





# GENESIS INDUSTRIAL SECTION 28, TOWNSHIP 32S, RANGE 39E INDIAN RIVER COUNTY, FLORIDA

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PRE-CONSTRUCTION REQUIREMENTS:

- 1. THE CONTRACTOR IS REQUIRED TO PERFORM HIS WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE VARIOUS
- PERMITS WHICH WILL BE OBTAINED PRIOR TO BEGINNING CONSTRUCTION.
- 2. THE CONTRACTOR SHALL SUBMIT A CONSTRUCTION SCHEDULE (SEQUENCE OF OPERATIONS) PRIOR TO THE PRE-CONSTRUCTION MEETING.
- 3. CONTRACTOR WILL ATTEND A PRE-CONSTRUCTION MEETING WITH THE DESIGN ENGINEER, MUNICIPALITY AND/ OR OWNER PRIOR TO LAND DISTURBANCE.
- 4. SHOP DRAWINGS SHALL BE SUBMITTED BEFORE ORDERING MATERIAL FOR PLANNED PROJECT. CORRESPONDING SHALL BE BETWEEN THE DESIGN ENGINEER AND THE LOCAL GOVERNING AGENCY AND IS THE RESPONSIBILITY OF THE CONTRACTOR.

CONSTRUCTION NOTES

- 1. THE CONTRACTOR IS ADVISED TO THOROUGHLY REVIEW THIS PLAN PACKAGE SO AS TO BE TOTALLY PREPARED TO PRESENT HIS BID PRICES IN THE CONTRACT DOCUMENTS. THE PLAN PACKAGE SUFFICIENTLY DELINEATES THE SCOPE AND INTENT OF THE ROADWAY WORK TO BE ACCOMPLISHED. IT WILL, THEREFORE, BE INCUMBENT ON THE CONTRACTOR TO ADJUST HIS FEE DOLLARS TO REFLECT ANY AND ALL ITEMS WHICH MAY NOT BE CLEARLY OUTLINED OR THOSE ITEMS WHICH MAY NOT BE INDICATED BUT WHICH ARE NECESSARY FOR THE SUCCESSFUL COMPLETION OF THIS PROJECT WITHOUT ADDITIONAL COSTS TO THE OWNER.Z
- 2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH INDIAN RIVER COUNTY AND FDOT STANDARDS AND SPECIFICATIONS.
- 3. THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND AND OTHER UTILITIES IS BASED ON AVAILABLE RECORDS AND IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND AND OTHER UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO AND IS RESPONSIBLE FOR THE COORDINATION OF UTILITY RELOCATION.
- 4. CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES IN THE FIELD WITH UTILITY OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION.
- 5. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY ALL UTILITY COMPANIES A MINIMUM OF TWO WORKING DAYS PRIOR TO EXCAVATION, AS REQUIRED BY THE UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY ACT. NOTIFY SUNSHINE AT 811.
- CONTRACTOR SHALL TAKE EXTREME CAUTION WHEN EXCAVATING NEARBY EXISTING UTILITIES.
- 7. CONTRACTOR SHALL INFORM ENGINEER OF ANY CONFLICT BEFORE ANY FURTHER WORK IS COMPLETED.
- 8. UTILITIES ARE TO BE ADJUSTED BY UTILITY OWNER OR AS DIRECTED BY THE ENGINEER.
- 9. SURFACE INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED FOR USE IN ESTABLISHING DESIGN CRITERIA FOR THE PROJECT. THE ACCURACY OF THIS INFORMATION IS NOT GUARANTEED AND IS NOT TO BE CONSTRUED AS PART OF THE PLANS GOVERNING CONSTRUCTION OF THE PROJECT IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INQUIRE OF THE ENGINEER IF ADDITIONAL INFORMATION IS AVAILABLE. TO MAKE ARRANGEMENTS TO REVIEW SAME PRIOR TO BIDDING, AND IS TO MAKE HIS OWN DETERMINATION AS TO ALL SUBSURFACE CONDITIONS.
- 11. ALL EXCAVATED SOILS DEEMED SUITABLE AS FILL MATERIAL AS DETERMINED BY THE ENGINEER SHALL BE UTILIZED ON SITE BY THE CONTRACTOR AT HIS OWN EXPENSE. THE EXACT LOCATION OF DELIVERY ON SITE SHALL BE DETERMINED BY THE ENGINEER. ALL EXCAVATED SOILS DEEMED UNSUITABLE SHALL BE DISPOSED OF BY THE CONTRACTOR AT HIS OWN EXPENSE.

10. CONTRACTOR SHALL NOTIFY THE ENGINEER IF SOIL OR SUBSURFACE CONDITIONS UNSUITABLE FOR CONSTRUCTION ARE ENCOUNTERED.

- 12. ITEM IN CONFLICT WITH DESIGN SUCH AS EXISTING CURBS AND GUTTERS, SIDEWALKS, DRAINAGE STRUCTURES, PAVEMENT AND EXCESS EXCAVATIONS ARE TO BE REMOVED BY THE CONTRACTOR AND DISPOSED OF IN A LEGAL AND PROPER MANNER AWAY FROM THE JOB SITE AT HIS OWN EXPENSE
- 13. CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS FOR CONSTRUCTION.
- 14. IT SHOULD BE NOTED THAT THE OCCUPATIONAL SAFETY AND HEALTH ACT PROHIBITS THE OPERATING OF EQUIPMENT OR MACHINES CLOSER THAN TEN (10) FEET TO ENERGIZED ELECTRIC LINES RATES AT FIFTY KILOVOLTS OR BELOW. ALSO, NO EXCAVATION IS PERMITTED WITHIN FIVE (5) FEET OF POWER POLE FACILITIES
- 15. ALL IRONS AND MONUMENTS (P.R.M.'S) SHOWN ON PLANS, OR FOUND, SHALL BE PRESERVED. THOSE SHOWN IN PROPOSED PAVEMENT SHALL BE PROTECTED WITH A CAST IRON VALVE BOX.
- 16. ANY PUBLIC LAND CORNERS WITHIN THE LIMITS OF CONSTRUCTION ARE TO BE PROTECTED. IF A CORNER MONUMENT IS IN DANGER OF BEING DESTROYED OR DISTURBED, THE CONTRACTOR WILL NOTIFY THE ENGINEER.
- 17. ALL EXISTING TREES WITHIN THE RIGHT OF WAY ARE TO BE REMOVED AS CLEARING AND GRUBBING UNLESS OTHERWISE NOTED.
- 18. WHEN REFERENCED TO, FDOT REFERS TO FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS, CURRENT EDITION.
- 19. THE CONTRACTOR SHALL RESTORE ALL AREAS DISTURBED BY CONSTRUCTION TO A CONDITION EQUAL TO, OR BETTER THAN THAT WHICH IS NOW EXISTING.
- 20. BACKFILL, GRADE AND SOD AS REQUIRED AROUND ALL NEW CONSTRUCTION AND ALL DEVELOPED LOTS TO PREVENT EROSION. SEED AND MULCH WILL ONLY BE ALLOWED TO RESTORE UNDEVELOPED LOTS AFFECTED BY CONSTRUCTION OR AS DIRECTED BY THE ENGINEER.
- 21. SODDING TO BE USED AT LOCATIONS AS DIRECTED BY THE ENGINEER. SOD ALL DISTURBED AREAS UPON COMPLETION.
- 22. ALL EXCESS CONSTRUCTION MATERIAL AND WASTE TO BE HAULED OFF-SITE AND DISPOSED OF PROPERLY AT CONTRACTOR'S EXPENSE.
- 23. MAINTENANCE OF TRAFFIC SHALL BE IN ACCORDANCE WITH FDOT STANDARDS FOR TRAFFIC CONTROL THROUGH WORK ZONES AND MUTCD (PART
- 24. PROPERTY OWNERS AND BUSINESSES WITHIN THE AREA OF CONSTRUCTION SHALL BE GIVEN ACCESS TO THEIR PROPERTY AT ALL TIMES DURING THE PERIOD OF CONSTRUCTION.
- 25. ALL MAILBOXES SHALL BE RELOCATED BY THE CONTRACTOR AS DIRECTED BY THE U.S. POSTAL MAIL CARRIER.
- 26. THE CONTRACTOR SHALL REMOVE, COVER OR OBLITERATE EXISTING ROADWAY SIGN AND PAVEMENT MARKINGS THAT CONFLICT WITH THE CONSTRUCTION TRAFFIC CONTROL PLANS
- 27. CONTRACTOR TO PROTECT ALL SPRINKLER HEADS NOT IN CONFLICT WITH DESIGN AND RELOCATE ALL THOSE WHICH ARE IN CONFLICT TO A LOCATION DETERMINED IN FIELD.
- 28. SOD TWO (2) FEET MINIMUM ALONG SIDE PROPOSED EDGE OF PAVEMENT.
- 29. THE CONTRACTOR SHALL PROVIDE ANY TEMPORARY DRAINAGE MEASURES AS REQUIRED TO ADEQUATELY DRAIN THE PROJECT AND ANY TEMPORARILY TRAVELED ROADWAYS. TEMPORARY DRAINAGE DESIGN, CONSTRUCTION AND MAINTENANCE IS THE CONTRACTOR'S RESPONSIBILITY; HOWEVER ALL SUCH MEASURES MUST BE APPROVED BY THE ENGINEER
- 30. THE EXISTING SIDEWALK SHALL NOT BE DISTURBED UNLESS OTHERWISE NOTED.
- 31. GRADES SHOWN ARE FINISHED GRADES.
- 32. SAWCUT CONCRETE OR ASPHALT DRIVEWAYS AS REQUIRED FOR REPLACEMENT.
- 33. ALL ABANDONED UTILITIES (INCLUDING PIPES, CABLES AND STRUCTURES) FOUND IN THE RIGHT OF WAY AND NOT SHOWN ON THE PLANS, ARE TO BE REMOVED AND PROPERLY DISPOSED OF AT THE EXPENSE OF THE CONTRACTOR. THIS INCLUDES ALL EXOTIC PIPES LIKE ASBESTOS-CEMENT PIPE. COST TO BE INCLUDED IN CLEARING AND GRUBBING ITEM.
- 34. DRIVEWAY LOCATIONS AND WIDTHS ARE APPROXIMATE AND ARE TO BE ADJUSTED AS NECESSARY OR AS DIRECTED BY THE ENGINEER.
- 35. BENCHMARK DATUM IN NAVD 88.
- 36. BACKFILL AND SOD AS REQUIRED BEYOND RIGHT OF WAY LINES ON INDIVIDUAL LOTS TO MAINTAIN POSITIVE DRAINAGE FLOW INTO CURB AND GUTTER.
- 37. GRADE AND SOD SWALES TEN (10) FEET FROM PROPOSED DITCH BOTTOM INLETS AND MITERED END SECTIONS ON SIDE STREETS AS REQUIRED.
- 38. IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN 🗄 (BASELINE) AND 🗲 (CENTERLINE) CONSTRUCTION THROUGHOUT THE PROJECT.
- 39. THE CONTRACTOR SHALL REMOVE DRIVEWAY APRONS AND DRIVEWAY CULVERTS AND SHALL MAINTAIN ROUGH GRADE FOR UTILITY MODIFICATIONS.
- 40. ALL EXISTING SWALES SHALL BE PROTECTED BY THE CONTRACTOR. ANY DAMAGE TO THE SWALE LINE SHALL BE CORRECTED BY THE CONTRACTOR AT HIS OWN EXPENSE
- 41. PAYMENT FOR INCIDENTAL ITEMS NOT SPECIFICALLY COVERED IN THE INDIVIDUAL BID ITEMS SHALL BE INCLUDED IN THE CONTRACT PRICES FOR BID ITEMS.
- 42. MAINTAIN A MINIMUM OF ONE (1) FOOT CLEARANCE BETWEEN POWER POLE AND EDGE OF SIDEWALK.
- 43. WHEN ALL OTHER PERMANENT CONSTRUCTION IS COMPLETE, THE FINAL SURFACE COURSE SHALL BE PLACED.
- 44. CONSTRUCTION OPERATIONS FOR PLACEMENT OF THE FINAL SURFACE COURSE SHALL BE LIMITED TO A DISTANCE, AS DIRECTED BY THE ENGINEER, THE CONTRACTOR CAN COMPLETE IN ONE (1) DAY.
- 45. THE CONTRACTOR SHALL IMPLEMENT TEMPORARY PAVEMENT MARKINGS UNTIL THE FINAL SURFACE COURSE HAS CURED (MINIMUM THIRTY (30) DAYS AFTER FINAL SURFACE COURSE PLACEMENT). ANY TEMPORARY PAINTED MARKINGS PLACED ON THE FINAL.
- 46. PAVEMENT TRANSITION SHALL BE MADE IN ACCORDANCE WITH PAVEMENT TRANSITION DETAIL.
- 47. ALL APPROVED PERMIT CONDITIONS, INCLUDING BUT NOT LIMITED TO FDOT, FDEP AND INDIAN RIVER COUNTY, SHALL BE MET BY CONTRACTOR PRIOR TO CERTIFICATION OF COMPLETION BY ENGINEER.

## **ROADWAY SPECIFICATIONS** GENERAL

CONSTRUCTION" AS THE "STANDARD SPECIFICATIONS" FOR THIS PROJECT. IF WITHIN THAT PARTICULAR SECTION ANOTHER SECTION, ARTICLE OR PARAGRAPH IS REFERRED TO, IT SHALL BE A PART OF THE STANDARD SPECIFICATIONS ALSO.

THE CONTRACTOR SHALL GIVE THE ENGINEER 48 HOURS NOTICE PRIOR TO REQUESTING INSPECTIONS AND SHALL

SUPPLY ALL EQUIPMENT NECESSARY TO PROPERLY TEST AND INSPECT THE COMPLETED WORK. THE CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS FOR A PERIOD OF TWO YEARS FROM THE DATE OF PROJECT ACCEPTANCE, DURING WHICH ALL FAULTY CONSTRUCTION AND/OR MATERIALS SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.

GRADING

TYPICAL SECTIONS.

<u>STAKING</u>

STABILIZING

STABILIZED SUBGRADE SHALL BE CONSTRUCTED TO THE FLORIDA BEARING VALUE AS PER PLAN FOR THE DEPTH AND LIMITS SHOWN ON THE PLAN, AND IN ACCORDANCE WITH SECTION 160 OF THE STANDARD SPECIFICATIONS. (TYPE C STABILIZATION). ALL STABILIZED AREAS SHALL BE COMPACTED TO AT LEAST 98% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.

BASE COURSE

THE BASE SHALL BE CONSTRUCTED OF EITHER LIMEROCK MATERIAL IN ACCORDANCE WITH SECTION 911 OR CEMENTED COQUINA SHELL MATERIAL IN ACCORDANCE WITH SECTION 915 OF THE STANDARD SPECIFICATIONS. LIMEROCK BASE AND CEMENTED COQUINA SHELL BASE SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 200 OF THE STANDARD SPECIFICATIONS. THE CONTRACTOR SHALL PROVIDE ROCK PIT CERTIFICATION FOR CEMENTED COQUINA SHELL MATERIAL. BASE SHALL BE COMPACTED BY AT LEAST 98% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180. BASE SHALL BE APPROVED PRIOR TO PRIME COAT.

PRIME AND TACK COAT

SPECIFICATIONS.

ASPHALTIC CONCRETE SURFACE COURSE (A.C.S.C.)

TYPE S-III ACSC SHALL BE CONSTRUCTED FOR THE DEPTH AND LIMITS SHOWN ON THE PLAN, IN ACCORDANCE WITH SECTIONS 320, AND 330 OF THE STANDARD SPECIFICATIONS.

<u>TESTING</u>

A. SUBGRADE:

- NECESSARY. B. BASE:
- NECESSARY

# EDGE, TO THE CENTER, TO A POINT 12 INCHES INSIDE THE RIGHT EDGE OF THE ITEM TESTED.

## SPECIFICATIONS ARE MET.

CONTRACTOR.

### CLEAN-UF

THE CONTRACTOR MUST PROVIDE CLEAN-UP OF EXCESS CONSTRUCTION MATERIAL UPON COMPLETION OF THE PROJECT. THE SITE MUST BE LEFT IN A NEAT. CLEAN. GRADED CONDITION.

## MAY HAVE JURISDICTION.

OF TRANSPORTATION SPECIFICATIONS AND STANDARDS.

- AUTHORITIES REGARDING CLOSING OR RESTRICTING THE USE OF PUBLIC STREETS OR HIGHWAYS.
- AND ANY LOCAL AGENCY HAVING JURISDICTION.

### IT IS INTENDED THAT THE FLORIDA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" MOST CURRENT EDITION BE USED WHERE APPLICABLE FOR VARIOUS WORK, AND THAT WHERE SUCH WORDING THEREIN REFERS TO THE STATE OF FLORIDA AND ITS DEPARTMENT OF TRANSPORTATION AND PERSONNEL. SUCH WORDING IS INTENDED TO BE REPLACED WITH THAT WORDING WHICH WOULD PROVIDE PROPER TERMINOLOGY, THEREBY MAKING SUCH "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE

THE CONTRACTOR SHALL PERFORM ALL GRADING NECESSARY TO ACHIEVE THE PROPOSED PLAN GRADES INCLUDING

ALL WORK SHALL BE IN ACCORDANCE WITH SECTION 120 OF THE STANDARD SPECIFICATIONS.

# CONSTRUCTION STAKING WILL BE PERFORMED BY THE CONTRACTOR.

PRIME AND TACK COAT FOR THE BASE SHALL BE IN ACCORDANCE WITH SECTION 300 OF THE STANDARD

THE CONTRACTOR SHALL RETAIN THE SERVICES OF AN APPROVED INDEPENDENT TESTING LABORATORY TO CONDUCT ALL REQUIRED TESTS ON SUBGRADE, BASE AND SURFACE COURSE MATERIALS. TEST RESULTS MUST BE SUBMITTED PRIOR TO ANY REQUEST FOR PAYMENT ON THE ABOVE ITEMS.

THE SCHEDULE FOR TESTING OF THE ROAD CONSTRUCTION SHALL BE AS FOLLOWS:

1. FLORIDA BEARING VALUE TESTS SHALL BE TAKEN AT INTERVALS OF NOT MORE THAN 200 FEET, OR CLOSER AS MIGHT BE NECESSARY IN THE EVENT OF VARIATIONS IN SUBSOIL CONDITIONS 2. DENSITY TESTS SHALL BE TAKEN AT INTERVALS OF NOT MORE THAN 200 FEET OR CLOSER AS MIGHT BE

1. DENSITY TESTS SHALL BE TAKEN AT INTERVALS OF NOT MORE THAN 500 FEET OR CLOSER AS MIGHT BE

ALL TESTING SHALL BE TAKEN IN A STAGGERED SAMPLING PATTERN FROM A POINT 1 1/2 INCHES INSIDE THE LEFT

IF ANY TEST INDICATES THAT THE WORK DOES NOT MEET THE SPECIFICATIONS, THE SUBSTANDARD AREA SHALL BE REWORKED OR CORRECTED AND RETESTED, AT THE CONTRACTOR'S EXPENSE, UNTIL THE PROVISIONS OF THESE

ALL PASSING TESTS SHALL BE PAID FOR BY THE OWNER. ALL FAILING TESTS SHALL BE PAID FOR BY THE

CONSTRUCTION IN STREETS AND ROAD RIGHT-OF-WAYS

1. OPEN ROAD CUTS REQUIRES PRIOR APPROVAL OF THE CITY, COUNTY, STATE OR ANY OTHER AGENCY WHICH

2. ALL CONSTRUCTION, MATERIALS AND WORKMANSHIP ARE TO BE IN ACCORDANCE WITH FLORIDA DEPARTMENT

3. ALL AREAS IN EXISTING RIGHT-OF-WAYS DISTURBED BY CONSTRUCTION SHALL RECEIVE SOLID SOD.

4. STREET RESTORATION TO BE DONE AS PER INDIAN RIVER COUNTY STANDARDS.

5. THE CONTRACTOR SHALL COMPLY WITH ALL RULES AND REGULATIONS OF THE STATE, COUNTY AND CITY

6. TRAFFIC CONTROL ON ALL COUNTY AND STATE HIGHWAY RIGHT-OF-WAYS SHALL MEET THE REQUIREMENTS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (U.S. DOT/FHA) AND THE REQUIREMENTS OF THE STATE

## DRAINAGE SPECIFICATIONS

STORM INLETS AND MANHOLES SHALL BE CONSTRUCTED IN GENERAL ACCORDANCE WITH SECTION 425 OF THE STANDARD SPECIFICATIONS OF THE FLORIDA DEPARTMENT OF TRANSPORTATION.

CONCRETE SHALL HAVE A MINIMUM 28-DAY STRENGTH OF 3000 PSI.

ALL REINFORCING STEEL TO BE ASTM A 615-72 GRADE 40, FYP = 40,000 PSI, AND SHALL BE HANDLED AND PLACED IN ACCORDANCE WITH ACI 318-71.

PRECAST CONCRETE MANHOLES AND STORM INLETS MAY BE USED UPON THE ENGINEER'S APPROVAL OF THE MANUFACTURER'S SHOP DRAWINGS.

STORM SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH SECTION 430 AND RELATED SECTIONS OF THE STANDARD SPECIFICATIONS OF THE FLORIDA DEPARTMENT OF TRANSPORTATION. <u>CONCRETE</u>

UNLESS OTHERWISE SPECIFIED OR INDICATED, ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF 3000 PSI. ALL WORK SHALL COMPLY WITH THE CURRENT EDITION OF THE AMERICAN CONCRETE INSTITUTE (ACI) BUILDING CODE AND THE APPLICABLE BUILDING CODES HAVING JURISDICTION IN THE AREA. CULVERT PIPES

REINFORCED CONCRETE PIPE (R.C.P.) SHALL BE IN ACCORDANCE WITH SECTION 449 OF THE STANDARD SPECIFICATIONS.

PRECAST CONCRETE DRAINAGE PRODUCTS

ALL PRECAST CONCRETE DRAINAGE PRODUCTS (INCLUDING BUT NOT LIMITED TO ROUND CONC. PIPE. ELLIPTICAL CONC. PIPE, UNDERDRAINS, MANHOLES, INLETS, ENDWALLS, JUNCTION BOXES, THREE SIDED CONC. CULVERTS, AND CONC. BOX CULVERTS) SHALL BE IN ACCORDANCE WITH SECTION 449 OF THE STANDARD SPECIFICATIONS.

GROUNDWATEF GROUNDWATER MAY BE ENCOUNTERED ON THIS SITE. THE CONTRACTOR IS TO PLAN ACCORDINGLY

RECORD DRAWINGS

CONTRACTOR SHALL KEEP AND MAINTAIN RECORD DRAWINGS ON THE PROJECT SITE AT ALL TIMES WHICH SHALL BE ANNOTATED BY THE CONTRACTOR DEPICTING ANY CHANGES MADE IN THE FIELD WHICH DIFFER FROM THE CONTRACT DRAWINGS. RECORD DRAWINGS SHALL INCLUDE, BUT NOT LIMITED TO, INVERT AND TOP ELEVATIONS OF CULVERTS AND INLET STRUCTURES. CONTRACTOR SHALL SUBMIT COMPLETE AND FINAL RECORD DRAWINGS TO ENGINEER UPON COMPLETION OF PROJECT AND PRIOR TO FINAL INSPECTION AND FINAL PAYMENT.

## **INSPECTION**

MINIMUM CONSTRUCTION INSPECTION CHECKPOINTS

THE ENGINEER SHALL BE NOTIFIED: 1. PRIOR TO ANY MAJOR DEVIATION FROM THE APPROVED PLANS.

2. PRIOR TO BACKFILLING ANY PIPE TRENCHES.

3. UPON COMPLETION OF SUBGRADE GRADING AND COMPACTION.

4. UPON BEGINNING OF SPREADING OF ROCK BASE MATERIAL.

- 5. UPON COMPLETION OF GRADING AND COMPACTION OF THE BASE MATERIAL AND PRIOR TO PRIMING.
- 6. IMMEDIATELY PRIOR TO AND UPON APPLICATION OF A.C.S.C.

7. UPON COMPLETION OF CONSTRUCTION.

# GENERAL NOTES 1. CONTRACTOR IS RESPONSIBLE FOR CHECKING ACTUAL SITE CONDITIONS BEFORE STARTING CONSTRUCTION. 2. ANY DISCREPANCIES ON THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE COMMENCING WORK. 3. ALL WORK SHALL BE IN WORKMANLIKE MANNER AND SHALL CONFORM WITH ALL APPLICABLE CITY, COUNTY, STATE AND FEDERAL REGULATIONS AND/OR CODES. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND LICENSES REQUIRED TO BEGIN WORK. 4. ALL MATERIALS AND LABOR UNDER THIS PROJECT SHALL BE IN STRICT ACCORDANCE WITH REQUIREMENTS OF THE INDIAN RIVER COUNTY, WATER MANAGEMENT DISTRICT, FDEP AND THESE PLANS AND SPECIFICATIONS. 5. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL CONTACT ALL CONCERNED UTILITIES AT LEAST 48 HOURS IN ADVANCE FOR CONSTRUCTION OPERATIONS. 6. NO FIELD CHANGES OR DEVIATIONS FROM DESIGN TO BE MADE WITHOUT PRIOR APPROVAL OF THE ENGINEER. 7. CONTRACTOR SHALL SUPPLY DENSITY TESTS TO ENGINEER ON ALL SUB-GRADE AND BASE. TESTS SHALL BE PREPARED PER AASHTO T-180 METHOD. -100400-8. SLOPE GRADES FROM ELEVATIONS SHOWN TO EXISTING GRADE AT PROPERTY LINE. MAXIMUM SLOPE 4:1. 9. ENGINEER SHALL BE NOTIFIED AT LEAST 48 HOURS IN ADVANCE FOR ANY INSPECTION. 10. ALL TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH M.U.T.C.D. STANDARDS, INDIAN RIVER COUNTY AND F.D.O.T. 11. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", LATEST EDITION. 12. THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED ON THIS PROJECT. CONTRACTORS BID SHALL INCLUDE CONSIDERATION FOR ADDRESSING THIS ISSUE. WHEN GROUNDWATER IS ENCOUNTERED THE CONTRACTOR SHALL PLAN ACCORDINGLY. 13. ALL INLETS SHALL HAVE A 6" MIN. SUMP BELOW LOWEST INVERT. 14. EROSION CONTROL FENCING MUST BE IN PLACE PRIOR TO GRADING 15. PIPE LENGTHS AND SLOPES SHOWN ARE APPROXIMATE. 16. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER. 17. ALL STORM PIPE ENTERING STRUCTURES SHALL BE GROUTED TO ASSURE CONNECTION AT STRUCTURE IS WATERTIGHT 18. CONTRACTOR SHALL ADJUST INLET/STRUCTURE OR CONNECTION LOCATION AS REQUIRED TO ENSURE PROPOSED STRUCTURES AND PIPES ARE IN PROPER ALIGNMENT AND MATCH SLOPE OF EXISTING PIPES OR CONNECTIONS. 19. THIS PLAN CONTEMPLATES ACCESS CONNECTIONS TO ADJACENT ROADS AS SHOWN. 20. FILL MATERIAL MAY NOT BE STOCKPILED HIGHER THAN SIX (6) VERTICAL FEET ONSITE PER INDIAN RIVER COUNTY. 20. DIMENSIONS SHOWN ARE TO EDGE OF GUTTER OR PAVEMENT. RADII SHOWN ARE TO FACE OF CURB. 21. ALL SIGNS SHALL BE PER M.U.T.C.D. STANDARDS. 22. ALL PAVEMENT MARKINGS, EXCEPT PARKING STALL STRIPING, SHALL BE THERMOPLASTIC PER INDIAN RIVER COUNTY REQUIREMENTS. 23. THE USES PROPOSED AS PART OF THIS PLAN DO NOT REQUIRE A SUBMITTAL OF A RISK MANAGEMENT PLAN ш PURSUANT TO U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA) REGULATIONS AND SHALL NOT EXCEED THE EPA'S RMP THRESHOLD QUANTITIES OF LISTED SUBSTANCES. 24. WATER FOR FIRE FIGHTING PURPOSES SHALL BE INDICATED WITH A BLUE ROADWAY REFLECTOR, PLACE ONE FOOT OFF OF THE CENTERLINE OF THE ROAD FACING THE FIRE HYDRANT. THIS INCLUDES NEW AND EXISTING SOURCES. 25. REGARDLESS OF PRIVATE OR PUBLIC DEDICATIONS, THERE SHALL BE NO UTILITY CONNECTIONS, METER BOXES OR VALVE BOXES IN EXISTING OR PROPOSED SIDEWALK OR DRIVEWAY AREAS. 26. CONTRACTOR SHALL ADJUST INLET/STRUCTURE OR CONNECTION LOCATION AS REQUIRED TO ENSURE PROPOSED STRUCTURES AND PIPES ARE IN PROPER ALIGNMENT AND MATCH SLOPE OF EXISTING PIPES OR CONNECTIONS. 27. ANY STATE AND FEDERAL PERMITS THAT MAY BE REQUIRED AS A RESULT OF LAND CLEARING AND LANDSCAPING ACTIVITIES ARE THE RESPONSIBILITY OF THE CONTRACTOR. 28. CONTRACTOR IS RESPONSIBLE TO PROTECT AND/OR REPLACE ALL SURVEY MONUMENTATION BY A LICENSED SURVEYOR IN THE STATE OF FLORIDA. 29 ALL PARKING SPACES WITH EXCEPTION OF THE HANDICAPPED PARKING SPACES SHALL BE STRIPED IN WHITE TRAFFIC PAINT AND BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) STANDARD SPECIFICATIONS FOR FOR ROAD & BRIDGE CONSTRUCTION, SECTION 710, LATEST EDITION. 111 30. ALL HANDICAPPED PARKING SPACES SHALL BE PROPERLY SIGNED AND STRIPED IN ACCORDANCE WITH FDOT STANDARD INDEX 711-001, LATEST EDITION. ( 31. COMMERCIAL/MULTI-FAMILY BUILDINGS SHALL POST A MINIMUM 6 INCH NUMERICAL ADDRESS. 32 THERMOPI ASTIC PAVEMENT MARKINGS SHALL BE REQUIRED ON EXISTING / PROPOSED DRIVEWAYS THAT CONNECT TO THE COUNTY RIGHT-OF-WAY (ROW) AND PROPOSED PAVEMENT MARKINGS WITHIN 25' OF EDGE OF PAVEMENT. 33. ALL SUBDIVISION CONSTRUCTION SHALL BE COMPLETED IN ACCORDANCE WITH THE APPLICABLE INDIAN RIVER COUNTY ORDINANCES. 34. ALL NUISANCE EXOTIC VEGETATION EXISTING WITHIN DEVELOPMENT PROJECT SITE PROPERTY MUST BE REMOVED IN CONJUNCTION WITH SITE DEVELOPMENT. NOTE: $( \cap$ THIS SITE IS SUBJECT TO THE SPECIFIC LIMITATIONS AND / OR ADDITIIONAL CRITERIA FOR CERTAIN TYPES OF USES, AS LISTED IN SECTION 911.23 OF THE INDIAN RIVER COUNTY LAND DEVELOPMENT REGULATIONS (LDR'S). PRIMARY BENCHMARK ELEVATIONS SHOWN ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 REFERENCING INDIAN RIVER COUNTY BENCHMARK BM072010 AT AN ELEVATION OF 24.40 FEET(NAVD88) ARON J. BOWN VCENS~ No. 55313 STATE OF FLORIDA

70NAV

SHEE

21-0053

AARON J. BOWLES I P F #55313

# LEGAL DESCRIPTION:

COMMENCING AT THE NORTHEAST CORNER OF TRACT 2, SECTION 28, TOWNSHIP 32 SOUTH, RANGE 39 EAST, ACCORDING TO THE LAST GENERAL PLAT OF LANDS OF THE INDIAN RIVER FARMS COMPANY, FILED IN THE OFFICE OF THE CLERK OF THE CIRCUIT COURT OF ST. LUCIE COUNTY, FLORIDA IN PLAT BOOK 2, PAGE 25, SAID LAND NOW LYING AND BEING IN INDIAN RIVER COUNTY, THENCE ALONG THE EAST LINE OF SAID TRACT 2 SOUTH 00°18'45" WEST TO THE SOUTH LINE OF INDIAN RIVER FARMS WATER CONTROL DISTRICT SUB-LATERAL A7, A DISTANCE OF 30.00 FEET, THENCE ALONG SAID SOUTH LINE OF SUB LATERAL A7 NORTH 89°48'52" WEST, A DISTANCE OF 114.49 FEET TO THE POINT OF BEGINNING, THENCE ON A LINE PARALLEL WITH SAID EAST LINE OF TRACT 2, SOUTH 00°18'45" WEST TO THE SOUTH LINE OF TRACT 2, A DISTANCE OF 1301.61 FEET, THENCE ALONG SAID SOUTH LINE NORTH 89°44'09" WEST, A DISTANCE OF 370.28 FEET, THENCE PARALLEL TO SAID EAST LINE NORTH 00°18'45" EAST TO SAID SOUTH LINE OF SUB LATERAL A7, A DISTANCE OF 1301.10







<b>PROJECT INFORMATION</b>						
SITE ADDRESS				—		
4725 45TH STREET				PROPOSED SITE DATA		
VERO BEACH, FLORIDA 32967				SITE AREA	481,774 SF	11.06 AC
OWNER		ENGINEER		IMPERVIOUS AREA	337,552 SF	7.75 AC
PHINEAS HOLDINGS LLC		MBV ENGINEER	ING. INC.	PROPOSED BUILDING	120,000 SF	2.75 AC
		1835 20TH STRE	ET	PROPOSED CONCRETE	16,823 SF	0.39 AC
		VERO BEACH E		PROPOSED ASPHALT	164,994 SF	3.79 AC
PHONE (772) 370-6199		PHONE (772) 56	9-0035	WET POND AREA	35,735 SF	0.82 AC
		SUBVEVOE		PERVIOUS AREA	144,222 SF	3.31 AC
GENESIS COMMERCIAL GROUP INC				DRY POND AREA	28,210 SF	0.65 AC
			ET	OPEN SPACE	116,012 SF	2.66 AC
PHONE (954) 647-3846		PHONE (772) 56	9-7880	NET NEW IMPERVIOUS	+ 337,552 SF	7.75 AC
			_	ZONING DATA		
		ARCHITEC		CRITERIA	REQUIRED	EXISTING
LANDSCAPE ARCHITECTURAL SERV	ACES, LLC.		HITECTURE	LOT SIZE	15,000 SF	481,774
		1701 HVVY. A1A,	SUILE #105	LOT WIDTH	100-FT	370.28
PORT ST. LUCIE, FLORIDA 34983		VERO BEACH, F	LORIDA 32963	BUILDING SETBACKS		
PHONE (772) 631-8400		PHONE (772) 74	2-3003	FRONT	25-FT	
				SIDE	10-FT	
TAX PARCEL I.D NUMBER	<u>(S)</u>				10-FT	
32-39-28-00001-0020-00008.1				REAR	20-FT	
					40% MAX	
ZONING	LAND USE	<u>OVERLAY DI</u>	<u>STRICT</u>	OPEN SPACE	15% MIN	
IG	C/I	(WGIC) WEST GIF	FORD INDUSTRIAL AND	BUILDING HEIGHT	35-FT MAX	
	LONGITUDE	COMMEN				
27°40'24 85"N	80°26'05 22''W/			PARKING DATA		
27 40 24.00 M	00 20 00.22 W			PARKING REQUIRED PER BUILDING	G (MANUFACTURING)	
DPA JECT DESCRIPTION				1 SP/ 50	00 SFX 120,000 SF =	240
						10
EXISTING STORMWATER AND UTLITY	STUB-OUTS. THIS ENTIRE PRO	JECT WILL BE COMP	LETED IN ONE (1)			230
				TOTAL PARKING PROVIDED		255
SILE DATA						11
EXISTING SITE DATA						Δ
	<u>SF</u>	AC	<u>%</u>			- 240
ORIGINAL PARCEL AREA	481,774 SF	11.06 AC				240
45TH ST. DEDICATION AREA	5,554 SF	0.13 AC				
NET SITE AREA	476,220 SF	10.93 AC	100.0%	PER ITE, 10TH EDITION:		
IMPERVIOUS AREA	0 SF	0.00 AC	0.0%	(130) INDUSTRIAL PARK = 3.37 ADT	FPER 1,000 SF GFA	
PERVIOUS AREA	476.220 SF	10.93 AC	100.0%	3.37 X 60.0	KSF = 202 ADDT	
	···· ,			(180) SPECIALTY TRADE CONTRAC	TOR = 10.22 ADT PER 1,000 SF GFA	
				10.22 X 60.0	KSF = 613 ADDT	





CONSTRUCTON	SCHEDULE
START:	FEB. 2023
FINISH:	JAN. 2024



















		STRUCTURE NUM BER	DS-1	DS-2	DS-3	DS-4	DS-5	DS-6	DS-7	DS-8	DS-9	DS-10	DS-11	DS-
ULE		FDOT INDEX #	# 425-052	# 425-052	# 425-052	# 425-052	# 425-052	# 425-052	# 425-052	# 425-052	# 425-052	# 425-052	# 425-052	# 425
JCTURE SCHED		DESCRIPTION	TYPE "F" DITCH BOTTOM INLET	TY PE "F' DBI W/6' TY PE "J" STRUCT.	TYPE "F" DITCH BOTTOM INLET	TY PE "F" DITCH BOTTOM INLET	TYPE"F" DITCH BOTTOM INLET	TYPE"F" DITCH BOTTOM INLET	TYPE "F" DITCH BOTTOM INLET	TYPE "F" DITCH BOTTOM INLET	TY PE "F" DITCH BOTTOM INLET	TYPE "F" DITCH BOTTOM INLET	TY PE "F" DITCH BOTTOM INLET	TYPI DIT BOT INL
		RIM ELEV.	20.70	22.80	22.80	22.80	22.80	22.80	22.80	22.80	22.80	22.80	<mark>22.8</mark> 0	22.
		PIPE DIA.	36.00	36.00	24.00	24.00	24.00	36.00	24.00	18.00	24.00	<mark>18.00</mark>	18.00	<mark>18</mark> .
TR		COVER	3.70	2.65	4.50	<mark>4</mark> .52	3.00	2.65	3.01	3.45	3.55	3.45	3.00	3.0
ы В	ERT ATION	N	14. N	14.25 N	-	-	-	15.75 N	-	17.85 N	-	17.85 N	-	-
AG		S		14.25 S	-	-	-	15.75 S	-	-	17.25 S	-	18.30 S	18.3
AIN	INVI EV/	E		17.15 E	16.30 E	-	17.80 E	17.15 E	-	17.85 E	17.25 E	-	-	-
DR	Ш	w		-	<b>-</b>	16.28 W		17.15 W	17.79 W	-	17.25 W	17.85 W	-	-
		BOTTOM ELEV.	13.50	13.75	15.80	15.78	17.30	15.25	17.29	17.35	16.75	17.35	17.80	17.



















		NUMBER	DS-2	DS-3	DS-4	DS-14	DS-15
CLE CLE		FDOT INDEX #	# 425-052	# 425-052	# 425-052	# 425-052	# 425-052
ке эснеи		DESCRIPTION	TYPE "F DBI W/6' TYPE "J" STRUCT.	TY PE "F" DITCH BOTTOM INLET	TY PE "F" DITCH BOTTOM INLET	STORM MH (4' DIA)	STORM M⊢ (4' DIA)
5		RIM ELEV.	22.80	22.80	22.80	23.00	23.20
2		PIPE DIA.	36.00	24.00	24.00	18.00	18.00
צ		COVER	2.65	4.50	4.52	3.50	3.90
л Ц	NO	N	14.25 N	-	-	17.55 N	17.35 N
Be	TIO	S	14.25 S	-	-	17.55 S	17.35 S
AIN		E	17.15 E	16.30 E	-	-	-
¥	Ш	W	-	-	16.28 W	-	-
		BOTTOM ELEV.	13.75	15.80	15.78	17.50	17.30





PAVING,	
SCALE: 1" = 20'	

		STRUCTURE NUM BER	DS-5	DS-6	DS-7	DS-16	DS-19
ULE		FDOT INDEX #	# 425-052	# 425-052	# 425-052	# 425-052	# 425-052
RE SCHEDI		DESCRIPTION	TY PE "F" DITCH BOTTOM INLET	TY PE "F" DITCH BOTTOM INLET	TYPE"F" DITCH BOTTOM INLET	STORM MH (4' DIA)	TY PE "F" DITCH BOTTOM INLET
5		RIM ELEV.	22.80	22.80	22.80	22.60	20.50
SUC		PIPE DIA.	24.00	36.00	24.00	18.00	18.00
STF		COVER	3.00	2.65	3.01	3.50	1.50
36.0	N	Ν	-	15.75 N	-	17.2 N	17.5 N
NAC	ERT VTIC	S	-	15.75 S	-	17.20 S	-
MI	INVI EV/	E	17.80 E	17.15 E	-		-
Ľ	Щ	W		17.15 W	17.79 W	-	-
		BOTTOM ELEV.	17.30	15.25	17.29	17.10	17.00

![](_page_11_Picture_3.jpeg)

![](_page_12_Figure_0.jpeg)

PAVING
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		STRUCTURE NUM BER	DS-8	DS-9	DS-10	DS-11	DS-12	DS-17	DS-19
ULE		FDOT INDEX #	# 425-052	# 425-052	# 425-052	# 425-052	# 425-052	# 425-052	# 425-052
RE SCHEDI		DESCRIPTION	TYPE "F" DITCH BOTTOM INLET	TY PE "F" DITCH BOTTOM INLET	TY PE "F" DITCH BOTTOM INLET	TYPE "F" DITCH BOTTOM INLET	TY PE "F" DITCH BOTTOM INLET	STORM MH (4' DIA)	TY PE "F" DITCH BOTTOM INLET
ILL		RIM ELEV.	22.80	22.80	22.80	22.80	22.80	23.30	20.50
SUC		PIPE DIA.	18.00	24.00	18.00	18.00	18.00	18.00	18.00
STF		COVER	3.45	3.55	3.45	3.00	3.00	4.40	1.50
Щ.	N	N	17.85 N	-	17.85 N	-	-	17.1 N	17.5 N
NAC	ATIC	S	-	17.25 S	-	18.30 S	18.30 S	17.10 S	-
SAII	IN NI	E	17.85 E	17.25 E	-	-	-	-	-
ä	Ш	w	-	17.25 W	17.85 W	-	-	-	-
		BOTTOM ELEV.	17.35	16.75	17.35	17.80	17.80	16.90	17.00

![](_page_12_Picture_4.jpeg)

![](_page_13_Figure_0.jpeg)

		_				CONFLIC	T TABLE			
		CONFLICT NUMBER	C1	C2	C3	C4	C5	C6	C7	C8
		GROUND ELEVATION	22.9 '	23.0 '	22.9 '	22.9 '	22.9 '	22.9 '	22.9 '	23.0 '
		COVER (UPPER)	2.9'	3.1 '	3.4 '	3.1 '	2.7 '	3.6 '	3.0 '	3.5 '
		PIPE SIZE	24 "	8 "	18 "	8 "	24 "	18 "	8 "	18 "
	Upper	MATERIAL	ST (ADS)	WTR(PVC)	ST (ADS)	WTR(PVC)	ST (ADS)	ST (ADS)	WTR(PVC)	ST (ADS)
$\mathcal{A}$	Pipe	INV. ELEV	17.7 '	19.2 '	17.8 '	19.1 '	17.8 '	17.6 '	19.2 '	17.8 '
		WALL THICKNESS	4.00 "	0.32 "	2.00 "	0.32 "	4.00 "	2.00 "	0.32 "	2.00 "
		BOTT. OF PIPE	17.4 '	19.2 '	17.6 '	19.1 '	17.5 '	17.4 '	19.2 '	17.6 '
		SEPARATION	1.1 '	3.2'	1.0 '	1.5 '	1.0'	0.5 '	2.4 '	1.0 '
		COVER (LOWER)	6.6'	7.0'	6.3 '	5.4 '	6.4 '	6.0 '	6.1 '	6.4 '
		TOP OF PIPE	16.3 '	16.0 '	16.6 '	17.6 '	16.5 '	16.9 <sup>'</sup>	16.8 '	16.6 '
$\square$		OBV. ELEV.	16.3 '	16.0 '	16.6 '	17.3 '	16.5 '	16.9 '	16.8 '	16.6 '
{	1	PIPE SIZE	8 "	8 "	8 "	36 "	8"	8"	8"	8"
У	Lower	MATERIAL	WTR(PVC)	SS(PVC)	WTR(PVC)	ST (ADS)	WTR(PVC)	SS(PVC)	SS(PVC)	WTR(PVC)
	Fipe	INV. ELEV	15.6 '	15.3 '	15.9 '	14.3 '	15.8 '	16.2 '	16.1 '	15.9 '
		WALL THICKNESS	0.32 "	0.32 "	0.32 "	3.00 "	0.32 "	0.32 "	0.32 "	0.32 "

![](_page_14_Figure_0.jpeg)

![](_page_15_Figure_0.jpeg)

# NOTES:

- 1. WHERE SOIL CONDITIONS CANNOT BE MAINTAINED AS SHOWN ABOVE, PROVIDE METHOD OF CONSTRUCTION TO IRCDUS FOR APPROVAL.
- 2. SHEETING WILL BE REQUIRED AS DETERMINED IN THE FIELD IN ACCORDANCE WITH OSHA REGULATIONS.
- 3. COMPACTION PERCENTAGES SHOWN REFER TO AASHTO T-180 MODIFIED PROCTOR METHOD.
- 4. MECHANICAL COMPACTION NOT ALLOWED BELOW THIS LEVEL OTHER THAN HAND
- VIBRATORY MEANS.
- COMPACTION REPORTS REQUIRED.
   MINIMUM TRENCH WIDTH "W" = PIPE O.D. PLUS 2'-0".
- MINIMOM TRENCH WIDTH W FIFE O.D. FLUS 2-0.
   2" DETECTION TAPE WITH METALLIC BACKING TO BE INSTALLED OVER MAIN 6" BELOW BOTTOM OF BASE COURSE. TAPE TO BE MARKED "CAUTION-WATER LINE BELOW", "CAUTION-FORCE MAIN BELOW", OR "CAUTION-REUSE MAIN BELOW". TRACE WIRE SHALL
- BE USED CONTINUOUSLY ON ALL PIPE. SEE DRAWING, No. M-14, TRACE WIRE DETAIL.
  8. ALL RESTORATION IN EASEMENTS OR RIGHT-OF-WAYS OR WHEN REQUIRED BY OTHER JURISDICTIONAL AGENCIES SHALL CONFORM TO IRCDUS SPECIFICATIONS OR THE OTHER
- JURISDICTIONAL AGENCY SPECIFICATION, WHICHEVER IS MORE STRINGENT.
  9. ALL PIPE TO BE LOCATED A MINIMUM OF 5' O.C. (TYPICAL) FROM EDGE OF PAVEMENT.
  10. EXCAVATABLE FLOWABLE FILL IS ALLOWED WITH PRIOR APPROVAL OF PROPOSED
- 10. EXCAVATABLE FLOWABLE FILL IS ALLOWED WITH PRIOR APPROVAL OF PROF MATERIAL STRENGTH BY COUNTY PUBLIC WORKS ENGINEER OR DESIGNEE.

INDIAN RIVER COUNTY DEPARTMENT OF UTILITY SERVICES	TRENCH DETA NOTES

# NOTES:

- VALVE BOXES SHALL BE CONSTRUCTED PER MANUFACTURERS' SPECIFICATION.
   ALL VALVE BOXES SHALL BE SHAFT/SCREW TYPE AND CANNOT REST ON THE VALVE.
- ALL VALVE BOXES SHALL BE SHAFT/SCREW TYPE AND CANNOT REST ON THE
   ALL VALVE BOLTS SHALL BE STAINLESS STEEL WITH BRASS NUTS.
- 4. VALVE MARKERS ARE TO BE INSTALLED ADJACENT TO ALL VALVES IN
- UNPAVED AREAS AS DIRECTED BY IRCDUS. (SEE DRAWING, No. M-10, VALVE MARKER) 5. ALL VALVES REQUIRE STATE PLANE COORDINATES.
- ALL VALVES REQUIRE STATE PLANE COORDINATES.
   TRACE WIRE IS REQUIRED. (SEE DRAWING, No. M-14, TRACE WIRE DETAILS)
- 7. BLUE REFLECTIVE MARKERS (RPM'S )ARE TO BE LOCATED IN MID-LANE OF ROADWAY FOR
- ALL HYDRANT VALVES. (SEE DRAWING, No. W-1, FIRE HYDRANTS & VALVE LOCATIONS)
  8. REFLECTIVE MARKERS SHALL NOT BE PLACED IN BIKE LANES.
  9. VALVE BOX LID LOCATED IN PAVEMENT SHALL BE A MINIMUM 24 LBS. WITH A MINIMUM 6"
- VALVE BOX SHALL COMPLY WITH FDOT STANDARDS AS APPLICABLE.
   VALVE EXTENSIONS OVER 36" REQUIRE IRCDUS ENGINEERING APPROVAL.
- 12. VALVE SPACING ON WATER MAINS SHALL NOT EXCEED 1,000' MAXIMUM.

![](_page_15_Figure_24.jpeg)

![](_page_15_Figure_25.jpeg)

![](_page_15_Figure_26.jpeg)

![](_page_15_Figure_27.jpeg)

![](_page_15_Figure_28.jpeg)

![](_page_15_Figure_29.jpeg)

![](_page_15_Figure_30.jpeg)

![](_page_15_Figure_31.jpeg)

![](_page_16_Figure_0.jpeg)

![](_page_16_Figure_2.jpeg)

![](_page_16_Figure_3.jpeg)

![](_page_16_Figure_4.jpeg)

S-5

# PART 1 GENERAL

# TWO GRINDER PUMPS ARE TO BE INSTALLED AT THE SITE. REFER TO THE PUMP STATION DATA TABLE IN THIS SHEET FOR PUMP DETAILS.

- 1.02 QUALITY ASSURANCE
   1. UNIT INTEGRITY: THE PUMPS, MOTORS, CONTROL PANEL, ACCESS COVER, AND GUIDE RAIL ASSEMBLIES SHALL BE SUPPLIED BY THE PUMP SUPPLIER TO INSURE UNIT INTEGRITY.
   2. PUMP TESTS: THE PUMP SUPPLIER SHALL PERFORM THE FOLLOWING TESTS ON EACH PUMP BEFORE
- SHIPMENT FROM THE SUPPLIER:
  A. MEGGER THE PUMP FOR INSULATION BREAKS OR MOISTURE.
  B. INTERNALLY PRESSURIZE THE MOTOR HOUSING TO 5 PSI WITH A HALOGEN GAS. CHECK ALL O-RING MATING SURFACES FOR GAS LEAKS WITH A HALOGEN GAS DETECTOR.
- C. VERIFY VOLTAGE SETTING MATCHES ORDER REQUIREMENTS. D. PUMP SHALL BE RUN DRY TO VERIFY ROTATION, PHASE BALANCE, AND DYNAMIC BALANCE.
- E. A WRITTEN CERTIFIED TEST REPORT GIVING THE ABOVE INFORMATION SHALL BE SUPPLIED WITH EACH PUMP AT THE TIME OF SHIPMENT.
- F. EACH PUMP CABLE END SHALL BE FITTED WITH A RUBBER SHRINK FIT BOOT TO PROTECT CABLE ENDS. GUARANTEED PARTS STOCKING PROGRAM: THE PUMP SUPPLIER SHALL HAVE A GUARANTEED PARTS STOCKING PROGRAM IN THE STATE OF FLORIDA. THESE PARTS SHALL INCLUDE AT LEAST ONE SET OF SPARE PARTS AS LISTED BELOW FOR EACH PUMP SUPPLIED ON THIS CONTRACT. IF THE PUMP SUPPLIER DOES NOT MEET THIS REQUIREMENT FOR A GUARANTEED STOCK PROGRAM, THE CONTRACTOR SHALL FURNISH THE FOLLOWING SPARE PARTS FOR EACH PUMP. UPPER LIP SEAL INSPECTION PLUG WASHERS
- LOWER MECHANICAL SEALIMPELLER BOLT IMPELLERCUTTERSKEY UPPER BEARING LOWERMOTOR CABLEBEARING COMPLETE SET OF O-RINGS
- MOTOR CABLE CABLE ENTRY WASHER/GROMMET COMPLETE SET OF O-RINGS
- 4. THE PUMP SUPPLIER SHALL HAVE A FACTORY AUTHORIZED SERVICE FACILITY WITHIN A 200 MILE RADIUS OF INDIAN RIVER COUNTY CAPABLE OF IN SHOP MOTOR REWINDS. NO PART OF A PUMP BEING REPAIRED SHALL LEAVE THE STATE OF FLORIDA FOR REPAIR.
- .03 SUBMITTALS
   COPIES OF ALL MATERIALS REQUIRED TO ESTABLISH COMPLIANCE WITH THE SPECIFICATIONS SET FORTH HERE SHALL BE SUBMITTED TO THE ENGINEER. SUBMITTALS SHALL INCLUDE AT LEAST THE FOLLOWING: A. EQUIPMENT DIMENSION DRAWINGS, ANCHOR BOLT LAYOUTS, AND WEIGHTS B. TECHNICAL DATA ON THE PUMP AND MOTOR MATERIALS OF CONSTRUCTION
- C. MOTOR ELECTRICAL DATA D. HYDRAULIC PERFORMANCE CURVES E. COMPLETE BILLS OF MATERIALS
- E. COMPLETE BILLS OF MATERIALS F. CONTROL PANEL LAYOUT DRAWINGS, SCHEMATICS, AND BILLS OF MATERIALS 2. ANY EQUIPMENT THAT DOES NOT CONFORM WITH ALL OF THE DETAILED REQUIREMENTS OF THE EDECATIONS, SUMMER DE ACCOMPANIED BY COMPLETE DESCRIPTIONS OF DEVIATIONS AND ALL
- SPECIFICATIONS, SHALL BE ACCOMPANIED BY COMPLETE DESCRIPTIONS OF DEVIATIONS AND ALL NONCONFORMING ASPECTS. FAILURE TO DESCRIBE ANY AND ALL DEVIATIONS FROM THE SPECIFICATIONS WILL BE CAUSE FOR REJECTION. 3. OPERATING AND MAINTENANCE MANUALS SHALL BE FURNISHED IN QUANTITIES AS REQUIRED BY THE
- COUNTY/COUNTY. MANUALS SHALL INCLUDE ALL NECESSARY INFORMATION TO INSTRUCT OPERATING AND MAINTENANCE PERSONNEL UNFAMILIAR WITH SUCH EQUIPMENT. 1.04 WARRANTY WARRANTY: THE PUMP MANUFACTURER SHALL WARRANT THE PUMPS BEING SUPPLIED AGAINST DEFECTS IN WORKMANSHIP

# AND MATERIALS FOR A PERIOD OF ONE (1) YEAR UNDER NORMAL USE, OPERATION AND SERVICE. THE MANUFACTURER SHALL REPLACE ANY PARTS, WHICH FAIL UNDER NORMAL USE AS A RESULT OF FACTORY MANUFACTURING DEFECTS FOR A PERIOD OF ONE YEAR. THE WARRANTY SHALL BE IN PUBLISHED FORM AND APPLY TO ALL SIMILAR UNITS.

### PART 2. PRODUCTS 2.01 MATERIALS

ALL METAL COMPONENTS IN THE LIFT STATION, WITH THE EXCEPTION OF THE PUMPS, MOTORS, GUIDE RAIL BASES, AND STATION PIPING, SHALL BE TYPE 304 STAINLESS STEEL.

- 2.02 PUMPS
   THE CONTRACTOR SHALL FURNISH AND INSTALL ELECTRIC MOTOR DRIVEN TOTALLY SUBMERSIBLE GRINDER PUMPS AS MANUFACTURED BY ABS PUMPS INC., ORANGE COUNTY, FL OR PRE-APPROVED EQUAL.
- PUMP DESIGN:
  A. PUMPS SHALL BE CAPABLE OF HANDLING RAW, UNSCREENED SEWAGE. THE GRINDER UNIT SHALL BE CAPABLE OF SHEARING AND REDUCING TO A FINE SLURRY ALL MATERIAL NORMALLY FOUND IN DOMESTIC AND COMMERCIAL SEWAGE SUCH AS SANITARY NAPKINS, DISPOSABLE DIAPERS, CLOTH DIAPERS, WASH RAGS, WOOD, PLASTIC, ETC. THE SLURRY SHALL BE CAPABLE OF FREELY PASSING THROUGH A 2" PIPING SYSTEM INCLUDING CHECK AND GATE VALVES.
  B. THE DESIGN SHALL BE SUCH THAT THE PUMPS WILL BE AUTOMATICALLY CONNECTED TO THE DISCHARGE
- PIPING WHEN LOWERED ONTO THE DISCHARGE CONNECTION GUIDED BY ONE 2" DIA. SCH 40 304 STAINLESS STEEL GUIDE RAIL. PUMPS SHALL BE EASILY REMOVABLE FOR INSPECTION OR SERVICE, REQUIRING NO BOLTS, NUTS OR OTHER FASTENINGS TO BE REMOVED FOR THIS PURPOSE AND NO NEED FOR PERSONNEL TO ENTER THE WET WELL. EACH PUMP SHALL BE FITTED WITH A 300 STAINLESS STEEL LIFTING BAIL WITH AN OPENING OF AT LEAST EIGHT INCHES IN DIAMETER AND A SERIES 300 STAINLESS STEEL LIFTING CABLE OF ADEQUATE STRENGTH AND LENGTH TO PERMIT RAISING THE PUMP FOR INSPECTION AND REMOVAL. GRINDER PUMP CONSTRUCTION:
- A. THE STATOR CASING, OL CASING AND IMPELLER SHALL BE OF GRAY IRON CONSTRUCTION, WITH ALL PARTS COMING INTO CONTACT WITH SEWAGE PROTECTED BY PVC EPOXY PRIMER WITH A COMPATIBLE EPOXY FINISH COAT. ALL EXTERNAL BOLTS AND NUTS SHALL BE OF 300 STAINLESS STEEL.
  B. THE PUMP SHALL BE OF THE CENTRIFUGAL TYPE WITH THE ROTATING CUTTER MOUNTED ON THE PUMP SHAFT DIRECTLY AGAINST THE IMPELLER. THE STATIONARY CUTTER SHALL BE MOUNTED IN AN ADJUSTABLE BOTTOM PLATE. THE BOTTOM PLATE SHALL BE CAST WITH GROOVES SPIRALING OUTWARD FROM THE CENTER OPENING OF THE PLATE TO THE OUTER DIAMETER. THE IMPELLER SHALL BE A MULTIPLE VANE CENTRIFUGAL TYPE. THE CUTTER MATERIAL SHALL BE SIMILAR TO AN AISI 440C STAINLESS STEEL WITH THE ADDITION OF COBALT, VANADIUM, AND MOLYBDENUM FOR SUPERIOR ABRASION RESISTANCE
- AND A HARDNESS OF 58-62 ROCKWELL C. C. THE COMMON PUMP AND MOTOR SHAFT SHALL BE 420 STAINLESS STEEL SUPPORTED BY A HEAVY DUTY LOWER SINGLE ROW BALL BEARING IN 2 AND 2.5 HORSEPOWER MODELS ONLY WHILE 3 HORSEPOWER AND ABOVE SHALL HAVE A MAXI-DUTY DOUBLE ROW LOWER BALL BEARING. THE UPPER BEARING SHALL BE A SEALED SINGLE ROW BALL BEARING, ALL MODELS. THE CUTTING ELEMENTS AND IMPELLER SHALL BE DESIGNED TO KEEP THE OVERHUNG LOAD DISTANCE TO A MINIMUM. ALL FASTENERS SHALL BE 304 STAINLESS STEEL.
- D. EACH PUMP SHALL BE EQUIPPED WITH TWO SEALS. THE LOWER SEAL (PUMP SIDE) SHALL BE OF THE MECHANICAL TYPE WITH SILICON CARBIDE FACES. THE UPPER SEAL SHALL BE A LIP TYPE SEAL MOUNTED AT A SLIGHT ANGLE TO THE SHAFT. THE SEALS SHALL BE SEPARATED BY AN OIL CHAMBER.
- E. THE PUMP SHALL BE FITTED WITH AN OIL CHAMBER IN WHICH THE SHAFT MECHANICAL SEALS OPERATE. THE CHAMBER SHALL BE FITTED WITH A DRAIN AND INSPECTION PLUG EASILY ACCESSIBLE FROM THE OUTSIDE OF THE PUMP. THE CHAMBER SHALL ALSO BE FITTED WITH A PROBE EXTENDING FROM THE BOTTOM OF THE MOTOR HOUSING INTO THE OIL CHAMBER. THE PROBE SHALL DETECT THE PRESENCE OF WATER IN THE OIL WHEN CONNECTED TO A RESISTIVE THRESHOLD RELAY INSTALLED IN THE CONTROL PANEL. THE RELAY SHALL TURN ON A SEAL FAILURE WARNING LIGHT ON THE INNER DOOR OF THE CONTROL PANEL WHEN WATER IS DETECTED IN THE OIL CHAMBER AS WELL AS IN THE MOTOR HOUSING. THIS SYSTEM WILL PROVIDE ADVANCE WARNING TO AN OPERATOR OF POTENTIAL SEAL FAILURE BEFORE
- MAJOR DAMAGE OCCURS TO THE PUMP MOTOR. F. THE PUMP DISCHARGE SHALL BE FITTED WITH A GUIDE BRACKET THAT SHALL BE A SEPARATE CASTING FITTED WITH A RENEWABLE BUNA-N SEAT AND BOLTED TO THE PUMP DISCHARGE. MACHINED GUIDE RAIL MATING FACES INTEGRAL TO THE PUMP DISCHARGE WILL NOT BE CONSIDERED EQUAL TO THE BOLT ON BRACKET WITH RENEWABLE SEAT SPECIFIED. SEALING OF THE GUIDE BRACKET TO THE DISCHARGE BASE SHALL NOT REQUIRE MOVEMENT OF THE PUMP, HYDRAULIC PRESSURE, OR MACHINED FACES. THE CAST IRON DISCHARGE CONNECTION SHALL BE BOLTED TO THE FLOOR OF THE WELT AND DESIGNED SO AS TO RECEIVE THE PUMP CONNECTING FLANGE WITHOUT THE NEED OF ANY BOLTS OR FASTENERS.
- PUMP MOTOR:
   A. PUMP MOTORS RATED FOR 2 AND 2.5 HORSEPOWER SHALL BE NEMA DESIGN B HOUSED IN AN OIL FILLED CASING. PUMP MOTORS 3 HORSEPOWER AND LARGER SHALL BE NEMA DESIGN B HOUSED IN AN AIR FILLED CASING. ALL MOTORS SHALL HAVE CLASS F INSULATED MOISTURE RESISTANT WINDINGS. THE TEMPERATURE AT ANY POINT IN THE WINDINGS SHALL NOT EXCEED 155 C AT ANY LOAD ON THE OPERATING CURVE OF THE PUMP. BIMETALLIC THERMAL SWITCHES SHALL BE IMBEDDED IN EACH PHASE OF THE WINDING TO SENSE HIGH TEMPERATURE. THE RATING OF THE SWITCH SHALL BE 1200C ± 50C. THE CONTROL CURRENT SHALL BE CONNECTED THROUGH THE BIMETALLIC SWITCHES SO THE MOTOR IS SHUT DOWN SHOULD A HIGH TEMPERATURE CONDITION EXIST. THE SWITCHES SHALL BE SLF-RESETTING
- WHEN THE MOTOR COOLS. B. SINGLE PHASE MOTORS SHALL BE OF THE EXTERNAL CAPACITOR START CAPACITOR RUN TYPE FOR HIGH STARTING TORQUE. MOTORS THAT HAVE INTEGRAL START CAPACITORS INSIDE THE MOTOR HOUSING SHALL NOT BE ACCEPTABLE.
- C. OIL FILLED MOTORS OF 2 & 2.5 HORSEPOWER SHALL BE ENCLOSED IN A TYPE 316 STAINLESS STEEL OUTER HOUSING. AIR FILLED MOTORS 3 HORSEPOWER AND ABOVE SHALL HAVE CAST IRON HOUSINGS EQUIPPED WITH EXTERNAL COOLING FINS.
- D. THE PUMP/MOTOR SHAFT SHALL BE CONSTRUCTED OF 420 STAINLESS STEEL AND SHALL BE KEYED TO ACCEPT THE IMPELLER. THE IMPELLER SHALL BE SECURED TO THE SHAFT BY A STAINLESS STEEL LOCKING BOLT OR NUT. SHAFTS THAT HAVE TAPERED OR THREADED ENDS FOR SECURING THE IMPELLER WILL NOT
- BE ACCEPTABLE. E. SEALING OF THE POWER CABLE ENTRANCE INTO THE TERMINAL CHAMBER SHALL BE PROVIDED BY A BUNA-N GROMMET IN A COMPRESSION FITTING. EPOXY OR OTHER COMPOUNDS USED IN THE SEALING OF THE POWER CABLE ENTRY IS UNACCEPTABLE. THE TERMINAL CHAMBER SHALL BE ISOLATED FROM THE MOTOR CHAMBER BY A WATERTIGHT BARRIER.
- PUMP MOTOR CABLE SHALL BE OF THE SO/SOW TYPE SUITABLE FOR SUBMERSIBLE PUMP APPLICATIONS WITH THE RATING PERMANENTLY EMBOSSED ON THE CABLE. CABLE LENGTH SHALL BE SUFFICIENT TO REACH THE CONTROL PANEL WITHOUT THE NEED FOR JUNCTION BOXES OR SPLICES. CABLE SIZING SHALL CONFORM TO NEC REQUIREMENTS FOR THE FULL LOAD CURRENT OF THE PUMP MOTOR. THE POWER CABLE FROM EACH PUMP SHALL BE PULLED TO THE CONTROL PANEL THROUGH A MINIMUM OF A 2" DIAMETER CONDUIT. ALL FLOAT SWITCHES SHALL BE PULLED THROUGH A SEPARATE 2" DIAMETER CONDUIT.

### 2.03 ACCESSORIES 1. ACCESS HATCHES:

- THE WET WELL AND VALVE VAULT SHALL BE EQUIPPED WITH ACCESS HATCHES OF THE SINGLE OR DOUBLE LEAF CONSTRUCTION IN THE MINIMUM SIZES SHOWN ON THE DRAWINGS. THE PUMP MANUFACTURER SHALL COORDINATE THE WET WELL HATCH SIZE WITH THE PUMPS BEING FURNISHED WHILE THE VALVE VAULT COVER SHALL BE SINGLE LEAF WITH A MINIMUM OF A 36"X 36" CLEAR OPENING. THE HATCHES SHALL BE FABRICATED OF ALUMINUM DIAMOND PLATE REINFORCED FOR A 300# LOAD RATING. THE COVER(S) SHALL BE EQUIPPED WITH STAINLESS STEEL HINGES, STAINLESS STEEL AUTOMATIC HOLD OPEN ARMS, AND PADLOCK HASPS. HATCHES SHALL BE AS MANUFACTURED BY HALLIDAY PRODUCTS OR ELECTRIC SPECIALTY.
- FLOAT / CABLE HANGER:
   A 300 SERIES STAINLESS STEEL CABLE HOLDER WITH A MINIMUM OF SIX HOOKS OF SUFFICIENT LENGTH AND STRENGTH TO PROVIDE SUPPORT FOR EACH SEPARATE CABLE SHALL BE FURNISHED. THE FLOAT/CABLE HANGER SHALL BE EASILY ACCESSED FROM THE HATCH OPENING.
   FLOAT SWITCHES:
- FLOAT SWITCHES: FLOAT SWITCHES SHALL BE U.L. LISTED NON FLOATING DISPLACEMENT TYPE WITH SEALED MERCURY SWITCHES IN A CHEMICAL RESISTANT POLYPROPYLENE CASING. SUFFICIENT CABLE SHALL BE PROVIDED TO REACH THE CONTROL PANEL WITHOUT THE NEED FOR SPLICES OR JUNCTION BOXES IN ADDITION TO PROVIDING AMPLE CABLE FOR HEIGHT ADJUSTMENTS. FLOAT SWITCHES SHALL BE ROTO-FLOATS AS MANUFACTURED BY ANCHOR SCIENTIFIC.

# 4. FIBERGLASS BASIN:

THE FIBERGLASS BASIN SHALL BE MANUFACTURED FROM COMMERCIAL GRADE POLYESTER RESIN. THE COMPLETE WET WELL SHALL HAVE A DYNAMIC LOADING OF 16,000FT-LBS AND SHALL NOT DEFLECT VERTICALLY DOWNWARD MORE THAN A 1/4" AT THE POINT OF LOAD APPLICATION WHEN LOADED TO 24,000LBS. THE FIBERGLASS VALVE VAULT SHALL BE 24"X36"X30" DEEP AND MEET THE REQUIREMENTS FOR INCIDENTAL TRAFFIC H-10 LOADING AS ESTABLISHED BY ASSHTO. THE COMPRESSION STRENGTH SHALL BE AT LEAST 11,000PSI. FLOAT SWITCHES SHALL BE UL LISTED TYPE "S-ROTOFLOAT" MANUFACTURED BY ANCHOR SCIENTIFIC, INC. WITH 30 FEET OF STO PVC CABLE.

### 2.04 CONTROL PANEL: A PUMP STATION CON

A PUMP STATION CONTROL PANEL SHALL BE PROVIDED FOR EACH PUMPING STATION. THE CONTROL PANEL SHALL RESPOND TO LIQUID LEVEL FLOAT SWITCHES TO AUTOMATICALLY START AND STOP THE PUMP TO COMPENSATE FOR VARIATIONS IN PUMP STATION INFLUENT FLOW AS WELL AS PROVIDING VISUAL AND AUDIBLE ALARMS AT HIGH WET WELL LEVELS AND VISUAL ALARMS UPON DETECTION OF MOISTURE IN THE PUMP. PANEL SHALL BE AS MANUFACTURED BY ELECTRIC SPECIALTY OR STACON. THE PUMP CONTROL PANEL SHALL BE THE STANDARD SYSTEM OF THE MANUFACTURER AS MODIFIED FOR THIS APPLICATION. THE WET WELL LEVELS TO BE MAINTAINED IN OPERATION ARE AS SHOWN ON THE DRAWINGS. 1. OPERATION REQUIREMENTS:

- A. THE CONTROL PANEL SHALL INCLUDE A MAIN CIRCUIT BREAKER, A MOTOR CIRCUIT PROTECTOR, AND MAGNETIC STARTER, FOR EACH PUMP MOTOR, AND 15 AMPERE, 120 VOLT CIRCUIT BREAKERS AS REQUIRED FOR CONTROL CIRCUITS AND DUPLEX RECEPTACLE.
  B. ALL PUMP CONTROL OPERATIONS SHALL BE ACCOMPLISHED BY A FLOAT TYPE LIQUID LEVEL CONTROL SYSTEM OPERATING ON A 110 VOLT CIRCUIT. ALL CONTROL COMPONENTS SHALL BE MOUNTED IN ONE
- COMMON ENCLOSURE. C. CONTROL SWITCHES OF THE H-O-A TYPE SHALL PROVIDE MEANS TO OPERATE EACH PUMP MANUALLY OR AUTOMATICALLY. WHEN OPERATED IN THE AUTOMATIC MODE, THE CONTROL LOGIC SHALL PROVIDE MEANS TO MANUALLY SELECT OR AUTOMATICALLY ALTERNATE THE POSITION OF THE "LEAD" AND "LAG" PUMPS AFTER EACH PUMPING CYCLE.
- D. PROVISIONS FOR THE CONNECTION OF EACH PUMP'S THERMAL OVERLOADS INTO A SERIES CONFIGURATION WITH THE HOLDING COIL OF THE APPROPRIATE PUMP STARTER SHALL BE MADE. THIS CIRCUIT SHALL SHUT THE PUMP DOWN IN THE EVENT OF MOTOR OVER-TEMPERATURE. THE CIRCUIT SHALL BE AUTOMATICALLY RESETTING. APPROPRIATELY MARKED TERMINALS SHALL BE PROVIDED FOR THE CONNECTION OF THE PUMP THERMAL OVERLOAD LEADS.
   CONSTRUCTION:
- A. THE ELECTRICAL CONTROL EQUIPMENT SHALL BE MOUNTED WITHIN A NEMA TYPE 3R DEAD FRONT ENCLOSURE, CONSTRUCTED OF NOT LESS THAN 14 GAUGE TYPE 304 STAINLESS STEEL.
  B. THE ENCLOSURE SHALL BE EQUIPPED WITH A RAIN DRIP SHIELD ON TOP AND A DEAD FRONT OUTER
- DOOR FITTED WITH A PIANO TYPE HINGE AND A LOCKING HASP. C. AN ALUMINUM INNER DOOR SHALL HAVE CUTOUTS TO EXPOSE THE OPERATING HANDLES OF ALL BREAKERS AND SHALL INCORPORATE THE COMPONENTS NECESSARY FOR AN OPERATOR TO CHECK THE STATUS OF A PLIMP
- I HE STATUS OF A PUMP. D. CONTROL COMPONENTS SHALL BE MOUNTED ON A REMOVABLE BACK PLATE THAT IS SECURED TO THE ENCLOSURE WITH COLLAR STUDS. E. ALL CONTROL COMPONENTS SHALL BE MARKED WITH LEGENDS FOR EASY IDENTIFICATION.
- E. ALL CONTROL COMPONENTS SHALL BE MARKED WITH LEGENDS FOR EASY IDENTIFICATION.
  F. CONTROL WIRE SHALL BE MINIMUM 18 GA. AWG, U.L. #1015. ALL CONTROL WIRE SHALL BE ROUTED THROUGH PLASTIC WIREWAYS WITH SNAP ON COVERS AND BE NEATLY BUNDLED AND TIE WRAPPED TO FORM A NEAT ASSEMBLY. EACH WIRE SHALL BE NUMBERED BOTH ENDS WITH BRADY TYPE WIRE MARKERS.
- G. EACH CONDUIT ENTERING THE CONTROL PANEL FROM THE WET WELL SHALL BE FITTED WITH A SEAL OFF CONNECTION AS SHOWN ON THE DRAWINGS. EACH SEAL OFF SHALL BE AMPLY FILLED WITH A REUSABLE AND PLIABLE ELECTRICAL SEALING COMPOUND TO PREVENT THE INTRUSION OF SEWER GAS INTO THE CONTROL PANEL. CHICO OR EPOXY COMPOUNDS WILL NOT BE ALLOWED.
  H. LAMINATED WEATHERPROOF WIRING SCHEMATICS OF THE PANEL CIRCUITS ALONG WITH A COMPONENT IDENTIFICATION LEGEND SHALL BE FIXED TO THE INSIDE OF THE OUTER DOOR.
- COMPONENTS: A. ALL MOTOR BRANCH CIRCUIT BREAKERS AND MOTOR STARTERS SHALL BE OF HIGHEST INDUSTRIAL QUALITY, AND SECURELY FASTENED TO THE REMOVABLE BACK PANELS WITH SCREWS AND WASHERS. BACK PANEL SHALL BE TAPPED TO ACCEPT ALL MOUNTING SCREWS SELF-TAPPING SCREWS SHALL NOT BE USED TO MOUNT ANY COMPONENT. B. AN OPEN FRAME, ACROSS-THE-LINE, NEMA RATED, MAGNETIC MOTOR STARTER, AS MANUFACTURED BY
- SQUARE D, SHALL BE FURNISHED FOR EACH PUMP MOTOR. ALL MOTOR STARTERS SHALL BE EQUIPPED TO PROVIDE OVERLOAD PROTECTION ON ALL PHASES. MOTOR STARTER CONTACTS SHALL BE EQUIPPED REPLACEABLE WITHOUT REMOVING THE MOTOR STARTER FROM ITS MOUNTED POSITION.
   C. A DUPLEX 15 AMP GFI UTILITY RECEPTACLE PROVIDING 120 VOLT 60 HERTZ, SINGLE PHASE POWER SHALL BE MOUNTED INSIDE OF THE ENCLOSURE ON THE INNER DOOR.
- D. A RECEPTACLE TO MATCH COUNTY STANDARDS SHALL BE PROVIDED FOR CONNECTION OF THE PANEL TO EMERGENCY POWER. A SEPARATE MAIN CIRCUIT BREAKER PROTECTING THE EMERGENCY POWER CIRCUIT SHALL BE PROVIDED AND SHALL BE MECHANICALLY INTERLOCKED TO THE NORMAL POWER MAIN BREAKER TO PREVENT BOTH BREAKERS TO BE IN THE "ON" POSITION AT THE SAME TIME.
  E. FOR ALARM INDICATION, A TOP MOUNTED FLASHING LIGHT AND HORN SHALL BE PROVIDED. AN NEMA 4 SILENCING BUTTON SHALL BE PROVIDED ON THE OUTSIDE OF THE ENCLOSURE TO SILENCE THE ALARM
- HORN ONLY. IN AN ALARM CONDITION, THE LIGHT WILL CONTINUE TO FLASH INDEPENDENT OF THE HORN. THE ALARM CIRCUIT SHALL AUTOMATICALLY RESET.
  F. A SECONDARY LIGHTNING ARRESTOR SHALL BE PROVIDED.
  G. A PLUG-IN TYPE 0 - 30 SECOND ADJUSTABLE TIMER SHALL BE PROVIDED ON THE LAG PUMP TO PREVENT BOTH PUMPS FROM COMING ON SIMULTANEOUSLY AFTER A POWER FAILURE OR CONNECTION TO EMERGENCY POWER (OPTIONAL).
  4. OPERATING CONTROLS AND INSTRUMENTS
- A. ALL OPERATING CONTROLS AND INSTRUMENTS SHALL BE SECURELY MOUNTED ON THE INNER DOOR.
  ALL CONTROLS AND INSTRUMENTS SHALL BE CLEARLY LABELED TO INDICATE FUNCTION.
  B. PUMP MODE SELECTOR SWITCHES SHALL BE HAND-OFF-AUTO TYPE TO PERMIT OVERRIDE OF AUTOMATIC LEVEL CONTROL AND MANUAL ACTUATION OR SHUTDOWN OF EITHER PUMP MOTOR.
- OPERATION OF PUMPS IN MANUAL MODE SHALL NOT BYPASS ANY SAFETY SHUTDOWN. SWITCHES SHALL BE MANUFACTURED BY SQUARE D COMPANY, NEMA 4X, PROVIDING THREE SWITCH POSITIONS, EACH OF WHICH SHALL BE CLEARLY LABELED ACCORDING TO FUNCTION. C. PUMP RUN INDICATOR LIGHTS SHALL BE PROVIDED AND EQUIPPED TO OPERATE AT 120 VOLT INPUT.
- BULBS SHALL BE EASILY REPLACEABLE FROM THE FRONT OF THE INNER DOOR WITHOUT THE NEED TO REMOVE LAMP SOCKET BASE FROM ITS MOUNTED POSITION.
  D. A SIX DIGIT, NON-RESETABLE ELAPSED TIME METER SHALL BE CONNECTED TO EACH MOTOR STARTER TO INDICATE THE TOTAL RUNNING TIME OF EACH PUMP IN "HOURS" AND "TENTH OF HOURS".
  E. CONTROL TERMINAL BLOCKS SHALL BE OF THE SCREW CLAMP TYPE, RATED 600 VOLTS AND SHALL BE
- CLEARLY MARKED AS TO FUNCTION. F. PHASE MONITORS: 230 VOLT, 3 PHASE STATIONS SHALL BE EQUIPPED WITH AN EIGHT PIN BASE COMBINATION VOLTAGE AND PHASE MONITOR AS MANUFACTURED BY DIVERSIFIED ELECTRONICS. 480 VOLT 1 PHASE STATIONS SHALL BE EQUIPPED WITH A SURFACE MOUNT UNIT AS MANUFACTURED BY
- DIVERSIFIED ELECTRONICS. G. ONE "SEAL FAIL" INDICATING LIGHT PER PUMP OF THE "PUSH TO TEST" TYPE, SHALL BE INSTALLED ON THE INNER DOOR TO PROVIDE INDICATION OF THE PRESENCE OF WATER IN THE PUMP. A PLUG-IN THRESHOLD RELAY AS MANUFACTURED BY SYRELEC MODEL PNR110 SHALL BE PROVIDED FOR EACH PUMP TO MONITOR THE SEAL PROBE IN THE PUMP.

### PART 3 EXECUTION 3.01 INSTALLATION

- INSTALLATION SHALL BE BY OTHERS IN STRICT ACCORDANCE WITH THE CONTRACTOR'S INSTRUCTIONS AND RECOMMENDATIONS IN THE LOCATIONS SHOWN ON THE DRAWINGS. ANCHOR BOLTS SHALL BE SET BY OTHERS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
   UPON COMPLETION OF EACH STATION, THE PUMP MANUFACTURER SHALL INSPECT THE INSTALLATION AND SUBMIT A CERTIFICATE STATING THAT THE INSTALLATION OF THE EQUIPMENT IS SATISFACTORY, AND THAT THE EQUIPMENT IS READY FOR OPERATION.
- 3.03 TESTING
   AFTER ALL PUMPS HAVE BEEN COMPLETELY INSTALLED, THE CONTRACTOR ALONG WITH THE PUMP SUPPLIER SHALL CONDUCT IN THE PRESENCE OF THE OWNER AND THE ENGINEER SUCH TESTS AS ARE NECESSARY TO INDICATE THAT THE PUMP STATION CONFORMS TO THE SPECIFICATIONS. FIELD TESTS SHALL INCLUDE ALL PUMPS INCLUDED UNDER THIS SECTION. THE CONTRACTOR SHALL SUPPLY ALL ELECTRIC POWER, WATER OR WASTEWATER, LABOR, EQUIPMENT AND INCIDENTALS REQUIRED TO COMPLETE THE FIELD TESTS.
- PRIOR TO THE FINAL TEST, THE CONTRACTOR SHALL FLUSH ALL INFLUENT LINES TO THE STATION AND THEN SHALL REMOVE ALL DEBRIS AND SEDIMENT THAT HAS ACCUMULATED IN THE STATION BOTTOM.
   THE FINAL ACCEPTANCE TEST SHALL DEMONSTRATE THAT ALL ITEMS OF THESE SPECIFICATIONS HAVE BEEN MET BY THE EQUIPMENT AS INSTALLED AND SHALL INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING TESTS:

   A. THAT THE QUICK RELEASE LIFT OUT FEATURE FUNCTIONS PROPERLY AND ALLOWS THE PUMP TO BE RAISED AND LOWERED PROPERLY.
- B. THAT ALL UNITS HAVE BEEN PROPERLY INSTALLED AND ARE IN CORRECT ALIGNMENT.
  C. THAT THE UNITS OPERATE WITHOUT OVERHEATING OR OVERLOADING ANY PARTS AND WITHOUT OBJECTIONABLE VIBRATION.
  D. THAT THERE ARE NO MECHANICAL DEFECTS IN ANY OF THE PARTS.
  E. THAT THE PUMPS CAN DELIVER THE SPECIFIED PRESSURE AND QUANTITY OF RAW, UNSCREENED
- E. THAT THE PUMP'S CAN DELIVER THE SPECIFIED PRESSURE AND QUARTY OF RAW, UNSCREENED SEWAGE.
  F. THAT THE PUMP SENSORS AND CONTROLS PERFORM SATISFACTORILY AS TO CONTROL SEQUENCE; I.E.,CORRECT START AND STOP ELEVATIONS, AND PROPER ALARM LEVEL FUNCTIONS.
  4. IF THE PUMP PERFORMANCE DOES NOT MEET THE SPECIFICATIONS, CORRECTIVE MEASURES SHALL BE TAKEN OR THE PUMPS SHALL BE REMOVED AND REPLACED WITH PUMPS WHICH SATISFY THE CONDITIONS SPECIFIED. A 24-HOUR OPERATING PERIOD OF THE PUMPS WILL BE REQUIRED BEFORE ACCEPTANCE. IF A PUMPING STATION CAN NOT BE PUT INTO REGULAR SERVICE BECAUSE OF THE LACK

OF WASTEWATER OR DISCHARGE FORCE MAINS, THE STATION SHALL BE "EXERCISED" AT A MINIMUM OF

# ENERAL UTILITY NOTES - ALL UTILITY CONSTRUCTION TO BE IN ACCORDANCE WITH "INDIAN RIVER COUNTY WATER AND WASTEWATER UTILITY STANDARDS, MARCH,2014." - UTILITY CONSTRUCTION IS SUBJECT TO INDIAN RIVER COUNTY UTILITY PERMIT AND F.D.E.P. PERMIT

TWO TIMES A MONTH BY THE CONTRACTOR.

- CONDITIONS.
  SHOP DRAWINGS SHALL BE SUBMITTED FOR APPROVAL TO THE ENGINEER AND I.R.C. UTILITY DEPT. PRIOR TO CONSTRUCTION.
  THE FOLLOWING SPECIFICATIONS ARE AN ABBREVIATED VERSION OF THE "INDIAN RIVER COUNTY WATER AND WASTEWATER UTILITY STANDARDS, MARCH 2014." WHERE MATERIAL OR INSTALLATION SPECIFICATIONS ARE NOT INCLUDED BELOW, OR ARE NOT CLEARLY UNDERSTOOD, THEN THE AFOREMENTIONED PUBLICATION SHALL BE REFERENCED.
  THE CONTRACTOR SHALL NOTIFY BELLSOUTH, C.T.V., FLORIDA POWER AND LIGHT, INDIAN RIVER COUNTY
- UTILITIES, U.N.C.L.E. AND ANY OTHER UTILITY PROVIDERS 48 HOURS PRIOR TO CONSTRUCTION AND SHALL HAVE ALL EXISTING UTILITIES LOCATED IN THE FIELD.
  ALL REQUIRED TESTING (PRESSURE TESTS, DISINFECTION/ BACTERIOLOGICAL, EXFILTRATION/ INFILTRATION, LAMPING, T.V. INSPECTION, AND OTHER TESTS OR INSPECTIONS REQUIRED IN THE ADOPTED SPECIFICATIONS) SHALL BE PROVIDED AND PAID FOR BY THE CONTRACTOR. THE ENGINEER SHALL BE PRESENT FOR ALL TESTING/INSPECTIONS, AND GIVEN 24 HOUR PRIOR NOTICE. THE ENGINEER SHALL BE GIVEN COPIES OF ALL TEST/INSPECTION RESULTS PRIOR TO ANY REQUEST FOR PAYMENT.

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- POLYVINYL CHLORIDE (P.V.C.) GRAVITY SEWER PIPE CAN BE USED TO A DEPTH OF SIXTEEN FEET.

- GRAVITY SEWER PIPE AND FITTINGS
   GRAVITY SEWER LINES AND LATERALS SHALL BE EXTRA STRENGTH POLYVINYL CHLORIDE PIPE AND SHALL CONFORM TO THE LATEST
  ASTM DESIGNATION D 3034-SDR 35
- FITTINGS INSTALLED IN POLYVINYL CHLORIDE PIPE SHALL CONFORM TO THE SAME SPECIFICATIONS AS THE PIPE IN WHICH THEY ARE
- POLYVINYL CHLORIDE PIPE SHALL BE A MAXIMUM OF 20 FEET IN LENGTH AND FURNISHED BY JM, OR INDIAN RIVER COUNTY UTILITIES DEPARTMENT APPROVED EQUAL.
- MATERIAL SHALL MEET OR EXCEED THE REQUIREMENTS OF ASTM DESIGNATION 1784, TYPE 1, GRADE 1 (12454-B).
   ALL WYES, FITTINGS, LATERALS AND MANHOLE COUPLINGS SHALL BE MANUFACTURED BY JM, OR APPROVED EQUAL.
- THE PIPE SHALL BE GREEN IN COLOR.
   JOINT SEALS IN POLYVINYL CHLORIDE PIPE AND FITTINGS SHALL COMPLY WITH ASTM DESIGNATION D3212 TESTING
- EXFILTRATION OR INFILTRATION TESTS WILL BE REQUIRED ON ALL PIPE, AS DETERMINED BY UTILITY DEPARTMENT OR BUILDING DEPARTMENT PERSONNEL.
   INSTALLATION
   PIPE MUST BE LAID IN A TRENCH FREE OF STONES, ROCKS, OR OTHER DELETERIOUS MATERIALS TO A DEPTH OF 6" BELOW THE
- BOTTOM OF THE PIPE. BACKFILL SHALL BE TAMPED IN 12" LIFTS UP TO THE SURFACE TO ACHIEVE A MINIMUM COMPACTION OF 95% OF THE MAXIMUM DRY DENSITY. DENSITY TESTS SHALL BE PERFORMED ON THE BACKFILL AT A MAXIMUM OF 200 FT. INTERVALS. - ALL PIPE TO BE INSTALLED WITH A MINIMUM GROUND COVER OF 36". PIPE MATERIALS - PRESSURE FORCE MAIN (4" OR LARGER)
- POLYVINYL CHLORIDE PRESSURE PIPE SHALL CONFORM TO THE LATEST AWWA STANDARDS C900 AND ASTM D1784 AND D2241, LATEST REVISION. P.V.C. PRESSURE PIPE SHALL BE MADE FROM CLASS 12454-A OR CLASS 12454-B MATERIAL AND CONFORM WITH THE OUTSIDE DIAMETER OF CAST IRON PIPE WITH A MINIMUM WALL THICKNESS OF DR18.
   PVC PIPE SHALL BE GREEN IN COLOR (FORCE MAIN).
- 2" OFF-SITE FORCE MAIN AND FITTINGS - FORCE MAIN SHALL BE BROWN, GREEN OR WHITE AND CONSTRUCTED OF:
- POLYVINYL CHLORIDE (PVC) PIPE PER ASTM D2241, SDR-21, 200 PSI WITH PUSH ON TYPE JOINTS WITH INTEGRAL WALL BELL. FITTINGS SHALL BE PVC-ASTMO-1784. CLASS 200 WITH GASKETED BELL JOINT PER ASTM-D-3139/F477. DIP PUSH ON OR MECH JOINT FITTINGS PER AWWA C153 MAY
- ALTERNATIVELY BE USED.
  POLYETHYLENE PIPE (PE-3408 PER AWWA C-901-88 CLASS 200, DR), AND SHALL HAVE A WORKING PRESSURE OF 200 PSI. DIMENSIONAL TOLERANCES SHALL CORRESPOND WITH ASTM D-2239, SDROF 9. JOINTS SHALL BE EITHER BY BUTT FUSION OR BY COMPRESSION TYPE, W/ A TOTALLY CONFINED GRIP SEAL AND COUPLING NUT. STAINLESS STEEL TUBE STIFFENER INSERTS SHALL
- BE USED. WHEN SPECIFIED, SERVICE SADDLES AT TAP SHALL BE STAINLESS STEEL DOUBLE STRAP SERVICE SADDLE W/ CORP
- FORCE MAIN SHALL HAVE A MIN OF 36" COVER, EXCEPT 42" COVER UNDER TRAFFIC AREAS.
- 2" ON-SITE FORCE MAIN: - SCH 80 PVC WITH GLUED JOINTS OR PIPE AS SPECIFIED ABOVE.
- VALVES GATE VALVES:

TESTING

- ALL BURIED VALVES SHALL BE RESILIENT SEATED GATE VALVES WITH BRONZE BODY, BRONZE-MOUNTED, RESILIENT SEATED, NON-RISING STEM TYPE FITTED WITH "O-RING" SEALS. VALVES SHALL BE MECHANICAL JOINT, ANSI STANDARD 21.11. PLUG VALVES:
- CAST IRON BODY NON-LUBRICATED, ECCENTRIC TYPE, WITH RESILIENT SEATED PLUGS. VALVE SURFACES SHALL BE 90% NICKEL. GEAR ACTIVATORS SHALL BE WITH SEALED ENCLOSURES. VALVES SHALL HAVE 2" ACTUATING NUTS. VALVES SHALL BE RATED FOR 150 P.S.I.
- TWO-INCH WIDE IDENTIFICATION TAPE SHALL BE SPIRAL-WRAPPED OR AFFIXED TO THE TOP OF THE PIPE. TAPE SHALL HAVE THE WORDS "WATER MAIN" OR "FORCE MAIN" IN 3/4" HIGH LETTERS APPEARING ONE OR MORE TIMES EVERY 24 INCHES.
   PIPING SHALL BE INSTALLED WITH #10 GA. THWA INSUL. STRANDED COPPER WIRE ATTACHED FOR LOCATING PURPOSES.
- INSTALLATION:
   MAINS SHALL BE INSTALLED IN ACCORDANCE WITH APPLICABLE A.W.W.A. STANDARD C600, C900, ASTM D-2774 AND A.W.W.A. MANUAL M23 AND THE
- MANUFACTURERS RECOMMENDED PROCEDURES.
   WATER MAINS SHALL CROSS ABOVE SANITARY SEWER, STORM SEWERS, FORCE MAINS, OR RECLAIMED WATER LINES WITH A MINIMUM OF 18" VERTICAL SEPARATION, OR CONSTRUCT DUCTILE IRON PIPE AT THE CROSSING SUCH THAT ALL PIPE JOINTS ARE EQUAL DISTANCE FROM THE CROSSING WITH NO LESS THAN 10 FFFT BETWEEN ANY TWO (2) JOINTS.
- WATER MAIN SHALL BE LOCATED AT LEAST 10-FEET HORIZONTALLY FROM ALL SANITARY SEWERS, STORM SEWERS, FORCE MAINS AND RECLAIMED WATER MAINS.
   WHEN THE MINIMUM HORIZONTAL AND VERTICAL CLEARANCES HEREIN SPECIFIED CAN NOT BE OBTAINED, ONLY THOSE ALTERNATE SOLUTIONS ACCORDING
- TO THE "RECOMMENDED STANDARDS FOR WATER WORKS" (LATEST REVISION) SHALL BE USED. PIPE MUST BE LAID IN A TRENCH FREE OF STONES, ROCKS OR OTHER DELETERIOUS MATERIAL TO A DEPTH OF 6" BELOW THE BOTTOM OF THE PIPE. PIPE SHALL BE LAID ON A CONTINUOUS UNIFORM BEDDING. BACKFIELD SHALL BE TAMPED IN 6" LIFTS TO ADEQUATELY PROTECT AND SUPPORT THE PIPE. REFERENCE THE TRENCH DETAILS WITHIN THE CONSTRUCTION PLANS.
- MAINS MUST BE INSTALLED WITH A MINIMUM OF 36" OF GROUND COVER AND 42" BELOW ROADS, DRIVEWAY OR PARKING LOTS IN ACCORDANCE WITH DETAILS AND SPECIFICATIONS IN THESE PLANS.
   TAPPING SI FEVES/VALVES
- TAPPING SLEEVES SHALL BE MECHANICAL JOINT TYPE WITH DUCTILE IRON OR STAINLESS STEEL BODIES AND HARDWARE. THE TAPPING VALVE SHALL BE GATE VALVE SPECIFICALLY DESIGNED FOR THE PURPOSE OF TAPPING PRESSURIZED MAINS, AND SHALL BE COMPATIBLE WITH THE TAPPING SLEEVE. THE SLEEVE OUTLET SHALL CONFORM TO ANSI B16.1, CLASS 125.
   TAPPING SADDLE TO BE STAINLESS STEEL DOUBLE STRAP SERVICE SADDLE WITH CORP. STOP
- HYDROSTATIC PRESSURE AND LEAKAGE TESTS SHALL BE PERFORMED IN ACCORDANCE WITH A.W.W.A. STANDARD C600, C900, C905 AND A.W.W.A MANUAL M23. CONTRACTOR SHALL FURNISH ALL GAUGES, METERS, PRESSURE PUMPS AND OTHER EQUIPMENT NECESSARY TO TEST THE LINE. THE ENGINEER SHALL BE

![](_page_17_Figure_94.jpeg)

![](_page_17_Figure_95.jpeg)

NOTES

CONTRACTOR TO LOCATE AND INSTALL INLET HUB IN FIELD.
 ALL DIMENSIONS ARE IN INCHES

- CONTROL PANEL TO BE NEMA 3R S.S. DUPLEX
   ELECTRICAL: PROPOSED AT SITE : 460 VOLTAGE 3 PHASE ELECTRIC
- CONSULT W/ FLORIDA, POWER & LIGHT, 1-800-226-3545 COORDINATE W/ FLECTRICAL PLANS BY OTHERS
- 5. PANEL / PUMPING STATION TO INCLUDE
- A. EMERGENCY POWER RECEPTACLE, COMPATIBLE W/ IRC UTILITY DEPT.
- EMERGENCY MAINT. EQUIPMENT. B. EMERGENCY PUMP-OUT COUPLING BY
- "KAM-LOC", COMPATIBLE W/ IRC UTILITY DEPT. EMERGENCY MAINT. EQUIPMENT.
- C. ALARM LIGHT & HORN TO INDICATE HIGH LEVEL ALARM ELEVATIONS & EMERGENCY
- PHONE DIAL UP. D. LIGHTING ARRESTOR.
- ALTERNATE PUMP MANUFACTURERS WILL BE CONSIDERED.
   ALL HARDWARE (NUTS, BOLTS, WASHERS, HINGES ETC.) TO BE 304 S.S.
- ALL HARDWARE (NOTS, BOLTS, WASHERS, HINGES ETC.) TO BE 304 S.S.
   ALL VALVES, FITTINGS, CHECK VALVES, ETC. TO BE AS APPROVED BY IRC UTILITIES & ENGINEER. CONTRACTOR MUST SUBMIT SHOP DRAWINGS FOR
- APPROVAL PRIOR TO CONSTRUCTION.
   CONTRACTOR SHALL VERIFY ELECTRIC AVAILABILITY (1Φ/3Φ) AND NOTIFY ENGINEER OF ANY INCOMPATIBILITIES PRIOR TO ORDERING PUMPS.
- 10. LIFT STATION WET WELL, VALVE VAULT AND CONTROL PANEL SHALL BE PROVIDED WITH LOCKABLE HARDWARE.
- 11. THE OWNER/DEVELOPER MUST IDENTIFY AND CONTRACT WITH A QUALIFIED UTILITY OPERATOR/CONTRACTOR TO PROVIDE REGULAR AND EMERGENCY MAINTENANCE. CONTACT INFORMATION SHALL BE PROVIDED TO IRC, D.O.H., SHALL BE POSTED ON A SIGN ADJACENT TO THE LIFT STATION, AND SHALL BE PROGRAMMED INTO THE SYSTEM EMERGENCY
- TELEMETRY NOTIFICATION.
  12. SIGN SHALL BE POSTED ADJACENT TO THE LIFT STATION, PROVIDING THE NAME AND PHONE NO. OF AN EMERGENCY CONTACT IN CASE OF AN
- EMERGENCY/ SYSTEM FAILURE. 13. THE LIFT STATION MUST BE EQUIPPED WITH A TELEMETRY DEVICE THAT WILL NOTIFY THE EMERGENCY CONTACT/OPERATOR/MAINTENANCE ENTITY UPON ACTIVATION OF THE ALARM SYSTEM.
- THE FORCE MAIN SHALL BE CLEARLY MARKED WITH TAPE OR OTHER MARKINGS AND IDENTIFIED AS A FORCE MAIN TO ENSURE THE PIPE IS NOT MISTAKEN AS A WATER MAIN.
- 15. THE ENGINEER OF RECORD SHALL NOTIFY THE COUNTY INSPECTOR OF THE LIFT STATION COMPLETION AT LEAST FIVE (5) WORKING DAYS PRIOR TO SCHEDULING OF LIFT STATION START-UP TO ALLOW FOR A FINAL INSPECTION.

PUMPING STATION	I DATA	TABLE
LIFT STATION NUMBER		
MIN. SOLIDS PASS. IMPELLER	INCHES	
PUMP MODEL NUMBER	NO.	PIR 08 D 50 HZ
PUMP IMPELLER	in.	5.33"
PUMP SPEED (DESIGN)	R.P.M.	2898
MOTOR NAMEPLATE H.P.	H.P.	1.34
MAX. MOTOR SPEED	R.P.M.	
INITIAL INFLUENT PEAK RATE	G.P.M.	69.5
MIN. PUMP CYCLE TIME	MINS.	15
TOP ELEV.		23.9
ALARM SIGNAL ON ELEV.	ELEV."A"	13.80
INFLUENT PIPE INV. ELEV.	ELEV."B"	14.30
LAG PUMP ON ELEV.	ELEV."C"	13.30
LEAD PUMP ON ELEV. (+)	ELEV."D"	12.80
PUMPS OFF ELEVATION	ELEV."E"	11.80
ALARM SIGNAL ON ELEV.	ELEV."F"	
BOTTOM OF WET WELL	ELEV."G"	10.30
PUMP MANUFACTURER	PIRANHA	
(*) PUMP WILL OPERATE BETWEEN PRIM/ AND SECONDARY POINTS.		