

# WATER DISTRIBUTION and WASTEWATER COLLECTION SYSTEM STANDARDS

PREPARED FOR

## City of Freeport



### CITY COMMISSION MEMBERS

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JANICE MC LEAN, COUNCIL MEMBER

EDDIE FARRIS, COUNCIL MEMBER

JENNIFER LAIRD, COUNCIL MEMBER

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ROBERT FAWCETT, LEAD WASTE WATER OPERATOR

## November 2014

PROJECT NO. 493.000

PLANS PREPARED BY:



## PREBLE-RISH INC

CONSULTING ENGINEERS AND SURVEYORS  
CIVIL • SURVEYING • SITE PLANNING

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EB# 0006155

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SUBSTANTIAL EFFORT HAS BEEN MADE TO ENSURE THE INFORMATION IN THESE STANDARDS IS ACCURATE, HOWEVER, THE CITY OR PREBLE-RISH, INC. CANNOT ACCEPT RESPONSIBILITY FOR ANY ERRORS OR OVERSIGHT IN THE USE OF THE MATERIAL OR IN THE PREPARATION OF THE ENGINEERING PLANS. THIS PUBLICATION IS INTENDED FOR USE BY PROFESSIONAL PERSONNEL COMPETENT TO EVALUATE THE SIGNIFICANCE AND LIMITATIONS OF ITS CONTENTS AND ABLE TO ACCEPT RESPONSIBILITY FOR THE APPLICATION OF THE MATERIAL IT CONTAINS.

THE DESIGNER MUST RECOGNIZE THAT NO HANDBOOK OR CODE CAN BE A SUBSTITUTE FOR EXPERIENCED ENGINEERING JUDGMENT.

USERS OF THESE STANDARDS ARE ENCOURAGED TO OFFER COMMENTS TO PREBLE-RISH, INC. ON THE CONTENTS OF THIS PUBLICATION AND SUGGESTIONS FOR CHANGES IN THE FUTURE EDITIONS.

PRODUCTS TO BE CONSIDERED "APPROVED EQUAL" SHALL BE SUBMITTED TO CITY'S ENGINEER FOR APPROVAL.

THESE STANDARDS ARE UNDER CONSTANT REVIEW AND ARE SUBJECT TO CHANGES APPROVED BY CITY AND PREBLE-RISH, INC.

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**INTRODUCTION**

**Water Distribution and Wastewater Collection System Standards**  
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## GENERAL NOTES

1. ALL GRADES ARE FINISHED GRADES.
2. ALL STATIONING AND OFFSETS ARE FROM, AND PERPENDICULAR OR RADIAL TO THE THE BASELINE OF SURVEY UNLESS OTHERWISE NOTED.
3. FOR STABILIZING AT INTERSECTIONS, TURNOUTS AND GRADED CONNECTIONS, SEE FDOT INDEX NO. 515.
4. ALL GRASSED AREAS DISTURBED AS A RESULT OF CONSTRUCTION SHALL BE RESODDED "IN KIND" UNLESS OTHERWISE NOTED IN THE PLANS.
5. UNSUITABLE MATERIALS SHALL BE REMOVED FROM THE CONSTRUCTION AREAS AND BACKFILLED WITH SUITABLE MATERIALS.
6. CONSTRUCTION SHALL INCLUDE REPLACING, WITH MATCHING MATERIALS: ANY DRIVEWAYS, WALKS, CURBS, SOD, STRIPING ETC. THAT ARE DAMAGED OR REMOVED DUE TO CONSTRUCTION. THIS WORK SHALL BE COORDINATED WITH THE PROPERTY OWNERS. PAYMENT FOR THIS WORK SHALL BE INCIDENTAL TO THE OTHER CONTRACT ITEMS.
7. ALL PERSONAL PROPERTY WITHIN THE RIGHT-OF-WAY SHALL BE RELOCATED BY THE PROPERTY OWNER. THE CONTRACTOR SHALL COORDINATE WITH THE PROPERTY OWNERS TO PROVIDE NOTIFICATION AND A REASONABLE TIME FRAME TO RELOCATE ITEMS. THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER PRIOR TO REMOVING THE ITEMS NECESSARY TO CONSTRUCT THE PROJECT IN ACCORDANCE WITH THE PLANS UNLESS OTHERWISE STATED IN THE PLANS.
8. ALL PUBLIC AND PRIVATE PROPERTY AFFECTED BY THE CONSTRUCTION WORK SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN THE PRE-CONSTRUCTION CONDITION.
9. ALL EXISTING DRAINAGE STRUCTURES WITHIN THE LIMITS OF CONSTRUCTION SHALL REMAIN IN PLACE UNLESS OTHERWISE NOTED.
10. ALL EXISTING UTILITIES ARE TO REMAIN IN PLACE UNLESS OTHERWISE NOTED.
11. SPECIAL ATTENTION IS DIRECTED TO THE FACT THAT PORTIONS OF SOME DRAINAGE STRUCTURES MAY EXTEND INTO THE STABILIZED PORTION OF THE ROADWAY AND EXTREME CAUTION WILL BE NECESSARY IN STABILIZATION OPERATIONS AT THESE LOCATIONS. ALL STORM SEWER LINES AND INLETS SHALL BE CLEANED OF DEBRIS AND ERODED MATERIALS AT THE LAST STAGE OF CONSTRUCTION.
12. ANY DRAINAGE PROBLEMS EXISTING BEFORE CONSTRUCTION COMMENCES SHALL BE BROUGHT TO THE ATTENTION OF THE NWF-WMD AND ENGINEER OF RECORD PRIOR TO BEGINNING OF CONSTRUCTION.
13. TEMPORARY DRAINAGE SHALL BE PROVIDED DURING CONSTRUCTION TO PREVENT ANY FLOODING OF PRIVATE PROPERTY.
14. THE EROSION CONTROL MEASURES PER FDOT EROSION AND SEDIMENT CONTROL MANUAL AND SPECIFICATION 104 ARE THE MINIMUM REQUIRED. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DUE TO FIELD CONDITIONS AS DETERMINED BY THE NWF-WMD'S AUTHORIZED REPRESENTATIVE AND THE REGULATORY AGENCIES.
15. BENCHMARK DATUM IS N.A.V.D. 1988 (NAVD 88). ANY MONUMENT WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED. IF IN DANGER OF DAMAGE, THE CONSTRUCTION MANAGER SHALL NOTIFY THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP), BUREAU OF SURVEY AND MAPPING, 3900 COMMONWEALTH BOULEVARD, M.S. 100, TALLAHASSEE, FLORIDA 32399, TELEPHONE (850) 245-2555.
16. ANY PUBLIC LAND CORNER, GPS, CITY, COUNTY OR STATE MONUMENT WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED. IF A CORNER OR MONUMENT IS IN DANGER OF BEING DESTROYED AND HAS NOT BEEN PROPERLY REFERENCED, THE CONTRACTOR'S CONSTRUCTION MANAGER SHALL NOTIFY THE PROJECT ENGINEER WITHOUT DELAY BY TELEPHONE.
17. ALL SURVEY CORNERS INDICATED ON THE PLANS SHALL BE REFERENCED AND CERTIFIED BY A REGISTERED PROFESSIONAL LAND SURVEYOR PRIOR TO COMMENCEMENT OF CONSTRUCTION. ALL CORNERS DESTROYED OR OBLITERATED BY CONSTRUCTION SHALL BE RESET AND SO CERTIFIED BY THE LAND SURVEYOR PRIOR TO COMPLETION OF THE PROJECT.
18. UPON COMPLETION OF THE CONSTRUCTION, THE FDEP AND THE PROJECT ENGINEER SHALL BE NOTIFIED FOR FINAL INSPECTION.
19. CONTRACTOR SHALL BE RESPONSIBLE FOR LITTER REMOVAL (TRASH, TREE LIMBS, BRUSH PILES, AND OTHER MAN MADE DEBRIS) ALONG ENTIRE PROJECT, TO PROVIDE A LITTER FREE CORRIDOR AT COMPLETION OF CONSTRUCTION.
20. THE LOCATION OF THE EXISTING UTILITIES SHOWN IN THE PLANS ARE APPROXIMATE ONLY. PRIOR TO CONSTRUCTION, ALL EXISTING UTILITIES, PUBLIC OR PRIVATE, SHALL BE LOCATED IN THE AREA OF CONSTRUCTION AND OWNERS OF SAID UTILITIES NOTIFIED PRIOR TO COMMENCING WORK. THE EXACT LOCATION SHALL BE DETERMINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION.
21. THE CONTRACTOR IS TO CONTACT (811) THE SUNSHINE STATE ONE CALL OF FLORIDA, INC. CENTER (1-800-432-4770), WWW.CALLSUNSHINE.COM AT LEAST TWO (2) BUSINESS DAYS (48 HOURS) PRIOR TO THE START OF CONSTRUCTION (PER CHAPTER 556 OF THE FLORIDA STATUTES).
22. ALL GRADES AND CROSS SLOPES SHALL COMPLY WITH THE LATEST AMERICANS WITH DISABILITIES ACT (A.D.A.) STANDARDS FOR ACCESSIBLE DESIGN. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IMMEDIATELY IN THE CASE THAT A D.A. REQUIREMENTS MAY NOT BE MET AS DESIGNED, SO THAT CORRECTIVE ACTION MAY BE PROVIDED PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL ENSURE SUFFICIENT CROSS SLOPE TO PROVIDE ADEQUATE DRAINAGE OF THE PROPOSED FACILITIES.
23. IN ADDITION TO THE TURBIDITY AND EROSION CONTROL MEASURES SPECIFIED ON THE PLANS, BEST MANAGEMENT PRACTICES FOR EROSION AND TURBIDITY CONTROL SHALL BE UTILIZED AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS, INCLUDING REGULATIONS OF THE NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT (NWF-WMD), U.S. ARMY CORPS OF ENGINEERS (USACOE), FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) AND THE NPDES PERMIT REQUIREMENTS. THESE PRACTICES SHALL INCLUDE THE USE AND MAINTENANCE OF STAKED SILT FENCE FILTER CLOTH AND OTHER SUITABLE MEANS SURROUNDING ALL CONSTRUCTION AREAS TO PREVENT EROSION AND SEDIMENTATION, AS WELL AS THE USE OF FLOATING AND/OR STAKED TURBIDITY BARRIERS WHERE APPROPRIATE TO ISOLATE CONSTRUCTION AREAS FROM ADJACENT SURFACE WATERS. THESE TURBIDITY CONTROL DEVICES SHALL BE INSPECTED AND MAINTAINED ON A DAILY BASIS TO ENSURE THAT CONSTRUCTION GENERATED TURBIDITY IS CONTAINED WITHIN THE WORK AREAS AND THAT THE TURBIDITY CONTROL DEVICES REMAIN IN PLACE UNTIL ALL CONSTRUCTION IS COMPLETE, AND WORK AREAS HAVE BEEN STABILIZED.
24. LOCATION OF SILT FENCE AND STAKED OR FLOATING TURBIDITY BARRIERS (IF) SHOWN ON CONSTRUCTION PLANS ARE FOR GRAPHIC PURPOSES IDENTIFYING THAT EROSION CONTROL FEATURES WILL BE PRESENT. LOCATIONS OF SILT FENCE ARE APPROXIMATE AND ARE TO BE ADJUSTED AS NECESSARY TO MEET FIELD CONDITIONS AS DIRECTED BY THE PROJECT ENGINEER.
25. THE CONTRACTOR SHALL REVIEW ALL PERMITS, PERMIT EXEMPTIONS, AND REPORT LOGS LOCATED IN THE CONTRACT DOCUMENTS PRIOR TO BIDDING ON THE PROJECT AND BECOME FAMILIAR WITH ALL OF THE CONDITIONS OF THESE DOCUMENTS. THE CONTRACTOR SHALL VERIFY THAT THE CONSTRUCTION ACTIVITIES ARE IN COMPLIANCE WITH THESE PERMITS.
26. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF THE PAVEMENT SURFACE. ALL DEFICIENCIES WILL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. NO EDGE PATCHES, POTHOLE AND GOUGE PATCHES OR PARTIAL SURFACE WIDTH PATCHES SHALL BE PERMITTED IN THE FINISHED ASPHALT OR CONCRETE SURFACE OF THE PAVEMENT AND ITS AMENITIES. ALL PATCHING OF THE FINISHED SURFACE SHALL BE FULL WIDTH OF THE SURFACE BEING REPAIRED AND EXTEND AT A MINIMUM ONE (1) FOOT IN LENGTH BEYOND THE IRREGULARITY EDGES. ASPHALT PAVEMENT PATCHING SHALL RECEIVE THERMOPLASTIC STRIPING. THE COST FOR ALL WORK AND MATERIALS NECESSARY TO REPAIR THE PAVEMENT SURFACE TO ITS REQUIRED SURFACE PROFILE SHALL BE INCIDENTAL TO THE OTHER CONTRACT PAY ITEM BID COSTS WITH NO ADDITIONAL CHARGE TO THE CITY.
27. ALL STAKING OF PROPOSED CONSTRUCTION TO ALLOW FOR PROPER INSTALLATION/RELOCATION OF UTILITY FEATURES, AS MAY BE INDICATED WITHIN THESE PLANS, SHALL BE PERFORMED BY THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER OF THE IMPACTED UTILITY AND STAKE THE ITEMS REQUESTED. THIS STAKING SHALL BE SEPARATE AND IN ADDITION TO THE NORMAL STAKING FOR THE PROJECT. THE COST OF THIS STAKING SHALL BE INCIDENTAL TO AND INCLUDED IN THE COST OF THE PROJECT.
28. EXISTING IRRIGATION LINES/SYSTEMS IN CONFLICT WITH PROPOSED IMPROVEMENTS SHALL BE ADJUSTED AS NECESSARY TO RELOCATE OUTSIDE OF THE PROPOSED CONSTRUCTION AREA, COST OF WHICH SHALL BE INCIDENTAL TO THE PAYMENT OF ASSOCIATED CONSTRUCTION.

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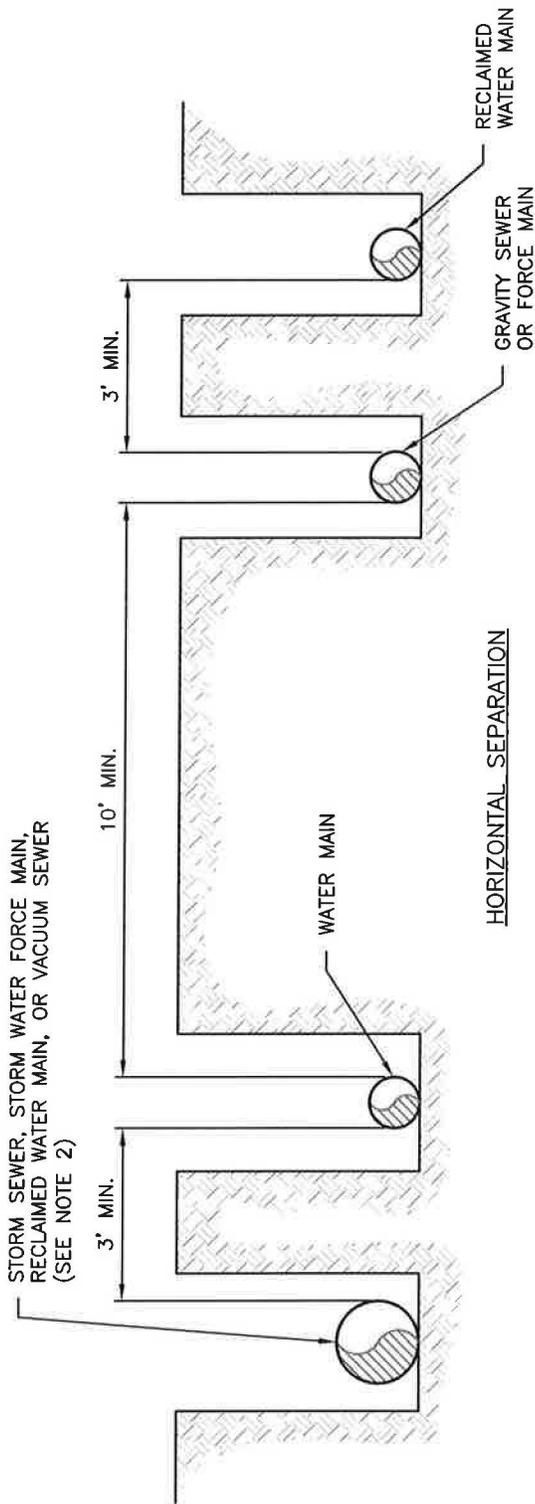
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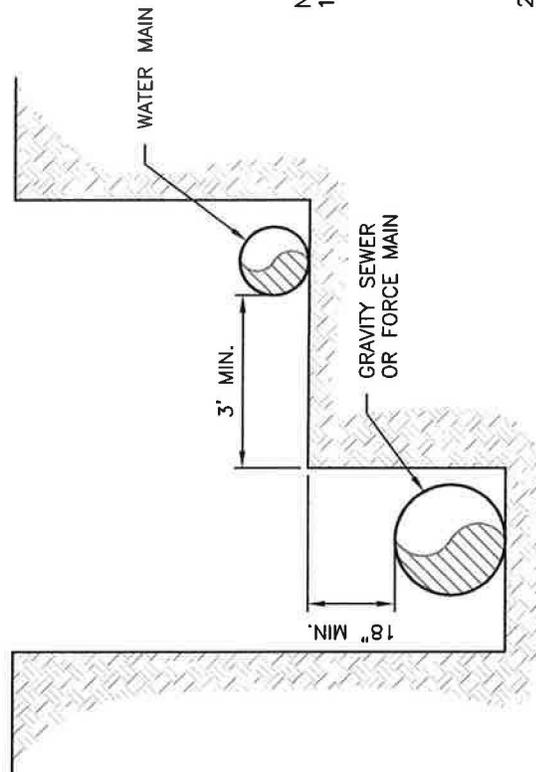
### GENERAL NOTES

Water Distribution and Wastewater Collection System Standards  
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HORIZONTAL SEPARATION



VERTICAL SEPARATION

NOTES:

1. WATER MAIN SEPARATION FROM GRAVITY SEWER MAINS AND FORCE MAINS: THE MINIMUM HORIZONTAL DISTANCE BETWEEN THE OUTSIDE OF A WATER MAIN AND SEWER MAIN SHALL BE 10'. WHERE A 10' PARALLEL SEPARATION CANNOT BE MAINTAINED BETWEEN A WATER MAIN AND A SEWER MAIN, THE WATER MAIN SHALL BE LAID IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF AT LEAST 18" ABOVE THE TOP OF THE SEWER MAIN. THE HORIZONTAL SEPARATION SHALL BE NO LESS THAN 3'.
2. WATER MAIN SEPARATION FROM VACUUM SEWER: THE DISTANCE BETWEEN A WATER MAIN AND A VACUUM SEWER LINE SHALL BE A MINIMUM OF 3' BUT A SEPARATION OF 10' IS PREFERRED.

DETAIL-WATER / SEWER SEPARATION

SCALE: N.T.S.



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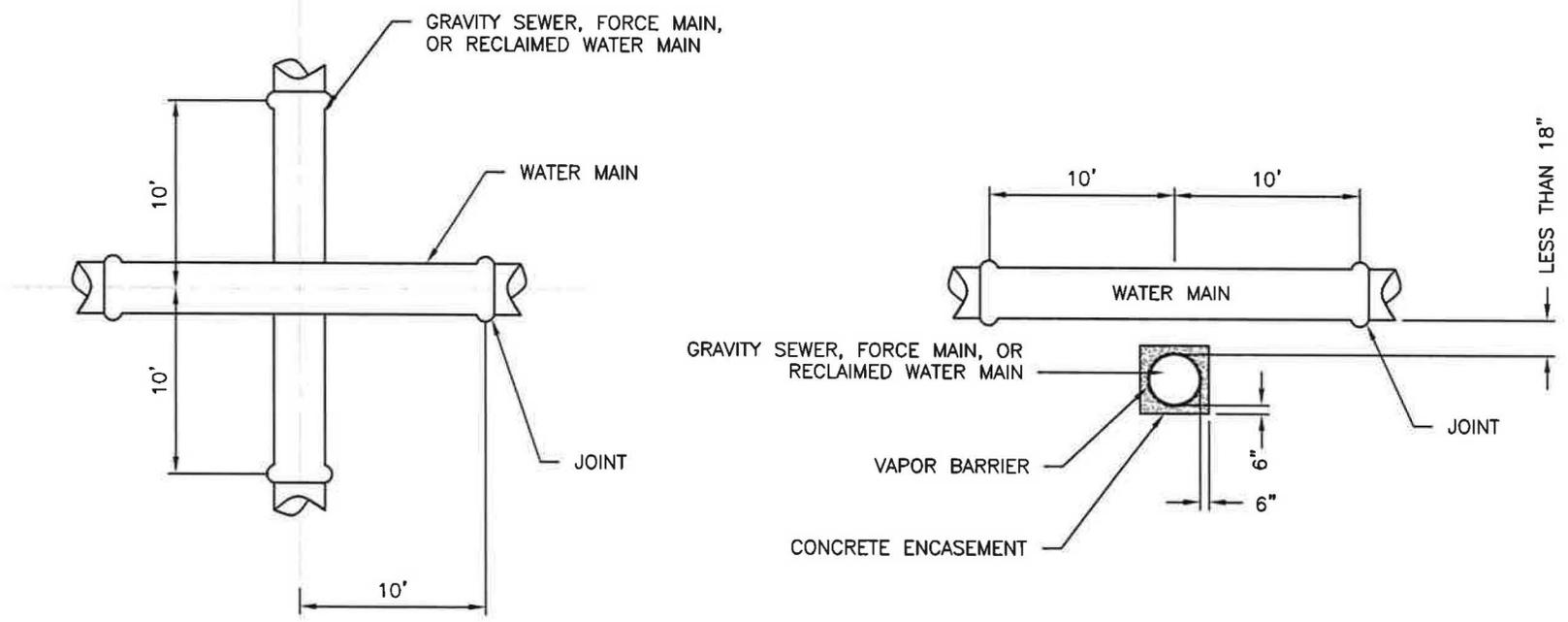
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**WATER / SEWER SEPARATION**

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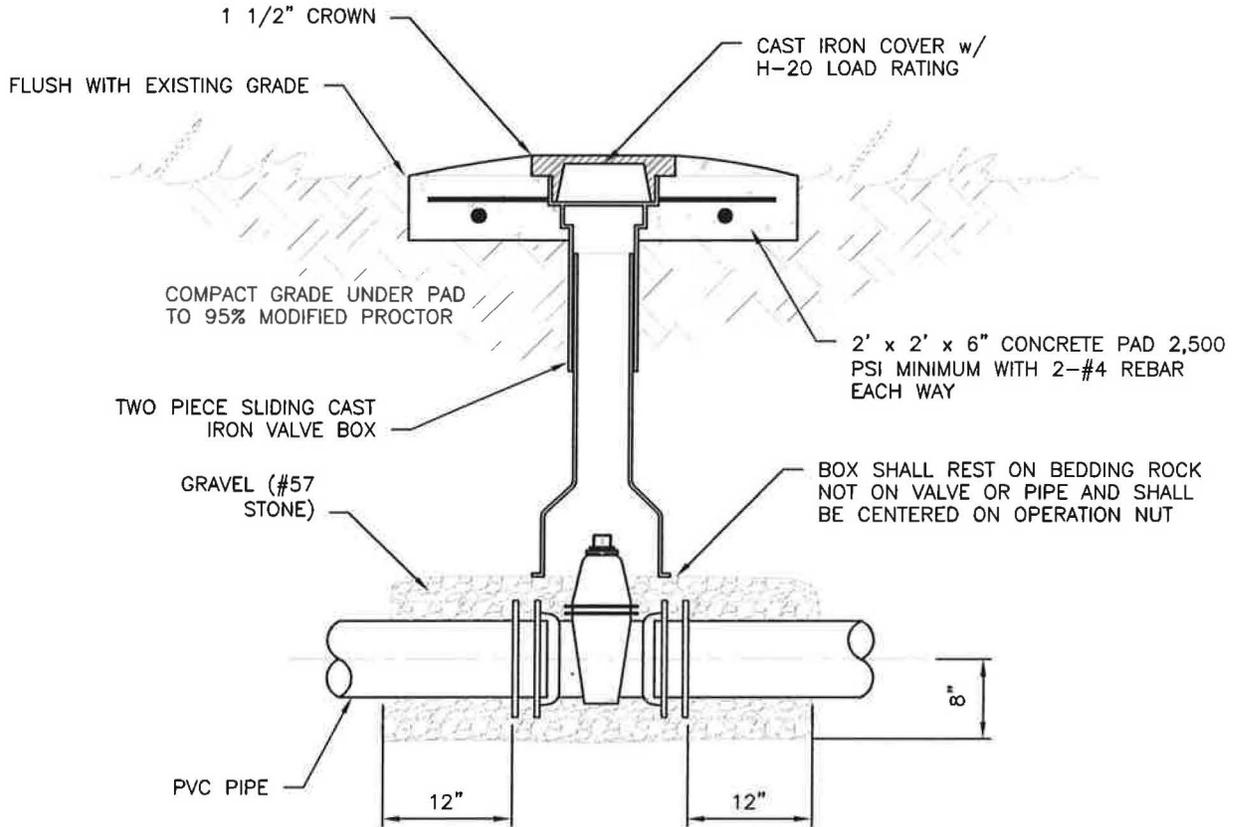
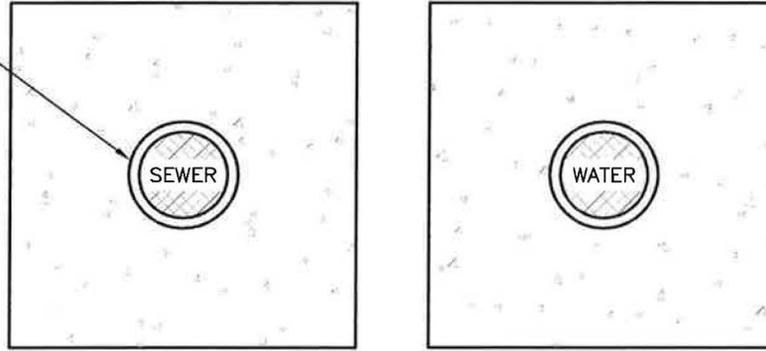
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- NOTES:
1. WHERE AN 18" VERTICAL SEPARATION DISTANCE CANNOT BE MAINTAINED BETWEEN A WATER MAIN AND A GRAVITY SEWER, FORCE MAIN, OR RECLAIMED WATER MAIN, THEN THE GRAVITY SEWER, FORCE MAIN, OR RECLAIMED WATER MAIN SHALL BE CONCRETE ENCASED 6" AND PASS UNDER THE WATER MAIN.
  2. THE PIPE JOINTS SHALL BE ARRANGED SO THAT ALL PIPE JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING WITH NO LESS THAN TEN FEET BETWEEN ANY TWO JOINTS. ALTERNATELY, CROSSING SHALL BE ENCASED IN CONCRETE TO OBTAIN THE EQUIVALENT OF THE TEN FOOT SEPARATION BETWEEN JOINTS.

**DETAIL - WATER/SEWER CROSSING**  
 SCALE: N.T.S.

CAST IRON COVER SHALL BE MARKED "SEWER, WATER, ETC."



**NOTE:**

1. ALL CONCRETE PADS SHALL BE FORMED WITH WOOD, NO EXCEPTIONS.
2. CONTRACTOR SHALL PROVIDE DUCTILE IRON RISER EXTENSIONS IF NEEDED. PVC SHALL NOT BE USED FOR EXTENSIONS.

**DETAIL - TYPICAL VALVE BOX & PAD**

SCALE: N.T.S.

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**TYPICAL VALVE BOX AND PAD**

Water Distribution and Wastewater Collection System Standards  
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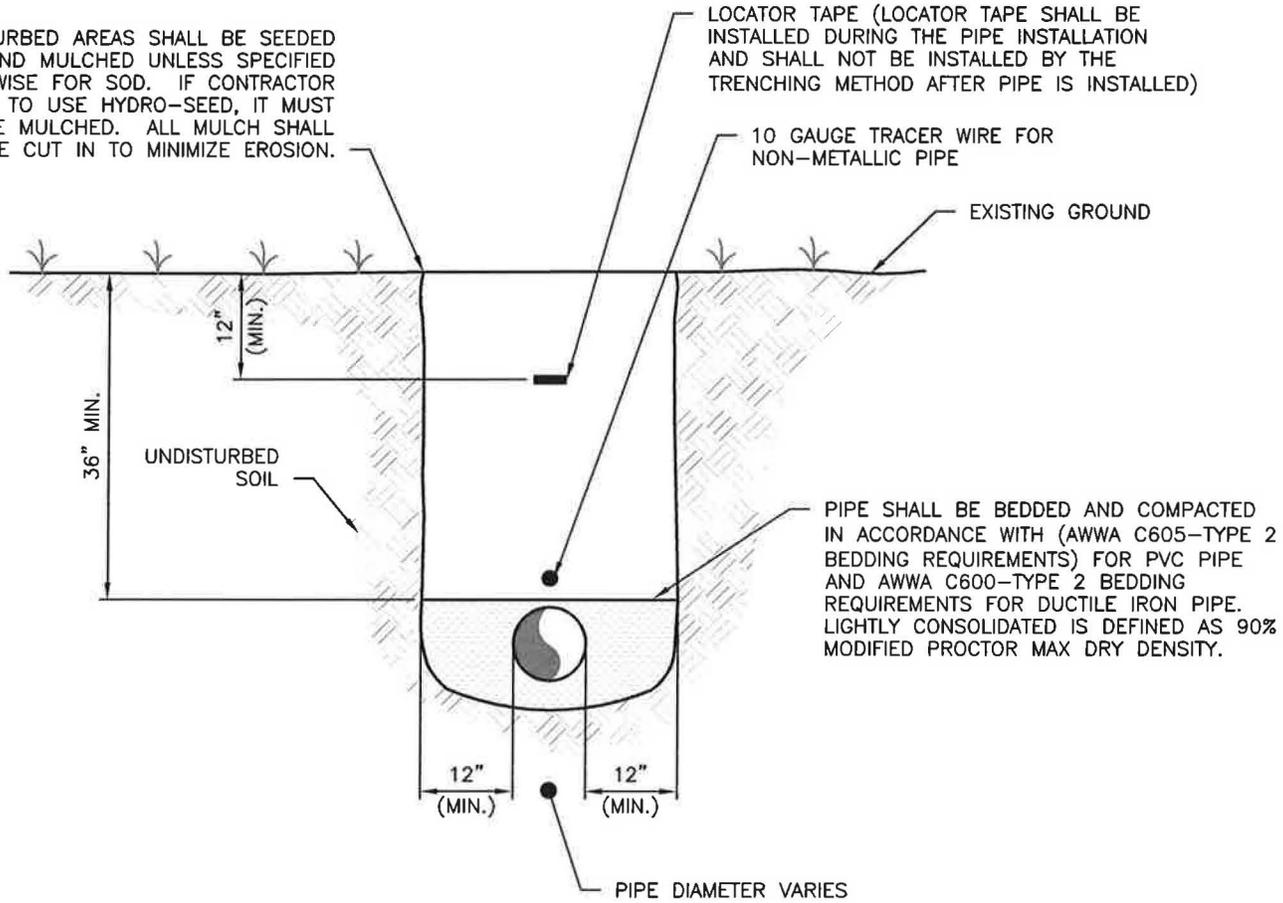
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ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED UNLESS SPECIFIED OTHERWISE FOR SOD. IF CONTRACTOR CHOOSES TO USE HYDRO-SEED, IT MUST ALSO BE MULCHED. ALL MULCH SHALL BE CUT IN TO MINIMIZE EROSION.

LOCATOR TAPE (LOCATOR TAPE SHALL BE INSTALLED DURING THE PIPE INSTALLATION AND SHALL NOT BE INSTALLED BY THE TRENCHING METHOD AFTER PIPE IS INSTALLED)

10 GAUGE TRACER WIRE FOR NON-METALLIC PIPE

EXISTING GROUND



PIPE SHALL BE BEDDED AND COMPACTED IN ACCORDANCE WITH (AWWA C605-TYPE 2 BEDDING REQUIREMENTS) FOR PVC PIPE AND AWWA C600-TYPE 2 BEDDING REQUIREMENTS FOR DUCTILE IRON PIPE. LIGHTLY CONSOLIDATED IS DEFINED AS 90% MODIFIED PROCTOR MAX DRY DENSITY.

NOTES:

1. NO TRASH, RUBBISH, ROCKS OR DEBRIS WILL BE ALLOWED IN TRENCHES.
2. ALL PIPE SHALL BE INSTALLED IN DRY TRENCHES.
3. CONTRACTOR MAY BE REQUIRED BY THE ENGINEER TO DE-WATER PIPE TRENCH, IF NECESSARY.
4. AT THE ENGINEERS DISCRETION, THE CONTRACTOR SHALL SUBSTITUTE SELECT BACKFILL IN LIEU OF NATIVE SOILS FOR A UNIT PRICE SPECIFIED IN THE CONTRACTOR'S BID FORM.
5. THE CONTRACTOR WILL BE COMPENSATED FOR SELECT BACKFILL ONLY IF DIRECTED BY THE ENGINEER IN WRITING. THE ENGINEER MAY ISSUE A FIELD ORDER WITH WRITTEN CONFIRMATION WITHIN 24 HOURS.

**DETAIL-TYPICAL PIPE BEDDING**

SCALE: N.T.S.

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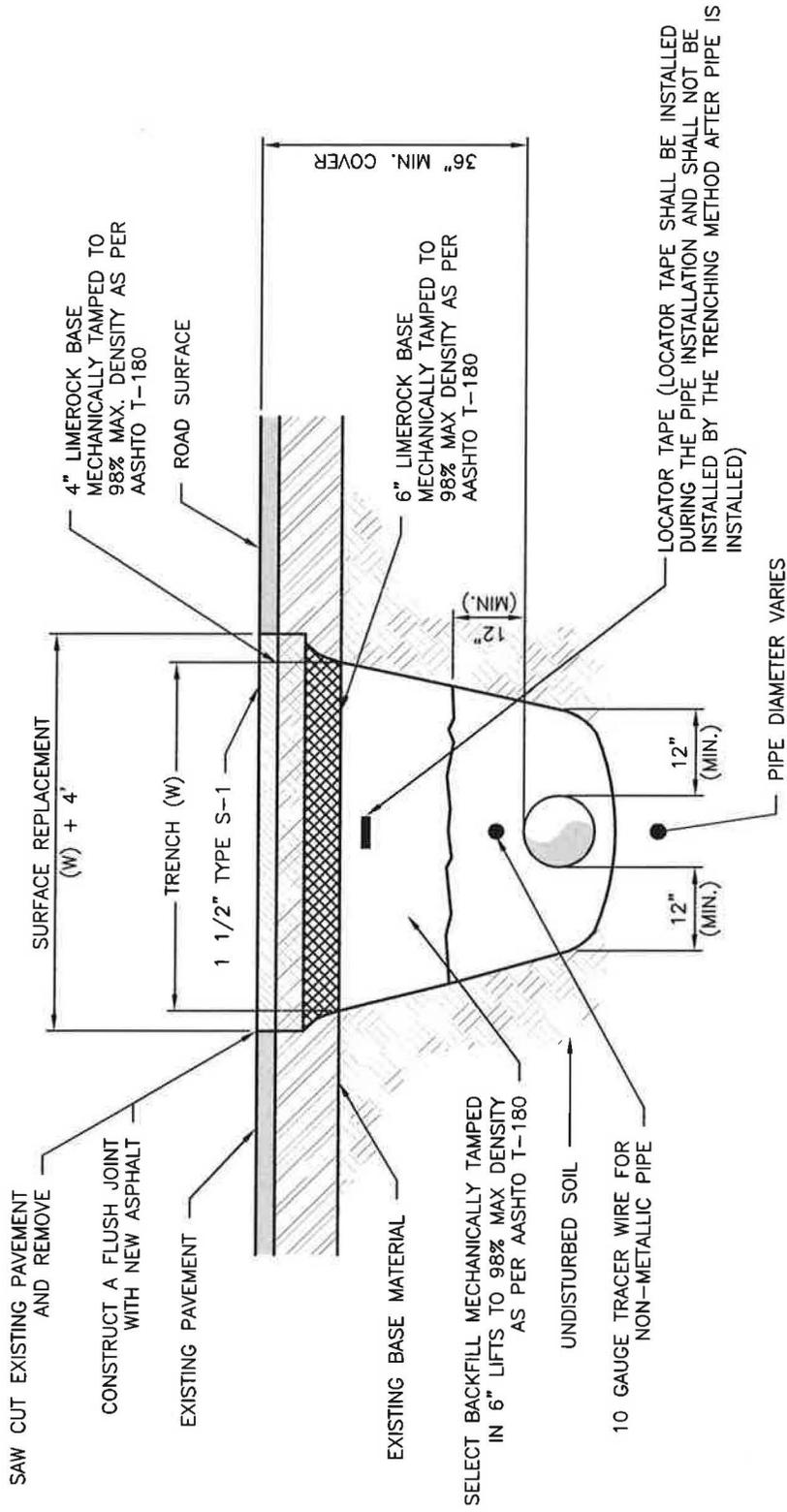
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**TYPICAL PIPE BEDDING**

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**DETAIL-REMOVAL AND REPLACEMENT OF ASPHALT PAVING**  
 SCALE: N.T.S.



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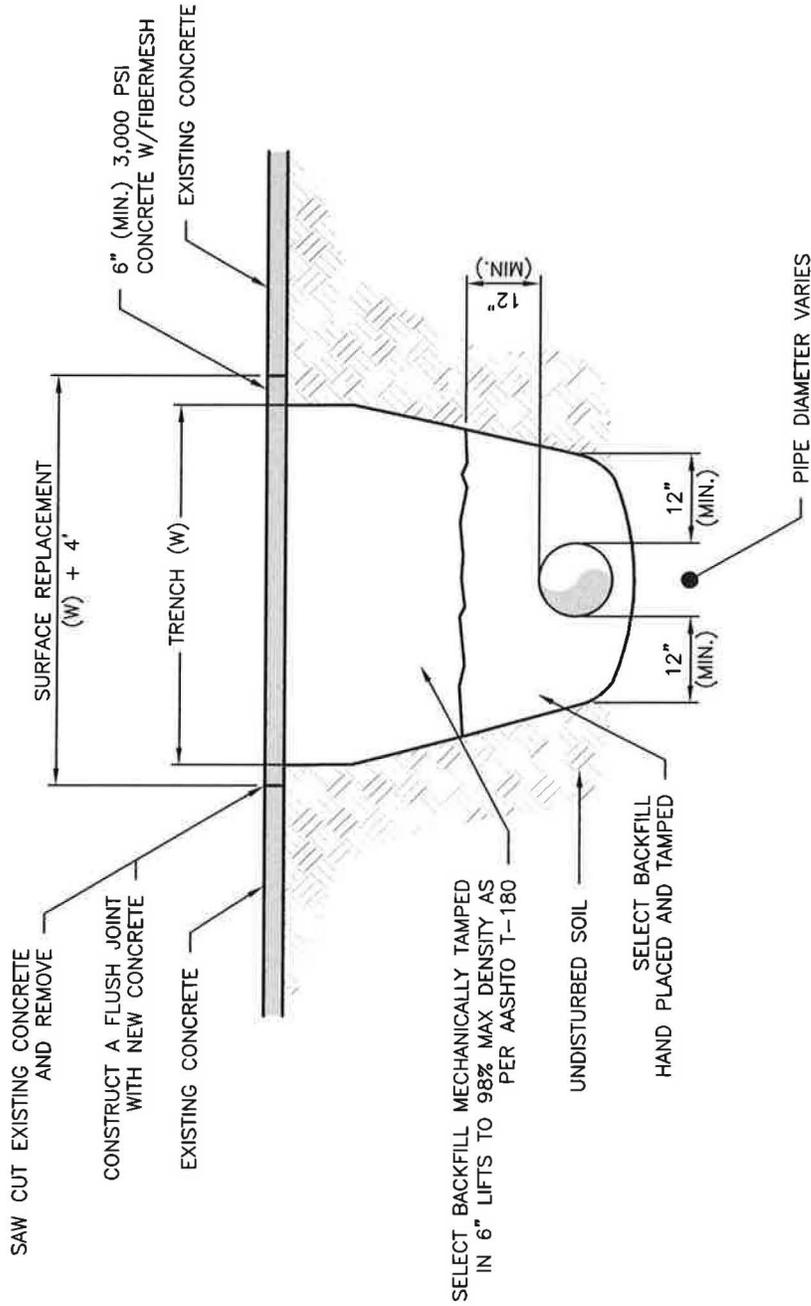
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**REMOVE & REPLACEMENT OF ASPHALT PAVING**  
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**DETAIL-REMOVAL AND REPLACEMENT OF CONCRETE DRIVE**

SCALE: N.T.S.

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**REMOVAL & REPLACEMENT OF CONCRETE DRIVE**  
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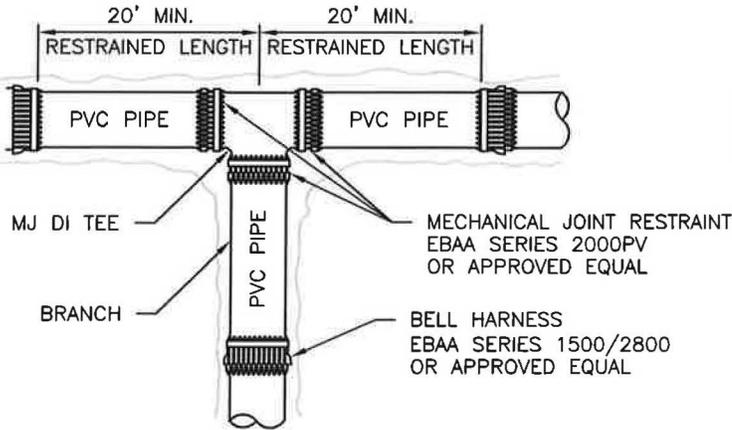
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DRAWN: SOE	
CHECKED: CLK	

EB# 0008155

**RESTRAINT LENGTH REQUIREMENTS FOR FITTINGS**

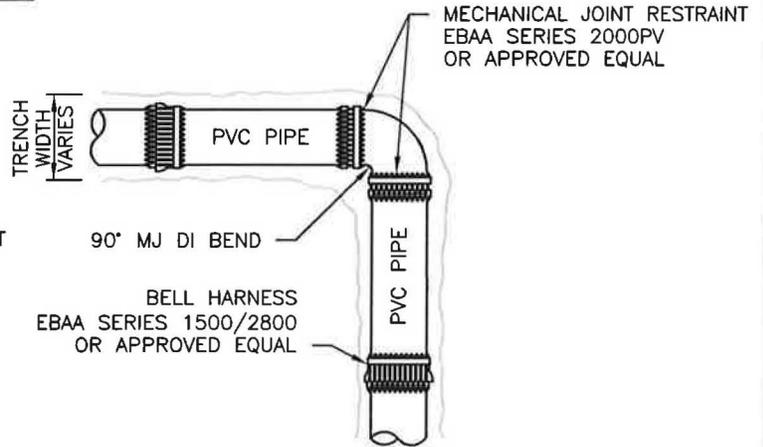
FITTING	RESTRAINT LENGTH REQUIRED 4"	RESTRAINT LENGTH REQUIRED 6"	RESTRAINT LENGTH REQUIRED 8"	RESTRAINT LENGTH REQUIRED 10"	RESTRAINT LENGTH REQUIRED 12"	RESTRAINT LENGTH REQUIRED 14"	RESTRAINT LENGTH REQUIRED 16"
11 1/4° BEND	10'	10'	10'	10'	10'	10'	10'
22 1/2° BEND	10'	10'	20'	20'	20'	20'	20'
45° BEND	20'	20'	40'	40'	40'	40'	40'
90° BEND	40'	40'	40'	40'	80'	90'	100'
REDUCER	4X3 = 35'	6X4 = 35'	8X6 = 40'	10X8 = 39'	12X10 = 50'	14X12 = 50'	16X14 = 50'
45° VERTICAL OFFSET	UPPER 30'	UPPER 30'	UPPER 40'	UPPER 48'	UPPER 68'	UPPER 78'	UPPER 88'
	LOWER 7'	LOWER 7'	LOWER 9'	LOWER 11'	LOWER 13'	LOWER 14'	LOWER 16'
DEAD END	60'	60'	80'	80'	160'	190'	210'

TEE'S	RESTRAINT LENGTH
4" X 4"	10' (BRANCH)
6" X 4"	10' (BRANCH)



**TEE RESTRAINT DETAIL**

SCALE: N.T.S.



**90° BEND RESTRAINT DETAIL**

SCALE: N.T.S.

**NOTES:**

RESTRAINED JOINT PIPING SHALL BE USED FOR ALL THRUST RESTRAINTS. THE ADJACENT SCHEDULE GIVES MINIMUM PIPE LENGTHS (FT) TO BE RESTRAINED ON EACH SIDE OF THE STANDARD FITTINGS.

CONCRETE THRUST BLOCKS SHALL NOT BE USED, NO EXCEPTIONS.

SOME PIPE RESTRAINT REQUIREMENTS ARE SHOWN IN THE PLANS FOR SPECIFIC CIRCUMSTANCES.

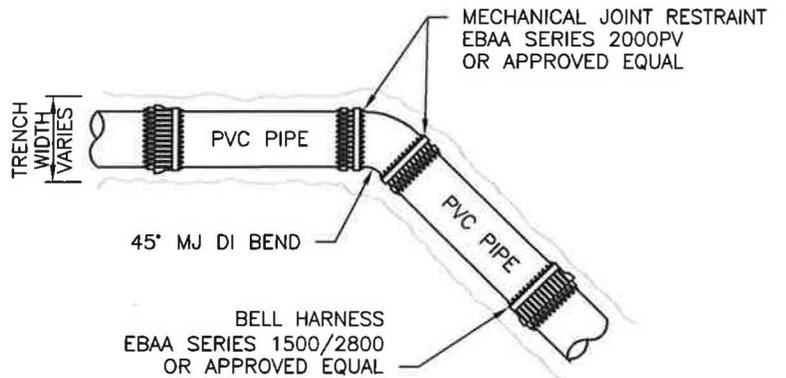
ALL 45° AND 22 1/2° COMBINATION BENDS AND 22 1/2° AND 11 1/4° COMBINATION BENDS SHALL BE TREATED AS 90° BENDS AND 45° BENDS, RESPECTIVELY, FOR RESTRAINED LENGTHS.

ALL FITTINGS AND RESTRAINED JOINTS MUST BE VISUALLY INSPECTED AND APPROVED BY THE ENGINEER BEFORE COVERED.

ALL VALVES SHALL BE RESTRAINED W/EBAA SERIES 2000 PVC. MECHANICAL JOINT RESTRAINT OR APPROVED EQUAL

BELL HARNESS RESTRAINTS SHALL BE EBAA SERIES 1500/2000 OR APPROVED EQUAL.

ALL DIRECTIONAL BORES SHALL BE RESTRAINED A MINIMUM OF 40'



**45° BEND RESTRAINT DETAIL**

SCALE: N.T.S.

NOTE: 22 1/2° AND 11 1/4° BENDS SHALL BE RESTRAINED THE SAME AS SHOWN ABOVE

**DETAIL-THRUST RESTRAINTS**

SCALE: N.T.S.

EB# 0006155



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(850) 267-0759

**THRUST RESTRAINT**

Water Distribution and Wastewater Collection System Standards  
City of Freeport  
Walton County  
Florida

DATE:

11/14

SCALE:

N/A

DRAWN:

SOE

CHECKED:

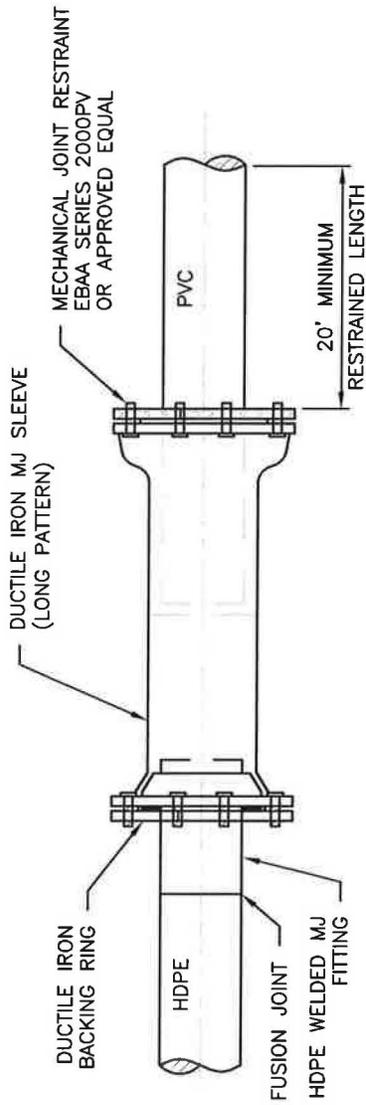
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PROJECT NO.

493.000

SHEET

UM-7



**DETAIL - HDPE TO PVC TRANSITION CONNECTION**

SCALE: N.T.S.

EB# 0006155



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**HDPE TO PVC TRANSITION CONNECTION**  
 Water Distribution and Wastewater Collection System Standards  
 City of Freeport  
 Walton County  
 Florida

DATE:  
11/14

SCALE:  
N/A

DRAWN:  
SOE

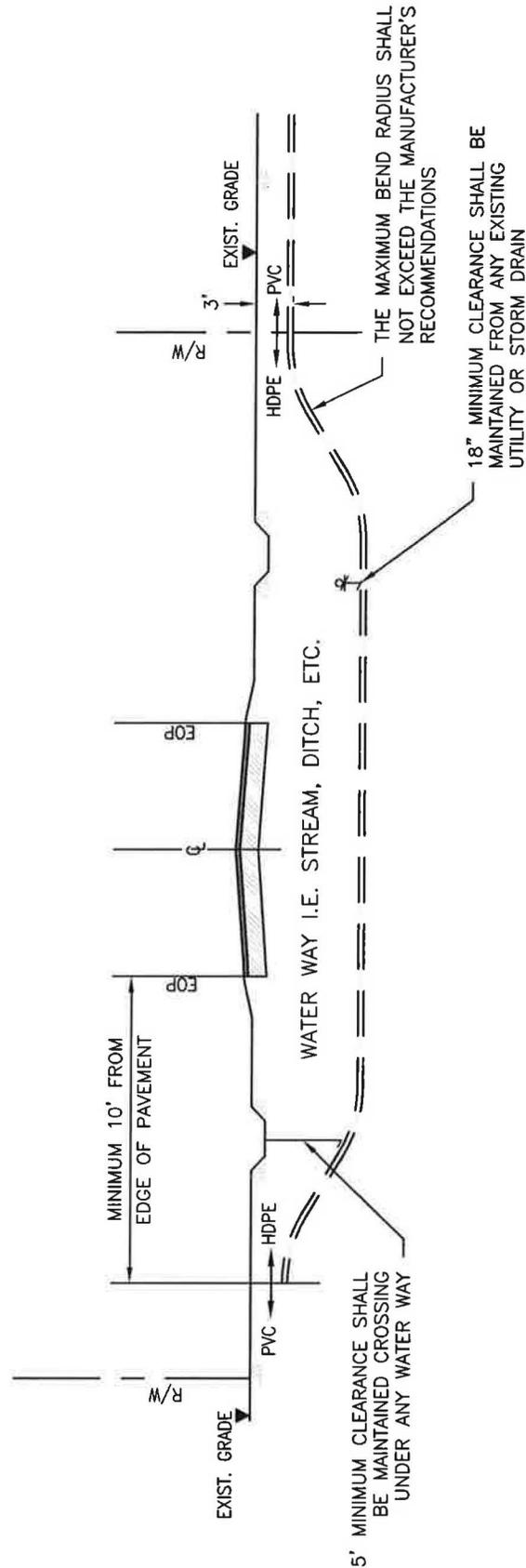
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PROJECT NO.

493.000

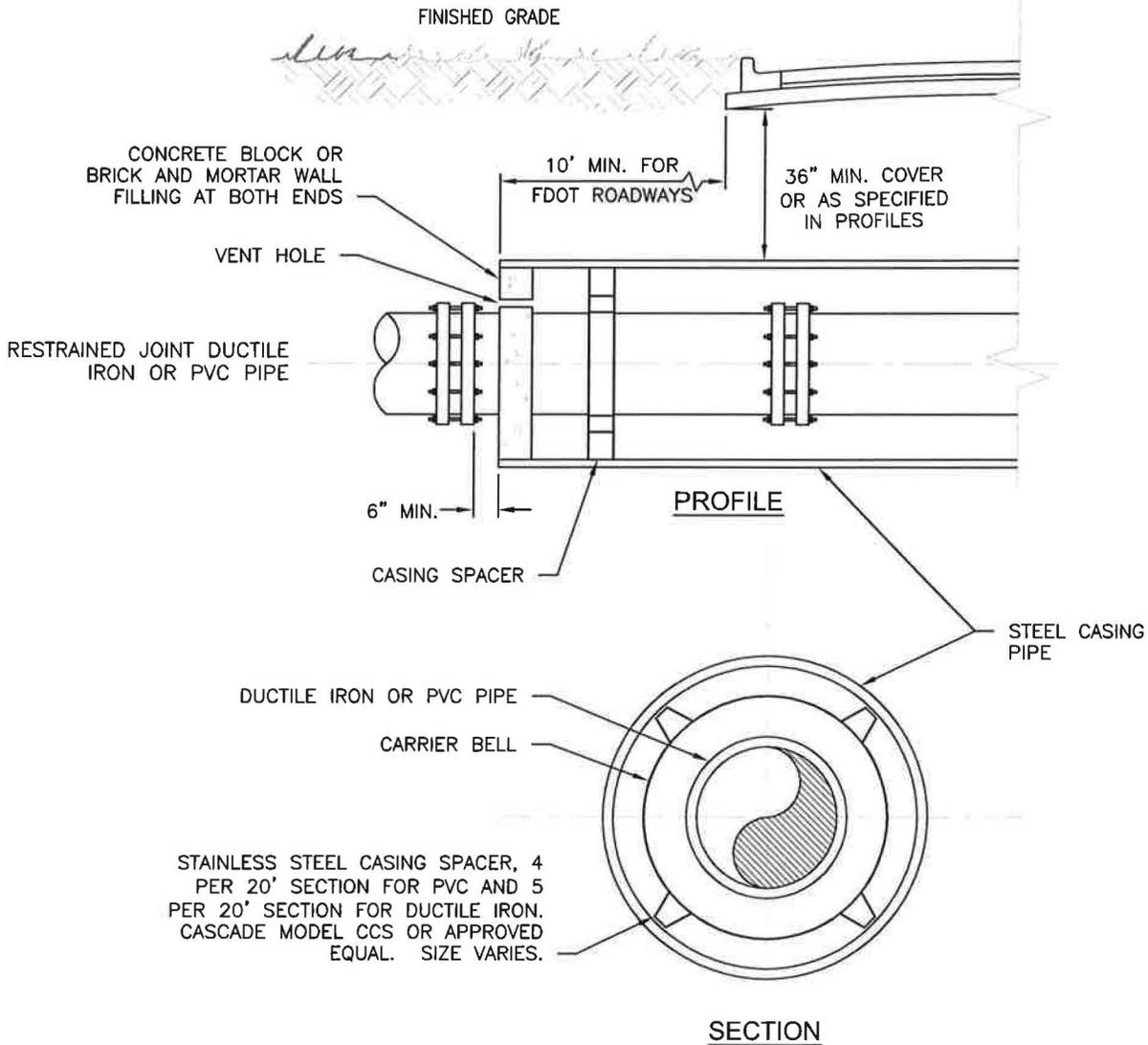
SHEET

UM-8



- NOTE:
1. SHADING LIMITS OF DIRECTIONAL BORES ON PLAN SHEETS DO NOT NECESSARILY ACCURATELY DEPICT THE ACTUAL BORE LENGTHS. CONTRACTOR TO DETERMINE ACTUAL LENGTH OF EACH BORE.
  2. ALL DIRECTIONAL BORES SHALL HAVE A 12 GAUGE TRACER WIRE.

**DETAIL - TYPICAL ROADWAY DIRECTIONAL BORE**  
 SCALE: N.T.S.



STAINLESS STEEL CASING SPACER, 4 PER 20' SECTION FOR PVC AND 5 PER 20' SECTION FOR DUCTILE IRON. CASCADE MODEL CCS OR APPROVED EQUAL. SIZE VARIES.

NOTES:  
ALL PIPING INSIDE OF JACK AND BORE CASING PIPE SHALL BE RESTRAINED JOINT PIPING.

THIS DETAIL SHALL BE USED UNLESS SHOWN SPECIFICALLY IN THE PROFILES.

**DETAIL - TYPICAL JACK AND BORE**

SCALE: N.T.S.

EB# 0006155



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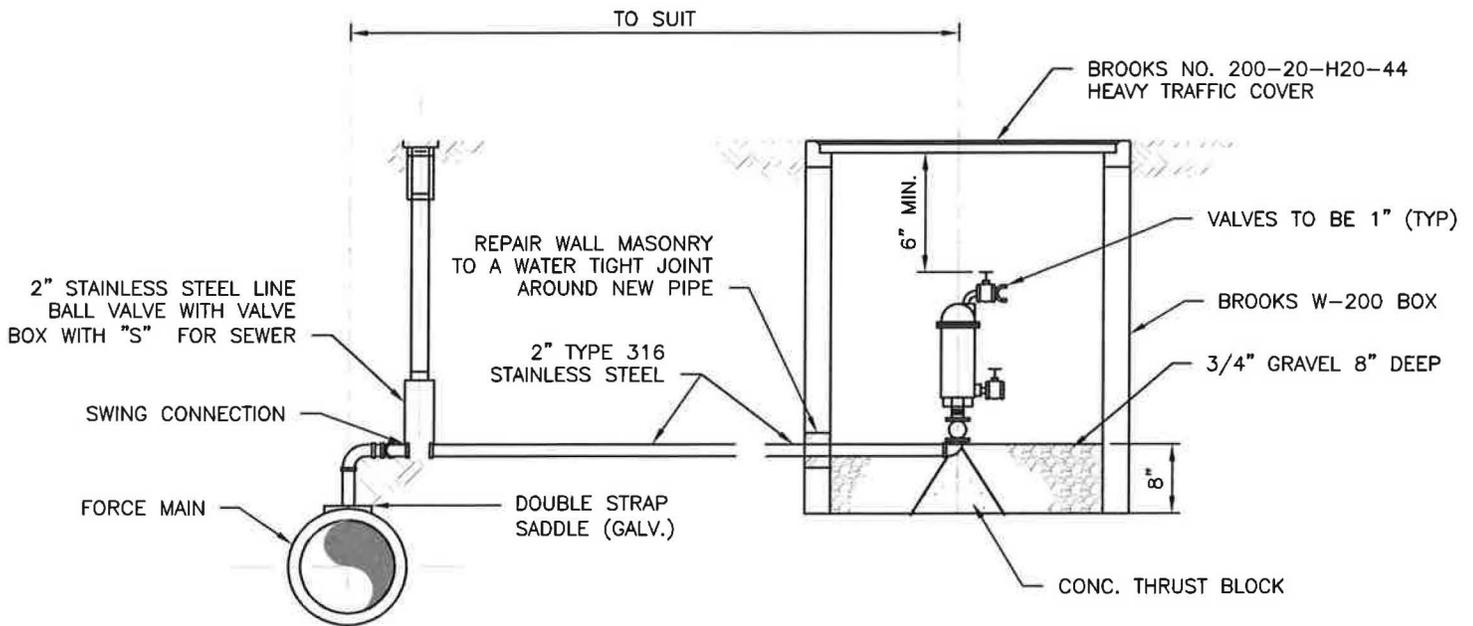
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**TYPICAL JACK AND BORE**

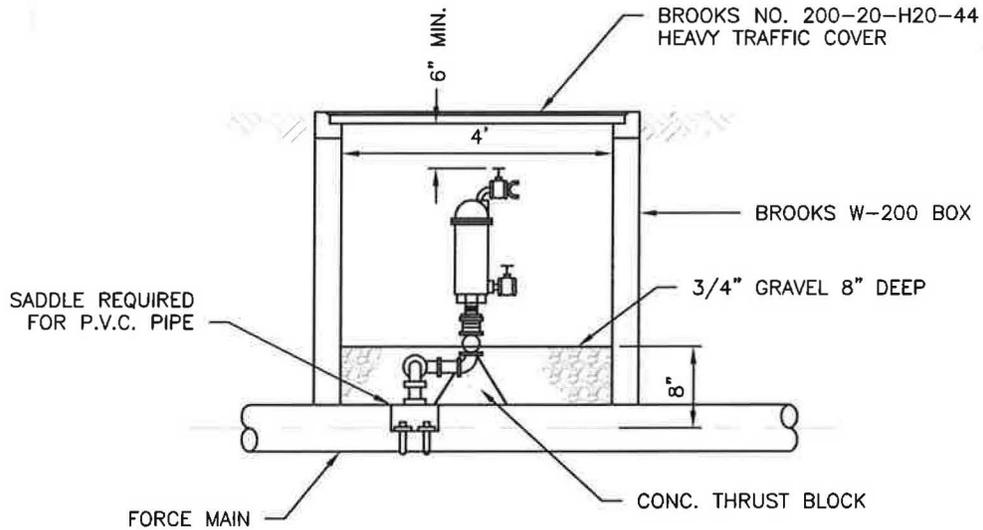
Water Distribution and Wastewater Collection System Standards  
City of Freeport  
Walton County  
Florida

DATE:  
11/14  
SCALE:  
N/A  
DRAWN:  
SOE  
CHECKED:  
CLK

PROJECT NO.  
493.000  
SHEET  
UM-10



**LOCATED AWAY FROM FORCE MAIN**



**LOCATED ABOVE FORCE MAIN**

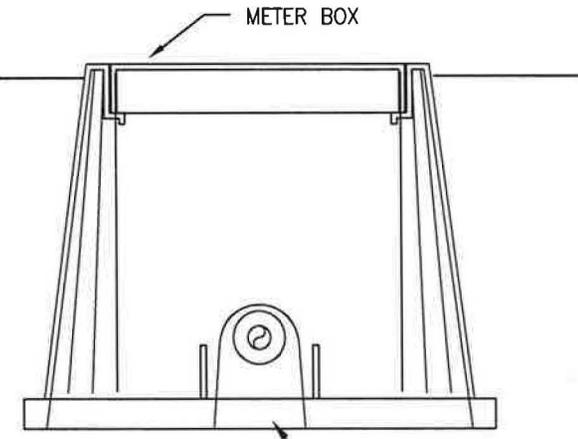
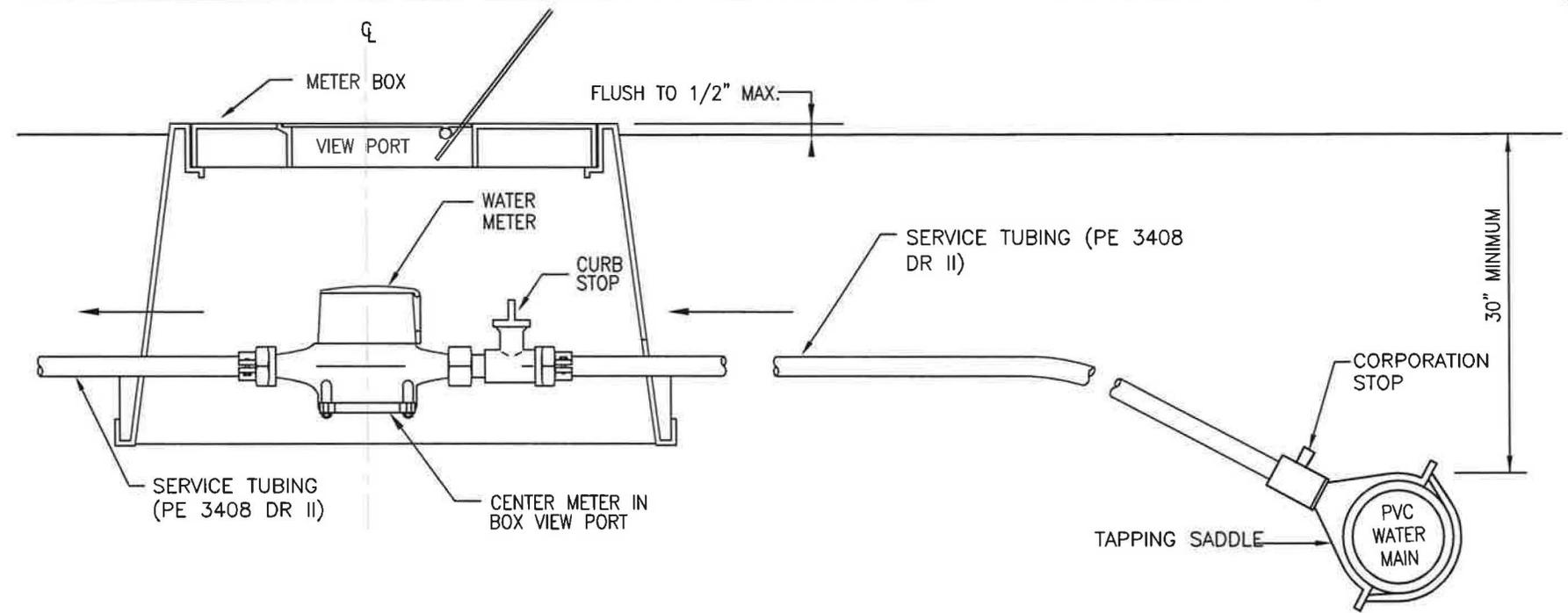
**NOTES:**

1. M.H. TO BE W-200 SERIES WITH 200-20-H20-44 HEAVY TRAFFIC COVER AS MFG. BY BROOKS PRODUCTS INC. OR EQUAL.
2. BOX TO BE LOCATED OUT OF PAVED AREAS. SET TOP FLUSH IF OCCURS IN SIDEWALK OR 1 1/2" ABOVE GROUND IF IN DIRT OR GRASS AREAS.
3. COMBINATION AIR RELEASE & VACUUM VALVE ASSEMBLY SHALL BE CLA-VAL MODEL 36-WW21BW OR APPROVED EQUAL

**DETAIL - AIR/VACUUM VALVES**

SCALE: N.T.S.

EB# 0006155

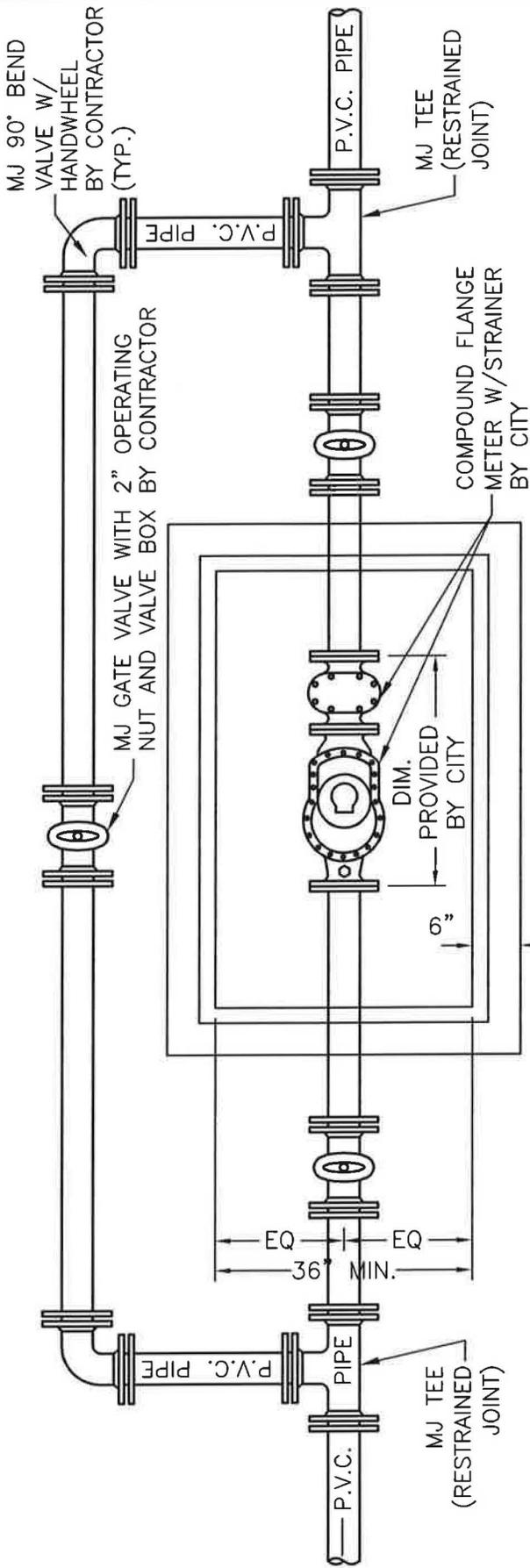


CUT OUT AND REMOVE SO BOX CAN BE LIFTED UP (TYP. EA. END)

ITEM #	DESCRIPTION	MANUFACTURER
1	TAPPING SADDLE	1" FORD 202B DOUBLE STRAP BRASS
2	CORPORATION STOP	1" FORD FB 1000
3	SERVICE TUBING	1" (RESIDENTIAL SERVICE) POLYETHELENE 3408 DR II TUBING WITH STAINLESS STEEL INSERTS (STIFFNERS) AT EACH END
4	CURB STOP	1" FORD W/ METER NUT
5	METER BOX	PROVIDED BY CITY OF FREEPORT
6	WATER METER	PROVIDED BY CITY OF FREEPORT

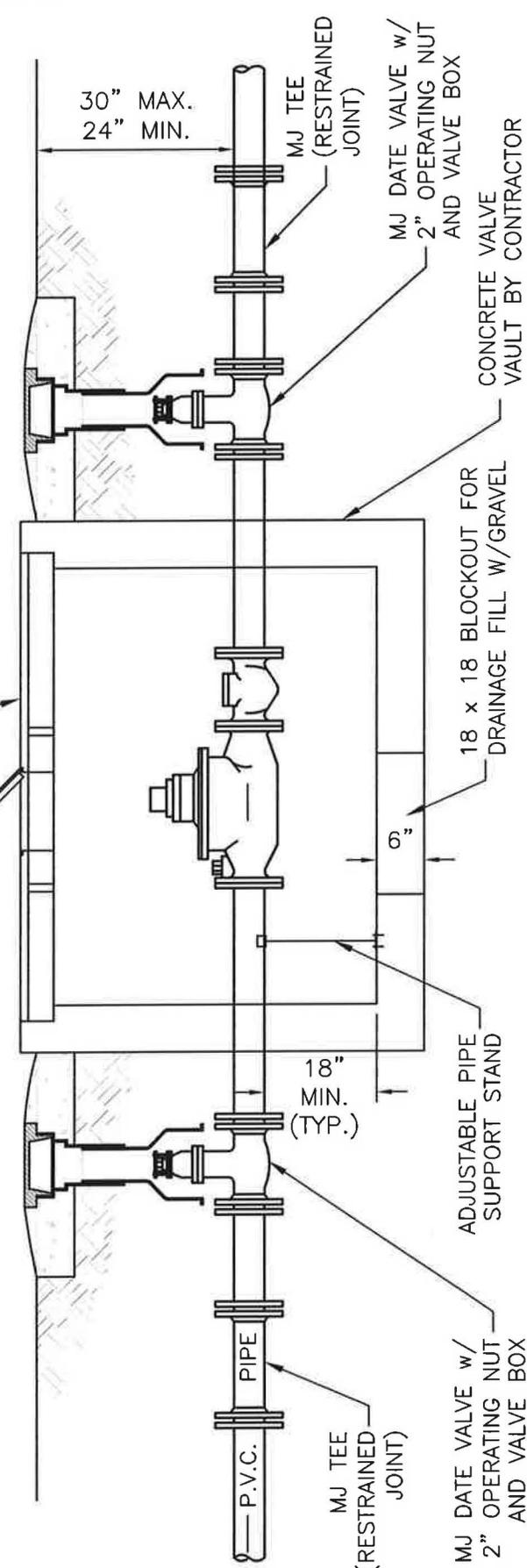
**NOTES:**  
 1. ALL SERVICE TUBING IS TO MEET THE "PIPING COLOR CODE" (SECTION 2.14) OF THE RECOMMENDED STANDARDS FOR WATER WORKS BY THE GREAT LAKES-UPPER MISSISSIPPI RIVER BOARD OF STATE PUBLIC HEALTH AND ENVIRONMENTAL MANAGERS.  
 2. THE WATER SERVICE LINE SHALL BE 1" FOR SERVICES UP TO 400' IN LENGTH. IF THE WATER SERVICE LINE LENGTH EXCEEDS 400' THE LINE SHALL BE 1 1/2"

**DETAIL - WATER SERVICE LINE SETTING**  
 SCALE: N.T.S.



NOTE:  
 ALL D.I. PIPE, VALVES, ETC. SHALL BE PAINTED WITH 2 (TWO) COATS OF BLUE ENAMEL PAINT.

VALVE VAULT COVERS SHALL BE ALUMINUM WITH 316 S.S. HARDWARE, VAULT COVER ASSEMBLIES WEIGHING IN EXCESS OF 100 LBS. SHALL BE FABRICATED IN SECTIONS FOR EASIER REMOVAL.

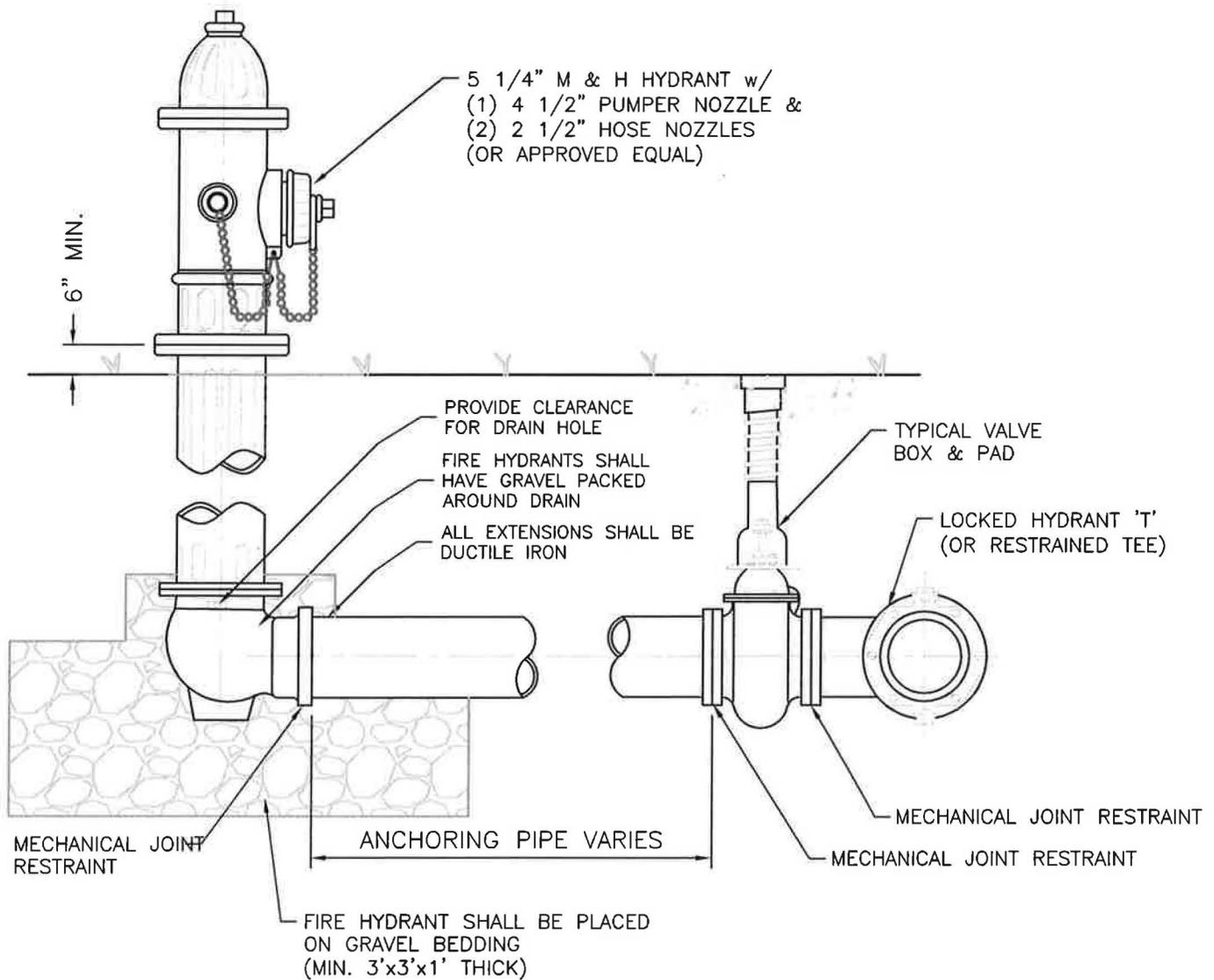


**DETAIL - 2" - 6" WATER METER INSTALLATION**

SCALE: NTS

DATE: 11/14	PROJECT NO. 493.000
SCALE: N/A	SHEET W-2
DRAWN: SOE	
CHECKED: CLK	

EB# 0006155



**NOTES :**

- 1.) HYDRANT SHALL BE MUELLER, M & H, AMERICAN DARLING, AUK OR APPROVED EQUAL. FIRE HYDRANT SHALL BE RED, WITH STAINLESS STEEL EXTERNAL NUTS AND BOLTS.
- 2.) VALVE OPENING IS 5 1/4".
- 3.) HOSE NOZZLES :  
TWO (2) 2 1/2" HOSE NOZZLES  
ONE (1) 4 1/2" PUMPER NOZZLE
- 4.) HYDRANT SHALL BE PLACED WITH NOZZLES FACING STREET.
- 5.) HYDRANT PLACEMENT :  
CURB AND GUTTER – BEHIND SIDE AS NOTED PER PLAN.  
OPEN DITCH STREET – TOP OF BACK SLOPE OF DITCH ON THE RIGHT-OF-WAY LINE.
- 6.) SOME FIRE HYDRANTS MAY REQUIRE RISER EXTENSIONS AT NO ADDITIONAL COST TO THE OWNER.
- 7.) ALL PIPE FROM MAIN TO HYDRANT SHALL BE DUCTILE IRON, NO SUBSTITUTES.
- 8.) SIX INCH MJ TO MAIN.
- 9.) GATE VALVE IS TO BE RESTRAINED TO THE MAIN TO ALLOW REMOVAL OF FIRE HYDRANT WITHOUT BLOWING THE GATE VALVE OFF.
- 10.) FIRE HYDRANT TEE MAY BE USED IN LIEU OF RESTRAINED TEE.
- 11.) MINIMUM BURY IS 36".
- 12.) PROPER COMPACTION FOR BREAKAWAY WILL MEET 95% MODIFIED PROCTOR MAXIMUM DRY DENSITY.
- 13.) PLASTIC BAGS SHALL BE PLACED OVER ALL HYDRANTS UNTIL THEY ARE PLACED INTO SERVICE FOR USE.

**DETAIL - STANDARD FIRE HYDRANT ASSEMBLY**

SCALE: N.T.S.

EB# 0006155

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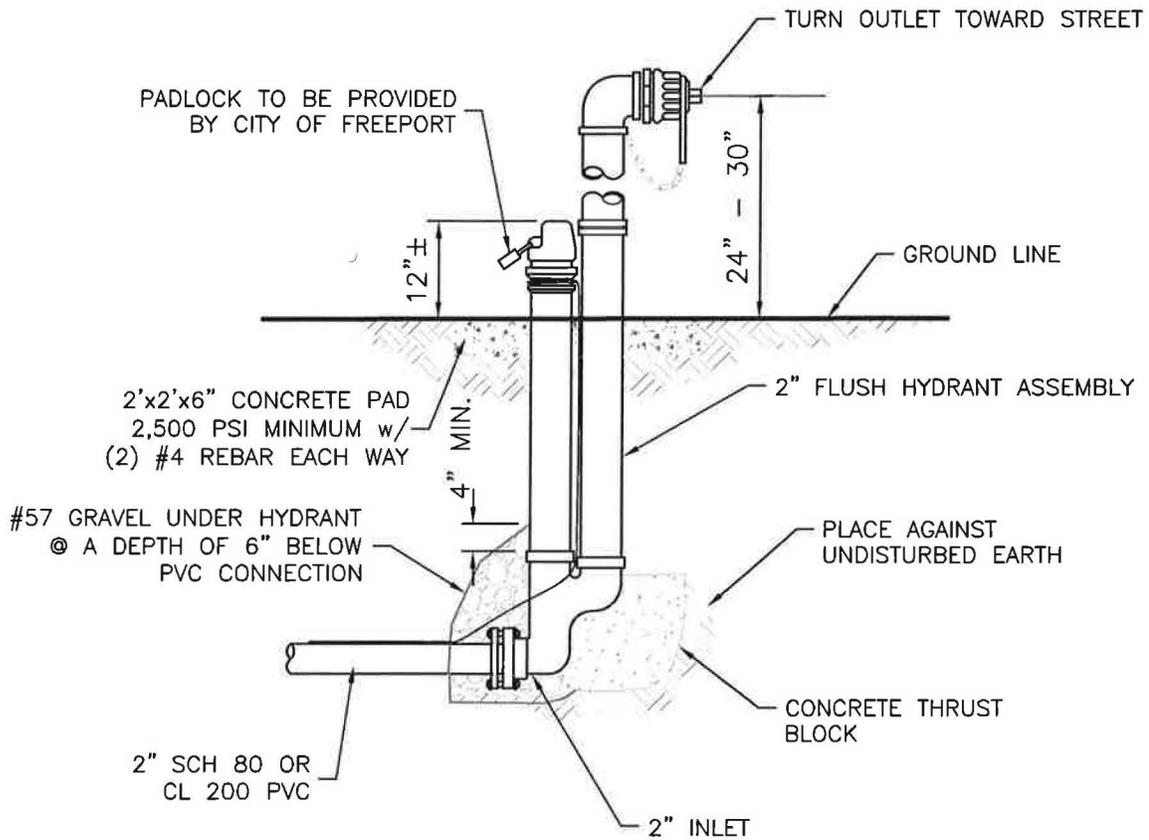
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**STANDARD FIRE HYDRANT ASSEMBLY**  
Water Distribution and Wastewater Collection System Standards  
City of Freeport  
Walton County  
Florida

DATE: 11/14	PROJECT NO. 493.000
SCALE: N/A	SHEET W-3
DRAWN: SOE	
CHECKED: CLK	



NOTES:

FLUSH HYDRANTS SHALL BE MAINGUARD NO. 77 AS MANUFACTURED BY KUPFERLE FOUNDRY CO., ST. LOUIS, MO, OR APPROVED EQUAL.

HYDRANT SHALL BE NON-FREEZING, SELF DRAINING TYPE WITH 36" COVER.

HYDRANTS SHALL BE FURNISHED WITH A 2" INLET, A NON-TURNING OPERATING ROD, AND SHALL OPEN TO THE LEFT.

THE OUTLET SHALL BE 2-1/2" NST BRONZE.

ALL WORKING PARTS SHALL BE OF BRONZE-TO-BRONZE DESIGN, AND BE SERVICABLE FROM ABOVE GRADE WITH NO DIGGING. HYDRANTS SHALL BE LOCKABLE TO PREVENT UNAUTHORIZED USE

**DETAIL - STANDARD FLUSH HYDRANT**

SCALE: N.T.S.

EB# 0006155

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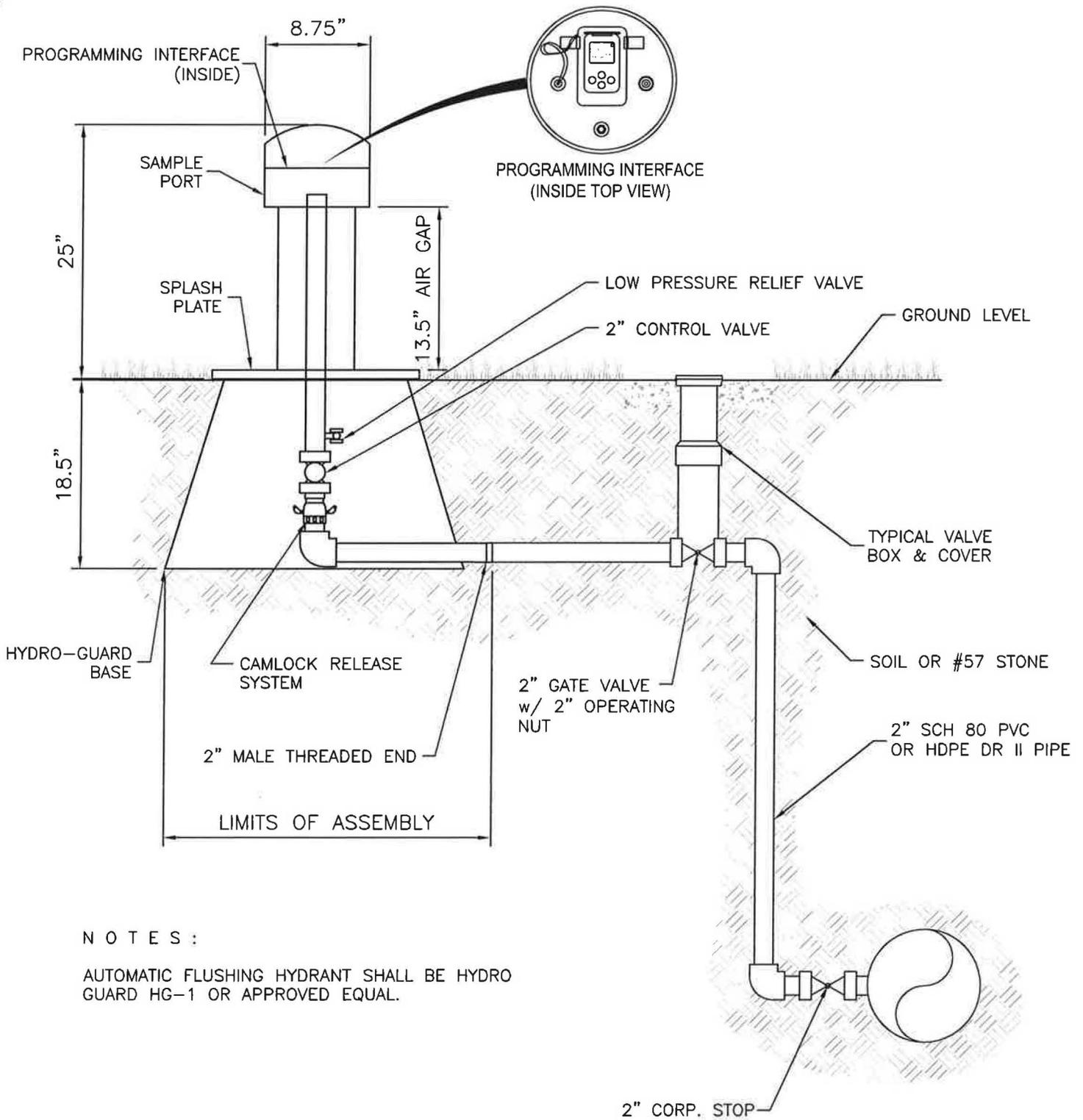
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**STANDARD FLUSH HYDRANT**

Water Distribution and Wastewater Collection System Standards  
City of Freeport  
Walton County  
Florida

DATE: 11/14	PROJECT NO. 493.000
SCALE: N/A	SHEET W-4
DRAWN: SOE	
CHECKED: CLK	



**NOTES :**

AUTOMATIC FLUSHING HYDRANT SHALL BE HYDRO GUARD HG-1 OR APPROVED EQUAL.

**DETAIL - AUTOMATIC FLUSHING HYDRANT**

SCALE: N.T.S.

EB# 0006155

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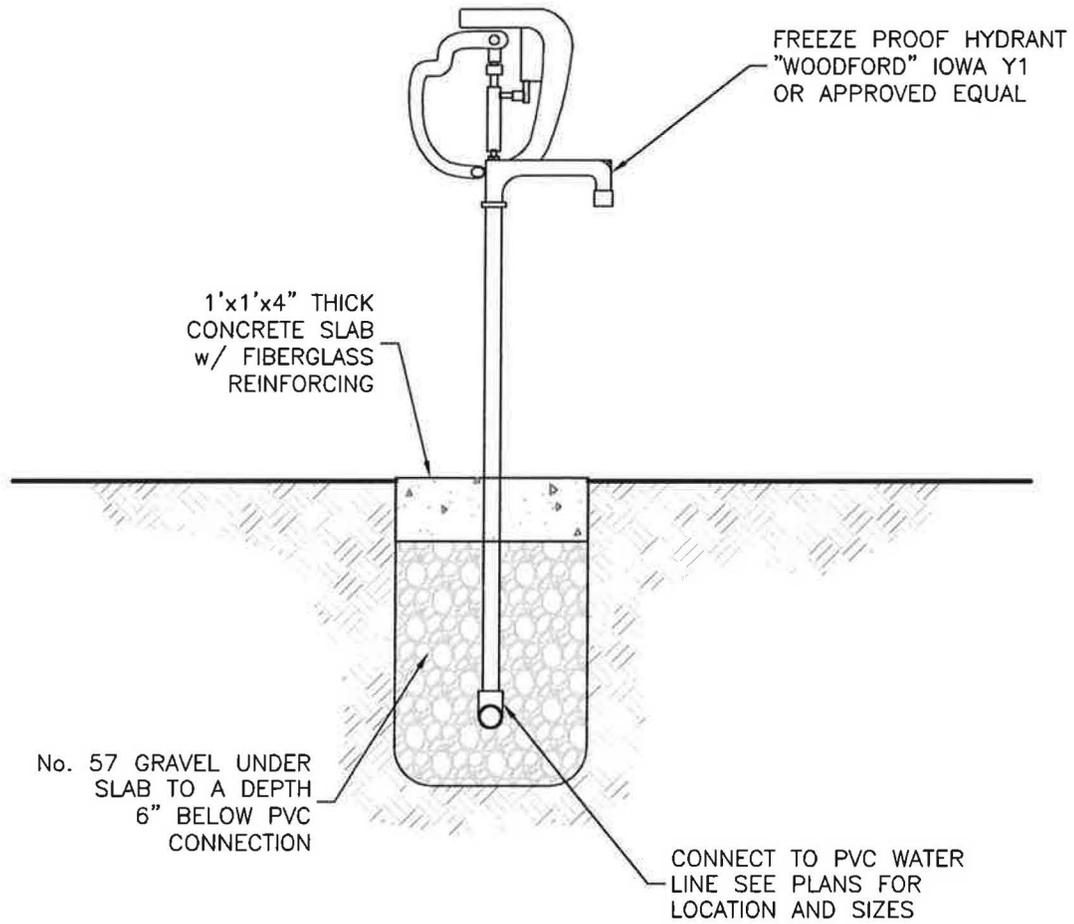
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**AUTOMATIC FLUSHING HYDRANT**  
 Water Distribution and Wastewater Collection System Standards  
 City of Freeport  
 Walton County  
 Florida

DATE: 11/14	PROJECT NO. 493.000
SCALE: N/A	SHEET W-5
DRAWN: SOE	
CHECKED: CLK	



## **DETAIL - FREEZE PROOF HYDRANT**

SCALE: N.T.S.

EB# 0006155



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(850) 267-0758

### **FREEZE PROOF HYDRANT**

Water Distribution and Wastewater Collection System Standards  
City of Freeport  
Walton County  
Florida

DATE:

11/14

SCALE:

N/A

DRAWN:

SOE

CHECKED:

CLK

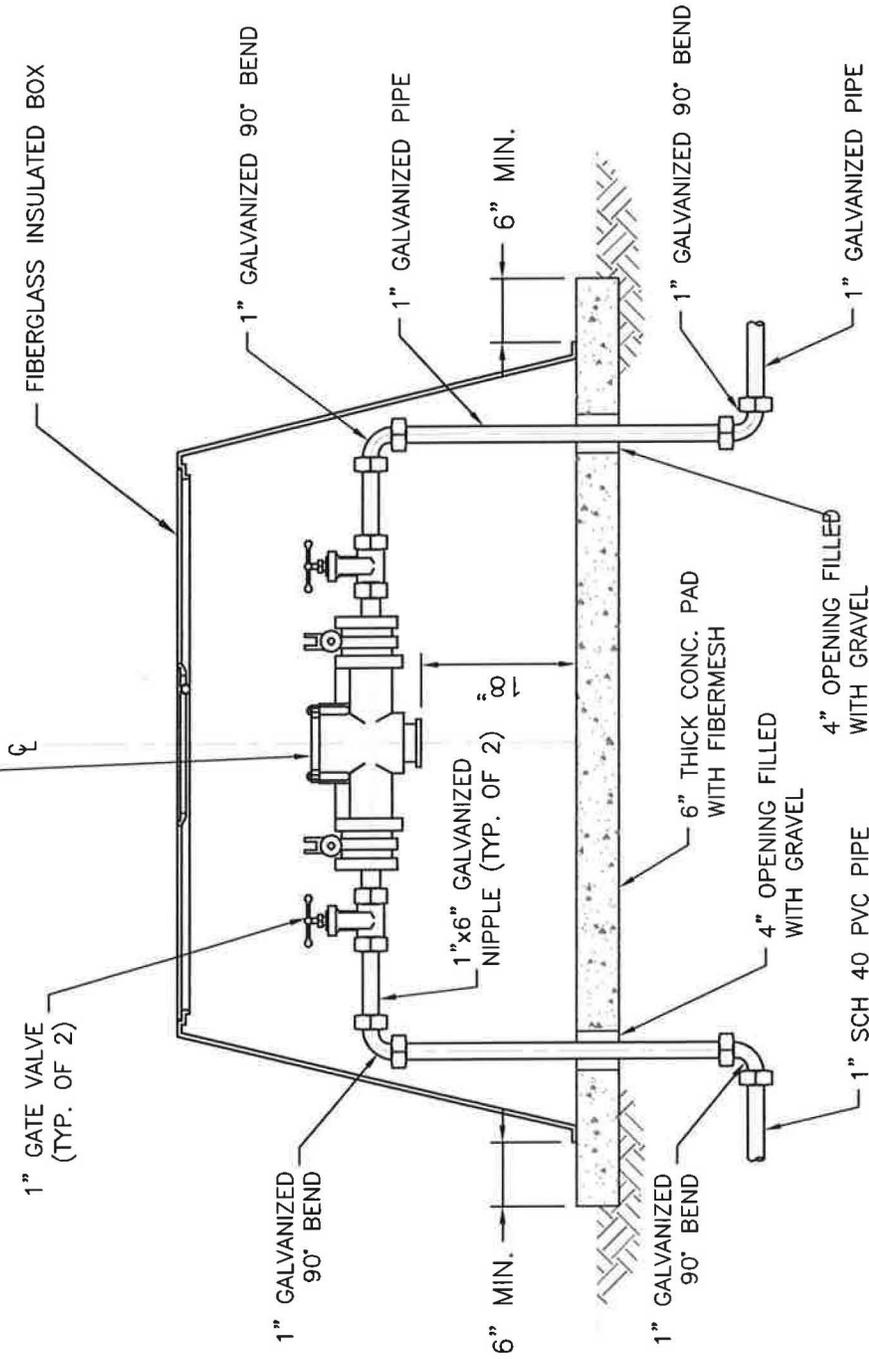
PROJECT NO.

493.000

SHEET

W-6

1" REDUCED PRESSURE ZONE BACKFLOW PREVENTER FOR POTABLE WATER SERVICE WATTS SERIES 909QT-S OR APPROVED EQUAL



NOTE: CONCRETE PAD SHALL BE 6" LARGER THAN FOOTPRINT OF INSULATED BOX.

**DETAIL - 1" REDUCED PRESSURE ZONE BACKFLOW PREVENTER**

SCALE: N.T.S.



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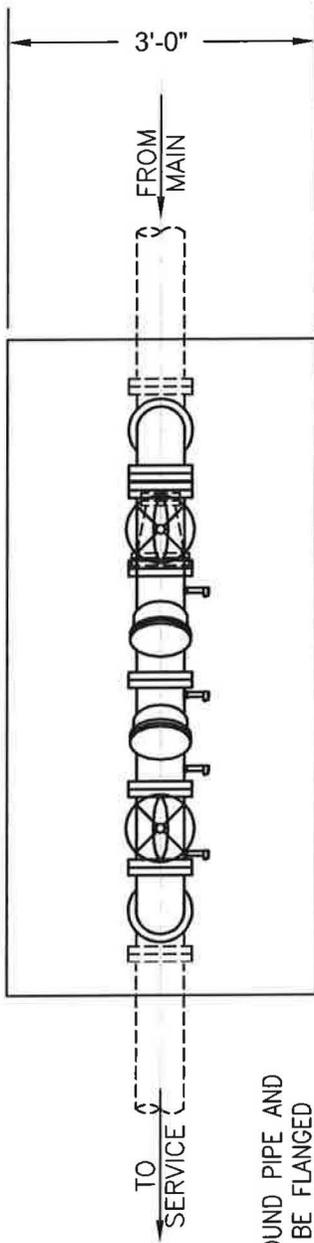
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1" REDUCED PRESSURE ZONE BACKFLOW PREVENTER  
Water Distribution and Wastewater Collection System Standards  
City of Freeport  
Walton County  
Florida

DATE: 11/14	PROJECT NO. 493.000
SCALE: N/A	SHEET W-7
DRAWN: SOE	
CHECKED: CLK	

EB# 0006155



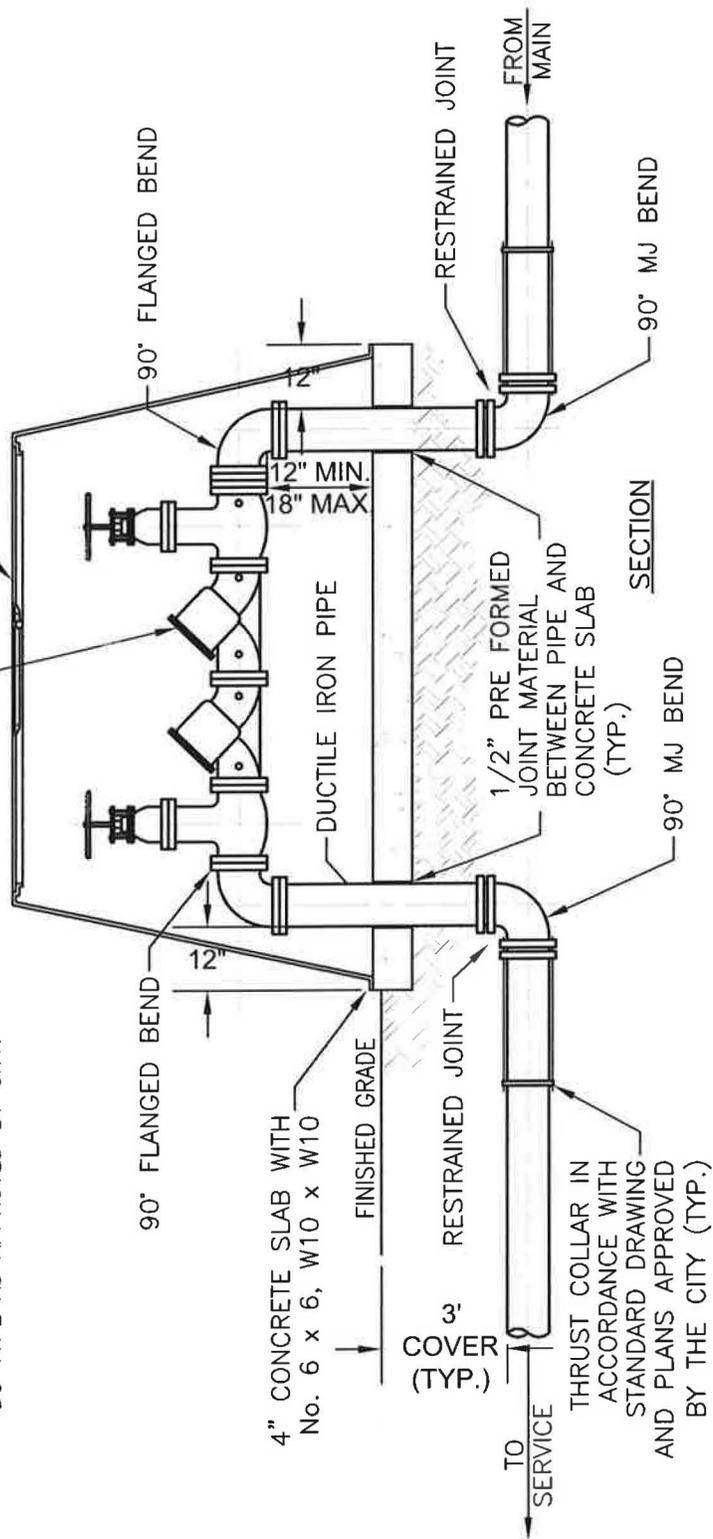
**NOTES:**

1. ALL ABOVE GROUND PIPE AND FITTINGS SHALL BE FLANGED DUCTILE IRON.
2. ALL ITEMS ABOVE GRADE SHALL HAVE TWO COATS OF APPROVED EPOXY BLUE ENAMEL PAINT.
3. ALL VALVES SHALL HAVE HANDWHEELS.
4. VALVE(S) SHALL BE CHAINED AND PADLOCKED IN OPENED POSITION.
5. BACKFLOW DEVICE SHALL BE RPZ OR DC TYPE AS APPROVED BY CITY.

**PLAN VIEW**

FIBERGLASS INSULATED BOX OR WRAP ALL EXPOSED MATERIAL

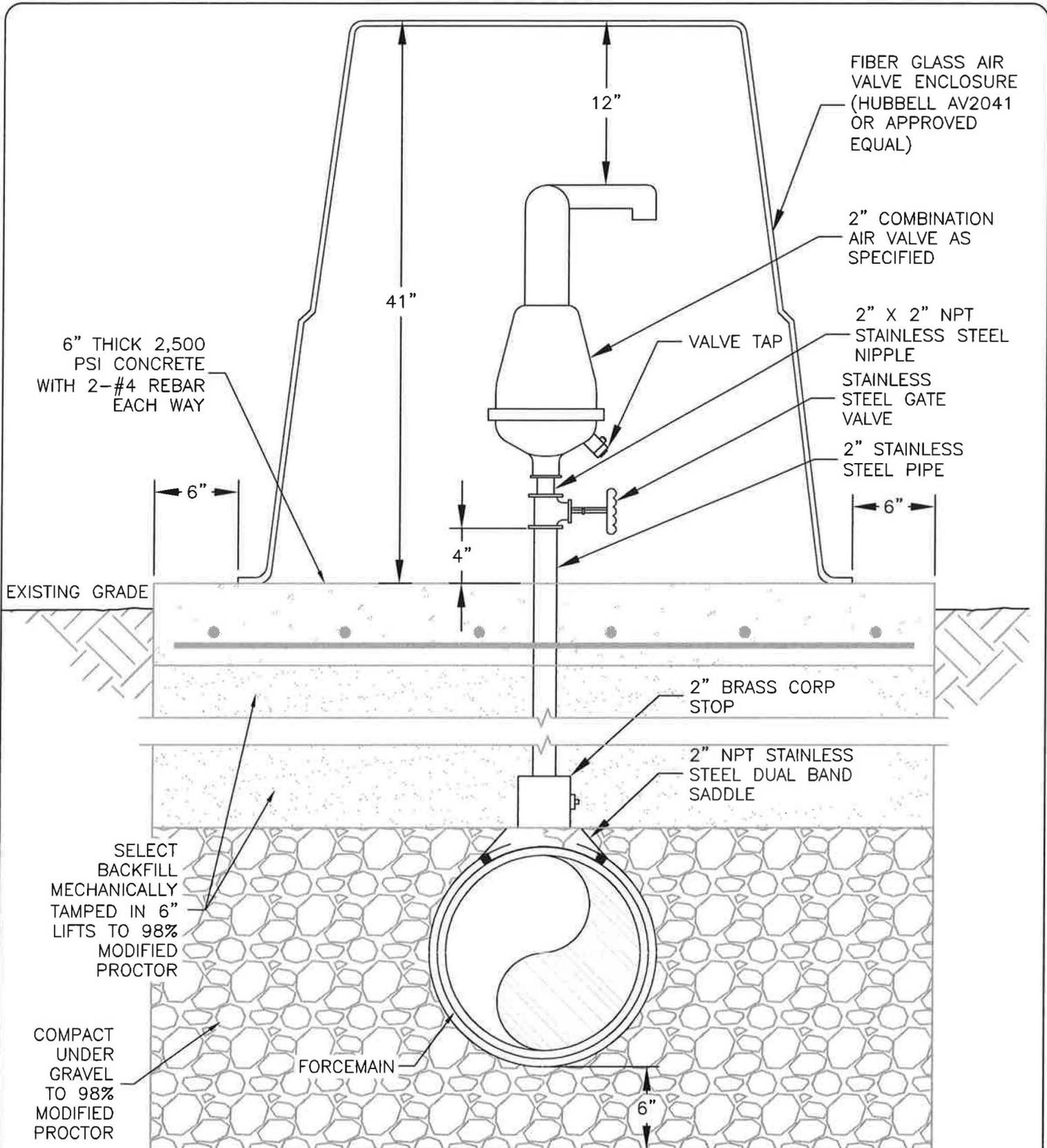
BACK FLOW PREVENTER



**SECTION**

**DETAIL - 2" - 6" BACKFLOW INSTALLATION**

SCALE: NTS



NOTES:

1. VALVES SHALL BE ARI, COMBINATION AIR VALVE SHORT SAAR 2" NPT PLASTIC, CATALOG NO. D025, OR COMBINATION AIR VALVE ST-3, CATALOG NO. D023ST-3". DISTRIBUTED BY FLOW CONTROL ACCESSORIES, LTD. SPECIFIC SIZES AND LOCATIONS OF ALL VALVES ARE SHOWN ALONG THE PIPELINE ROUTE.
2. MOUNT THE UNIT IN THE VERTICAL POSITION ON TOP OF THE PIPELINE WITH AN ISOLATION VALVE INSTALLED BELOW EACH VALVE IN THE EVENT SERVICING IS REQUIRED. AN ENCLOSURE WITH ADEQUATE AIR VENTING AND DRAINAGE IS REQUIRED.

EB# 0006155

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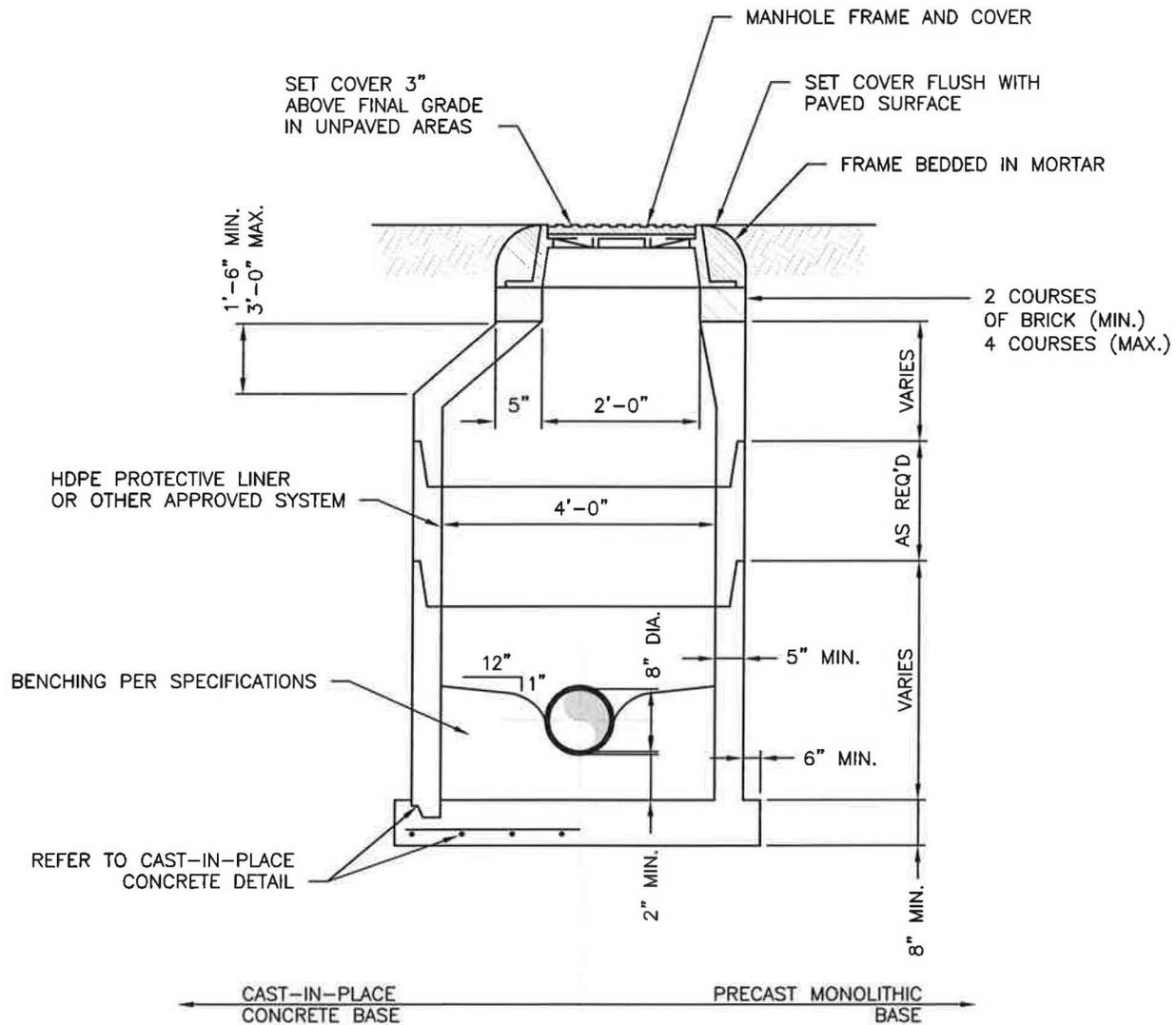
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**COMBINATION AIR VALVE ASSEMBLY**

Water Distribution and Wastewater Collection System Standards  
 City of Freeport  
 Walton County  
 Florida

DATE: 11/14	PROJECT NO. 493.000
SCALE: N/A	SHEET W-9
DRAWN: SOE	
CHECKED: CLK	



**NOTES:**

1. MANHOLE SHOWN IS FOR SEWER SIZE 8" THRU 18", MANHOLE DIAMETER FOR SEWERS GREATER THAN 18" SHALL BE AS APPROVED BY CITY'S ENGINEERS.
2. DROP CONNECTIONS ARE REQUIRED WHENEVER INVERT OF INFLUENT SEWER IS 24" OR MORE ABOVE THE INVERT OF THE MANHOLE. SEE TYPICAL MANHOLE DROP PIPE CONNECTION.
3. APPROVED CONCENTRIC CONE DESIGN MAY BE USED AS AN ALTERNATIVE.
4. THE INTERIOR OF ALL MANHOLES SHALL BE HDPE LINED OR OTHER APPROVED SYSTEM.
5. THE EXTERIOR OF ALL MANHOLES SHALL BE COATED WITH COAL TAR. (2 COATS, 9 MILS EACH)
6. PIPE SHALL NOT BE INSTALLED IN CONSTRUCTION JOINT OF A MANHOLE.

**SECTION**

**DETAIL - STANDARD SANITARY SEWER MANHOLE**

SCALE: N.T.S.

EB# 0006155

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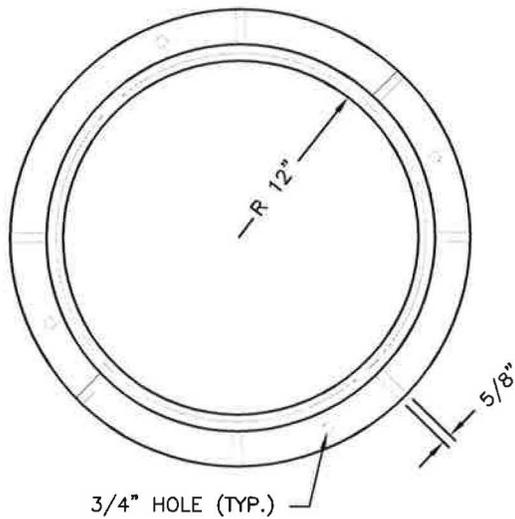
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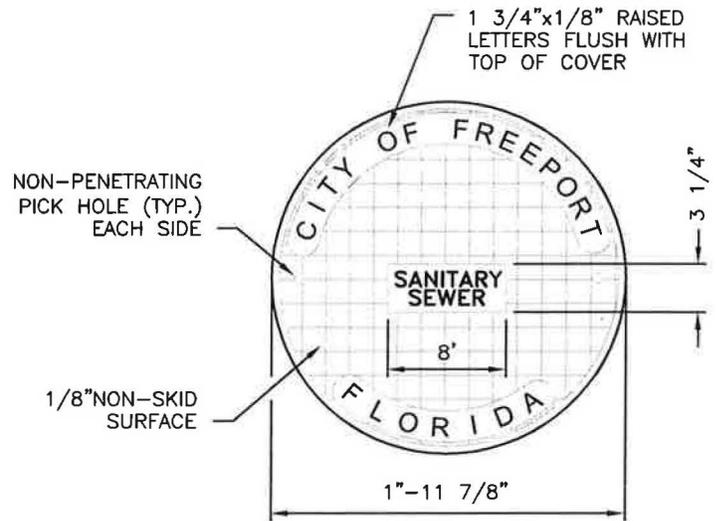
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**STANDARD SANITARY SEWER MANHOLE**  
 Water Distribution and Wastewater Collection System Standards  
 City of Freeport  
 Walton County  
 Florida

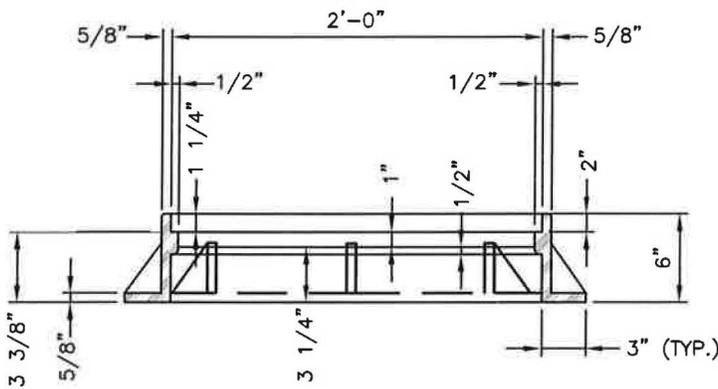
DATE: 11/14	PROJECT NO. 493.000
SCALE: N/A	
DRAWN: SOE	SHEET GS-1
CHECKED: CLK	



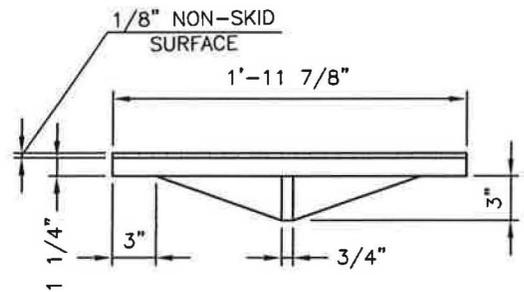
PLAN



PLAN



SECTION



SECTION

NOTE: MANHOLE FRAME AND COVER SHALL BE US FOUNDRY E-170 OR EQUIVALENT

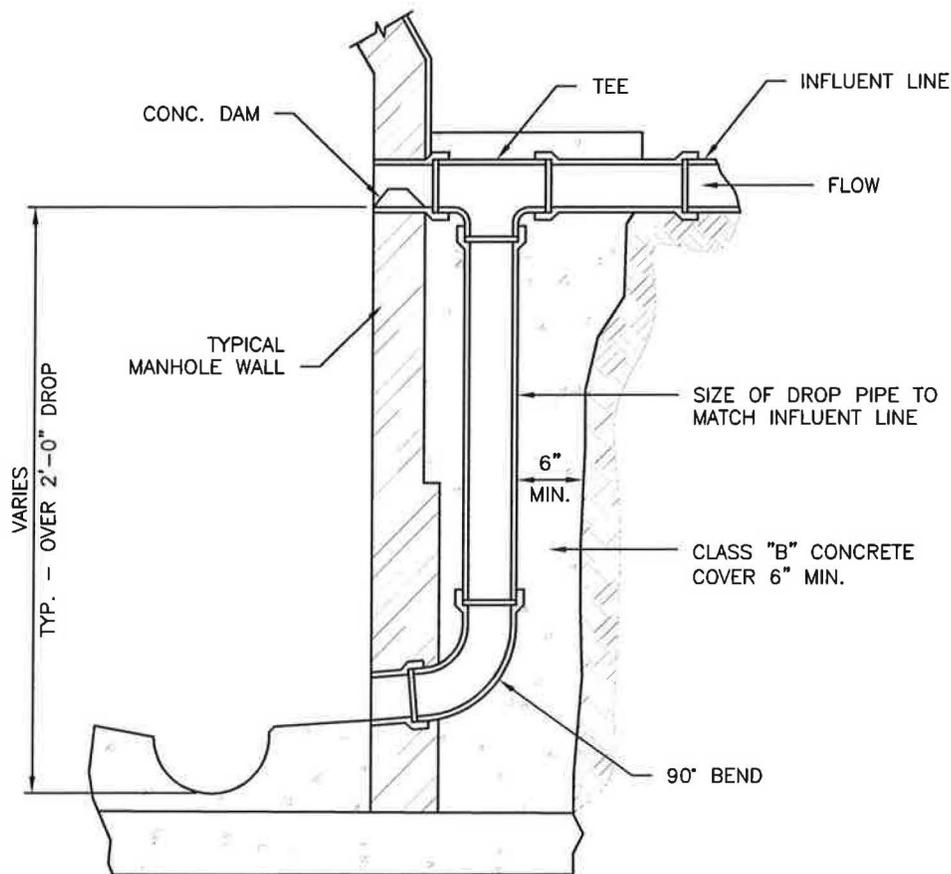
**DETAIL - STANDARD MANHOLE FRAME & COVER**

SCALE: N.T.S.

GENERAL NOTES:

1. PRECAST MANHOLE SECTIONS AND GRADE RINGS SHALL BE MANUFACTURED IN ACCORDANCE WITH THE LATEST EDITION OF ASTM SPECIFICATIONS C-478 AND C-76 WITH 4000 P.S.I. CONCRETE, TYPE II CEMENT. STANDARD WALL THICKNESS SHALL BE 5" WITH A SINGLE LAYER OF 6 X 6, 4/4 WELDED WIRE FABRIC (0.192" WIRE DIA.) FOR ALL MANHOLES.
2. CONCRETE TOP SLABS, WHERE REQUIRED, SHALL BE CAPABLE OF SUPPORTING THE OVERBURDEN PLUS A LIVE LOAD EQUIVALENT TO AASHTO H-20 LOADING.
3. PRE-MOULDED POLYURETHANE COMPRESSION JOINTS ON ALL INFLUENT AND EFFLUENT ADAPTERS MEET OR EXCEED ASTM. SPECIFICATIONS C-425.
4. ALIGN TOP OPENING WITH CENTER LINE OF EFFLUENT LINE FROM MANHOLE.
5. ALIGN STEPS VERTICALLY OVER CENTER LINE OF EFFLUENT LINE FROM MANHOLE.
6. MANHOLE STEPS SHALL BE DRIVEN INTO PRECAST 3 5/8" DEEP, TAPERED HOLE, 16" ON CENTER VERTICALLY.
7. MANHOLE COVER LIFT HOLES SHALL BE A MAXIMUM OF 3 1/2" DEEP.
8. MANHOLE FRAME AND COVER SHALL BE U.S. FOUNDRY E-170 ORS TYPE E "O" RING GASKET OR EQUIVALENT

EB# 0006155



**DETAIL - TYPICAL MANHOLE DROP PIPE CONNECTION (DROP MANHOLE)**

SCALE: N.T.S.

EB# 0006155



**PREBLE-RISH INC**  
 CONSULTING ENGINEERS AND SURVEYORS  
 CIVIL • SURVEYING • SITE PLANNING

324 MARINA DRIVE  
 FORT ST. JOE, FL 32458  
 (850) 227-7200

203 ABERDEEN PARKWAY  
 PANAMA CITY, FL 32405  
 (850) 522-0644

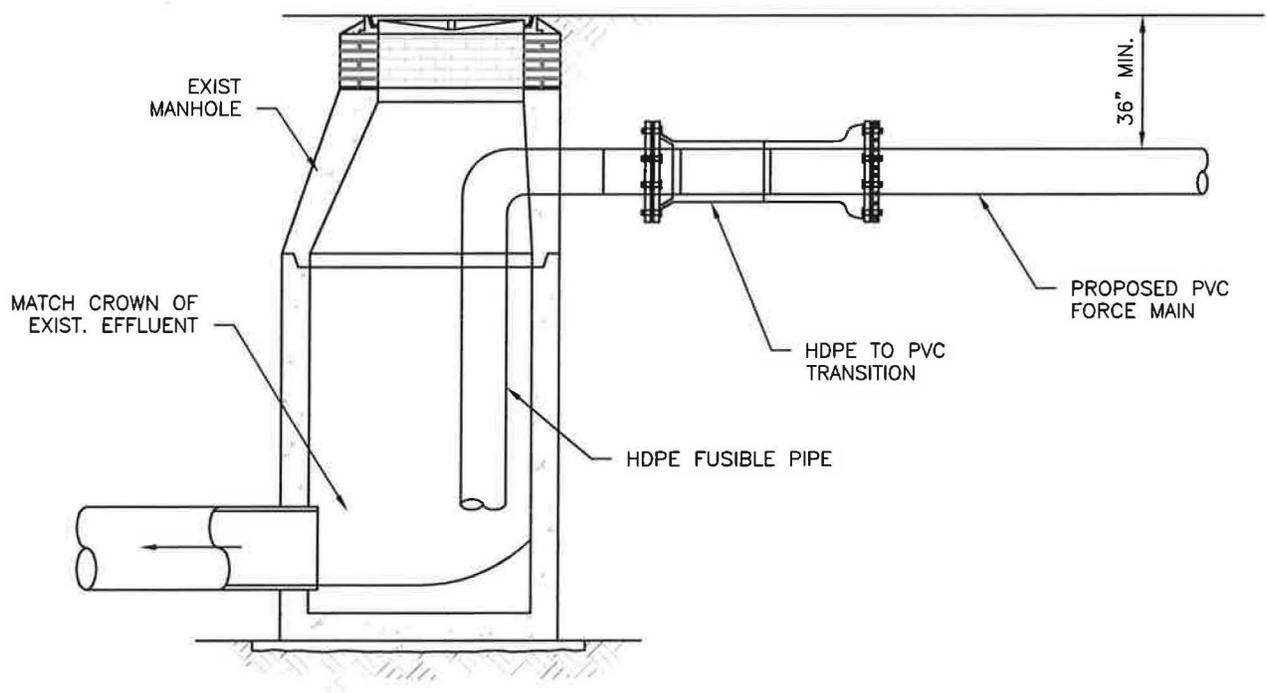
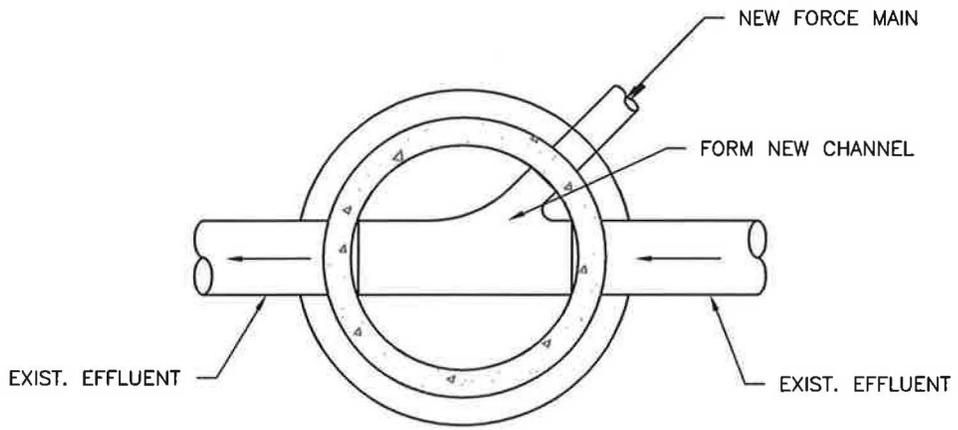
877 COUNTY ROAD 393  
 SANTA ROSA BEACH, FL 32459  
 (850) 267-0759

**TYPICAL MANHOLE DROP PIPE CONNECTION**

Water Distribution and Wastewater Collection System Standards  
 City of Freeport  
 Walton County  
 Florida

DATE:  
11/14  
SCALE:  
N/A  
DRAWN:  
SOE  
CHECKED:  
CLK

PROJECT NO.  
493.000  
SHEET  
GS-3



**DETAIL - FORCE MAIN CONNECTION TO MANHOLE**  
 SCALE: N.T.S.

EB# 0006155

**PREBLE-RISH INC**  
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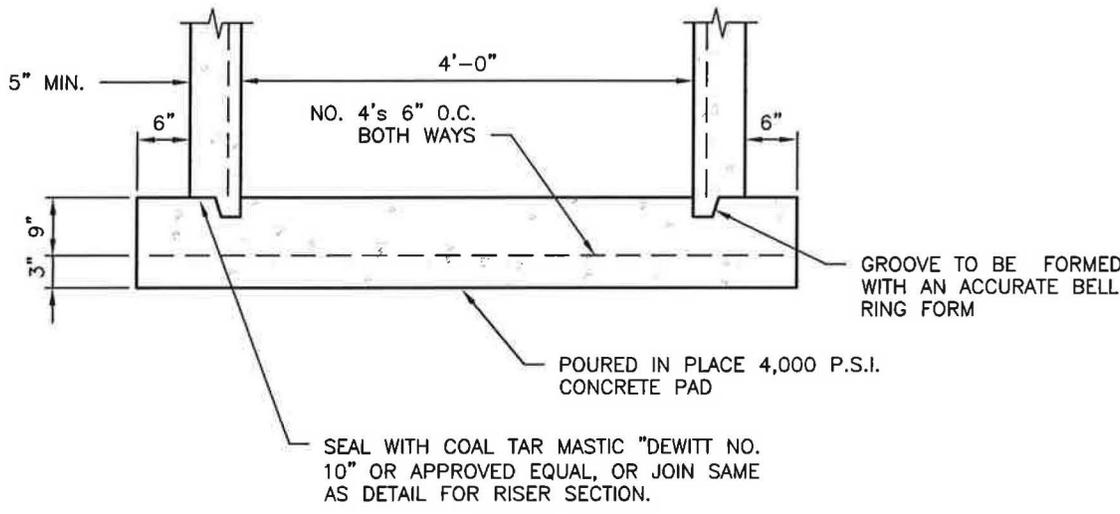
324 MARINA DRIVE  
 PORT ST. JOE, FL 32456  
 (850) 227-7299

203 ABERDEEN PARKWAY  
 PANAMA CITY, FL 32405  
 (850) 522-0644

877 COUNTY ROAD 393  
 SANTA ROSA BEACH, FL 32459  
 (850) 267-0759

**FORCEMAIN CONNECTION TO MANHOLE**  
 Water Distribution and Wastewater Collection System Standards  
 City of Freeport  
 Walton County  
 Florida

DATE: 11/14	PROJECT NO. 493.000
SCALE: N/A	SHEET GS-4
DRAWN: SOE	
CHECKED: CLK	



**DETAIL - CAST-IN-PLACE CONCRETE BASE**

SCALE: N.T.S.

EB# 0006155

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324 MARINA DRIVE  
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 (850) 227-7200

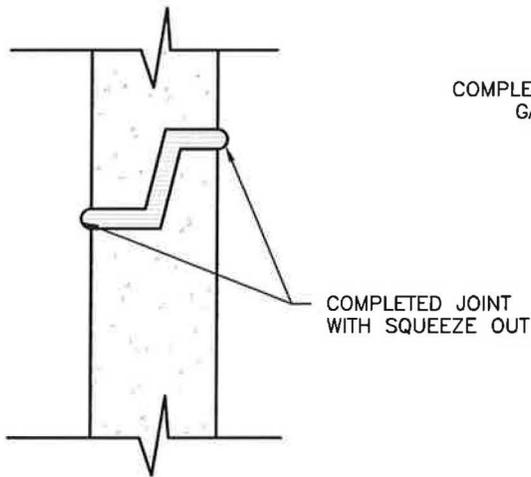
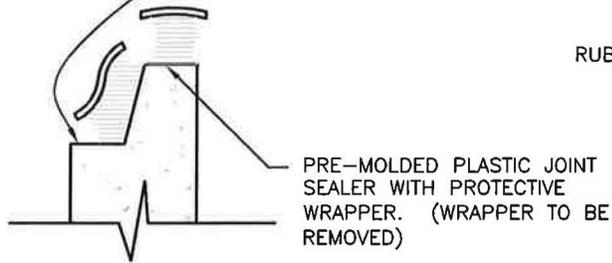
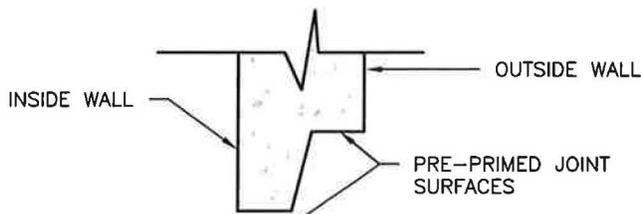
203 ABERDEEN PARKWAY  
 PANAMA CITY, FL 32409  
 (850) 522-0644

877 COUNTY ROAD 383  
 SANTA ROSA BEACH, FL 32459  
 (850) 267-0759

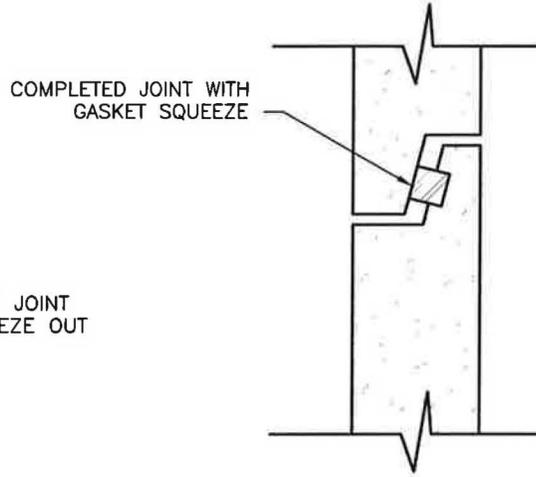
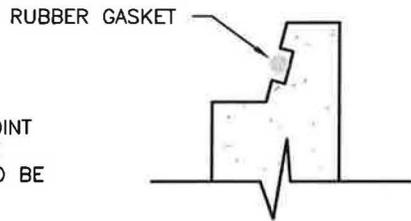
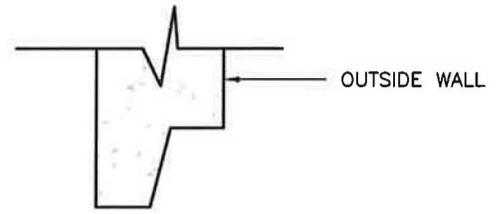
**CAST-IN-PLACE CONCRETE BASE**

Water Distribution and Wastewater Collection System Standards  
 City of Freeport  
 Walton County  
 Florida

DATE: 11/14	PROJECT NO. 493.000
SCALE: N/A	SHEET GS-5
DRAWN: SOE	
CHECKED: CLK	



JOINT DETAIL  
PLASTIC SEALER



JOINT DETAIL  
"O" RING GASKET

DETAIL - TYPICAL MANHOLE JOINT

SCALE: N.T.S.

EB# 0006155



**PREBLE-RISH INC**  
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324 MARINA DRIVE  
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(850) 227-7200

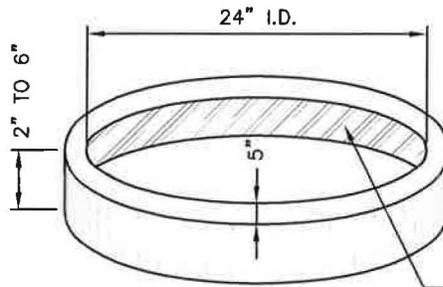
203 ABERDEEN PARKWAY  
PANAMA CITY, FL 32405  
(850) 522-0644

877 COUNTY ROAD 393  
SANTA ROSA BEACH, FL 32459  
(850) 267-0759

**TYPICAL MANHOLE JOINT**

Water Distribution and Wastewater Collection System Standards  
City of Freeport  
Walton County  
Florida

DATE: 11/14	PROJECT NO. 493.000
SCALE: N/A	SHEET GS-6
DRAWN: SOE	
CHECKED: CLK	



1 STRAND 6 GA. WIRE (0.192 IN THICKNESS) CONTINUOUS

NOTE:  
MAXIMUM NUMBER IS THREE (TOTAL=18")

**DETAIL - ADJUSTMENT RING**

SCALE: N.T.S.

EB# 0006155



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PANAMA CITY, FL 32405  
(850) 522-0644

877 COUNTY ROAD 383  
SANTA ROSA BEACH, FL 32459  
(850) 267-0759

**ADJUSTMENT RING DETAIL**

Water Distribution and Wastewater Collection System Standards  
City of Freeport  
Walton County  
Florida

DATE:

11/14

SCALE:

N/A

DRAWN:

SOE

CHECKED:

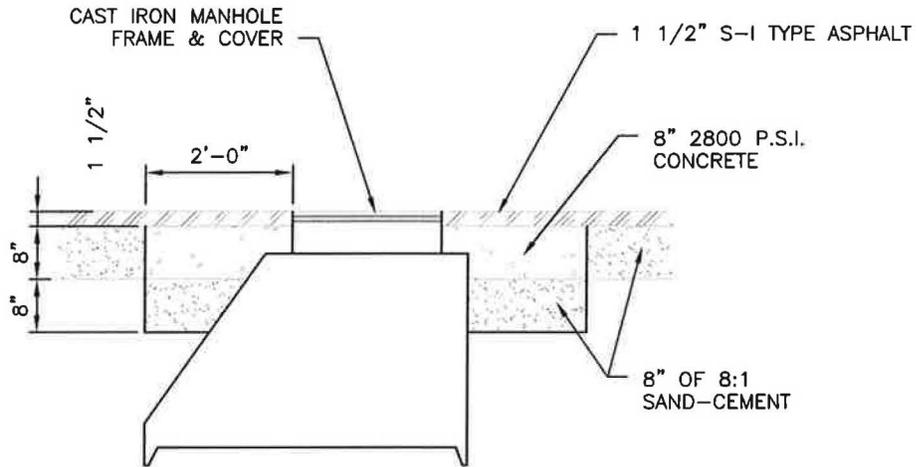
CLK

PROJECT NO.

493.000

SHEET

GS-7



WITHIN PAVING

DETAIL - MANHOLE BACKFILLED

SCALE: N.T.S.

EB# 0006155



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877 COUNTY ROAD 393  
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 (850) 267-0759

**MANHOLE BACKFILL DETAIL**

Water Distribution and Wastewater Collection System Standards  
 City of Freeport  
 Walton County  
 Florida

DATE:  
11/14

SCALE:  
N/A

DRAWN:  
SOE

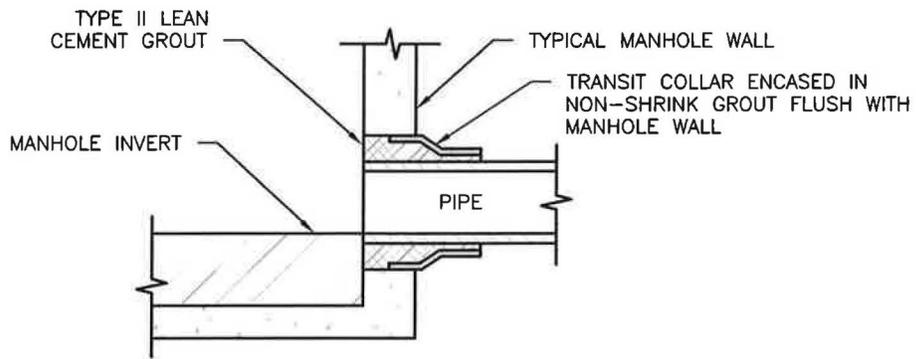
CHECKED:  
CLK

PROJECT NO.

493.000

SHEET

GS-8



**DETAIL - PRECAST MANHOLE PIPE CONNECTION**

SCALE: N.T.S.

EB# 0006155



**PREBLE-RISH INC**  
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 PANAMA CITY, FL 32405  
 (850) 522-0644

877 COUNTY ROAD 393  
 SANTA ROSA BEACH, FL 32459  
 (850) 267-0759

**PRECAST MANHOLE PIPE CONNECTION**

Water Distribution and Wastewater Collection System Standards  
 City of Freeport  
 Walton County  
 Florida

DATE:

11/14

SCALE:

N/A

DRAWN:

SOE

CHECKED:

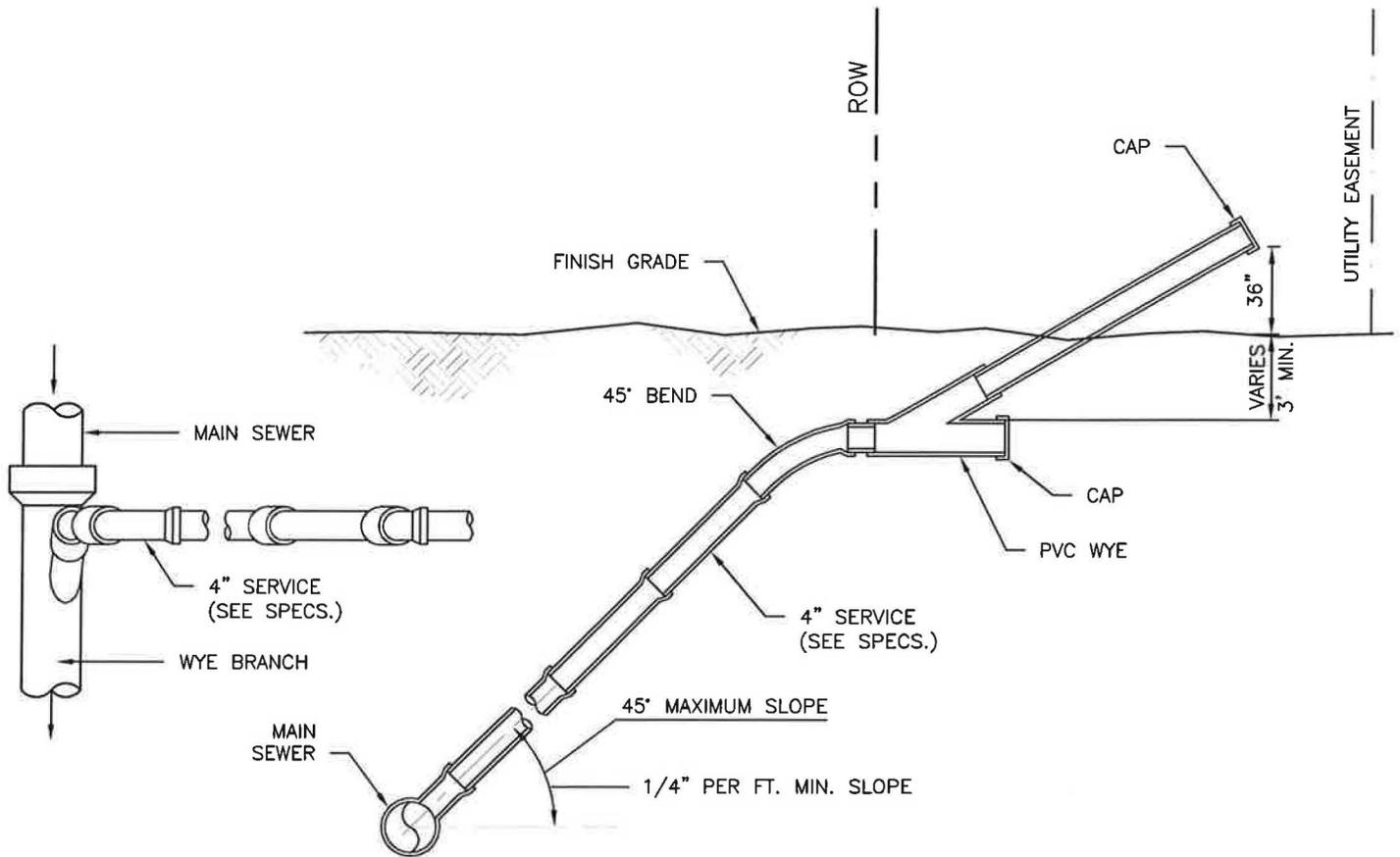
CLK

PROJECT NO.

493.000

SHEET

GS-9



PLAN

SECTION

**DETAIL - TYPICAL SERVICE CONNECTION**

SCALE: N.T.S.

EB# 0008155

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203 ABERDEEN PARKWAY  
 PANAMA CITY, FL 32406  
 (850) 522-0644

877 COUNTY ROAD 393  
 SANTA ROSA BEACH, FL 32459  
 (850) 267-0759

**TYPICAL SERVICE CONNECTION**  
 Water Distribution and Wastewater Collection System Standards  
 City of Freeport  
 Walton County  
 Florida

DATE:  
11/14

SCALE:  
N/A

DRAWN:  
SOE

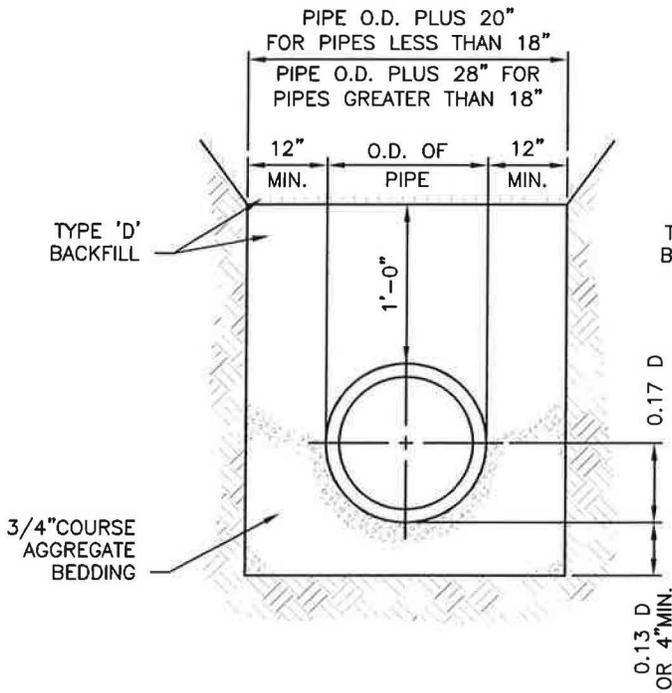
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PROJECT NO.

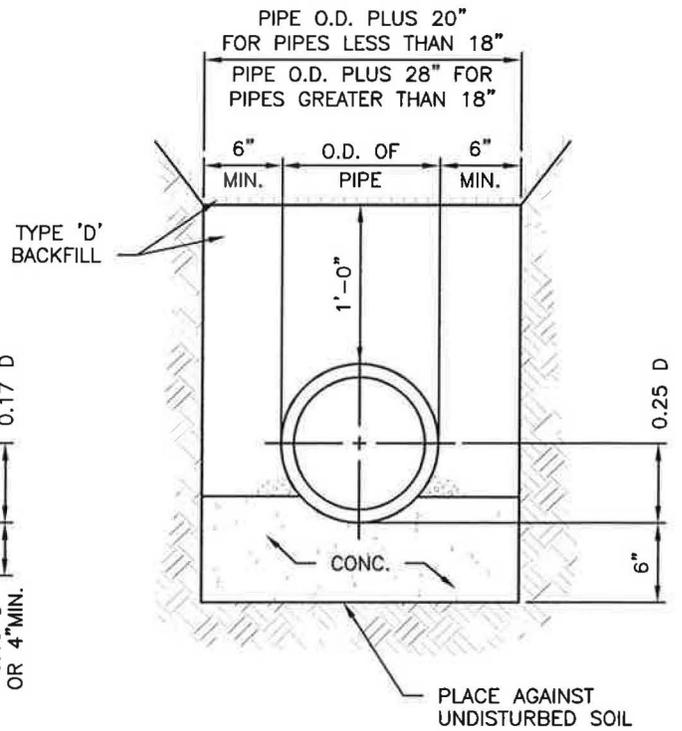
493.000

SHEET

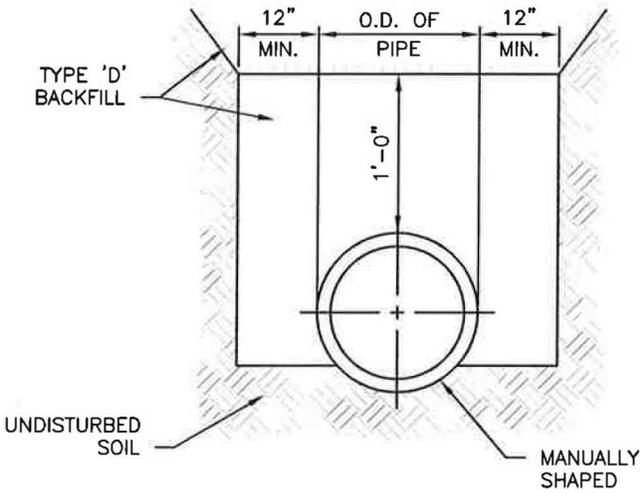
GS-10



**TYPE 1 PIPE  
ENVELOPE**

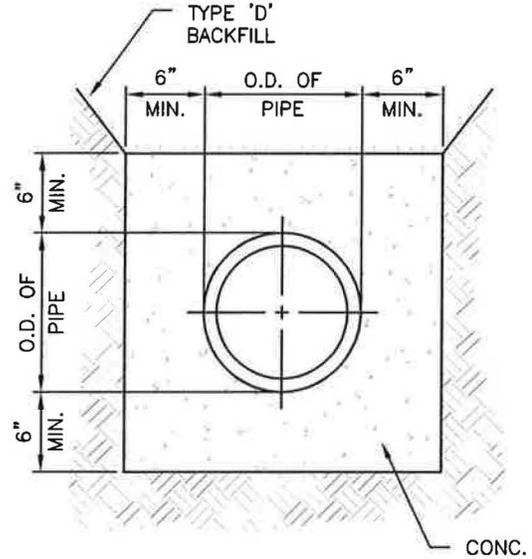


**CONCRETE CRADLE**



NOTE: EXCAVATE AT JOINT FOR BELL.

**TYPE 2 PIPE  
ENVELOPE (MIN.)**



**CONCRETE ENCASEMENT**

**DETAIL - GRAVITY SEWER PIPE BEDDING**  
SCALE: N.T.S.



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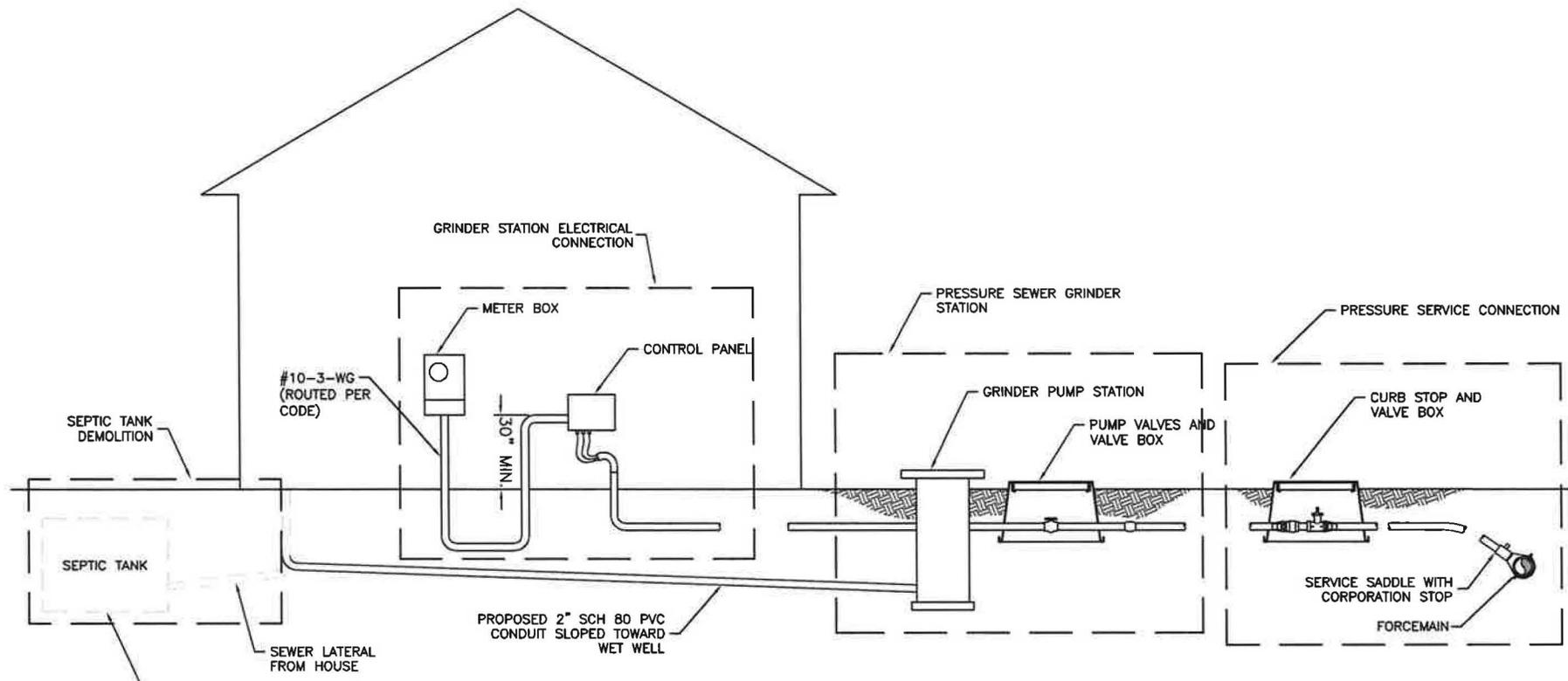
324 MARINA DRIVE  
 PORT ST. JOE, FL 32695  
 (850) 287-1500

203 ABERDEEN PARKWAY  
 PALM BEACH, FL 32805  
 (407) 852-5944

877 COUNTY ROAD 388  
 SEASIDE BEACH, FL 32689  
 (850) 267-0726

**TYP. GRINDER STATION SINGLE UNIT INSTALLATION**  
 Water Distribution and Wastewater Collection System Standards  
 City of Freeport  
 Walton County  
 Florida

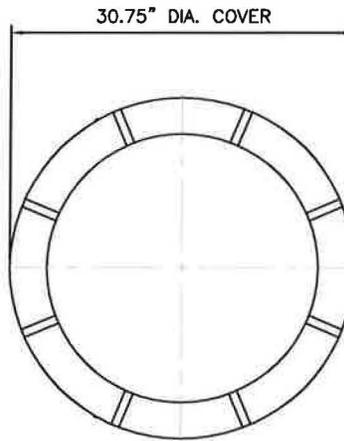
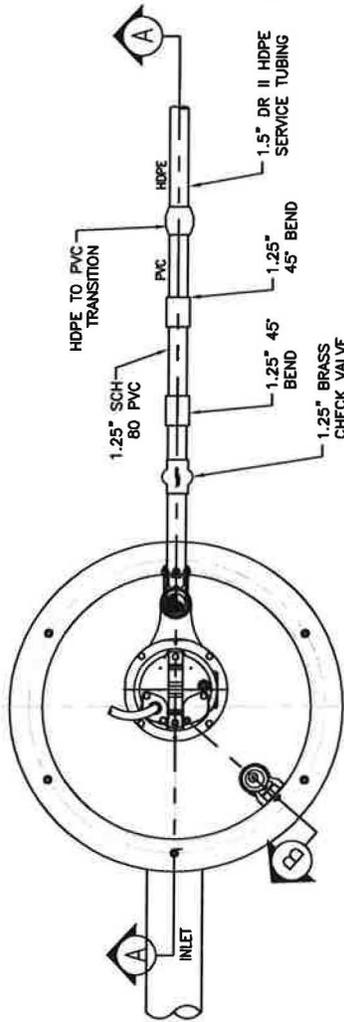
DATE:	1/1/14	PROJECT NO.:	493.000
SCALE:	N/A	SHEET:	PS-1
DRAWN:	SOE		
CHECKED:	CLK		



IF UNIT HAS AN EXISTING SEPTIC TANK, TANK MUST BE ABANDONED IN ACCORDANCE WITH FAC CHAPTER 10D-6.053 STANDARDS FOR ONSITE SEWAGE TREATMENT AND DISPOSAL SYSTEM. (TANK MUST BE PUMPED OUT, BOTTOM RUPTURED OR TANK COLLAPSED SO AS NOT TO RETAIN WATER AND TANK FILLED WITH SAND OR SUITABLE MATERIAL.)

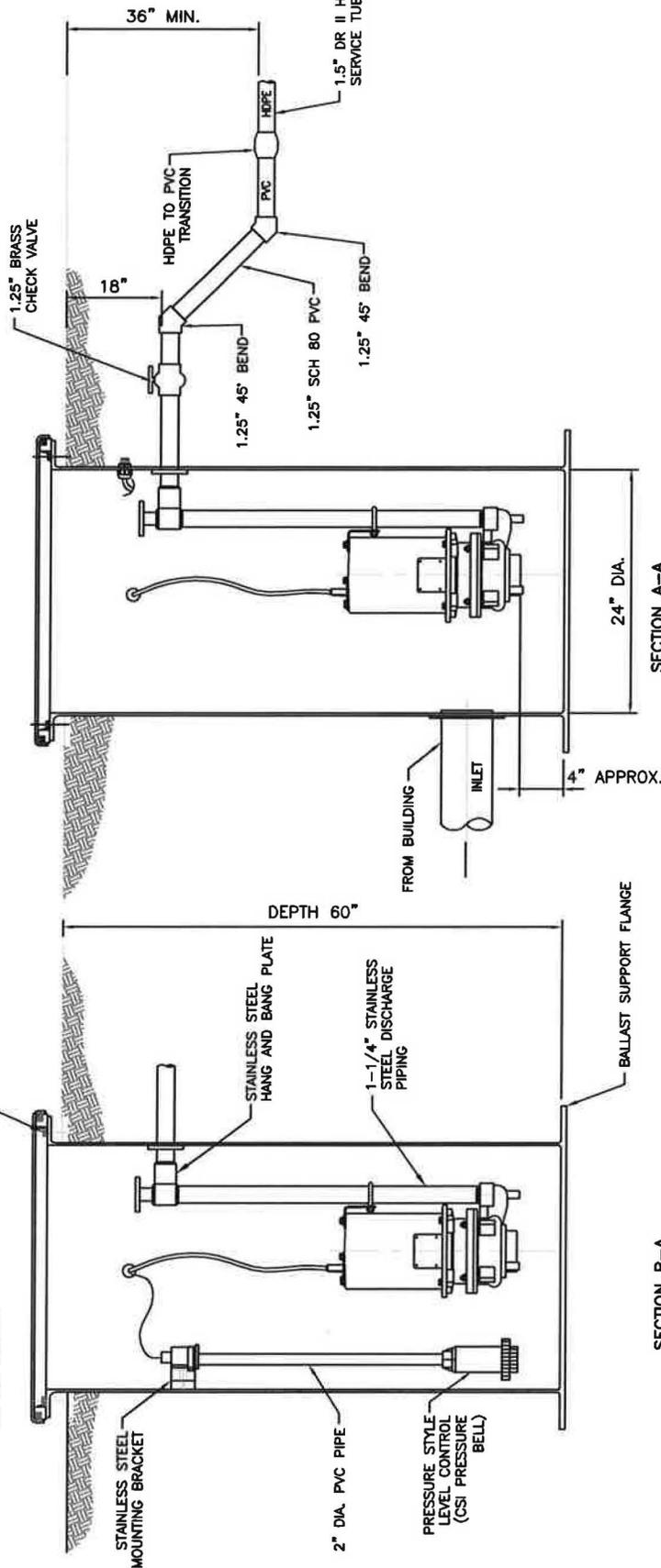
**TYPICAL GRINDER STATION SINGLE UNIT INSTALLATION**  
 SCALE: N.T.S.

EB# 0006155



SIX 3/8-16 S.S. HXHD BOLTS ON 26.50 DIA. B.C.

(3) 1/4 - 20 x 1.00 RD. HD. SCREWS



SECTION A-A

SECTION B-A

NOTES:

1. GRINDER PUMP STATION SHOULD BE OBTAINED FROM THE CITY OF PORT ST JOE

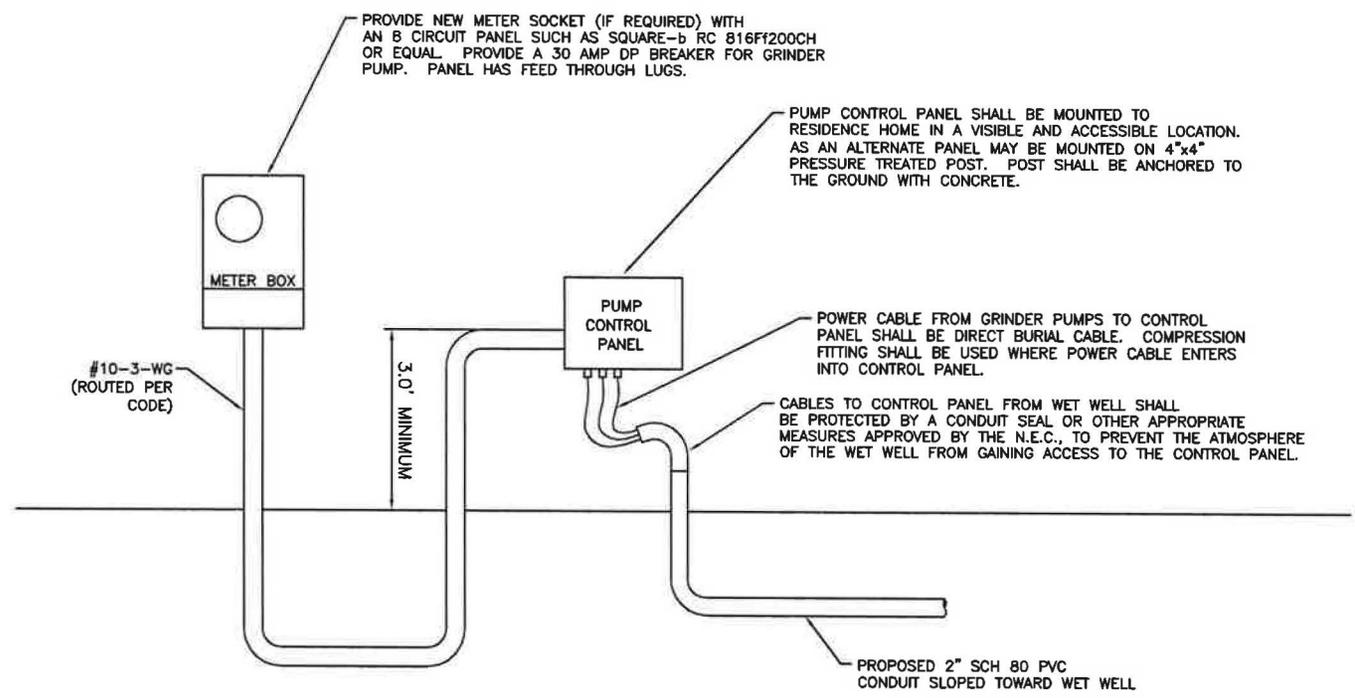
# DETAIL PRESSURE SEWER GRINDER STATION

SCALE: N.T.S.

EB# 0006155

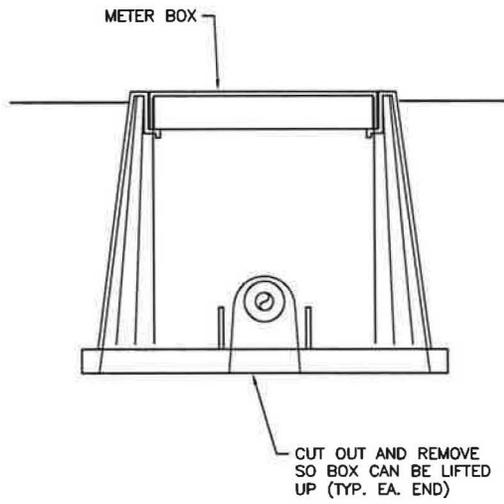
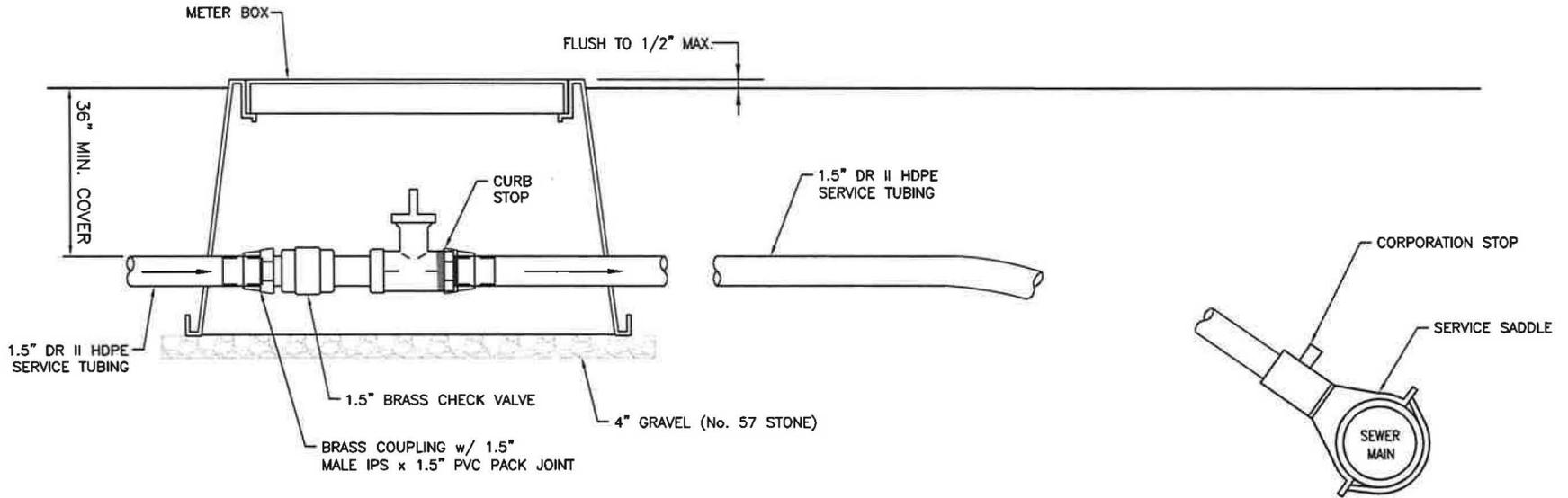
DATE: 11/14	PROJECT NO. 493.000
SCALE: N/A	SHEET PS-2
DRAWN: SOE	
CHECKED: CLK	

EB# 0006155



**DETAIL - GRINDER STATION ELECTRICAL CONNECTION**

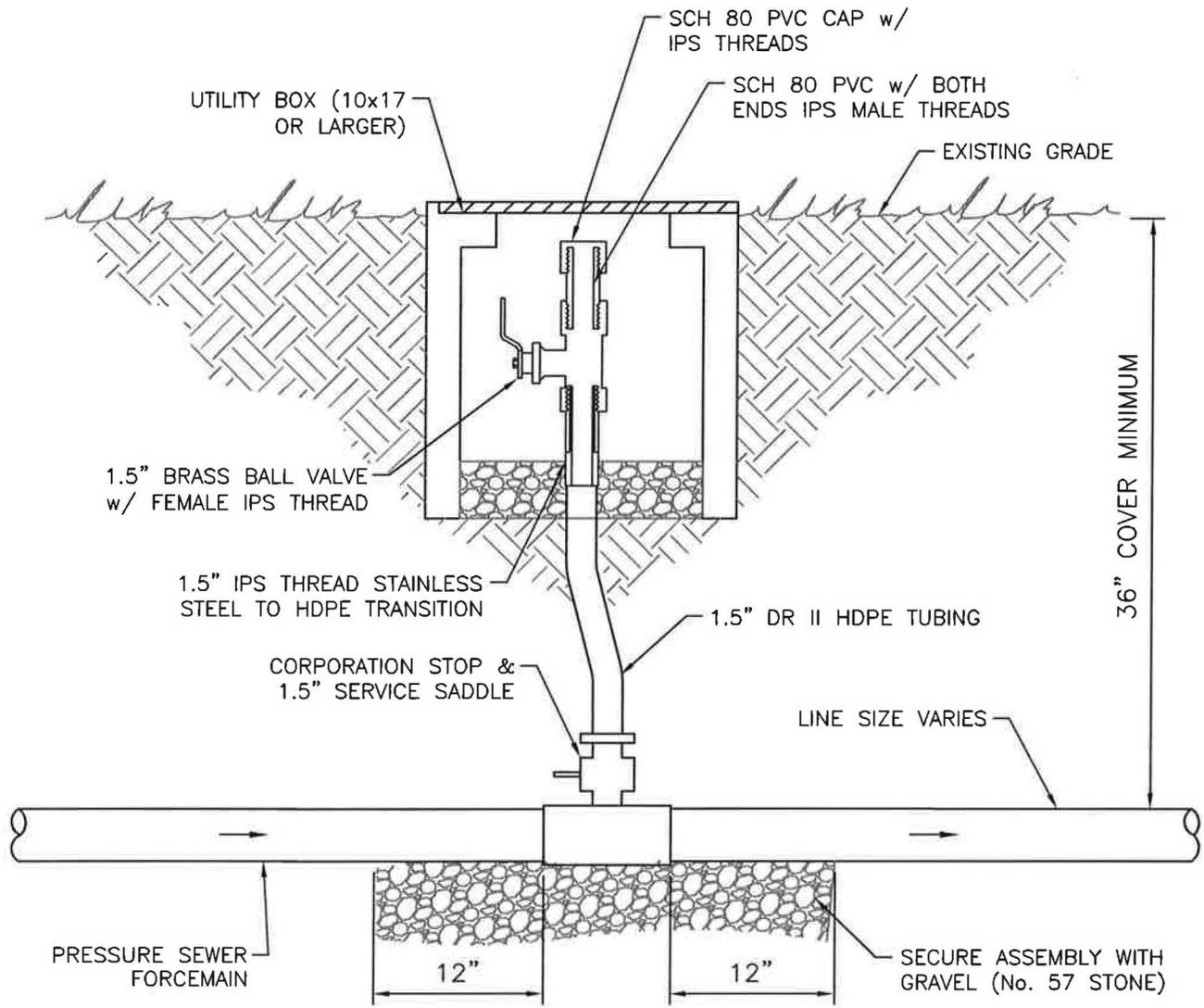
SCALE: N.T.S.



ITEM #	DESCRIPTION	MANUFACTURER
1	SERVICE SADDLE	1.5" ELECTROFUSION CORP SADDLE BY CENTRAL PLASTICS OR APPROVED EQUAL ON HDPE PIPE. 1.5" SMITH-BLAIR 317 SERVICE SADDLE OR APPROVED EQUAL ON PVC PIPE
2	CORPORATION STOP	1.5" FORD FB 1000
3	SERVICE TUBING	1.5" (SINGLE SERVICE), DR11 POLYETHYLENE TUBING WITH STAINLESS STEEL INSERTS (STIFFENERS) AT EACH END
4	CURB STOP	1.5" FORD w/ 1.5" FEMALE IPS BY 1.5" PVC PACK JOINT
5	METER BOX	STANDARD 12" METER BOX WITH GREEN FLUSH COVER (FURNISHED BY GRINDER PUMP MANUFACTURER)

**NOTE:**  
 1. ALL SERVICE TUBING SHALL BE GREEN OR GREEN STRIPED  
 2. ALL PAVEMENT CROSSINGS SHALL BE DIRECTIONAL-BORED.  
 NO OPEN CUTS WILL BE ALLOWED.

**DETAIL - PRESSURE SEWER SERVICE LINE**  
 SCALE: N.T.S.



### DETAIL - TYPICAL IN-LINE CLEANOUT

SCALE: N.T.S.

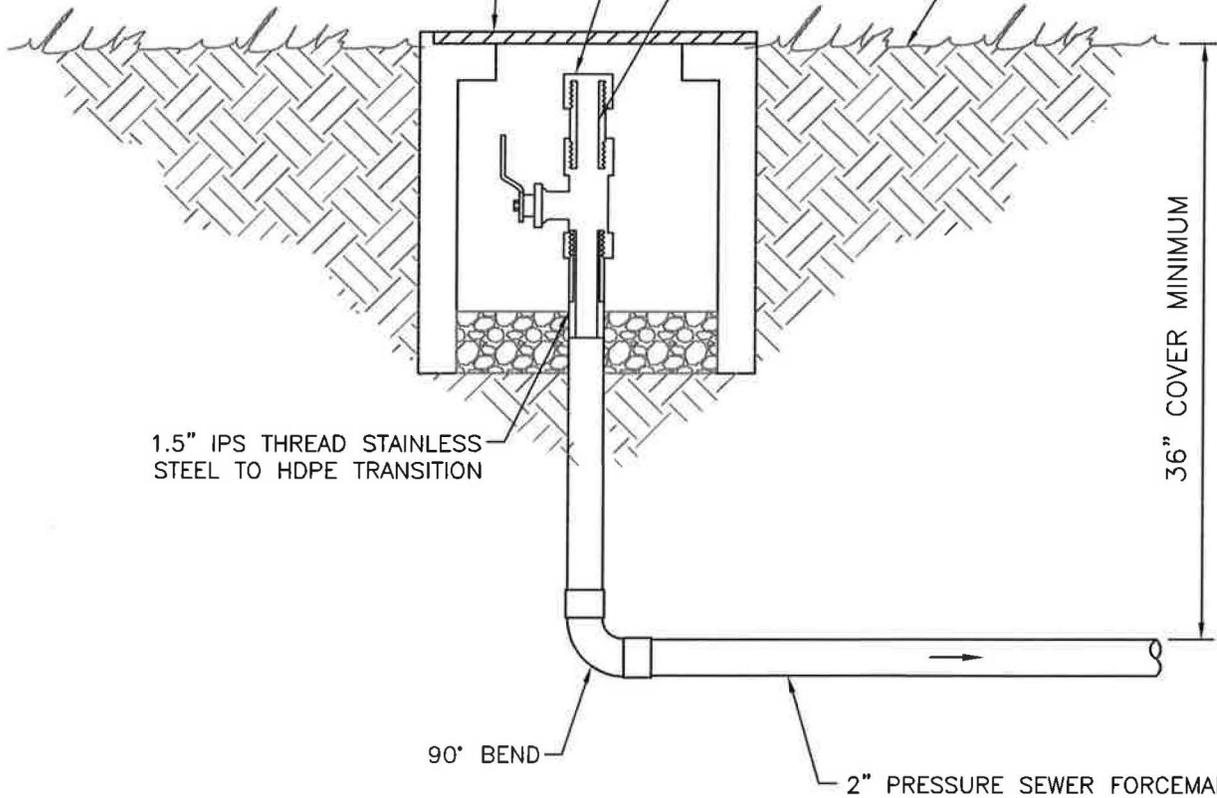
ITEM #	DESCRIPTION	MANUFACTURER
1	SERVICE SADDLE	1.5" ELECTROFUSION CORP SADDLE BY CENTRAL PLASTICS OR APPROVED EQUAL ON HDPE PIPE. 1.5" SMITH-BLAIR 317 SERVICE SADDLE OR APPROVED EQUAL ON PVC PIPE
2	CORPORATION STOP	1.5" FORD FB 1000
3	SERVICE TUBING	1.5" (SINGLE SERVICE), DR11 POLYETHELENE TUBING WITH STAINLESS STEEL INSERTS (STIFFENERS) AT EACH END
4	UTILITY BOX	10"x17"(MIN.) CONCRETE BOX w/ H2O LOADING & CAST IRON LID MARKED SEWER

UTILITY BOX 10"x19" (MIN.) CONCRETE BOX  
w/ H2O LOADING & CAST IRON LID  
MARKED SEWER

SCH 80 PVC CAP w/  
IPS THREADS

SCH 80 PVC w/ BOTH  
ENDS IPS MALE THREADS

EXISTING GRADE



1.5" IPS THREAD STAINLESS  
STEEL TO HDPE TRANSITION

36" COVER MINIMUM

90° BEND

2" PRESSURE SEWER FORCEMAIN

## **DETAIL - TYPICAL TERMINAL CLEANOUT**

SCALE: N.T.S.

EB# 0006155



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203 ABERDEEN PARKWAY  
PANAMA CITY, FL 32405  
(850) 522-0644

877 COUNTY ROAD 393  
SANTA ROSA BEACH, FL 32459  
(850) 267-0759

### TYPICAL TERMINAL CLEANOUT

Water Distribution and Wastewater Collection System Standards  
City of Freeport  
Walton County  
Florida

DATE:

11/14

SCALE:

N/A

DRAWN:

SOE

CHECKED:

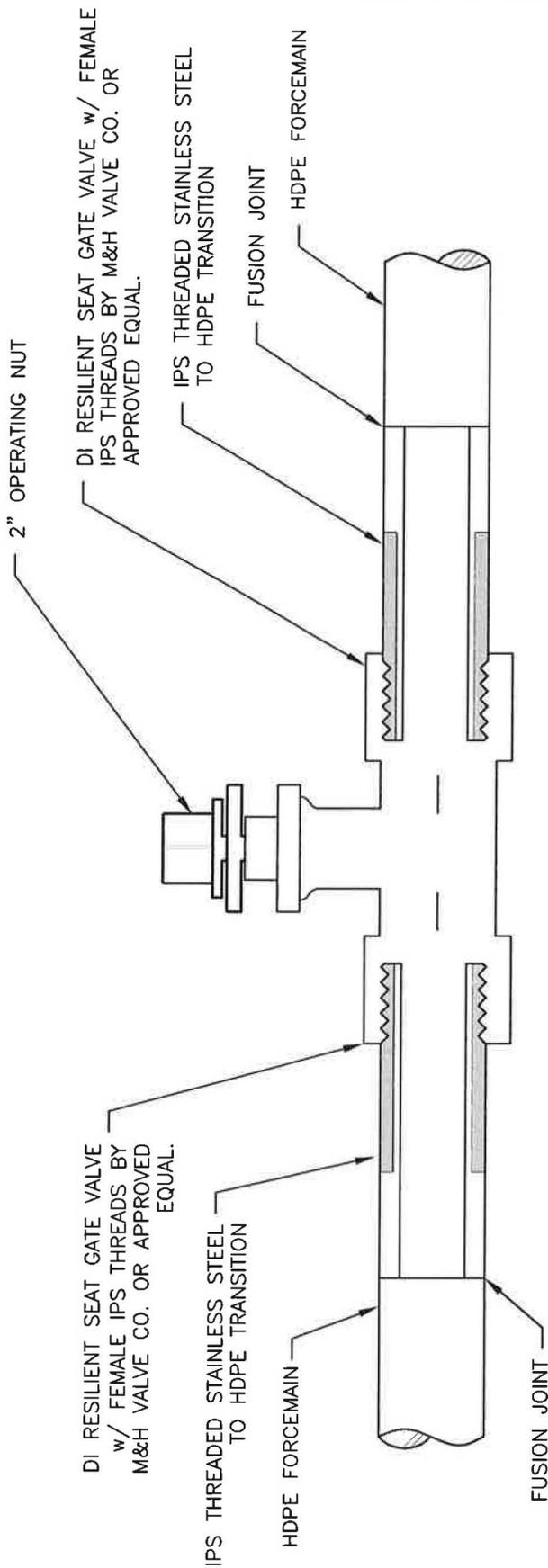
CLK

PROJECT NO.

493.000

SHEET

PS-6



**DETAIL - 2" & 3" GATE VALVE**  
 SCALE: N.T.S.

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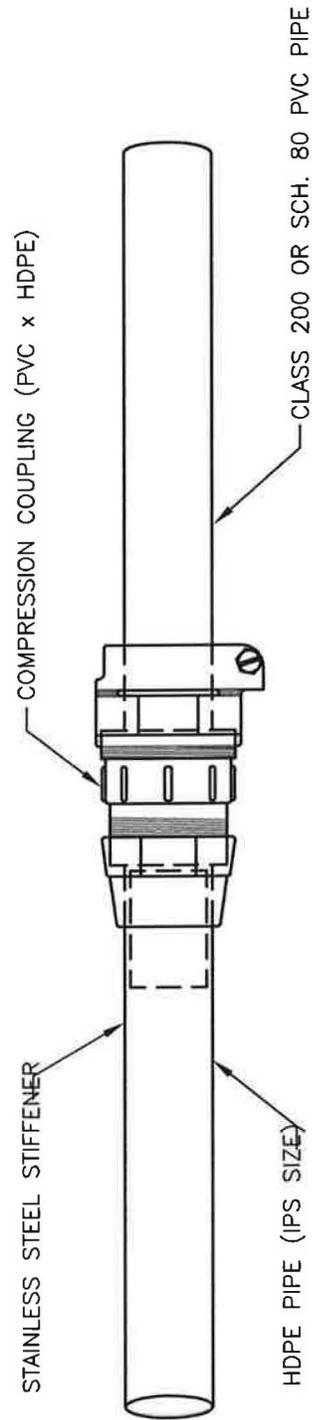
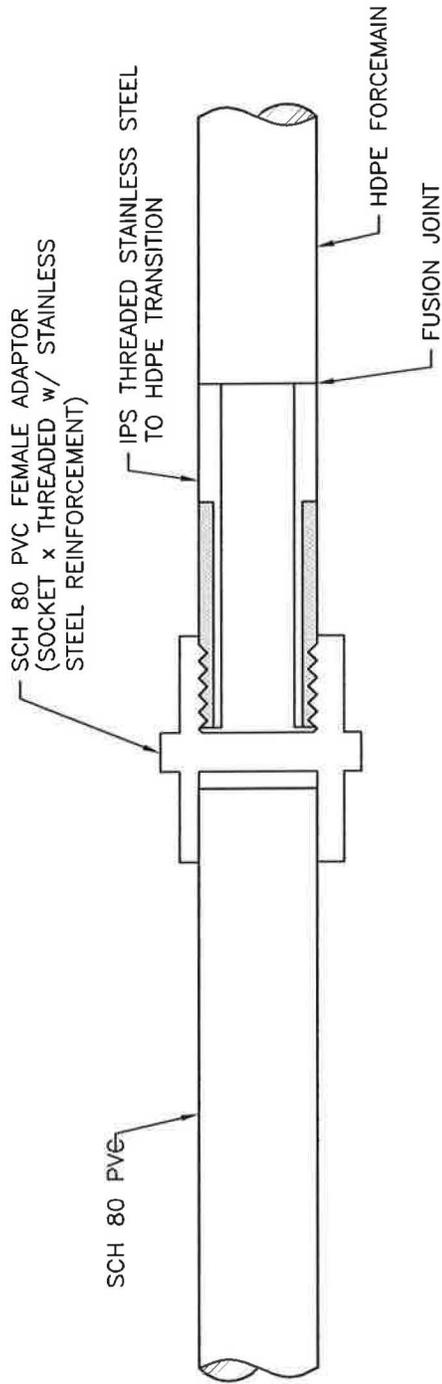
203 ABERDEEN PARKWAY  
 PANAMA CITY, FL 32405  
 (850) 522-0644

877 COUNTY ROAD 393  
 SANTA ROSA BEACH, FL 32459  
 (850) 287-0759

**2" AND 3" GATE VALVE**  
 Water Distribution and Wastewater Collection System Standards  
 City of Freeport  
 Walton County  
 Florida

DATE: 11/14	PROJECT NO. 493.000
SCALE: N/A	SHEET PS-7
DRAWN: SOE	
CHECKED: CLK	

EB# 0006155



**DETAIL - HDPE TO PVC TRANSITION**  
 (3" DIAMETER AND SMALLER)  
 SCALE: N.T.S.

EB# 0006155



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 (850) 227-7200

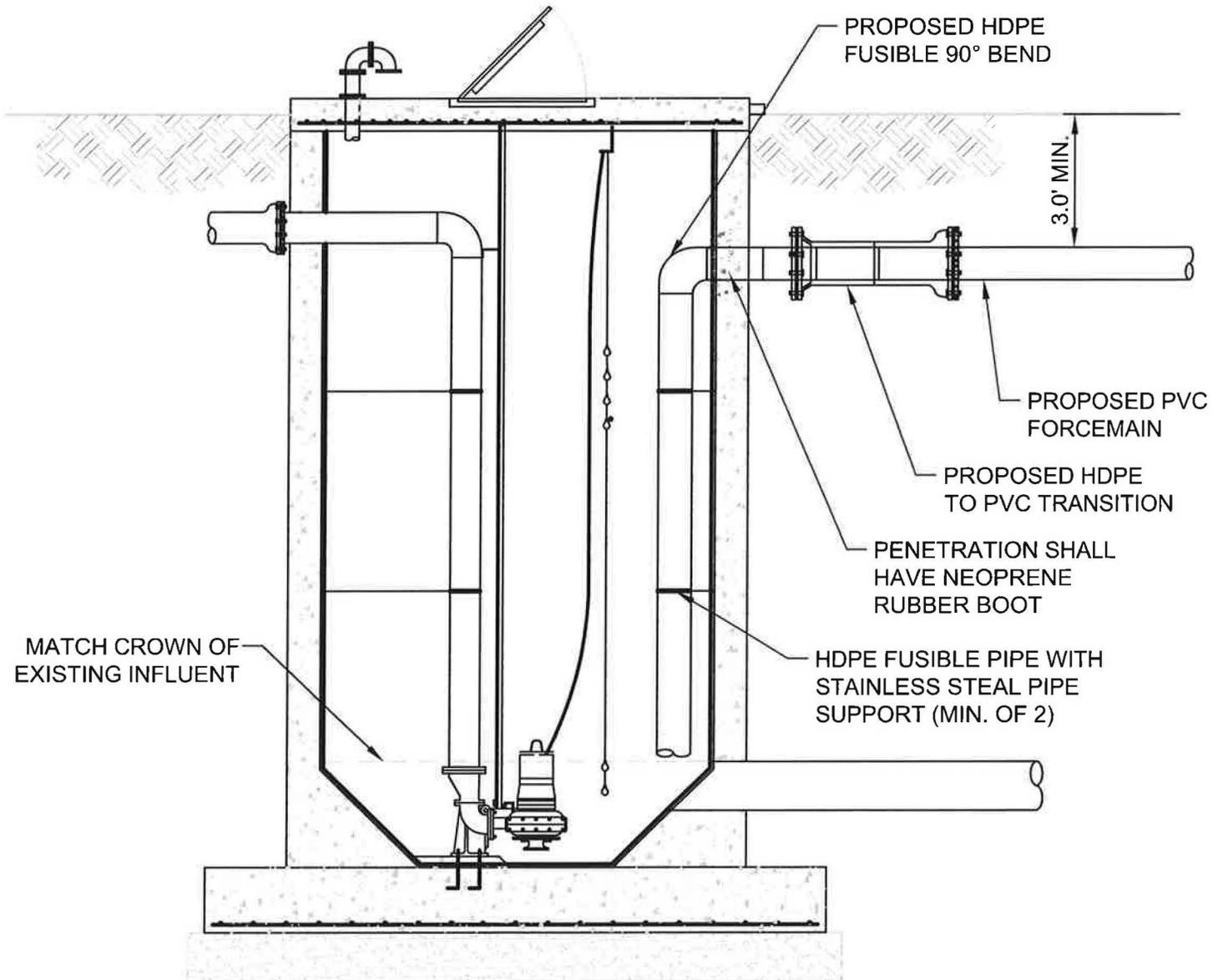
203 ABERDEEN PARKWAY  
 PANAMA CITY, FL 32405  
 (850) 522-0644

877 COUNTY ROAD 393  
 SANTA ROSA BEACH, FL 32459  
 (850) 267-0759

**HDPE TO PVC TRANSITION**

Water Distribution and Wastewater Collection System Standards  
 City of Freeport  
 Walton County  
 Florida

DATE: 11/14	PROJECT NO. 493.000
SCALE: N/A	SHEET PS-8
DRAWN: SOE	
CHECKED: CLK	



## DETAIL - FORCEMAIN CONNECTION TO WET WELL

SCALE: N.T.S.

EB# 0006155



**PREBLE-RISH INC**  
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203 ABERDEEN PARKWAY  
 PANAMA CITY, FL 32405  
 (850) 522-0544

877 COUNTY ROAD 393  
 SANTA ROSA BEACH, FL 32459  
 (850) 267-0759

### FORCEMAIN CONNECTION TO WET WELL

Water Distribution and Wastewater Collection System Standards  
 City of Freeport  
 Walton County  
 Florida

DATE:

11/14

SCALE:

N/A

DRAWN:

SOE

CHECKED:

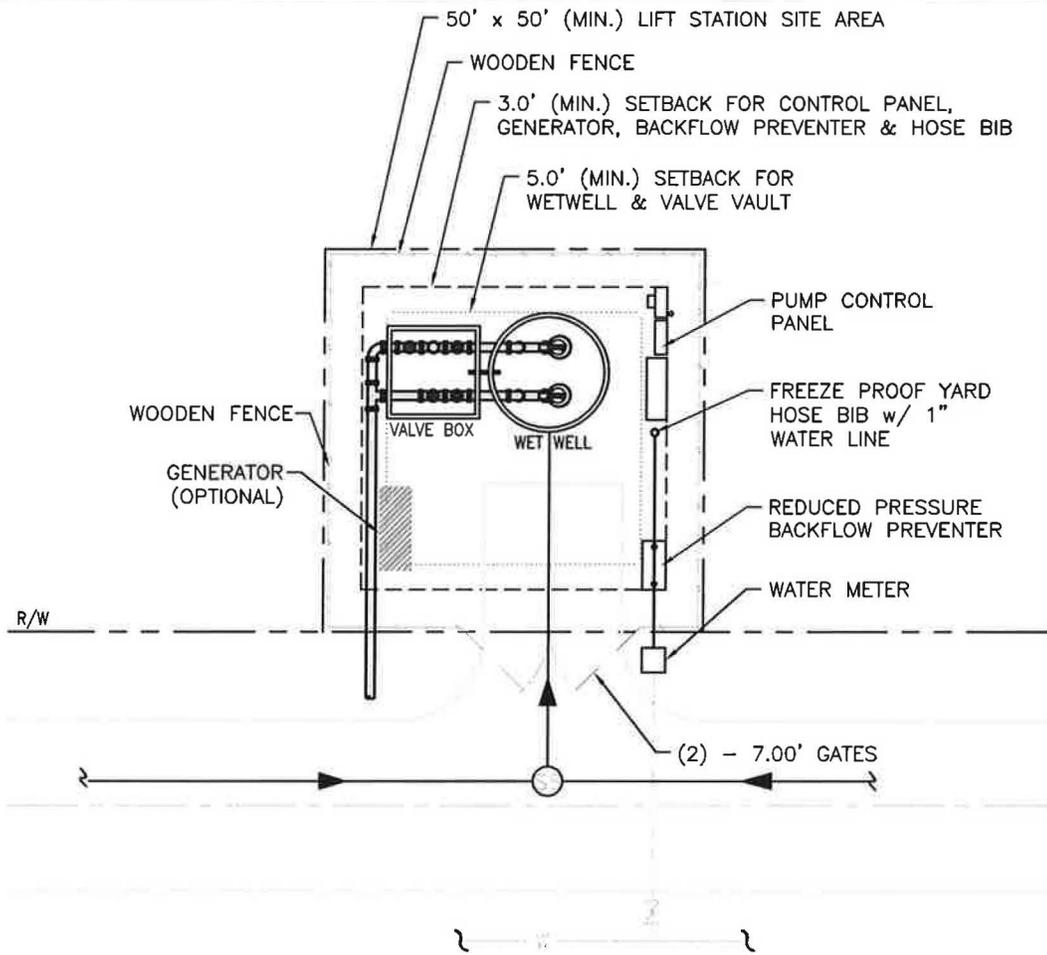
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PROJECT NO.

493.000

SHEET

PS-9

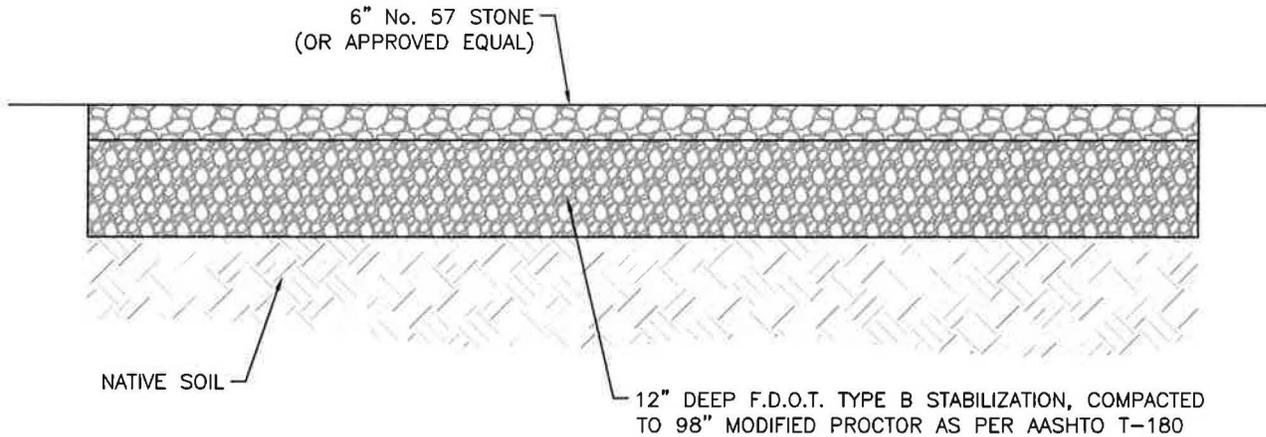


ENGINEER SHALL PROVIDE A SCALED (1" = 10' MIN.) SITE SPECIFIC DETAIL

IF LIFT STATION SITE IS NOT CONTIGUOUS TO PUBLIC R/W, A 20' MINIMUM WIDTH INGRESS, EGRESS, AND UTILITY EASEMENT APPROVED BY CITY MUST BE PROVIDED TO PUBLIC R/W.

### PLAN VIEW

SCALE: N.T.S.



### DETAIL - TYPICAL SITE CROSS SECTION

SCALE: N.T.S.

FB# 0006155



**PREBLE-RISH INC**  
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877 COUNTY ROAD 393  
SANTA ROSA BEACH, FL 32459  
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#### TABLE of CONTENTS

Water Distribution and Wastewater Collection System Standards  
City of Freeport  
Walton County  
Florida

DATE:

11/14

SCALE:

N/A

DRAWN:

SOE

CHECKED:

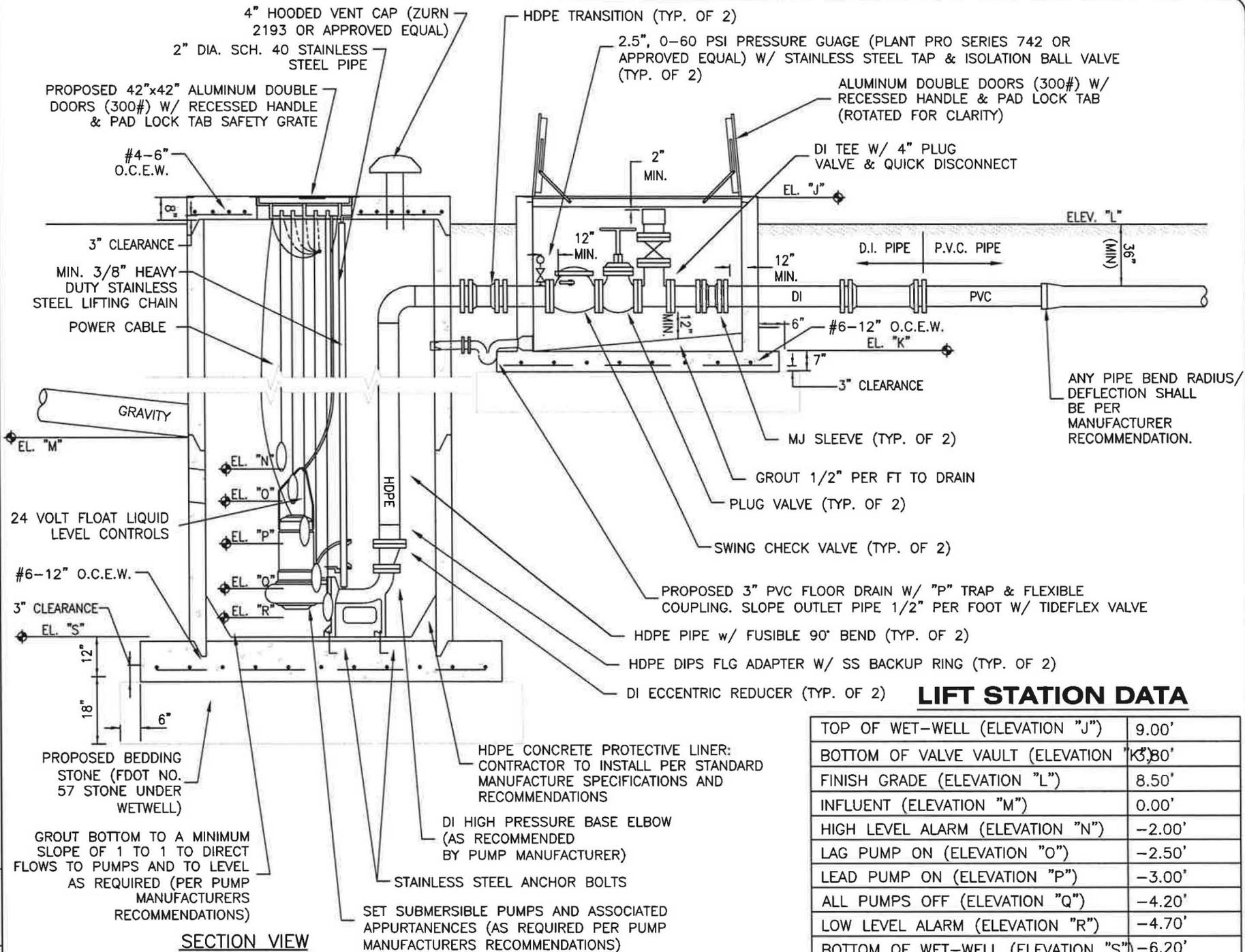
CLK

PROJECT NO.

493.000

SHEET

LS-1



**LIFT STATION DATA**

TOP OF WET-WELL (ELEVATION "J")	9.00'
BOTTOM OF VALVE VAULT (ELEVATION "K")	3.80'
FINISH GRADE (ELEVATION "L")	8.50'
INFLUENT (ELEVATION "M")	0.00'
HIGH LEVEL ALARM (ELEVATION "N")	-2.00'
LAG PUMP ON (ELEVATION "O")	-2.50'
LEAD PUMP ON (ELEVATION "P")	-3.00'
ALL PUMPS OFF (ELEVATION "Q")	-4.20'
LOW LEVEL ALARM (ELEVATION "R")	-4.70'
BOTTOM OF WET-WELL (ELEVATION "S")	-6.20'
FORCE MAIN DIAMETER	6.00"
WETWELL DIAMETER	12.00'

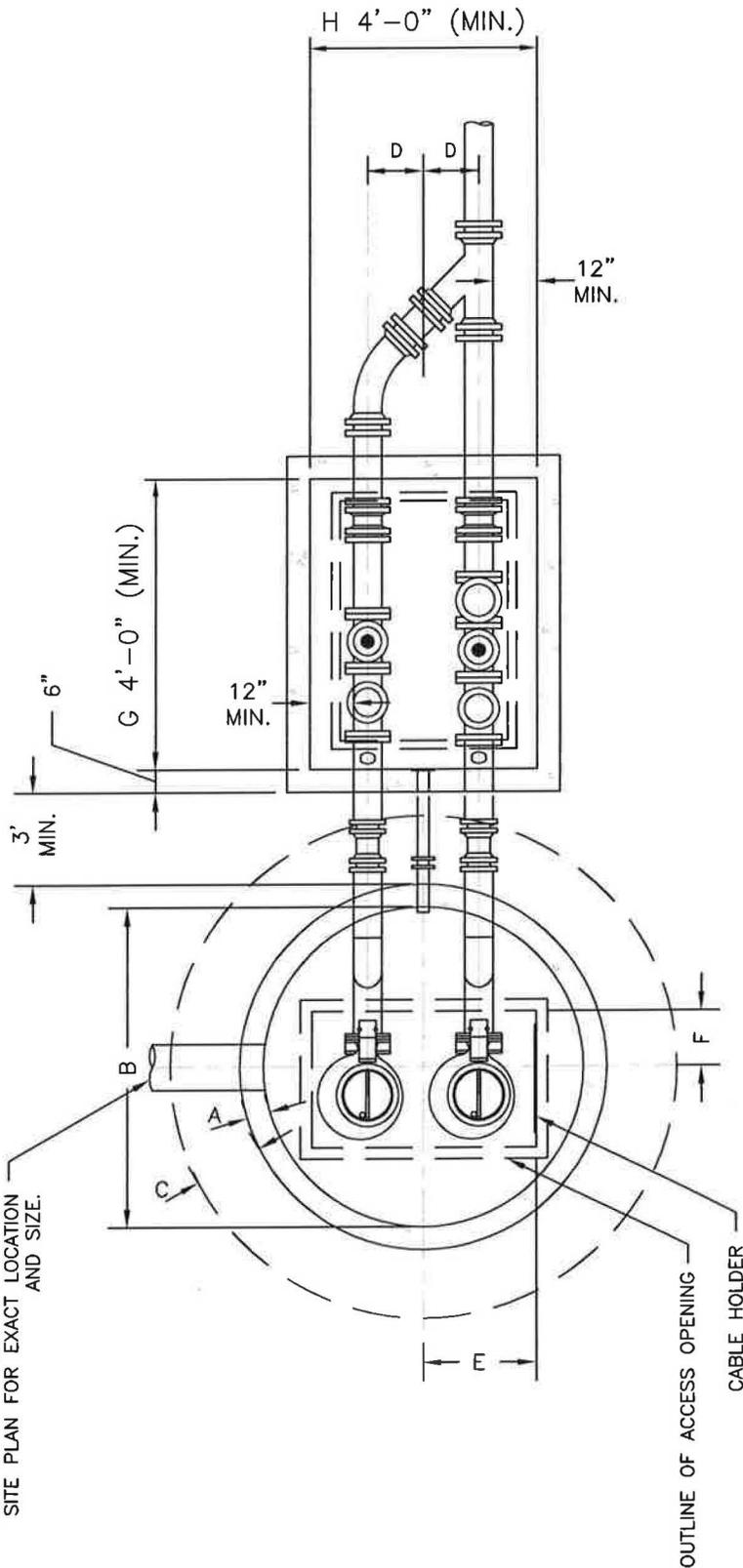
**SECTION VIEW**  
**DETAIL - LIFT STATION**  
 SCALE: N.T.S.

**CONCRETE LIFT STATION - SECTION VIEW**  
 Water Distribution and Wastewater Collection System Standards  
 City of Freeport  
 Walton County  
 Florida

DATE: 11/14  
 SCALE: N/A  
 DRAWN: SOE  
 CHECKED: CLK

PROJECT NO. 493.000  
 SHEET LS-2  
 EBN 0006155

GRAVITY SEWER PIPE ROTATED FOR CLARITY. SEE LIFT STATION SITE PLAN FOR EXACT LOCATION AND SIZE.



**PLAN VIEW**

SCALE: N.T.S.

**LIFT STATION DATA**

DIMENSION "A"	10.00"
DIMENSION "B"	12.00'
DIMENSION "C"	24.00"
DIMENSION "D"	7.50" MIN.
DIMENSION "E"	24.00"
DIMENSION "F"	*
DIMENSION "G"	7'-0" MIN.
DIMENSION "H"	5'-6" MIN.

\* SEE PUMP SPECIFICATIONS FOR DIMENSIONS



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**CONCRETE LIFT STATION - PLAN VIEW**

Water Distribution and Wastewater Collection System Standards  
 City of Freeport  
 Walton County  
 Florida

DATE: 11/14	PROJECT NO. 493.000
SCALE: N/A	SHEET LS-3
DRAWN: SOE	
CHECKED: CLK	

EB# 0006155

## GENERAL NOTES:

1. ALL EXPOSED METAL SHALL BE PAINTED WITH 2 COATS OF EXTERIOR ENAMEL PAINT.
2. WETWELL AND VALVE VAULT SHALL BE COATED WITH COAL TAR ON THE OUTSIDE EXCEPT TOP SURFACE OF COVERS. (TWO COATS, 9 MILS EACH.)
3. BASE AND FIRST RISER UNIT TO BE CAST MONOLITHIC.
4. VALVE VAULT SHALL BE SIZED TO PERMIT EASY REMOVAL OF CHECK VALVE SPINDLES WITH MINIMUM CLEARANCES AS SHOWN FOR 6" DIAMETER PIPE AND SMALLER. CLEARANCES SHALL INCREASE AS REQUIRED FOR LARGER PIPE SIZES.
5. VALVE VAULT SHALL HAVE SEALED FLOOR AND DRAIN.
6. ALL LOCATIONS WHERE PIPES ENTER OR LEAVE THE WET WELL OR VALVE VAULT SHALL BE MADE WATERTIGHT WITH WALL SLEEVE OR NON-SHRINK GROUT.
7. THERE SHALL BE NO VALVES OR ELECTRICAL JUNCTION BOXES IN WET WELL.
8. WET WELL AND VALVE VAULT COVERS SHALL BE ALUMINUM WITH 316 S.S. HARDWARE AND LOCK BRACKET. SIZE AS REQUIRED BY PUMP MANUFACTURER AND APPROVED BY THE CITY.
9. ALL NUTS, BOLTS, WASHERS, ETC. IN WET WELL AND VALVE BOX TO BE 304 STAINLESS STEEL.
10. WET WELL SHALL BE HDPE LINED.
11. HDPE PIPE IN WET WELL SHALL BE ANCHORED TO WET WELL WALL AS REQUIRED BY PUMP MANUFACTURER TO ELIMINATE ANY SAGGING.

## LIFT STATION DATA

PROJECT NAME	
PUMP MODEL	MYERS, FLYGT (OR DAVIS EMU)
MOTOR MODEL	NP 3085 MT W/ MOTOR 15-10-4AL
IMPELLER SIZE	-
VOLTAGE	230 - (3 PHASE)
HP	VARIES
RPM	-
DELIVERY, GPM (HIGH SYSTEM HEAD)	-
DELIVERY, GPM (LOW SYSTEM HEAD)	-
TDH, FEET (HIGH SYSTEM HEAD)	-
TDH, FEET (LOW SYSTEM HEAD)	-

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### LIFT STATION NOTES AND TABLE

Water Distribution and Wastewater Collection System Standards  
 City of Freeport  
 Walton County  
 Florida

DATE:  
11/14

SCALE:  
N/A

DRAWN:  
SOE

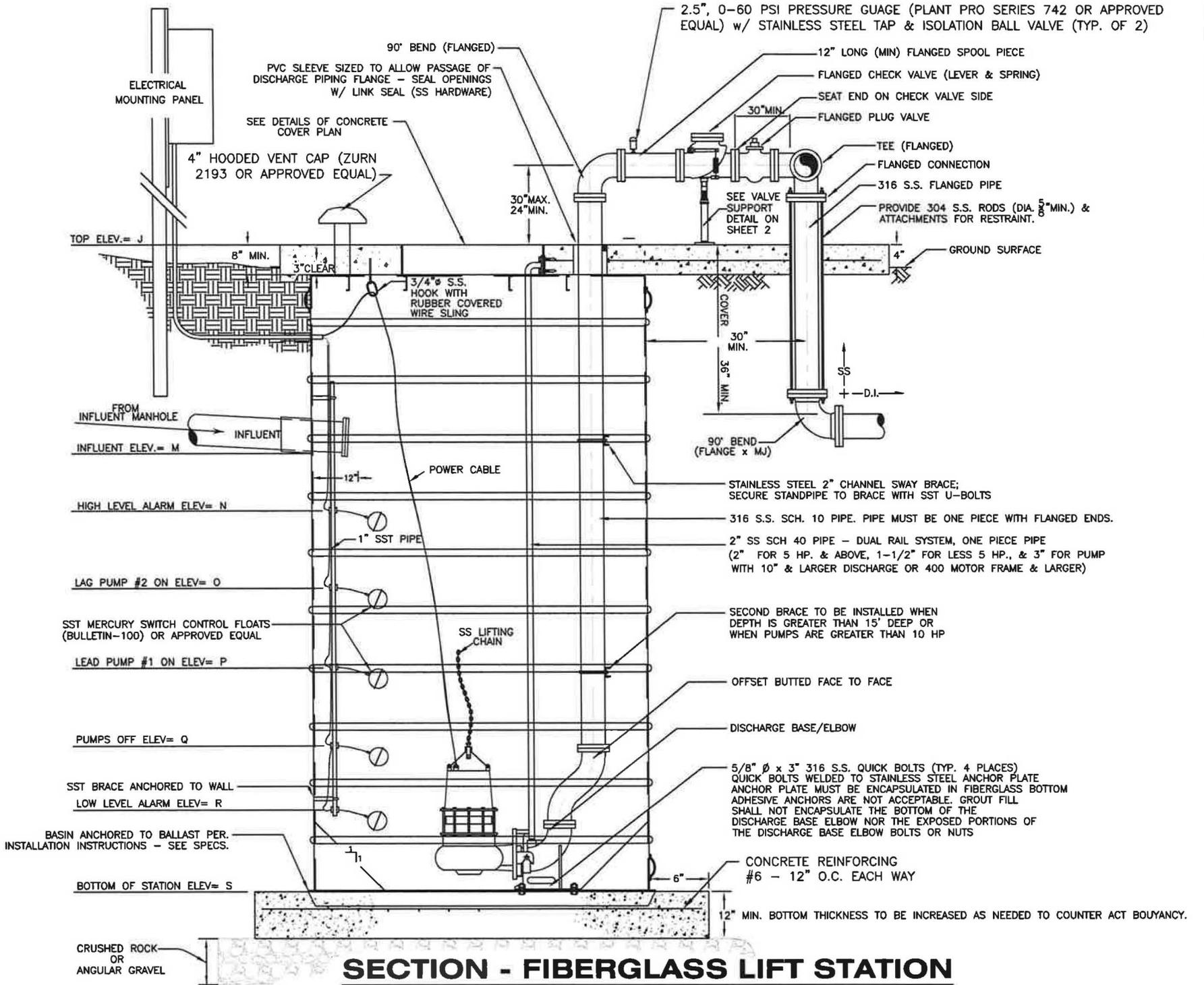
CHECKED:  
CLK

PROJECT NO.

493.000

SHEET

LS-4



**SECTION - FIBERGLASS LIFT STATION**

SCALE: N.T.S.

316 S.S. DOUBLE NUTS FOR  
BASE EL'S - BOTH TOP & BOTTOM

FLOAT SWITCH & PUMP CONTROL  
LINES ENCASED IN CONDUIT 3-2"  
CONDUITS - OVER 50 HP PUMPS,  
INCREASE SIZE TO 3" CONDUITS.  
CONDUIT IS TO BE SCHEDULE 40 PVC  
IF BELOW GROUND AND SCHEDULE  
80 PVC IF ABOVE GROUND

TYP. 2" WALL SLEEVE  
(SEAL ENDS)

INFLUENT

GROUT BASE SLOPES

4" PLUG VALVE &  
QUICK DISCONNECT

REDUCER  
(FLANGED)

1'6" MIN.  
(TYP.)

1'6" (MIN.)

SS FLANGED  
SPOOL PIECE  
OR FLANGED  
FILLER AS  
NEEDED.

STAINLESS STEEL 2" CHANNEL  
SWAY BRACE ANCHORED TO WET WELL WALL WITH  
4" x 4" x 1/4" THICK SS. PLATE - WELD SWAY BRACE TO PLATE.

NOTE: SEE CONC. COVER PLAN; COVER NOT SHOWN IN PLAN VIEW FOR CLARITY

# PLAN - FIBERGLASS LIFT STATION

N.T.S.



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## FIBERGLASS LIFT STATION - PLAN VIEW

Water Distribution and Wastewater Collection System Standards  
City of Freeport  
Walton County  
Florida

DATE:

11/14

SCALE:

N/A

DRAWN:

SOE

CHECKED:

CLK

EB# 0006155

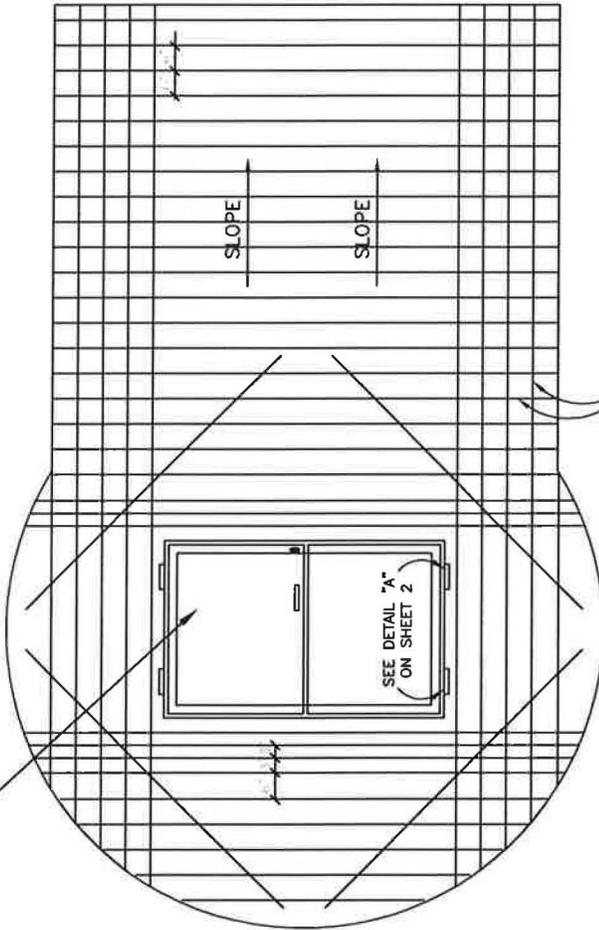
PROJECT NO.

493.000

SHEET

LS-6

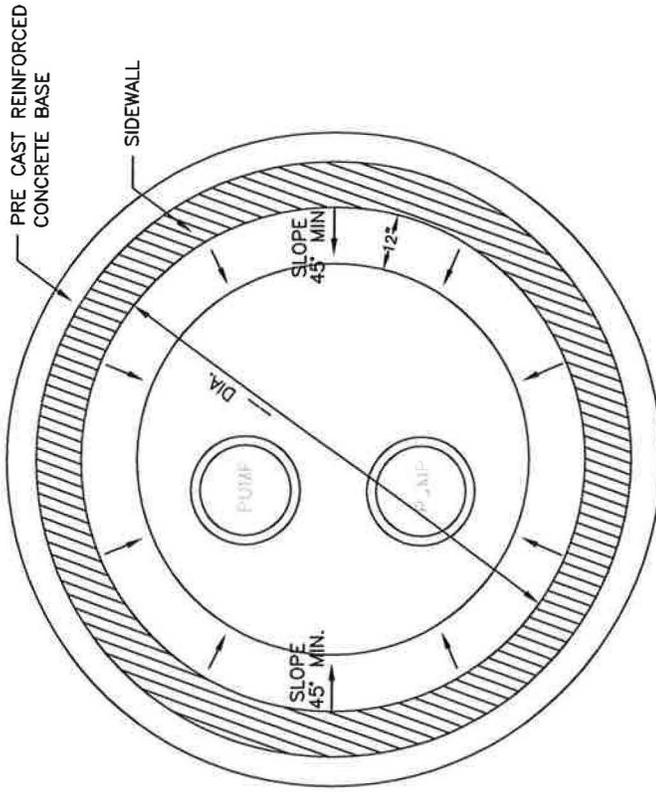
48" X 72" (MIN.) ALUMINUM HATCH  
(U.S. FOUNDRY TYPE ALUM. APD OR APPROVED EQUAL)  
& NO CENTER HATCH SUPPORT



#4 BAR AT 6" SPACING

**CONCRETE COVER PLAN**

N.T.S.



**PRE CAST BASE PLAN**

N.T.S.

**DETAIL - FIBERGLASS & CONCRETE LIFT STATION GROUTING**

SCALE: N.T.S.



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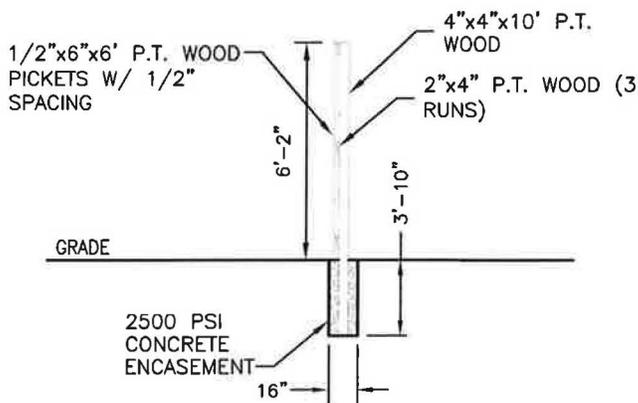
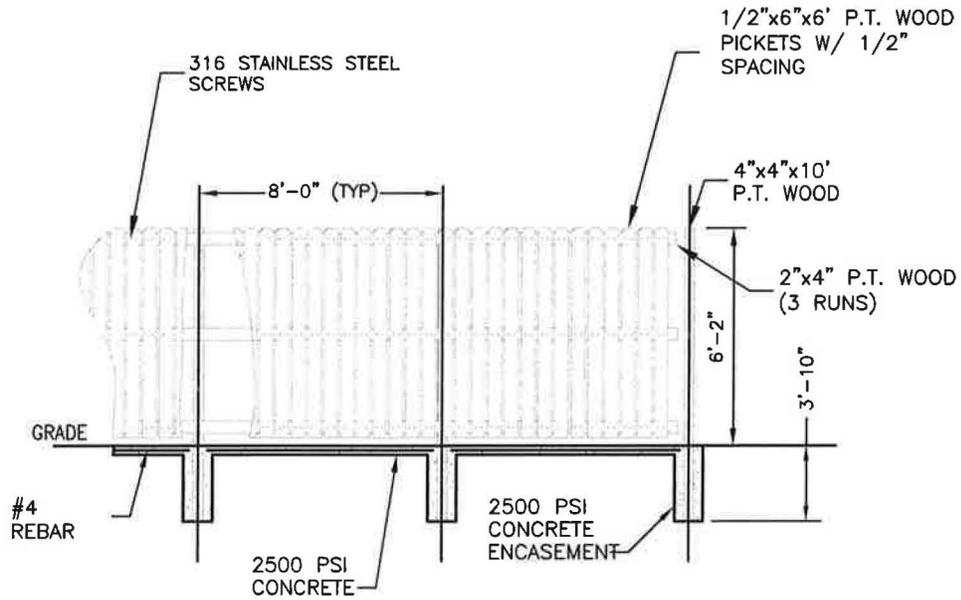
**FIBERGLASS & CONCRETE LIFT STATION GROUTING**

Water Distribution and Wastewater Collection System Standards  
City of Freeport  
Walton County  
Florida

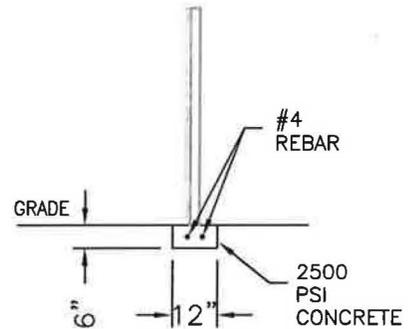
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11/14  
SCALE:  
N/A  
DRAWN:  
SOE  
CHECKED:  
CLK

EB# 0006155

PROJECT NO.  
**493.000**  
SHEET  
**LS-7**



SECTION VIEW 1



SECTION VIEW 2

## DETAIL - 6' PRESSURE TREATED WOOD FENCE

SCALE: N.T.S.

EB# 0006155



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### 6' PRESSURE TREATED WOOD FENCE

Water Distribution and Wastewater Collection System Standards  
City of Freeport  
Walton County  
Florida

DATE:

11/14

SCALE:

N/A

DRAWN:

SOE

CHECKED:

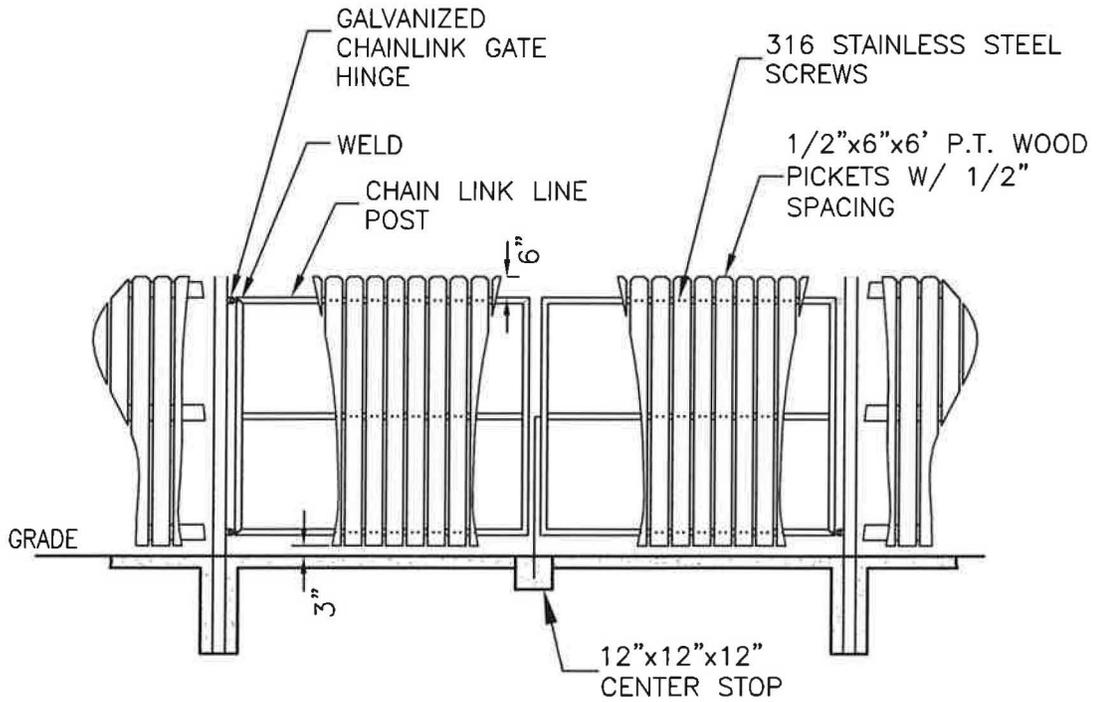
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PROJECT NO.

493.000

SHEET

LS-8



**DETAIL - PRESSURE TREATED WOOD GATE**

SCALE: N.T.S.

EB# 0006155

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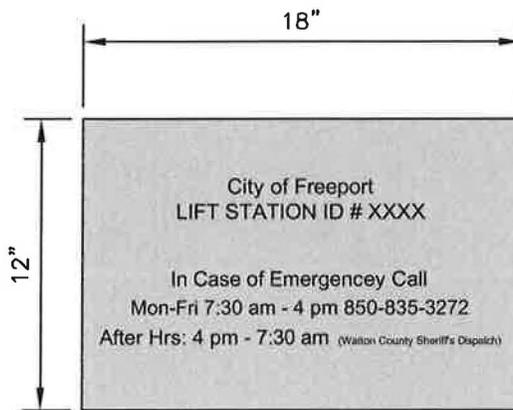
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**PRESSURE TREATED WOOD GATE**  
 Water Distribution and Wastewater Collection System Standards  
 City of Freeport  
 Walton County  
 Florida

DATE: 11/14	PROJECT NO. 493.000
SCALE: N/A	SHEET LS-9
DRAWN: SOE	
CHECKED: CLK	



NOTE: WHITE PAINTED ALUMINUM WITH  
1-1/2" BLACK VINYL LETTERS

**DETAIL - LIFT STATION SIGN**

SCALE: N.T.S.

EB# 0006155



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**LIFT STATION SIGN**

Water Distribution and Wastewater Collection System Standards  
City of Freeport  
Walton County  
Florida

DATE:

11/14

SCALE:

N/A

DRAWN:

SOE

CHECKED:

CLK

PROJECT NO.

493.000

SHEET

LS-10

# **BASIC ELECTRICAL REQUIREMENTS**

## **SCOPE**

THIS SCOPE COVERS THE FURNISHING, INSTALLATION, TESTING, ADJUSTING AND PLACING IN OPERATION ALL ELECTRICAL EQUIPMENT, DEVICES, FACILITIES, MATERIALS, AND AUXILIARY ITEMS NECESSARY FOR THE COMPLETE AND SUCCESSFUL OPERATION OF ALL ELECTRICAL EQUIPMENT AS HEREIN DESCRIBED, SHOWN ON THE PLANS, OR DEEMED NECESSARY FOR THE COMPLETION OF THE ELECTRICAL PORTION OF THE PROJECT. IT IS THE INTENT TO OUTLINE THE ELECTRICAL REQUIREMENTS OF THE CONTRACT IN ORDER TO PROVIDE THE INFORMATION NECESSARY FOR THE CONSTRUCTION OF A FULLY OPERATIONAL SYSTEM AS SHOWN ON THE PLANS AND AS HEREIN DESCRIBED. A COMPREHENSIVE ELECTRICAL SCOPE OF WORK IS AS FOLLOWS:

EQUIPMENT

- POWER/ELECTRICAL SYSTEM
- LIFT STATION ELECTRICAL
- UTILITY WORK
- CONNECTION OF ELECTRICALLY POWERED MECHANICAL

OPERATIONAL

- TEMPORARY CONSTRUCTION POWER
- ALL INCIDENTALS NECESSARY FOR A COMPLETE AND FULLY ELECTRICAL SYSTEM.

## **WORKING CLEARANCES**

WORKING CLEARANCES AROUND EQUIPMENT REQUIRING ELECTRICAL SERVICES SHALL BE VERIFIED BY CONTRACTOR TO COMPLY WITH CODE REQUIREMENTS. SHOULD THERE BE APPARENT VIOLATIONS OF CLEARANCES, THE CONTRACTOR SHALL NOTIFY THE ENGINEER BEFORE PROCEEDING WITH CONNECTION OR PLACING OF EQUIPMENT.

IN THE CASE OF PANEL BOARDS, SAFETY SWITCHES AND OTHER EQUIPMENT REQUIRING WIRE AND CABLE TERMINATIONS, THE CONTRACTOR SHALL ASCERTAIN THAT LUG SIZES AND WIRING GUTTERS OR SPACE ALLOWED FOR PROPER ACCOMMODATION AND TERMINATION OF THE WIRES AND CABLES ARE ADEQUATE.

## **WORKMANSHIP**

ALL WORK SHALL BE ACCOMPLISHED BY PERSONS SKILLED IN PERFORMANCE OF THE REQUIRED TASK. ALL WORK SHALL BE DONE IN KEEPING WITH CONVENTIONS OF THE TRADE. WORK OF THIS DIVISION SHALL BE CLOSELY COORDINATED WITH WORK OF OTHER TRADES TO AVOID CONFLICT AND INTERFERENCE.

ALL CONDUCTORS INSIDE THE LIFT STATION ENCLOSURE SHALL BE IDENTIFIED WITH STANDARD VINYL-CLOTH SELF ADHESIVE CABLE/CONDUCTOR MARKERS OF WRAP-AROUND TYPE. MARKERS SHALL BE PLASTIC COATED AND PRE-NUMBERED TO SHOW CIRCUIT IDENTIFICATION. WRITE-ON TYPE MARKERS WILL NOT BE ACCEPTED. CONDUCTORS AND CABLES IN MANHOLES AND HANDHOLES SHALL BE IDENTIFIED BY BRASS TAGS WITH DIE STAMPED LETTERING.

## **UTILITIES**

ARRANGE WITH CITY OF FREEPORT FOR THE SERVICES AND INSTALL THE SERVICES IN ACCORDANCE WITH CITY OF FREEPORT REQUIREMENTS, REGULATIONS AND RECOMMENDATIONS.

## **GUARANTEE**

THE CONTRACTOR SHALL GUARANTEE ALL OTHER ELECTRICAL SYSTEMS, MATERIALS AND WORKMANSHIP TO BE FREE FROM DEFECTS FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE. HE SHALL CORRECT ALL DEFECTS ARISING WITHIN THIS PERIOD UPON NOTIFICATION BY THE OWNER OR ENGINEER, WITHOUT ADDITIONAL COMPENSATION.

## **MATERIAL STANDARDS**

MATERIAL SHALL BE NEW AND COMPLY WITH STANDARDS OF UNDERWRITERS' LABORATORIES, INC., WHERE STANDARDS HAVE BEEN ESTABLISHED FOR THE PARTICULAR PRODUCT AND THE VARIOUS NEMA, ANSI, ASTM, IEEE, AEIC, IPCEA OR OTHER PUBLICATIONS REFERENCED.

## **TEST EQUIPMENT**

THE CONTRACTOR SHALL PROVIDE ALL TEST EQUIPMENT AND SUPPLIES DEEMED NECESSARY BY THE ENGINEER/INSPECTOR AT NO EXTRA COST TO THE OWNER. THESE SUPPLIES SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING: VOLT METERS, AMP METERS, LIGHT METERS, FUEL, GENERATOR LOAD BANKS, WATT METERS, HARMONIC DISTORTION TEST EQUIPMENT, AND OSCILLOSCOPES.

## **SUBMITTAL**

EB# 0008155



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### **BASIC ELECTRICAL REQUIREMENTS**

Water Distribution and Wastewater Collection System Standards  
City of Freeport  
Walton County  
Florida

DATE: 11/14	PROJECT NO. 493.000
SCALE: N/A	SHEET E-1
DRAWN: SOE	
CHECKED: CLK	

SUBMITTAL

SUBMIT SHOP DRAWING FOR APPROVAL BY THE OWNER.

SUBMIT SHOP DRAWINGS AND PRODUCT DATA GROUPED TO INCLUDE COMPLETE SUBMITTAL OF RELATED SYSTEMS, PRODUCTS, AND ACCESSORIES IN A SINGLE SUBMITTAL. NO ELECTRICAL WORK MAY BE PERFORMED UNTIL ALL SHOP DRAWINGS ARE APPROVED. SUBMIT SHOP DRAWINGS ON THE FOLLOWING SYSTEMS AS GROUPED BELOW:

POWER/ELECTRICAL

SYSTEM

- CONDUIT
- WIRE
- PULL BOXES
- PANEL BOARDS
- PANEL BOARD LAYOUTS
- BREAKERS
- DISCONNECTS
- FUSES
- CONDUIT SUPPORT SYSTEMS
- WIRING DEVICES
- PUMP STARTERS
- TRANSFORMERS
- SURGE PROTECTION DEVICES

LIFT STATION

CONTROL SYSTEM

- PUMP CONTROLLER
- FLOATS
- H-O-A SWITCHES
- HOUR METERS
- NAME PLATES
- PUMP STARTERS
- CONTROL RELAYS
- CONTROL SCHEMATICS

UTILITY WORK

- UTILITY COORDINATION INFORMATION
- UTILITY CONDUIT
- MISC.

MARK DIMENSIONS AND VALUES IN UNITS TO MATCH THOSE SPECIFIED.

REGULATORY REQUIREMENTS

CONFORM TO APPLICABLE SECTIONS OF THE BUILDING CODE FOR CITY AND ALL LOCAL RULES, REGULATIONS AND ORDINANCES.

ELECTRICAL: CONFORM TO NFPA 70. CONFORM TO NEC 1996.

OBTAIN PERMITS, AND REQUEST INSPECTIONS FROM AUTHORITY HAVING JURISDICTION.

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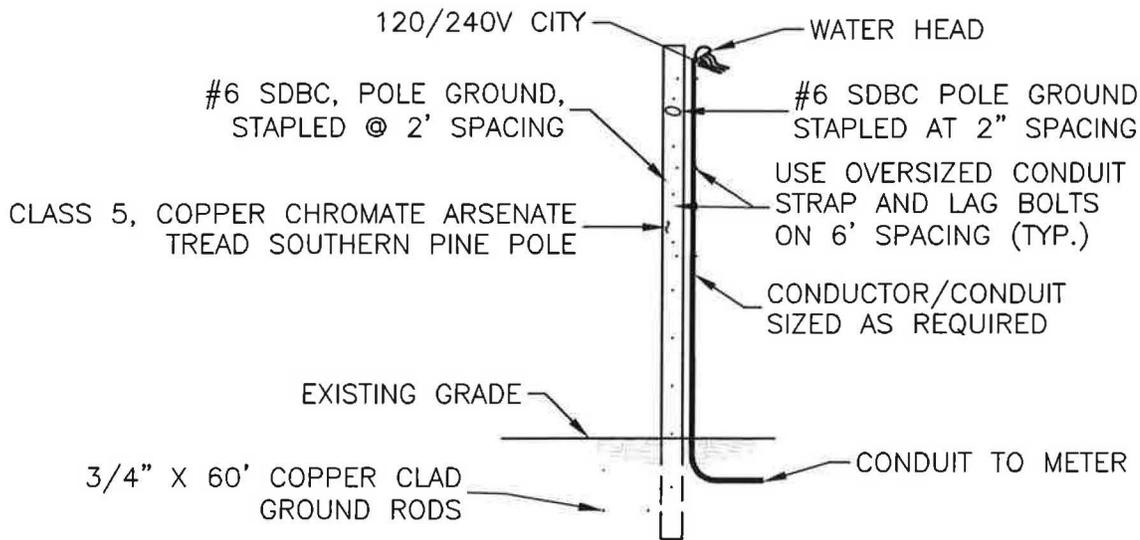
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**SUBMITTAL**

Water Distribution and Wastewater Collection System Standards  
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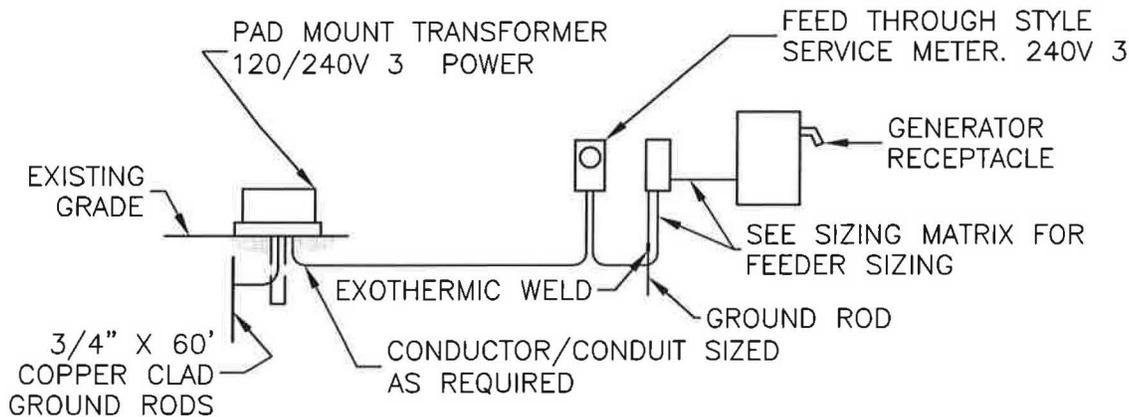
DATE: 11/14	PROJECT NO. 493.000
SCALE: N/A	
DRAWN: SOE	SHEET E-2
CHECKED: CLK	



**NOTE:**  
 CONTRACTOR TO COORDINATE WITH CITY  
 AND INSTALL METERING EQUIPMENT IN  
 ACCORDANCE WITH RULES AND REGULATIONS.  
 ( IF REQUIRED )

### **DETAIL - SERVICE POLE CONNECTION**

SCALE: N.T.S.



**NOTE:**  
 CONTRACTOR TO COORDINATE WITH CITY.  
 INSTALL METERING EQUIPMENT IN ACCORDANCE WITH  
 RULES AND REGULATIONS.

### **DETAIL - PAD MOUNT TRANSFORMER CONNECTION**

SCALE: N.T.S.

EB# 0006155



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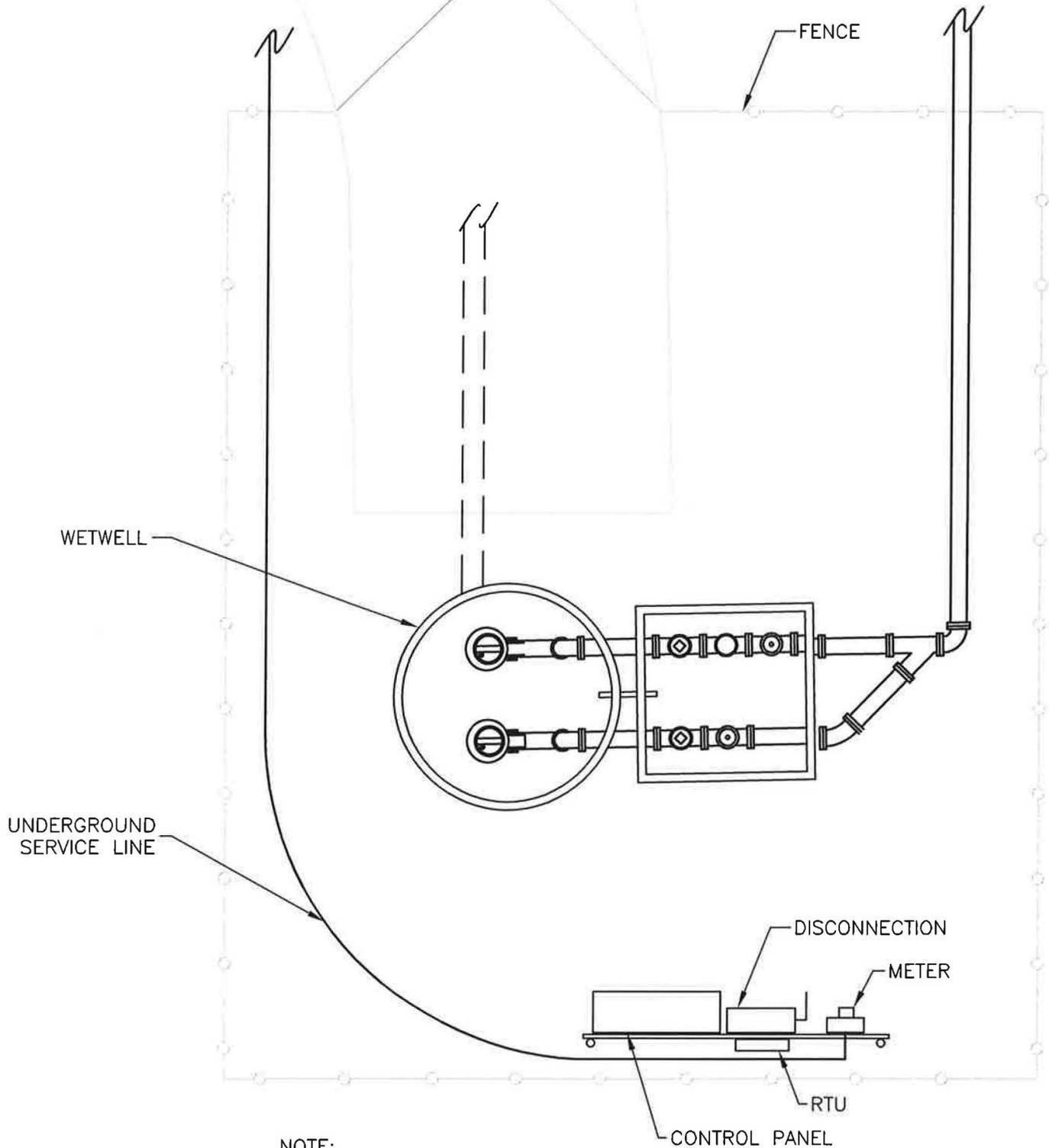
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**SUBMITTAL**

Water Distribution and Wastewater Collection System Standards  
 City of Freeport  
 Walton County  
 Florida

DATE:  
11/14  
 SCALE:  
N/A  
 DRAWN:  
SOE  
 CHECKED:  
CLK

PROJECT NO.  
493.000  
 SHEET  
E-3



**NOTE:**  
 KILOWATT HOUR METER SHALL BE POSITIONED  
 SO THAT METER READING CAN BE OBSERVED  
 WITHOUT ENTERING FENCED IN AREA

**DETAIL - LIFT STATION PLAN-ELECTRIC**

SCALE: N.T.S.

EB# 0006155

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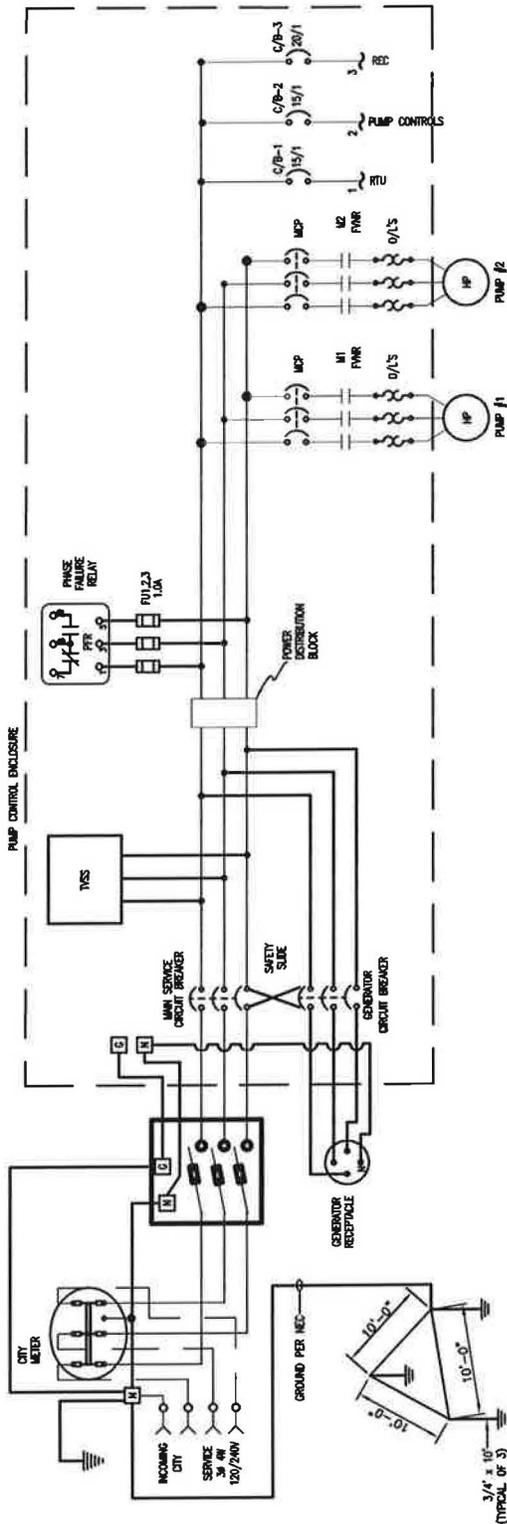
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**LIFT STATION PLAN ELECTRICAL**  
 Water Distribution and Wastewater Collection System Standards  
 City of Freeport  
 Walton County  
 Florida

DATE: 11/14	PROJECT NO. 493.000
SCALE: N/A	SHEET E-4
DRAWN: SOE	
CHECKED: CLK	

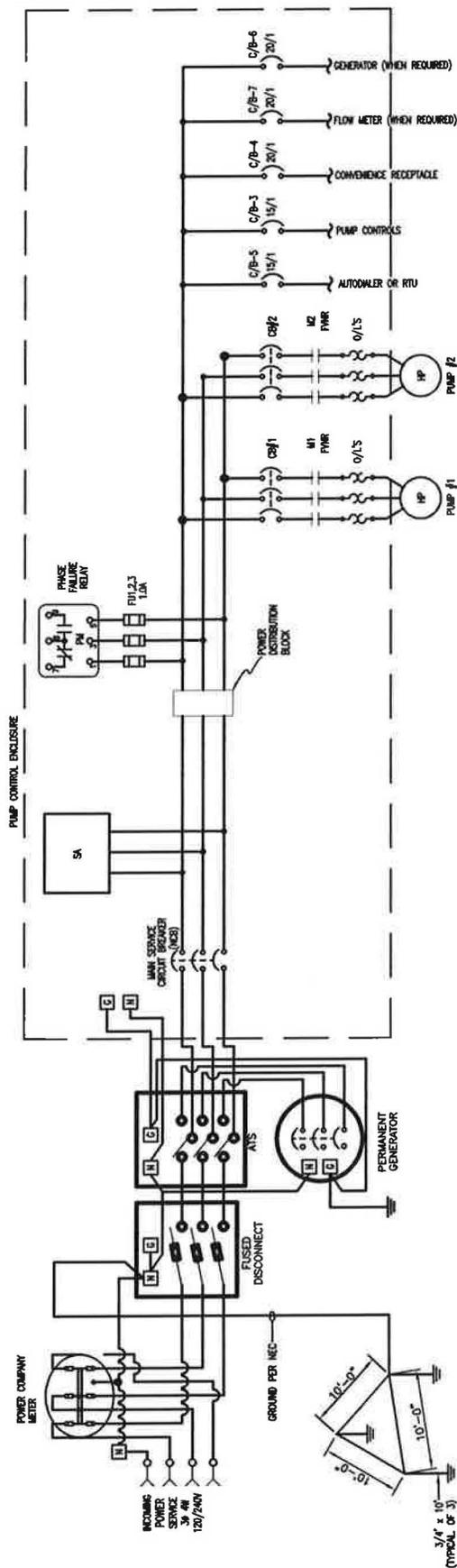


# DETAIL - SINGLE LINE DIAGRAM

SCALE: N.T.S.

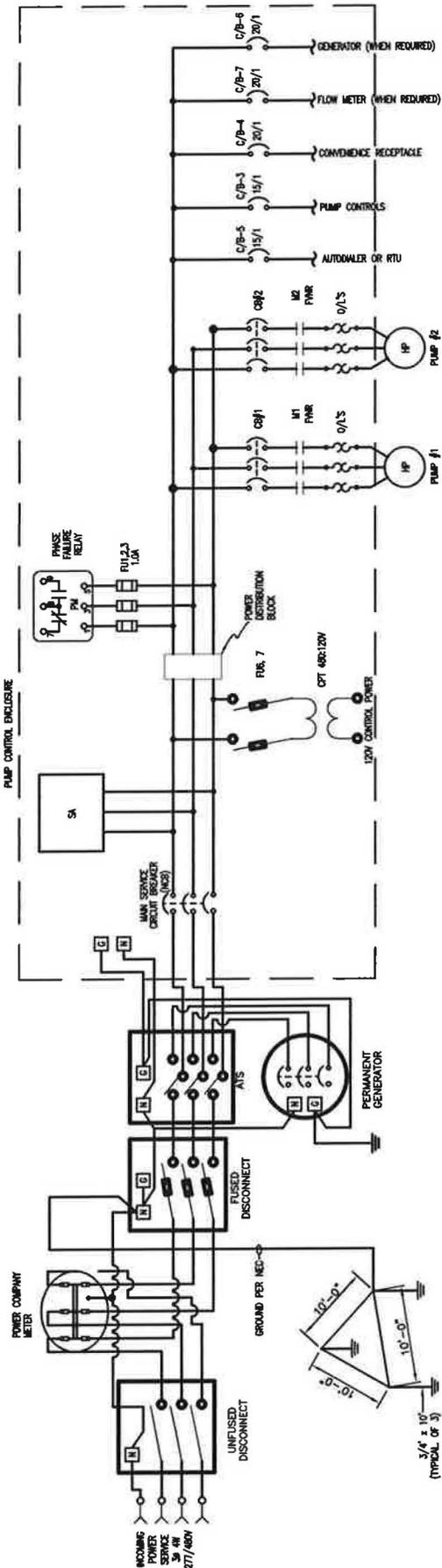
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SCALE: N/A	SHEET E-5
DRAWN: SOE	
CHECKED: CLK	

EB# 0006155



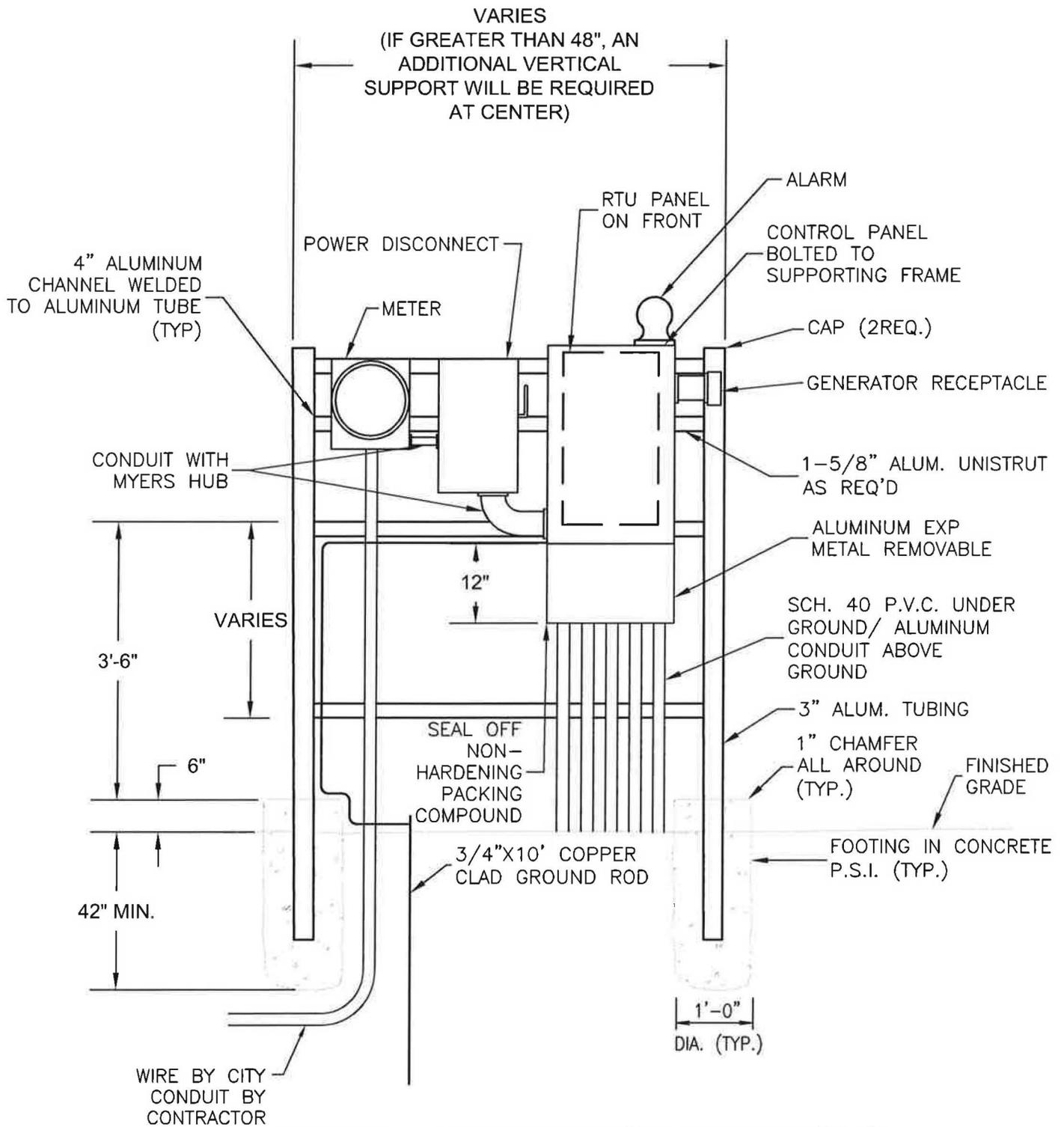
### DETAIL - SINGLE LINE DIAGRAM

SCALE: N.T.S.  
120/240 V WITH PERMANENT GENERATOR



### DETAIL - SINGLE LINE DIAGRAM

SCALE: N.T.S.  
277/480 V WITH PERMANENT GENERATOR



## DETAIL - LIFT STATION CONTROLS

SCALE: N.T.S.

EB# 0006155

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### LIFT STATION CONTROLS MTG DETAILS

Water Distribution and Wastewater Collection System Standards  
City of Freeport  
Walton County  
Florida

DATE:

11/14

SCALE:

N/A

DRAWN:

SOE

CHECKED:

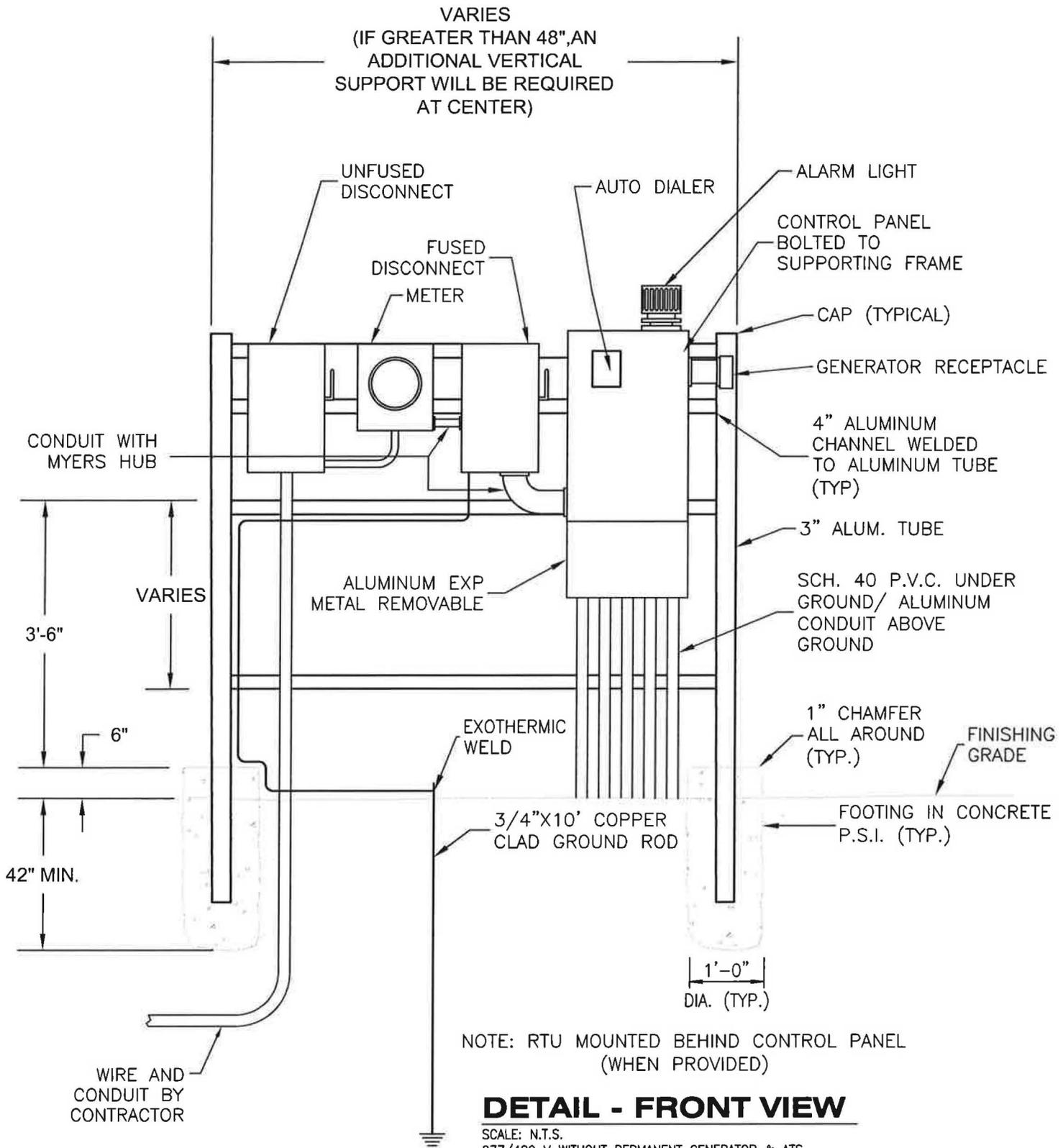
CLK

PROJECT NO.

493.000

SHEET

E-7



**DETAIL - FRONT VIEW**

SCALE: N.T.S.  
277/480 V WITHOUT PERMANENT GENERATOR & ATS

EB# 0006155

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CIVIL • SURVEYING • SITE PLANNING

324 MARINA DRIVE  
PORT ST. JOE, FL 32456  
(850) 227-1200

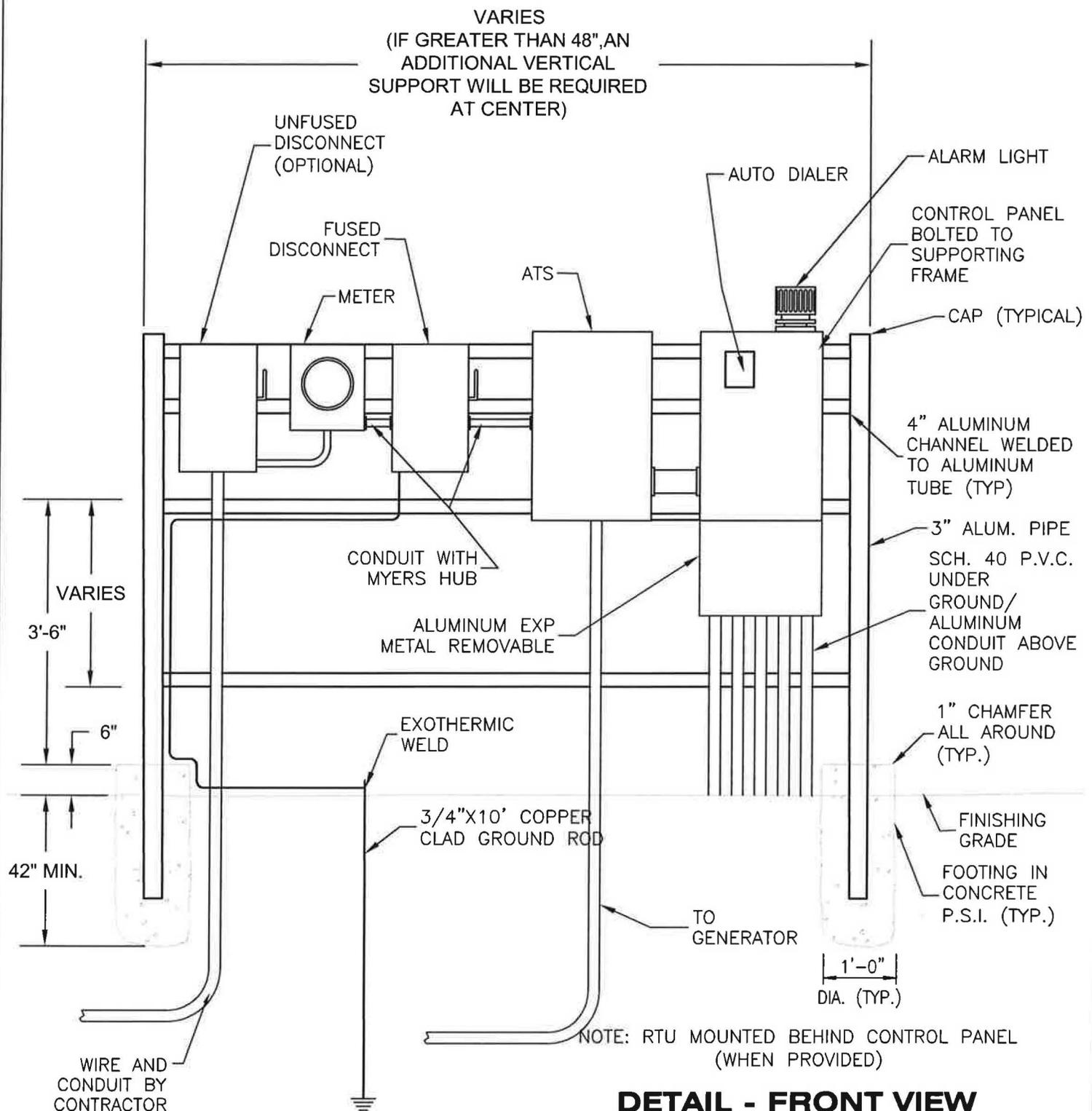
203 ABERDEEN PARKWAY  
PANAMA CITY, FL 32405  
(850) 522-0644

877 COUNTY ROAD 393  
SANTA ROSA BEACH, FL 32459  
(850) 267-0759

**LIFT STATION CONTROLS MTG DETAILS**

Water Distribution and Wastewater Collection System Standards  
City of Freeport  
Walton County  
Florida

DATE: 11/14	PROJECT NO. 493.000
SCALE: N/A	SHEET E-8
DRAWN: SOE	
CHECKED: CLK	



### DETAIL - FRONT VIEW

SCALE: N.T.S. WITH PERMANENT GENERATOR & ATS

EB# 0006155

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324 MARINA DRIVE  
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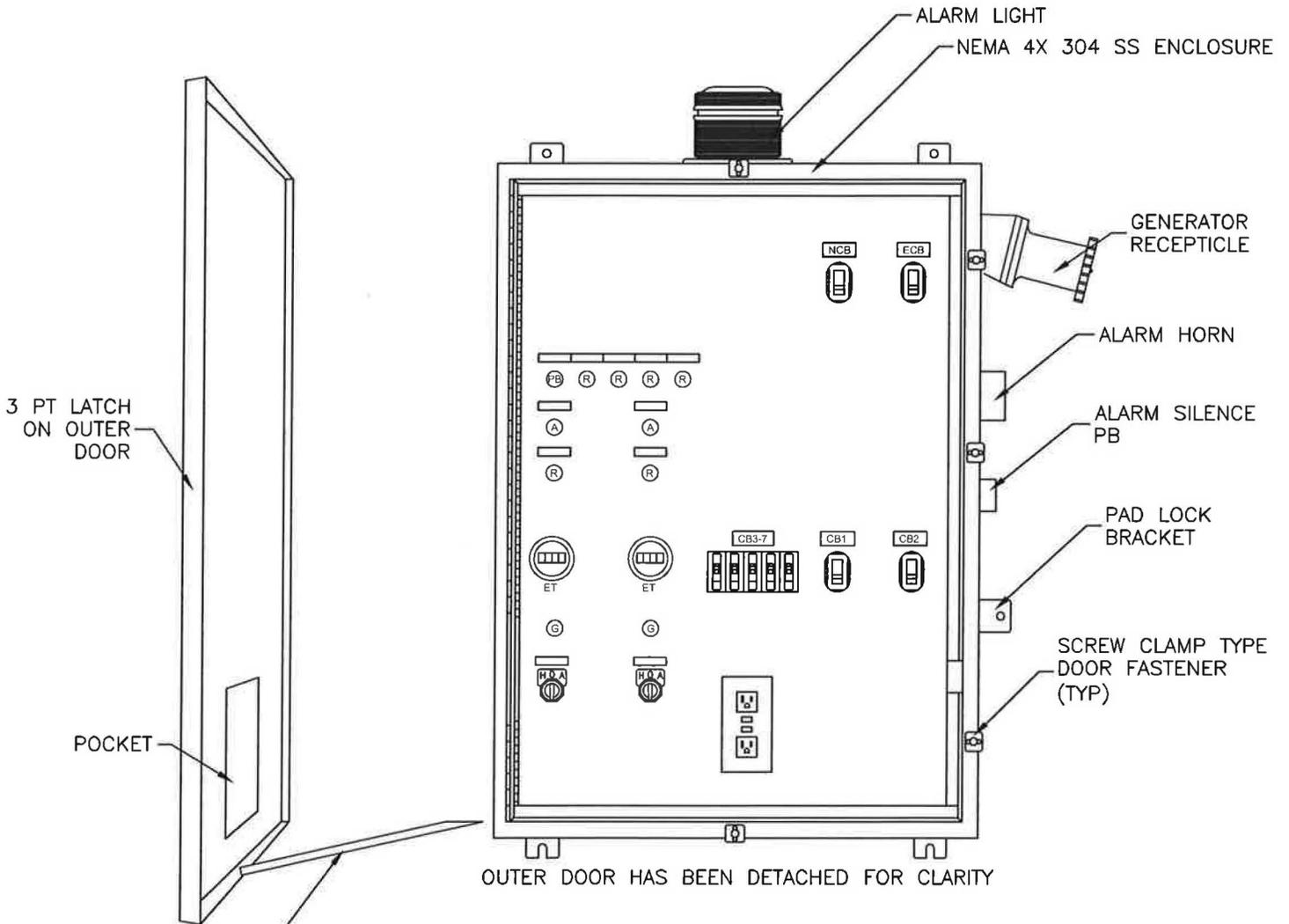
203 ABERDEEN PARKWAY  
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#### LIFT STATION CONTROLS MTG DETAILS

Water Distribution and Wastewater Collection System Standards  
City of Freeport  
Walton County  
Florida

DATE: 11/14	PROJECT NO. 493.000
SCALE: N/A	SHEET E-9
DRAWN: SOE	
CHECKED: CLK	



**DETAIL - FRONT VIEW**

SCALE: N.T.S.  
WITHOUT PERMANENT GENERATOR & ATS

EB# 0006155

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324 MARINA DRIVE  
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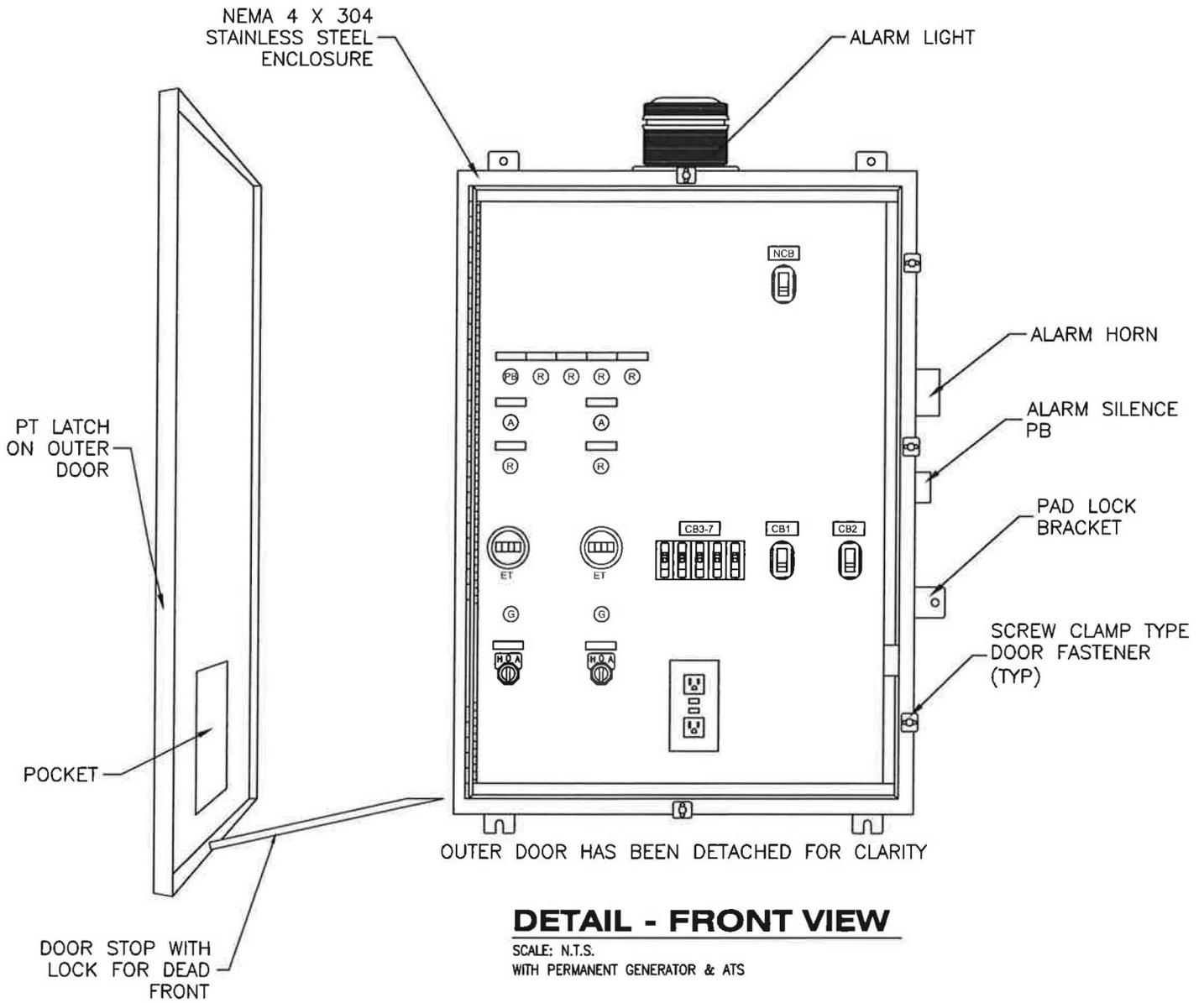
203 ABERDEEN PARKWAY  
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**LIFT STATION ENCLOSURE DETAILS**

Water Distribution and Wastewater Collection System Standards  
City of Freeport  
Walton County  
Florida

DATE: 11/14	PROJECT NO. 493.000
SCALE: N/A	SHEET E-10
DRAWN: SOE	
CHECKED: CLK	



EB# 0008155

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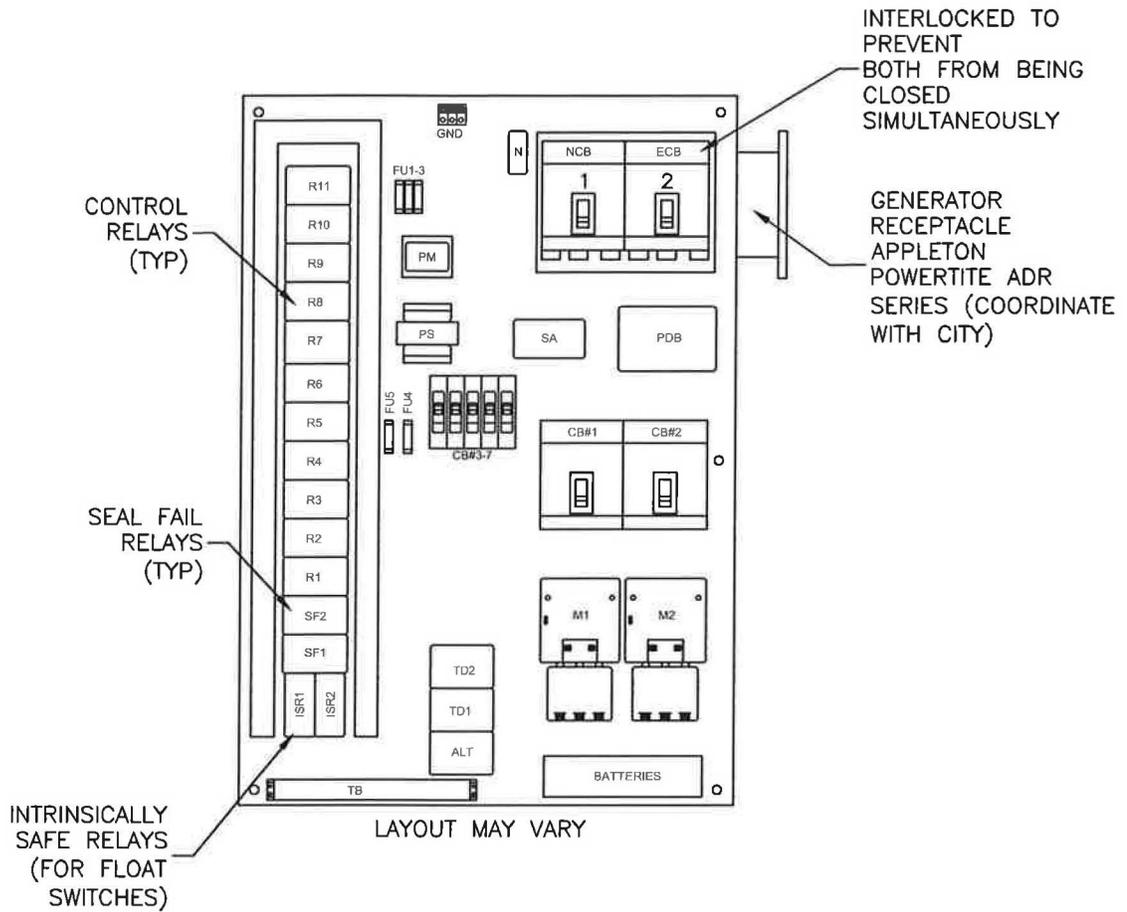
203 ABERDEEN PARKWAY  
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**LIFT STATION ENCLOSURE DETAILS**

Water Distribution and Wastewater Collection System Standards  
City of Freeport  
Walton County  
Florida

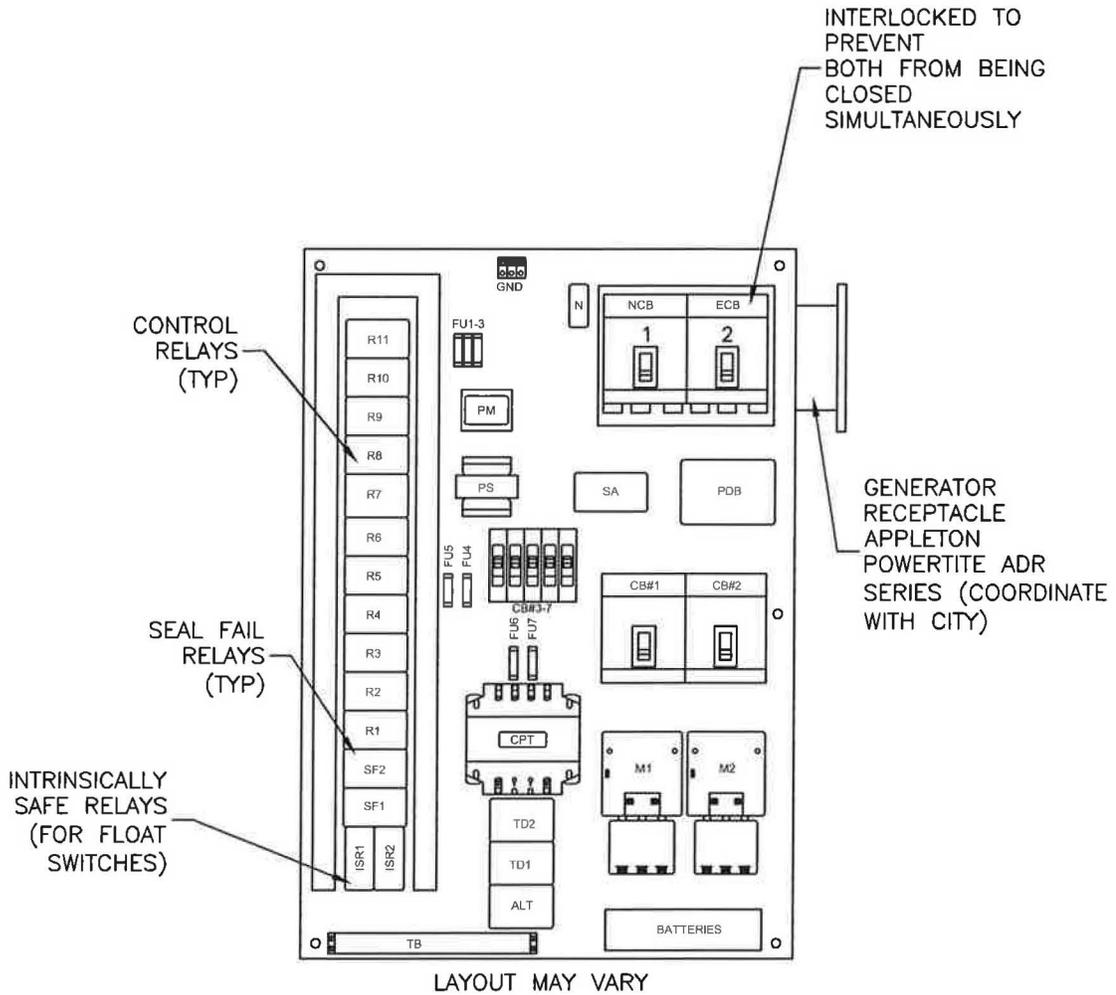
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SCALE: N/A	SHEET E-11
DRAWN: SOE	
CHECKED: CLK	



**DETAIL - FRONT VIEW**

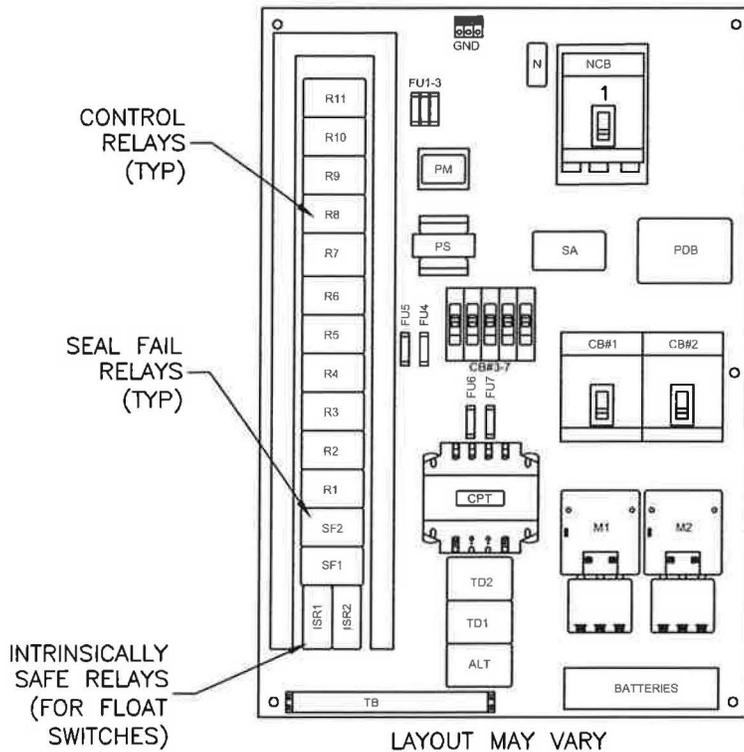
SCALE: N.T.S.  
120/240 V WITHOUT PERMANENT GENERATOR & ATS

EB# 0006155



**DETAIL - FRONT VIEW**

SCALE: N.T.S.  
277/480 V WITHOUT PERMANENT GENERATOR & ATS



### DETAIL - FRONT VIEW

SCALE: N.T.S.

277/480 V WITH PERMANENT GENERATOR & ATS

EB# 0006155



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203 ABERDEEN PARKWAY  
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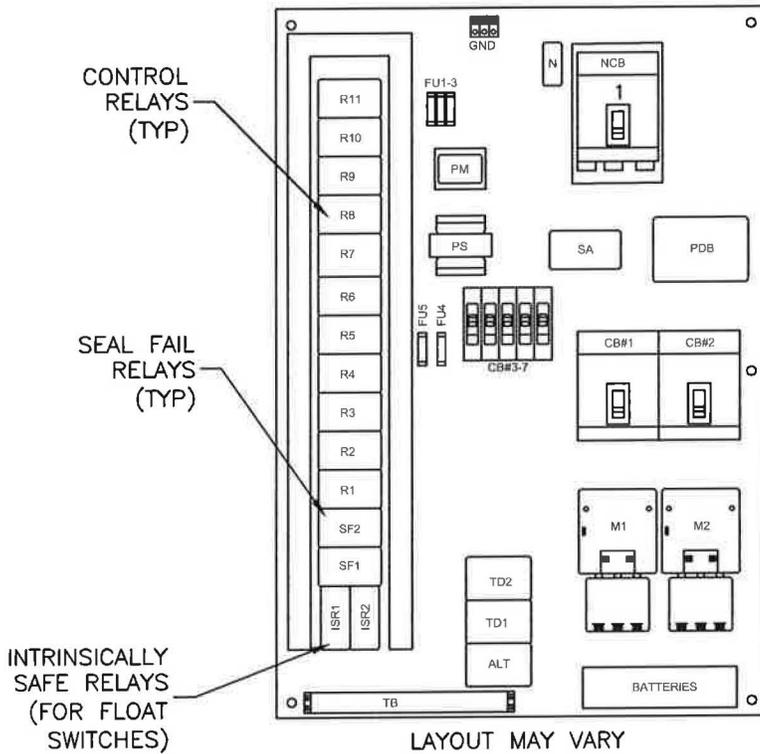
877 COUNTY ROAD 303  
 SANTA ROSA BEACH, FL 32459  
 (850) 297-0759

#### LIFT STATION CONTROL PANEL DETAILS

Water Distribution and Wastewater Collection System Standards  
 City of Freeport  
 Walton County  
 Florida

DATE:  
11/14  
SCALE:  
N/A  
DRAWN:  
SOE  
CHECKED:  
CLK

PROJECT NO.  
493.000  
SHEET  
E-14



**DETAIL - FRONT VIEW**

SCALE: N.T.S.

120/240 V WITH PERMANENT GENERATOR & ATS

EB# 0006155



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**LIFT STATION CONTROL PANEL DETAILS**

Water Distribution and Wastewater Collection System Standards  
 City of Freeport  
 Walton County  
 Florida

DATE:

11/14

SCALE:

N/A

DRAWN:

SOE

CHECKED:

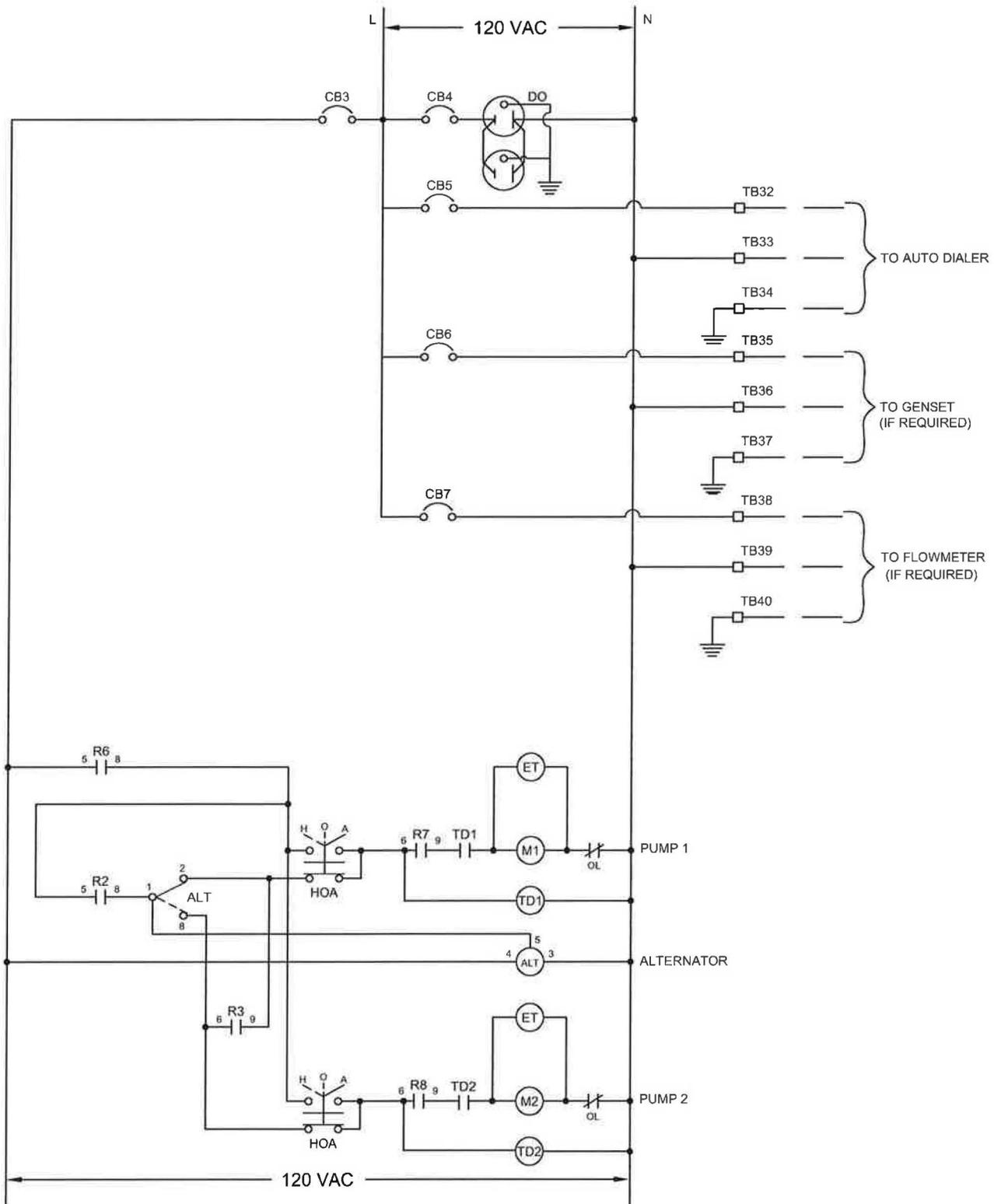
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PROJECT NO.

493.000

SHEET

E-15



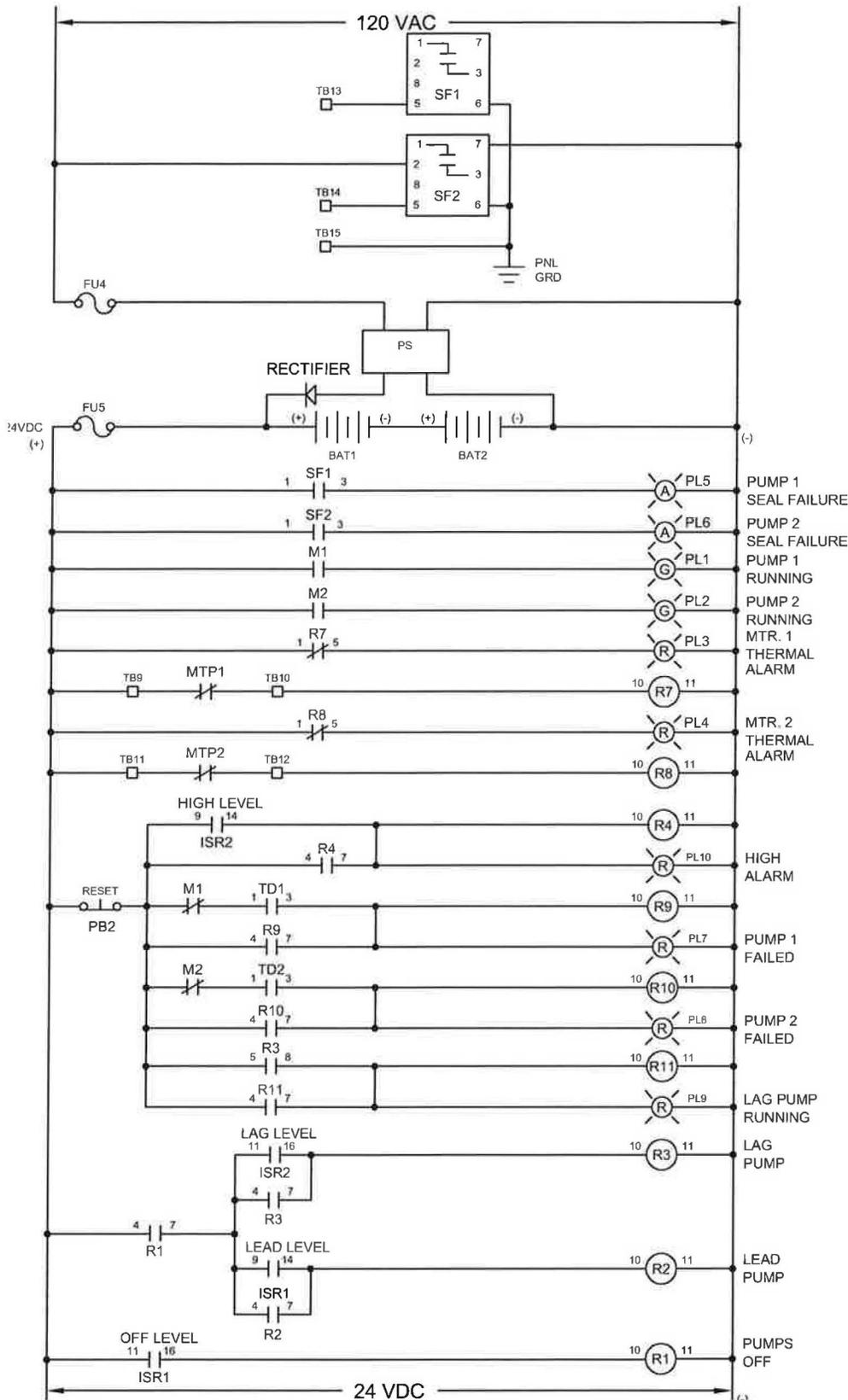
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CONTINUED ON SHEET E-18

### DETAIL - CONTROL LADDER DIAGRAM

SCALE: N.T.S.

EB# 0006155



CONTINUED ON SHEET E-18

CONTINUED ON SHEET E-18

### DETAIL - CONTROL LADDER DIAGRAM

SCALE: N.T.S.

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LIFT STATION CONTROL LADDER DIAGRAM

Water Distribution and Wastewater Collection System Standards

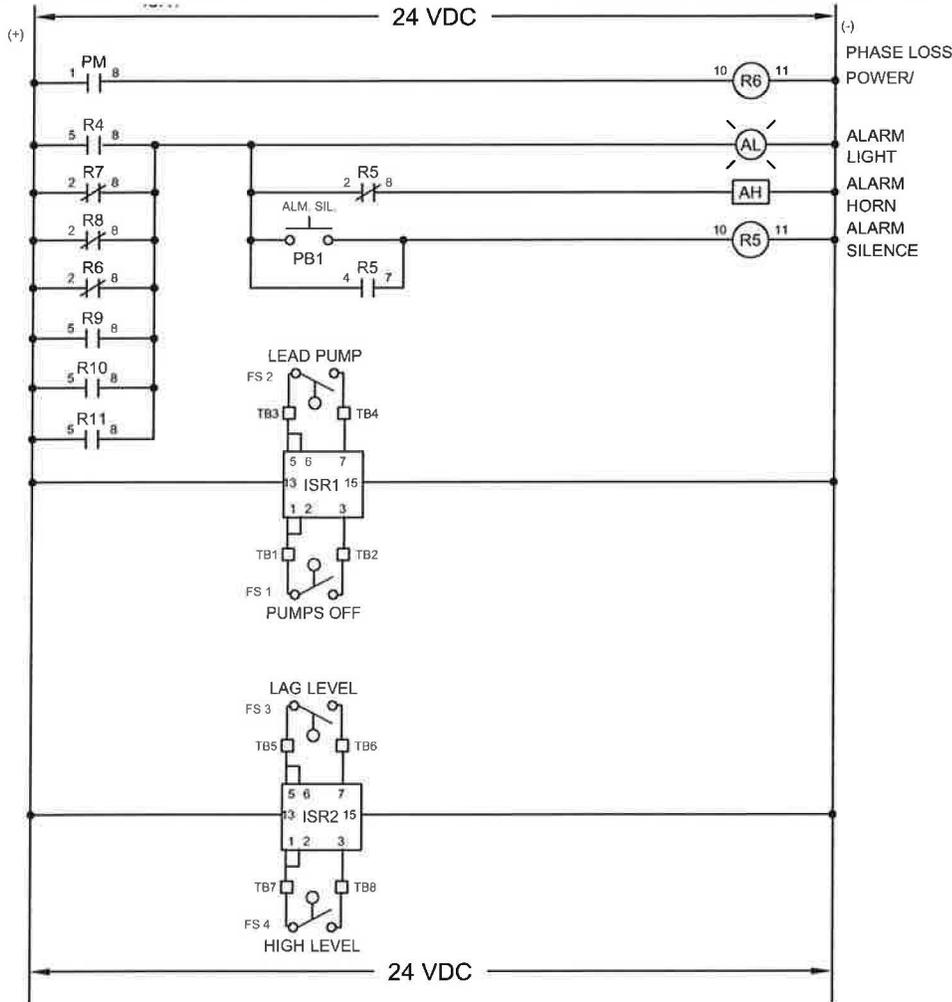
City of Freeport  
 Walton County  
 Florida

DATE: 11/14	PROJECT NO. 493.000
SCALE: N/A	SHEET E-17
DRAWN: SOE	
CHECKED: CLK	

EB# 0006155

CONTINUED ON SHEET E-17

CONTINUED ON SHEET E-17



### DETAIL - CONTROL LADDER DIAGRAM

SCALE: N.T.S.

EB# 0006155



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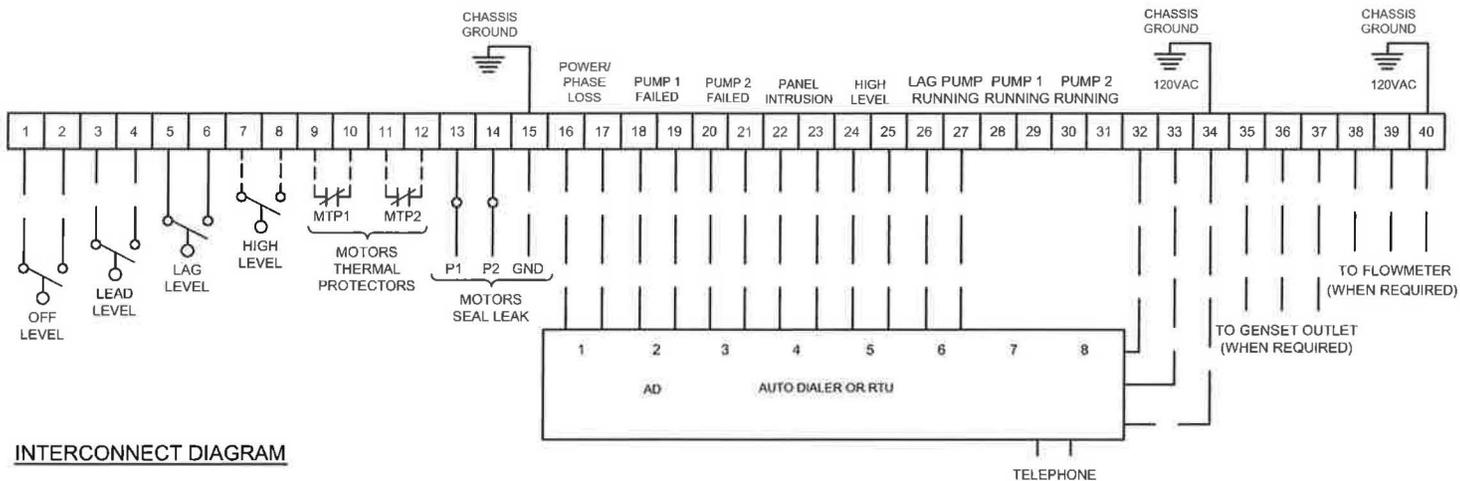
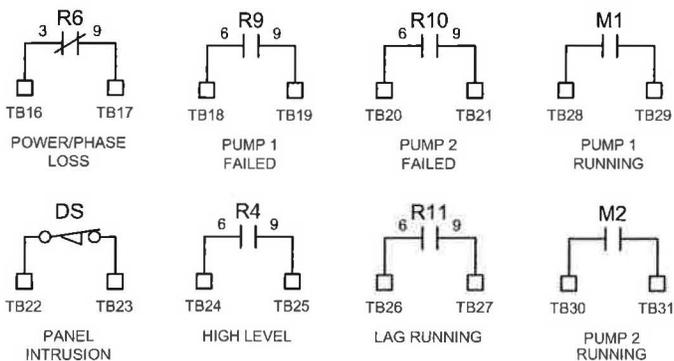
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**LIFT STATION CONTROL LADDER DIAGRAM**  
 Water Distribution and Wastewater Collection System Standards  
 City of Freeport  
 Walton County  
 Florida

DATE:  
11/14  
 SCALE:  
N/A  
 DRAWN:  
SOE  
 CHECKED:  
CLK

PROJECT NO.  
493.000  
 SHEET  
E-18



**INTERCONNECT DIAGRAM**

**DETAIL - INTERCONNECT DIAGRAM**

SCALE: N.T.S.

EB# 0006155

**PREBLE-RISH INC**  
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**LIFT STATION CONTROL LADDER DIAGRAM**  
 Water Distribution and Wastewater Collection System Standards  
 City of Freeport  
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 Florida

DATE: 11/14	PROJECT NO. 493.000
SCALE: N/A	SHEET E-19
DRAWN: SOE	
CHECKED: CLK	

**PARTS LIST**

CODE	DESCRIPTION	MANUFACTURER / PART NO.	NOTES
ATS	AUTO TRANSFER SWITCH	ASCO OR APPROVED EQUAL	OPEN TRANSITION
ET	HOOR METER	REDINGTON MODEL 710-002	
PDB	POWER DISTRIBUTION BLOCK	MARATHON 1433555	SIZE AS REQUIRED
PS	POWER SUPPLY	ASTRODYNE MODEL SP-75-27V	ADJUST TO TRICKLE CHARGE BATTERY
ALT	PUMP ALTERNATOR	DIVERSIFIED ELECTRIC ARX-120-ABA	
PM	PHASE MONITOR	TIMEMARK MODEL 258B	PROVIDE SOCKET
AH	ALARM HORN	EDWARDS MODEL 871P-E1	24VDC HORN
AL	ALARM LIGHT	TOMAR MODEL 824-1228 RED	24VDC STROBE LIGHT
SF1/SF2	SEAL FAIL RELAYS	SSAC LLC4 4 A 30 A	
BATTERY 1 & 2	12V 7.2AH BATTERY	PANASONIC LC-R127R2P1	TWO 12VDC BATTERIES CONNECTED TO SUPPLY 24 VDC
DS	DOOR SWITCH		FOR INTRUSION DETECTION
R1-R11	RELAYS	OMRON NO. LY3-DC24 OR AS REQUIRED	PROVIDE PTF11A SOCKET
TD1/TD2	TIME DELAY RELAY	DIVERSIFIED ELECTRONICS TDU-12-AKA	PROVIDE SOCKET
HOA	22MM H-O-A SELECTOR SWITCH	ALLEN-BRADLEY OR EQUAL	
PB1/PB2	PUSHBUTTON SWITCH	ALLEN-BRADLEY OR EQUAL	
SA1,2,3	SURGE ABSORBER	PANASONIC ERZ	SIZE PER SERVICE VOLTAGE AND GROUNDING
PL (R, G, A)	22MM 24V LED INDICATOR	ALLEN-BRADLEY OR EQUAL	R-RED G-GREEN A-AMBER
NCB, ECB	CIRCUIT BREAKER	SQUARE-D FAL OR KAL	SIZE AS REQUIRED
CB1, CB2	MOTOR CIRCUIT BREAKER	SQUARE-D FAL OR KAL	SIZE PER MOTOR HP
M1, M2	MOTOR STARTER	SQUARE-D, SIZED PER MOTOR HP	FVNR OR SOFT STARTER
FU1-3	THREE POLE BLOCK & FUSES	BUSSMAN KTK-1	SIZE ACCORDING TO UTILITY VOLTAGE
FU4	ONE POLE BLOCK & FUSE	BUSSMAN FNQ-R-2	SIZE ACCORDING TO PS
FU5	ONE POLE BLOCK & FUSE	BUSSMAN KTK-4	SIZE ACCORDING TO DC LOAD AND PS OUTPUT
FU6, FU7	TWO POLE BLOCK & FUSES	BUSSMAN FNQ-R-10	SIZE ACCORDING TO CPT SIZE AND NEC REQUIREMENTS
CONTROL POWER XFMR	CPT 3 KVA 480V-120V 1PH	SQUARE D CAT. # 9070EO10D1 OR EQUAL	
AD	AUTO DIALER	SENSAPHONE EXPRESS II	AQUA PRODUCTS OR BLUE BOOK
ISR1/ISR2	INTRINSICALLY SAFE RELAY	PHOENIX CONTACT P1/EX-ME-2NAM/COC-24VDC	
CB3, CB4, CB5, CB7	15A SINGLE POLE BREAKER	SQUARE D	
CB6	20A SINGLE POLE BREAKER	SQUARE D	FOR GENERATOR BLOCK HEAT AND BATTERY CHARGER
RECEPTACLE	15A DUPLEX RECEPTACLE		OUTLET TO BE GFCI TYPE
RECTIFIER	10A SILICON RECTIFIER		BLOCKING DIODE / RECTIFIER
RTU	SCADA WITH RADIO COMMS	DEXTER FORTSON	OPTIONAL IN LIEU OF AUTODIALER

NOTES:

- SENSAPHONE AUTO DIALER INCLUDES IT'S OWN EXTERNAL MOUNTING CABINET TO BE ATTACHED TO MOUNTING SUPPORTS, INSIDE CONTROL PANEL.
- PROVIDE ISOLATION AND BYPASS CONTACTORS WHEN SOFT STARTERS ARE PROVIDED.

EB# 0006155



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**CONTROL PANEL PARTS LIST**

Water Distribution and Wastewater Collection System Standards  
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SCALE: N/A	SHEET E-20
DRAWN: SOE	
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