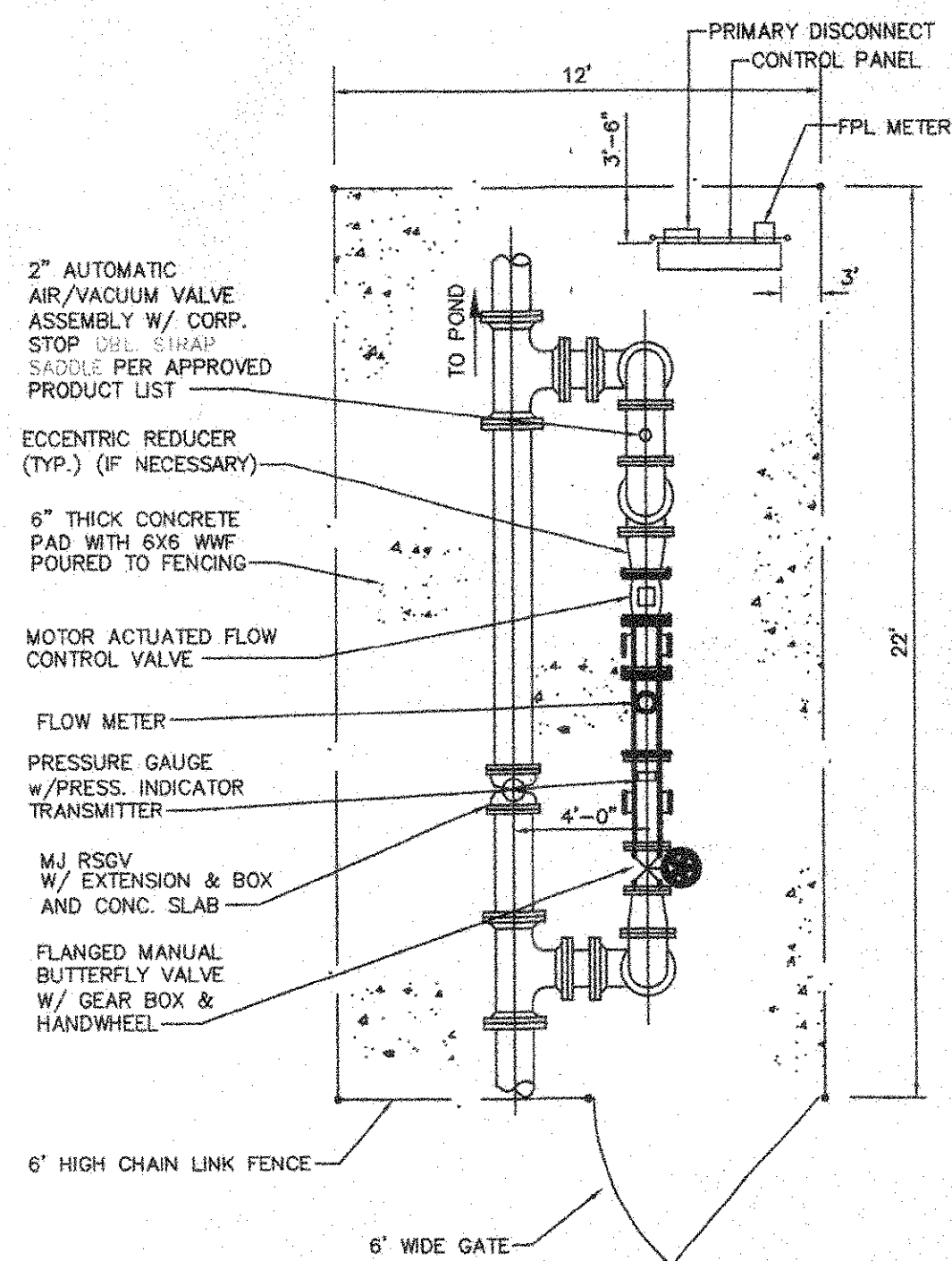
NOTES:

1. ALL VALVES TO BE STRAIGHT 2" BALL VALVES WITH LOCK- WING. (FLANGE AT METER) FORD OR APPROVED EQUAL.
2. SEE TYPICAL SERVICE DETAIL FOR MAIN CONNECTION.
3. METER BOX SHALL BE POLYMER CONCRETE FIBER REINFORCED POLYESTER, AND **PURPLE** IN COLOR. (PANTONE 522)
4. PIPING SHALL BE 2" SCHEDULE 80 PVC WITH SCHEDULE 80 FITTINGS.
5. LID SHALL BE PURPLE AND MARKED **RECLAIMED WATER**.



NOTES:

1. ALL FLANGED PIPE AND FITTINGS SHALL BE DUCTILE IRON, CEMENT LINED.
2. MECHANICAL JOINT FITTINGS REQUIRED BELOW GRADE AND FLANGED FITTINGS FOR ABOVE GRADE USE.
3. ALL ABOVE GRADE MATERIAL SHALL BE COATED WITH A TWO PART EPOXY PAINT. COLOR SHALL BE PURPLE.
4. CONCRETE SUPPORTS SHALL BE INSTALLED AS SHOWN. ALL CONCRETE SHALL BE 3000 PSI.
5. ALL ABOVE GROUND BOLTING SHALL BE STAINLESS STEEL.
6. PIPE SHALL BE SIZED BY ENGINEER.
7. CONCRETE MONOLITHIC SLAB POURED TO FENCING.



MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	RECLAIMED WATER 2" METER DETAIL	PAGE No.
JULY, 2006		60

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	RECLAIMED WATER METERING FACILITY (BULK USER)	PAGE No.
JULY, 2006		61

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	RECLAIMED WATER METERING FACILITY PLAN (BULK USER)	PAGE No.
JULY, 2006		62

MARTIN COUNTY CONSTRUCTION STANDARDS & DETAILS

REVISION	RECLAIMED WATER METERING FACILITY CONTROL SCHEMATIC (BULK USER)	PAGE No.
JULY, 2006		63

SPECIAL NOTICE PER FAC 61G15-30.003:

NOTED DETAIL WERE PREPARED AND REQUIRED TO BE PLACED ON THE PROJECT. THE ENGINEER HAS REVIEWED THE DETAIL AND IS PROVIDING THEM FOR INFORMATION ONLY AND DOES NOT ACCEPT RESPONSIBILITY FOR ITS ELEMENTS.

Engineering & Water Resources, Inc.
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RECLAIMED WATER DETAILS

HAMMOCK RIDGE

MARTIN COUNTY, FLORIDA

Sheet No.

MC-11