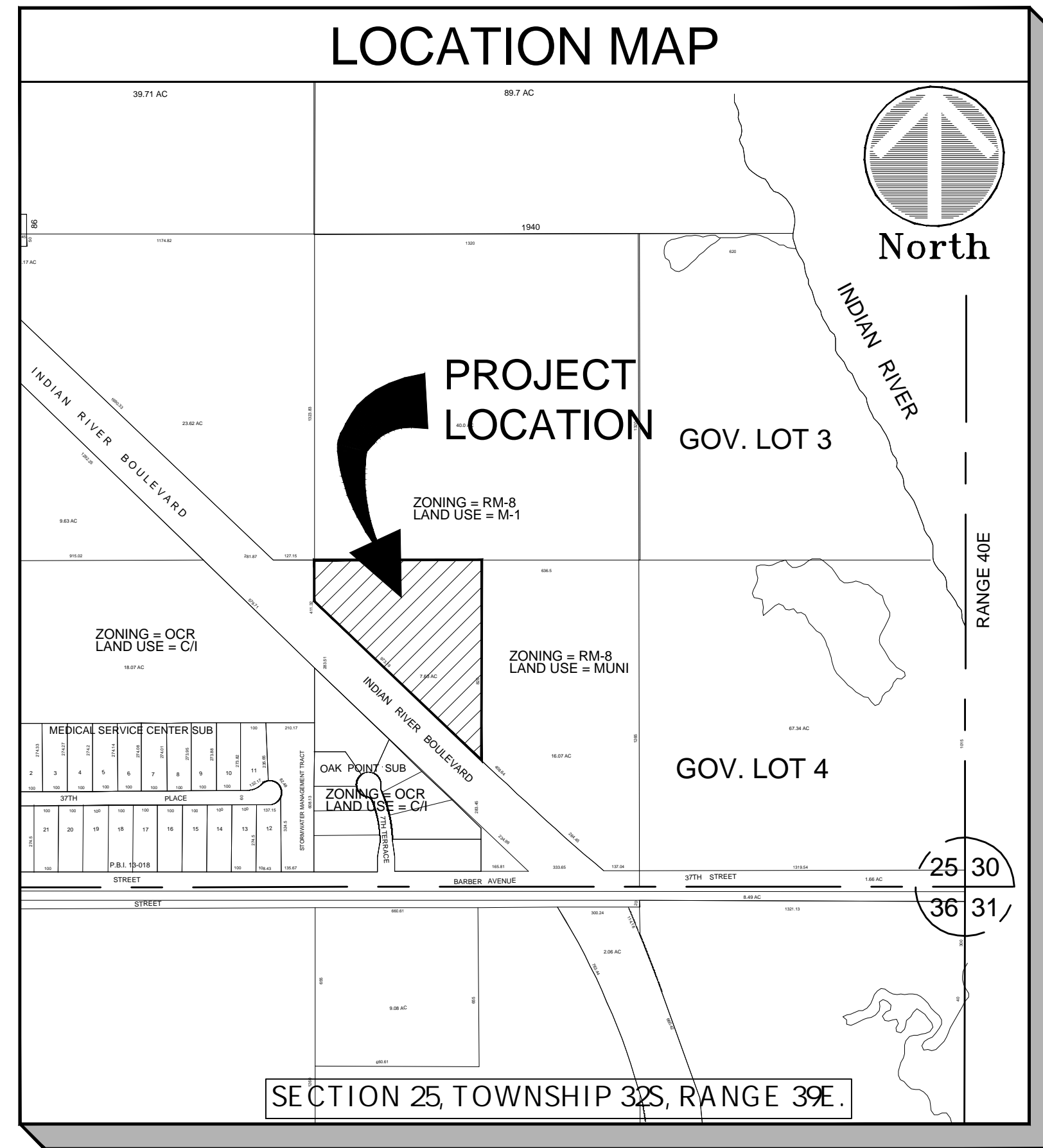


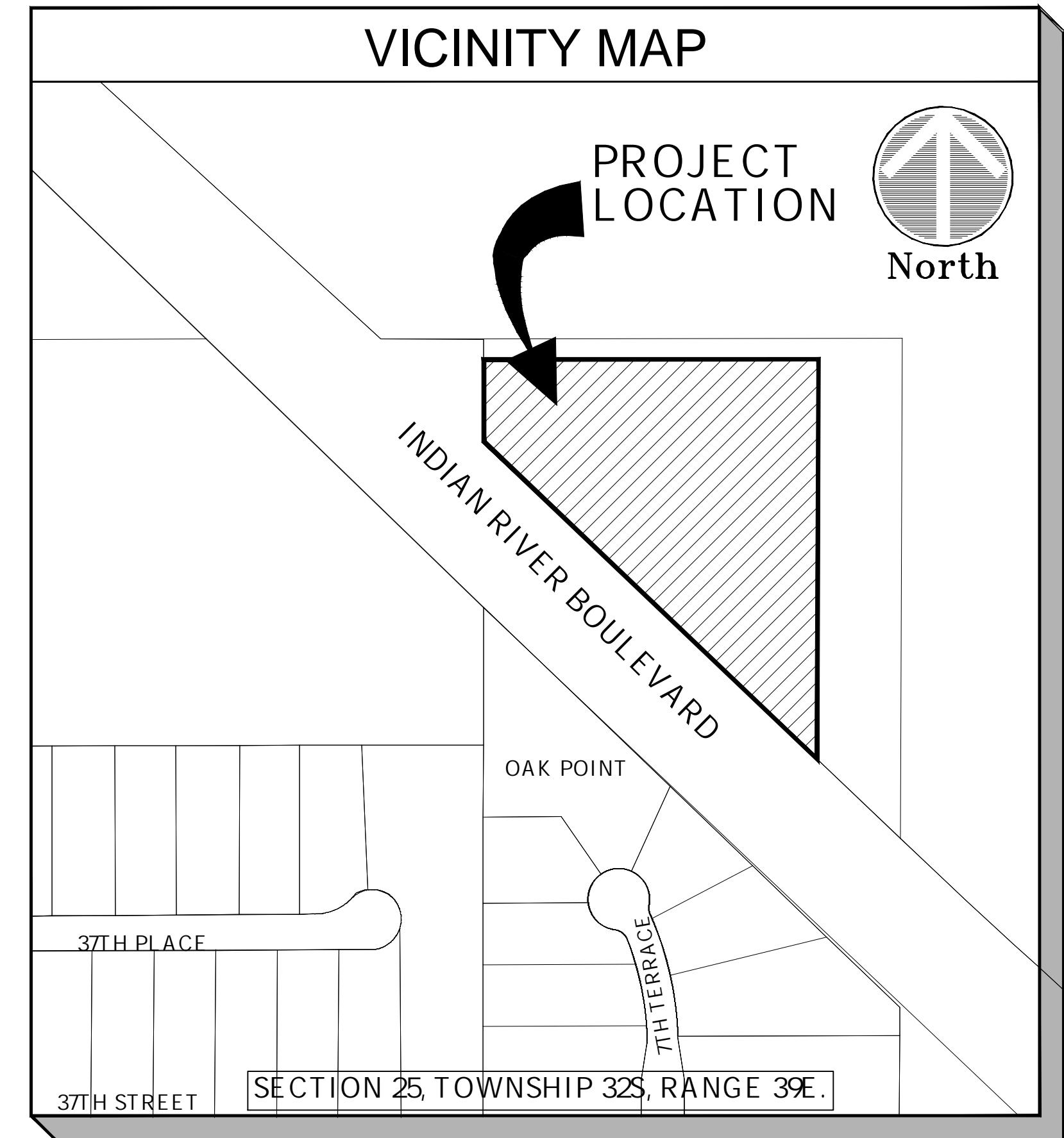
CONSTRUCTION PLAN SET

OAK LAKE APARTMENTS

CITY OF VERO BEACH, FL



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PROJECT INFORMATION

PROJECT NAME:	OAK LAKE APARTMENTS 3850 INDIAN RIVER BOULEVARD VERO BEACH, FLORIDA	SURVEYOR:	WILLIAM HAYHURST P.S.E. KMA ENGINEERING & SURVEYING 2345 14th AVENUE, SUITE 3 VERO BEACH, FLORIDA 32960 PHONE (772) 569-5505
INTENDED USE:	MULTI-FAMILY RESIDENTIAL	LANDSCAPE ARCHITECT:	MICHAEL N. SAPUSEK LA0000676 IDG DESIGN GROUP 8965 SE BRIDGE ROAD #206 HOBE SOUND, FL 33455 PHONE (772) 220-9711 FAX (772) 781-1040
MEANS OF CONVEYANCE:	FEE SIMPLE	PROJECT DESCRIPTION:	CONSTRUCTION OF A 59-UNIT MULTIFAMILY RESIDENTIAL DEVELOPMENT WITH ASSOCIATED PARKING AND AMENITIES.
OWNERS:	PILLIA 59 DEVELOPMENT, LLC 200 RAILROAD AVE, FIRST FLOOR GREENWICH, CT 06830		
ARCHITECT:	DAMON ROBLING 101 WALKER AVE. GREENACRES, FL PHONE (561) 649-6705		
ENGINEER:	BLAINE R. BERGSTRESSER, P.E. KMA ENGINEERING & SURVEYING 2345 14th AVENUE, SUITE 3 VERO BEACH, FLORIDA 32960 PHONE (772) 569-5505		

REQUIRED PERMITS

- | | |
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| <ol style="list-style-type: none"> 1. CITY OF VERO BEACH SITE PLAN 2. SJRWMD ERP 3. INDIAN RIVER COUNTY UTILITY (WATER & SEWER) 4. FDEP WATER 5. FDEP SEWER 6. INDIAN RIVER COUNTY RIGHT OF WAY PERMIT | <ol style="list-style-type: none"> 7. CITY OF VERO BEACH STORMWATER PERMIT 8. CITY OF VERO BEACH LAND CLEARING PERMIT 9. CITY OF VERO BEACH TREE REMOVAL PERMIT 10. F.D.E.P. NOTICE OF INTENT TO USE GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE & SMALL CONSTRUCTION ACTIVITIES. |
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LEGAL DESCRIPTION

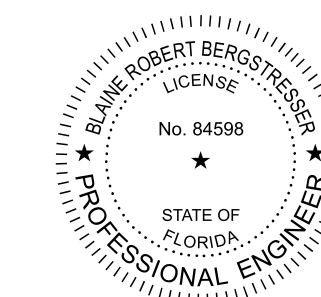
THE WEST 686.49 FEET OF THE SOUTH-WEST ONE-QUARTER OF THE SOUTH-EAST ONE-QUARTER OF SECTION 25, TOWNSHIP 32 SOUTH, RANGE 39 EAST, INDIAN RIVER COUNTY FLORIDA;
LESS AND EXCEPT:

- (1) ALL EASEMENTS AND RIGHTS-OF-WAY OF RECORD;
- (2) RIGHT-OF-WAY FOR INDIAN RIVER BOULEVARD, AS DESCRIBED IN QUIT-CLAIM DEED RECORDED IN OFFICIAL RECORDS BOOK 788 AT PAGE 2723, AND WARRANTY DEED RECORDED IN OFFICIAL RECORDS BOOK 790 AT PAGE 2305, PUBLIC RECORDS OF INDIAN RIVER COUNTY, FLORIDA;
- (3) THE FOLLOWING DESCRIBED PARCEL: A PARCEL OF LAND LYING IN SECTION 25, TOWNSHIP 32 SOUTH, RANGE 39 EAST, INDIAN RIVER COUNTY, FLORIDA, DESCRIBED AS FOLLOWS: BEGIN AT THE INTERSECTION OF THE NORTH/SOUTH QUARTER SECTION LINE OF SAID SECTION 25 AND THE NORTH RIGHT-OF-WAY LINE OF 37TH STREET (A 110.00 FOOT RIGHT-OF-WAY); THENCE NORTH 00°01'22" WEST ALONG SAID QUARTER SECTION LINE, A DISTANCE OF 858.62 FEET TO THE SOUTHWESTERLY RIGHT-OF-WAY LINE OF INDIAN RIVER BOULEVARD (A 200.00 FOOT RIGHT-OF-WAY); THENCE SOUTH 44°56'05" EAST ALONG SAID RIGHT-OF-WAY LINE, A DISTANCE OF 972.62 FEET; THENCE SOUTH 00°01'22" EAST, A DISTANCE OF 167.00 FEET TO A POINT ON THE AFOREMENTIONED NORTH RIGHT-OF-WAY LINE OF 37TH STREET; THENCE SOUTH 89°44'30" WEST, ALONG SAID RIGHT-OF-WAY LINE, A DISTANCE OF 686.49 FEET TO THE POINT OF BEGINNING.

PREPARED BY:

KMA ENGINEERING & SURVEYING, LLC
 CONSULTING ENGINEERS AND PLANNERS
 3001 INDUSTRIAL AVENUE 3, FORT PIERCE, FLORIDA, 34946
 PHONE: (772) 569-5505
 EMAIL: CIVIL@KMAFL.COM

THESE PLANS ARE NOT FOR CONSTRUCTION UNLESS STAMPED "Construction Set", DATED, SIGNED AND SEALED BY THE ENGINEER. ALL CONSTRUCTION SHALL BE IN COMPLIANCE WITH ALL JURISDICTIONAL PERMITS, CONDITIONS AND CONTRACT DOCUMENTS.



DATE: _____
Blaine R. Bergstresser REG. No 39573

Drawing name: U:\22-1022 - Oak Lake Apartments\Drawings\Civil\Current\22-1022 - CIVIL.dwg by KMA-4 on Nov 28, 2023 - 3:28pm

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01	SJRWMD RAI REVISIONS	08-08-22	PMP

SPECIFICATIONS

CLEARING/GRADING/PAVING/DRAINAGE/UTILITY CONSTRUCTION

GENERAL
IT IS INTENDED THAT THE FLORIDA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", LATEST REVISIONS, BE USED WHERE APPLICABLE FOR VARIOUS WORK, AND THAT WHERE SUCH WORDING THEREIN REFERS TO THE STANDARD SPECIFICATIONS OF THE 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 CONSTRUCTION" AS THE "STANDARD SPECIFICATIONS" FOR THIS PROJECT. IN ADDITION THE CONTRACTOR SHALL REFER TO THE "FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS", LATEST REVISIONS. IF WITHIN THAT PARTICULAR SECTION ANOTHER SECTION, ARTICLE OR PARAGRAPH IS REFERRED TO, IT SHALL BE A PART OF THE STANDARD SPECIFICATIONS, ALSO.
ALL WORK SHALL BE IN A 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.
THE CONTRACTOR SHALL GIVE THE ENGINEER 24 HOURS NOTICE PRIOR TO REQUESTING REQUIRED 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 ONE YEAR FROM THE DATE OF PROJECT ACCEPTANCE, DURING WHICH ALL FAULTY CONSTRUCTION AND/OR MATERIALS SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.

CLEARING/RUBBING

THE CONTRACTOR SHALL COMPLETELY REMOVE AND DISPOSE OF ALL BUILDING, TIMBER, BRUSH, STUMPS, ROOTS, RUBBISH, DEBRIS, INCLUDING SEPTIC TANK, BUILDING FOUNDATIONS, PIPES, ETC., WITHIN THE LIMITS OF THE ROADWAY CONSTRUCTION, ALL AREAS WHERE STRUCTURES WILL BE CONSTRUCTED INCLUDING PIPE CULVERTS, AND AS OTHERWISE DEPICTED IN THE PLANS, ALL IN ACCORDANCE WITH SECTION 110.0 OF THE STANDARD SPECIFICATIONS.

GRADING

THE CONTRACTOR SHALL PERFORM ALL GRADING NECESSARY TO ACHIEVE THE PROPOSED PLAN GRADES, FINAL DRESSING SHALL HAVE A TOLERANCE OF 0.2 FT.± FROM THE PLAN CROSS SECTIONS. GRADING SHALL INCLUDE ALL SHAPING, ROUGH GRADING, ROADWAY EXCAVATION, AND FINAL DRESSING REQUIRED FOR THE PROPOSED ROADWAY AND ROAD EMBANKMENTS WITHIN THE LIMITS DEPICTED IN THE PLANS.
THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE FINISHED GRADES UNTIL CONTRACT CLOSE-OUT, AND MUST RE-GRADE AS REQUIRED WHEN EROSION OR OTHER DISTURBANCES OCCUR. SEED/MULCH AND/OR SODDING SHALL BE INCORPORATED TO ASSIST IN THIS REGARD. HOWEVER, ANY LOSS OF SOIL OR SEED/MULCH DURING THESE OCCURRENCES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

SOD

SOD SHALL BE ARGENTINE BAHIA, UNLESS OTHERWISE INDICATED. SOD SHALL BE WELL MATTED WITH ROOTS AND SHALL BE SUFFICIENTLY THICK TO SECURE A DENSE STAND OF LIVE GRASS. THE SOD SHALL BE LIVE, FRESH AND UNINJURED AT THE TIME OF PLANTING AND SHALL BE REASONABLY FREE OF WEEDS AND OTHER GRASSES. THE RECEIVING GROUND SURFACE SHALL BE GRADED TO PROPER ELEVATIONS, FREE OF LARGE VOIDS, ROOTS, WEEDS OR PATCHES OF EXISTING GRASS. UPON LAYING, THE ENTIRE AREA SHALL BE ROLLED THOROUGHLY.
ALL SODDED AREAS ARE TO BE WATERED TO KEEP SOD ALIVE UNTIL THE CONTRACTOR IS CLOSED OUT, DEAD SOD SHALL BE REPLACED BY CONTRACTOR.

EMBANKMENT CONSTRUCTION

ROADWAY EMBANKMENT CONSTRUCTION SHALL CONSIST OF ALL THE EMBANKMENT CONSTRUCTION REQUIRED FOR THE PROPOSED ROADWAY AND SHOULDER IN ACCORDANCE WITH SECTION 910 OF THE STANDARD SPECIFICATIONS. THE CONTRACTOR SHALL PROVIDE SPECIFICATIONS, EMBANKMENTS SHALL BE CONSTRUCTED FROM MATERIAL CONTAINING NO MUCK, STUMPS, ROOTS, BRUSH, VEGETABLE MATTER, RUBBISH, OR OTHER DELETERIOUS MATERIALS THAT WILL NOT COMPACT TO A SUITABLE ENDURING ROAD BED.

MATERIAL: SELECT GRADE; A.A.S.H.T.O. M-145 DESIGNATION A-1, A-3, A-2-4. (REFERENCE F.D.O.T. INDEX 120-001) COMPACTION: 12" COMPACTED LIFTS, MINIMUM 98% MAXIMUM DRY DENSITY (A.A.S.H.T.O. T-180); COMPENSATION: COMPENSATION FOR THE EMBANKMENT CONSTRUCTION SHALL BE MADE FULLY BY THE BID ITEMS FOR BORROW EXCAVATION (PER C.Y.), GRADING (PER L.F. OF ROADWAY OR PER ACRE OF SITE), AND SUBSOIL EXCAVATION (PER C.Y.) WHEN APPLICABLE.

STAKING

CONSTRUCTION STAKING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

STABILIZATION

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, 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. THE CONTRACTOR SHALL PROVIDE ROCK PIT CERTIFICATION FOR CEMENTED COQUINA SHELL MATERIAL. BASE SHALL BE COMPACTED TO 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

PRIME AND TACK COATS FOR THE BASE COURSE SHALL BE IN ACCORDANCE WITH SECTION 300 OF THE STANDARD SPECIFICATIONS.

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

TYPE SP 9.5 SHALL BE A.C.S.C. SHALL BE CONSTRUCTED FOR THE DEPTH AND LIMITS SHOWN ON THE PLAN, IN ACCORDANCE WITH SECTIONS 320, 330 AND 334 OF THE STANDARD SPECIFICATIONS.

CURB

ALL CURB CONSTRUCTION SHALL BE IN ACCORDANCE WITH SECTION 520 OF THE STANDARD SPECIFICATIONS, AND IN ACCORDANCE WITH F.D.O.T. INDEX No. 520-001, PROVIDE CONSTRUCTION JOINTS AT 10'-FOOT O.C. MAXIMUM. TRANSITION ENDS OF CURB FROM FULL TO ZERO HEIGHTS IN 3'-FEET.
CURB CUT RAMPS SHALL BE IN ACCORDANCE WITH F.D.O.T. INDEX No. 522-002.

TESTING

THE CONTRACTOR SHALL RETAIN THE SERVICES OF AN APPROVED INDEPENDENT TESTING LABORATORY TO CONDUCT ALL REQUIRED TESTS ON EMBANKMENT, SUBGRADE, BASE, PIPE BACKFILL AND SURFACE COURSE MATERIALS. TEST RESULTS MUST BE SUBMITTED PRIOR TO ANY REQUEST FOR PAYMENT ON THE ABOVE ITEMS.
THE SCHEDULE FOR TESTING THE ROAD/PAVEMENT AREAS CONSTRUCTION SHALL BE AS FOLLOWS:
A. EMBANKMENT:
(1) DENSITY TESTS SHALL BE TAKEN AT A MAXIMUM OF 200 FT. INTERVALS FOR EACH 12" LIFTS CONSTRUCTED.
B. SUBGRADE:
(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 NECESSARY.
C. BASE:
(1) DENSITY TESTS SHALL BE TAKEN AT INTERVALS OF NOT MORE THAN 200 FEET OR CLOSER AS MIGHT BE NECESSARY.
D. PIPE BACKFILL:
(1) DENSITY TESTS SHALL BE TAKEN AT A MAXIMUM OF 200 FT. INTERVALS.
E. STRUCTURES:
(1) A MINIMUM OF 1 DENSITY TEST SHALL BE PERFORMED IN THE STABILIZED SUBGRADE ADJACENT TO EACH STRUCTURE INSTALLED.
F. BUILDING PAD:
(1) AS SPECIFIED IN ARCHITECTURAL PLANS.
ALL TESTS SHALL BE PAID FOR BY THE CONTRACTOR.

CLEAN-UP

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.

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 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI
ALL REINFORCING STEEL TO BE ASTM A 615-72 GRADE 40, Fy = 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.

PRECAST INLETS

ALL STORM INLETS SHALL BE PRECAST REINFORCED CONCRETE IN ACCORDANCE WITH APPLICABLE REFERENCES TO FDOT DRAWINGS IN THE "FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS", LATEST EDITION. TYPE II PORTLAND CEMENT SHALL BE USED IN THE CONCRETE MIX. CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28-DAYS OF 4000 PSI.

CULVERT PIPES

REINFORCED CONCRETE PIPES (R.C.P.) SHALL BE IN ACCORDANCE WITH SECTION 449 OF THE STANDARD SPECIFICATIONS CORRUGATED ALUMINUM PIPE SHALL BE IN ACCORDANCE WITH SECTION 945 OF THE STANDARD SPECIFICATIONS. HDPE PIPE SHALL BE IN ACCORDANCE WITH SECTION 948 OF THE STANDARD SPECIFICATIONS.
STORM SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH SECTION 430 AND RELATED SECTIONS OF THE STANDARD SPECIFICATIONS OF THE FLORIDA DEPARTMENT OF TRANSPORTATION. BACKFILLING OVER PIPE CULVERT AND STORM SEWERS SHALL BE COMPLETED IN MAXIMUM 6" LIFTS, TO A POINT 12" ABOVE THE PIPE, AND IN 12" LIFTS BEYOND, COMPACTED TO A MINIMUM OF 98% OF MAXIMUM DRY DENSITY.

CONCRETE

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.

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 ARE NOT LIMITED TO, HORIZONTAL LOCATION, INVERT AND TOP ELEVATIONS OF CULVERTS, SEWER MANHOLES, DRAINAGE STRUCTURES, INLETS, AND UTILITY MAINS. CONTRACTOR SHALL SUBMIT COMPLETE AND FINAL RECORD DRAWINGS TO ENGINEER UPON COMPLETION OF PROJECT AND PRIOR TO FINAL INSPECTION AND FINAL PAYMENT.
THE CONTRACTOR SHALL BE REQUIRED TO HAVE A SURVEYOR PROVIDE CERTIFIED RECORD DRAWINGS.

INSPECTION

MINIMUM CONSTRUCTION INSPECTION CHECKPOINTS

THE ENGINEER SHALL BE NOTIFIED:
A. PRIOR TO ANY MAJOR DEVIATION FROM THE APPROVED PLANS.
B. PRIOR TO BACKFILLING ANY PIPE TRENCHES.
C. UPON COMPLETION OF SUBGRADE AND COMPACTION.
D. UPON BEGINNING OF SPREADING OF ROCK BASE MATERIAL.
E. UPON COMPLETION OF GRADING AND COMPACTION OF BASE MATERIAL AND PRIOR TO PRIMING.
F. IMMEDIATELY PRIOR TO AND UPON APPLICATION OF A.C.S.C.
G. UPON COMPLETION OF CONSTRUCTION.

INSPECTION NOTIFICATION:

THE RESPECTIVE TOWN DIVISION SHALL BE NOTIFIED, IN WRITING, WITH COPIES TO THE COMMUNITY DEVELOPMENT DIVISION OF THE COMMENCEMENT AND COMPLETION OF THE FOLLOWING ITEMS OF CONSTRUCTION SO THAT AN IMMEDIATE INSPECTION CAN BE PERFORMED TO ENSURE CONSTRUCTION IN CONFORMANCE WITH SAID APPROVED CONSTRUCTION PLANS AND SPECIFICATIONS AND THE REQUIREMENTS OF CHAPTER 913. IF THE COUNTY NOTIFIES THE DEVELOPER THAT NO COUNTY INSPECTOR IS AVAILABLE TO INSPECT WITHIN FORTY-EIGHT (48) HOURS OF AN INSPECTION REQUEST AND IF A DELAY IN INSPECTION WOULD CAUSE A DELAY IN THE PROJECT, THEN THIS REQUIREMENT MAY BE MET BY SUBMISSION OF A CERTIFICATE FROM THE ENGINEER OF RECORD THAT ALL CONSTRUCTION WAS COMPLETED IN ACCORDANCE WITH THE LAND DEVELOPMENT PERMIT:

- 1. WATER LINE AND SANITARY SEWER LINES PRIOR TO BACKFILLING (UTILITIES DIVISION)
- 2. STABILIZED SUBGRADE (PUBLIC WORKS DIVISION)
- 3. CURB AND CONCRETE WORK (PUBLIC WORKS DIVISION)
- 4. ROADWAY BASE (PUBLIC WORKS DIVISION)
- 5. SURFACE COURSE (PUBLIC WORKS DIVISION)
- 6. PERMANENT REFERENCE MONUMENTS AND PERMANENT CONTROL POINTS (PUBLIC WORKS DIVISION)

THE FAILURE TO NOTIFY THE RESPECTIVE DIVISIONS OF THE COMMENCEMENT AND COMPLETION OF CONSTRUCTION OF SUCH ITEMS SHALL BE GOOD CAUSE TO REFUSE TO ISSUE A CERTIFICATION OF COMPLETION UNTIL SUCH FURTHER INVESTIGATION IS CONDUCTED TO VERIFY COMPLIANCE WITH THE LAND DEVELOPMENT PERMIT. ALL WATER AND SEWER IMPROVEMENTS MUST BE INSPECTED BY THE INDIAN RIVER COUNTY UTILITIES DIRECTOR OR HIS REPRESENTATIVE OR THE APPROPRIATE MUNICIPAL OR PRIVATE UTILITY REPRESENTATIVE PRIOR TO BACKFILLING [913.07(5)(H)].

TRAFFIC/PAVEMENT MARKING NOTES:

MARKING

ALL PARKING SPACE MARKINGS WITH THE EXCEPTION TO THE HANDICAPPED PARKING SPACES SHALL BE MARKED IN WHITE REFLECTORIZED TRAFFIC PAINT AND BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION'S STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2019, SECTION 710.
ALL HANDICAPPED PARKING SPACES SHALL BE PROPERLY SIGNED AND MARKED IN ACCORDANCE WITH THE F.D.O.T.'s STANDARD INDEX NO. 711-001.
TRAFFIC FLOW ARROWS THRU PARKING AREAS ARE FOR DIRECTION AND ARE TO BE PAINTED. USE EXTRUDED TYPE, ALKYD BASE THERMOPLASTIC DIRECTION ARROWS (SEE SITE PLAN).
STOP BARS SHALL BE 24" WIDE. USE EXTRUDED TYPE, ALKYD BASE THERMOPLASTIC.
ALL SIGNS AND PAVEMENT MARKINGS SHALL BE IN CONFORMANCE WITH F.D.O.T. TRAFFIC DESIGN STANDARDS AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
ALL PAVEMENT MARKINGS FOR THE PROPOSED ROADWAYS SHALL BE EXTRUDED TYPE ALKYD BASE THERMOPLASTIC AND SHALL BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION'S SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2019, SECTION 711.
SPECIAL MARKINGS (CROSS WALK, STOP BARS, ROADWAY CONTINUOUS STRIPING, THRU ARROWS, PAVEMENT MARKINGS FOR TRAFFIC SEPARATORS, ETC. SHALL BE IN ACCORDANCE WITH THE F.D.O.T.'s STANDARD INDEX NO. 711-001.
SIGNS
ALL SIGNS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
ALL SIGNS SHALL BE SINGLE COLUMN GROUND SIGNS IN ACCORDANCE WITH F.D.O.T.'s STANDARD INDEX NO. 700-010. WIND LOAD SHALL BE IN ACCORDANCE WITH CURRENT ASCE STANDARDS.
ALL SIGNS PLACEMENT SHALL BE IN ACCORDANCE WITH F.D.O.T.'s STANDARD INDEX NO. 700-101.
30" STOP SIGN SHALL BE IN ACCORDANCE WITH THE MUTCD LATEST EDITION.

SANITARY SEWER - POLYVINYL CHLORIDE PIPE

GENERAL

POLYVINYL CHLORIDE (P.V.C.) GRAVITY SEWER PIPE CAN BE USED TO A DEPTH OF SIXTEEN (16) FEET.
PIPE SHALL BE GREEN IN COLOR.

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-SOR26, AND MEET ASTM D3212 ON JOINTS USING FLEXIBLE ELASTOMERIC SEALS.
FITTINGS INSTALLED IN POLYVINYL CHLORIDE PIPE SHALL CONFORM TO THE SAME SPECIFICATIONS AS THE PIPE IN WHICH THEY ARE INSTALLED.
POLYVINYL CHLORIDE PIPE SHALL BE A MAXIMUM OF TWENTY (20) FEET IN LENGTH AND BE ON THE APPROVED MANUFACTURER'S PRODUCT LIST (SECTION 15.0 OF THE INDIAN RIVER COUNTY DEPT. OF UTILITY SERVICES (IRCUDS) WATER & WASTEWATER UTILITY STANDARDS).
JOINT SEALS IN POLYVINYL CHLORIDE PIPE AND FITTINGS SHALL COMPLY WITH ASTM DESIGNATION D3212. ALL JOINTS SHALL BE RUBBER GASKETED AND SHALL BE SEALED BY ITS OWN COMPRESSION.
N ADDITION TO THE REQUIREMENTS OF ASTM SPECIFICATIONS, THE PIPE SHALL NOT BE OUT-OF-ROUND OR CROOKED IN ALIGNMENT AS DETERMINED BY THE ENGINEER. ANY LENGTH OF SIX (6) INCHES OR GREATER IN DIAMETER WHOSE INSIDE DIAMETERS MEASURED AT RIGHT ANGLES TO EACH OTHER VARY MORE THAN 1/4" MAY BE REJECTED.

MARKING

NUMBER 10 STRANDED CONDUCTOR COPPER TRACE WIRE SHALL BE SPIRAL WRAPPED OR AFFIXED TO THE TOP OF THE PIPE. SEE TRACE WIRE DETAIL M-16 FOR SPECIFICATIONS REGARDING THE INSTALLATION.
TRACE WIRE IS REQUIRED OVER ALL PIPES.
A 2" WIDE MAGNETIC I.D. LOCATION TAPE IS REQUIRED OVER ALL PIPES. TAPE IS TO BE INSTALLED 12" BELOW PROPOSED GRADE.

TESTING

INSPECTION SHALL BE BY USE OF A SELF CONTAINED TELEVISION SYSTEM AND LAMPING, IN ACCORDANCE WITH THE UTILITY STANDARD SPECIFICATIONS (MAINS ONLY)
EXFILTRATION OR INFILTRATION TESTS WILL BE REQUIRED ON ALL PIPE, AS DETERMINED BY UTILITY DEPARTMENT PERSONNEL. ACCEPTABLE LEAKAGE TESTS WILL NOT EXCEED 50 GALLON/INCH DIAM./DAY/MILE OF SEWER PIPE.

INSTALLATION

INSTALLATION OF GRAVITY SEWERS SHALL BE CONTROLLED BY USE OF A LASER TO MAINTAIN PROPER GRADE.
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 98% 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 MUST BE WITHIN ±0.2' OF ELEVATION ON DRAWINGS FOR EVERY TWO (2) PIPE JOINTS INSTALLED.
ALL LATERALS/SERVICES TO BE INSTALLED WITH PERMANENT MAGNETIC MARKERS.

- 1. ALL CHANGE IN DIRECTION SHALL BE ACCOMPLISHED VIA SEWER MANHOLE. (MAINS ONLY)
- 2. CLEAN-OUTS IN LATERAL/SERVICES NOT MORE THAN 75 FEET APART AND AT CHANGE OF DIRECTION.

* MAXIMUM FLOW FOR THE ENTIRE PROJECT AT BUILD-OUT IS 78.1 GPM (PEAK HOUR). THIS DOES NOT GOVERN THE SIZE OF THE SEWER OR CORRESPONDING SLOPE BASED ON APPROPRIATE VELOCITIES. RATHER, MINIMUM SLOPE AND SIZE CRITERIA AS GOVERNED BY LOCAL UTILITY.

PAVEMENT & DRAINAGE STRUCTURES

ALL PAVEMENT/DRAINAGE STRUCTURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS AS FOLLOWS:

STRUCTURE	INDEX NO.
CURB CUT/RAMPS	No. 522-002
DRAINAGE MANHOLE: STRUCT. BOT. TYPE 'P' w/ SUMP BOT., AND MANHOLE TOP TYPE B.	No. 425-010 & 425-001
TYPE 'C, D, E, & H" DITCH BOTTOM INLETS	No. 425-052
MITERED END SECTIONS	No. 430-021
CURBING	No. 520-001
SIDEWALKS	No. 522-001

WHERE REFERENCES ARE MADE TO ROADWAY CONSTRUCTION, IT IS INTENDED TO INDICATE CONSTRUCTION FOR ROADWAYS AND/OR PARKING LOTS/DRIVEWAYS.

GENERAL UTILITY NOTES

ALL UTILITY CONSTRUCTION TO BE IN ACCORDANCE WITH INDIAN RIVER COUNTY DEPARTMENT OF UTILITY SERVICES (IRCUDS) WATER AND WASTEWATER UTILITY STANDARDS, MAY, 2019.
UTILITY CONSTRUCTION IS SUBJECT TO INDIAN RIVER COUNTY UTILITY PERMIT AND F.D.E.P. PERMIT 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 DEPARTMENT OF UTILITY SERVICES (IRCUDS) WATER AND WASTEWATER UTILITY STANDARDS, MAY, 2019." 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 AT&T, C.T.V., FLORIDA POWER AND LIGHT, FLORIDA CITY GAS, CITY OF VERO BEACH UTILITIES, 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, TV, 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.
A PERFORMANCE BOND SHALL BE PROVIDED BY THE CONTRACTOR (25% OF VALUE OF MATERIALS/LABOR) TO INDIAN RIVER COUNTY AT THE CLOSE-OUT OF THE CONTRACT, TO GUARANTEE THE UTILITY SYSTEM FOR ONE (1) YEAR.
THE CONTRACTOR WILL PROVIDE SURVEYED "AS-BUILTS" OF UTILITY CONSTRUCTION DRAWN IN ACAD 2007 FORMAT OR LATER, AND TIED TO STATE PLANE COORDINATES, ALL IN ACCORDANCE WITH INDIAN RIVER COUNTY UTILITY SPECIFICATIONS, PUBLICATION REFERENCED ABOVE, AND IN ACCORDANCE WITH PERMIT CONDITIONS. THE APPLICANT SHALL RETAIN A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF FLORIDA, TO OBSERVE CONSTRUCTION OF THE PROJECT AND TO ASSURE CONFORMITY TO THE APPLICATION, PLANS AND SPECIFICATIONS AS APPLIED TO THE PROJECT. THE ENGINEER SHALL PROVIDE A LETTER TO THE COUNTY DEPARTMENT WITH A CERTIFICATION OF COMPLETION OF CONSTRUCTION ON DEP FORM 62-604.300(7)(b) AND RECORD DRAWINGS IN ACCORDANCE WITH RULE 62-604, F.A.C. THIS PROJECT, AS PERMITTED, SHALL NOT BE PLACED IN OPERATION UNTIL WRITTEN ACCEPTANCE OF THE CERTIFICATION OF COMPLETION HAS BEEN RECEIVED FROM THE DEPARTMENT.
ANY CONNECTIONS TO AND/OR EXTENSIONS OF THIS SYSTEM, BEYOND THAT WHICH IS AUTHORIZED BY THIS PERMIT, SHALL REQUIRE SEPARATE WRITTEN APPROVAL FROM THE DEPARTMENT AND THE UTILITY.
ALL WATER MAINS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 110.0 OF THE STANDARD SPECIFICATIONS. THE APPLICANT SHALL PREFERRED FROM GRAVITY OR PRESSURE SANITARY SEWER, SANITARY FORCE MAIN, OR RECLAIMED WATER MAIN.

FORCE MAINS

GENERAL

FORCE MAIN SHALL BE GREEN IN COLOR.
POLYVINYL CHLORIDE PIPE (PVC) SHALL BE DESIGNED FOR A MINIMUM WORKING PRESSURE OF 150 PSI AND SHALL CONFORM TO AWWA STANDARDS SPECIFICATIONS C900, C909, AND ASTM D1784, D2241 OR LATEST REVISIONS. PVC PRESSURE PIPE SHALL BE MADE FROM CLASS 12454-A OR CLASS 12454-B MATERIAL AND CONFORM TO THE OUTSIDE DIAMETER OF CAST IRON PIPE WITH A MINIMUM WALL THICKNESS OF 0.181.
DUCTILE IRON PIPE (DIP) SHALL BE IN ACCORDANCE WITH AWWA STANDARD SPECIFICATIONS C150/A21.50-96 OR C151/A51-96 OR LATEST REVISIONS, AND SHALL BE PRESSURE CLASS 300 OR 350 MINIMUM AS DEPICTED ON TABLE 6.1 OF THE IRC UTILITY STANDARDS. ALL DIP CROSSING UNDER ROADWAY SHALL HAVE A MIN OF 36" COVER, EXCEPT 42" COVER UNDER TRAFFIC AREAS.

PIPE MATERIALS

DUCTILE IRON PIPE SHALL BE BELL AND SPIGOT CAST IN ACCORDANCE WITH AWWA STANDARD SPECIFICATIONS C150/A21.50-96 AND C151/A51-96 OR LATEST REVISIONS, BASED ON MINIMUM TENSILE STRENGTH OF 60 KSI, YIELD STRENGTH OF 48 KSI, AND USING A MINIMUM WORKING PRESSURE OF 200 PSI, AND A LAYING CONDITION "TYPE 2." ALL PIPE SHALL BE GIVEN A MINIMUM FLOW HYDROSTATIC TEST OF 500 PSI.
LINING AND COATING (DIP). ALL DIP SHALL BE FACTORY LINED AND COATED, UNLESS OTHERWISE INDICATED.
LINING: FUSION-BONDED CERAMIC EPOXY, ONE (1) COAT, 40 MILS, AWWA C-211.
... COATING: BITUMINOUS COATING ON OUTSIDE, DRY FILM THICKNESS OF MINIMUM OF (1) MIL.
... REPAIR: WHERE COATING HAS BEEN DAMAGED, IT MUST BE CLEANED AND RE COATED TO A MINIMUM OF 1 MIL. DRY THICKNESS.
PVC SHALL BE PURCHASED PER APPROVED MANUFACTURER'S PRODUCT LIST (SECTION 15.0 WITHIN THE INDIAN RIVER COUNTY DEPARTMENT OF UTILITY SERVICES WATER & WASTEWATER UTILITY STANDARDS). THE PIPE USED FOR THE WASTEWATER FORCE MAIN SHALL BE GREEN IN COLOR.

JOINTS

JOINTS FOR PVC PRESSURE PIPE SHALL BE BELL AND SPIGOT PUSH-ON RUBBER GASKET TYPE ONLY. NO SOLVENT WELD OR THREADED JOINTS WILL BE PERMITTED.
JOINTS FOR DIP BELL AND SPIGOT PIPE SHALL BE PUSH-ON, MECHANICAL, OR RESTRAINED JOINTS IN ACCORDANCE WITH AWWA STANDARD SPECIFICATIONS C111/A21.11-00 OR LATEST REVISION. FOR FLANGED CONNECTIONS, PIPE BARRELS SHALL COMPLY WITH THE PHYSICAL AND CHEMICAL REQUIREMENTS AS SET FORTH IN THE HANDBOOK OF DUCTILE IRON PIPE RESEARCH ASSOCIATION, LATEST REVISION.
JOINTS FOR DUCTILE IRON PIPE SHALL BE BELL AND SPIGOT PUSH-ON RUBBER GASKET TYPE ONLY. NO SOLVENT WELD OR THREADED JOINTS WILL BE PERMITTED.
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FITTINGS

ALL UNDERGROUND FITTINGS SHALL BE DUCTILE IRON PUSH-ON, RESTRAINED OR MECHANICAL JOINT. MECHANICAL JOINT SHALL CONFORM TO SPECIFICATIONS AWWA C110/A21.10-98 OR C153/A21.53-00 OR LATEST REVISIONS. FITTINGS SHALL BE FUSION-BONDED CERAMIC EPOXY LINED. THE EPOXY MATERIAL SHALL BE APPLIED IN ONE COAT WITH A MINIMUM DRY FILM THICKNESS OF 40.0 MILS. ALL ABOVE GROUND EXPOSED FITTINGS SHALL BE FLANGED. FITTINGS SHALL BE PRESSURE RATED TO 350 PSI AND JOINT RESTRAINT, WHEN REQUIRED, SHOULD BE FROM THE APPROVED MANUFACTURER'S PRODUCT LIST.

VALVES (GATE VALVES)

ALL BURIED VALVES SHALL MEET THE REQUIREMENTS OF AWWA STANDARD SPECIFICATION C509 - C515, OR LATEST REVISION.
VALVES SHALL BE RATED FOR 150 PSI WORKING PRESSURE AND A MINIMUM 300 PSI TEST PRESSURE.
VALVES SHALL BE DUCTILE IRON BODY, BRONZE MOUNTED, RESILIENT SEATED, NON-RISING STEM TYPE FITTED WITH "O-RING" SEALS.

MARKING

NUMBER 10 STRANDED CONDUCTOR COPPER TRACE WIRE SHALL BE SPIRAL WRAPPED OR AFFIXED TO THE TOP OF THE PIPE. SEE TRACE WIRE DETAIL M-16 FOR SPECIFICATIONS REGARDING THE INSTALLATION.
TRACE WIRE IS REQUIRED OVER ALL PIPES.
A 2" WIDE MAGNETIC I.D. LOCATION TAPE IS REQUIRED OVER ALL PIPES. TAPE IS TO BE INSTALLED 12" BELOW PROPOSED GRADE.

INSTALLATION

MAINS SHALL BE INSTALLED IN ACCORDANCE WITH APPLICABLE PROVISIONS OF A.W.W.A. STANDARD SPECIFICATIONS C605-94, OR LATEST REVISION. MANUFACTURER'S INSTRUCTIONS SHALL GOVERN WHEN CONFLICTING WITH AWWA STANDARD SPECIFICATIONS.
WATER MAINS SHALL CROSS ABOVE SANITARY SEWER, STORM SEWERS, FORCE MAINS, OR RECLAIMED WATER LINES WITH A MINIMUM OF 6" (PREFERABLY 12") VERTICAL SEPARATION.
WATER MAIN SHALL BE LOCATED AT LEAST 6' (SIX) FEET, (10' (TEN) FEET PREFERRED), 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 IF APPROVED BY IRCUDS.
PIPE MUST BE LAID IN A TRENCH FREE OF STONES, ROCKS OR OTHER DELETERIOUS MATERIAL TO A DEPTH OF 4" BELOW THE BOTTOM OF THE PIPE. PIPE SHALL BE LAID ON A CONTINUOUS UNIFORM BEDDING. BACKFILL SHALL BE TAMPED IN 4" 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 SLEEVES/VALVES

TAPPING SLEEVES SHALL BE MECHANICAL JOINT TYPE WITH DUCTILE IRON OR STAINLESS STEEL BODIES AND HARDWARE PER APPROVED BY IRCUDS. THE TAPPING VALVE SHALL BE GATE VALVE SPECIFICALLY DESIGNED FOR THE PURPOSE OF TAPPING PRESSURIZED MAINS, AND SHALL BE COMPATIBLE WITH THE TAPPING SLEEVE.

TESTING

HYDROSTATIC PRESSURE AND LEAKAGE TESTS FOR PVC PIPE SHALL BE PERFORMED IN ACCORDANCE WITH A.W.W.A. STANDARD C-605-94, OR LATEST REVISION. CONTRACTOR SHALL FURNISH ALL GAUGES, METERS, PRESSURE PUMPS AND OTHER EQUIPMENT NECESSARY TO TEST THE LINE. THE ENGINEER OR REPRESENTATIVE SHALL BE PRESENT FOR ALL REQUIRED TESTING AND FINAL INSPECTIONS.
HYDROSTATIC PRESSURE AND LEAKAGE TESTS FOR DUCTILE IRON PIPE SHALL BE PERFORMED IN ACCORDANCE WITH A.W.W.A. STANDARD C600-99, OR LATEST REVISION. CONTRACTOR SHALL FURNISH ALL GAUGES, METERS, PRESSURE PUMPS AND OTHER EQUIPMENT NECESSARY TO TEST THE LINE. THE ENGINEER OR REPRESENTATIVE SHALL BE PRESENT FOR ALL REQUIRED TESTING AND FINAL INSPECTIONS.

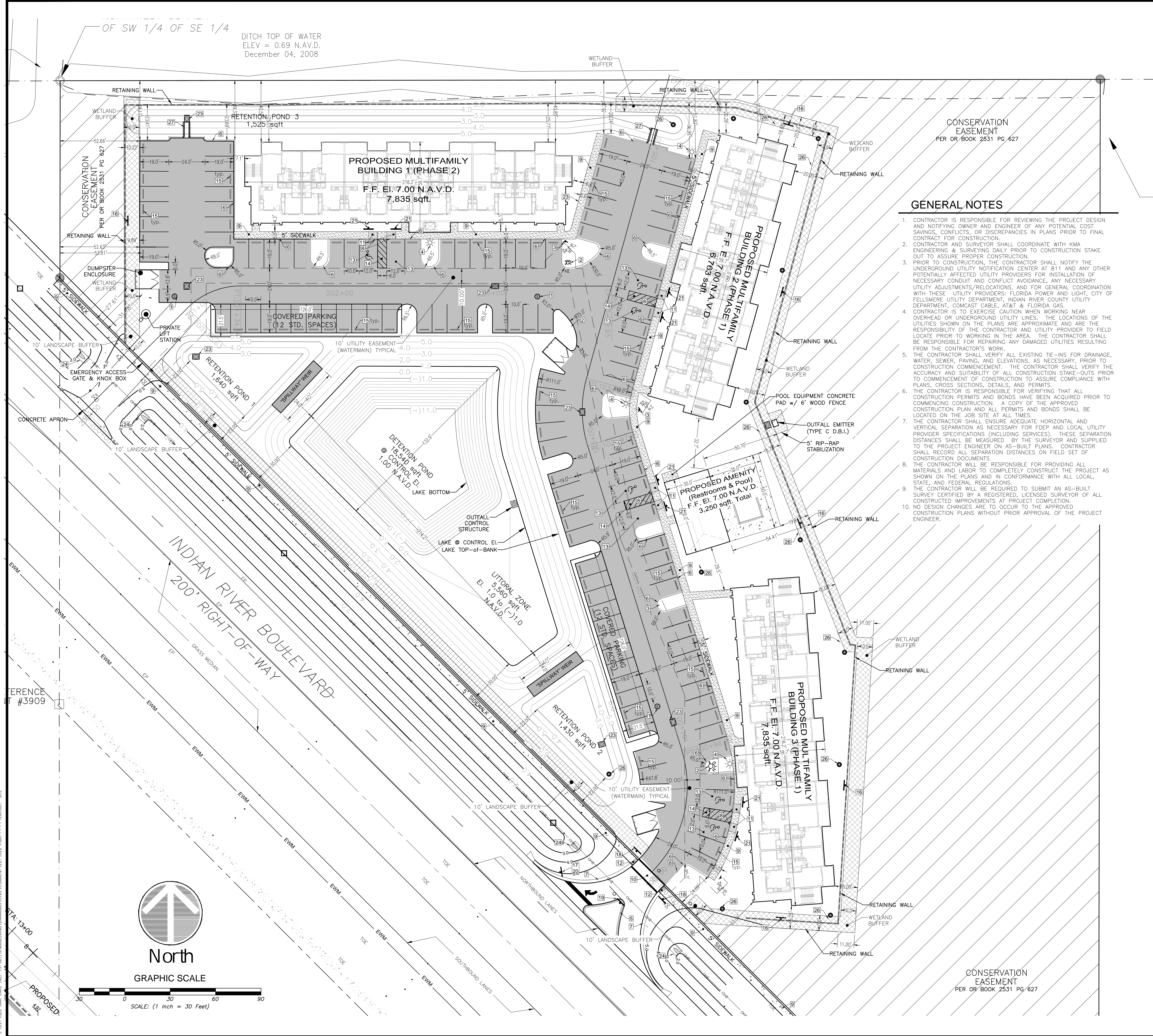
WATER MAINS

GENERAL

WATER MAIN SHALL BE BLUE IN COLOR.
POLYVINYL CHLORIDE PIPE (PVC) SHALL BE DESIGNED FOR A MINIMUM WORKING PRESSURE OF 150 PSI AND SHALL CONFORM TO AWWA STANDARDS SPECIFICATIONS C900-97, C909-98, AND ASTM D1784, D2241 OR LATEST REVISIONS. PVC PRESSURE PIPE SHALL BE MADE FROM CLASS 12454-A OR CLASS 12454-B MATERIAL AND CONFORM TO THE OUTSIDE DIAMETER OF CAST IRON PIPE WITH A MINIMUM WALL THICKNESS OF 0.181.
DUCTILE IRON PIPE (DIP) SHALL BE IN ACCORDANCE WITH AWWA STANDARD SPECIFICATIONS C150/A21.50-96 OR LATEST REVISIONS, AND SHALL BE PRESSURE CLASS 300 OR 350 MINIMUM AS DEPICTED ON TABLE 1.1 OF THE IRCUDS UTILITY STANDARDS. ALL DIP CROSSING UNDER ROADWAYS SHALL BE PRESSURE CLASS 350 MINIMUM. WATER MAIN SHALL HAVE A MIN OF 36" COVER, EXCEPT 42" COVER UNDER TRAFFIC AREAS.

PIPE MATERIALS

DUCTILE IRON PIPE SHALL BE BELL AND SPIGOT CAST IN ACCORDANCE WITH AWWA STANDARD SPECIFICATIONS C150/A21.50-96 OR LATEST REVISIONS, BASED ON MINIMUM TENSILE STRENGTH OF 60 KSI, YIELD STRENGTH OF 42 KSI, AND USING A MINIMUM WORKING PRESSURE OF 200 PSI, AND A LAYING CONDITION "TYPE 2." ALL PIPE SHALL BE GIVEN A MINIMUM FLOW HYDROSTATIC TEST OF 500 PSI.
LINING AND COATING (DIP). ALL DIP SHALL BE FACTORY LINED AND COATED, UNLESS OTHERWISE INDICATED.
LINING: CEMENT MORTAR LINED AND SEAL COATED PER A.W.W.A. C104 (ANSI A21.4-95) OR LATEST REVISION.
... COATING: BITUMINOUS COATING ON OUTSIDE, DRY FILM THICKNESS OF MINIMUM OF (1) MIL.
... REPAIR: WHERE COATING HAS BEEN DAMAGED, IT MUST BE CLEANED AND RECOATED TO A MINIMUM OF



CONSTRUCTION NOTES

- 1 SEWER MANHOLE
- 2 FIRE HYDRANT
- 3 FIRE DEPARTMENT CONNECT
- 4 STREET LIGHT
- 5 FDOT TYPE 'A' CURB
- 6 FDOT TYPE 'D' CURB
- 7 RIBBON CURB
- 8 TRANSITION CURB
- 9 CONCRETE SIDEWALK
- 10 PEDESTRIAN CROSSWALK
- 11 FDOT CURB RAMP
- 12 2' TACTILE SURFACE
- 13 HANDICAP SPACE
- 14 HANDICAP ACCESS
- 15 WHEEL STOP
- 16 CONSERVATION SIGN
- 17 R-11 STOP SIGN
- 18 W11-2 PEDESTRIAN SIGN w/ W16-7PL
- 19 R-47 KEEP RIGHT SIGN
- 20 R-3-5R RIGHT TURN ONLY SIGN
- 21 FTP-25 HANDICAP SIGN
- 22 FIRE LANE SIGN
- 23 DRAINAGE STRUCTURE
- 24 MITERED END SECTION
- 25 FLARED END SECTION
- 26 YARD DRAIN
- 27 CONCRETE FLUME

LEGEND

- DENOTES EASEMENTS
- DENOTES RETAINING WALL
- DENOTES DRAINAGE FLOWLINE
- DENOTES ROW CENTERLINE
- DENOTES OVERHEAD ELECTRIC
- DENOTES WATER MAIN
- DENOTES SEWER MAIN
- FM DENOTES FORCE MAIN
- DENOTES FDC
- DENOTES FIRE HYDRANT
- DENOTES BLOW-OFF
- DENOTES WATER SERVICE
- DENOTES SANITARY MANHOLE
- DENOTES GATE VALVE
- DENOTES DRAINAGE INLET
- DENOTES YARD DRAIN
- DENOTES M.E.S. or F.E.S.
- DENOTES JUNCTION BOX
- DENOTES PROPOSED ELEVATION
- DENOTES EXISTING ELEVATION
- DENOTES FLOW DIRECTION
- DENOTES SIGN
- DENOTES STREET LIGHT

GENERAL NOTES

1. CONTRACTOR IS RESPONSIBLE FOR REVIEWING THE PROJECT DESIGN AND NOTIFYING OWNER AND ENGINEER OF ANY POTENTIAL COST SAVINGS, CONFLICTS, OR DISCREPANCIES IN PLANS PRIOR TO FINAL CONTRACT FOR CONSTRUCTION.
2. CONTRACTOR AND SURVEYOR SHALL COORDINATE WITH KMA ENGINEERING & SURVEYING DAILY PRIOR TO CONSTRUCTION STAKE OUT TO ASSURE PROPER CONSTRUCTION.
3. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE UNDERGROUND UTILITY NOTIFICATION CENTER AT 811 AND ANY OTHER POTENTIALLY AFFECTED UTILITY PROVIDERS FOR INSTALLATION OF NECESSARY CONDUIT AND CONFLICT AVOIDANCE, ANY NECESSARY UTILITY ADJUSTMENTS/RELOCATIONS, AND FOR GENERAL COORDINATION WITH THESE UTILITY PROVIDERS: FLORIDA POWER AND LIGHT, CITY OF FELLSMERE UTILITY DEPARTMENT, INDIAN RIVER COUNTY UTILITY DEPARTMENT, COMCAST CABLE, AT&T & FLORIDA GAS.
4. CONTRACTOR IS TO EXERCISE CAUTION WHEN WORKING NEAR OVERHEAD OR UNDERGROUND UTILITY LINES. THE LOCATIONS OF THE UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE AND ARE THE RESPONSIBILITY OF THE CONTRACTOR AND UTILITY PROVIDER TO FIELD LOCATE PRIOR TO WORKING IN THE AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY DAMAGED UTILITIES RESULTING FROM THE CONTRACTOR'S WORK.
5. THE CONTRACTOR SHALL VERIFY ALL EXISTING TIE-INS FOR DRAINAGE, WATER, SEWER, PAVING, AND ELEVATIONS, AS NECESSARY, PRIOR TO CONSTRUCTION COMMENCEMENT. THE CONTRACTOR SHALL VERIFY THE ACCURACY AND SUITABILITY OF ALL CONSTRUCTION STAKE-OUTS PRIOR TO COMMENCEMENT OF CONSTRUCTION TO ASSURE COMPLIANCE WITH PLANS, CROSS SECTIONS, DETAILS, AND PERMITS.
6. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING THAT ALL CONSTRUCTION PERMITS AND BONDS HAVE BEEN ACQUIRED PRIOR TO COMMENCING CONSTRUCTION. A COPY OF THE APPROVED CONSTRUCTION PLAN AND ALL PERMITS AND BONDS SHALL BE LOCATED ON THE JOB SITE AT ALL TIMES.
7. THE CONTRACTOR SHALL ENSURE ADEQUATE HORIZONTAL AND VERTICAL SEPARATION AS NECESSARY FOR FDEP AND LOCAL UTILITY PROVIDER SPECIFICATIONS (INCLUDING SERVICES). THESE SEPARATION DISTANCES SHALL BE MEASURED BY THE SURVEYOR AND SUPPLIED TO THE PROJECT ENGINEER ON AS-BUILT PLANS. CONTRACTOR SHALL RECORD ALL SEPARATION DISTANCES ON FIELD SET OF CONSTRUCTION DOCUMENTS.
8. THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING ALL MATERIALS AND LABOR TO COMPLETELY CONSTRUCT THE PROJECT AS SHOWN ON THE PLANS AND IN CONFORMANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.
9. THE CONTRACTOR WILL BE REQUIRED TO SUBMIT AN AS-BUILT SURVEY CERTIFIED BY A REGISTERED, LICENSED SURVEYOR OF ALL CONSTRUCTED IMPROVEMENTS AT PROJECT COMPLETION.
10. NO DESIGN CHANGES ARE TO OCCUR TO THE APPROVED CONSTRUCTION PLANS WITHOUT PRIOR APPROVAL OF THE PROJECT ENGINEER.

SITE DATA

PARCEL NUMBER	33-39-25-00000-7000-00002.1	
EXISTING ZONING	RM-8	
LAND USE	RM	
GROSS ACREAGE OF SITE	7.48 (325,789 AC/SF)	
TOTAL CONSERVATION/OPEN SPACE	5.02 (218,671 AC/SF) = 67%	
TOTAL IMPERVIOUS	2.47 (107,593 AC/SF) = 33%	
MAXIMUM DENSITY	59 UNITS (7.48 AC @ 8 UNIT/1 AC)	
PROPOSED DENSITY	59 UNITS (8.0 UNITS/ACRE)	
PROPOSED BUILDINGS	(1) 3 STORY BUILDING, 20 UNITS EA (PHASE 1) (1) 3 STORY BUILDING, 18 UNITS EA (PHASE 1) (1) 3 STORY BUILDING, 21 UNITS EA (PHASE 2)	
	NOTE EACH BUILDING IS TO BE ARCHITECTURALLY SIMILAR AND CONSISTENT	
MINIMUM LIVING QUARTERS BUILDING 1.2.3:	REQUIRED	MINIMUM PROVIDED
MINIMUM LAND AREA	860 SF. PER UNIT REQ.	1,125 SF
MINIMUM LAND AREA	5,445 SF. PER UNITS REQ.	5,521 SF
REQUIRED SETBACKS	REQUIRED	PROPOSED
	FRONT = 25'	EAST - 182'
	REAR = 25'	NORTH - 36'
	SIDE = 20'	SOUTH-WEST - 33'
CONSERVATION AREA	3.27 AC (44.0%)	
FEMA FLOOD ZONE	FLOOD ZONE AE, BASE FLOOD ELEVATION 8.0 NAVD FROM MAP No. 12061C015E	
CONSTRUCTION TIMETABLE	BEGIN CONSTRUCTION - SEPT 1, 2019 COMPLETE APPROX. SEPT 30, 2020	

SITE CALCULATIONS

DEVELOPMENT PERCENTAGES	IMPERVIOUS	PROPOSED
BUILDING COVERAGE	0.71 AC	0.59%
POOL AREA	0.07 AC	0.5%
DRIVES/ROADS/SIDEWALKS	1.19 AC	16.0%
POND	0.50 AC	6.7%
TOTAL	2.47 AC	33.1%
OPEN SPACE 7.48 AC @ 50% = 3.74 AC REQUIRED		
CONSERVATION	3.27 AC (44.0%)	
LANDSCAPED OPEN SPACE	1.78 AC (23.0%)	
TOTAL	5.02 AC (67.0%)	
PARKING SPACES (MULTIFAMILY)	PROPOSED	REQUIRED (2 PER UNIT)
PARKING FOR 59 UNITS	124	118
ADA PARKING	8	6
BUILDING HEIGHT	PROPOSED	ALLOWED
MULTIFAMILY UNITS	31	35 FEET
FAR (30% MAXIMUM)		
BUILDING 1, 3 FLOORS	(3) x 7,835 SF = 23,505 SF	
BUILDING 2, 3 FLOORS	(3) x 6,765 SF = 20,295 SF	
BUILDING 3, 3 FLOORS	(3) x 7,835 SF = 23,505 SF	
COVERED PARKING	(2) x 2,700 SF = 5,400 SF	
CLUBHOUSE/POOL/HOUSE	(1) x 1,500 SF = 1,500 SF	
TOTAL	74,133 SF (23.0%)	
FLOOR AREA RATIO	ALLOWED	PROPOSED
	97,730 SF 30.0% FAR	74,133 SF 23.0% FAR



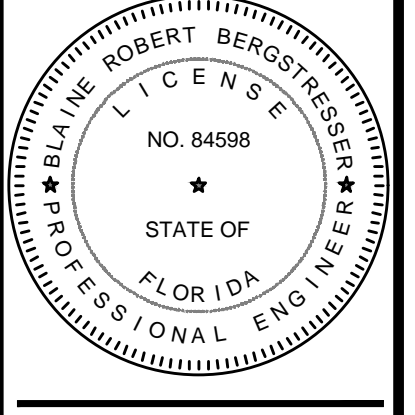
REVISIONS:

BY:	DATE:	COMMENT:

NOT FOR CONSTRUCTION

PROJECT:
OAK LAKE APARTMENTS
City of Vero Beach, Florida

CLIENT:
OAK LAKE APARTMENTS
City of Vero Beach
Indian River County
Florida

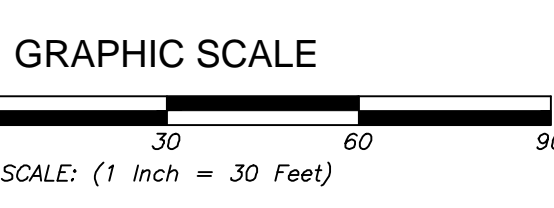


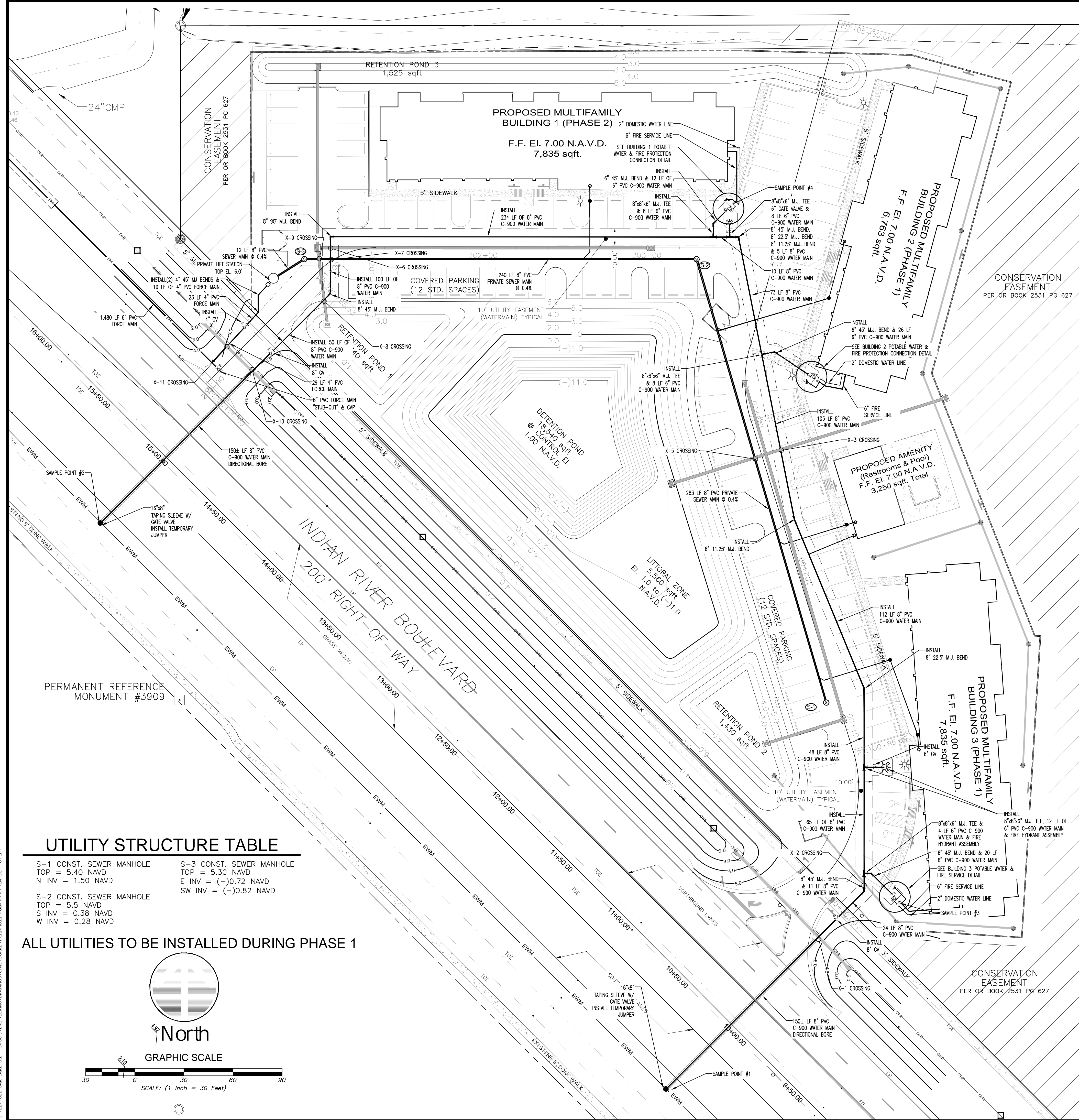
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PROJECT No.: 22-1022
DRAWN BY: PMP
CHECKED BY: BRB
DATE: 02/22/2022
CAD I.D.: 22-1022.PGD

SHEET TITLE:
SITE PLAN
SHEET NUMBER:
2

Project: 22-1022, 02/22/2022, 1:30 PM, By: BRB, KMA
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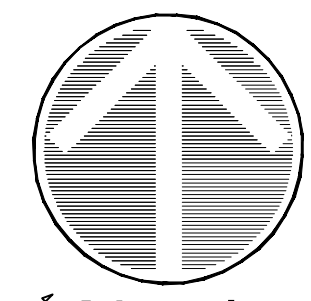




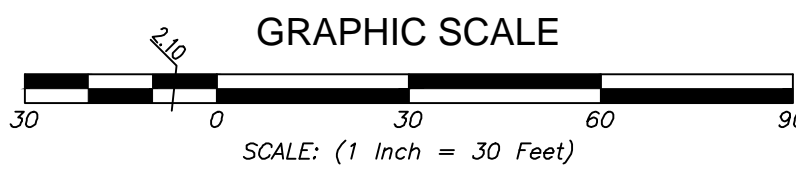
UTILITY STRUCTURE TABLE

S-1 CONST. SEWER MANHOLE TOP = 5.40 NAVD N INV = 1.50 NAVD	S-3 CONST. SEWER MANHOLE TOP = 5.30 NAVD E INV = (-)0.72 NAVD SW INV = (-)0.82 NAVD
S-2 CONST. SEWER MANHOLE TOP = 5.5 NAVD S INV = 0.38 NAVD W INV = 0.28 NAVD	

ALL UTILITIES TO BE INSTALLED DURING PHASE 1



North

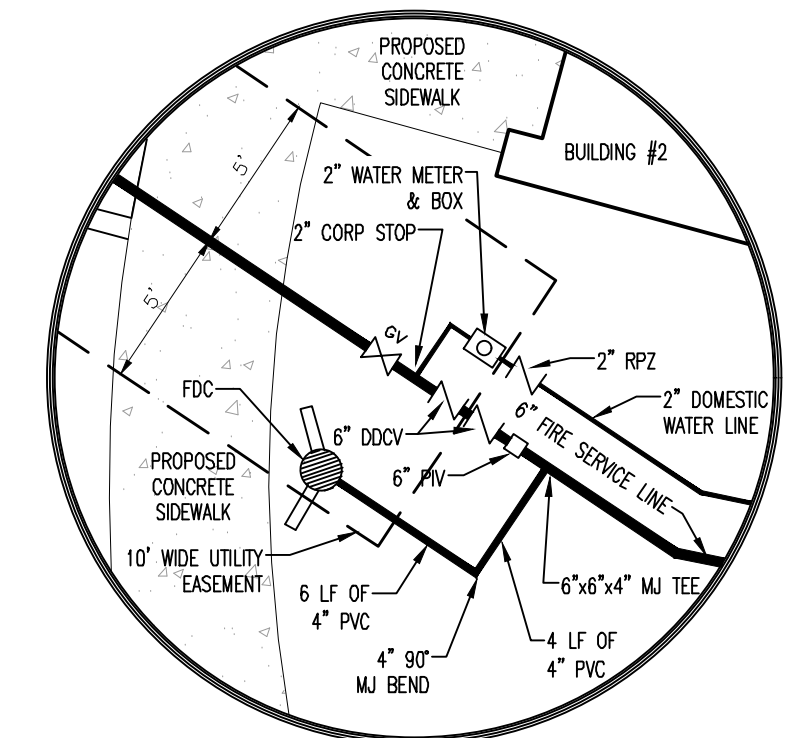


LEGEND

- DENOTES EASEMENTS
- DENOTES RETAINING WALL
- DENOTES DRAINAGE FLOWLINE
- DENOTES ROW CENTERLINE
- DENOTES OVERHEAD ELECTRIC
- DENOTES WATER MAIN
- DENOTES SEWER MAIN
- DENOTES DRAINAGE PIPE
- FM --- DENOTES FORCE MAIN
- DENOTES FDC
- DENOTES FIRE HYDRANT
- DENOTES BLOW-OFF
- DENOTES WATER SERVICE
- DENOTES SEWER SERVICE
- DENOTES SANITARY MANHOLE
- DENOTES GATE VALVE
- DENOTES DRAINAGE INLET
- DENOTES YARD DRAIN
- DENOTES HIGH-POINT
- DENOTES M.E.S. or F.E.S.
- DENOTES JUNCTION BOX
- DENOTES SIGN
- DENOTES STREET LIGHT

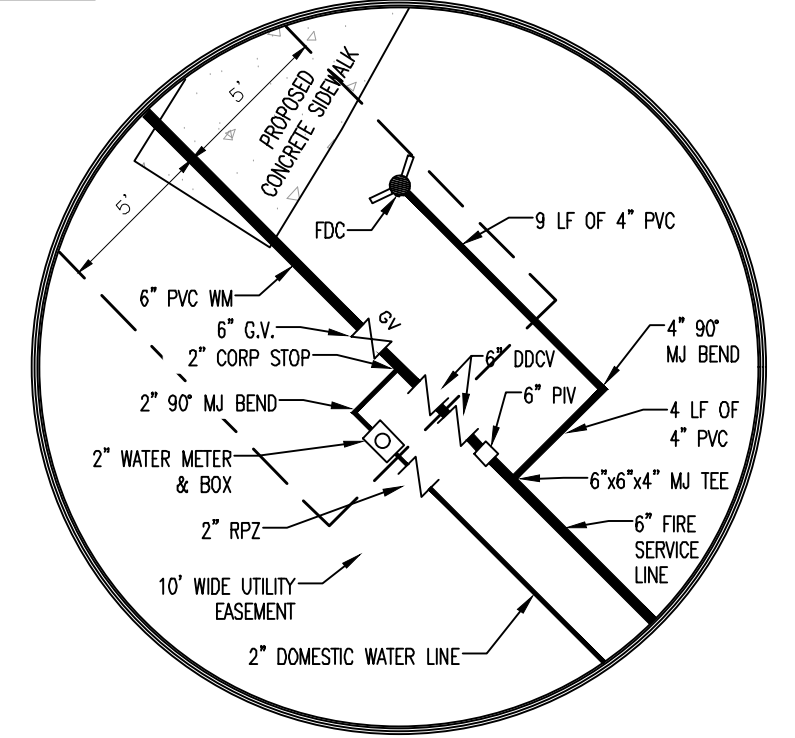
BUILDING #1 POTABLE WATER & FIRE SERVICE DETAIL

SCALE: 1" = 5'



BUILDING #2 POTABLE WATER & FIRE SERVICE DETAIL

SCALE: 1" = 5'

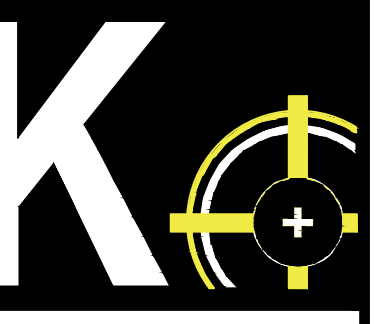


BUILDING #3 POTABLE WATER & FIRE SERVICE DETAIL

SCALE: 1" = 5'

UTILITY CROSSING TABLE

X-1 CULVERT OVER WATER BOTTOM CULVERT = 2.20 NAVD TOP WATER = 1.20 NAVD CLEARANCE = 1.00 FEET	X-7 WATER OVER SEWER BOTTOM WATER = 0.50 NAVD TOP SEWER = (-)0.60 NAVD CLEARANCE = 1.10 FEET
X-2 STORM OVER WATER BOTTOM STORM = 2.65 NAVD TOP WATER = 1.65 NAVD CLEARANCE = 1.00 FEET	X-8 WATER OVER STORM BOTTOM WATER = 2.5± NAVD TOP STORM = 1.77 NAVD CLEARANCE = 0.7± FEET
X-3 STORM OVER WATER BOTTOM STORM = 3.00 NAVD TOP WATER = 2.00 NAVD CLEARANCE = 1.00 FEET	X-9 STORM OVER SEWER BOTTOM STORM = 0.75 NAVD TOP SEWER = 0.00 NAVD CLEARANCE = 0.75 FEET
X-4 WATER OVER STORM BOTTOM WATER = 2.25 NAVD TOP STORM = (-)1.00 NAVD CLEARANCE = 3.25 FEET	X-10 CULVERT OVER SEWER BOTTOM CULVERT = 1.00 NAVD TOP WATER = 0.00 NAVD CLEARANCE = 1.00 FEET
X-5 SEWER OVER STORM BOTTOM SEWER = 0.50 NAVD TOP STORM = (-)1.00 NAVD CLEARANCE = 1.50 FEET	X-11 CULVERT OVER FORCE MAIN BOTTOM CULVERT = 1.00 NAVD TOP FORCE MAIN = 0.50 NAVD CLEARANCE = 0.50 FEET
X-6 STORM OVER WATER BOTTOM WATER = 2.06 NAVD TOP WATER = 1.00 NAVD CLEARANCE = 1.06 FEET	



KMA

ENGINEERING & SURVEYING, LLC
2845 14TH AVE. SUITE #3
VERO BEACH, FL 34960
PHONE: (772) 588-9505
FBIPE C.O.A. # 33705

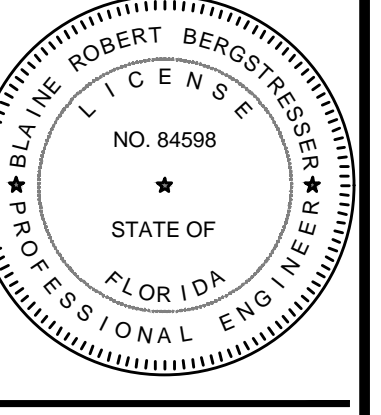
REVISIONS:

BY:	DATE:	COMMENT:

NOT FOR CONSTRUCTION

PROJECT:
OAK LAKE APARTMENTS
City of Vero Beach, Florida

CLIENT:
OAK LAKE APARTMENTS
City of Vero Beach
Indian River County
Florida



BLAINE BERGSTRESSER, P.E.
FLORIDA LICENSE NO. 84598
02/24/2022



PROJECT No.: 22-1022
DRAWN BY: PMP
CHECKED BY: BRB
DATE: 02/22/2022
CAD I.D.: 22-1022 PGD

SHEET TITLE:
MASTER UTILITIES PLAN

SHEET NUMBER:
3c

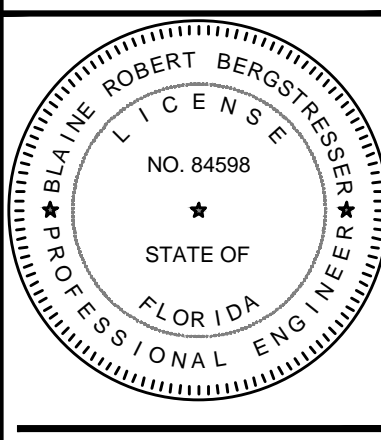
REVISIONS:

BY:	DATE:	COMMENT:

NOT FOR CONSTRUCTION

PROJECT:
OAK LAKE APARTMENTS
City of Vero Beach, Florida

CLIENT:
OAK LAKE APARTMENTS
City of Vero Beach
Indian River County
Florida



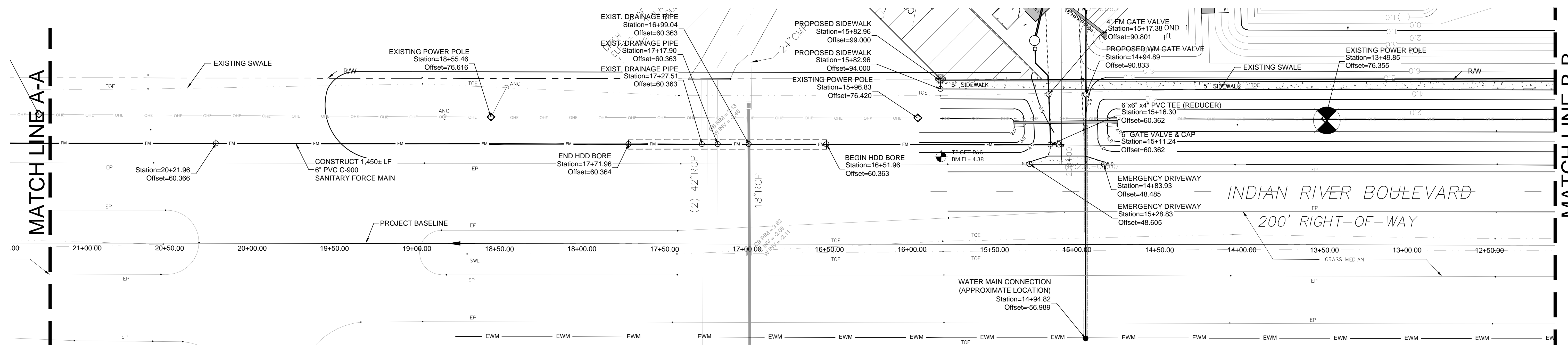
BLAINE BERGSTRESSER, P.E.
FLORIDA LICENSE NO. 84598
02/24/2022



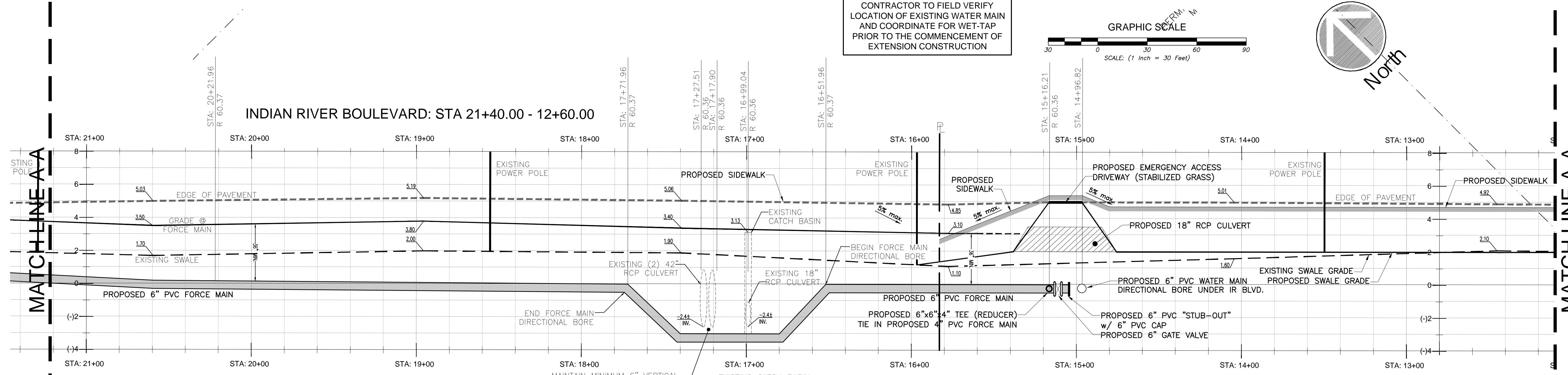
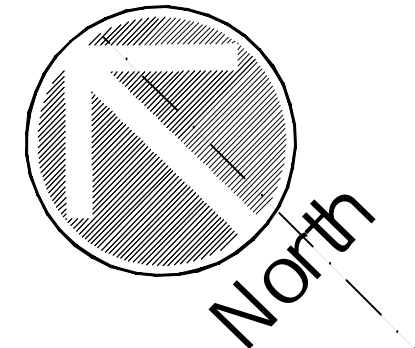
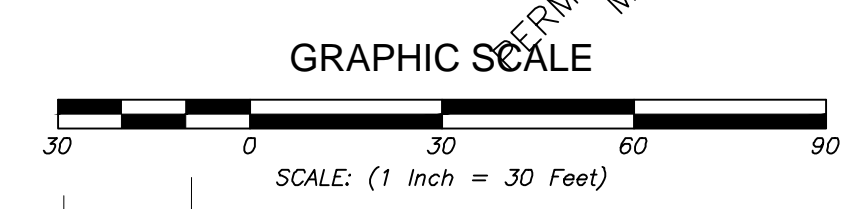
PROJECT No.: 22-1022
DRAWN BY: PMP
CHECKED BY: BRB
DATE: 02/22/2022
CAD ID: 22-1022 PGD

SHEET TITLE:
OFF-SITE PLAN & PROFILE

SHEET NUMBER:
3e



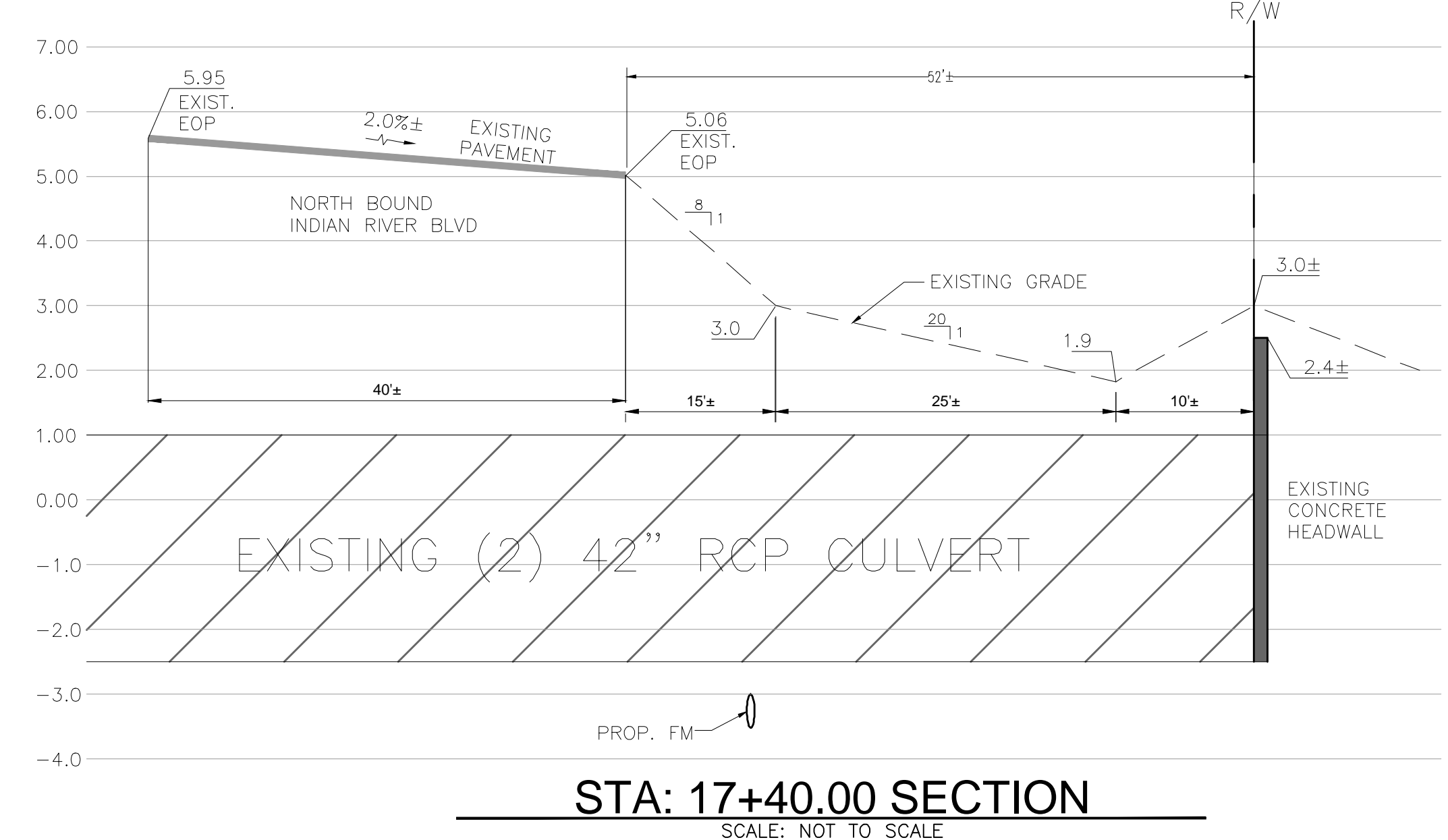
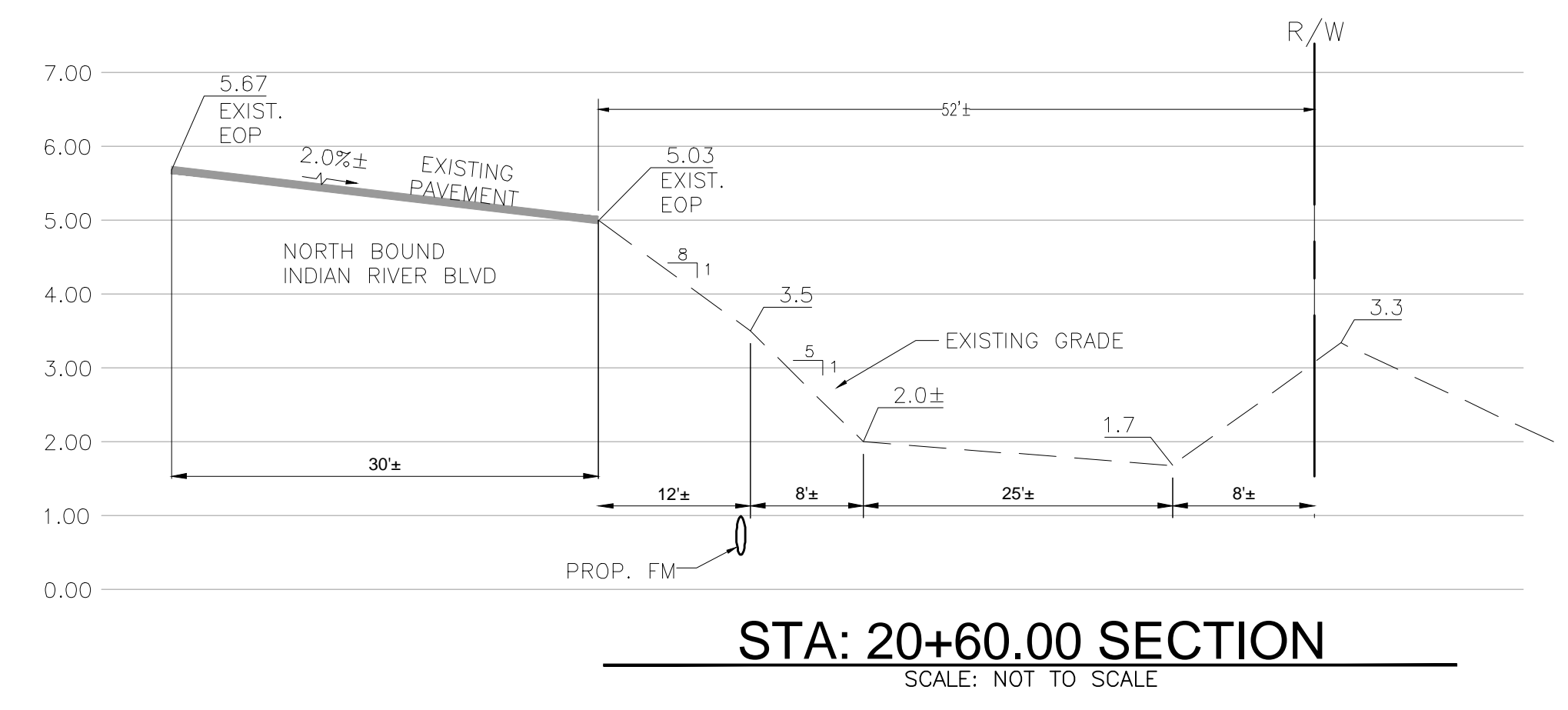
CONTRACTOR TO FIELD VERIFY LOCATION OF EXISTING WATER MAIN AND COORDINATE FOR WET-TAP PRIOR TO THE COMMENCEMENT OF EXTENSION CONSTRUCTION

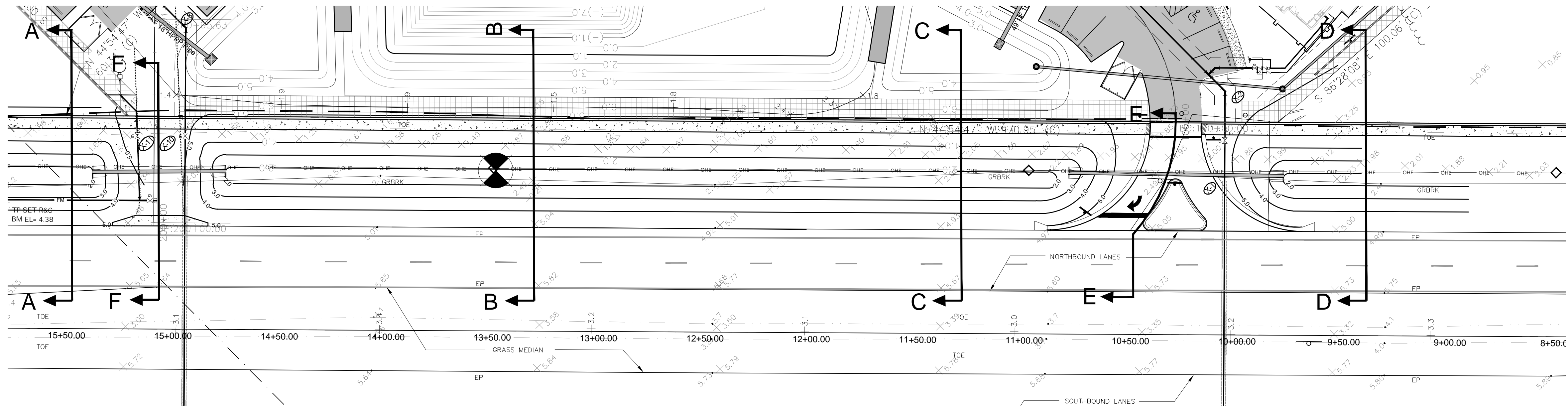


WORK BY OTHERS IN THE AREA REPORTED THE POTENTIAL OF CAP-ROCK IN THE EXCAVATION AREA. CONTRACTOR MAY USE DIRECTIONAL BORE IN LIEU OF OPEN-CUT FOR ALL FORCE MAIN INSTALLATION. THE CONTRACTOR IS ADVISED TO CONSULT THE ENGINEER OF RECORD TO PLAN ACCORDINGLY IN THAT EVENT.

GENERAL Right-of-Way NOTES

- CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROLLING EROSION AND RESTORING SWALE FLOW LINES WITHIN 60 FT. OF THE WORK.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING MAINTENANCE OF TRAFFIC IN CONFORMANCE WITH FDOT CURRENT STANDARD PLANS INDEX 102-611 AND 102-612.
- CONTRACTOR SHALL STABILIZE ALL DISTURBED AREA WITH SOD FOLLOWING WORK. SODDING TO BE CONDUCTED IN CONFORMANCE WITH FDOT STANDARD PLANS INDEX 570-010.
- ALL AREAS IN THE ROW SHALL BE LEFT IN A CONDITION EQUAL TO OR BETTER THAN THAT WHICH EXISTED PRIOR TO CONSTRUCTION. SHOULDERS DISTURBED WITHIN 5 FEET OF THE EDGE OF PAVEMENT SHALL BE STABILIZED A MINIMUM 50 PSI FLORIDA BEARING VALUE, 6 INCHES IN DEPTH. EXISTING DRAINAGE SHALL NOT BE IMPEDED.
- INDIAN RIVER COUNTY (IRC) ENGINEERING INSPECTIONS SHALL BE 48 HOURS BEFORE COMMENCEMENT OF WORK TO ESTABLISH A TIMELINE WHEN FIELD REVIEW(S) OF THE WORK ARE REQUIRED. CONSTRUCTION SHALL BE DONE MONDAY THROUGH FRIDAY. WEEKEND WORK SHALL BE APPROVED BY IRC INSPECTIONS BY WEDNESDAY AT 4 PM. THE APPROVED PERMIT AND STAMPED PLANS SHALL BE AT THE WORK SITE.





PROJECT FRONTAGE PLAN
SCALE: 1"=30'

GENERAL Right-of-Way NOTES

CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROLLING EROSION AND RESTORING SWALE FLOW LINES WITHIN 60 FT. OF THE WORK.

CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING MAINTENANCE OF TRAFFIC IN CONFORMANCE WITH FDOT CURRENT STANDARD PLANS INDEX 102-611 AND 102-612.

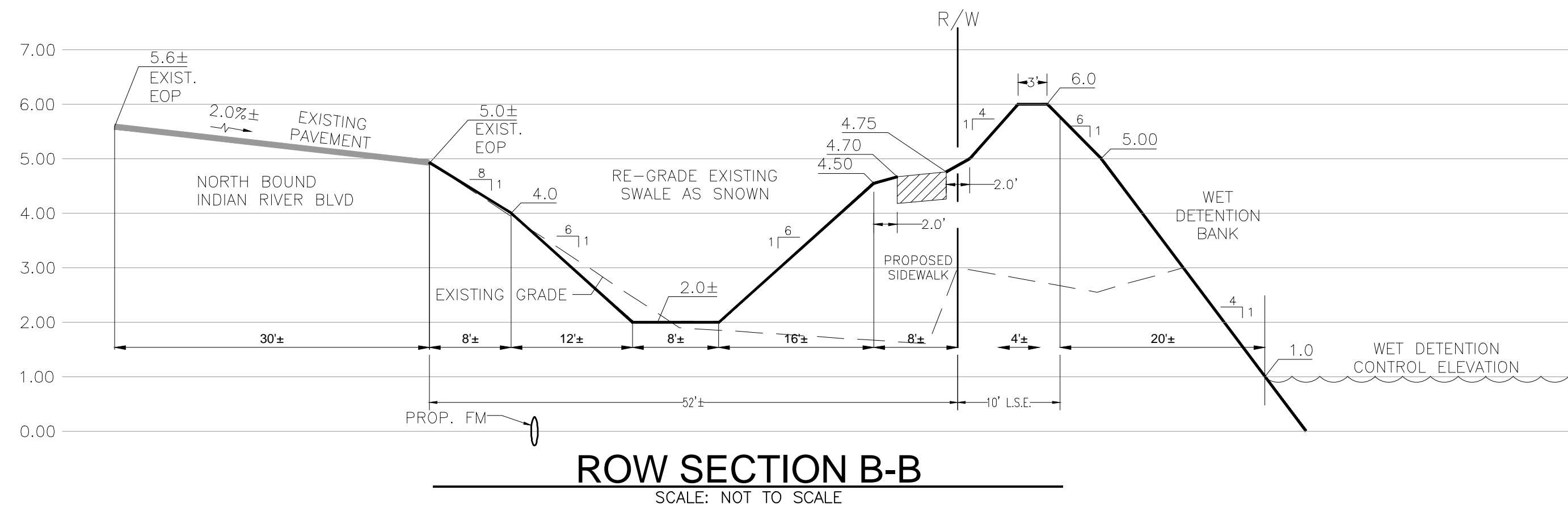
CONTRACTOR SHALL STABILIZE ALL DISTURBED AREA WITH SOD FOLLOWING WORK. SODDING TO BE CONDUCTED IN CONFORMANCE WITH FDOT STANDARD PLANS INDEX 570-010.

ALL AREAS IN THE ROW SHALL BE LEFT IN A CONDITION EQUAL TO OR BETTER THAN THAT WHICH EXISTED PRIOR TO CONSTRUCTION. SHOULDERS DISTURBED WITHIN 5 FEET OF THE EDGE OF PAVEMENT SHALL BE STABILIZED A MINIMUM 50 PSI FLORIDA BEARING VALUE, 6 INCHES IN DEPTH. EXISTING DRAINAGE SHALL NOT BE IMPEDED.

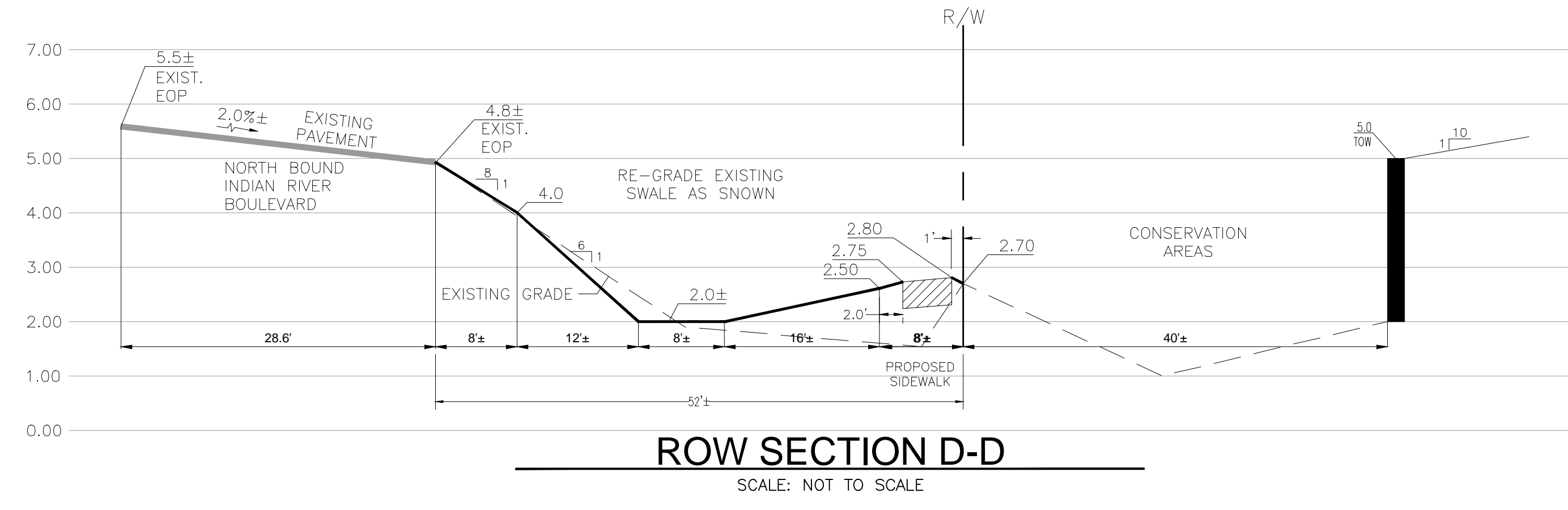
INDIAN RIVER COUNTY (IRC) ENGINEERING INSPECTIONS SHALL BE 48 HOURS BEFORE COMMENCEMENT OF WORK TO ESTABLISH A TIMELINE WHEN FIELD REVIEW(S) OF THE WORK ARE REQUIRED. CONSTRUCTION SHALL BE DONE MONDAY THROUGH FRIDAY. WEEKEND WORK SHALL BE APPROVED BY IRC INSPECTIONS BY WEDNESDAY AT 4 PM. THE APPROVED PERMIT AND STAMPED PLANS SHALL BE AT THE WORK SITE.

ALL STRIPING & SIGNING TO CONFORM TO MUTCD LATEST VERSION. ALL PAVEMENT MARKINGS ARE TO BE THERMOPLASTIC.

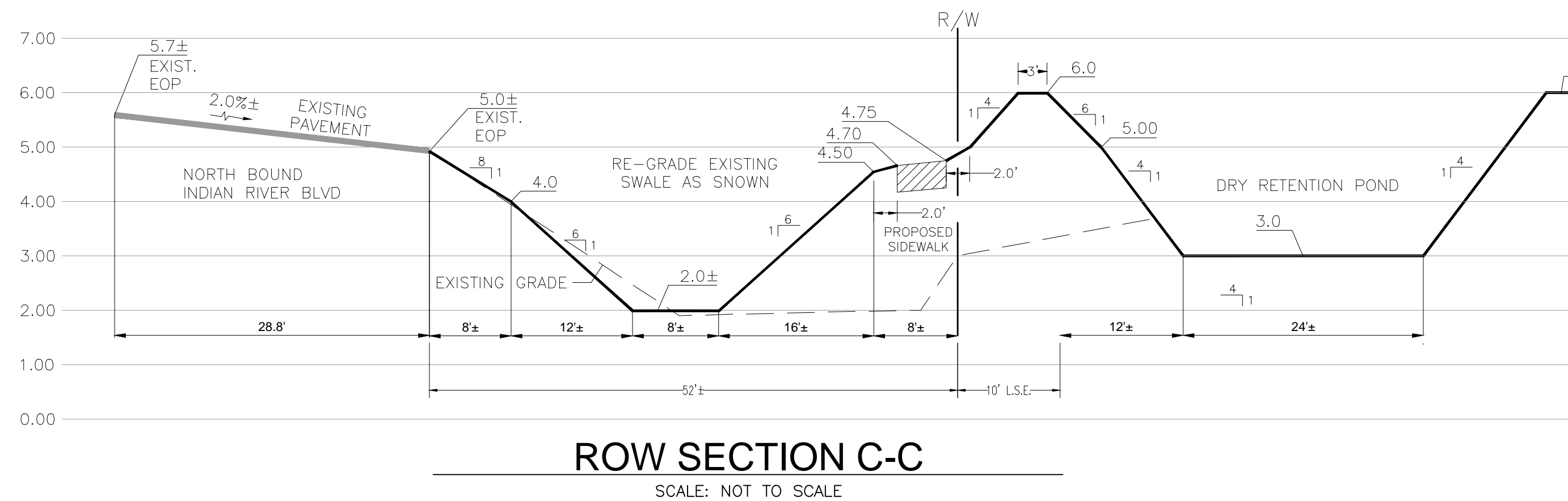
"TRUCKS ENTERING HIGHWAY" SIGNAGE SHALL BE INSTALLED ON INDIAN RIVER BOULEVARD PER MUTCD STANDARDS (LATEST VERSION).



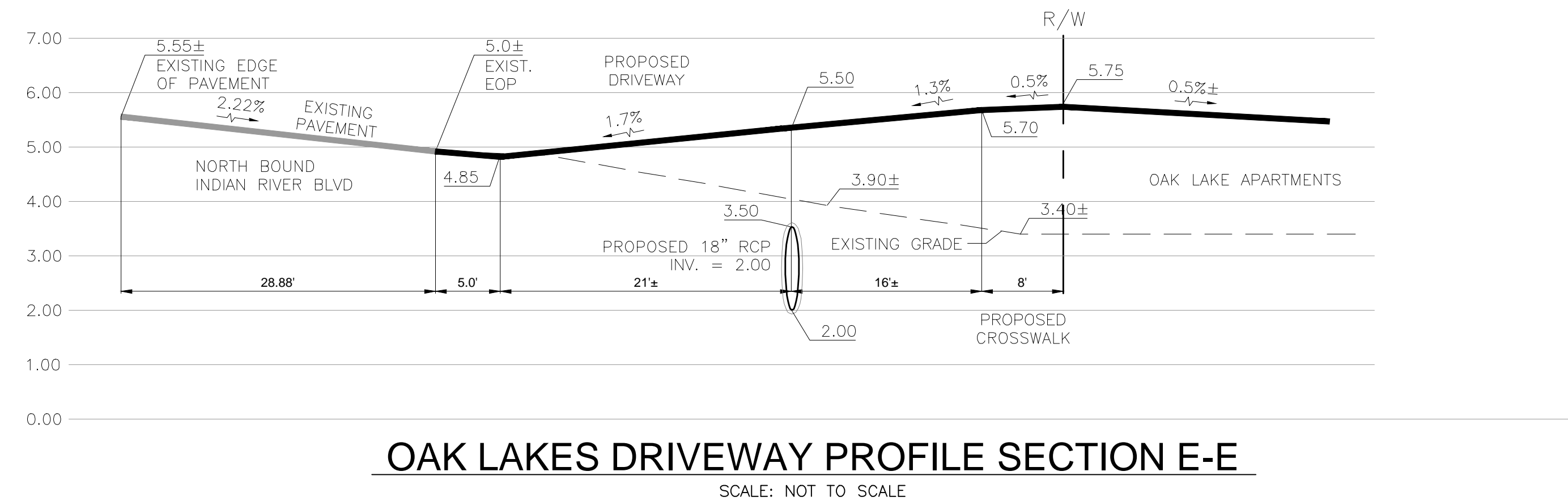
ROW SECTION B-B
SCALE: NOT TO SCALE



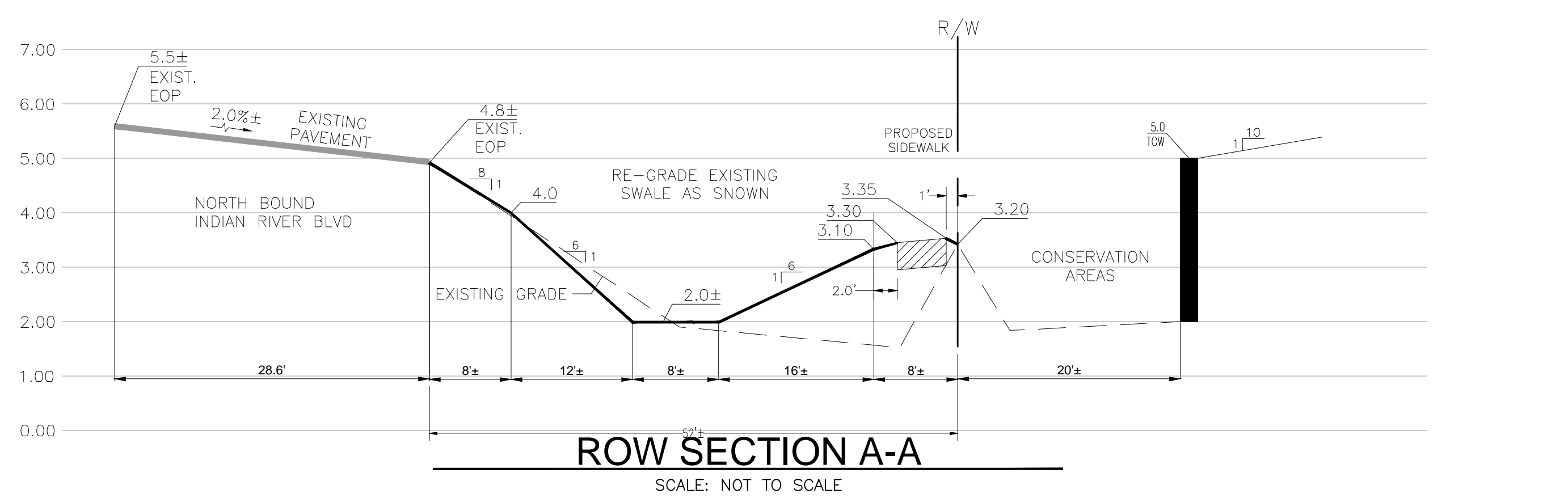
ROW SECTION D-D
SCALE: NOT TO SCALE



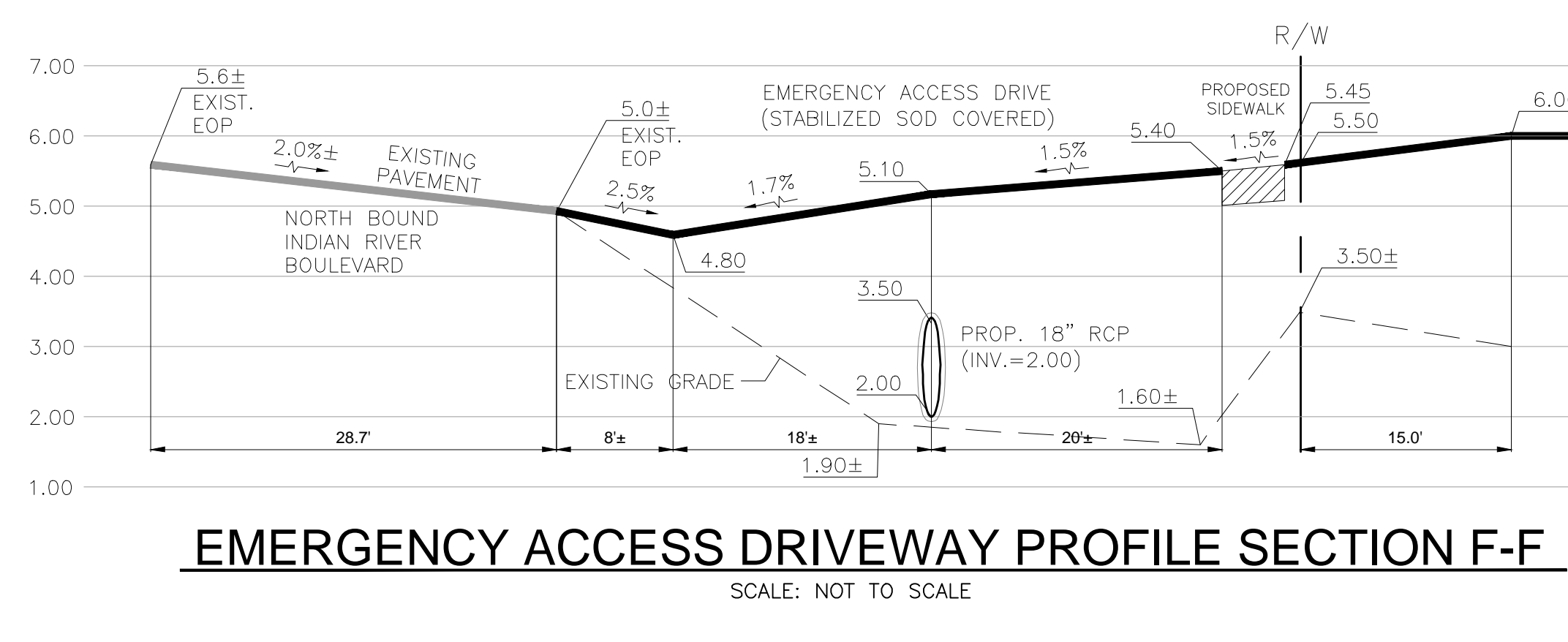
ROW SECTION C-C
SCALE: NOT TO SCALE



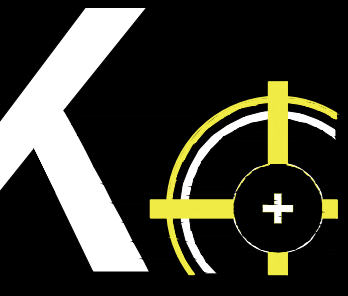
OAK LAKES DRIVEWAY PROFILE SECTION E-E
SCALE: NOT TO SCALE



ROW SECTION A-A
SCALE: NOT TO SCALE



EMERGENCY ACCESS DRIVEWAY PROFILE SECTION F-F
SCALE: NOT TO SCALE



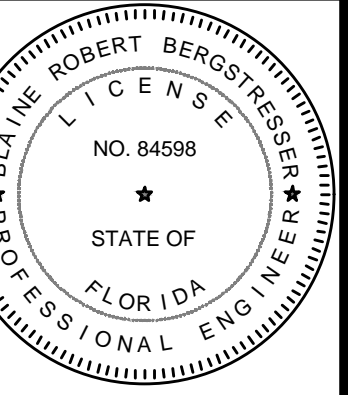
KMA
ENGINEERING & SURVEYING, LLC
2045 14TH AVE. SUITE #3
VERO BEACH, FL 34960
PHONE: (772) 568-9505
FBIPE C.O.A. # 33705

REVISIONS:	
BY:	COMMENT:

NOT FOR CONSTRUCTION

PROJECT:
OAK LAKE APARTMENTS
City of Vero Beach, Florida

CLIENT:
OAK LAKE APARTMENTS
City of Vero Beach
Indian River County
Florida



BLAINE BERGSTRESSER, P.E.
FLORIDA LICENSE No. 84598
02/24/2022

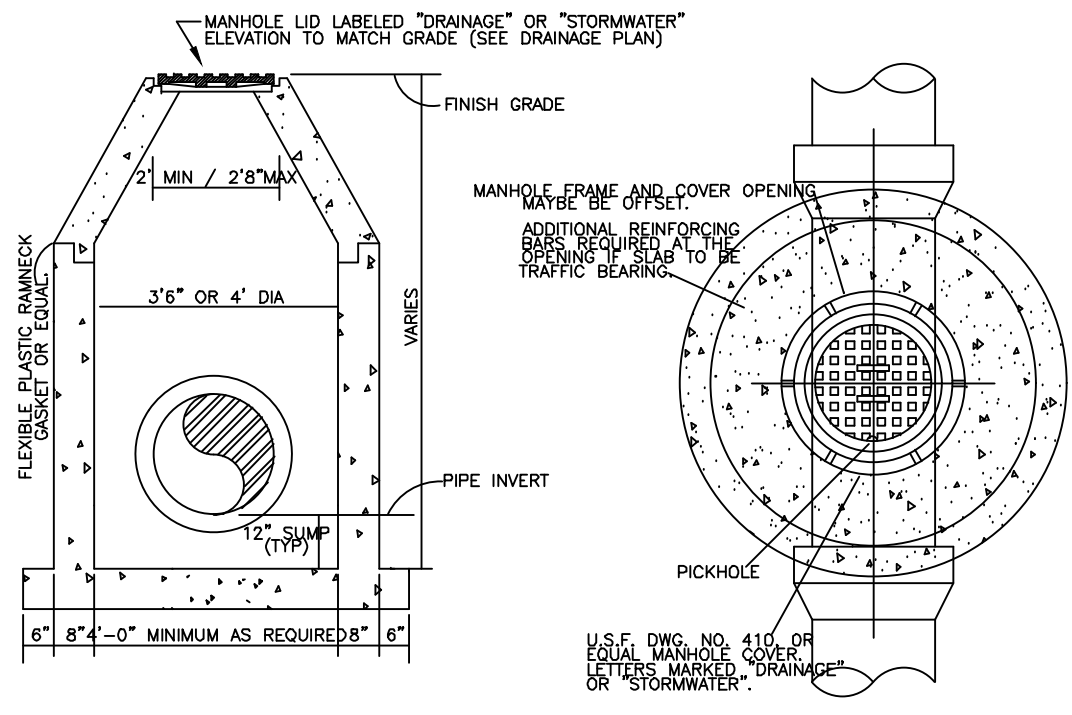


PROJECT No.: 22-1022
DRAWN BY: PMP
CHECKED BY: BRB
DATE: 02/22/2022
CAD ID: 22-1022 PGD

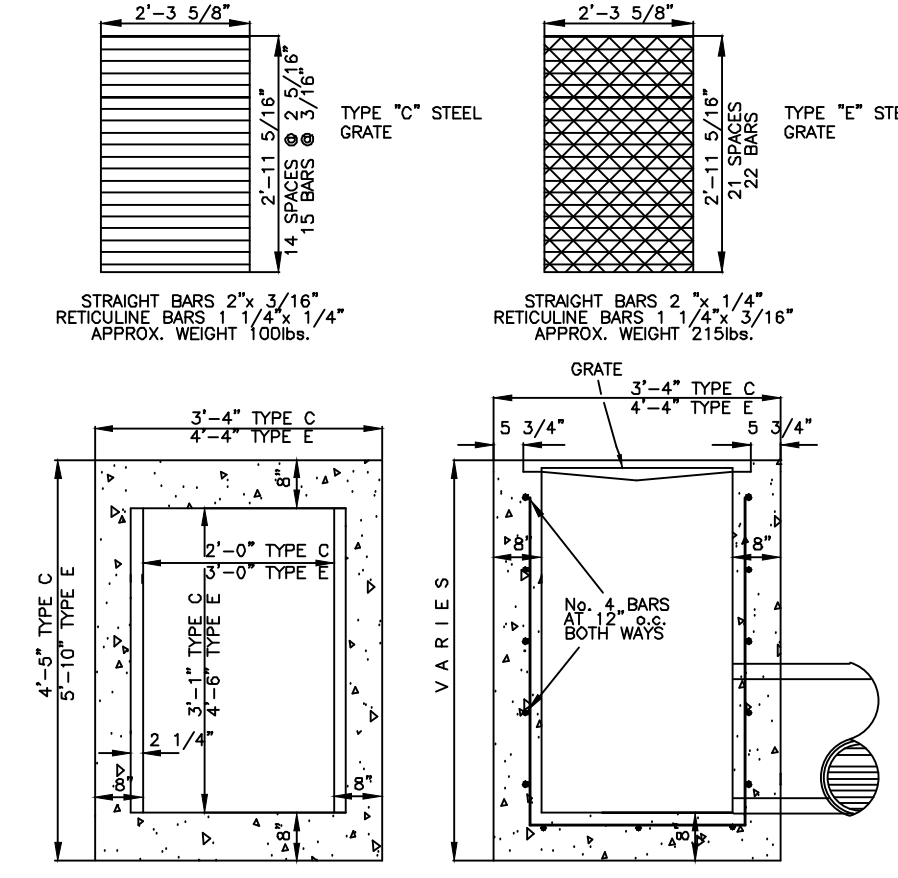
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OFF-SITE ROW SECTIONS

SHEET NUMBER:
3h

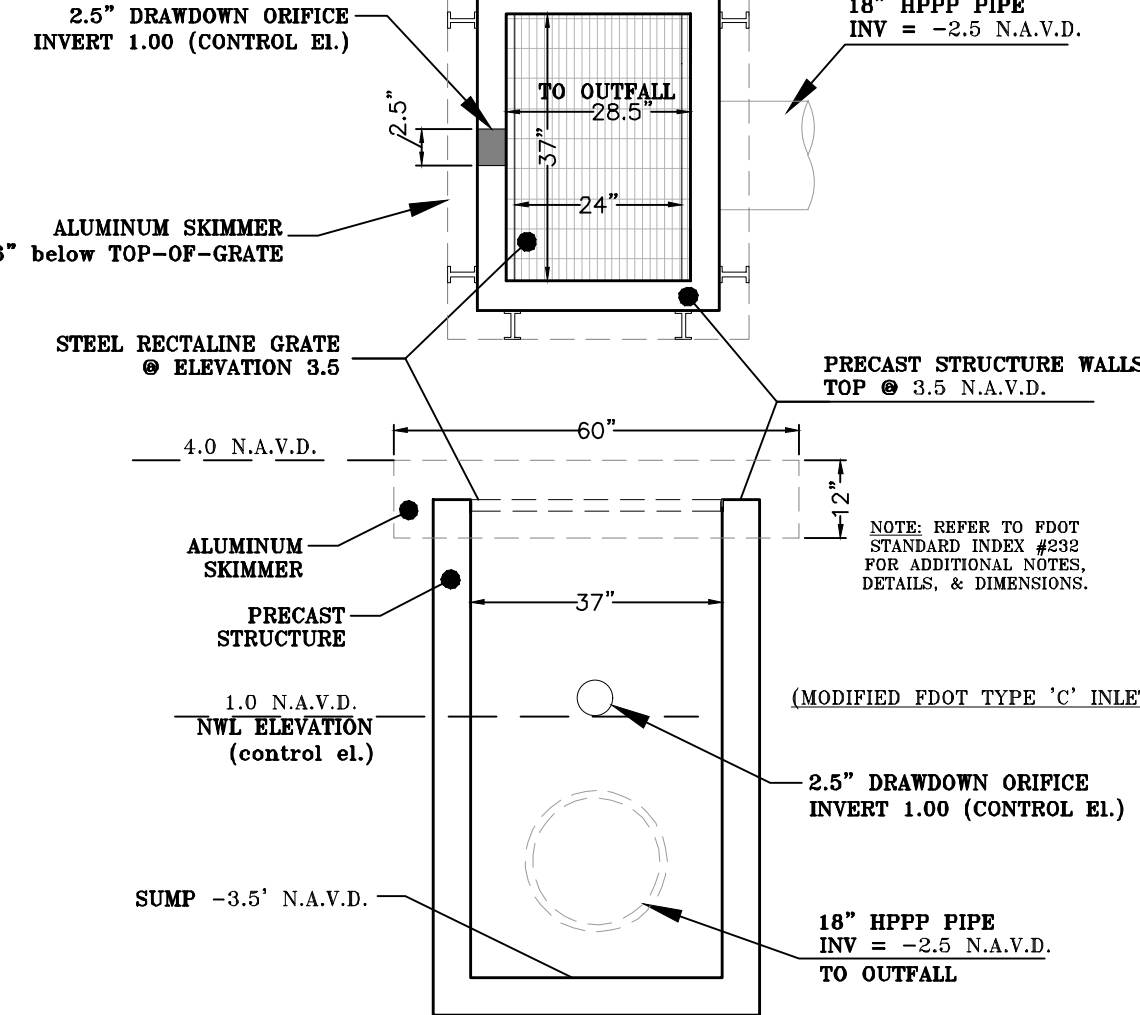
Project: 22-1022, Revision: 01, Date: 02/22/2022, Drawn By: PMP, Checked By: BRB, Date: 02/22/2022, CAD ID: 22-1022 PGD, File Path: \\server\projects\22-1022\22-1022 ROW SECTIONS.dwg, Plot Date: 02/22/2022, Plot Time: 10:00 AM, Plot User: pmp



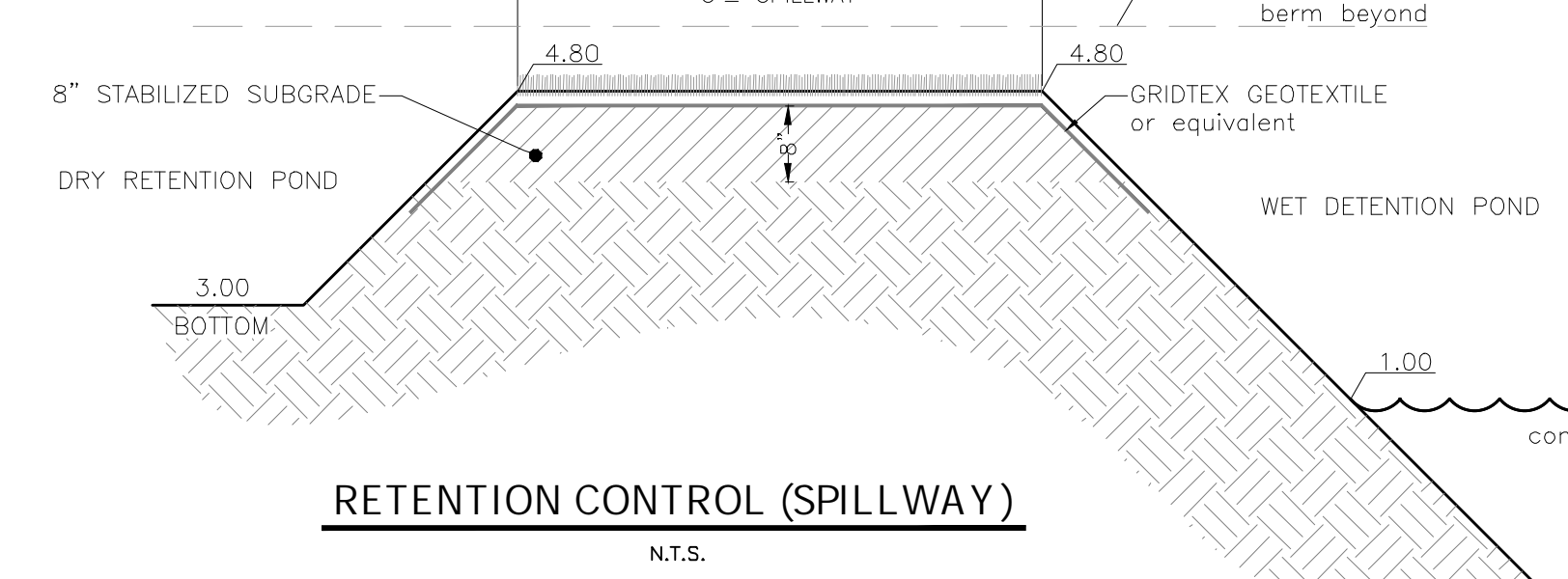
Drainage Junction Box
N.T.S.



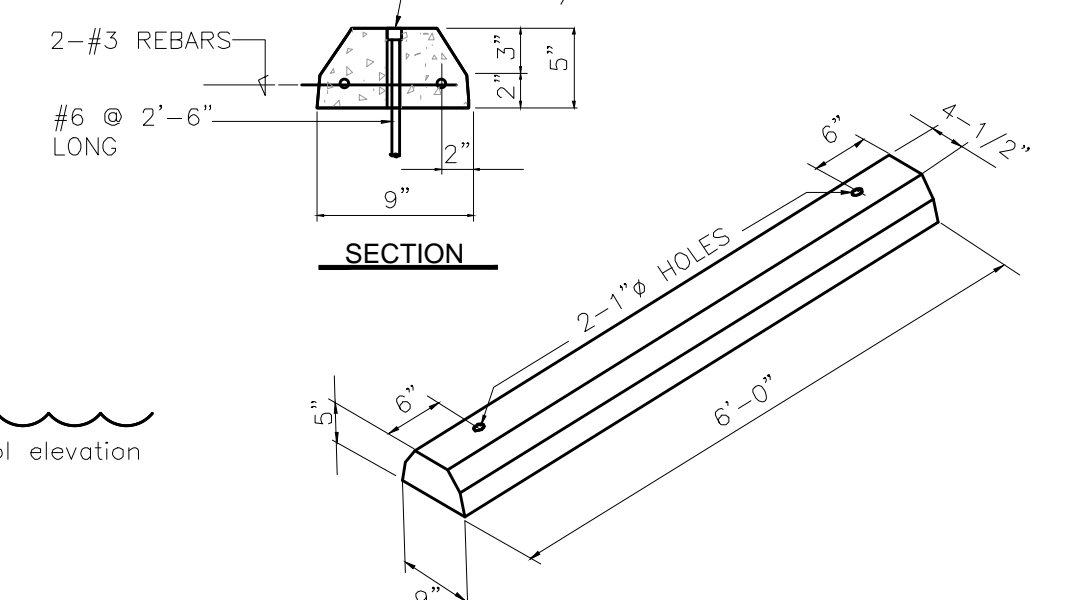
Type 'C' & 'E' Inlets
N.T.S.



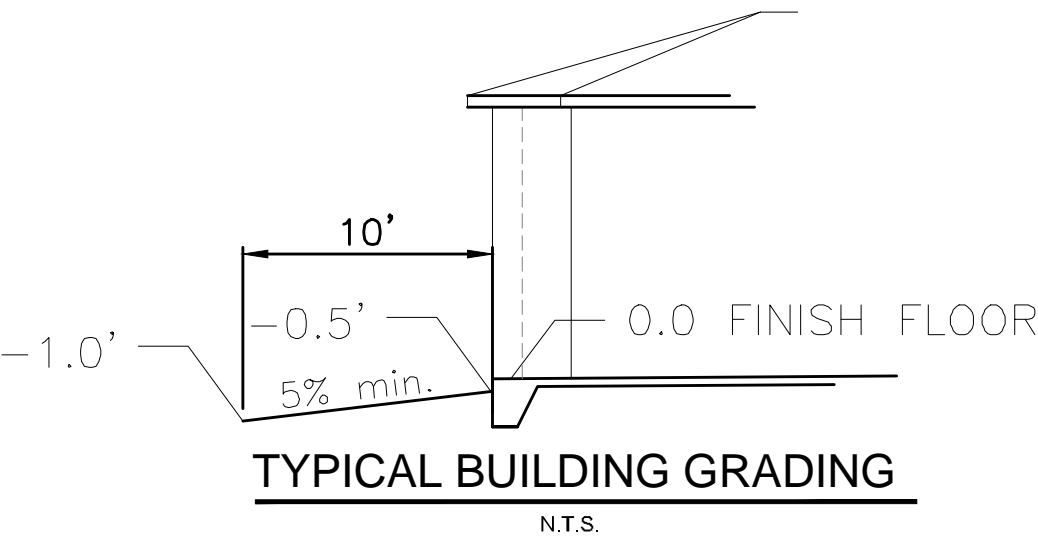
CONTROL STRUCTURE
N.T.S.



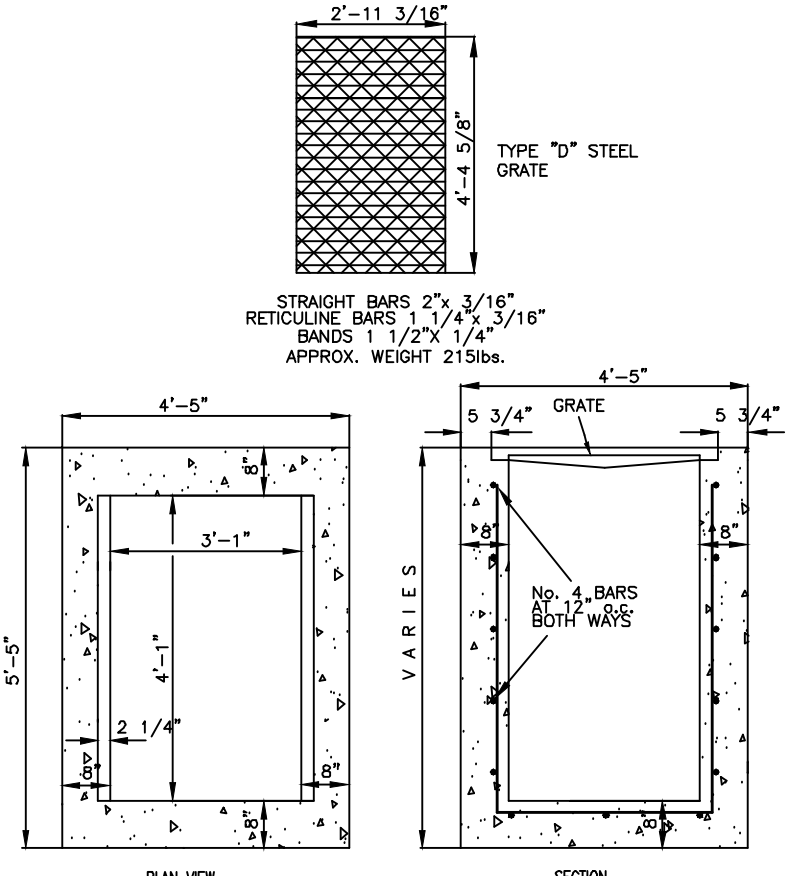
RETENTION CONTROL (SPILLWAY)
N.T.S.



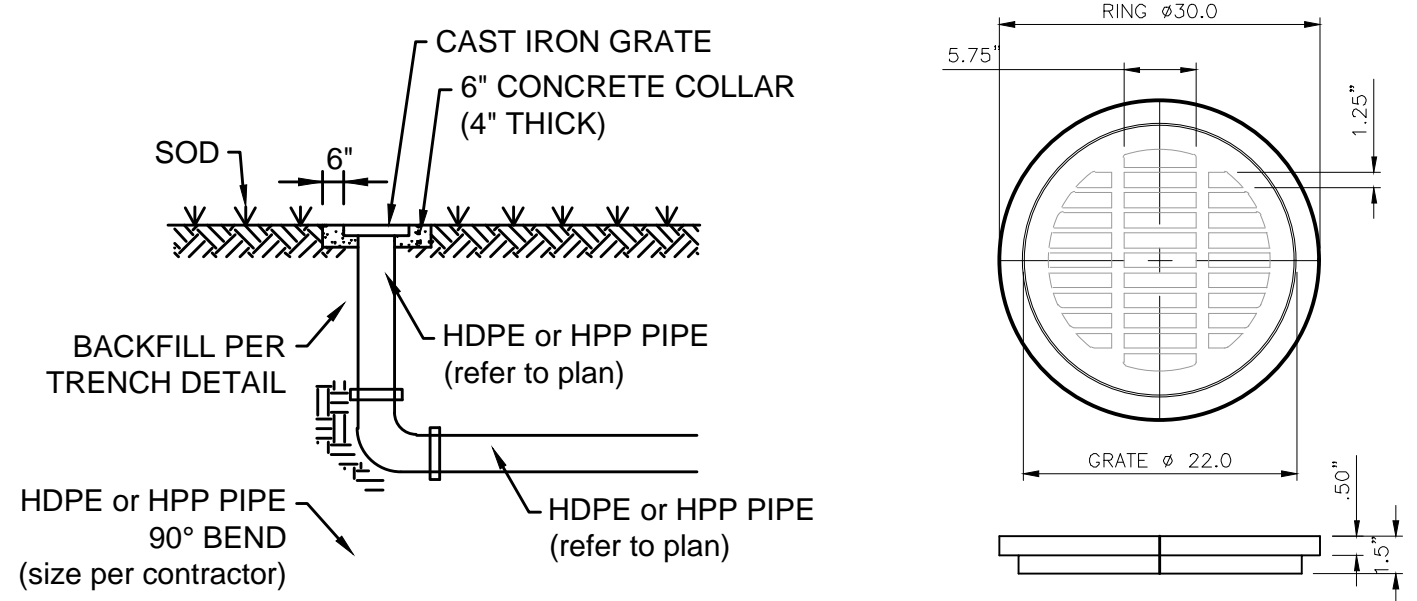
PRECAST CONCRETE WHEEL STOP DETAIL
N.T.S.



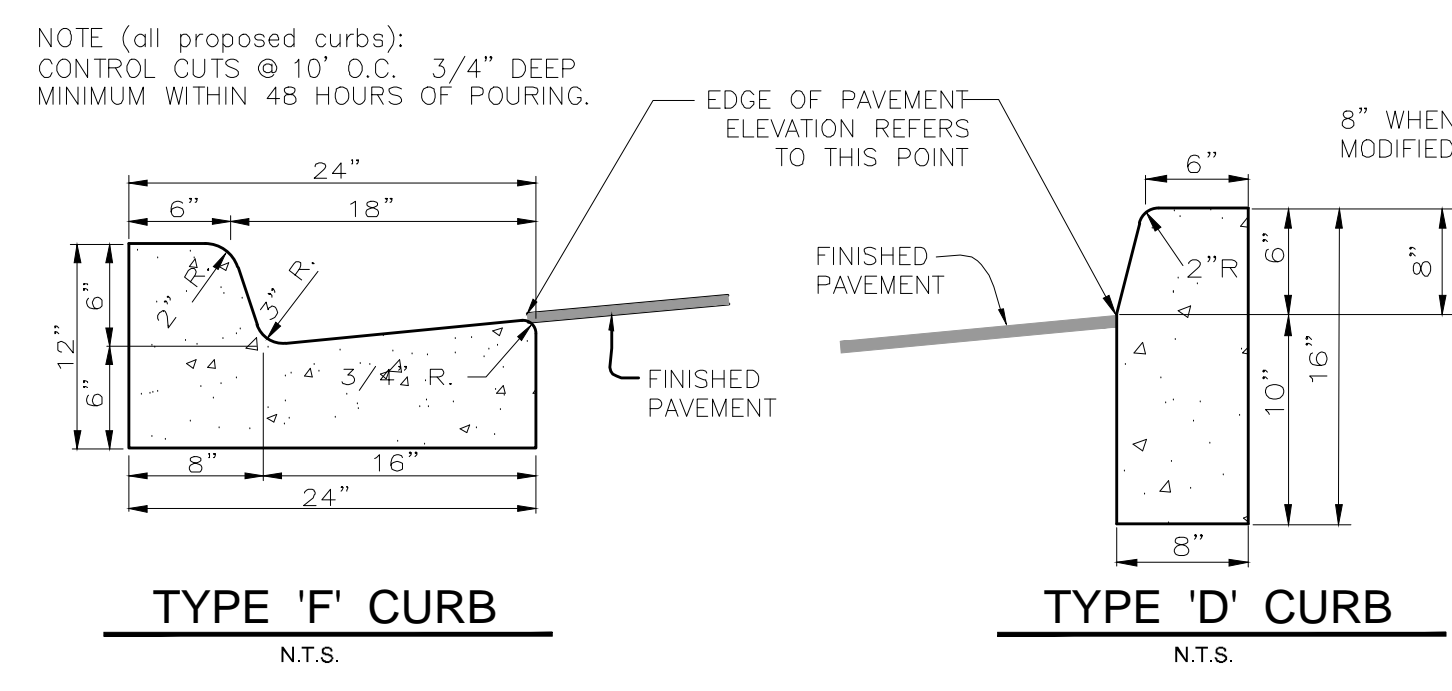
TYPICAL BUILDING GRADING
N.T.S.



Type 'D' Inlet
N.T.S.



TYPICAL YARD DRAIN DETAIL
N.T.S.

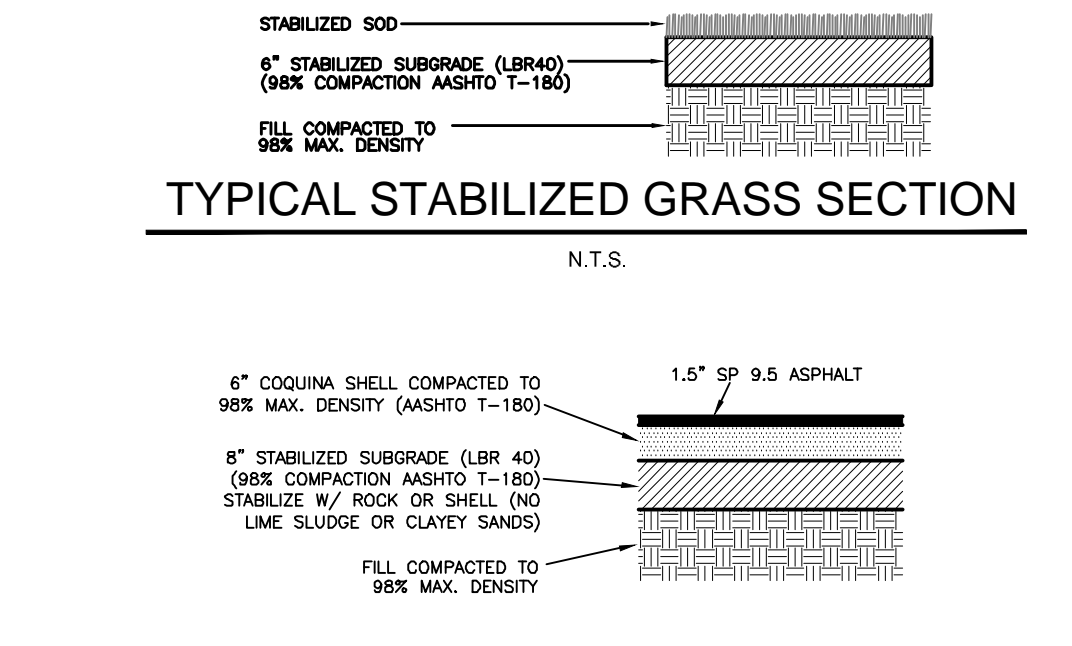


TYPE 'F' CURB
N.T.S.

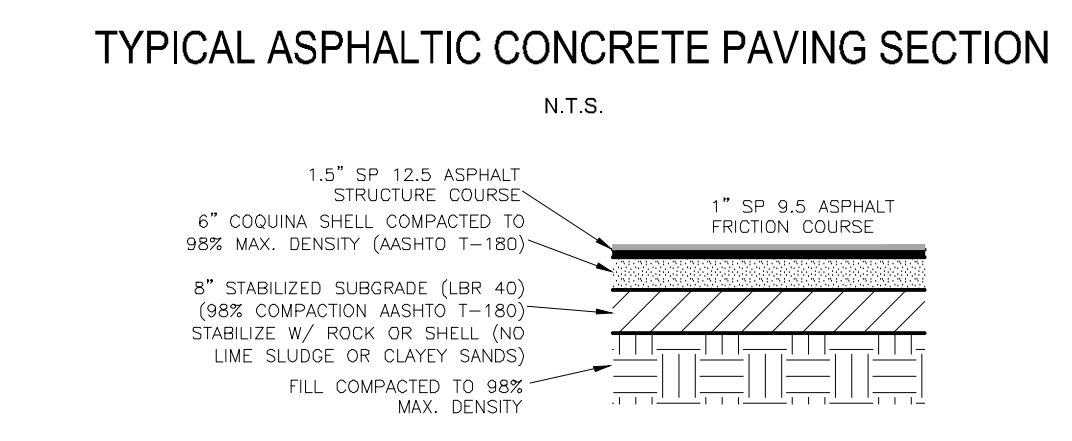
TYPE 'D' CURB
N.T.S.

FLUSH HEADER CURB (ENVIRONMENTAL CURB)
N.T.S.

TYPE A CURB
N.T.S.

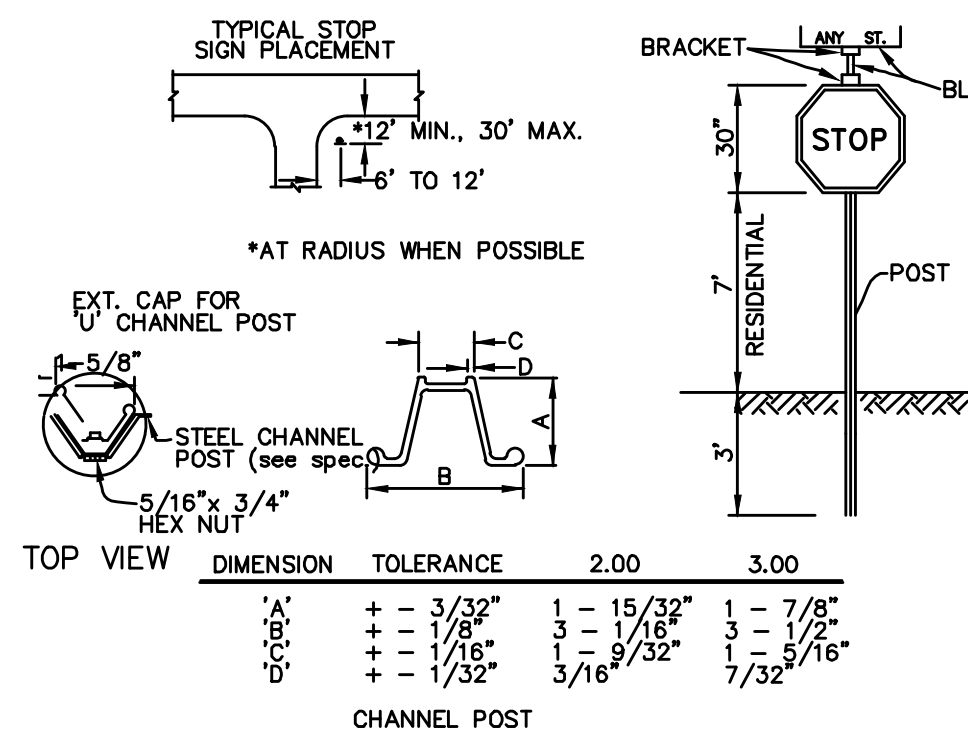


TYPICAL STABILIZED GRASS SECTION
N.T.S.



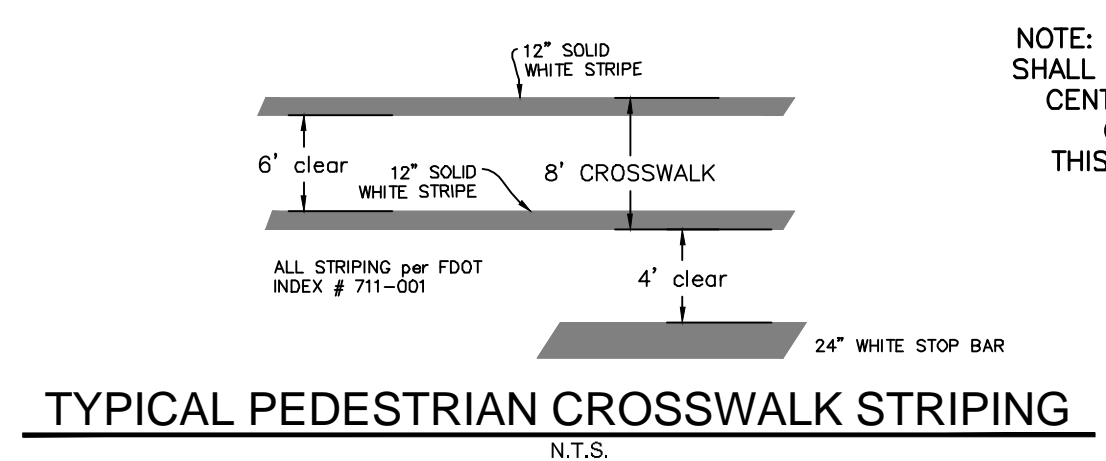
TYPICAL ASPHALTIC CONCRETE PAVING SECTION
N.T.S.

ASPHALTIC CONCRETE PAVING SECTION (within the FDOT/IRC Right-of-Way)
N.T.S.



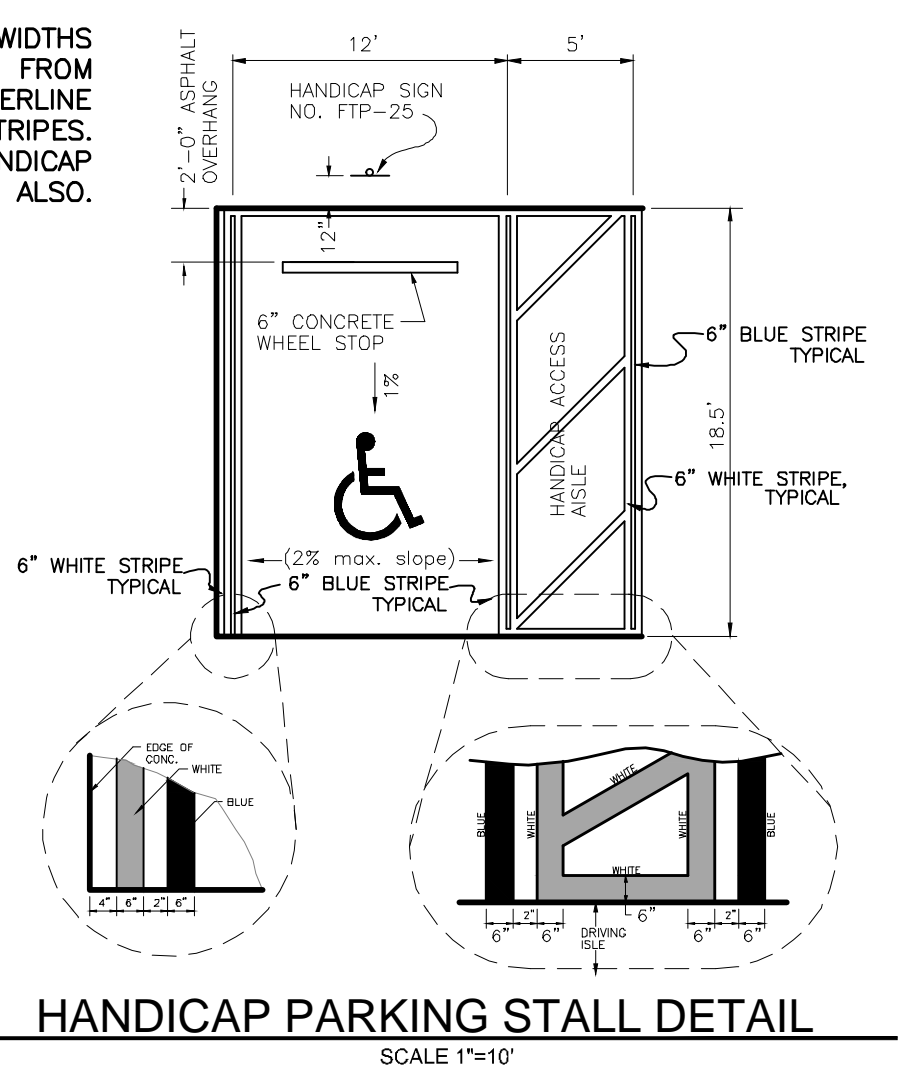
TYP. STREET/STOP SIGN
N.T.S.

GENERAL SPECIFICATIONS
 FLAT BLADE: ALCOA #6063A-6063-T6 ALLOY, ETCHED, DECREASED WITH #1200 ALDINE FINISH WITH #2277 GREEN SCOTCHLITE BACKGROUND AND EQUAL DIMENSIONS - 9\"/>

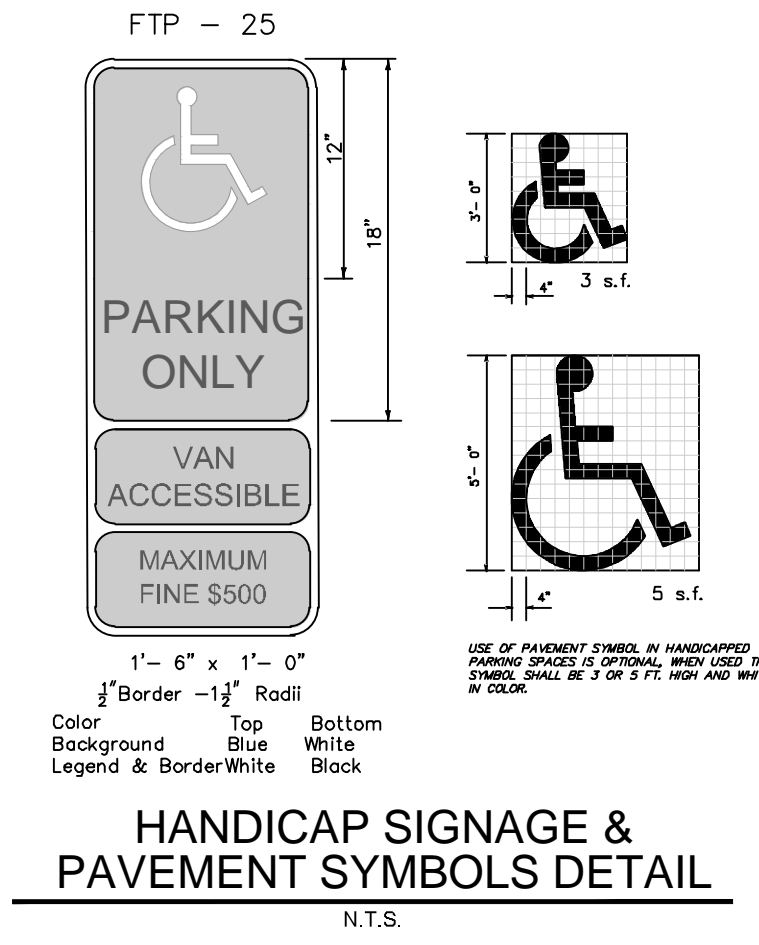


TYPICAL PEDESTRIAN CROSSWALK STRIPING
N.T.S.

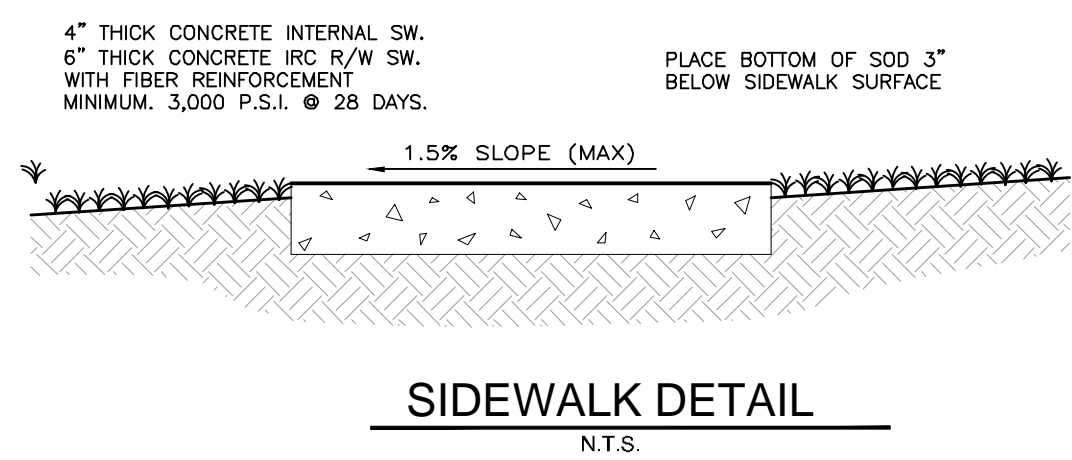
NOTE: PARKING STALL WIDTHS SHALL BE DIMENSIONED FROM CENTERLINE TO CENTERLINE OF THE WHITE STRIPES. THIS APPLIES TO HANDICAP PARKING STALLS ALSO.



HANDICAP PARKING STALL DETAIL
SCALE 1\"/>

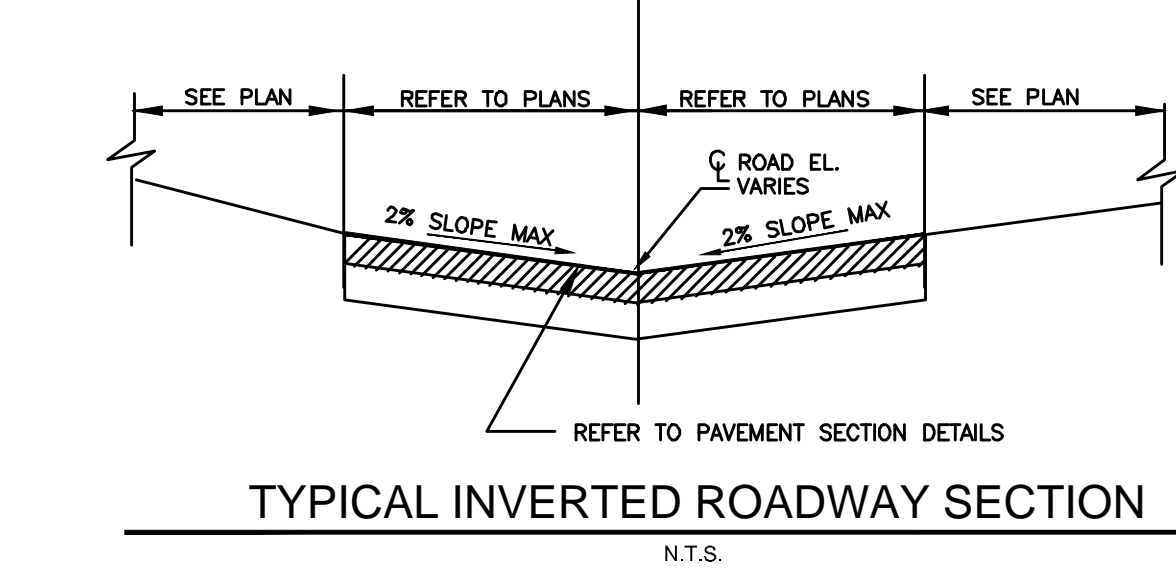


HANDICAP SIGNAGE & PAVEMENT SYMBOLS DETAIL
N.T.S.

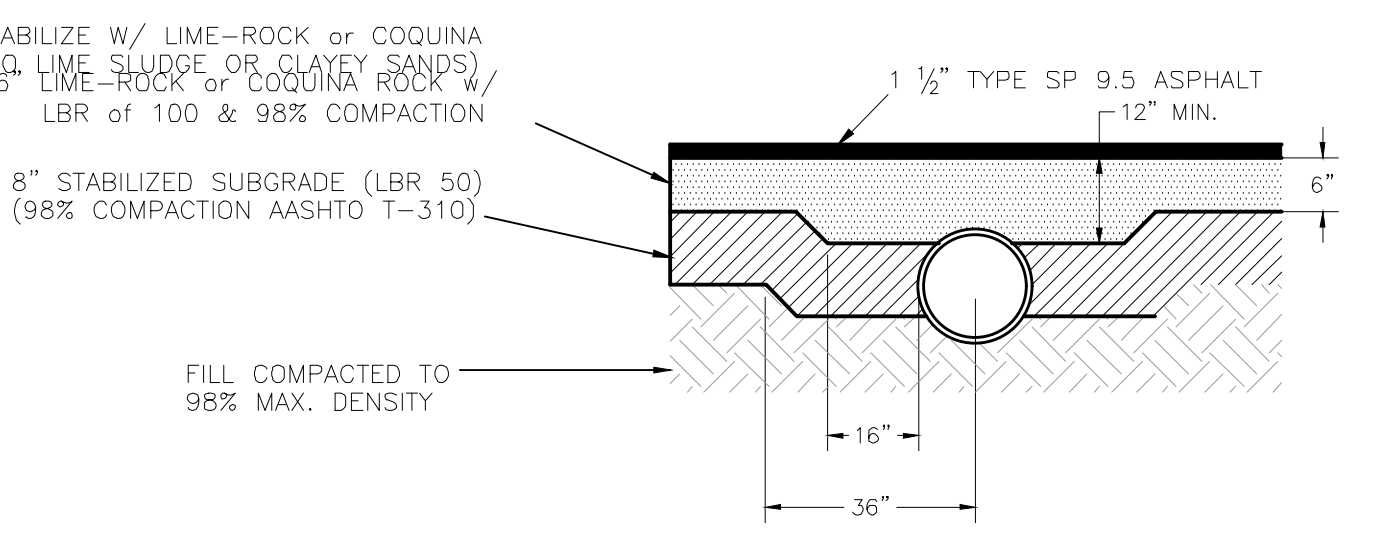


SIDEWALK DETAIL
N.T.S.

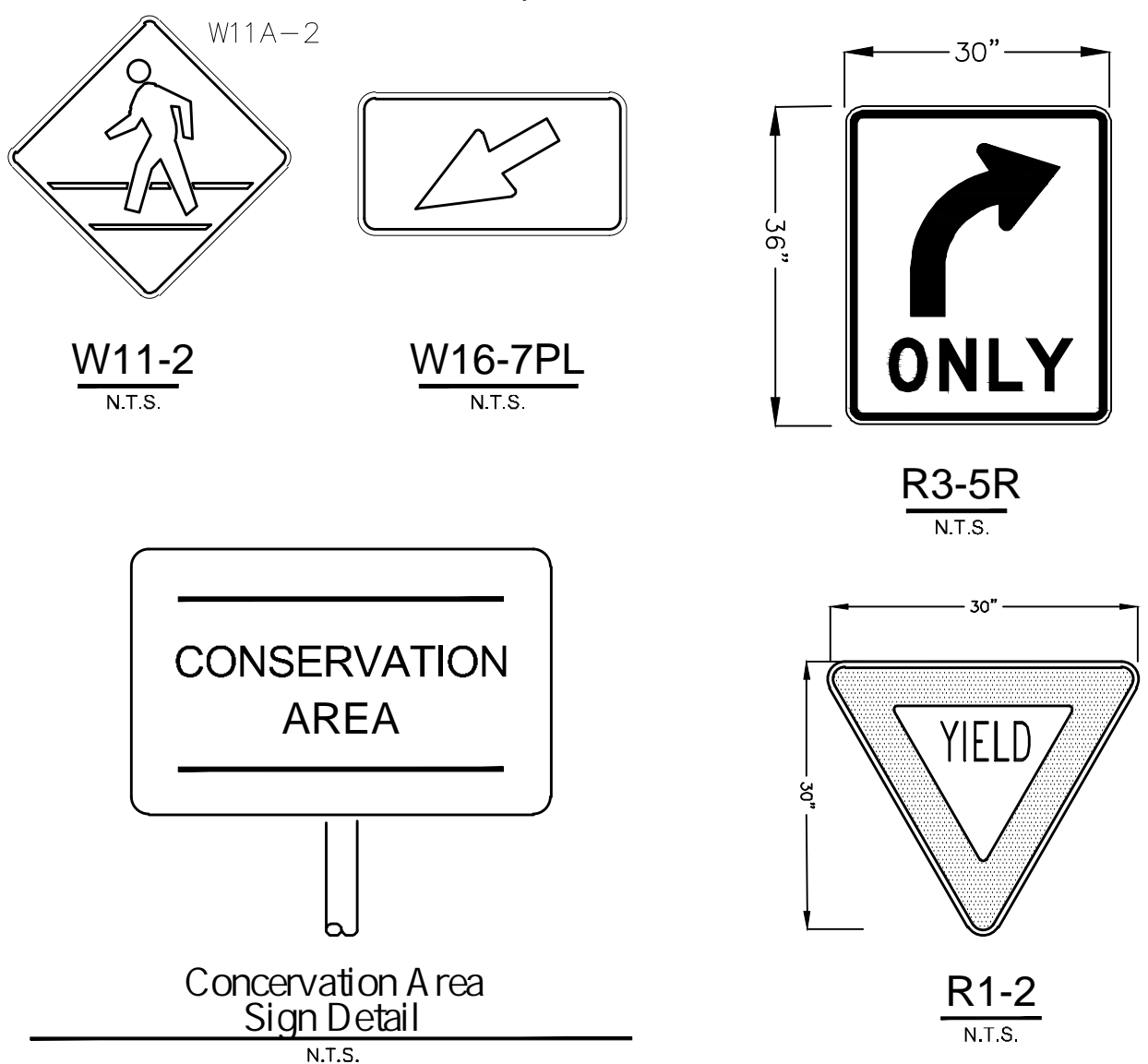
- SIDEWALK NOTES:**
1. ALL MATERIALS AND CONSTRUCTION PROCEDURES SHALL BE IN ACCORDANCE WITH THE "SUGGESTED SPECIFICATIONS FOR CONCRETE AREAS" PREPARED BY THE PORTLAND CEMENT ASSOCIATION.
 2. CONTROL JOINTS SHALL BE CONSTRUCTED AT A MAXIMUM OF 8'-FEET.
 3. AT LEAST THREE (3) COMPRESSIVE STRENGTH CYLINDER SAMPLES SHALL BE TAKEN FOR EACH 10,000 SQUARE FEET OF PAVEMENT OR FIVE (5) PER JOB, WHICHEVER IS GREATER. SLUMP SHALL BE 2 TO 4 INCHES (AASHTO T-119). COMPRESSIVE STRENGTH SHALL BE REPORTED AT 7, 14, AND 28 DAYS.
 4. CONSTRUCT UPON FIRM, STABILIZED GROUND, COMPACTED TO 95% MAXIMUM DRY DENSITY.
 5. SURFACE WITH BROOK FINISH.
 6. SIDEWALK LOCATION AND DETAILS PER FDOT INDEX #310, LATEST EDITION.



TYPICAL INVERTED ROADWAY SECTION
N.T.S.

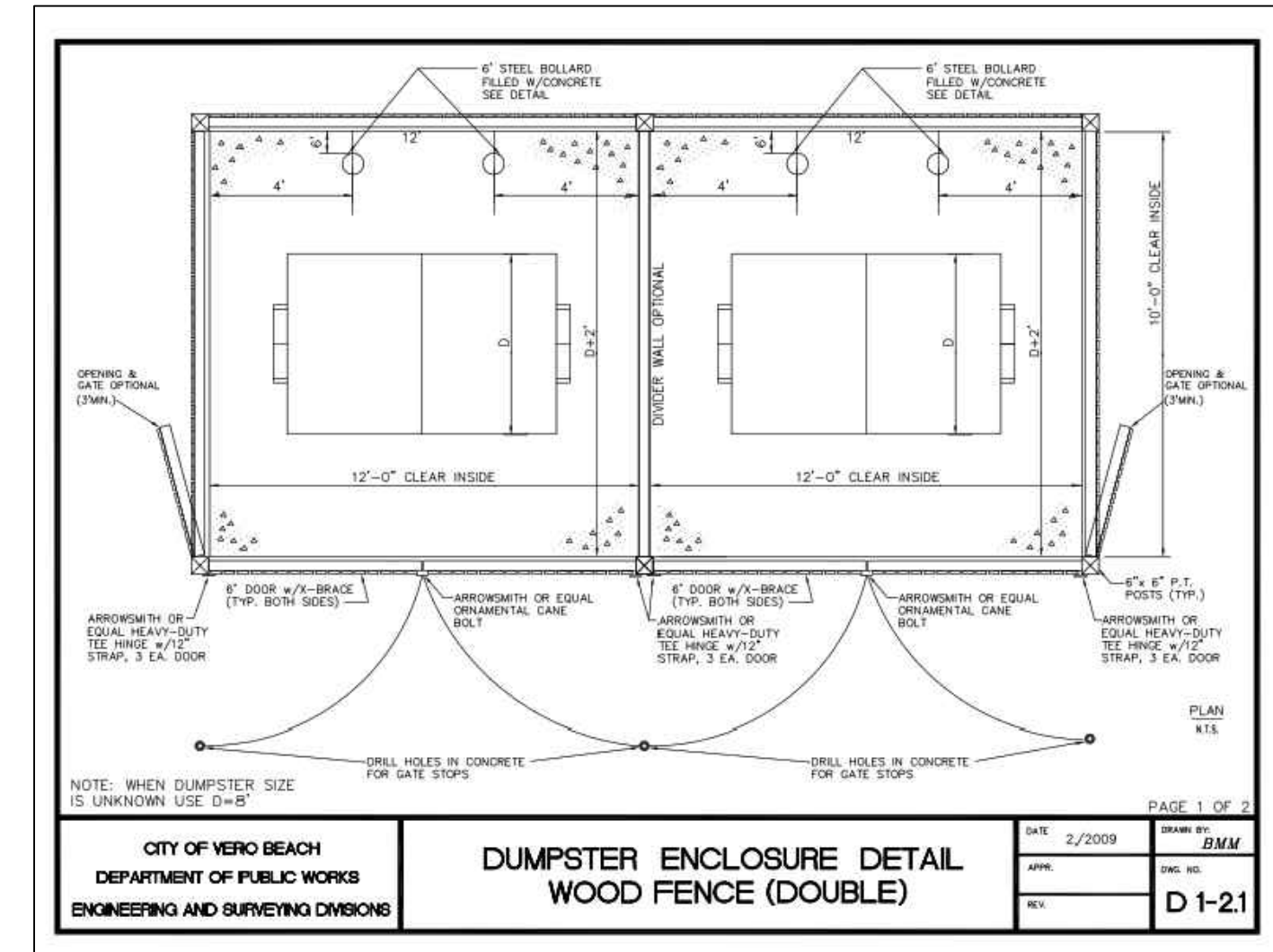


TYPICAL ASPHALTIC CONCRETE PAVING OVER DRAINAGE PIPES
N.T.S.

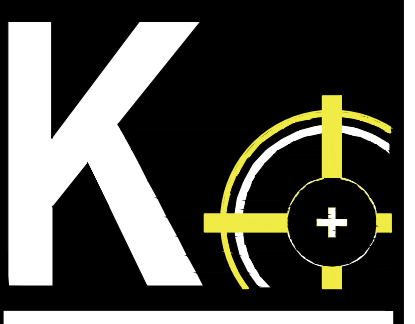


CONSERVATION AREA
N.T.S.

Conservation Area Sign Detail
N.T.S.



DUMPSTER ENCLOSURE DETAIL
WOOD FENCE (DOUBLE)



KMA
 ENGINEERING & SURVEYING, LLC
 2045 14TH AVE. SUITE #3
 VERO BEACH, FL 34960
 PHONE: (772) 588-9505
 FAX: (772) 588-9505
 PIPE C.O.A. # 33705

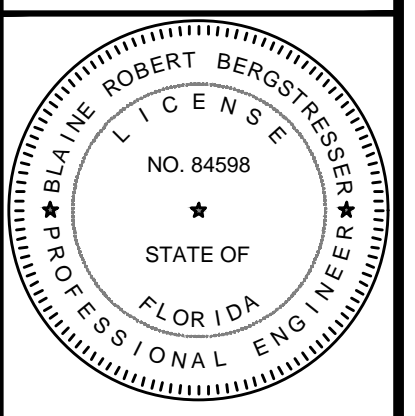
REVISIONS:

BY:	DATE:	COMMENT:

NOT FOR CONSTRUCTION

PROJECT:
OAK LAKE APARTMENTS
 City of Vero Beach, Florida
 Indian River County, Florida

CLIENT:
OAK LAKE APARTMENTS
 City of Vero Beach
 Indian River County, Florida



BLAINE BERGSTRESSER, P.E.
 FLORIDA LICENSE NO. 84598
 02/24/2022



KNOW WHATS BELOW
 ALWAYS CALL 811
 BEFORE YOU DIG
 www.call811.com

SHEET TITLE:
PAVING GRADING & DRAINAGE DETAILS

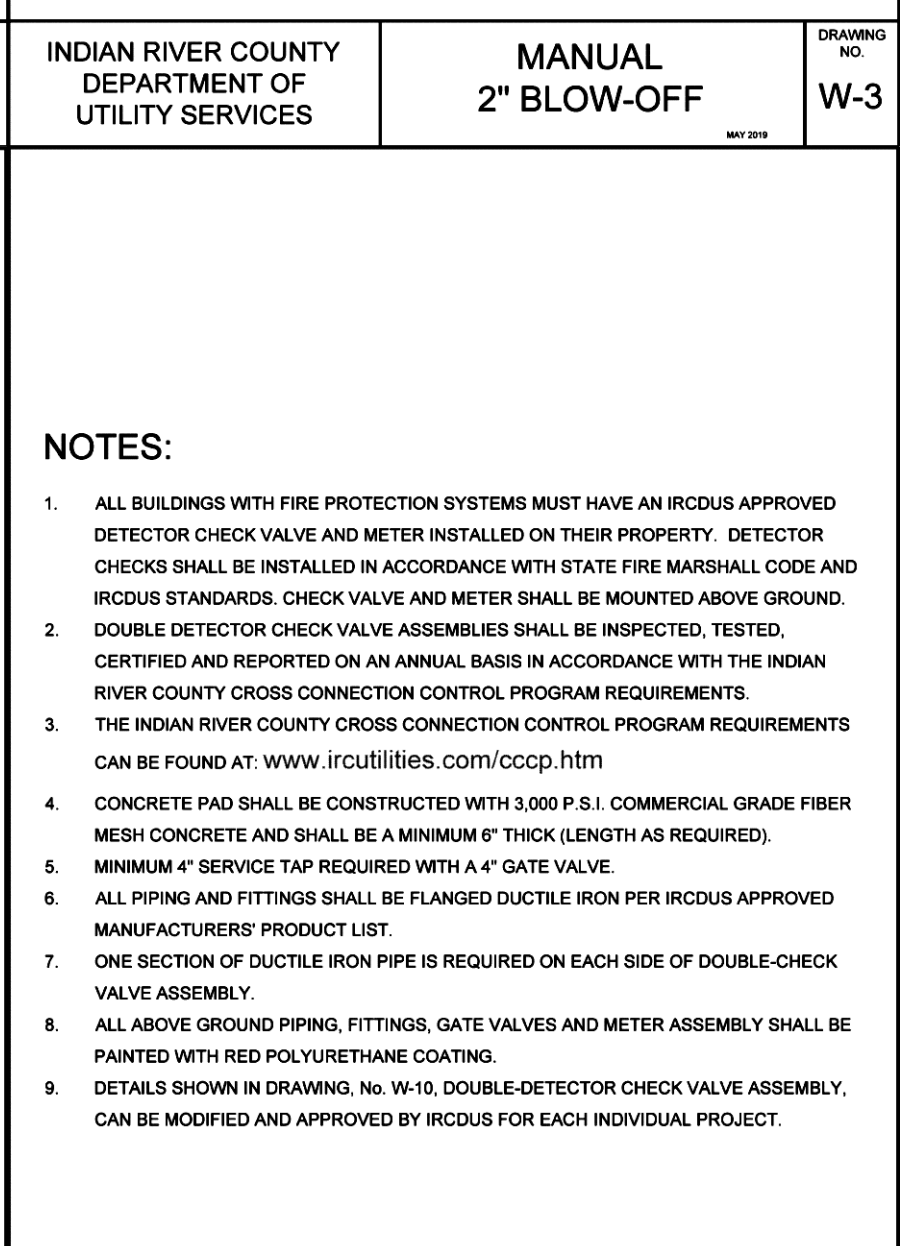
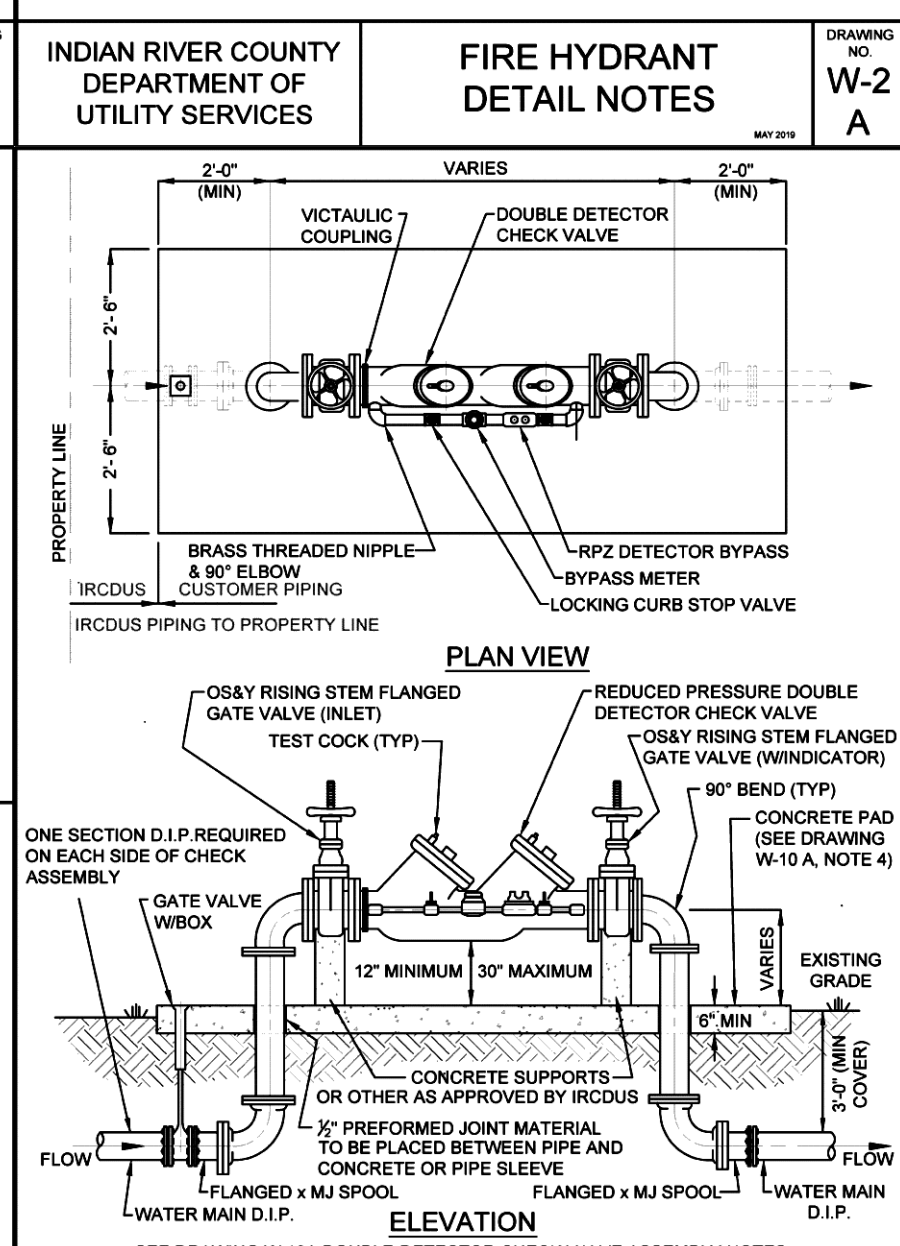
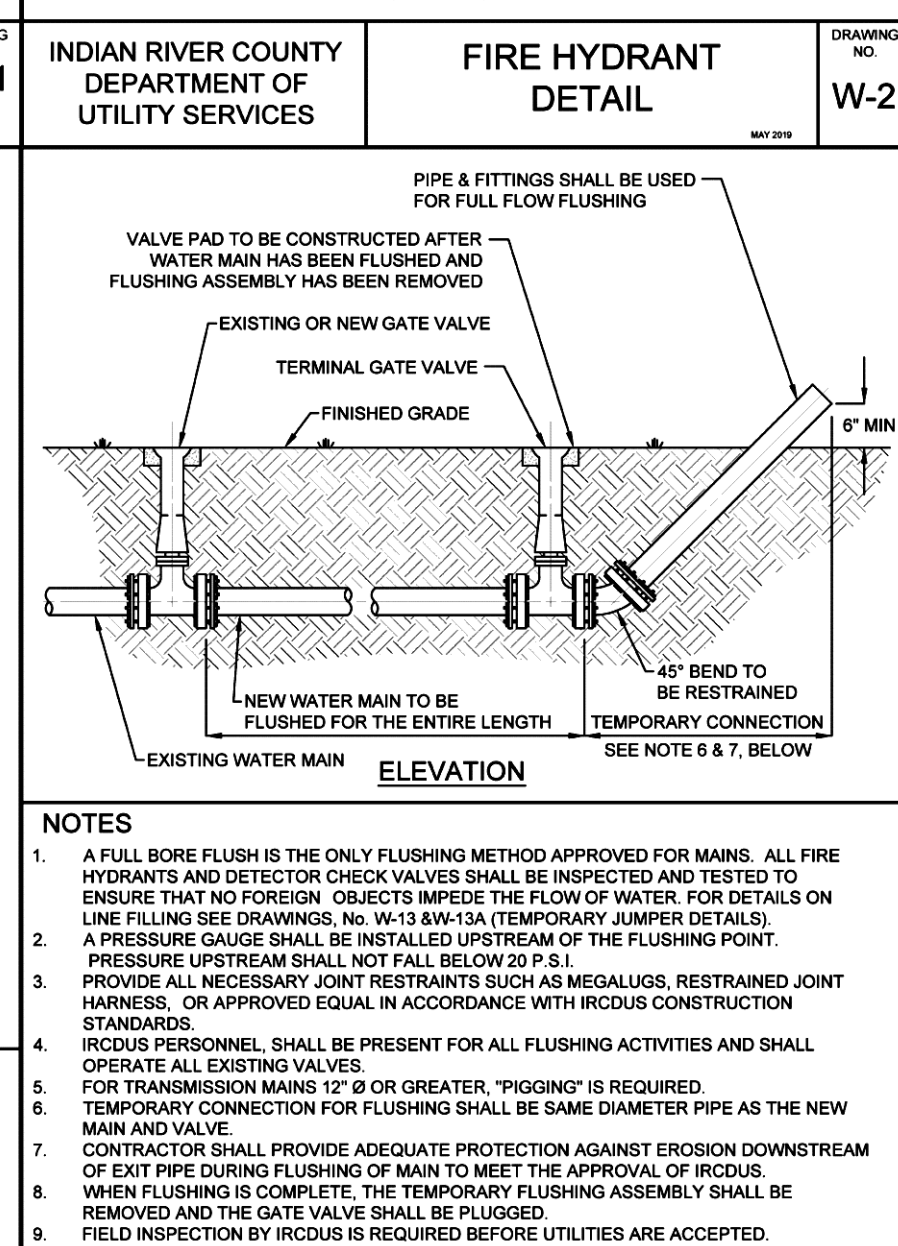
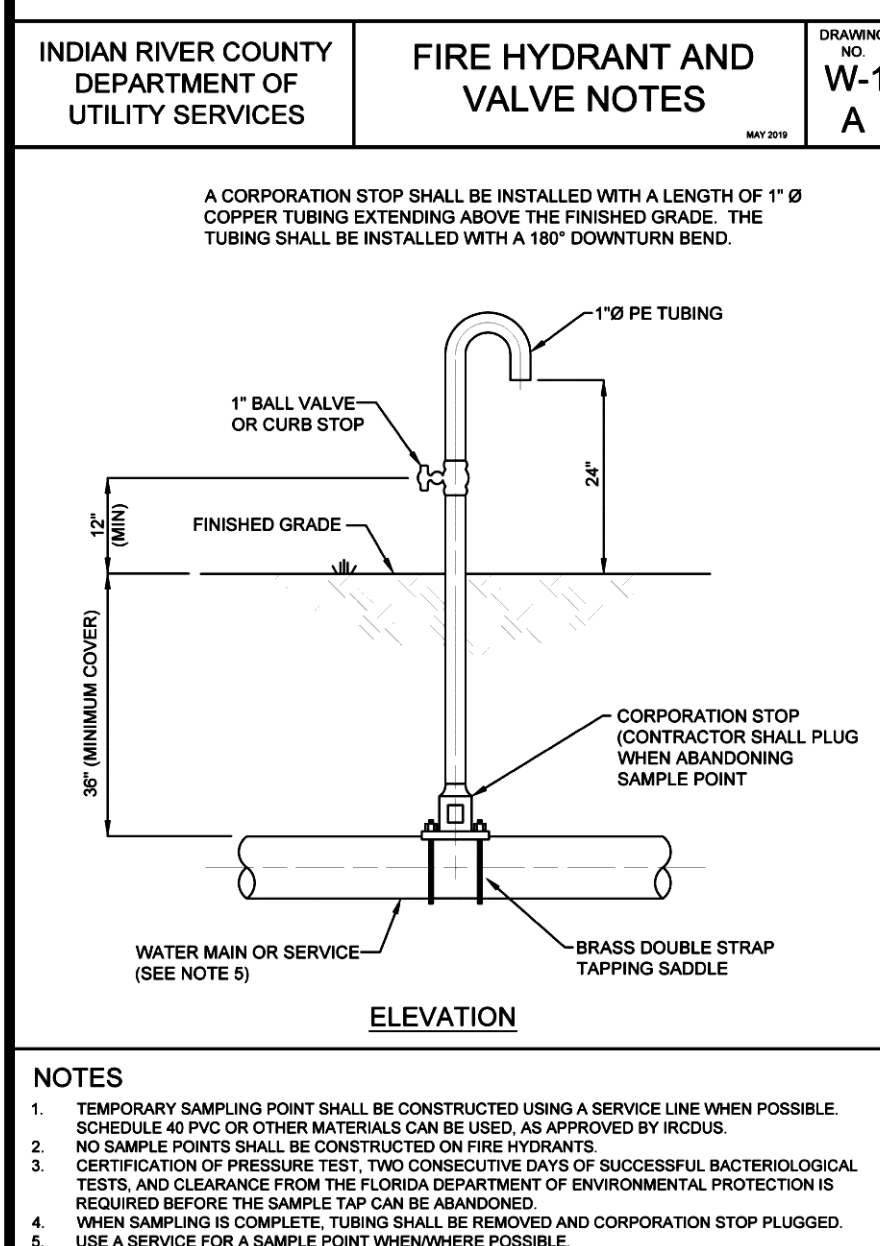
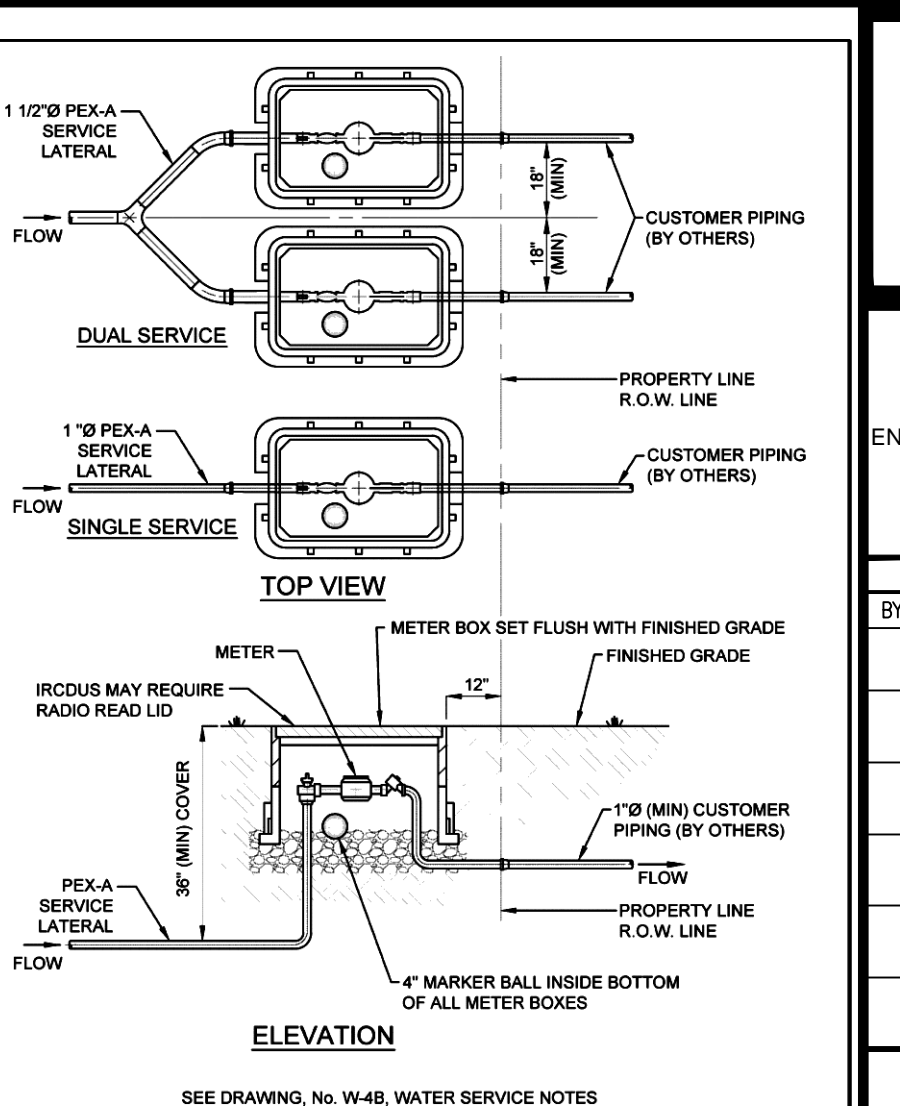
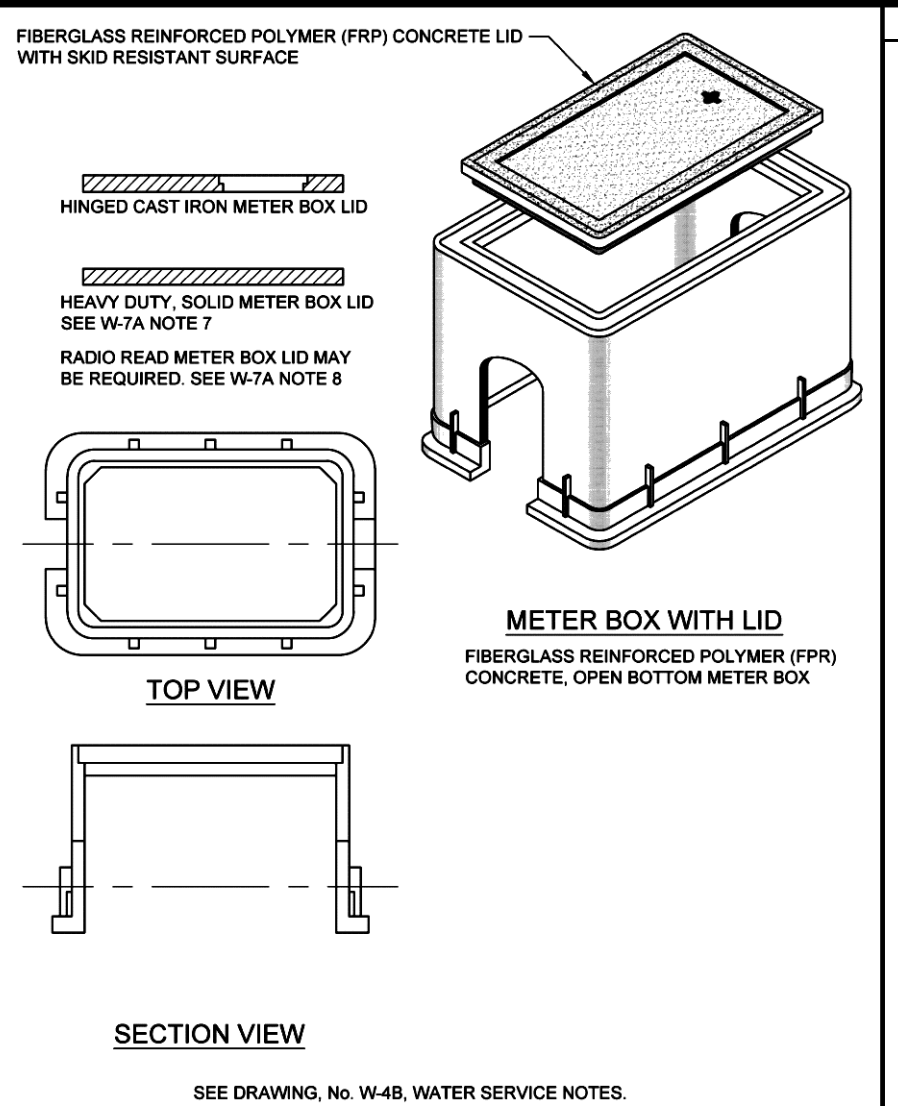
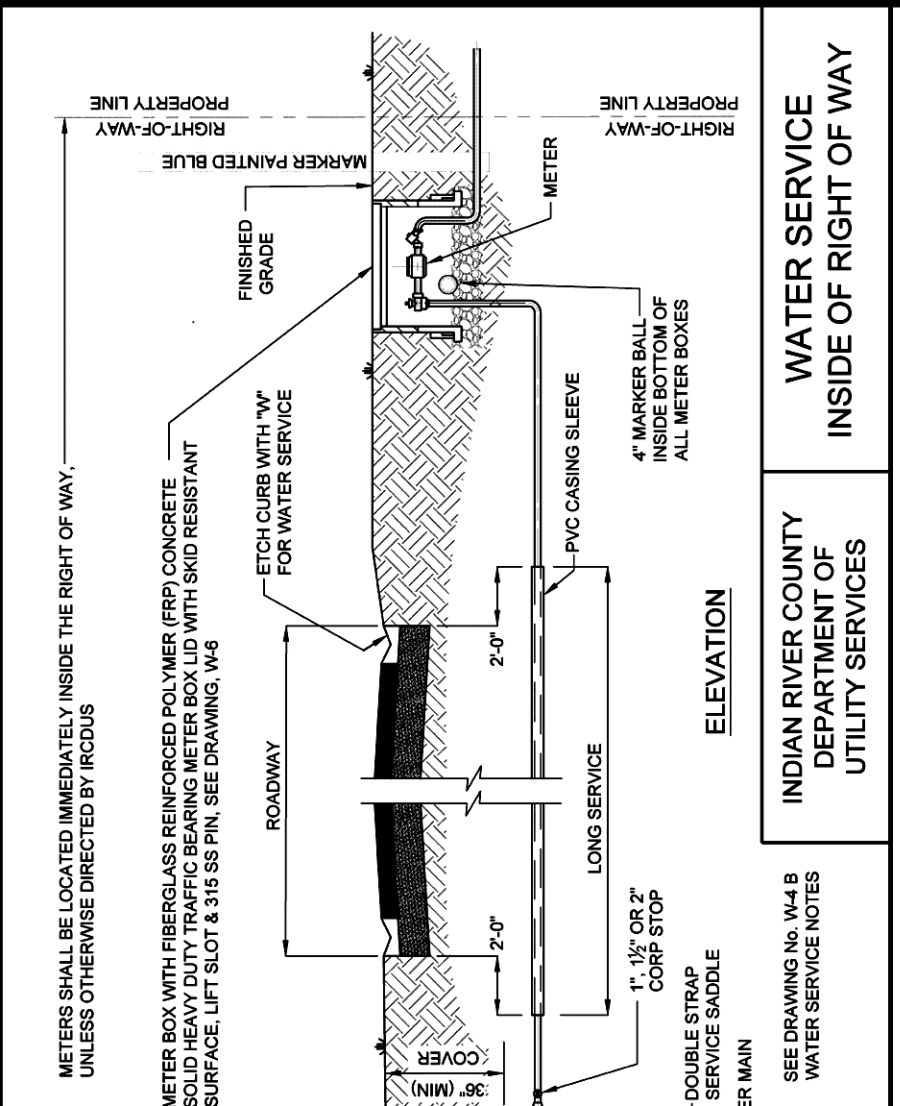
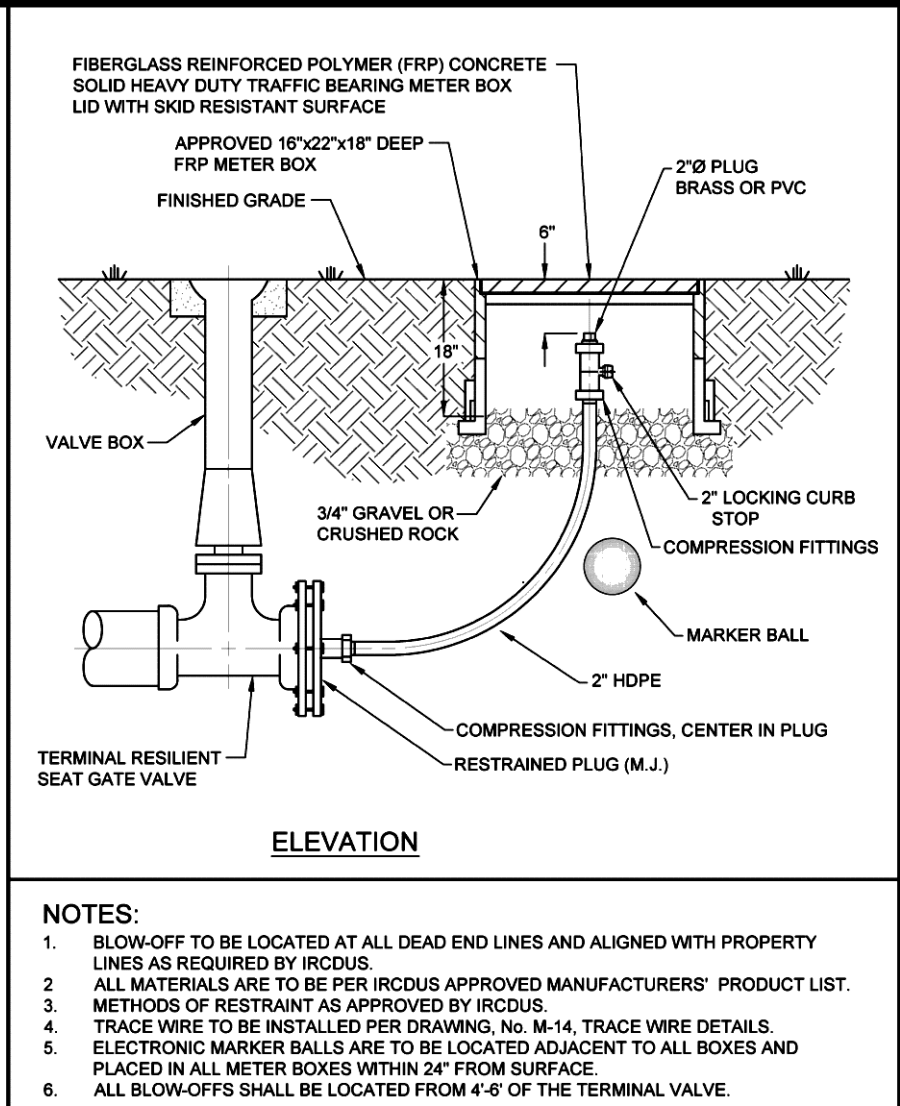
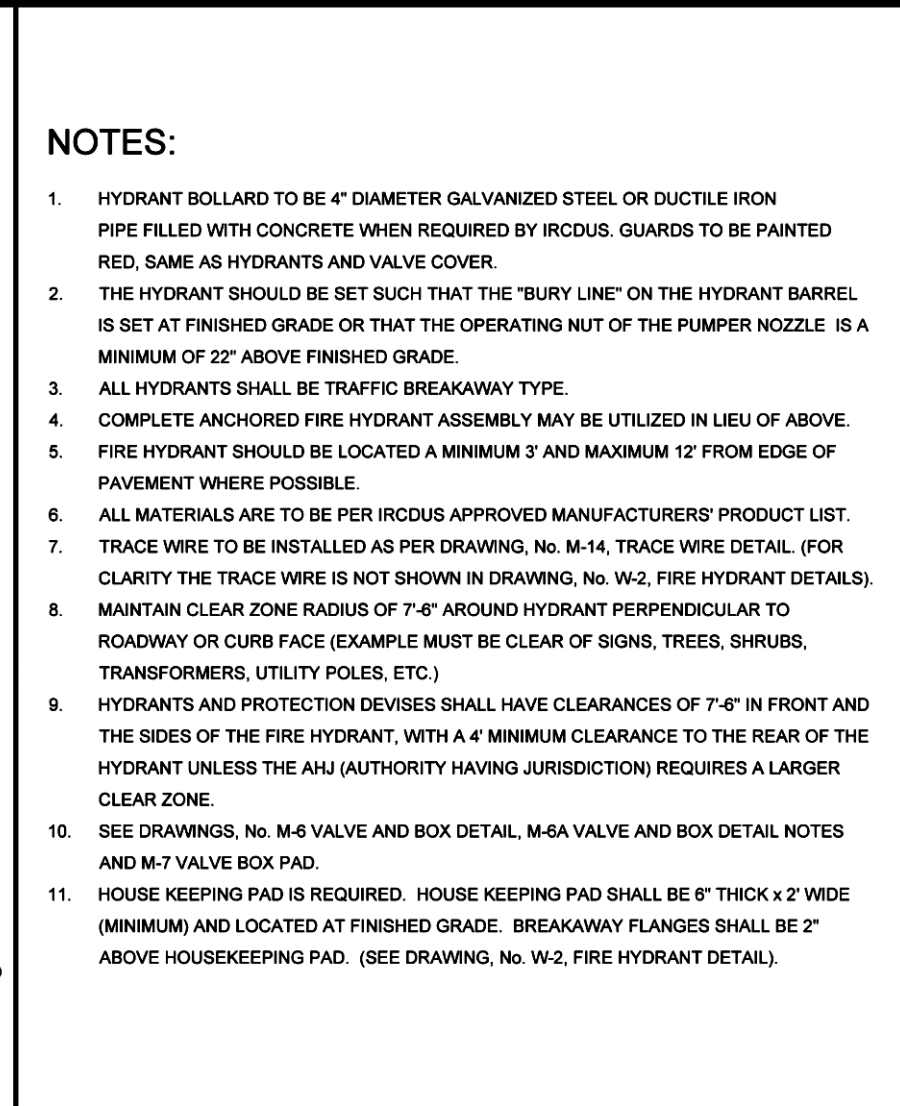
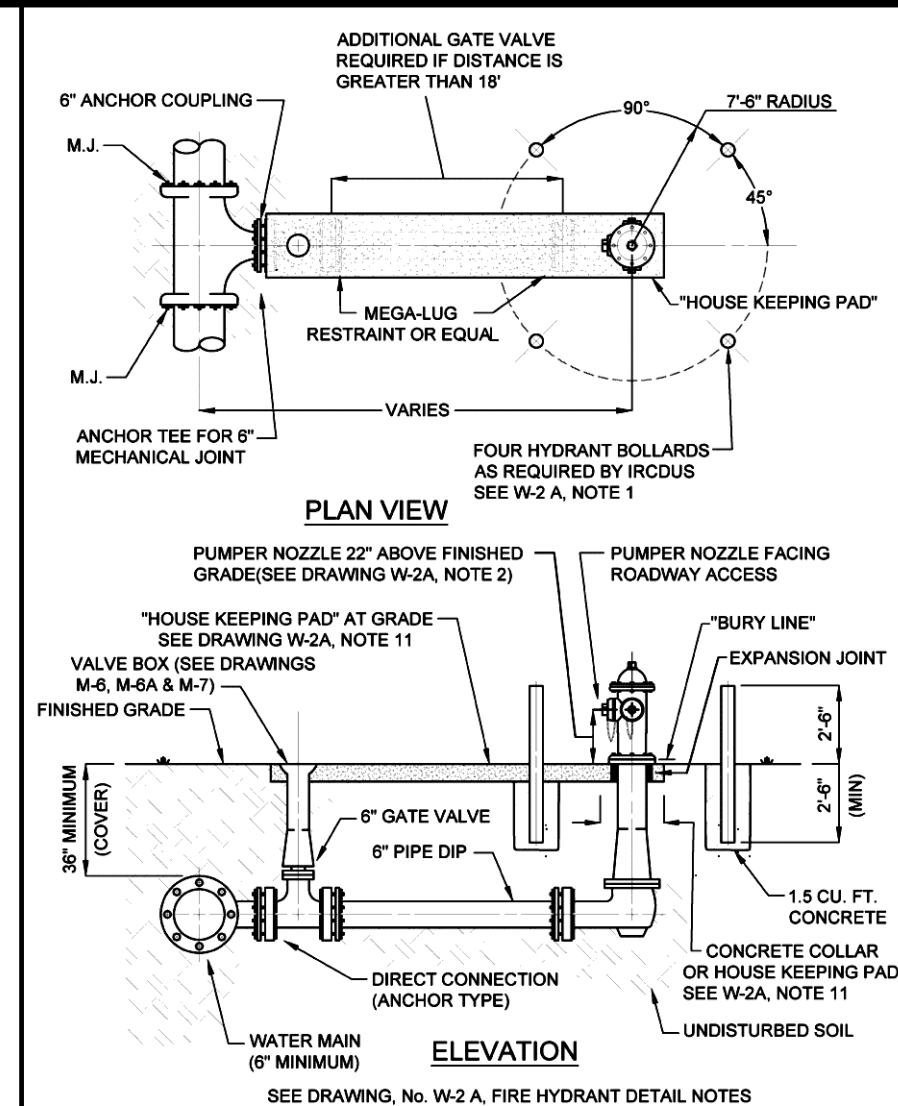
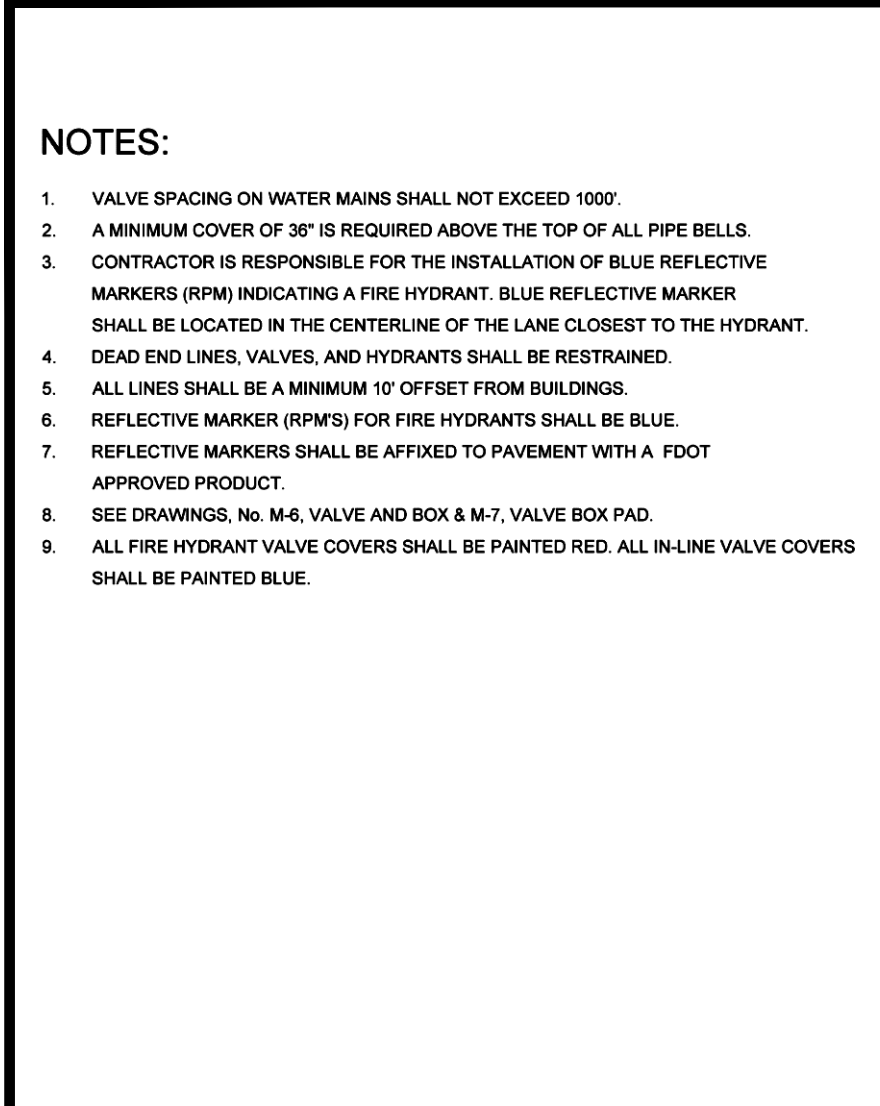
SHEET NUMBER:
5a

Project: 24-0000 - Paving, Grading, & Drainage Details - 02/24/2022
 Drawn by: BMM
 Checked by: BMM
 Date: 02/22/2022
 CAD ID: 22-1022-DETAILS

CITY OF VERO BEACH
 DEPARTMENT OF PUBLIC WORKS
 ENGINEERING AND SURVEYING DIVISION

DUMPSTER ENCLOSURE DETAIL
 WOOD FENCE (DOUBLE)

DATE: 2/2020
 DRAWN BY: BMM
 CHECKED BY: BMM
 SHEET NO.: D 1-21



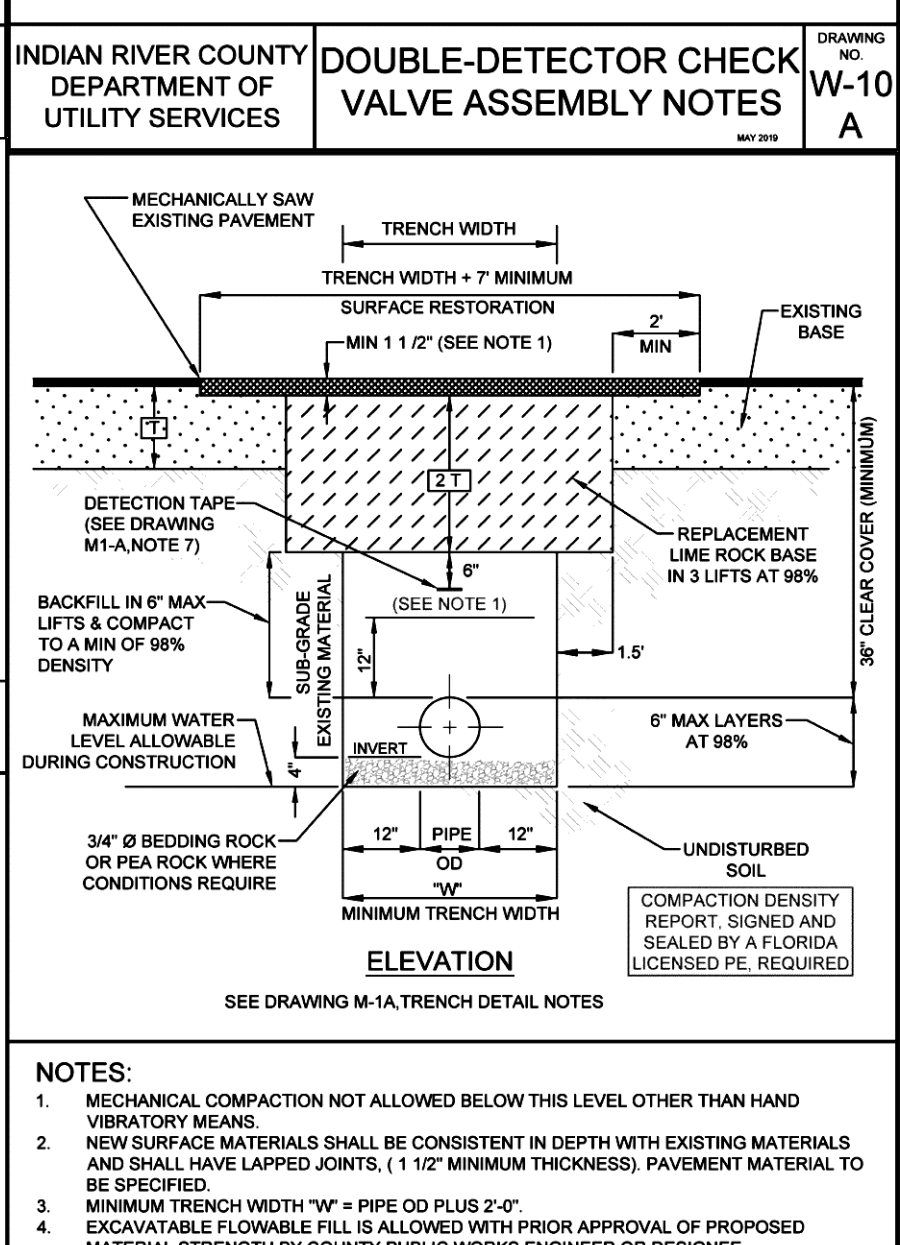
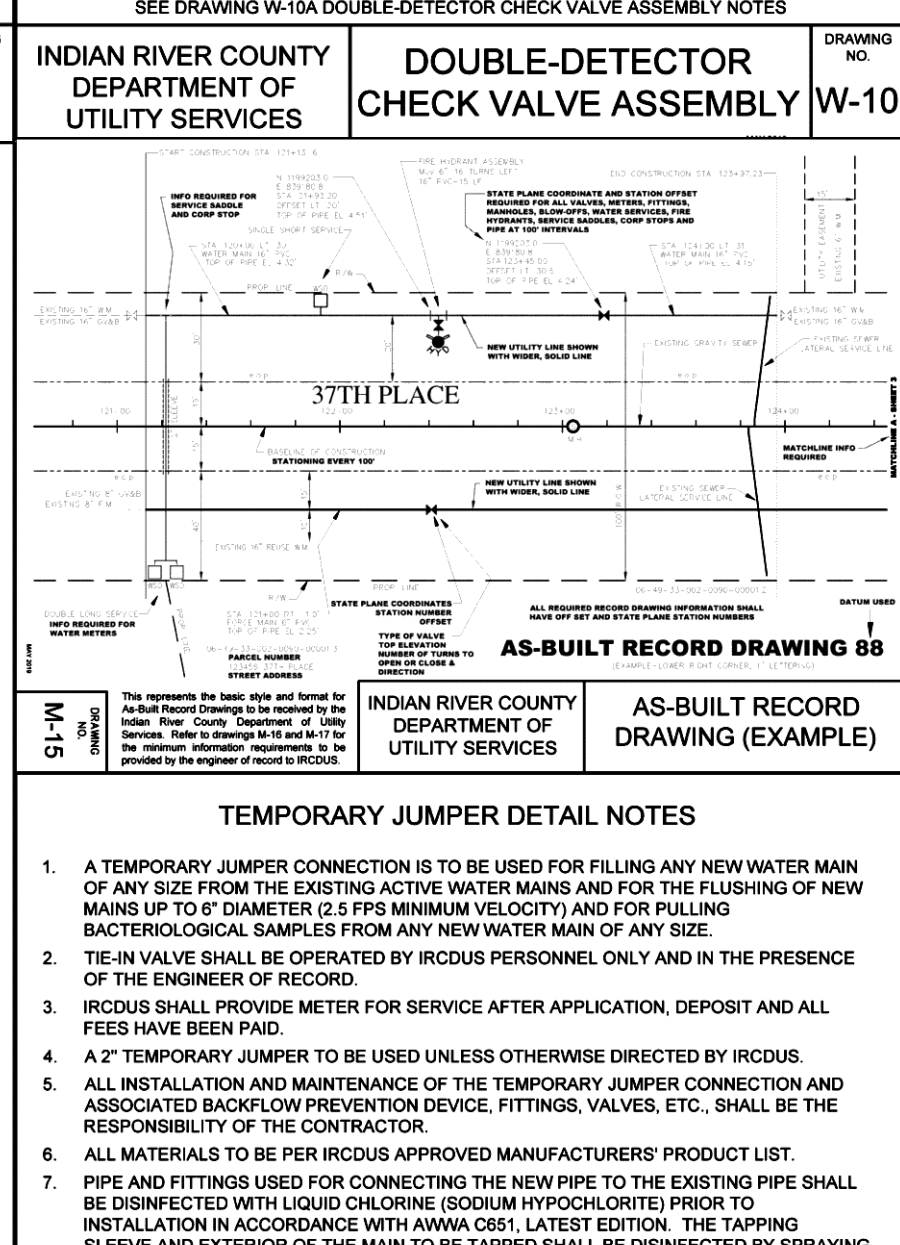
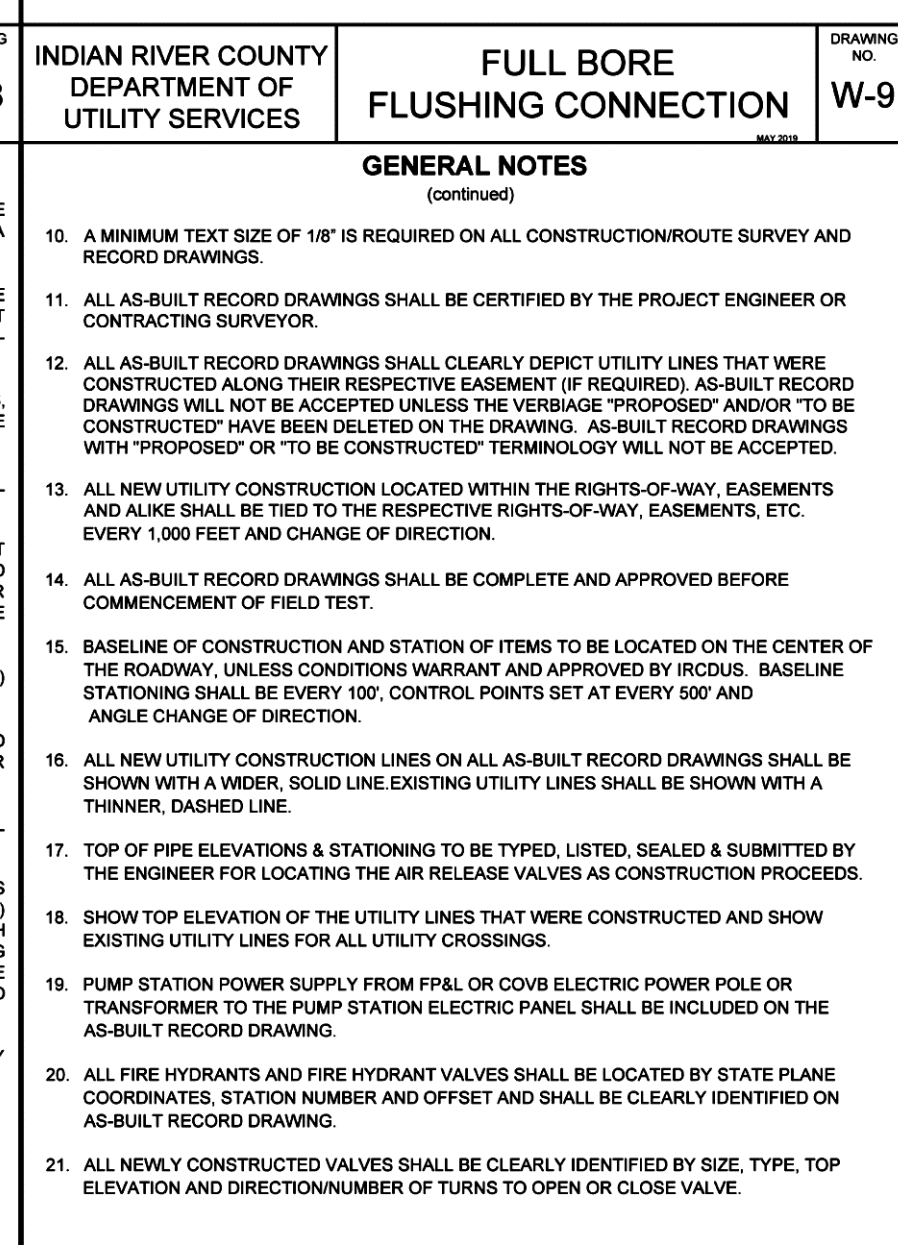
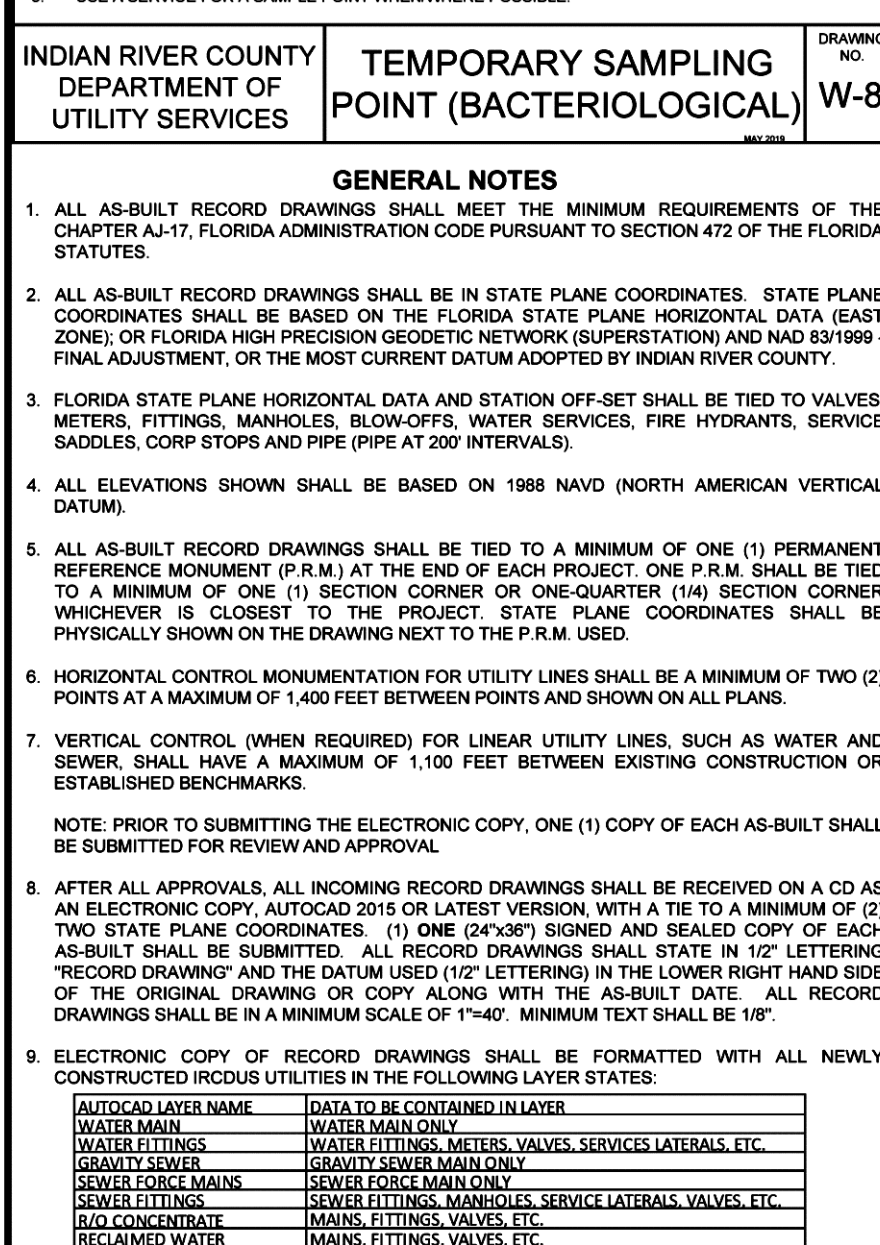
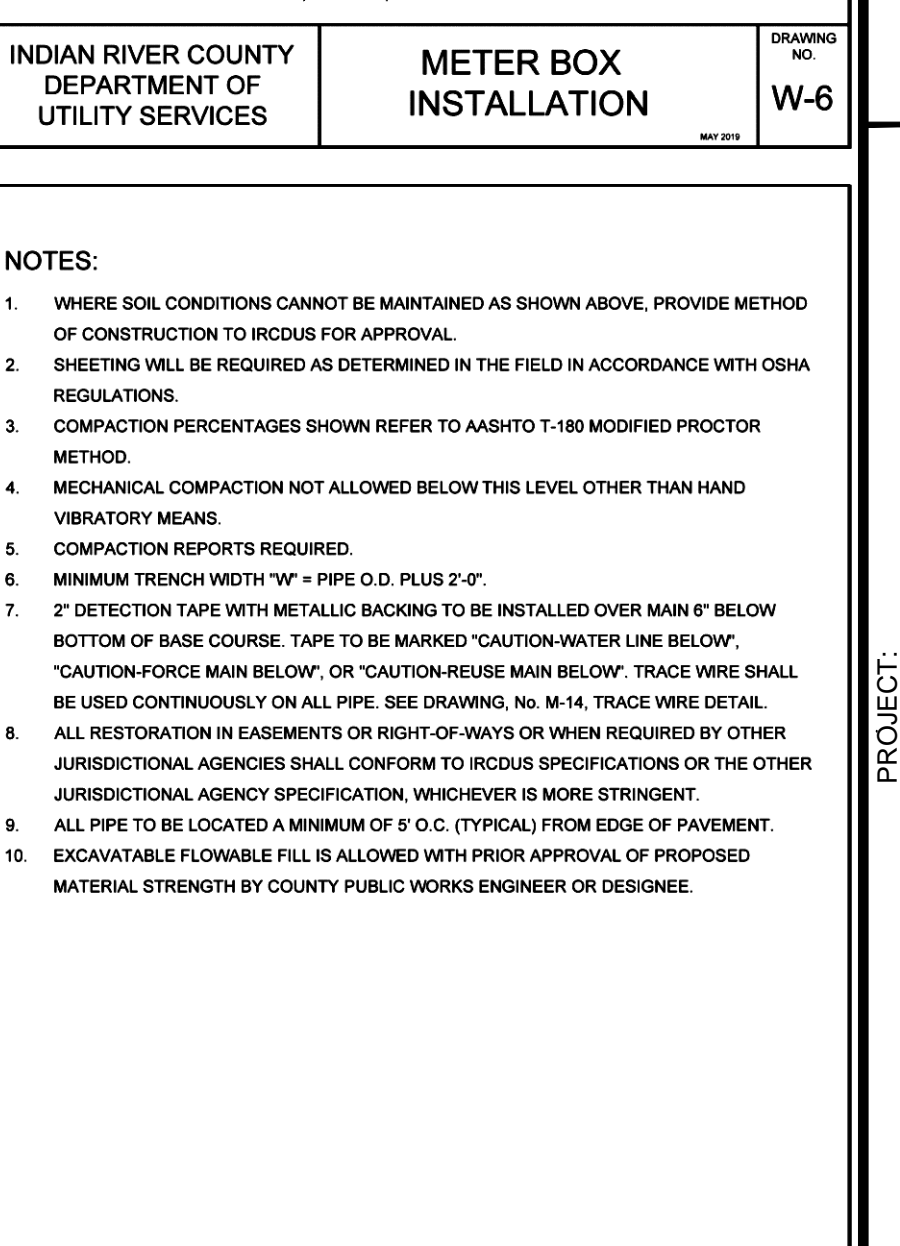
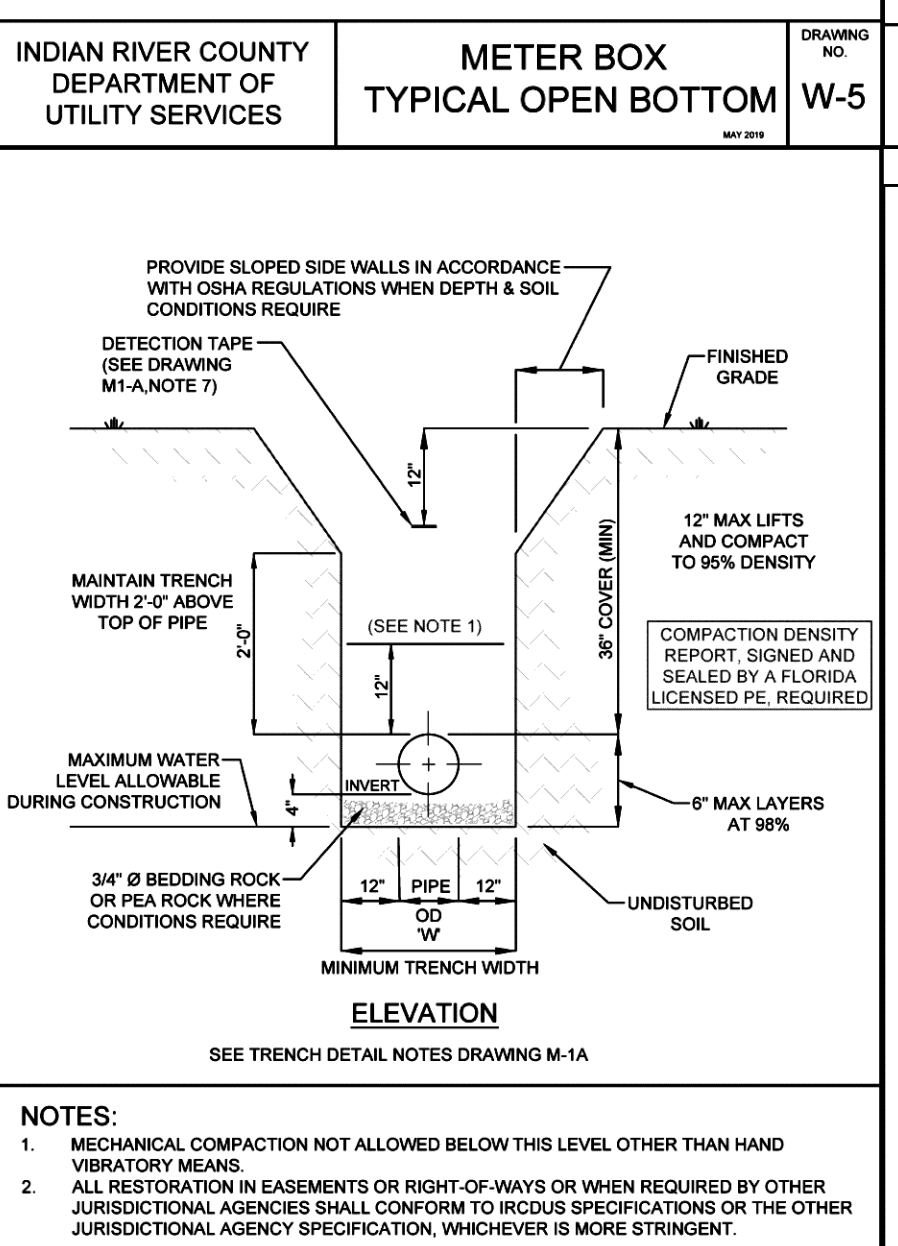
RESTRAINED LENGTH IN FEET EACH SIDE OF BEND

PIPE DIAMETER (INCHES)	D.I.P.			P.V.C.		
	90°	45°	22 1/2°	90°	45°	22 1/2°
3"	30	15	10	40	20	10
4"	30	15	10	50	25	10
6"	30	15	10	60	30	10
8"	30	15	10	70	35	10
10"	30	15	10	80	40	10
12"	30	15	10	90	45	10
14"	30	15	10	100	50	10
16"	30	15	10	110	55	10
18"	30	15	10	120	60	10
20"	30	15	10	130	65	10
24"	30	15	10	150	75	10
30"	30	15	10	180	90	10
36"	30	15	10	210	105	10
42"	30	15	10	240	120	10
48"	30	15	10	270	135	10

RESTRAINED LENGTHS FOR DEAD ENDS AND BRANCHES FROM TEE'S SHALL BE THE SAME AS FOR 90° BENDS.

RESTRAINED LENGTHS FOR LARGER DIAMETER PIPES

PIPE DIAMETER (INCHES)	3"	4"	6"	8"	10"	12"	16"	20"	24"	30"
3"	0	0	0	0	0	0	0	0	0	0
4"	0	0	0	0	0	0	0	0	0	0
6"	50	45	0	0	0	0	0	0	0	0
8"	75	70	40	0	0	0	0	0	0	0
10"	90	80	70	40	0	0	0	0	0	0
12"	120	110	100	75	40	0	0	0	0	0
16"	160	150	140	125	100	70	0	0	0	0
20"	200	190	180	170	150	120	70	0	0	0
24"	240	230	220	200	180	150	105	0	0	0
30"	280	270	260	240	220	200	170	105	70	125



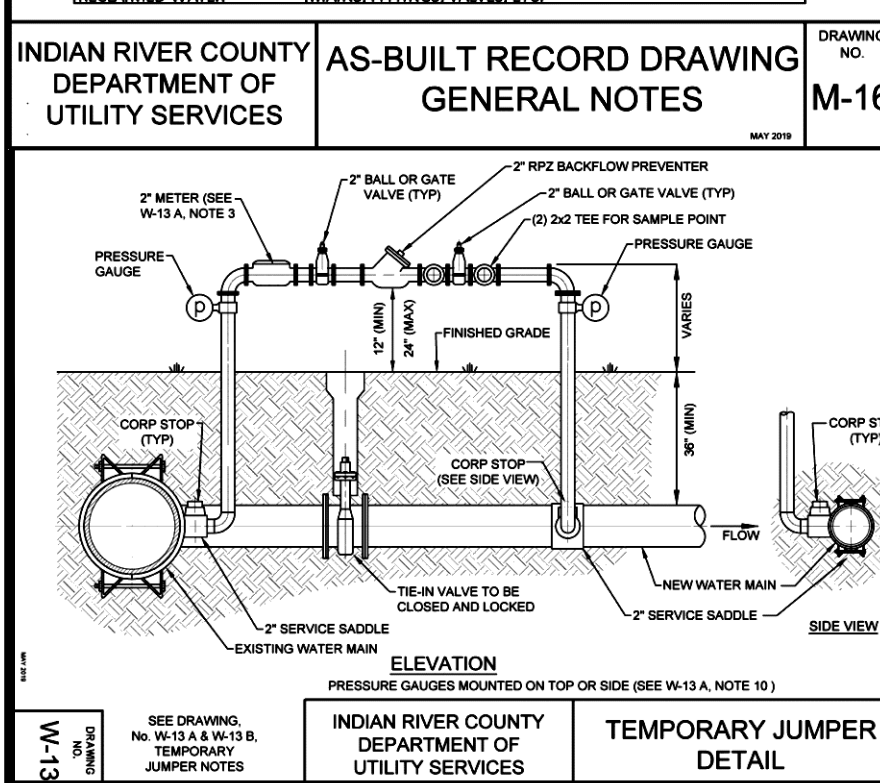
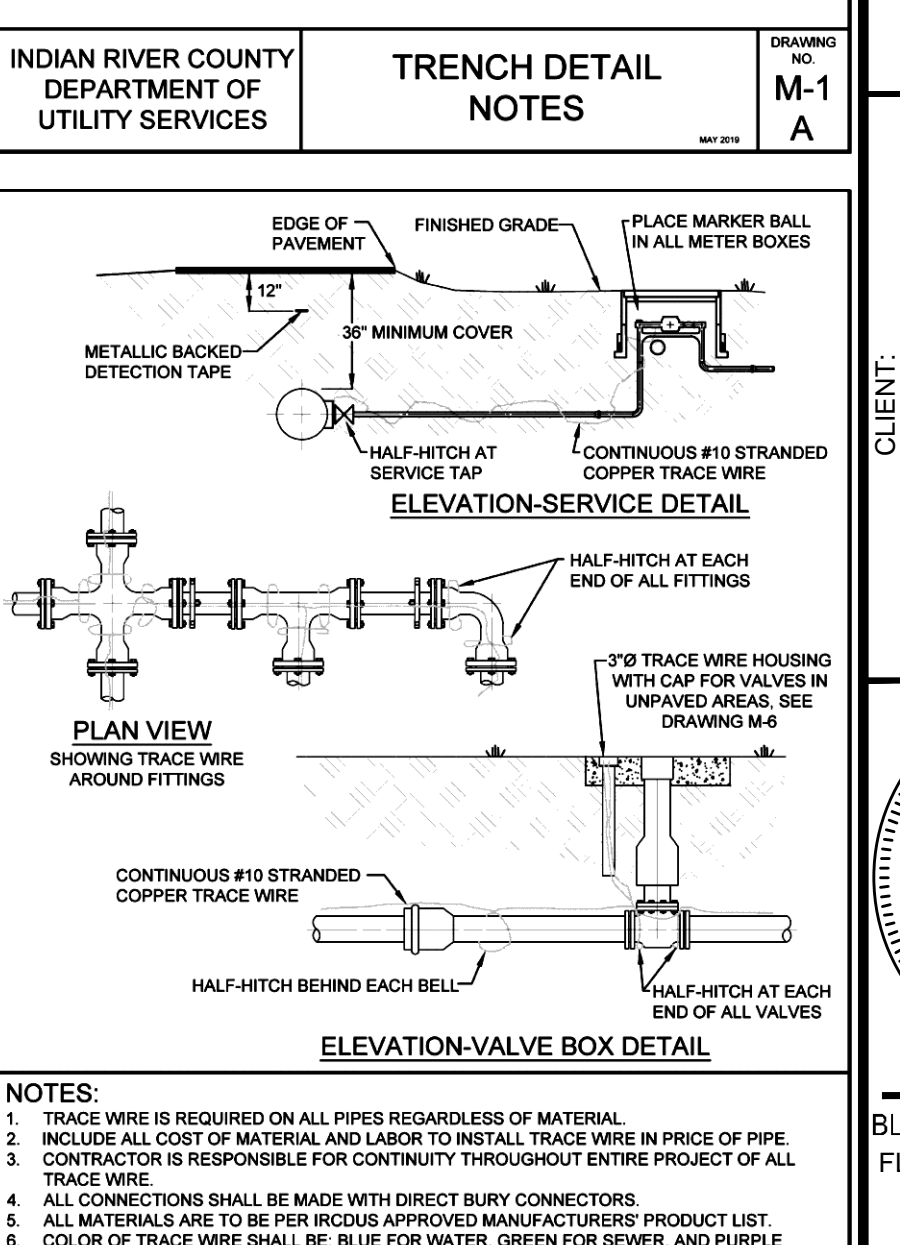
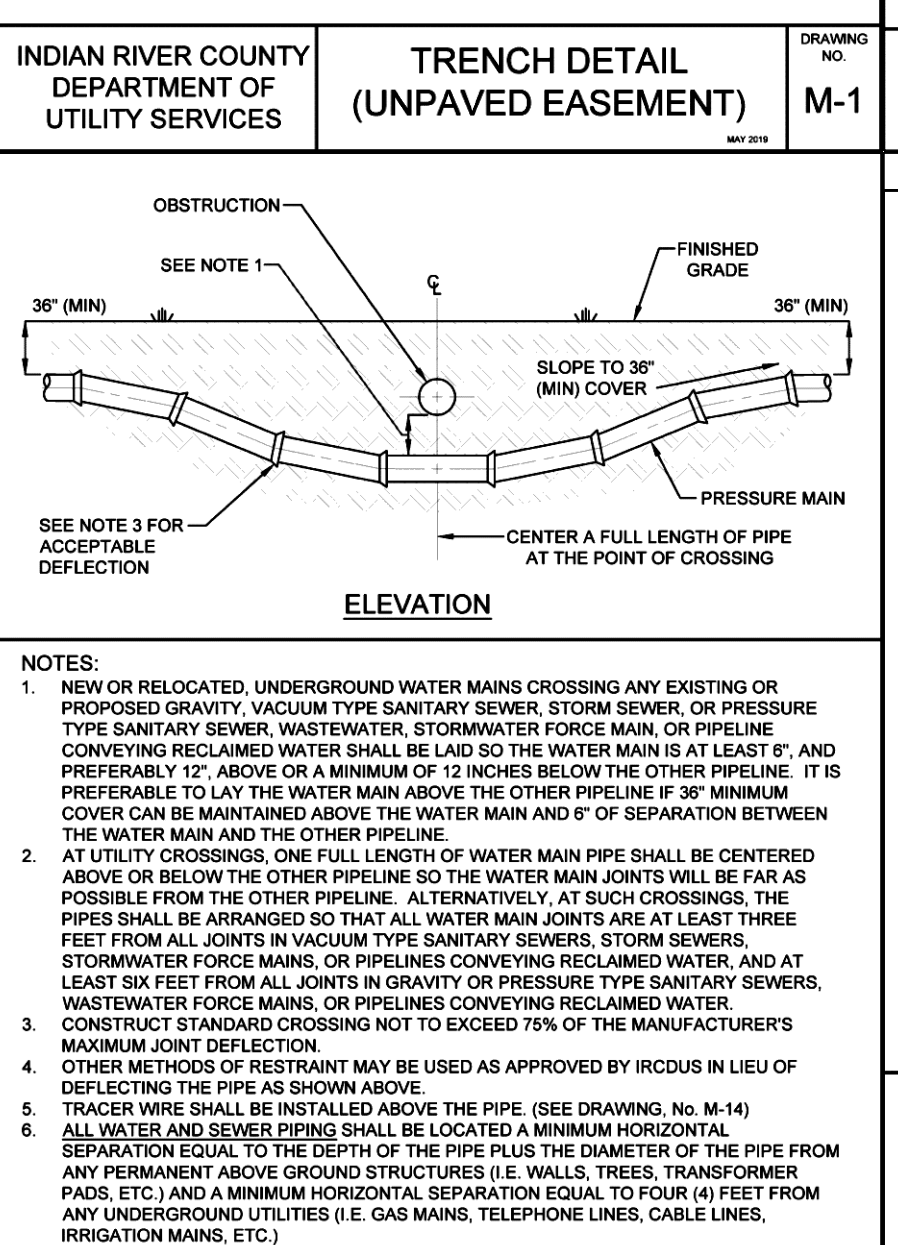
RESTRAINED LENGTH IN FEET EACH SIDE OF BEND

PIPE DIAMETER (INCHES)	D.I.P.			P.V.C.		
	90°	45°	22 1/2°	90°	45°	22 1/2°
3"	30	15	10	40	20	10
4"	30	15	10	50	25	10
6"	30	15	10	60	30	10
8"	30	15	10	70	35	10
10"	30	15	10	80	40	10
12"	30	15	10	90	45	10
14"	30	15	10	100	50	10
16"	30	15	10	110	55	10
18"	30	15	10	120	60	10
20"	30	15	10	130	65	10
24"	30	15	10	150	75	10
30"	30	15	10	180	90	10
36"	30	15	10	210	105	10
42"	30	15	10	240	120	10
48"	30	15	10	270	135	10

RESTRAINED LENGTHS FOR DEAD ENDS AND BRANCHES FROM TEE'S SHALL BE THE SAME AS FOR 90° BENDS.

RESTRAINED LENGTHS FOR LARGER DIAMETER PIPES

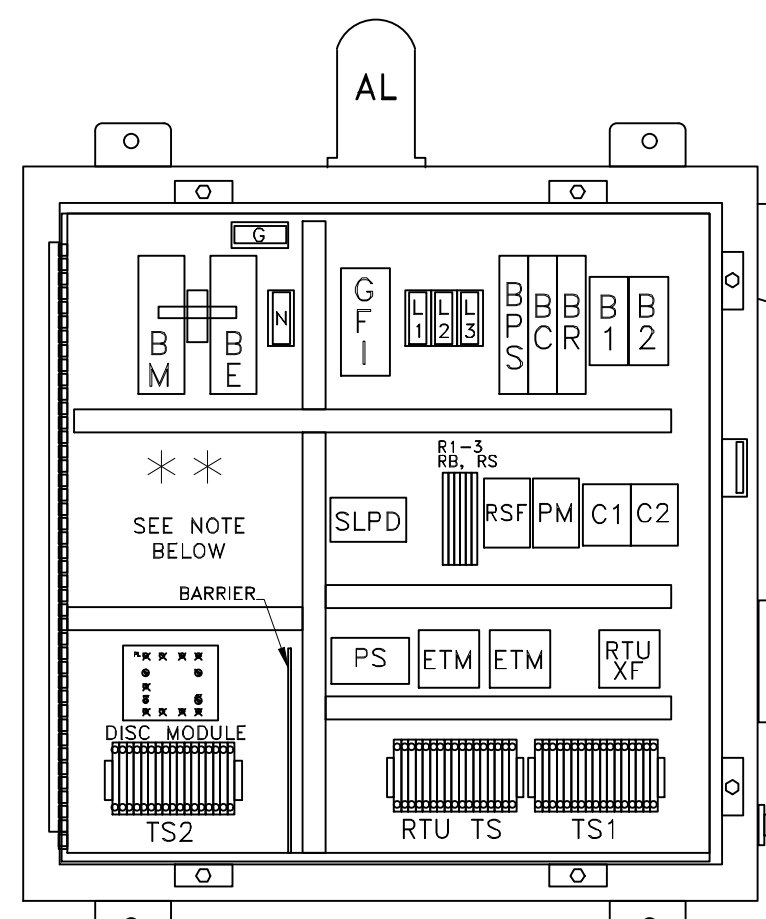
PIPE DIAMETER (INCHES)	3"	4"	6"	8"	10"	12"	16"	20"	24"	30"
3"	0	0	0	0	0	0	0	0	0	0
4"	0	0	0	0	0	0	0	0	0	0
6"	50	45	0	0	0	0	0	0	0	0
8"	75	70	40	0	0	0	0	0	0	0
10"	90	80	70	40	0	0	0	0	0	0
12"	120	110	100	75	40	0	0	0	0	0
16"	160	150	140	125	100	70	0	0	0	0
20"	200	190	180	170	150	120	70	0	0	0
24"	240	230	220	200	180	150	105	0	0	0
30"	280	270	260	240	220	200	170	105	70	125



CONTROL CENTER DESIGNED & MANUFACTURED TO MEET ALL D.E.P. REQUIREMENTS

MOPS CONTROL CENTER

SEE SCHEDULE FOR ELECTRICAL SERVICE REQUIREMENTS



PANEL COMPONENTS

- AL ALARM LIGHT
- ALT ALTERNATOR (ON DISC)
- AS ALARM SILENCE SWITCH
- B1-2 MOTOR BREAKERS
- BC CONTROL BREAKER
- BE EMERGENCY BREAKER
- BM MAIN BREAKER
- BPS POWER SUPPLY BREAKER
- BR RECEPTACLE BREAKER
- C1-2 CONTACTOR, MOTOR START
- GF1 CONVENIENCE RECEPTACLE
- DISC DUPLEX INTRINSICALLY SAFE CONTROLLER
- ETM ELAPSED TIME METER
- G GROUND BLOCK
- GR GENERATOR RECEPTACLE
- H HORN
- HOA HAND-OFF-AUTO SWITCH (ON DISC)
- L1,2,3 POWER DISTRIBUTION BLOCK
- N NEUTRAL BLOCK
- PL PILOT LIGHT (ON DISC)
- PM PHASE MONITOR
- PS POWER SUPPLY
- R1-3 RELAYS
- RB BATTERY RELAY
- RS SILENCE RELAY
- RSF SEAL FAIL RELAY
- RTUX RTU TRANSFORMER
- SLPD SURGE/LIGHTNING PROTECTION DEV.
- TS1 TERMINAL STRIP FOR PUMPS
- TS2 TERMINAL STRIP FOR FLOATS

INTERIOR LAYOUT (DOOR NOT SHOWN FOR CLARITY)

ENCLOSURE

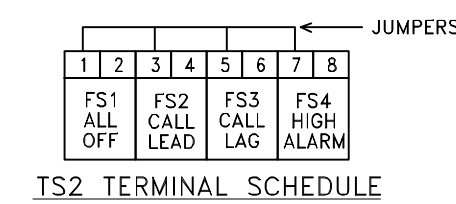
NEMA 4X Stainless Steel
Single Door w/ Padlock Hasp
30"H x 30"W x 8"D

NOTES:

- PANEL LABELED FOR U.L. 508A "MOTOR CONTROL CENTERS" AND U.L. 698A "HAZARDOUS LOCATION PANELS" (INTRINSICALLY SAFE)
- COMPLETE BACK-UP, SELF-CHARGING BATTERY, WITH VISUAL/AUDIO ALARM SYSTEM PER RSWF-45.
- SEE CONTROL CENTER DETAIL SHEET FOR ANY ADDITIONAL NOTES.

27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
NEU	120V	RTU	TERMINALS (IF USED)	PUMP SEAL FAIL	MOTOR LEADS	MT1 MOTOR LEADS	MT2 MOTOR LEADS	TS1	TS2	MOTOR LEADS	MOTOR LEADS	MOTOR LEADS	MOTOR LEADS	MOTOR LEADS	MOTOR LEADS	MOTOR LEADS	MOTOR LEADS	MOTOR LEADS	MOTOR LEADS	MOTOR LEADS	MOTOR LEADS	MOTOR LEADS	MOTOR LEADS	MOTOR LEADS	MOTOR LEADS	MOTOR LEADS	MOTOR LEADS	MOTOR LEADS

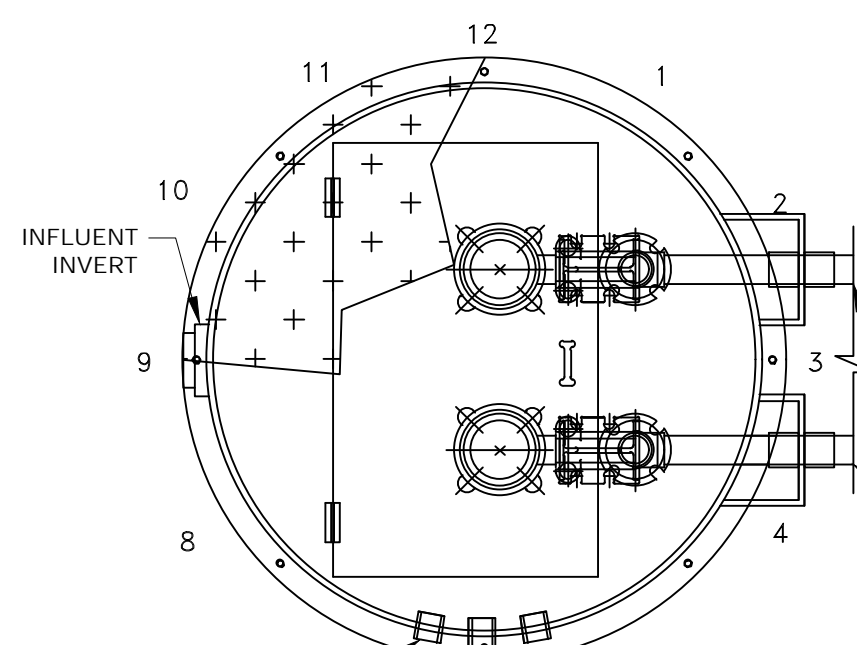
TS1 TERMINAL SCHEDULE



TS2 TERMINAL SCHEDULE

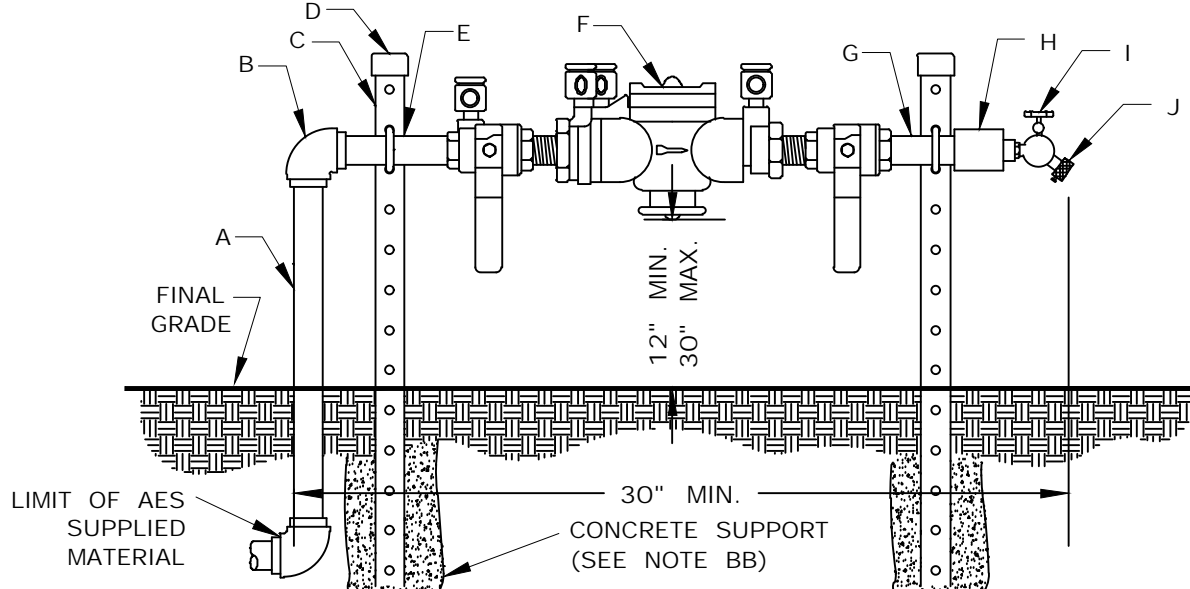
THIS SPACE AVAILABLE FOR CAPACITORS FOR SINGLE PHASE OR TRANSFORMER FOR 460V.

HUB AND INVERT LOCATION



ITEMS	CLOCK POSITION
DISCHARGE LINES	3:00
PRIMARY INVERT	9:00
SECONDARY INVERT	N/A
LOCATION OF CONTROL PANEL	6:00

NOTE: BACKFILL AROUND LIFT STATION FROM ANTI-FLOATATION RING UP TO FINISHED GRADE SHALL BE COMMON FILL COMPACTED IN 12-INCH MAX. LIFTS TO 98% DENSITY PER AASHTO T-180. CONTRACTOR SHALL EXERCISE CARE NOT TO DAMAGE WETWELL DURING COMPACTION.



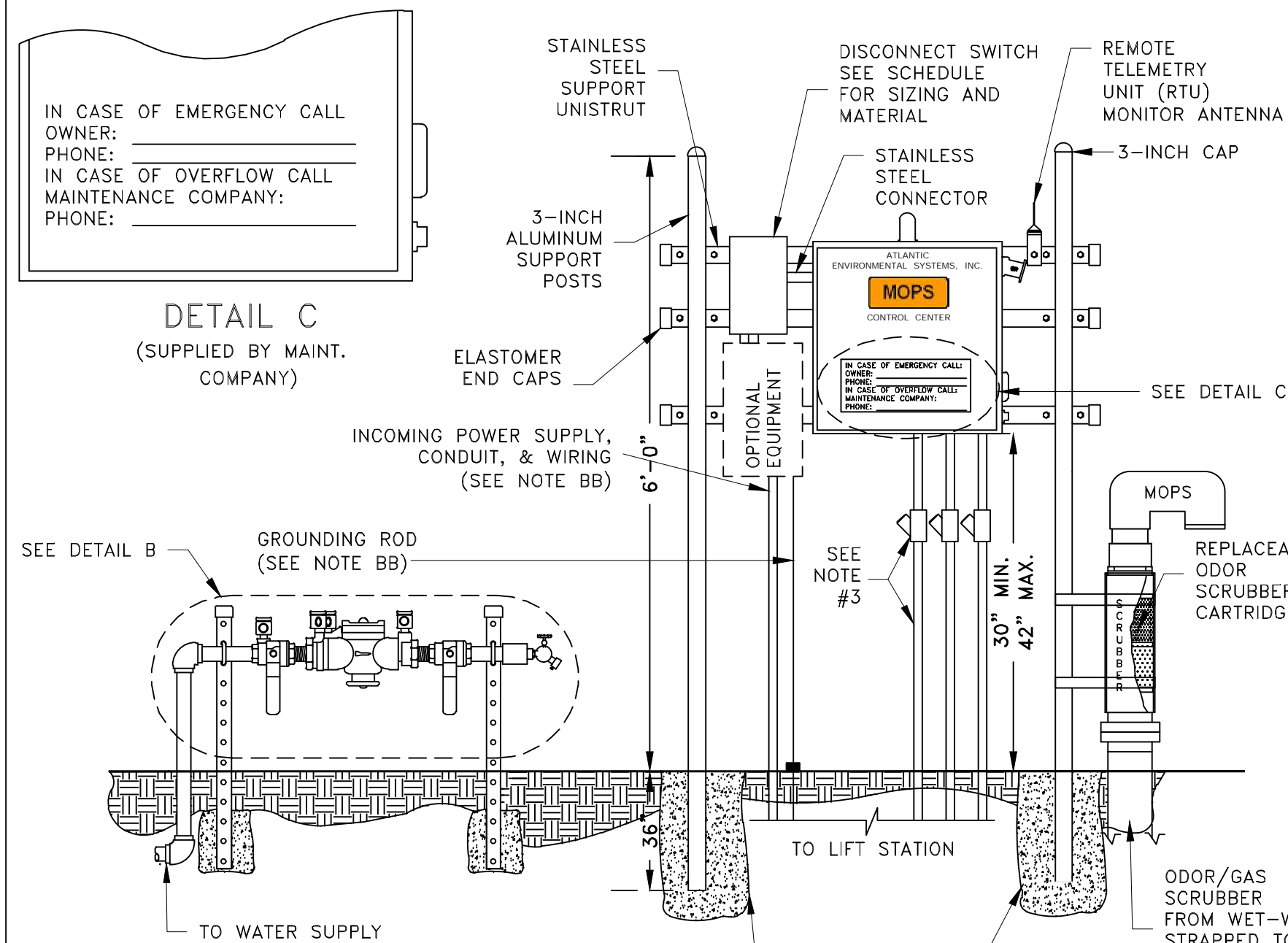
ITEM	QTY.	DESCRIPTION
A	1	3/4" x 36" S.S. NIPPLE
B	1	3/4" S.S. 90° ELBOW
C	2	1-5/8"x1-5/8"x40" S.S. SUPPORT BRACKET
D	2	SUPPORT BRACKET CAPS P/N 1877
E	2	3/4" S.S. PIPE BOLTS

DETAIL B

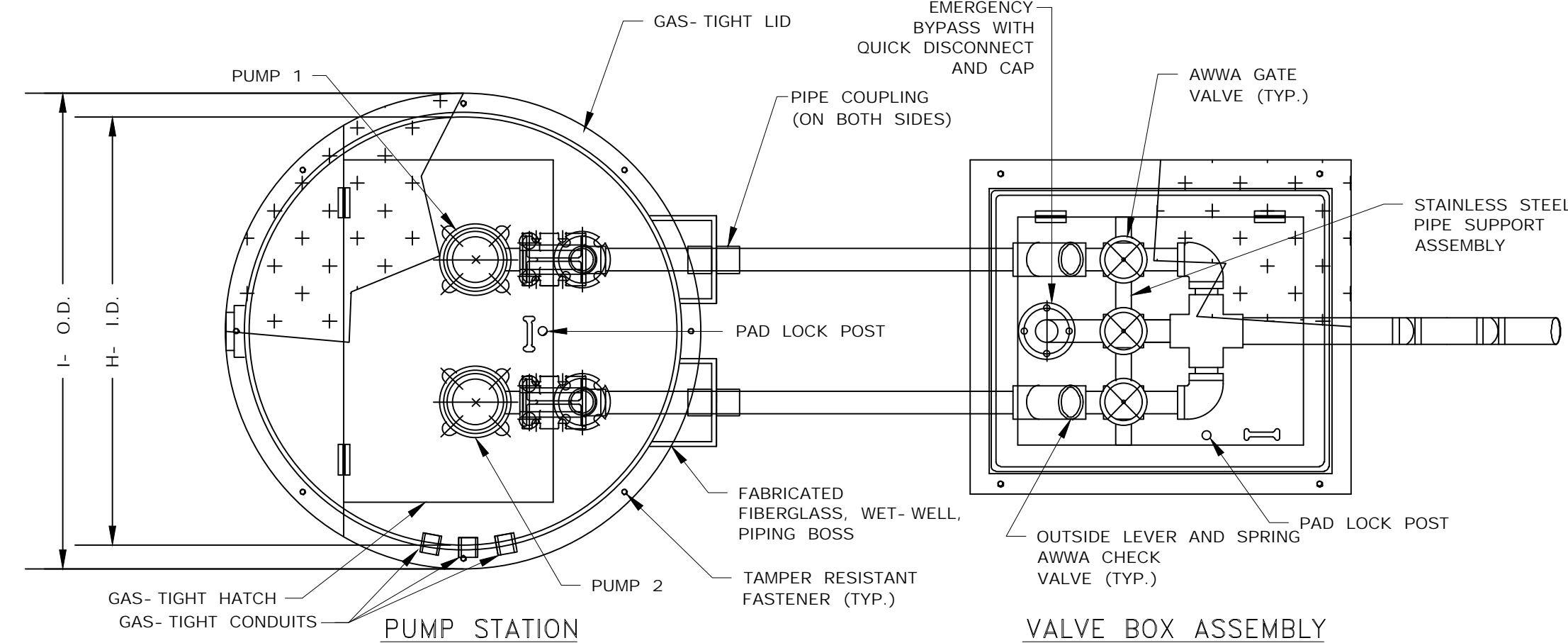
R.P.Z. BACKFLOW PREVENTER ASSEMBLY DETAIL

U.S.C. AND A.S.S.E. APPROVED

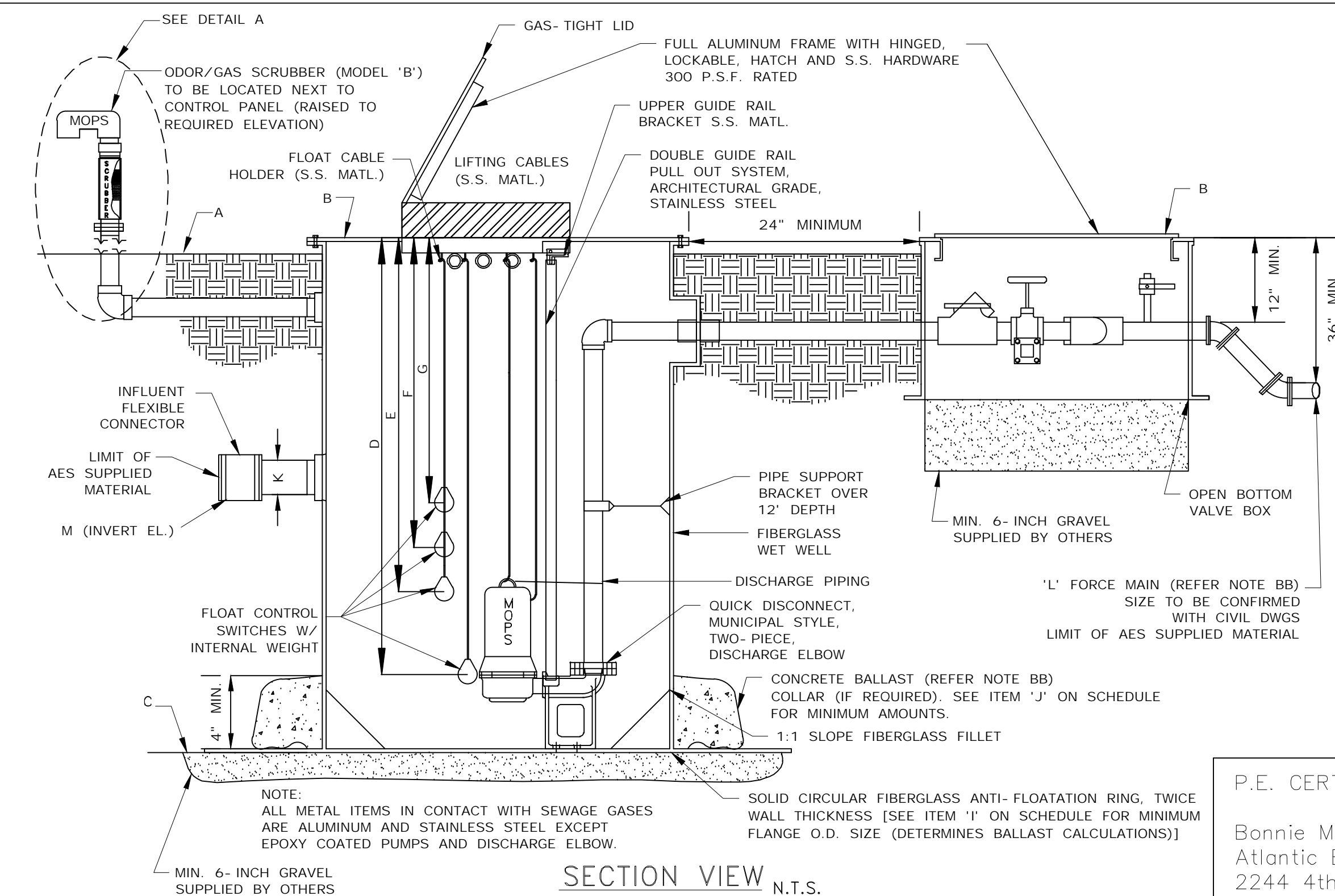
N.T.S.



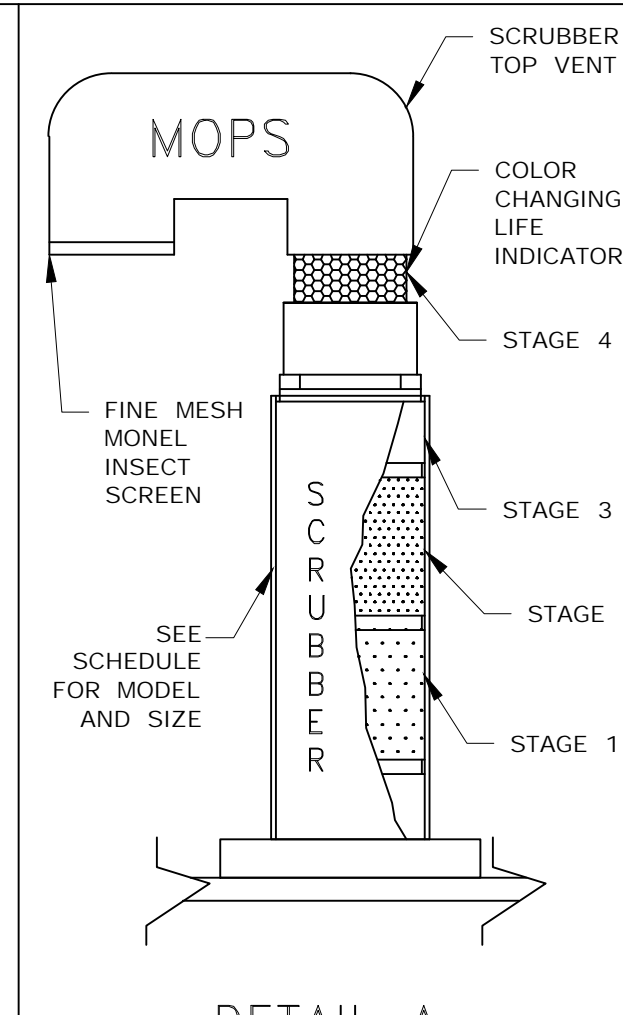
CONTROL CENTER ASSEMBLY AND INSTALLATION N.T.S.



TOP VIEW N.T.S.



SECTION VIEW N.T.S.



DETAIL A

- #### MOPS ODOR/GAS SCRUBBER NOTES:
- SCRUBBER DESIGNED TO REMOVE TOXIC SEWAGE GASES, H₂S, AND OFFENSIVE ODORS SUCH AS SKATOLES AND MERCAPTANS.
 - SCRUBBER'S LIFE EXPECTANCY CALCULATIONS ARE INCLUDED IN SHOP DRAWING SUBMITTALS.
 - SCRUBBER UNIT CAN BE MOUNTED INSIDE WET-WELL OR TOP MOUNTED.
 - MODEL 'B' SHOWN.

MOPS PRIVATE SERIES

MANUFACTURED ODORLESS PUMP STATION
ATLANTIC ENVIRONMENTAL SYSTEMS, INC.
LAKE WORTH, FL 33461
PH: (561) 547-8080 FAX: (561) 547-3999 © 2000

THIS DRAWING AND THE DESIGN CONTAINED HEREIN IS PROPRIETARY AND IS AND SHALL REMAIN THE PROPERTY OF ATLANTIC ENVIRONMENTAL SYSTEMS, INC. THIS DRAWING AND DESIGN SHOULD BE USED ONLY FOR THE PURPOSE FOR WHICH IT IS INTENDED, AND ONLY WITH WRITTEN AUTHORIZATION FROM ATLANTIC ENVIRONMENTAL SYSTEMS, INC. ANY REPRODUCTION, IN WHOLE OR IN PART, MUST CLEARLY SHOW THE ATLANTIC ENVIRONMENTAL NAME AND ADDRESS IN THE REPRODUCTION.

MOPS PUMP STATION SCHEDULE

MOPS SERIES	ITEM DESCRIPTION	QTY.	MODEL DESIGNATION
INITIAL DESIGN FLOW (G.P.M.)	145	100 YEAR FLOOD ELEVATION	6.00'
INITIAL DESIGN HEAD (T.D.H.)	81'	25 YEAR FLOOD ELEVATION	<6.00'
SECONDARY DESIGN FLOW (G.P.M.)	240	A GRADE ELEVATION	6.50'
SECONDARY DESIGN HEAD (T.D.H.)	68'	B TOP ELEVATION OF WET WELL	6.50'
RATED PERFORMANCE SPEED	3450 RPM	C BOTTOM ELEVATION OF WET WELL	-9.50'
RATED MOTOR HORSEPOWER	10	D ALL PUMPS OFF ELEVATION	-6.50'
SUBMERSIBLE PUMP TYPE (P-1,P-2)	NON-CLOG/CHOPPER	E LEAD PUMP ON ELEVATION	-4.00'
PUMP MODEL NUMBER	MOPS	F LAG PUMP ON ELEVATION	-3.00'
SERVICE ENTRANCE VOLTAGE	460	G HIGH ALARM ELEVATION	-2.00'
SERVICE ENTRANCE PHASE	3	H INSIDE DIAMETER OF WET-WELL	72"
CONTROL CENTER FULL LOAD AMPS	31	I OUTSIDE DIAMETER OF ANTI-FLOATATION RING	96"
NEMA 3R PAINTED STEEL DISCONNECT SWITCH, RATED AMPS	60	J MINIMUM CUBIC FEET OF CONCRETE BALLAST (CU YDS)	243/(9)
WET WELL SCOURER SYSTEM	N/A	K INVERT PIPE DIAMETER	8"
REMOTE STATION MONITOR (TELEMETRY)	N/A	L FORCE MAIN DIAMETER	4"/6"
ON-SITE GENERATOR SYSTEM	N/A	M PRIMARY INVERT ELEVATION	-0.87'
		N SECONDARY INVERT ELEVATION	N/A

MOPS EQUIPMENT IDENTIFICATION	QTY.	MODEL DESIGNATION
MOPS PUMP STATION	1	A24-72192-D-10.0
MOPS VALVE BOX ASSEMBLY (VBA)	1	VBA-24
MOPS ODOR/GAS SCRUBBER (OGS)	1	OGS-B
MOPS R.P.Z. ASSEMBLY	1	75
MOPS CONTROL CENTER	1	PSC-232-10.0
MOPS DISCONNECT SWITCH	1	FDS-60-3-4-PS
MOPS CONTROL CENTER MOUNTING ASSEMBLY	1	CCMA-32AL
MOPS WET WELL SCOURER SYSTEM	0	N/A
MOPS REMOTE STATION MONITOR	0	N/A
1st YEAR SERVICE/MAINTENANCE CONTRACT	0	N/A
MOPS ON-SITE GENERATOR SYSTEM	0	N/A
MOPS FIELD SERVICE WORK	1	CONTROL INSTALLATION & START-UP

MOPS PUMP STATION COMPLIANCE NOTES:

- THIS PUMP STATION DESIGN COMPLIES WITH THE FOLLOWING REQUIRED STANDARDS:
- STATE OF FLORIDA ENVIRONMENTAL PROTECTION STANDARDS
 - FLORIDA ADMINISTRATIVE CODE (F.A.C.): 62-640.400- COLLECTION AND TRANSMISSION SYSTEMS
 - NATIONAL ELECTRIC CODE (NEC) CLASS 1, DIVISION 1, GROUP D- HAZARDOUS LOCATIONS
 - UNDERWRITER'S LABORATORIES (U.L.) 508A-MOTOR CONTROL CENTERS AND U.L. 698A- INTRINSICALLY SAFE CONTROL CENTERS
 - RECOMMENDED STANDARDS FOR WASTEWATER FACILITIES (2014 EDITION).
- PUMPS ARE RATED BY FACTORY MUTUAL FOR CLASS 1, DIVISION 1, GROUP D ATMOSPHERES AS REQUIRED BY NEC.
 - THE CONTROL CENTER INCORPORATES INTRINSICALLY SAFE RELAYS AND IS LISTED TO UL 698A INTRINSICALLY SAFE FOR CLASS 1, DIVISION 1 ATMOSPHERES.
 - THE CONDUIT PROVIDED, ALONG WITH CONDUIT GAS-SEAL-OFFS, ARE RATED FOR CLASS 1, DIVISION 1 LOCATIONS.
 - THE WASTEWATER PUMPS AND THE CONTROL CENTER INCORPORATE A MECHANICAL SEAL FAILURE DETECTION AND NOTIFICATION SYSTEM.
 - THE CONTROL CENTER INCLUDES EITHER A REMOTE TELEMETRY UNIT (RTU) OR A SELF-CHARGING, BACK-UP ALARM SYSTEM TO OPERATE ON POWER FAILURE.
 - THE PUMP STATION INCORPORATES AN ODORLESS DESIGN WITH A SCRUBBER SYSTEM TO CONTROL TOXIC GASES AND ODORS FOR COMPLIANCE TO F.A.C. 62-604.400.
 - THE BOTTOM OF THE TOP RIM ELEVATION OF PUMP STATION MUST BE LOCATED AT A HIGHER ELEVATION THAN THE 25 YEAR FLOOD ELEVATION. THE LISTED 25 YEAR FLOOD ELEVATION PROVIDED BY SITE CIVIL ENGINEER.
 - THE BOTTOM ELEVATION OF THE MOPS CONTROL CENTER MUST BE LOCATED AT A HIGHER ELEVATION THAN THE 100 YEAR FLOOD ELEVATION. THE LISTED 100 YEAR FLOOD ELEVATION PROVIDED BY THE SITE CIVIL ENGINEER.

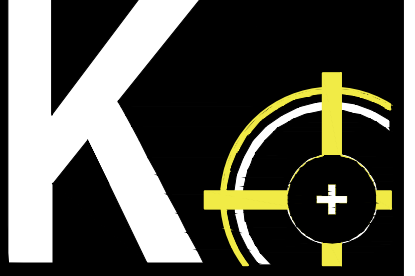
MOPS ENGINEERING NOTES:

- THE HORSEPOWER SHOWN ON THE SCHEDULE IS A MINIMUM HORSEPOWER REQUIREMENT BASED ON THE STATION'S DESIGN CRITERIA AND THE REQUIRE TORQUE. (LOWER RATED HORSEPOWER EQUIPMENT WILL NOT BE ACCEPTABLE.)
- THESE ITEMS ARE NOT SUPPLIED BY A.E.S. WITH THE MOPS STATION.
- INVERT ELEVATIONS BASED ON INSIDE BOTTOM OF PIPE.
- THE MOPS CONTROL ASSEMBLY CONSISTS OF THE FOLLOWING: CONTROL CENTER DISCONNECT SWITCH, MOUNTING ASSEMBLY, ELECTRICAL CONDUITS, AND SEAL-OFF. THESE ITEMS MUST BE SUPPLIED AND INSTALLED BY THE MOPS PUMP STATION MANUFACTURER TO VALIDATE MOPS WARRANTY PROGRAM.
- FOR STATIONS IN MIAMI-DADE COUNTY, THE MOPS PUMP STATION IS SUPPLIED WITH A REMOTE TELEMETRY MONITORING UNIT AND A.E.S. MAINTENANCE SERVICE. THE R.T.U. ALLOWS FOR MONITORING OF LAG ALARM, HIGH ALARM, AND POWER FAILURE PER CHAPTER 24.42.2(5). THE R.T.U. IS EQUIPPED WITH A BATTERY BACK UP AND IS INSTALLED ABOVE THE 100 YEAR FLOOD ELEVATION.

THE MOPS WASTEWATER PUMP STATION DESIGN AND EQUIPMENT SHOWN ON THIS DRAWING HAS BEEN REVIEWED, PERMITTED, AND CERTIFIED AS COMPLYING WITH ALL THE STATE OF FLORIDA D.E.P. AND LOCAL REQUIREMENTS. ANY SUBSTITUTION FROM THIS DESIGN MAY REQUIRE NEW PERMITS, APPLICATION FEES, AND ENGINEERING SERVICES FOR RE-CERTIFICATION AND DESIGN REVIEW.

P.E. CERTIFICATION:

Bonnie McLeod, P.E., Lic # 70797 V.P. of Engineering
Atlantic Environmental Systems, Inc., Certificate # 26398
2244 4th Ave. North, Lake Worth, Florida 33461
Ph: 561-547-8080 Fax: 561-547-3999



KMA

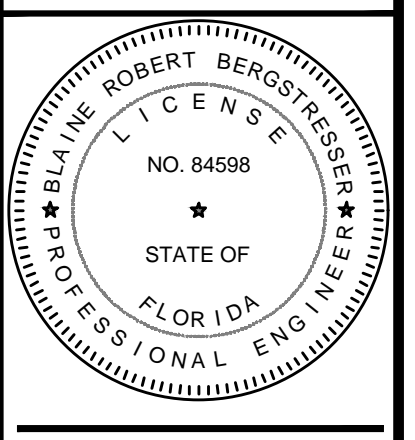
ENGINEERING & SURVEYING, LLC
2041 14TH AVE. SUITE #3
VERO BEACH, FL 34960
PHONE: (772) 588-9505
FAX: (772) 588-9505
PIPE C.O.A. # 33705

REVISIONS:	DATE:	COMMENT:

NOT FOR CONSTRUCTION

OAK LAKE APARTMENTS
City of Vero Beach, Florida

OAK LAKE APARTMENTS
City of Vero Beach
Indian River County
Florida



BLAINE BERGSTRESSER, P.E.
FLORIDA LICENSE NO. 84598
02/24/2022



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PROJECT No.: 22-1022
DRAWN BY: BMP
CHECKED BY: BRB
DATE: 02/22/2022
CAD ID: 22-1022 DETAILS

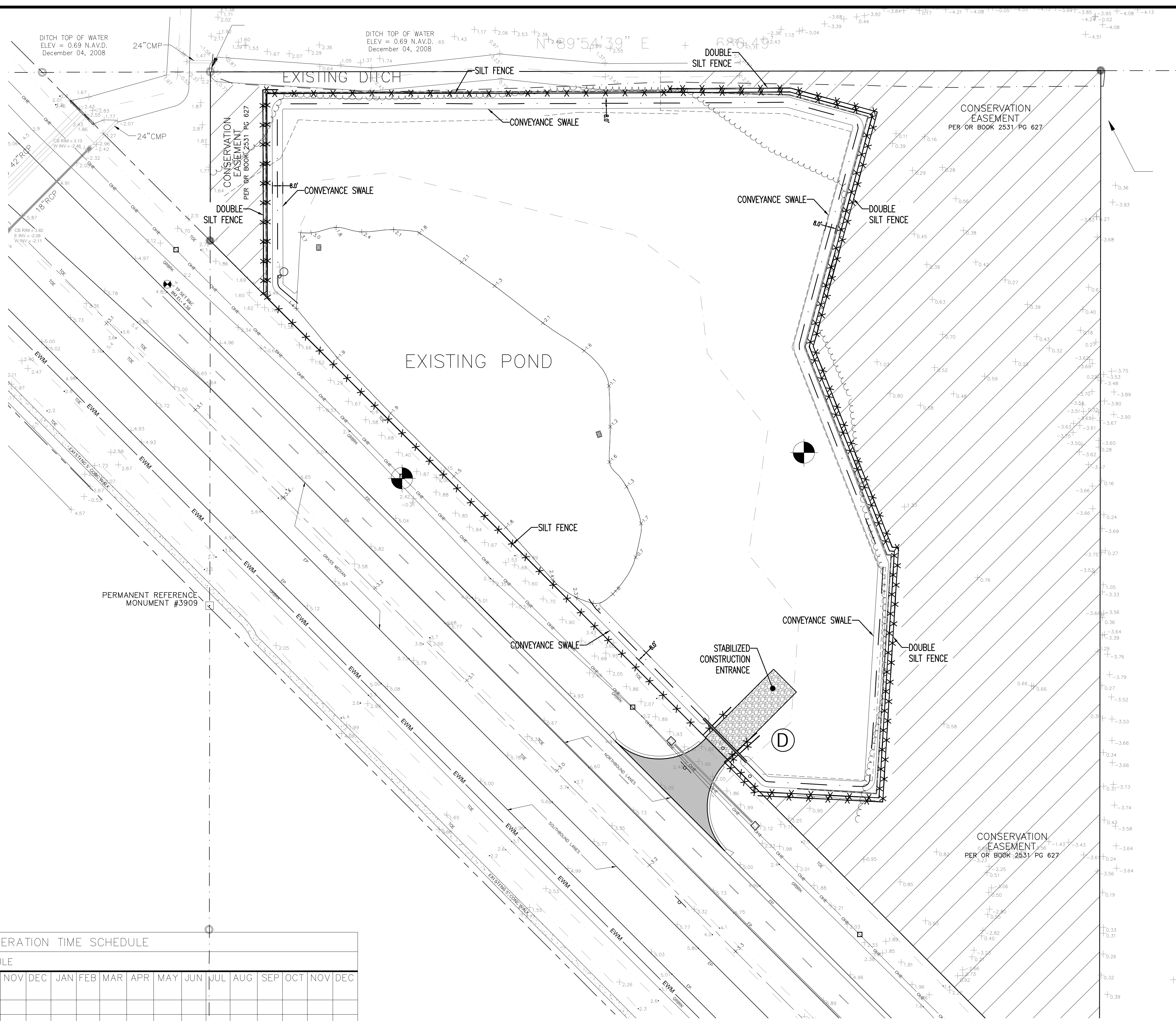
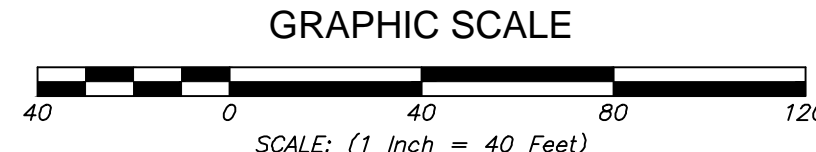
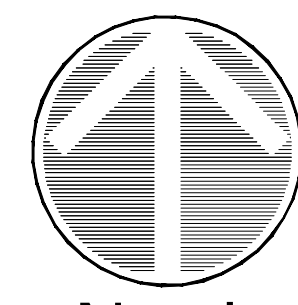
SHEET TITLE:
PRIVATE LIFT STATION DETAILS & SPECIFICATIONS

SHEET NUMBER:
5d

LEGEND

- x---x---x--- DENOTES SILT FENCE
- o---o---o--- DENOTES TURBIDITY BARRIER
- DENOTES DRAINAGE PIPE
- DENOTES SWALE CENTERLINE
- DENOTES GRADE-BREAK
- DENOTES EASEMENTS
- DENOTES RETAINING WALL
- DENOTES ROW CENTERLINE
- DENOTES OVERHEAD ELECTRIC

- DENOTES DRAINAGE INLET
- DENOTES YARD DRAIN
- ⊢ DENOTES M.E.S. or F.E.S.
- ⊙ DENOTES JUNCTION BOX
- ⊗ SWPP BMP refer to details on following sheet



SEQUENCE OF CONSTRUCTION

UPON IMPLEMENTATION AND INSTALLATION OF THE FOLLOWING AREAS: TRAILER, PARKING, LAYDOWN, PORTA-POTTY, WHEEL WASH, CONCRETE WASHOUT, FUEL AND MATERIAL STORAGE CONTAINERS, SOLID WASTE CONTAINERS, ETC., IMMEDIATELY DENOTE THEM ON THE SITE MAPS AND NOTE ANY CHANGES IN LOCATION AS THEY OCCUR THROUGHOUT THE CONSTRUCTION PROCESS.

- PHASE 1:**
- CONSTRUCT STABILIZED CONSTRUCTION ENTRANCE (1) AND INSTALL SILT FENCE.
 - DEMOLISH EXISTING STRUCTURES, IF APPLICABLE.
 - CONSTRUCT AND STABILIZE SEDIMENT BASIN AND DRAINAGE SWALES WITH APPROPRIATE OUTFALL STRUCTURES (CLEAR ONLY THOSE AREAS NECESSARY TO INSTALL CONTROL DEVICES LISTED ABOVE)
 - INSTALL INLET PROTECTION AT EXISTING INLET(S).
 - INSTALL AND STABILIZE ANY NECESSARY HYDRAULIC CONTROL STRUCTURES (DIKES, CHECK DAMS, OUTLET TRAPS, RISER PIPE DISCHARGE POINT, ETC.)
 - PREPARE CLEARING AND GRUBBING OF THE SITE, IF APPLICABLE.
- PHASE 2:**
- PERFORM MASS GRADING, ROUGH GRADE TO ESTABLISH PROPOSED DRAINAGE PATTERNS.
 - START CONSTRUCTION OF THE BUILDING PAD AND STRUCTURES.
 - TEMPORARILY SEED WITH PURE LIVE SEED, THROUGHOUT CONSTRUCTION, DISTURBED AREAS THAT WILL BE INACTIVE FOR 7 DAYS OR MORE OR AS REQUIRED BY GENERIC PERMIT.
 - INSTALL UTILITIES, UNDERDRAINS, STORM SEWERS, AND CURBS.
 - INSTALL INLET PROTECTION AT ALL STORM DRAIN INLETS AS EACH INLET IS INSTALLED.
 - PERMANENTLY STABILIZE AREAS TO BE VEGETATED AS THEY ARE BROUGHT TO FINAL GRADE.
 - PREPARE SITE FOR PAVING AND PAVE SITE.
 - CONTACT CIVIL ENGINEER ONCE THE SITE APPEARS TO BE FULLY STABILIZED.
 - REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES AFTER INSPECTION AND APPROVAL OF THE ENGINEER AND STABILIZE ANY AREA DISTURBED BY THE REMOVAL OF BMPs.
 - CONTINUE DAILY INSPECTION REPORTS UNTIL THE FINAL DAILY INSPECTION IS SIGNED OFF BY THE CONSTRUCTION MANAGER THAT THE SITE IS FULLY STABILIZED AND THE PERMIT MAY BE TERMINATED.

MAINTENANCE

ALL MEASURES STATED ON THIS SITE MAP, AND IN THE STORM WATER POLLUTION PREVENTION PLAN, SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL NO LONGER REQUIRED FOR A COMPLETED PHASE OF WORK OR FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON IN ACCORDANCE WITH THE CONTRACT DOCUMENTS OR THE APPLICABLE PERMIT, WHICHEVER IS MORE STRINGENT, AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:

- INLET PROTECTION DEVICES AND BARRIERS SHALL BE REPAIRED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING OR DETERIORATION.
- ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, WATERED, AND RE-SEEDED AS NEEDED.
- SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-HALF THE HEIGHT OF THE SILT FENCE.
- THE CONSTRUCTION EXITS SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION EXITS AS CONDITIONS DEMAND.
- THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AREA AS CONDITIONS DEMAND.
- OUTLET STRUCTURES IN THE SEDIMENTATION BASINS SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES. SEDIMENT SHALL BE REMOVED FROM SEDIMENT BASINS OR TRAPS WHEN THE DESIGN CAPACITY HAS BEEN REDUCED BY 50%.

SOIL EROSION/SEDIMENTATION CONTROL OPERATION TIME SCHEDULE

NOTE: GENERAL CONTRACTOR TO COMPLETE TABLE WITH THEIR SPECIFIC PROJECT SCHEDULE

CONSTRUCTION SEQUENCE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
TEMPORARY CONSTRUCTION EXITS																								
TEMPORARY CONTROL MEASURES																								
SEDIMENT CONTROL BASINS																								
STRIP & STOCKPILE TOPSOIL																								
ROUGH GRADE																								
STORM FACILITIES																								
SITE CONSTRUCTION																								
PERMANENT CONTROL STRUCTURES																								
FOUNDATION / BUILDING CONSTRUCTION																								
FINISH GRADING																								
LANDSCAPING/SEED/FINAL STABILIZATION																								

HALT ALL ACTIVITIES AND CONTACT THE CONSULTANT TO PERFORM INSPECTION AND CERTIFICATION OF BMPs. GENERAL CONTRACTOR SHALL SCHEDULE AND CONDUCT STORM WATER PRE-CONSTRUCTION MEETING WITH CONSULTANT AND ALL GROUND-DISTURBING CONTRACTORS BEFORE PROCEEDING WITH CONSTRUCTION.

CONTRACTOR TO BE RESPONSIBLE FOR OBTAINING ALL DEWATERING PERMITS NECESSARY FOR CONSTRUCTION

THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED ON THIS PROJECT. CONTRACTOR'S BID SHALL INCLUDE CONSIDERATION FOR ADDRESSING THIS ISSUE.

SITE PREPARATION SHOULD BE IN ACCORDANCE WITH GEOTECHNICAL INVESTIGATION



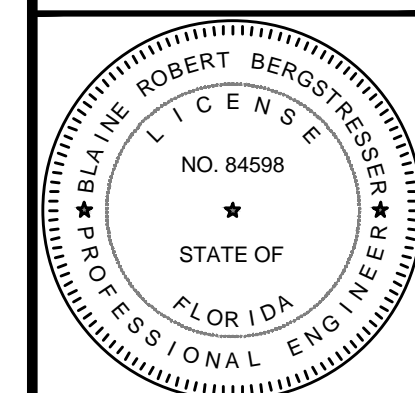
REVISIONS:

BY:	DATE:	COMMENT:

NOT FOR CONSTRUCTION

PROJECT: **OAK LAKE APARTMENTS**
City of Vero Beach, Florida

CLIENT: **OAK LAKE APARTMENTS**
City of Vero Beach
Indian River County
Florida



BLAINE BERGSTRESSER, P.E.
FLORIDA LICENSE No. 84598
02/24/2022



PROJECT No.: 22-1022
DRAWN BY: PMP
CHECKED BY: BRB
DATE: 02/22/2022
CAD ID: 22-1022 PGD

SHEET TITLE:
EROSION CONTROL PLAN PHASE I

SHEET NUMBER:
6a

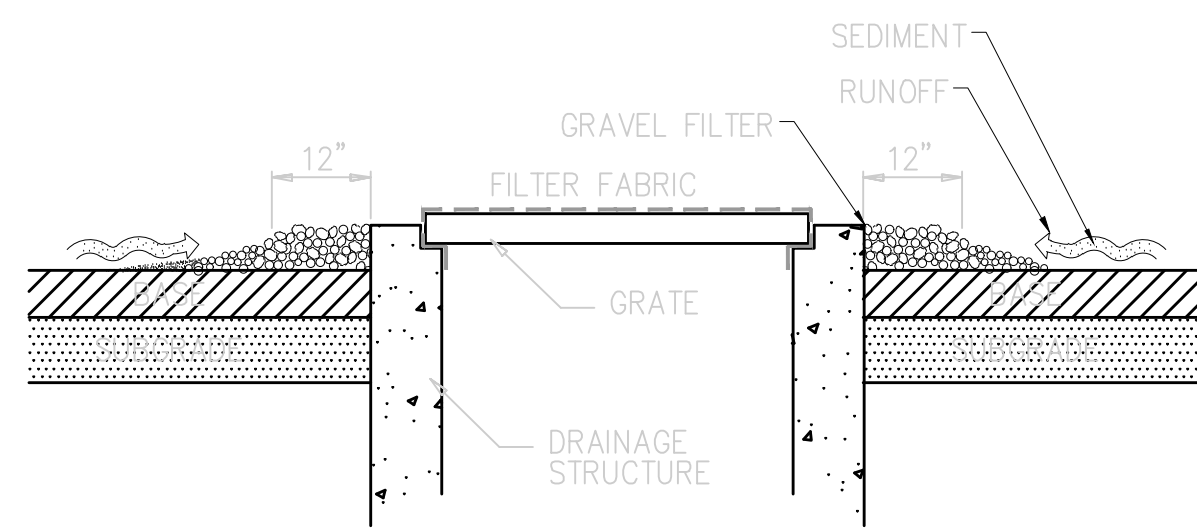
Project: 22-1022, Erosion Control Plan, Phase I, 02/22/2022, PMP, BRB, 02/22/2022, 22-1022 PGD
 File: 22-1022-001.dwg, PLOT: 22-1022-001.dwg, PLOT DATE: 02/22/2022, PLOT TIME: 10:00:00 AM, PLOT BY: PMP, PLOT DEVICE: HP DesignJet T1100e, PLOT SCALE: 1.00, PLOT ORIGIN: 0,0, PLOT SIZE: 11x17, PLOT STATUS: SUCCESS

Section 1	Project Name and location information:	Oak Lake Vero Beach, Florida.
Section 2	Describe the nature of the construction activity:	Construction activities consist of the development of a 7.48 AC residential property totaling 59 apartment units and related infrastructure within the City of Vero Beach, Florida.
Section 3	Describe the intended sequence of major soil disturbing activities:	<ul style="list-style-type: none"> - 0-2 DAYS - SITE PREP AND STABILIZED CONSTRUCTION ENTRANCE - 3-6 DAYS - INSTALL PERIMETER SEDIMENT AND EROSION CONTROLS - 7-90 DAYS - INSTALL STORMWATER RETENTION BASIN - 7-10 DAYS - CLEARING/GRUBBING OVER ALL AREAS - 11-90 DAYS - SITE GRADING - 90-150 DAYS - INSTALL STORM SEWER AND UTILITIES - 150-180 DAYS - STABILIZE SITE
Section 4	Total area of the site:	7.48 AC
Section 5	Total area of the site to be disturbed:	4.21 AC
Section 6	Existing data describing the soil or quality of any stormwater discharge from the site:	The soils on site are mostly sand, consisting of Anoka and Farmton, Waveland and Immokolee sands.
Section 7	Estimate the drainage area size for each discharge point:	4.21 AC
Section 8	Latitude and longitude of each discharge point and identify the receiving water or MSA for each discharge point:	LAT: 27° 39' 47" N LON: 80° 23' 17" W Discharges through control structure into existing wetland to the east of the site.
Section 9	Give a detailed description of all controls, Best Management Practices (BMPs) and measures that will be implemented at the construction site for each activity identified in the intended sequence of major soil disturbing activities section. Provide time frames in which the controls will be implemented. NOTE: All controls shall be consistent with performance standards for erosion and sediment control and stormwater treatment set forth in s. 62-40.432, F.A.C., the applicable Stormwater or Environmental Resource Permitting requirements of the Department or a Water Management District, and the guidelines contained in the State of Florida Erosion and Sediment Control Designer and Reviewer Manual, FDOT, FDEP, and any subsequent amendments.	<p>PHASE I</p> <ol style="list-style-type: none"> 1. INSTALL STABILIZED CONSTRUCTION EXIT(S) AND SWPPP ENTRANCE SIGN. 2. INSTALL SILT FENCE(S) ON THE SITE (CLEAR ONLY THOSE AREAS NECESSARY TO INSTALL SILT FENCE). 3. PREPARE TEMPORARY PARKING AND STORAGE AREA. 4. ORANGE PROTECTIVE FENCE AROUND ANY LAND TO BE PRESERVED IF NECESSARY, INCLUDING TREES/WETLANDS. 5. INSTALL AND STABILIZE HYDRAULIC CONTROL STRUCTURES (SWALES, CHECK DAMS, ETC.). 6. BEGIN CLEARING AND GRUBBING THE SITE. 7. BEGIN GRADING THE SITE.
Section 10	Describe all temporary and permanent stabilization practices. Stabilization practices include temporary seeding, mulching, permanent seeding, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, vegetative preservations, etc.	<ol style="list-style-type: none"> 1. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN (7) DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN (7) DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN UNDISTURBED FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT UNDISTURBED FOR MORE THAN ONE YEAR. 2. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCK PILES SHALL BE STABILIZED, COVERED OR CONTAINED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE. 3. A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. 4. WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. 5. ALL CLEARED AREAS WILL RECEIVE SEED AND MULCH WITHIN 7 DAYS IF NO CONSTRUCTION ACTIVITIES ARE TAKING PLACE OR PLANNED FOR 7 DAYS OR MORE AND/OR COMPLETION OF A PHASE OF GRADING. 6. VEGETATIVE COVER OR OTHER EROSION CONTROL DEVICES OR STRUCTURES USED TO MEET THESE REQUIREMENTS SHALL BE PROPERLY MAINTAINED DURING AND AFTER CONSTRUCTION.
Section 11	Describe all structural controls to be implemented to divert stormwater flow from exposed sites and structural practices to store flows, retain sediment on site or in any other way limit stormwater runoff. These controls include silt fences, earth dikes, diversions, swales, sediment traps, check dams, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, coagulating agents and temporary or permanent sediment basins.	<ol style="list-style-type: none"> 1. SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UP-SLOPE LAND DISTURBANCE TAKES PLACE. 2. ALL SEDIMENT CONTROL MEASURES ARE TO BE ADJUSTED TO MEET FIELD CONDITIONS AT THE TIME OF CONSTRUCTION AND BE CONSTRUCTED PRIOR TO ANY GRADING OR DISTURBANCE OF EXISTING SURFACE MATERIAL ON BALANCE OF SITE. PERIMETER SEDIMENT BARRIERS SHALL BE CONSTRUCTED TO PREVENT SEDIMENT OR TRASH FROM FLOWING OR FLOATING ON TO ADJACENT PROPERTIES. 3. CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME, SLOPE DRAIN STRUCTURE OR APPROVED CONTROL. 4. SEDIMENT WILL BE PREVENTED FROM ENTERING ANY STORM WATER SYSTEM, DITCH OR CHANNEL. ALL STORM WATER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT. 5. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED. 6. PROPERTIES AND WATERWAYS DOWNSTREAM FROM CONSTRUCTION SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION AND EROSION AT ALL TIMES DURING CONSTRUCTION. 7. ALL STORM SEWER INLET GRATES TO BE COVERED WITH FILTER FABRIC DURING CONSTRUCTION. 8. CUT AND FILL SLOPES TO BE CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION. SILT FENCES TO BE USED WHERE NECESSARY. 9. SILT FENCE INSTALLATION SHALL BE IN ACCORDANCE WITH FDOT STANDARD INDEX NO. 102. 10. FLOATING TURBIDITY BARRIER INSTALLATION SHALL BE IN ACCORDANCE WITH THE FDOT STANDARD INDEX NO. 103. 11. THE ANGLE FOR GRADED SLOPES AND FILLS SHALL NOT BE GREATER THAN THE ANGLE WHICH CAN BE RETAINED BY VEGETATIVE COVER, OR OTHER ADEQUATE EROSION-CONTROL DEVICES OR STRUCTURE (GENERALLY 4:1 OR LESS). SLOPES LEFT EXPOSED WILL, WITHIN SEVEN (7) WORKING DAYS OF COMPLETION OF ANY PHASE OF GRADING, BE PLANTED OR OTHERWISE PROVIDED WITH GROUND COVER, DEVICES, OR STRUCTURES SUFFICIENT TO RESTRAIN EROSION. 12. PERIODIC INSPECTION AND MAINTENANCE OF ALL SEDIMENT CONTROL STRUCTURES MUST BE PROVIDED TO ENSURE INTENDED PURPOSE IS ACCOMPLISHED. THE DEVELOPER, OWNER AND/OR CONTRACTOR SHALL BE CONTINUALLY RESPONSIBLE FOR ALL SEDIMENT CONTROLS. SEDIMENT CONTROL MEASURES SHALL BE IN WORKING CONDITION AT THE END OF EACH WORKING DAY.
Section 12	Describe all sediment basins to be implemented for areas that will disturb 10 or more acres at one time. The sediment basins (or an equivalent alternative) should be able to provide 3,600 cubic feet of storage for each acre drained. Temporary sediment basins (or an equivalent alternative) are recommended for drainage areas under 10 acres.	
Section 13	Describe all permanent stormwater management controls such as, but not limited to, detention or retention systems or vegetated swales that will be installed during the construction process.	

Section 14	Waste disposal, this may include construction debris, chemicals, litter, and sanitary wastes:	All construction materials and debris will be placed in a dumpster and hauled off site to a landfill or other proper disposal site. No materials will be buried on site.
Section 15	Offsite vehicle tracking from construction entrances/exits:	Off site vehicle tracking of sediments and dust generation will be minimized via a rock construction entrance, street sweeping and the use of water to keep dust down.
Section 16	The proper application rates of all fertilizers, herbicides and pesticides used at the construction site:	Florida-friendly fertilizers and pesticides will be used at a minimum and in accordance with the manufacturer's suggested application rates.
Section 17	The storage, application, generation and migration of all toxic substances:	All paints and other chemicals will be stored in a locked covered shed.
Section 18	Other:	Port-o-lets will be placed away from storm sewer systems, storm inlet(s), surface waters and wetlands. No vehicle maintenance shall be conducted on-site. A washdown area shall be designated at all times and will not be located in any area that will allow for the discharge of polluted runoff.
Section 19	Provide a detailed description of the maintenance plan for all structural and non-structural controls to assure that they remain in good and effective operating condition.	
Section 20	Contractor shall provide routine maintenance of permanent and temporary sediment and erosion control features in accordance with the technical specifications or as follows, whichever is more stringent: • Silt fence shall be inspected at least weekly. Any required repairs shall be made immediately. Sediment deposits shall be removed when they reach approximately one-half the height of the barrier. • Maintenance shall be performed on the rock entrance when any void spaces are full of sediment. • Inlets/outfalls shall be inspected immediately after each rain event and any required repairs to the filter inlets, silt fence, or filter fabric shall be performed immediately. • Bare areas of the site that were previously seeded shall be reseeded per manufacturer's instructions. • Mulch and sod that has been washed out shall be replaced immediately. • Maintain all other areas of the site with proper controls as necessary.	
Section 21	Inspections: Describe the inspection and inspection documentation procedures, as required by the FDEP NPDES Generic Permit for Stormwater Discharge from Large and Small Construction Activities. Qualified personnel will inspect all points of discharges, all disturbed areas of construction that have not been stabilized, constructed areas and locations where vehicles enter and exit the site, and all BMPs at least once every 7 calendar days and within 24 hours of the end of a rainfall event that is 0.5 inches or greater. Where sites have been finally stabilized, said inspections shall be conducted at least once every month until the Notice of Termination is filed.	
Section 22	Identify and describe all sources of non-stormwater discharges as allowed by the FDEP NPDES Generic Permit for Stormwater Discharge from Large and Small Construction Activities. 1. Contractor is responsible for all surface water discharges, rainfall run off or dewatering activities. 2. Contractor must incorporate all BMP's necessary to meet or exceed state water quality and SWPPP requirements. 3. Dewatering from construction activities shall be maintained onsite with no discharge to surface waters of the state or MSA systems.	
Section 22	All contractor(s) and subcontractor(s) identified in the SWPPP must sign the following certification: "I certify under penalty of law that I understand and shall comply with, the terms and conditions of the State of Florida Generic Permit for Stormwater Discharge from Large and Small Construction Activities and this Stormwater Pollution Prevention Plan prepared thereunder."	

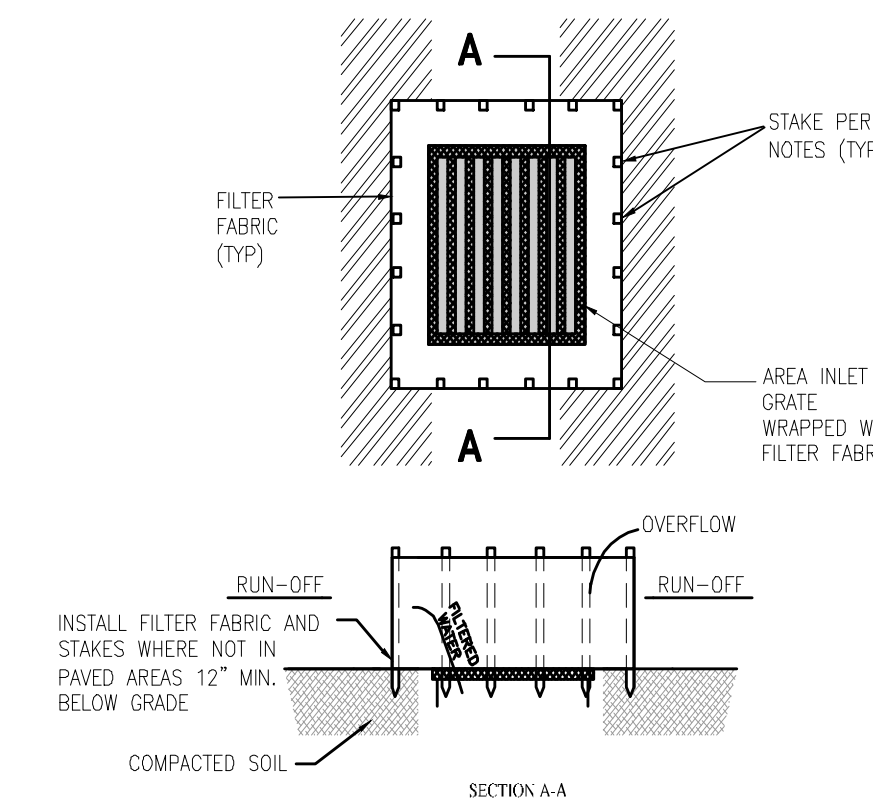
NOTE: CONTRACTOR SHALL FILL OUT THE RESPONSIBLE ENTITIES THE FOLLOWING TABLE...

Name	Title	Company Name, Address and Phone Number	Date

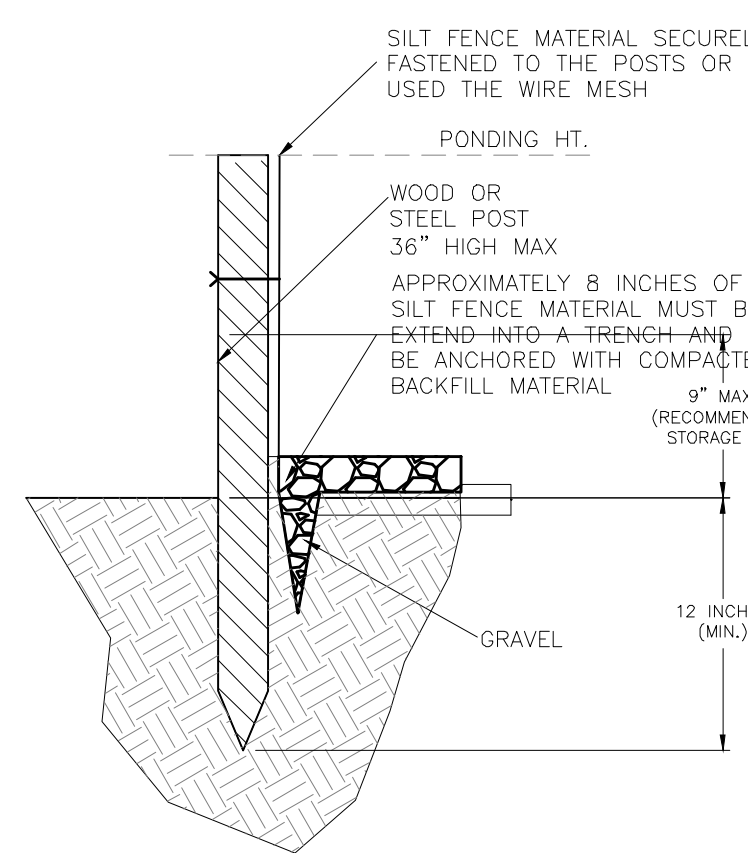
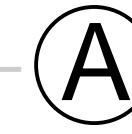


THIS METHOD OF INLET PROTECTION IS APPLICABLE AT DITCH BOTTOM INLETS USED IN VEHICLE USE AREAS, WHERE STAKED SEDIMENT FILTER IS NOT PRACTICAL.

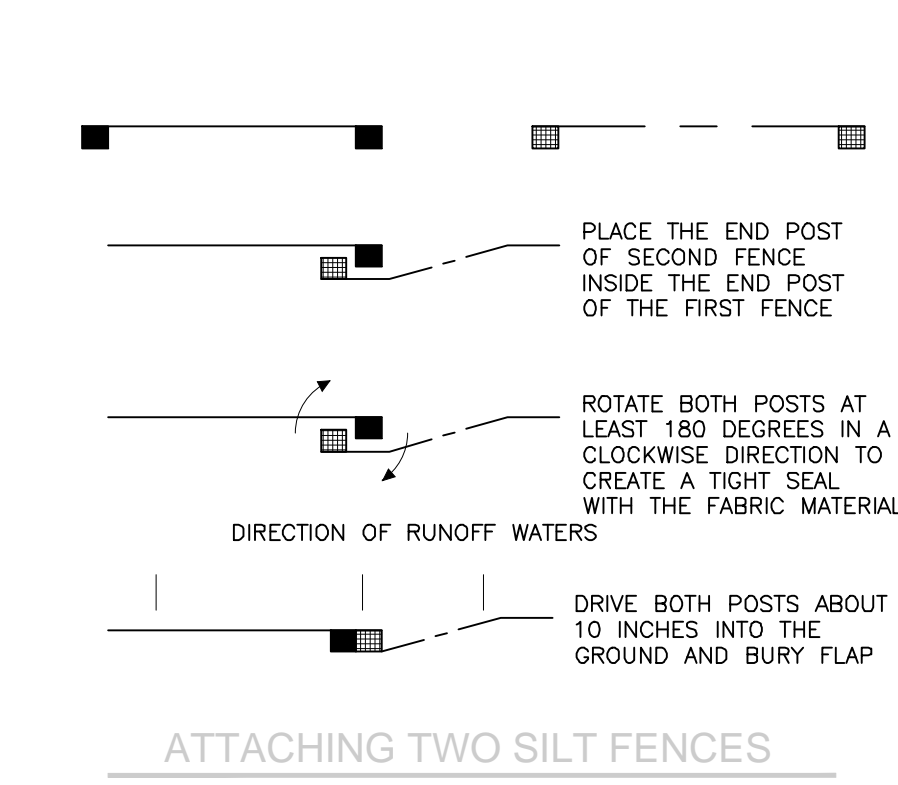
GRAVEL GRATE INLET SEDIMENT FILTER
N.T.S.



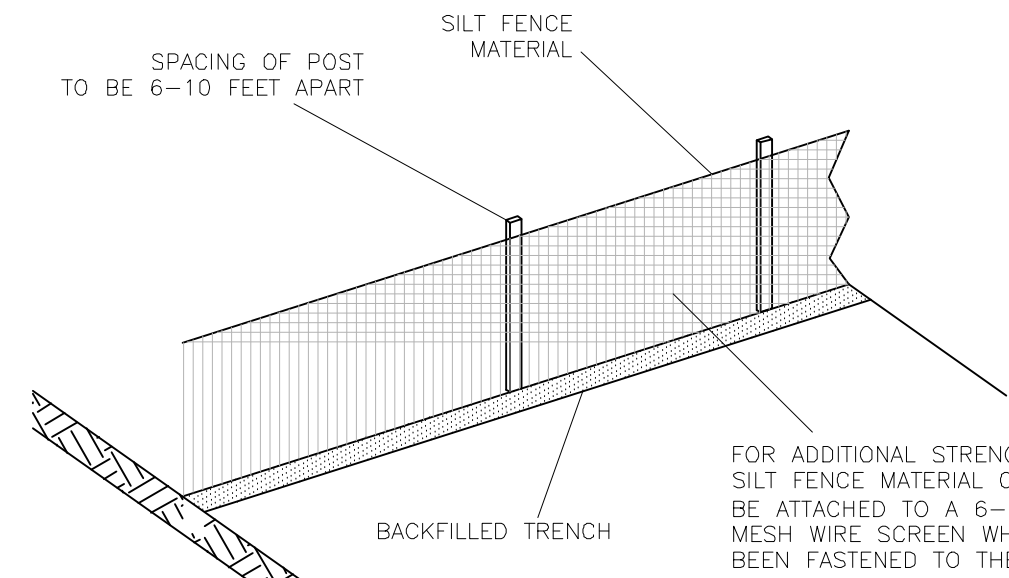
FABRIC DROP INLET SEDIMENT FILTER
N.T.S.



ALTERNATE DETAIL TRENCH WITH GRAVEL
N.T.S.



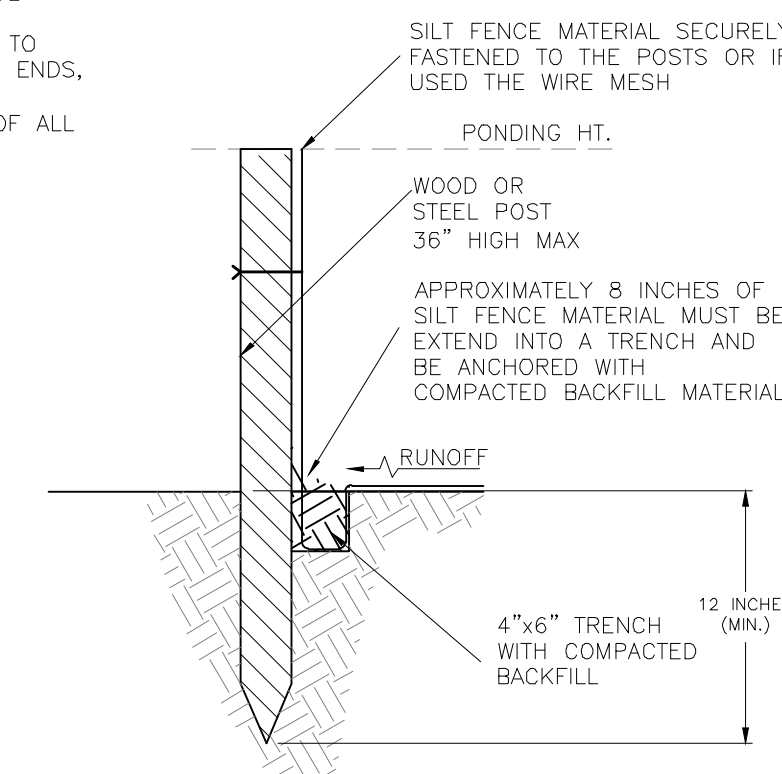
ATTACHING TWO SILT FENCES
N.T.S.



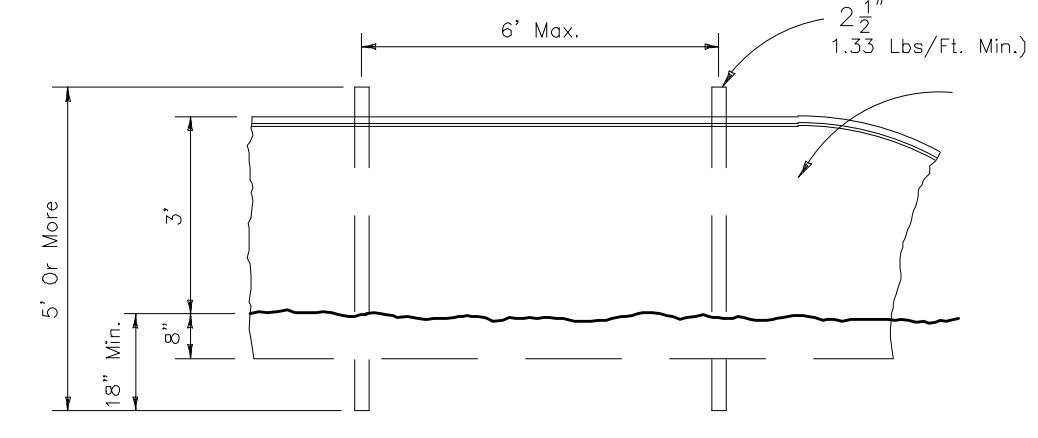
FABRIC SILT FENCE
N.T.S.

FILTER FABRIC NOTES:

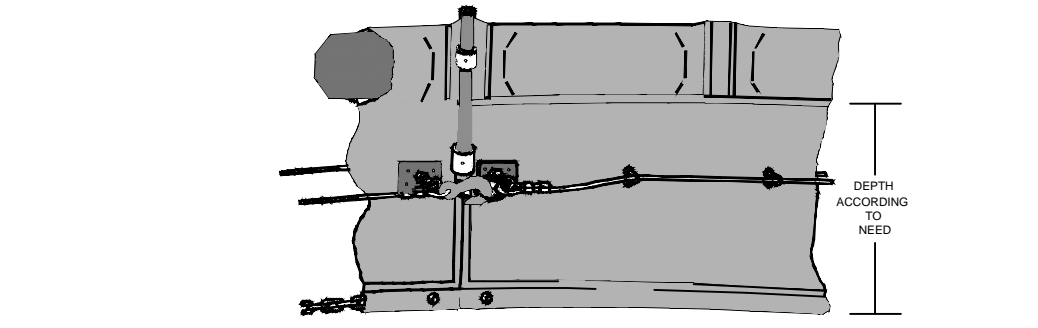
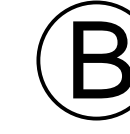
1. FILTER FABRIC SHALL BE CONSTRUCTED AT THE FOLLOWING LOCATIONS TO INTERCEPT AND DETAIN SEDIMENT FROM DISTURBED AREAS DURING CONSTRUCTION OPERATIONS FROM ENTERING EXISTING WETLANDS, DITCHES, OR RECEIVING WATERS.
 - 1.A. AT THE PERIMETER OF ALL EXISTING WETLANDS THAT ARE BELOW DISTURBED AREAS WHERE EROSION COULD OCCUR DURING CONSTRUCTION OPERATIONS, AND AT THE LIMITS OF FILL OF EXISTING WETLANDS.
 - 1.B. AT THE PERIMETER OF ALL INLETS IMMEDIATELY FOLLOWING THE INSTALLATION AND BACKFILLING OF EACH INLET.
 - 1.C. AT ALL EXISTING DITCHES THAT TRAVERSE THE PROJECT SITE, A FILTER BARRIER SHALL BE CONSTRUCTED AT THE DOWNSTREAM PROPERTY LINE.
 - 1.D. AT ALL OTHER LOCATIONS DEPICTED ON THE PLANS OR AS REQUESTED IN THE FIELD BY THE PROJECT ENGINEER.
2. FLOATING SILT BARRIERS SHALL BE INSTALLED AROUND THE POINT OF DISCHARGE TO A WATER BODY. THE BARRIERS SHALL BE REGULARLY CHECKED AND MAINTAINED TO ENSURE ADEQUATE FUNCTION UNTIL ALL PAVEMENT SURFACES ARE COMPLETE AND ALL SWALED AREAS HAVE GRASS COVER.
3. IN LIEU OF SEED AND MULCH, SOD ALL AREAS THAT ARE PRONE TO EXCESSIVE EROSION, INCLUDING AREAS ADJACENT TO CULVERT ENDS, DISCHARGE STRUCTURES, FLUMES, ETC.
4. PROVIDE 18" MIN. WIDE STRIP OF SOD ADJACENT TO THE EDGE OF ALL NEW PAVED SURFACES.



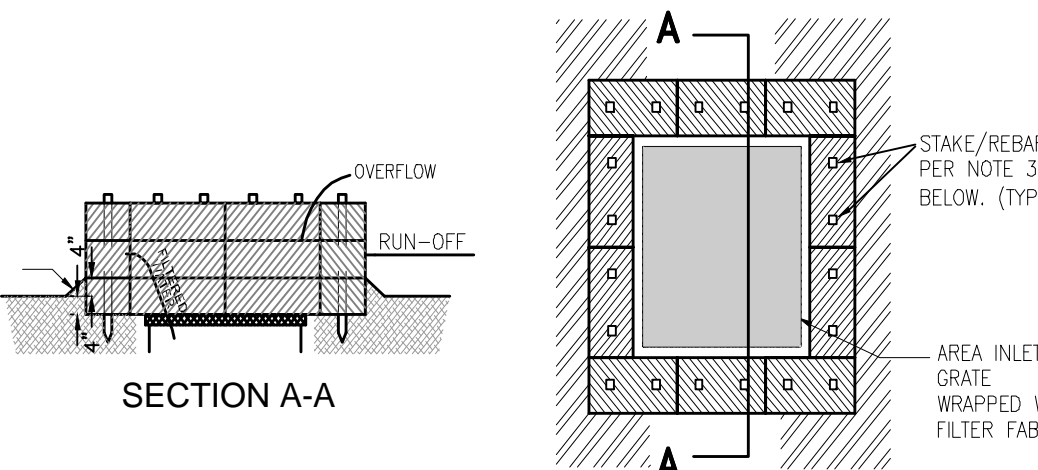
STANDARD DETAIL TRENCH WITH NATIVE BACKFILL
N.T.S.



STAKED TURBIDITY CURTAIN
N.T.S.



TYPICAL FLOATING TURBIDITY CURTAIN
N.T.S.



STRAW BALE FILTER FOR DROP INLET
N.T.S.

1. STRAW BALES ARE TO BE PLACED 4 INCHES IN THE SOIL, TIGHTLY ADJUTING WITH NO GAPS, STAKED AND BACKFILLED AROUND THE ENTIRE OUTSIDE PERIMETER.
2. WEDGE LOOSE STRAW BETWEEN BALES TO CLOSE GAPS.
3. USE 2\"/>

CONSTRUCTION ENTRANCE NOTES

1. ENTRANCE MUST EXTEND THE FULL WIDTH OF THE VEHICULAR INGRESS AND EGRESS AREA AND WIDE ITS CONNECTION TO THE ROADWAY TO ACCOMMODATE THE TURNING RADIUS OF THE LARGE VEHICLES.
2. ENTRANCE MUST BE AT LEAST 12" THICK, 75 FEET LONG, AND 20 FEET WIDE. THE ENTRANCE SHALL BE PAVED WITHIN THE COUNTY RIGHT-OF-WAY.
3. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
4. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
5. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

GRAVEL CONSTRUCTION ENTRANCE
N.T.S.



GRAVEL CONSTRUCTION ENTRANCE
N.T.S.

CONSTRUCTION ENTRANCE NOTES

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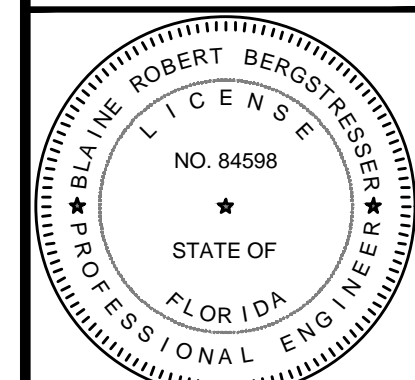


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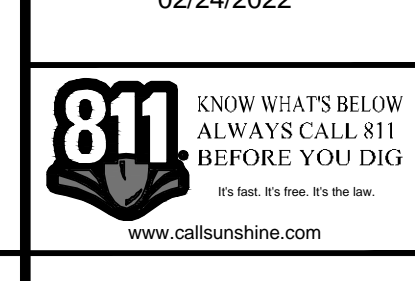
NOT FOR CONSTRUCTION

OAK LAKE APARTMENTS
City of Vero Beach, Florida

OAK LAKE APARTMENTS
City of Vero Beach
Indian River County
Florida



BLAINE BERGSTRESSER, P.E.
FLORIDA LICENSE NO. 84598
02/24/2022



PROJECT No.: 22-1022
DRAWN BY: PMP
CHECKED BY: BRB
DATE: 02/22/2022
CAD I.D.: 22-1022 PGD

SHEET TITLE:
EROSION CONTROL DETAILS

SHEET NUMBER:
6C