

HIDDEN COVE SUBDIVISION PRELIMINARY PLAT PLANS

PROJECT TEAM

CIVIL ENGINEERING

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SURVEYING

SHANNON SURVEYING, INC.
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499 NORTH S.R. 434 - SUITE 2045
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(407) 774-8372

OWNER/DEVELOPER

LAKE RC LLC.
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GEOTECHNICAL ENGINEERING

G.E.O. ENGINEERING & SCIENCES, INC.
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GENERAL NOTE

THE PLANS WERE PREPARED ACCORDING TO AVAILABLE INFORMATION BASED ON THE CONDITIONS AS THEY EXISTED AT THE TIME OF PLAN PREPARATION. THE CONDITIONS OF THE PROPERTY MAY HAVE CHANGED SINCE PROJECT DESIGN. THE CONTRACTOR SHALL VERIFY AND CONFIRM ALL EXISTING CONDITIONS AND SHALL CONTACT THE PROJECT ENGINEER IMMEDIATELY IF CONDITIONS HAVE CHANGED FROM WHEN THE PLANS WERE PREPARED.

ACCESSIBILITY NOTE

THE SITE SHALL COMPLY WITH THE FLORIDA BUILDING CODE (FBC) 2020 ACCESSIBILITY CODE.

PROPERTY LEGAL DESCRIPTION (PER SURVEY)

THAT PART OF THE WEST 1/2 OF THE NORTHWEST 1/4 OF SECTION 13, TOWNSHIP 19 SOUTH, RANGE 26 EAST, IN THE CITY OF EUSTIS, LAKE COUNTY, FLORIDA, BOUNDED AND DESCRIBED AS FOLLOWS:

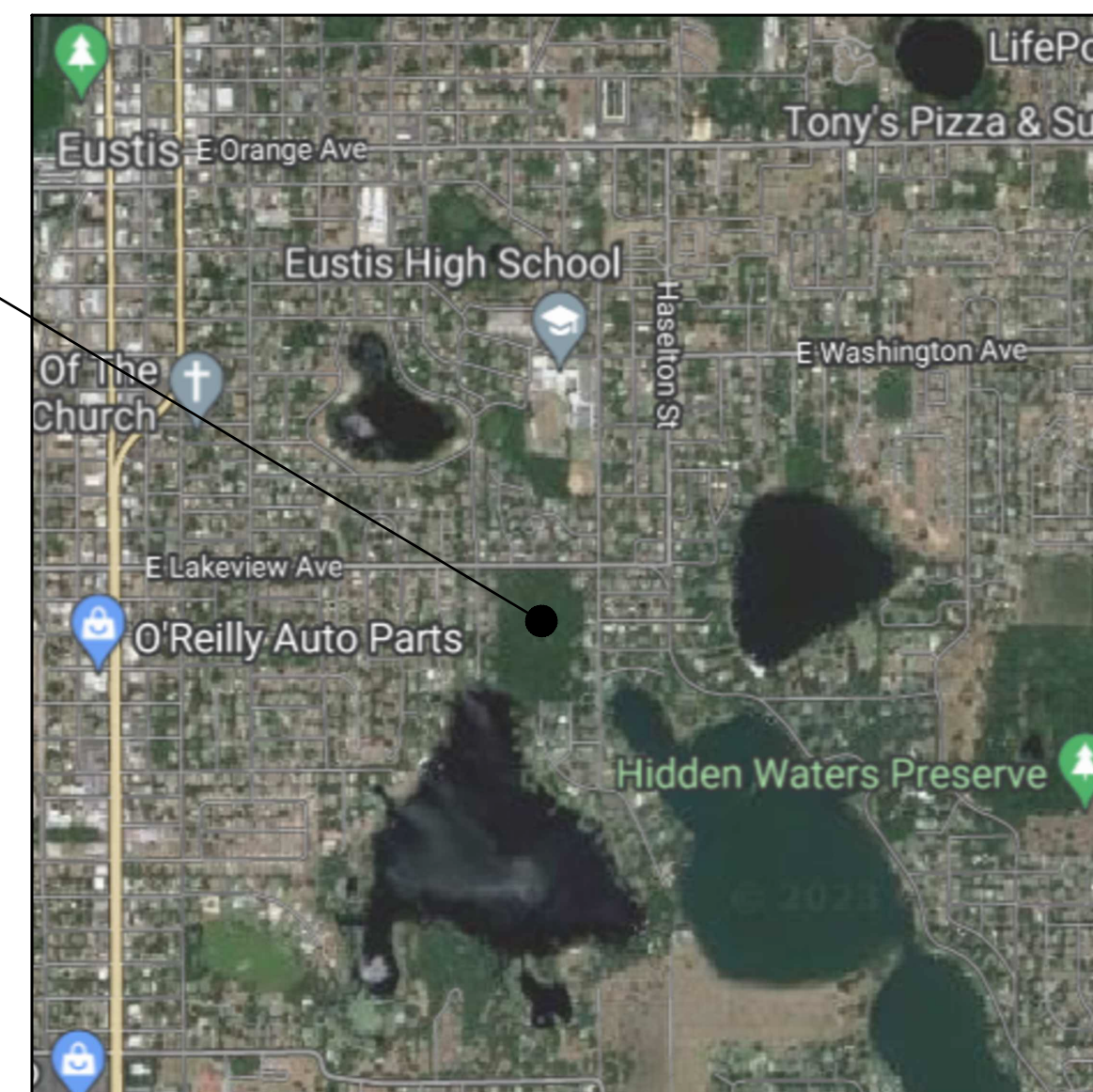
FROM THE NORTHWEST CORNER OF THE SAID SECTION 13, RUN SOUTH 725.55 FEET TO A POINT ON THE SOUTH LINE OF THE RIGHT-OF-WAY OF LAKEVIEW AVENUE; THENCE RUN EAST ALONG THE SOUTH LINE OF THE SAID RIGHT-OF-WAY 713.02 FEET FOR A POINT OF BEGINNING. FROM SAID POINT OF BEGINNING, RUN SOUTH 1046.1 FEET; THENCE RUN S 57°09' W, 397.34 FEET; THENCE RUN N 89°38' E ALONG THE NORTH LINE OF EL CERITO SUBDIVISION, ACCORDING TO THE REVISED PLAT THEREOF RECORDED IN PLAT BOOK 9, PAGE 26, PUBLIC RECORDS OF LAKE COUNTY, FLORIDA, A DISTANCE OF 922.35 FEET TO THE WEST LINE OF THE RIGHT-OF-WAY OF FAHNSTOCK STREET; THENCE RUN N 00°06' E ALONG THE WEST LINE OF THE SAID RIGHT-OF-WAY 1015 FEET, TO A POINT 240.6 FEET SOUTH OF THE SOUTH LINE OF THE RIGHT-OF-WAY OF LAKEVIEW AVENUE; THENCE RUN WEST AND PARALLEL WITH THE SOUTH LINE OF THE RIGHT-OF-WAY OF LAKEVIEW AVENUE 255 FEET; THENCE RUN N 00°06' E AND PARALLEL WITH THE WEST LINE OF THE RIGHT-OF-WAY OF FAHNSTOCK STREET 240.6 FEET TO THE SOUTH LINE OF THE RIGHT-OF-WAY OF LAKEVIEW AVENUE; THENCE RUN WEST ALONG THE SOUTH LINE OF THE SAID RIGHT-OF-WAY 335.78 FEET TO THE POINT OF BEGINNING.

LESS THAT PART THEREOF DESCRIBED AS CROOKED LAKE HEIGHTS, ACCORDING TO THE PLAT RECORDED IN PLAT BOOK 23, PAGE 16, PUBLIC RECORDS OF LAKE COUNTY, FLORIDA.

ALSO LESS THAT PART THEREOF DESCRIBED AS CROOKED LAKE HEIGHTS FIRST ADDITION, ACCORDING TO THE PLAT RECORDED IN PLAT BOOK 30, PAGE 68, PUBLIC RECORDS OF LAKE COUNTY, FLORIDA.

ALSO LESS THAT PART OF THE WEST 1/2 OF THE NORTHWEST 1/4 OF SECTION 13, TOWNSHIP 19 SOUTH, RANGE 26 EAST, IN THE CITY OF EUSTIS, FLORIDA, BOUNDED AND DESCRIBED AS FOLLOWS: BEGIN AT THE NORTHEAST CORNER OF LOT 9 IN EL CERITO, A SUBDIVISION IN THE CITY OF EUSTIS, FLORIDA, ACCORDING TO THE PLAT THEREOF RECORDED IN PLAT BOOK 7, PAGE 47, PUBLIC RECORDS OF LAKE COUNTY, FLORIDA, AND RUN NORTH ALONG THE WEST LINE OF THE RIGHT-OF-WAY OF FAHNSTOCK AVENUE A DISTANCE OF 45 FEET; THENCE WEST AND PARALLEL WITH THE NORTH LINES OF LOTS 9 AND 18 IN SAID EL CERITO TO THE NORTHERLY EXTENSION OF THE WEST LINE OF SAID LOT 18; THENCE SOUTH ALONG THE NORTHERLY EXTENSION OF THE WEST LINE OF SAID LOT 18 A DISTANCE OF 45 FEET TO THE NORTHWEST CORNER OF SAID LOT 18; THENCE EAST ALONG THE NORTH LINES OF SAID LOTS 9 AND 18 TO THE POINT OF BEGINNING.

VICINITY MAP



PROJECT SITE

EAST LAKEVIEW AVENUE
EUSTIS, FLORIDA 32726

SECTION 13, TOWNSHIP 19 SOUTH, RANGE 26 EAST

SHEET LIST

C1	COVER SHEET
C2	CONSTRUCTION NOTES
C3	DEMOLITION PLAN
C4	SUBDIVISION SITE PLAN
C5	SUBDIVISION GRADING AND DRAINAGE PLAN
C6	SUBDIVISION UTILITY PLAN
C7	STORMWATER POLLUTION PREVENTION PLAN
C8	WEST BAY LANE PLAN AND PROFILE -0+12 TO 10+00
C9	WEST BAY LANE PLAN AND PROFILE 10+00 TO 12+50
C10	HIDDEN COURT PLAN AND PROFILE 0+00 TO 2+75
C11	WEST BAY LANE CROSS SECTIONS 1+00 TO 9+00
C12	WEST BAY LANE CROSS SECTIONS 9+50 TO 11+60
C13	HIDDEN COURT CROSS SECTIONS 0+00 TO 2+75
C14	CONSTRUCTION DETAILS
C15	CITY OF EUSTIS CONSTRUCTION DETAILS

DATUM NOTE

ELEVATIONS SHOWN ON THE PLAN SET ARE RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988

PERMIT NOTE

SEPARATE PERMITS ARE REQUIRED FOR THE FOLLOWING (IF APPLICABLE):

- CONSTRUCTION TRAILERS
- LIFT STATIONS
- RETAINING WALLS
- ACCESS GATES
- GENERATORS
- AWNINGS
- ETC.
- DUMPSTER ENCLOSURES
- SIGNS
- ENTRY WALL FEATURES
- SITE LIGHTING
- FENCES
- WALK-IN COOLERS

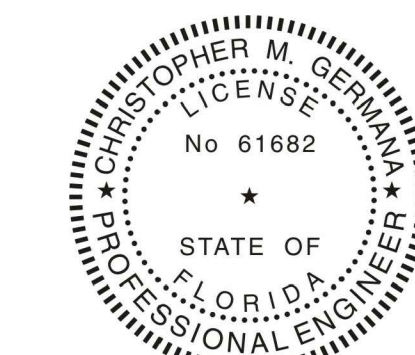
FIRE NOTE

SITE TO CONFORM TO FLORIDA FIRE PREVENTION CODE 7TH EDITION (2020) SEPARATE PERMITS ARE REQUIRED FOR THE FOLLOWING (IF APPLICABLE):

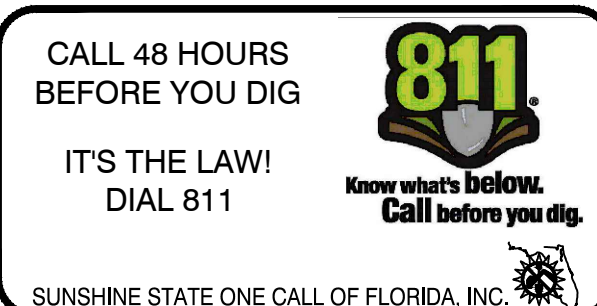
- FIRE SPRINKLERS
- FIRE ALARM MONITORING
- DUMPSTER ENCLOSURE
- FIRE ALARMS
- FIRE UNDERGROUND

This item has been digitally signed and sealed by Christopher M. Germana, PE on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Digitally signed
by Christopher
M Germana
Date: 2023.05.01
16:14:28 -04'00'



CHRISTOPHER M. GERMANA, P.E.
FLORIDA PROFESSIONAL ENGINEER # 61682
ENGINEERING FIRM REGISTRY # 29279



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EXISTING UTILITIES

THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN ON THE PLANS HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY. PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE VARIOUS UTILITIES AND TO MAKE THE NECESSARY ARRANGEMENTS FOR ANY RELOCATIONS TO THESE UTILITIES WITH THE OWNER OF THE UTILITY. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN CROSSING AN UNDERGROUND UTILITY, WHETHER SHOWN ON THE PLAN OR LOCATED BY THE UTILITY COMPANY. ALL UTILITIES THAT INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE RELOCATED BY THE RESPECTIVE UTILITY COMPANY AND THE CONTRACTOR SHALL COOPERATE WITH THEM DURING RELOCATION OPERATIONS. ANY DELAY OR INCONVENIENCE CAUSED TO THE CONTRACTOR BY THE RELOCATION OF VARIOUS UTILITIES SHALL BE INCIDENTAL TO THE CONTRACT, AND NO EXTRA COMPENSATION WILL BE ALLOWED.

DRAINAGE SYSTEMS

THE CONTRACTOR SHALL PERFORM ALL WORK PERTAINING TO DRAINAGE INCLUDING EXCAVATION OF STORMWATER POND PRIOR TO THE COMMENCEMENT OF OTHER WORK INCLUDED IN THESE PLANS. THE DRAINAGE FACILITIES SHALL BE MAINTAINED BY THE CONTRACTOR DURING THE COURSE OF THIS CONTRACT. THE CONTRACTOR SHALL INCLUDE FUNDS IN THE DRAINAGE COSTS OF THE CONTRACT TO OPERATE AND MAINTAIN THE DRAINAGE SYSTEMS DURING THE WORK PROCESS.

PERMITS AND PERMIT REQUIREMENTS

THE CONTRACTOR SHALL OBTAIN FROM THE OWNER COPIES OF ALL REGULATORY AND LOCAL AGENCY PERMITS. THE CONTRACTOR SHALL BE EXPECTED TO REVIEW AND ABIDE BY ALL THE REQUIREMENTS AND LIMITATIONS SET FORTH IN THE PERMITS. A COPY OF THE PERMIT SHALL BE KEPT ON THE JOB AT ALL TIMES.

LAYOUT AND CONTROL

UNLESS OTHERWISE NOTED ON THE PLANS, THE CONTRACTOR SHALL PROVIDE FOR THE LAYOUT OF ALL THE WORK TO BE CONSTRUCTED. BENCHMARK INFORMATION SHALL BE PROVIDED TO THE CONTRACTOR BY THE OWNER OR OWNER'S SURVEYOR. ANY DISCREPANCIES BETWEEN FIELD MEASUREMENTS AND CONSTRUCTION PLAN INFORMATION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER IMMEDIATELY.

QUALITY CONTROL TESTING REQUIREMENTS

ALL TESTING RESULTS SHALL BE PROVIDED TO THE OWNER/OPERATOR AND THE ENGINEER. TESTING REQUIREMENTS ARE TO BE IN ACCORDANCE WITH THE OWNER/OPERATOR'S SPECIFICATIONS AND REQUIREMENTS. ALL TEST RESULTS SHALL BE PROVIDED (PASSING AND FAILING) ON A REGULAR AND IMMEDIATE BASIS. CONTRACTOR SHALL PROVIDE TESTING SERVICES THROUGH A FLORIDA LICENSED GEOTECHNICAL ENGINEERING FIRM ACCEPTABLE TO THE OWNER AND THE ENGINEER. CONTRACTOR TO SUBMIT TESTING FIRM TO OWNER FOR APPROVAL PRIOR TO COMMENCING TESTING.

SHOP DRAWINGS

SHOP DRAWINGS AND CERTIFICATIONS FOR ALL STORM DRAINAGE, WATER SYSTEM, SEWER SYSTEM, AND PAVING SYSTEM MATERIALS AND STRUCTURES ARE REQUIRED. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO ORDERING THE MATERIALS REQUIRED FOR CONSTRUCTION.

EARTHWORK QUANTITIES

THE CONTRACTOR SHALL PERFORM HIS OWN INVESTIGATIONS AND CALCULATIONS AS NECESSARY TO ASSURE HIMSELF OF EARTHWORK QUANTITIES. THERE IS NO IMPLICATION THAT EARTHWORK BALANCES, AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY IMPORT FILL NEEDED, OR FOR REMOVAL AND DISPOSAL OF EXCESS MATERIALS. PURSUANT TO LAND DEVELOPMENT REGULATIONS (LDR) SECTION 6.06.01(F), SOIL REMOVAL FROM THE SITE SHALL NOT EXCEED 200% OF THE VOLUME AREA OF THE NEEDED RETENTION/DETENTION VOLUME REQUIRED.

EROSION CONTROL

EROSION AND SILTRATION CONTROL MEASURES ARE TO BE PROVIDED AND INSTALLED PRIOR TO COMMENCEMENT OF CONSTRUCTION. THESE MEASURES ARE TO BE INSPECTED BY THE CONTRACTOR ON A REGULAR BASIS AND ARE TO BE MAINTAINED OR REPAIRED ON AN IMMEDIATE BASIS AS REQUIRED. REFER TO WATER MANAGEMENT DISTRICT PERMIT FOR ADDITIONAL REQUIREMENTS FOR EROSION CONTROL AND SURFACE DRAINAGE. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE STABILIZED WITH SOD WITHIN 7 DAYS OF COMPLETION OF CONSTRUCTION. SOD SHALL BE THE SAME VARIETY OF EXISTING SOD

LIMITS OF DISTURBANCE

AT NO TIME SHALL THE CONTRACTOR DISTURB SURROUNDING PROPERTIES OR TRAVEL ON SURROUNDING PROPERTIES WITHOUT WRITTEN CONSENT FROM THE PROPERTY OWNER. REPAIR OR RECONSTRUCTION OF DAMAGED AREAS ON SURROUNDING PROPERTIES SHALL BE PERFORMED BY THE CONTRACTOR ON AN IMMEDIATE BASIS. ALL COSTS FOR REPAIRS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND NO EXTRA COMPENSATION SHALL BE PROVIDED. GRADING AND/OR CLEARING ON PROPERTIES OTHER THAN SHOWN ON THE APPROVED PLANS IS PROHIBITED.

TREE REMOVAL

THE CONTRACTOR SHALL NOTIFY THE OWNER AND THE ENGINEER WHEN ALL WORK IS LAID OUT (SURVEY STAKED), SO THAT A DETERMINATION MAY BE MADE OF SPECIFIC TREES TO BE REMOVED. NO TREES ON THE CONSTRUCTION PLANS AS BEING SAVED SHALL BE REMOVED WITHOUT PERMISSION FROM THE OWNER AND ENGINEER.

CLEARING AND GRUBBING

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEARING AND GRUBBING FOR SITE CONSTRUCTION INCLUDING CLEARING FOR PAVING, UTILITIES, DRAINAGE FACILITIES AND BUILDING CONSTRUCTION. ALL AREAS TO BE CLEARED SHALL BE FIELD STAKED AND REVIEWED BY THE OWNER AND ENGINEER PRIOR TO ANY CONSTRUCTION.

AS-BUILTS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AS-BUILT SURVEYS FOR ALL APPLICABLE UTILITIES.

MATERIAL STORAGE/DEBRIS REMOVAL

1. NO COMBUSTIBLE BUILDING MATERIALS MAY BE ACCUMULATED ON THE SITE AND NO CONSTRUCTION WORK INVOLVING COMBUSTIBLE MATERIALS MAY BEGIN UNTIL INSTALLATION OF ALL REQUIRED WATER MAINS AND FIRE HYDRANTS HAVE BEEN COMPLETED, DEP APPROVAL RECEIVED FOR THE WATER MAINS, AND THE HYDRANTS ARE IN OPERATION. CONSTRUCTION WORK INVOLVING NON-COMBUSTIBLE MATERIALS, SUCH AS CONCRETE, MASONRY AND STEEL MAY BEGIN PRIOR TO THE FIRE HYDRANTS BEING OPERATIONAL.
2. ALL MATERIALS EXCAVATED SHALL REMAIN THE PROPERTY OF THE OWNER AND SHALL BE STOCKPILED AT ON-SITE LOCATIONS AS SPECIFIED BY THE OWNER. MATERIALS SHALL BE STOCKPILED SEPARATELY AS TO USABLE (NON-ORGANIC) FILL STOCKPILES AND ORGANIC (MUCK) STOCKPILES IF MUCK IS ENCOUNTERED. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL UNSUITABLE FILL MATERIALS FROM THE SITE. ALL CLAY ENCOUNTERED SHALL BE EXCAVATED OUT AND REPLACED WITH CLEAN GRANULAR FILL MATERIALS.

FILL MATERIAL

ALL MATERIALS SHALL CONTAIN NO MUCK, STUMPS, ROOTS, BRUSH, VEGETATIVE MATTER, RUBBISH OR OTHER MATERIAL THAT WILL NOT COMPACT INTO A SUITABLE AND ENDURING BACKFILL. FILL SHALL BE CLEAN, NON-ORGANIC, GRANULAR MATERIAL WITH NOT MORE THAN 10% PASSING THE NO. 200 SIEVE.

COMPACTION

FILL MATERIALS PLACED UNDER ROADWAYS SHALL BE COMPACTED TO AT LEAST 98% OF THE MAXIMUM DENSITY AS SPECIFIED IN AASHTO T-180. ALL OTHER FILL AREAS ARE TO BE COMPACTED TO AT LEAST 95% MAXIMUM DENSITY AS SPECIFIED IN AASHTO T-180. FILL MATERIALS SHALL BE PLACED AND COMPACTED IN A MAXIMUM OF 12" LIFTS. THE CONTRACTOR SHALL PROVIDE THE ENGINEER AND OWNER WITH ALL (PASSING AND FAILING) TESTING RESULTS. RESULTS SHALL BE PROVIDED ON A TIMELY AND REGULAR BASIS PRIOR TO CONTRACTOR'S PAY REQUEST SUBMITTAL FOR THE AFFECTED WORK.

GENERAL DESIGN INTENT

ALL PAVING SURFACES IN INTERSECTIONS AND ADJACENT SECTIONS SHALL BE GRADED TO DRAIN POSITIVELY IN THE DIRECTION SHOWN BY THE FLOW ARROWS ON THE PLANS AND TO PROVIDE A SMOOTHLY TRANSITIONED DRIVING SURFACE FOR VEHICLES WITH NO SHARP BREAKS IN GRADE, AND NO UNUSUALLY STEEP OR REVERSE CROSS SLOPES. APPROACHES TO INTERSECTIONS AND ENTRANCE AND EXIT GRADES TO INTERSECTIONS WILL HAVE TO BE STAKED IN THE FIELD AT DIFFERENT GRADES THAN THE CENTERLINE GRADES TO ACCOMPLISH THE PURPOSES OUTLINED. IN ADDITION, THE STANDARD CROWN WILL HAVE TO BE CHANGED IN ORDER TO DRAIN POSITIVELY IN THE AREA OF INTERSECTIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ACCOMPLISH THE ABOVE AND THE ENGINEER SHALL BE CONSULTED SO THAT HE MAY MAKE ANY AND ALL REQUIRED INTERPRETATIONS OF THE PLANS OR GIVE SUPPLEMENTARY INSTRUCTION TO ACCOMPLISH THE INTENT OF THE PLANS.

MATERIALS/CONSTRUCTION SPECIFICATIONS

MATERIALS AND CONSTRUCTION METHODS FOR THE ROADWAY CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION LATEST EDITION.

PAVEMENT SECTION REQUIREMENTS

CONSTRUCTION OF ROADWAY, SUBGRADE PREPARATION, AND PAVEMENT INSTALLATION SHALL CONFORM TO FDOT STANDARDS AND SOILS REPORT RECOMMENDATIONS UNLESS OTHERWISE NOTED IN THE CONSTRUCTION DOCUMENTS.

SIDEWALKS

SIDEWALKS ARE TO BE CONSTRUCTED IN THE AREA AS SHOWN ON THE CONSTRUCTION PLANS. SIDEWALK SHALL BE CONSTRUCTED OF 4 INCHES OF CONCRETE WITH A 28 DAY COMPRESSION STRENGTH OF 2500 PSI. JOINTS SHALL BE EITHER TOOLED OR SAWCUT AT A DISTANCE OF 5' LENGTHS. HANDICAPPED RAMPS SHALL BE PROVIDED AT ALL INTERSECTIONS AND BE IN ACCORDANCE WITH STATE REGULATIONS FOR HANDICAP ACCESSIBILITY.

PAVEMENT MARKINGS/SIGNAGE

PAVEMENT MARKINGS AND SIGNAGE SHALL BE PROVIDED AS SHOWN ON THE CONSTRUCTION PLANS AND SHALL MEET THE REQUIREMENTS OF THE OWNER/OPERATOR. SIGNAGE SHALL BE IN CONFORMANCE WITH MUTCD (LATEST EDITION). A 48-HOUR PAVEMENT CURING TIME WILL BE PROVIDED PRIOR TO APPLICATION OF THE PAVEMENT MARKINGS. REFLECTIVE PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH FDOT INDEX NO. 17352.

TRAFFIC CONTROL

WHERE APPLICABLE A MOT PLAN SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO COMMENCEMENT OF WORK. A MINIMUM OF 2-WAY, ONE LANE TRAFFIC SHALL BE MAINTAINED IN THE WORK SITE AREA. ALL CONSTRUCTION WARNING SIGNAGE SHALL BE IN PLACE PRIOR TO COMMENCEMENT OF CONSTRUCTION AND BE MAINTAINED THROUGHOUT CONSTRUCTION. ACCESS SHALL BE CONTINUOUSLY MAINTAINED FOR ALL PROPERTY OWNERS SURROUNDING THE WORK SITE AREA. LIGHTED WARNING DEVICES ARE TO BE OPERATIONAL PRIOR TO DUSK EACH NIGHT DURING CONSTRUCTION.

CURBING

CURBING SHALL BE CONSTRUCTED WHERE NOTED ON THE CONSTRUCTION PLANS. CONCRETE FOR CURBS SHALL BE DEPARTMENT OF TRANSPORTATION CLASS "1" CONCRETE WITH A 28 DAY COMPRESSION STRENGTH OF 2500 PSI. ALL CURBS SHALL HAVE SAW CUT CONTRACTION JOINTS AND SHALL BE CONSTRUCTED AT INTERVALS NOT TO EXCEED 10'-0" ON CENTER. CONSTRUCTION OF CURBS SHALL BE IN CONFORMANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SECTION 520 AND DETAILS PROVIDED ON THE CONSTRUCTION PLANS.

R/W RESTORATION

ALL AREAS WITHIN THE RIGHT-OF-WAYS SHALL BE FINISH GRADED WITH A SMOOTH TRANSITION INTO EXISTING GROUND. ALL SWALES SHALL BE STABILIZED IMMEDIATELY AFTER FINAL GRADING. ALL DISTURBED AREAS SHALL BE RAKED CLEAN OF ALL LIMEROCK AND ROCKS AND SODDED AFTER FINAL GRADING IN ACCORDANCE WITH THE CONSTRUCTION PLANS PRIOR TO FINAL INSPECTION. ALL GRASSING (SOD) SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL FINAL ACCEPTANCE BY THE OWNER/OPERATOR.

SITE ACCESS

ALL ACCESS TO THE JOB SITE FOR CONSTRUCTION AND RELATED ACTIVITIES SHALL BE BY EXISTING STREETS AND ROADS.

LANDSCAPING

PROVIDE MINIMUM 5' SEPARATION FROM UTILITIES AND TREES WITH INVASIVE ROOT SYSTEMS.

WATER PIPE MATERIALS

WATER SYSTEM SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER AND SHALL MEET CITY OF EUSTS SPECIFICATIONS. POLYVINYL CHLORIDE PLASTIC PIPE (PVC) 4" THROUGH 12" SHALL BE MANUFACTURED IN ACCORDANCE WITH ANSI/AWWA C900 (LATEST EDITION) AND SHALL HAVE A MINIMUM WORKING PRESSURE OF 150 PSI AND A DR (DIMENSION RATIO) OF 18. ALL PVC PIPE SHALL BEAR THE NSF LOGO FOR POTABLE WATER. JOINTS SHALL BE OF THE PUSH-ON TYPE AND COUPLINGS CONFORMING TO ASTM D3139, DR18 PIPE. DUCTILE IRON PIPE (DIP) SHALL BE STANDARD PRESSURE CLASS 350 IN SIZES 4" THROUGH 12" AND CONFORM TO ANSI/AWWA C150/A21.50 (LATEST EDITION). ALL DUCTILE IRON PIPE SHALL HAVE A STANDARD THICKNESS OF CEMENT MORTAR LINING AS SPECIFIED IN ANSI/AWWA C104/A21.4 (LATEST EDITION). PIPE JOINTS SHALL BE OF THE PUSH-ON RUBBER GASKET TYPE CONFORMING TO ANSI/AWWA C111/A21.11 (LATEST EDITION). PIPE DETECTOR WITH LOCATOR WIRE SHALL BE INSTALLED ON ALL WATER MAINS PER DETAIL. PIPE SIZES GREATER THAN 12" SHALL BE SEPARATELY SPECIFIED ON THE PLANS; WITH THICKNESS CLASSES TO BE SHOWN BASED ON WORKING PRESSURES, PIPE DEPTH AND TRENCH CONDITIONS. FITTINGS FOR DUCTILE IRON PIPE AND PVC C-900 PIPE SHALL BE DUCTILE IRON AND SHALL CONFORM TO ANSI/AWWA C153/A21.10 (LATEST EDITION) AND SHALL BE CEMENT LINED IN CONFORMANCE WITH ANSI/AWWA C104/A21.4 (LATEST EDITION). POLYETHYLENE WRAP USED FOR CORROSION PREVENTION ON DUCTILE IRON PIPE SHALL CONFORM TO THE REQUIREMENTS OF ANSI/ASTM D1248. THE MINIMUM NOMINAL THICKNESS SHALL BE 0.008 IN. (8 MILS). INSTALLATION OF POLY WRAP SHALL BE IN ACCORDANCE WITH AWWA C105. TRANSMISSION MAIN SHALL BE DIP RATED FOR 250 PSI.

VALVES

GATE VALVES SHALL BE RESILIENT SEAT AND SHALL CONFORM TO ANSI/AWWA C509.87 WITH WRENCH NUT, EXTENSION STEMS AND OTHER APPURTENANCES AS REQUIRED. MANUFACTURER'S CERTIFICATION OF THE VALVES COMPLIANCE WITH AWWA SPECIFICATION C509 AND TESTS LISTED THEREIN WILL BE REQUIRED. VALVES SHALL BE CLOW, DRESSER, KENNEDY, AMERICAN.

AIR RELEASE VALVES

AIR RELEASE VALVES SHALL BE PLACED AT HIGH POINTS OF THE TRANSMISSION MAIN TO PERMIT ESCAPE OF TRAPPED AIR. THE VALVE SIZE, LOCATION AND METHOD OF INSTALLATION SHALL BE INDICATED ON THE DRAWINGS, OR AS DIRECTED BY THE ENGINEER. AIR RELEASE VALVES SHALL BE CRISPN PRESSURE AIR VALVE TYPE.

WATER SERVICES

UNLESS OTHERWISE NOTED IN THE PLANS, THE UTILITY COMPANY SHALL PROVIDE AND INSTALL WATER METERS. CONTRACTOR SHALL CONSTRUCT WATER SERVICE THROUGH THE CURB STOP AND SET METER BOXES TO FINISHED GRADE AS SHOWN ON THE WATER SYSTEM DETAIL SHEET. POLYETHYLENE (PE) PRESSURE PIPE FOR WATER SERVICES 1/2" THROUGH 3" SHALL CONFORM TO AWWA C901.88, MIN. 200 PSI. AND SHALL BE PHILLIPS DRISCO CTS 5100 (DR-9) ASTM D-2737, 200 PSI. ALL SERVICES SHALL INCLUDE THE FOLLOWING: LOCKING CURB STOPS, WYE BRANCHES, UNIONS AS REQUIRED, PE SERVICE PIPE AND CORPORATION STOPS. THE SERVICE SHALL BE COMPLETE THROUGH THE CURB STOP AS SHOWN ON THE DETAIL SHEET, AND SHALL BE OF THE TYPE REQUIRED FOR COMPATIBILITY WITH THE SERVICE LINES SPECIFIED, AND FITTINGS SHALL BE MANUFACTURED BY FORD. WHERE APPLICABLE - UNLESS OTHERWISE NOTED IN PLANS, UTILITY COMPANY SHALL PROVIDE AND INSTALL IRRIGATION METERS. WHERE RECLAIM SERVICE IS NOT PROVIDED, CONTRACTOR SHALL CONSTRUCT IRRIGATION SERVICE THROUGH THE CURB STOP AND SET NEW BOXES TO FINISHED GRADE AS SHOWN ON THE WATER SYSTEM DETAIL SHEET.

PIPE INSTALLATION

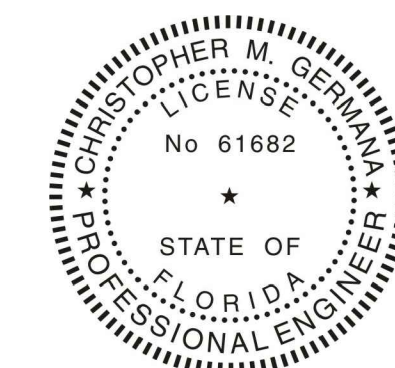
PIPE INSTALLATION OF PVC WATER MAIN SHALL BE IN CONFORMANCE WITH ASTM D2774 (LATEST EDITION). INSTALLATION OF DUCTILE IRON PIPE WATER MAIN SHALL BE IN CONFORMANCE WITH AWWA C600.87. COMPACTED BACKFILL SHALL BE TO 98% MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180 UNDER ALL PAVEMENTS WITH 12" MAXIMUM LIFT THICKNESS. OTHER COMPACTION OF BACKFILL SHALL BE TO 95% MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180 WITH 12" MAXIMUM LIFT THICKNESS. SEE PIPE TRENCHING DETAILS. MINIMUM COVER OVER ALL PIPE SHALL BE 36" FROM TOP OF PIPE TO FINISHED GRADE. SEE PLAN AND PROFILE SHEETS FOR REQUIRED DEPTH. WATER MAINS ARE TO BE INSTALLED SO AS TO PROVIDE A MINIMUM VERTICAL CLEARANCE OF 18" OR A MINIMUM HORIZONTAL CLEARANCE OF 10' FROM ALL OTHER UTILITIES. IF THE MINIMUM CLEARANCE CAN NOT BE ACHIEVED, THEN DUCTILE IRON WATER MAIN SHALL BE SPECIFIED 10 FEET EITHER SIDE OF THE CROSSING. HORIZONTAL AND VERTICAL MINIMUM SEPARATION DISTANCE REQUIREMENTS BETWEEN WATER MAIN AND ALL OTHER UTILITIES SHALL COMPLY WITH 62-555.314 (1), (2), (3) AND (4), FAC. ALL WATER MAINS SHALL BE INSTALLED WITH CONCRETE THRUST BLOCKS. ALL PLUGS, CAPS, TEES, BENDS, FIRE HYDRANTS, VALVES, ETC. SHALL BE MECHANICAL JOINT FITTINGS.

SCHEDULING

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SCHEDULE OF WORK TO BE COMPLETED INCLUDING DATES FOR ELECTRICAL, COMMUNICATION, WALLS, FENCES, UTILITIES, LANDSCAPING, IRRIGATION, HARDSCAPING, ROADWAY, MASS GRADING, WELL INSTALLATION, WASTEWATER SYSTEM, ETC. (IF APPLICABLE)

This item has been digitally signed and sealed by:
Christopher M. Germana, PE on the date adjacent to the seal.
Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Digitally signed
by Christopher
M Germana
Date: 2023.05.01
16:18:01 -04'00'



CHRISTOPHER M. GERMANA, P.E.
FLORIDA PROFESSIONAL ENGINEER # 61682
ENGINEERING FIRM REGISTRY # 29279

CONSTRUCTION
NOTES

HIDDEN COVE
SUBDIVISION

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1120 WEST MINNEOLA AVENUE
CLERMONT, FL 34711
WWW.GERMANAENGINEERING.COM
ENGINEERING FIRM REGISTRY # 29279

SCALE: NTS

DATE: 03-01-2023

SHEET

C2

DATE

REVISIONS

#

PROJECT # GE0072022

EUSTIS, FLORIDA

ALT KEY #2538406 (NOT INCLUDED)

ALT KEY #2538392 (NOT INCLUDED)

ALT KEY #2578316 (NOT INCLUDED)

ALT KEY #2538384 (NOT INCLUDED)

ALT KEY #2538376 (NOT INCLUDED)

ALT KEY #2538341 (NOT INCLUDED)

ALT KEY #1191131 (NOT INCLUDED)

ALT KEY #2538422 (NOT INCLUDED)

ALT KEY #2538333 (NOT INCLUDED)

ALT KEY #2538325 (NOT INCLUDED)

ALT KEY #2538317 (NOT INCLUDED)

ALT KEY #3883801 (NOT INCLUDED)

TRACT F

TRACT G

100-YR FLOOD EL. = 73.30'
PER FEMA FIRM 1209C058E
PANEL 0398E

ALT KEY #1243629 (NOT INCLUDED)

ALT KEY #1193184 (NOT INCLUDED)

ALT KEY #1193168 (NOT INCLUDED)

ALT KEY #1633072 (NOT INCLUDED)

ALT KEY #1215790 (NOT INCLUDED)

ALT KEY #1192889 (NOT INCLUDED)

ALT KEY #3428064 (NOT INCLUDED)

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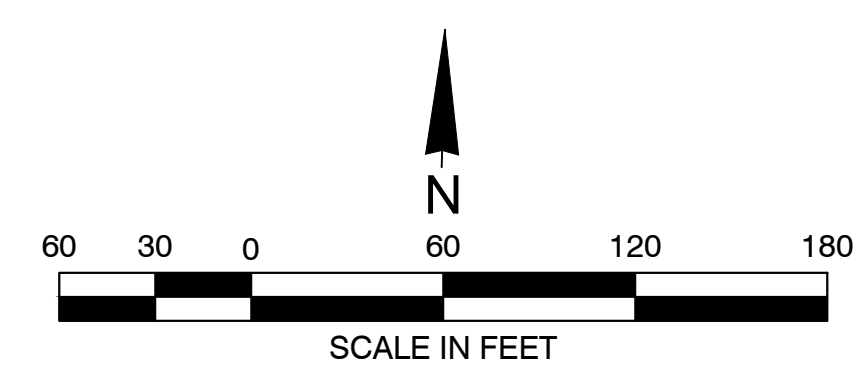
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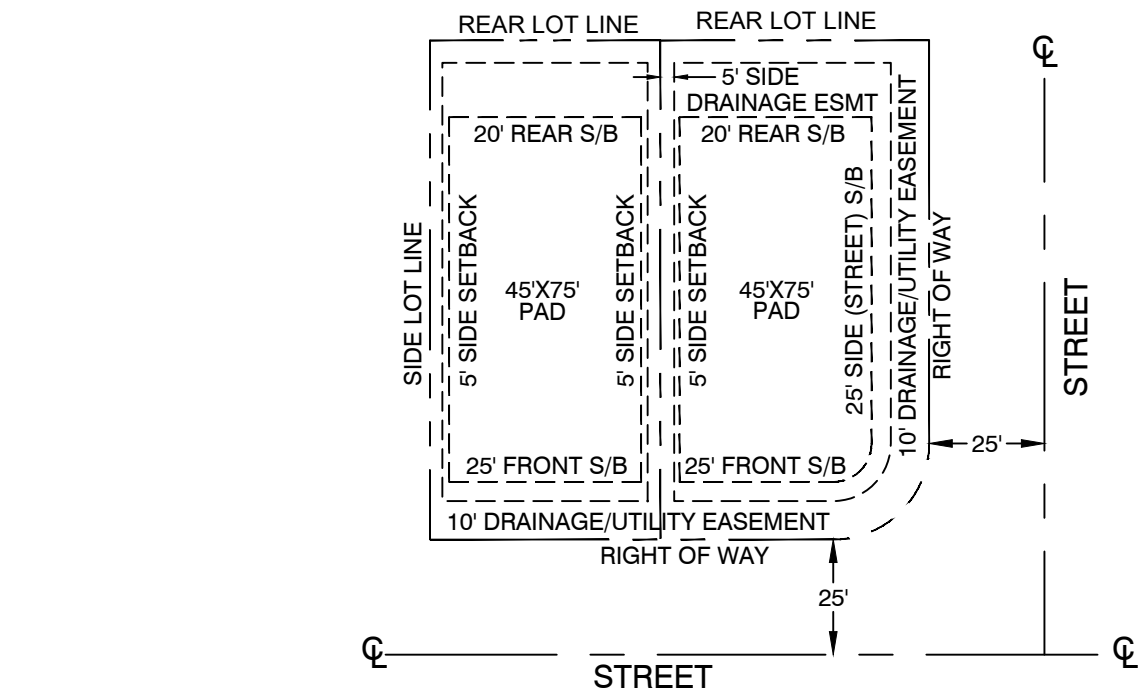
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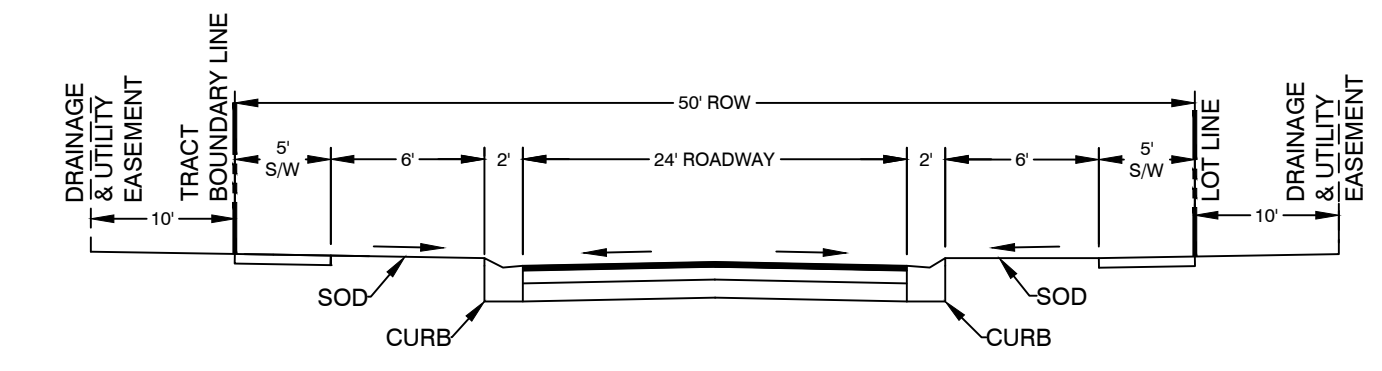
SITE DATA

- SITE AREA** = 13.18 AC / 574,264 SF
- SITE LOCATION**
EAST LAKEVIEW AVENUE
EUSTIS, FLORIDA 32726
SECTION 13, TOWNSHIP 19 SOUTH, RANGE 26 EAST
- SITE DESCRIPTION**
TAX PARCEL ALT KEY: 1216044
FUTURE LAND USE: SUBURBAN RESIDENTIAL
DESIGN DISTRICT: SUBURBAN NEIGHBORHOOD
- SITE REQUIREMENTS**
MAXIMUM DWELLING UNITS: 66 (5 DU/ACRE)
MINIMUM OPEN SPACE REQUIRED: 25%
MAXIMUM ISR: 40%
MINIMUM PARK SIZE: 1/2 ACRE (25-49 LOTS)
- SUBDIVISION DATA**
USE TYPE: SINGLE-FAMILY RESIDENTIAL
LOT TYPE: HOUSE LOT
NUMBER OF LOTS: 43
MINIMUM LOT DIMENSIONS: 55' X 120'
NET BUILDABLE AREA = SITE AREA - WETLAND AREA
= 13.18 AC - 0.21 AC
= 12.97 AC (DENSITY = 3.32 DU/AC < 5 DU/AC)

OPEN SPACE REQUIRED: 3.30 AC (25%)
R/W WIDTH: 50'
ROAD TYPE: RESIDENTIAL STREET
PARK TYPE: MINI PARK/PLAYGROUND (0.50 AC MINIMUM)
LAKEVIEW AVENUE LANDSCAPE BUFFER: 15' - 24' WIDE
WETLAND BUFFER: 50'
SCHOOL AGE POPULATION: 43 X 0.65 = 28 CHILDREN
- LOT SETBACKS**
STREET SETBACK: 25'
COMMON LOT SETBACK: 5'
REAR SETBACK: 20'
- UTILITY PROVIDERS**
WATER: CITY OF EUSTIS
RECLAIMED WATER: CITY OF EUSTIS
WASTEWATER: CITY OF EUSTIS
ELECTRICITY: SECO ENERGY
- IMPERVIOUS DATA**
LOTS = 3.65 AC (3,697 SF/LOT)
ROADWAY = 1.12 AC
CONCRETE = 0.50 AC
ON-SITE IMPERVIOUS = 5.27 AC (ISR = 40.00%)
PERVIOUS = 7.91 AC (60.00%)



TYPICAL LOT LAYOUT NTS



TYPICAL 50' RIGHT-OF-WAY NTS

NOTES

- THE SITE CONSTRUCTION STAKEOUT SHALL BE PERFORMED UNDER THE DIRECTION OF A FLORIDA REGISTERED SURVEYOR. AUTOCAD FILE WILL BE PROVIDED TO AID IN THE SITE CONSTRUCTION STAKEOUT. ANY DISCREPANCIES FOUND BETWEEN THE AUTOCAD FILES SHALL BE BROUGHT TO THE ENGINEERS ATTENTION FOR CLARIFICATION PRIOR TO THAT STAKEOUT.
- PROJECT SITE SHALL COMPLY WITH THE FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION (FBC) 2020 EDITION
- UTILITY EASEMENTS TO BE DEDICATED TO THE CITY OF EUSTIS AND ELECTRICITY PROVIDER WHERE APPLICABLE.
- DRAINAGE UTILITIES TO BE DEDICATED TO THE HOME OWNERS ASSOCIATION.
- THE HOME OWNERS ASSOCIATION SHALL MAINTAIN ALL COMMON AREAS, FENCES, AND RETENTION AREAS.
- ALL SIDEWALKS CONSTRUCTED THROUGHOUT THE ENTIRE SITE SHALL BE CONSTRUCTED IN COMPLIANCE WITH THE CITY OF EUSTIS LAND DEVELOPMENT REGULATIONS AND SPECIFICATIONS.
- POND TRACTS SHALL BE DEDICATED TO THE HOME OWNERS ASSOCIATION.
- WALLS, FENCES, AND SIGNS SHALL BE OWNED AND MAINTAINED BY THE HOME OWNERS ASSOCIATION.
- ALL UTILITY LINES TO BE DESIGNED TO MEET THE CITY OF EUSTIS STANDARDS.
- ALL CONSTRUCTION MATERIAL AND OTHER PROPOSED IMPROVEMENTS SHALL MEET THE APPLICABLE CODES OF THE CITY OF EUSTIS, CITY OF EUSTIS DETAILS, OR APPROVED EQUALS, AND WILL BE UTILIZED ON THE FINAL CONSTRUCTION PLANS.
- ANY PROPOSED MECHANICAL GATES WILL REQUIRE FIRE DEPARTMENT ACCESS (CLICKCENTER, TO BE PERMITTED SEPARATELY)
- ONLY COMMON AREA SIDEWALKS ARE TO BE BUILT WITH THIS PROJECT. INDIVIDUAL LOT SIDEWALKS ARE TO BE BUILT WITH THE CONSTRUCTION OF EACH LOT.

LEGEND

- PROPOSED LOT LINE
- EXISTING FENCE
- EXTERIOR PARCEL LINE
- EASEMENT LINE
- WETLAND LINE
- FLOOD ZONE LINE
- PROPOSED CONCRETE TO BE CONSTRUCTED WITH LOTS (TYPICAL)
- PROPOSED CONCRETE TO BE CONSTRUCTED WITH THIS PROJECT (TYPICAL)
- GRASSPAVE2 FIRE TRUCK ALTERNATE ACCESS (SEE SHEET C14 FOR DETAILS)

TRACT TABLE

TRACT	USE	OWNERSHIP	ACREAGE	% OVERALL	OPEN SPACE
N/A	SINGLE FAMILY LOTS	-	6.83 AC	51.82%	0.00 AC
N/A	RIGHT OF WAY	CITY OF EUSTIS	1.90 AC	14.41%	0.00 AC
TRACT A	LANDSCAPE BUFFER	H.O.A.	0.04 AC	0.28%	0.04 AC
TRACT B	LANDSCAPE BUFFER	H.O.A.	0.05 AC	0.40%	0.05 AC
TRACT C	OPEN SPACE / PARK	H.O.A.	1.68 AC	12.78%	1.68 AC
TRACT E	EMERGENCY FIRE ACCESS	CITY OF EUSTIS	0.47 AC	3.53%	0.47 AC
TRACT F	STORMWATER	H.O.A.	1.87 AC	14.16%	1.87 AC
TRACT G	CONSERVATION EASEMENT	H.O.A.	0.34 AC	2.62%	0.34 AC
TOTAL			13.18 AC	100.00%	4.43 AC

KEY LEGEND

- 24" WHITE PAINTED STOP BAR
- 30" R-1 STOP SIGN AND STREET SIGN
- DROP CURB (TYPICAL)
- SPILL-OUT DROP CURB PER FDOT INDEX, 300
- HANDICAP RAMP W/ CAST IN PLACE DETECTABLE WARNING MAT IN BRICK RED (PER FDOT INDEX 304)
- VALLEY GUTTER CURB AT INTERSECTION (PER FDOT INDEX 300)
- PROPOSED SUBDIVISION MONUMENT SIGN LOCATION (DESIGN BY OTHERS)
- 12" WIDE WHITE PAINTED CROSSWALK STRIPING
- 6" CURB TRANSITION

Digitally signed by Christopher M Germana
Date: 2023.05.01 16:19:06 -04'00'



CHRISTOPHER M. GERMANA, P.E.
FLORIDA PROFESSIONAL ENGINEER # 61682
ENGINEERING FIRM REGISTRY # 29279

REVISIONS	DATE
1. REVISED BASED ON CITY COMMENTS	04-03-2023

SUBDIVISION SITE PLAN

HIDDEN COVE SUBDIVISION

GERMANA ENGINEERING AND ASSOCIATES, LLC
1120 WEST MINNEOLA AVENUE
CLERMONT, FL 34711
WWW.GERMANAENGINEERING.COM
ENGINEERING FIRM REGISTRY # 29279

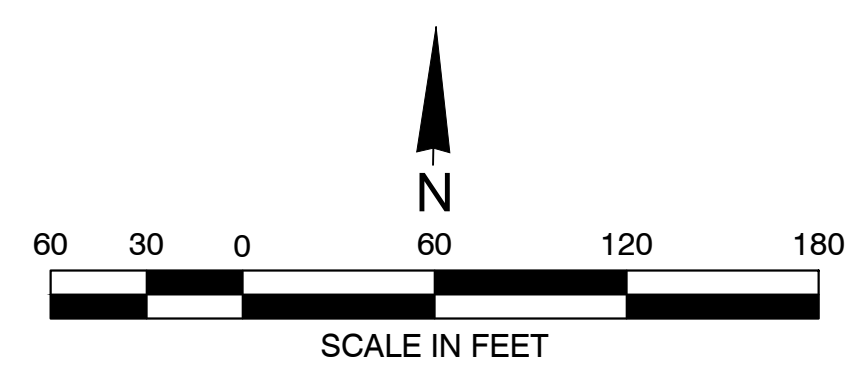
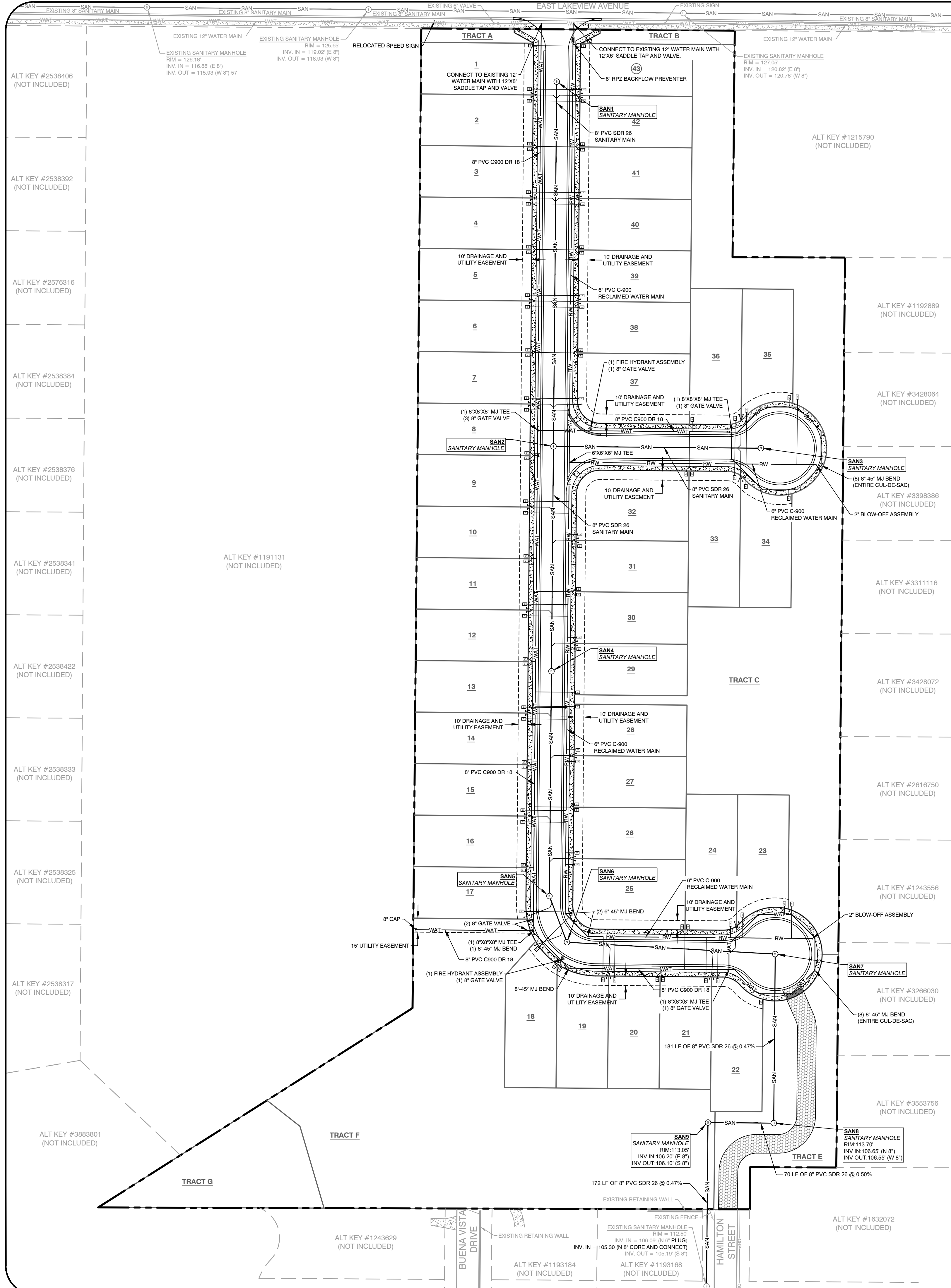
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DATE: 03-01-2023

SHEET **C4**

PROJECT # GE072022

EUSTIS, FLORIDA



- NOTES**
1. ALL ON-SITE UTILITIES TO BE OWNED AND MAINTAINED BY THE CITY OF EUSTIS.
 2. EXISTING UTILITIES ARE SHOWN FOR INFORMATION ONLY. IT IS THE CONTRACTORS RESPONSIBILITY TO LOCATE THE EXACT LOCATION AND DEPTH OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. DAMAGE TO EXISTING UTILITIES IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REPAIRED AT THE CONTRACTORS OWN EXPENSE.
 3. ALL UTILITY CONSTRUCTION TO CONFORM TO THE CITY OF EUSTIS CONSTRUCTION STANDARDS.
 4. THE MINIMUM FIRE FLOW AND FLOW DURATION REQUIREMENTS FOR ONE- AND TWO-FAMILY DWELLINGS HAVING A FIRE FLOW AREA THAT DOES NOT EXCEED 5000FT² SHALL BE 1000 GPM FOR 1 HOUR, (NFPA 18.4.5.1.1)
 5. NEWLY INSTALLED FIRE HYDRANTS MUST BE FLOW TESTED AND SHALL BE WITNESSED (FEE APPLIES) BY LAKE COUNTY FIRE INSPECTOR PRIOR TO APPROVAL OF FINAL PLAT AND ANY BUILDING PERMITS.
 6. FIRE PROTECTION WATER SUPPLY WILL BE AVAILABLE PRIOR TO AND DURING CONSTRUCTION.

- LEGEND**
- | | | | |
|--|------------------------------------|--|-------------------------------------|
| | PROPOSED FIRE HYDRANT ASSEMBLY | | EXTERIOR PARCEL LINE |
| | PROPOSED WATER SERVICE (TYPICAL) | | EXISTING CONCRETE |
| | EXISTING WATER MAIN | | PROPOSED CONCRETE |
| | PROPOSED WATER MAIN | | PROJECT PROPERTY LINE |
| | PROPOSED RECLAIM SERVICE (TYPICAL) | | EXISTING FENCE |
| | PROPOSED RECLAIMED WATER MAIN | | PROPOSED SANITARY SERVICE (TYPICAL) |
| | EXISTING OVERHEAD POWER LINE | | EXISTING SANITARY MAIN |
| | PROPOSED EASEMENT | | PROPOSED SANITARY MAIN |

****CAUTION****
 EXISTING UNDERGROUND AND OVERHEAD UTILITIES ARE LOCATED WITHIN THE PROJECT AREA. THE LOCATION OF THE EXISTING UTILITIES SHOWN IN THESE PLANS IS FOR REFERENCE INFORMATION ONLY. IT IS THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

DATE
04-03-2023

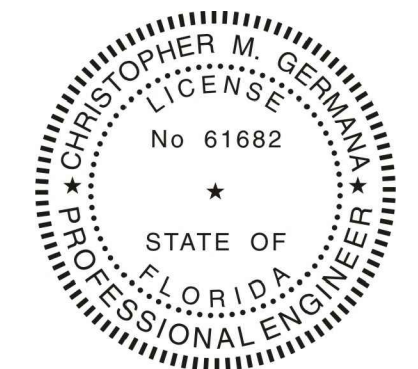
REVISIONS	BASED ON CITY COMMENTS
# 1.	

**HIDDEN COVE
SUBDIVISION**

**GERMANA ENGINEERING
AND ASSOCIATES, LLC**
 1120 WEST MINNEOLA AVENUE
 CLEMONT, FL 34711
 WWW.GERMANAENGINEERING.COM
 ENGINEERING FIRM REGISTRY # 29279

SCALE: 1" = 60'
DATE: 03-01-2023
SHEET C6

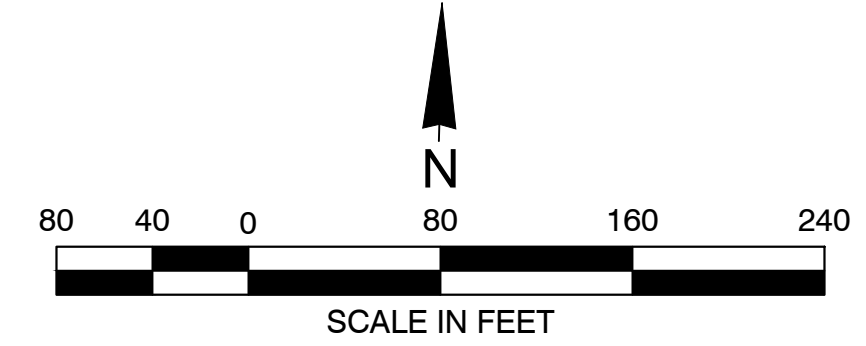
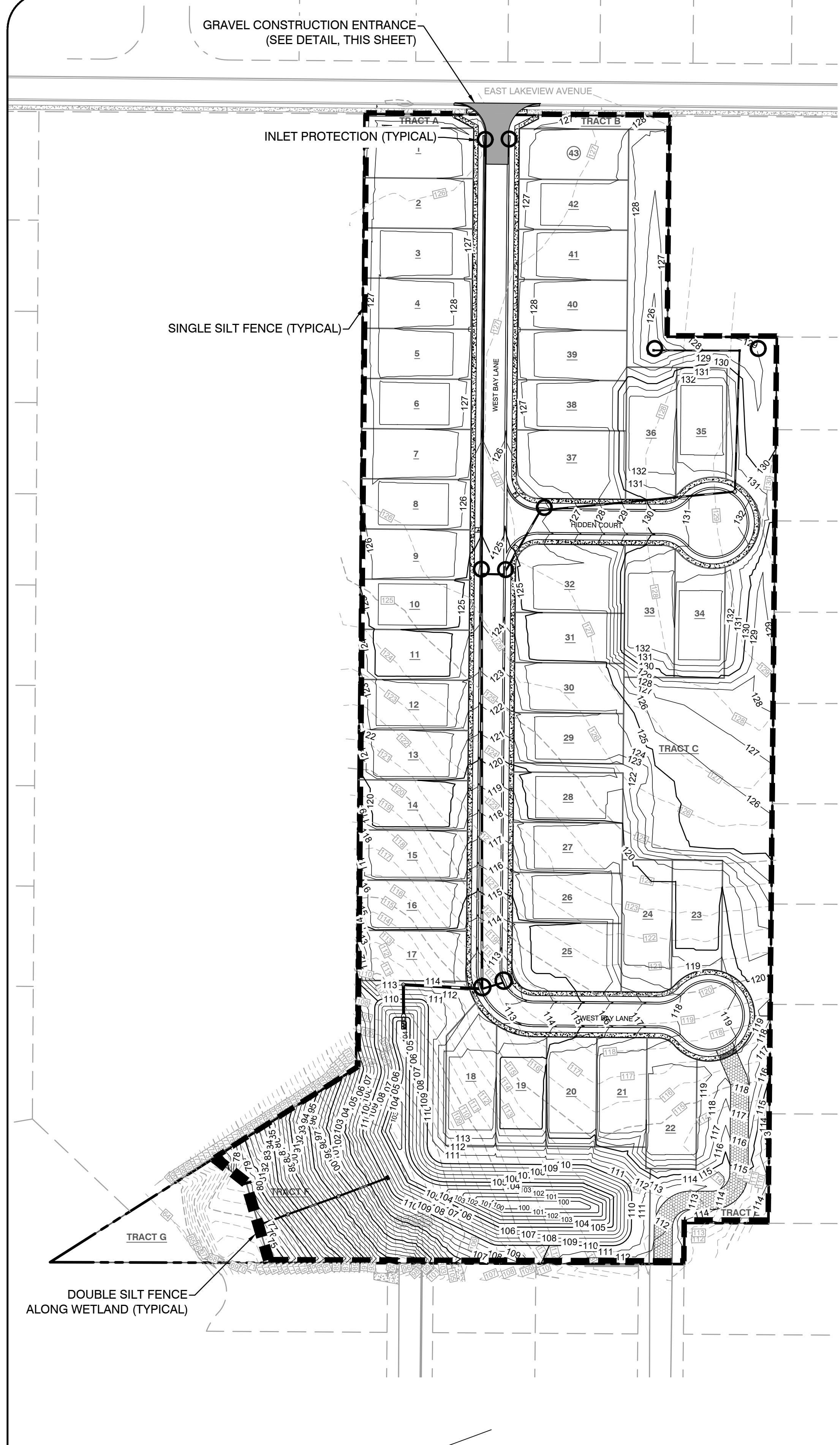
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 by Christopher M
 Germana
 Date: 2023.05.01
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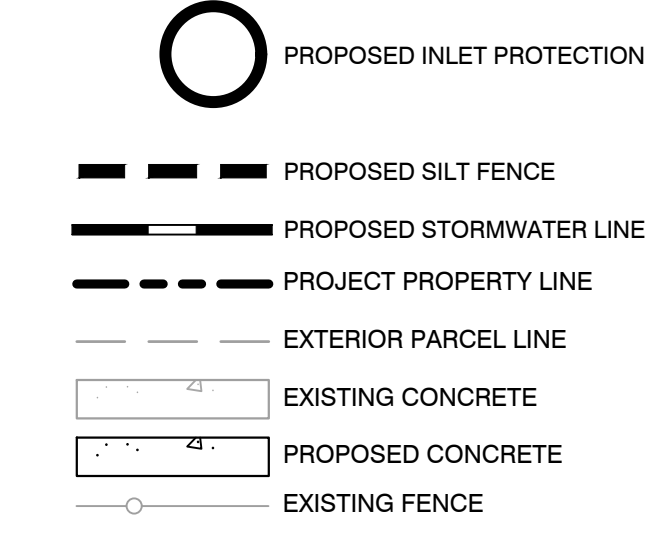
This item has been digitally signed and sealed by Christopher M. Germana, PE on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

CHRISTOPHER M. GERMANA, P.E.
 FLORIDA PROFESSIONAL ENGINEER # 61682
 ENGINEERING FIRM REGISTRY # 29279

PROJECT # GE072022
 EUSTIS, FLORIDA



LEGEND

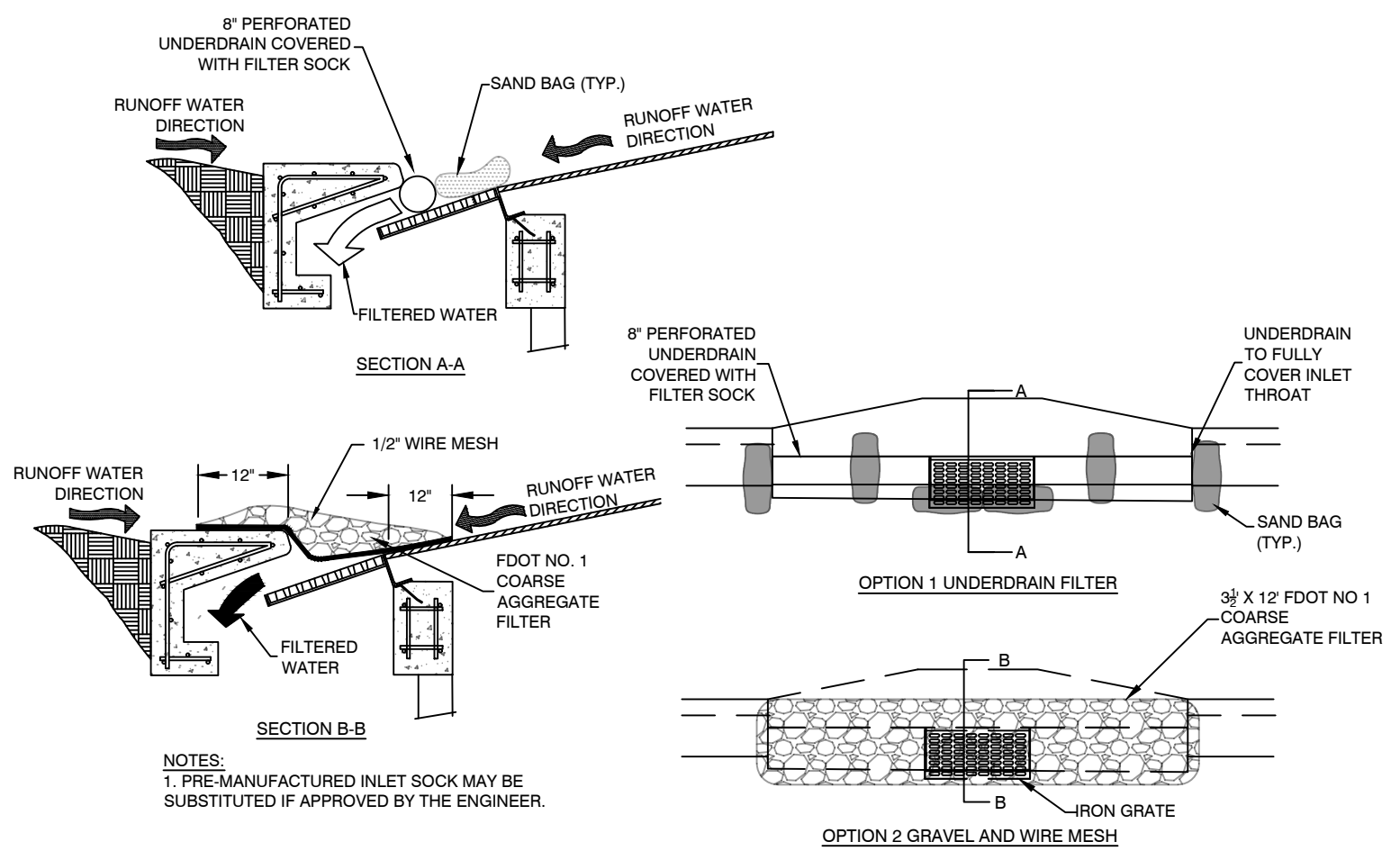


CONSTRUCTION SEQUENCE

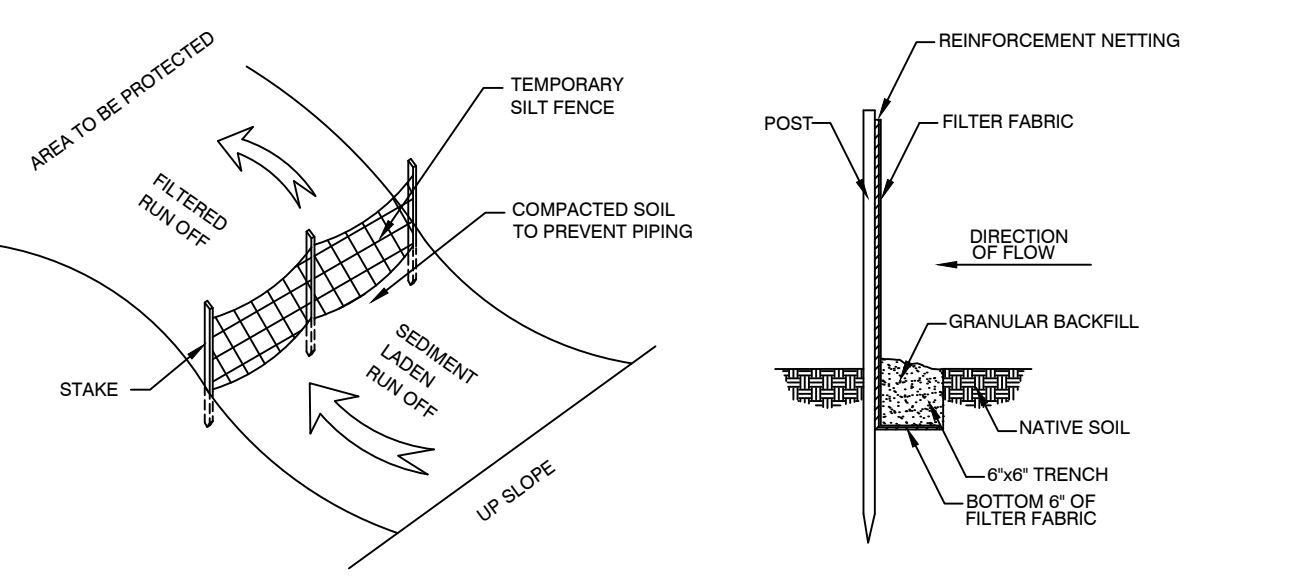
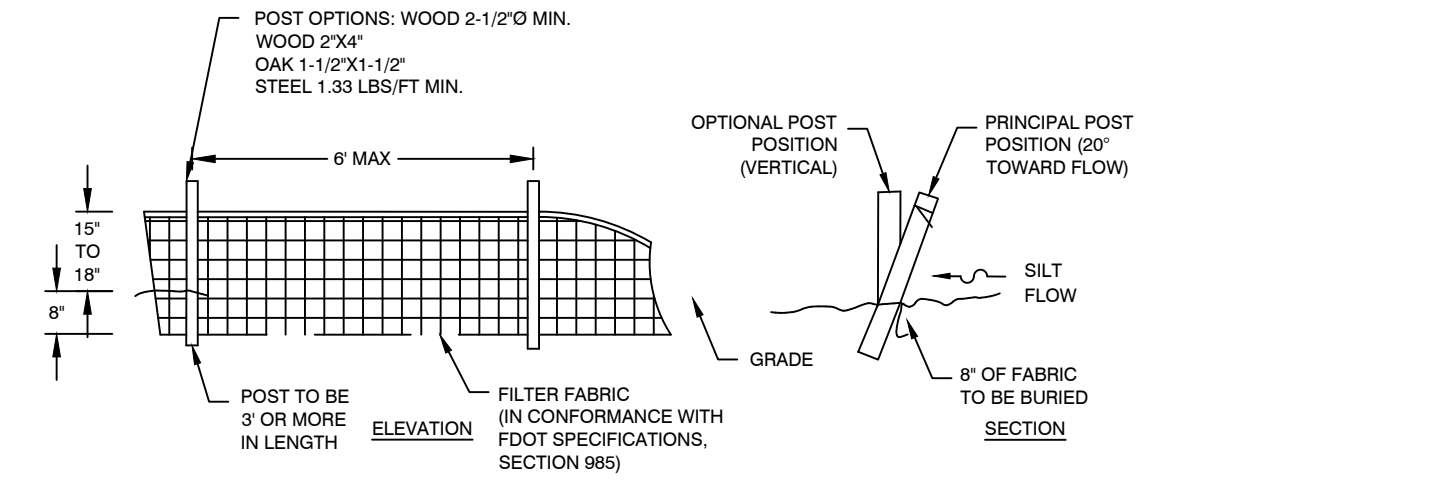
1. INSTALL SEDIMENT CONTROL MEASURES
2. ROUGH GRADE SITE & STOCKPILE TOPSOIL
3. TEMPORARY VEGETATION
4. INSTALL STORM WATER MANAGEMENT MEASURES
5. INSTALL ROAD & PARKING BASE
6. SURFACE ROADS & PARKING
7. FINAL GRADING
8. PERMANENT VEGETATION
9. INSTALLING LANDSCAPING
10. PERFORM CONTINUING MAINTENANCE

NOTES

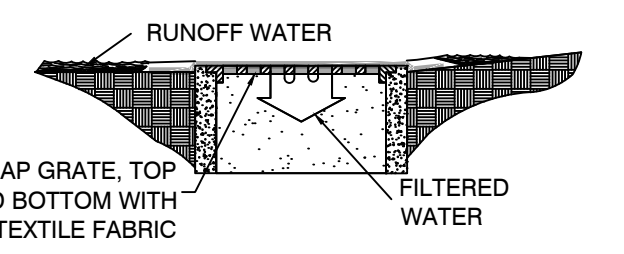
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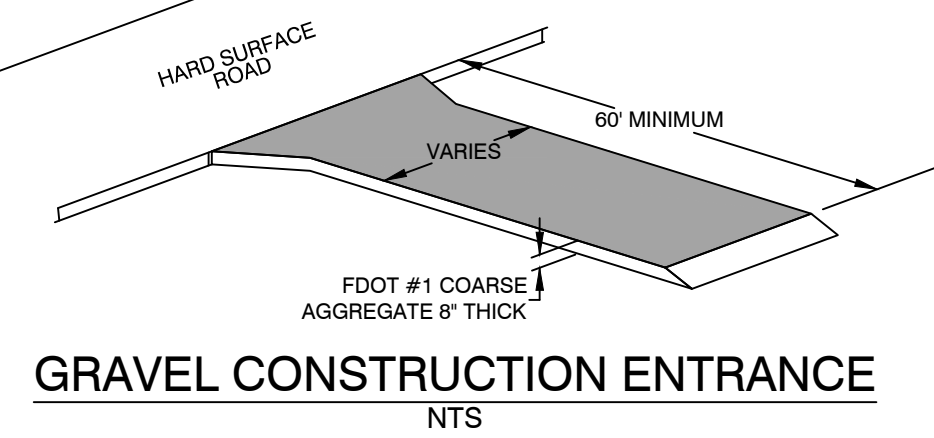
CURB INLET PROTECTION NTS



SILT FENCE NTS



DROP INLET PROTECTION NTS



GRAVEL CONSTRUCTION ENTRANCE NTS

EROSION CONTROL NOTES

- STORMWATER POLLUTION PREVENTION PLAN**
1. ATTENTION IS DRAWN TO THE FACT THAT THIS PROJECT IS PERMITTED UNDER THE STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AREA CONSTRUCTION ACTIVITIES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE FAMILIAR WITH THE REQUIREMENTS OF THIS PERMIT, AND TO UNDERTAKE ANY MEASURES NECESSARY TO COMPLY WITH SAID REQUIREMENTS.
 2. IT MAY BE NECESSARY, DUE TO WEATHER CONDITIONS, PHASING OF CONSTRUCTION ACTIVITIES, QUANTITY AND TYPE OF MATERIALS, ETC., TO TAKE ADDITIONAL MEASURES TO COMPLY WITH THE N.P.D.E.S. PERMIT THAT ARE NOT OUTLINED IN THESE PLANS. THE CONTRACTOR IS FULLY RESPONSIBLE FOR IMPLEMENTATION OF WHATEVER MEASURES ARE NECESSARY TO PREVENT THE DISCHARGE OF POLLUTANTS, INCLUDING BUT NOT LIMITED TO TURBID WATER RUNOFF, AND FUGITIVE AIRBORNE PARTICULATE POLLUTANTS.
 3. THE CONTRACTOR IS FURTHER ADVISED THAT A SEPARATE STORMWATER POLLUTION PREVENTION PLAN (S.W.P.P.P.) HAS BEEN PREPARED FOR THIS PROJECT AND IS HEREBY MADE PART OF THE CONSTRUCTION DOCUMENTS.
 4. THIS INFORMATION REPRESENTS THE MINIMUM AMOUNT OF EROSION AND SEDIMENT CONTROL MEASURES, IN THE OPINION OF THE ENGINEER, THAT MAY BE NECESSARY FOR ANY ADDITIONAL MEASURES OR PRACTICES THAT MAY BE NECESSARY TO CONTROL EROSION, TURBID DISCHARGE, FUGITIVE PARTICULATES, ETC. TO FULLY COMPLY WITH ALL GOVERNMENTAL RULES AND/OR PERMIT REQUIREMENTS.

- GENERAL NOTES**
1. THE FOLLOWING LIST REPRESENTS A BASIC EROSION AND SEDIMENT CONTROL PROGRAM WHICH IS TO BE IMPLEMENTED TO HELP PREVENT OFF-SITE SEDIMENTATION DURING AND AFTER CONSTRUCTION OF THE PROJECT.
 2. TEMPORARY EROSION CONTROL TO BE UTILIZED DURING CONSTRUCTION AT AREAS DESIGNATED BY THE ENGINEER OR AREAS ON SITE WHERE UNSTABILIZED GRADES MAY CAUSE EROSION PROBLEMS. EROSION CONTROL MAY BE REMOVED AFTER UPSLOPE AREA HAS BEEN STABILIZED BY SOD, OR COMPACTED AS DETERMINED BY THE ENGINEER.
 3. PERMANENT EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AT THE EARLIEST PRACTICAL TIME CONSISTENT WITH GOOD CONSTRUCTION PRACTICES. ONE OF THE FIRST CONSTRUCTION ACTIVITIES SHOULD BE THE PLACEMENT OF PERMANENT AND TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES AROUND THE PERIMETER OF THE PROJECT OR THE INITIAL WORK AREA TO PROTECT THE PROJECT, ADJACENT PROPERTIES AND WATER RESOURCES.
 4. TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE COORDINATED WITH PERMANENT MEASURES TO ASSURE ECONOMICAL, EFFECTIVE, AND CONTINUOUS CONTROL THROUGHOUT THE CONSTRUCTION PHASE. TEMPORARY MEASURES SHALL NOT BE CONSTRUCTED FOR EXPEDIENCY IN LIEU OF PERMANENT MEASURES.
 5. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE ADEQUATELY MAINTAINED TO PERFORM THEIR INTENDED FUNCTION DURING CONSTRUCTION OF THE PROJECT.
 6. NECESSARY REPAIRS TO BARRIERS OR REPLACEMENT OF BARRIERS SHALL BE ACCOMPLISHED PROMPTLY.
 7. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH RAINFALL. THEY MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
 8. MATERIAL FROM SEDIMENT TRAPS SHALL NOT BE STOCKPILED OR DISPOSED OF IN A MANNER WHICH MAKES THEM READILY SUSCEPTIBLE TO BEING WASHED INTO ANY WATER COURSE BY RUNOFF OR HIGH WATER.
 9. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE BARRIERS ARE NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED, AND SEED.

- SEDIMENT FENCE**
1. THE SEDIMENT BARRIER UTILIZES STANDARDS STRENGTH OR EXTRA STRENGTH SYNTHETIC FILTER FABRICS. IT IS DESIGNED FOR SITUATIONS IN WHICH ONLY SHEET OR OVERLAND FLOWS ARE EXPECTED.
 2. THE HEIGHT OF A SEDIMENT FENCE SHALL NOT EXCEED 36-INCHES (HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE).
 3. THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL, CUT TO THE LENGTH OF THE BARRIER TO AVOID THE USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPUN TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM INCH OVERLAP, AND SECURELY SEALED.
 4. POSTS SHALL BE SPACED A MAXIMUM OF 10 FEET APART AT THE BARRIER LOCATION AND DRIVEN SECURELY INTO THE GROUND (MINIMUM 12 INCHES), WHEN EXTRA STRENGTH FABRIC IS USED WITHOUT THE WIRE SUPPORT FENCE, POST SPACING SHALL NOT EXCEED 6 FEET.
 5. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 4 INCHES WIDE AND 4 INCHES DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER.
 6. WHEN STANDARD STRENGTH FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE TRENCH USING HEAVY DUTY WIRE STAPLES AT LEAST 1-INCH LONG. THE WIRE MESH SHALL EXTEND INTO THE TRENCH A MINIMUM OF 2 INCHES AND SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
 7. THE STANDARD STRENGTH FILTER FABRIC SHALL BE STAPLED OR WIRED TO THE FENCE, AND 8-INCHES OF THE FABRIC SHALL BE EXTENDED INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE. FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING TREES.
 8. WHEN EXTRA STRENGTH FILTER FABRIC AND CLOSURE POST SPACING ARE USED, THE WIRE MESH SUPPORT FENCE MAY BE ELIMINATED IN SUCH A CASE, THE FILTER FABRIC IS STAPLED OR WIRED DIRECTLY TO THE POSTS WITH ALL OTHER PROVISION OF ITEM NO. 6, APPLYING.
 9. THE TRENCH SHALL BE BACKFILLED AND SOIL COMPACTED OVER THE FILTER FABRIC.
 10. SEDIMENT FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.

- SEDIMENT FENCE MAINTENANCE**
1. SEDIMENT BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
 2. SHOULD THE FABRIC ON A SEDIMENT FENCE OR FILTER BARRIER DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER IS STILL NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
 3. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY ONE-THIRD THE HEIGHT OF THE BARRIER.
 4. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SEDIMENT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED, AND SEED.

- DITCH BARRIERS**
1. STRAW BALES SHALL BE PLACED IN A SINGLE ROW, LENGTHWISE, ORIENTED PERPENDICULAR TO THE CONTOUR, WITH ENDS OF ADJACENT BALES TIGHTLY ABUTTING ONE ANOTHER.
 2. THE REMAINING STEPS FOR INSTALLING A STRAW BALE BARRIER FOR SHEET FLOW APPLICATIONS APPLY HERE, WITH THE FOLLOWING ADDITION.
 3. THE STRAW BALES SHALL BE INSTALLED SUCH THAT UNDERCUTTING BENEATH THE BALES IS MINIMIZED BY THE USE OF ROCK CHECK DAMS PLACED ADJACENT TO THE STRAW BALES.
 4. THE BARRIER SHALL BE EXTENDED TO SUCH A LENGTH THAT THE BOTTOMS OF THE END BALES ARE HIGHER IN ELEVATION THAN THE TOP OF THE LOWEST MIDDLE BALE TO ASSURE THAT SEDIMENT LADEN RUNOFF WILL FLOW EITHER THROUGH OR OVER THE BARRIER BUT NOT AROUND IT.

- DITCH BARRIER MAINTENANCE**
1. STRAW BALES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.
 2. CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED BALES, END RUNS, AND UNDERCUTTING BENEATH BALES.
 3. NECESSARY REPAIRS TO BARRIERS OR REPLACEMENT OF BALES SHALL BE ACCOMPLISHED PROMPTLY.
 4. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH RAINFALL. THEY MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.
 5. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE STRAW BALE BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED, AND SEED.

- TIMING OF SEDIMENT CONTROL PRACTICES**
1. SEDIMENT CONTROL PRACTICES SHALL BE FUNCTIONAL THROUGHOUT EARTH DISTURBING ACTIVITY.
 2. SETTLING FACILITIES, PERIMETER CONTROLS, AND OTHER PRACTICES INTENDED TO TRAP SEDIMENT SHALL BE IMPLEMENTED AS THE FIRST STEP OF GRADING AND WITHIN SEVEN DAYS FROM THE START OF GRUBBING. THEY SHALL CONTINUE TO FUNCTION UNTIL THE UPSLOPE DEVELOPMENT AREA IS RE-STABILIZED.
- STABILIZATION OF NON-STRUCTURAL PRACTICES**
1. CONTROL PRACTICES SHALL PRESERVE EXISTING VEGETATION WHERE ATTAINABLE AND DISTURBED AREAS SHALL BE RE-VEGETATED AS SOON AS IT IS PRACTICAL AFTER GRADING OR CONSTRUCTION.
 2. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN FOURTEEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE, AND SHALL ALSO BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS WHICH MAY NOT BE AT FINAL GRADE, WHERE CONSTRUCTION ACTIVITIES HAVE PERMANENTLY OR TEMPORARILY CEASED.

- MAINTENANCE**
- TEMPORARY EROSION CONTROL FEATURES SHALL BE ACCEPTABLY MAINTAINED AND SHALL BE REMOVED OR REPAIRED BY THE CONTRACTOR AT NO COST TO THE OWNER. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS.
- SEDIMENT BARRIERS**
- SHEET FLOW RUNOFF FROM DENUDED AREAS SHALL BE INTERCEPTED BY SEDIMENT BARRIERS SUCH AS STRAW BALE BARRIERS, SEDIMENT BARRIERS SUCH AS A SEDIMENT FENCE OR OVERSPILLS TO SETTLING FACILITIES SHALL PROTECT ADJACENT PROPERTIES AND WATER RESOURCES FROM SEDIMENT TRANSPORTED BY SHEET FLOW.
- STOCKPILES**
- ALL SOIL STOCKPILES SHALL BE PROTECTED FROM EROSION BY PERIMETER CONTROL DEVICES SUCH AS STRAW BALE DIKES OR FILTER FABRIC FENCES, AND THESE PERIMETER CONTROL DEVICES SHALL BE MAINTAINED THROUGHOUT THE LIFE OF THE PROJECT.
- INLET PROTECTION**
- ALL STORM SEWER INLETS WHICH ACCEPT WATER RUNOFF FROM THE DEVELOPMENT AREA SHALL BE PROTECTED SO THAT SEDIMENT LADEN WATER WILL NOT ENTER THE STORM SYSTEM WITHOUT FIRST BEING PONDED AND FILTERED.
- CONSTRUCTION ACCESS ROUTES**
- MEASURES SHALL BE TAKEN TO PREVENT SOIL TRANSPORT ONTO SURFACES OR PUBLIC ROADS WHERE RUNOFF IS NOT CHECKED.
- PERMANENT VEGETATION**
- PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL GROUND COVER IS ACHIEVED WHICH, IN THE OPINION OF THE ENGINEER, PROVIDES ADEQUATE COVER AND IS MATURE ENOUGH TO CONTROL SOIL EROSION SATISFACTORILY AND TO SURVIVE ADVERSE WEATHER CONDITIONS.

- INSPECTION SCHEDULE**
1. DIRECTION STABLE AND STRUCTURAL PROTECTION - INSPECT EVERY 7 DAYS OR AFTER EACH RAINSTORM PRODUCING RUNOFF. REPAIR AS REQUIRED.
 2. INLET PROTECTION - INSPECT FOR SEDIMENT ACCUMULATION AFTER EACH RAINFALL AND DAILY DURING CONTINUED RAINFALL. REPAIR OR REPLACE WHEN WATER FLOW IS RESTRICTED BY SEDIMENT.
 3. VEGETATIVE PLANTING - INSPECT AFTER SPROUTING OCCURS AND REPLANT BARE AREAS. INSPECT ESTABLISHED COVER EVERY 15 DAYS FOR DAMAGE. REPLANT AS REQUIRED. MAINTAIN ESTABLISHED COVER AT MAXIMUM 6" HEIGHT. IRRIGATE AS REQUIRED DURING DRY PERIODS TO MAINTAIN LIVE VEGETATION.

EROSION CONTROL SUMMARY

EROSION CONTROL DESIGNER: **GERMANA ENGINEERING AND ASSOCIATES, LLC.**
 CONTACT: CHRISTOPHER M. GERMANA, PE
 1120 WEST MINNEOLA AVENUE
 CLERMONT, FLORIDA 34711
 (352) 242-9329

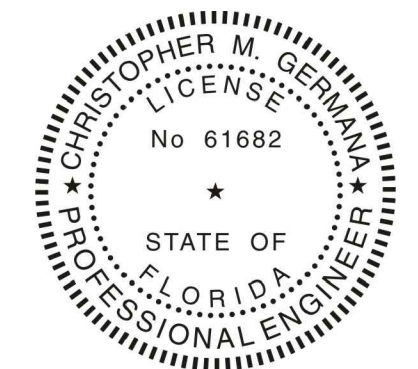
OWNER/DEVELOPER: **LAKE RC LLC.**
 CONTACT: THOMAS ZAHN
 128 NORTH EUSTIS STREET, SUITE 101
 EUSTIS, FLORIDA 32726
 (352) 989-6000

AREA ADJACENT TO SITE: THE PROJECT SITE IS BORDERED BY LAKEVIEW AVENUE AND SINGLE-FAMILY RESIDENTIAL TO THE NORTH, SINGLE-FAMILY RESIDENTIAL TO THE EAST AND SOUTH, WEST CROOKED LAKE TO THE SOUTHWEST, AND VACANT LAND TO THE WEST.

EROSION CONTROL MEASURES: EROSION AND RUNOFF WILL BE CONTROLLED BY CONSTRUCTION ENTRANCE, SILT FENCE AND INLET PROTECTION AS NEEDED.

This item has been digitally signed and sealed by Christopher M. Germana, P.E. in the state of Florida. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Digitally signed by Christopher M Germana
 Date: 2023.05.01 16:25:18 -04'00'



DATE	04-03-2023
REVISIONS	
#	1. REVISED BASED ON CITY COMMENTS

STORMWATER POLLUTION PREVENTION PLAN

HIDDEN COVE SUBDIVISION

EUSTIS, FLORIDA

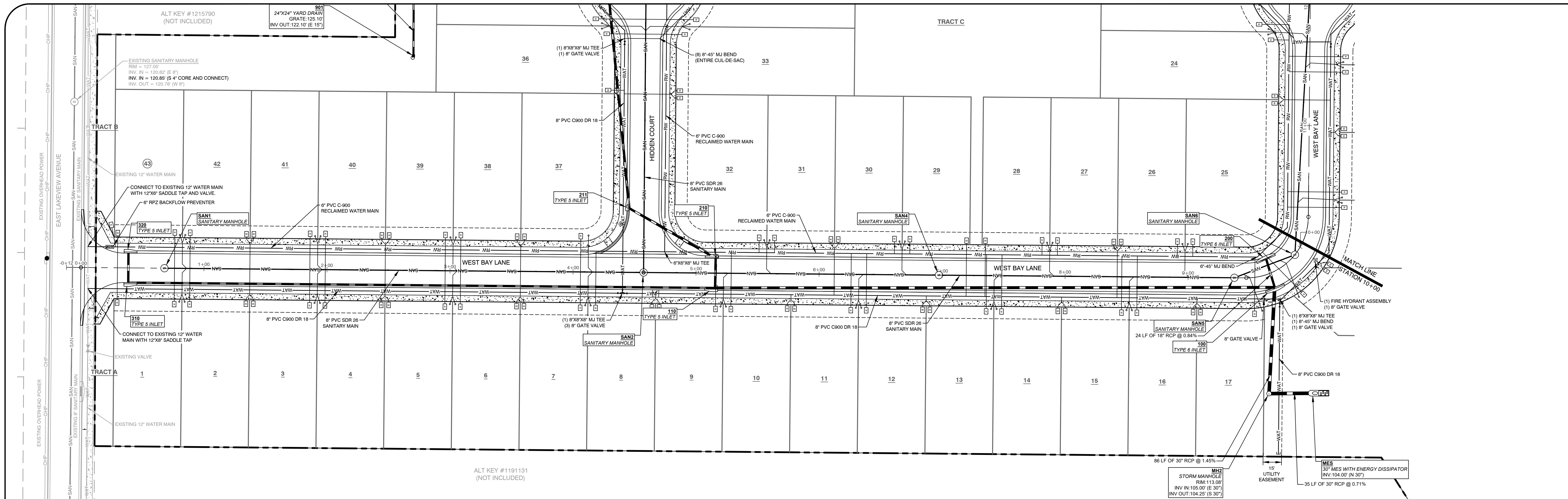
GERMANA ENGINEERING AND ASSOCIATES, LLC
 1120 WEST MINNEOLA AVENUE
 CLERMONT, FL 34711
 WWW.GERMANAENGINEERING.COM
 ENGINEERING FIRM REGISTRY # 29279

SCALE: 1" = 80'

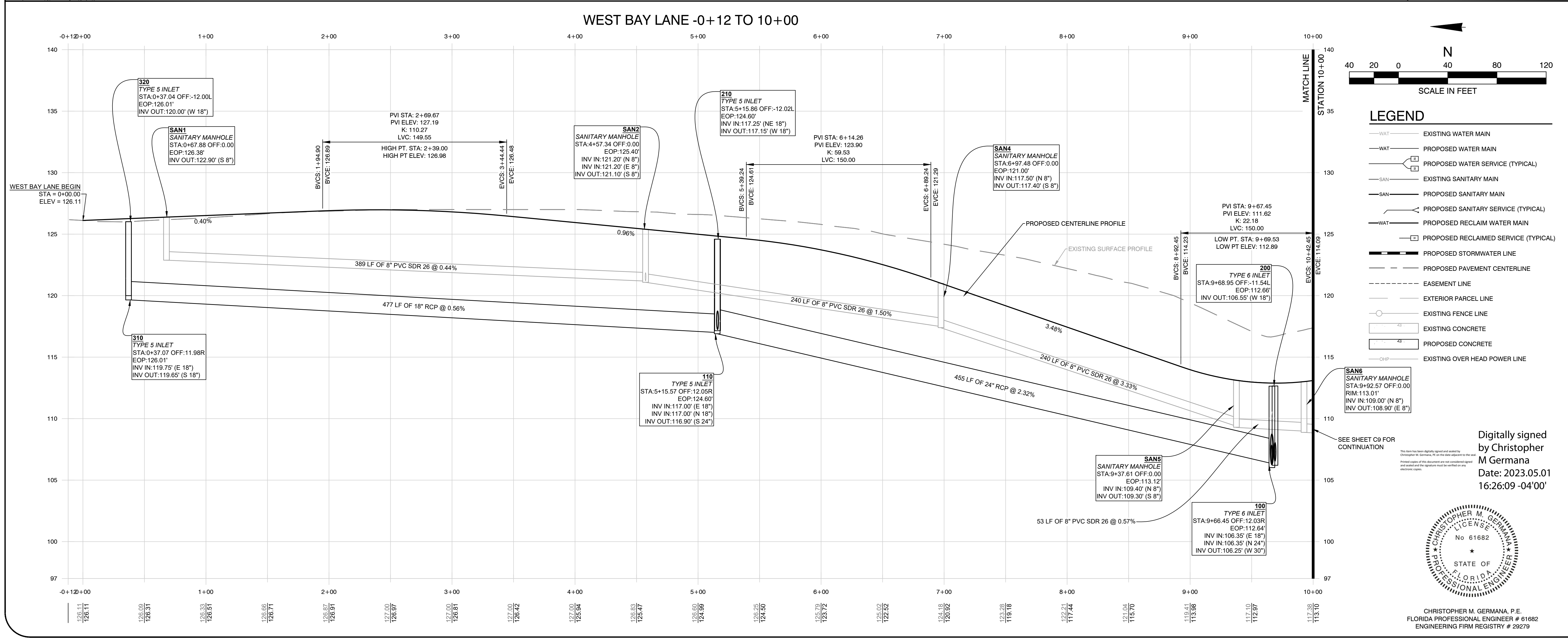
DATE: 03-01-2023

SHEET **C7**

CHRISTOPHER M. GERMANA, P.E.
 FLORIDA PROFESSIONAL ENGINEER # 61682
 ENGINEERING FIRM REGISTRY # 29279



DATE	04-03-2023
REVISIONS	
#	1. REVISED BASED ON CITY COMMENTS
WEST BAY LANE PLAN AND PROFILE -0+12 TO 10+00	
PROJECT # GE072022	



WEST BAY LANE -0+12 TO 10+00

**HIDDEN COVE
SUBDIVISION**

EUSTIS, FLORIDA

LEGEND

- WAT — EXISTING WATER MAIN
- WAT — PROPOSED WATER MAIN
- WAT — PROPOSED WATER SERVICE (TYPICAL)
- SAN — EXISTING SANITARY MAIN
- SAN — PROPOSED SANITARY MAIN
- WAT — PROPOSED SANITARY SERVICE (TYPICAL)
- WAT — PROPOSED RECLAIM WATER MAIN
- WAT — PROPOSED RECLAIM SERVICE (TYPICAL)
- — PROPOSED STORMWATER LINE
- — PROPOSED PAVEMENT CENTERLINE
- — EASEMENT LINE
- — EXTERIOR PARCEL LINE
- — EXISTING FENCE LINE
- — EXISTING CONCRETE
- — PROPOSED CONCRETE
- OHP — EXISTING OVER HEAD POWER LINE

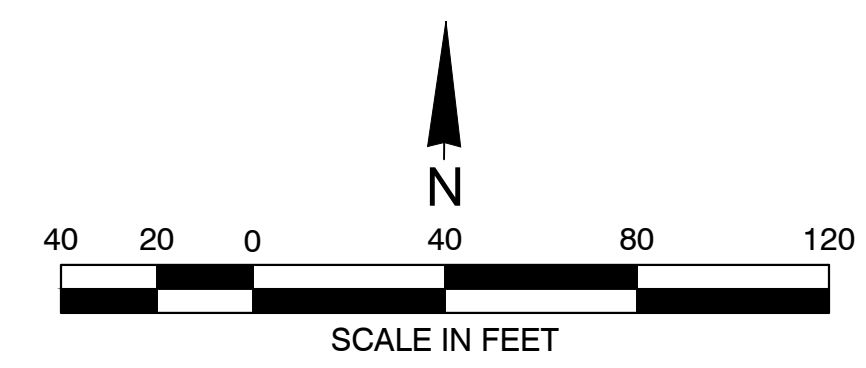
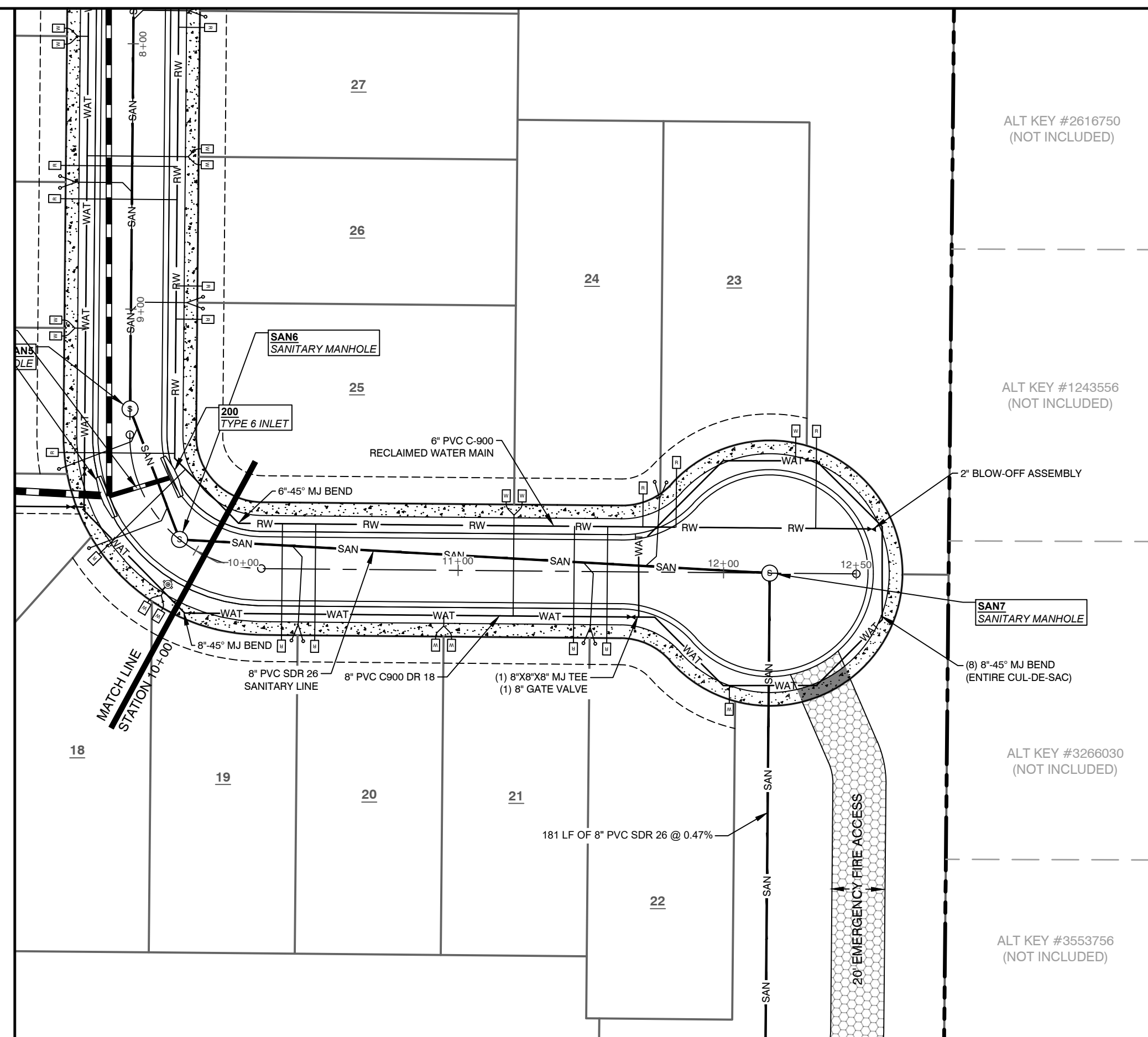
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DATE: 03-01-2023

SHEET
C8

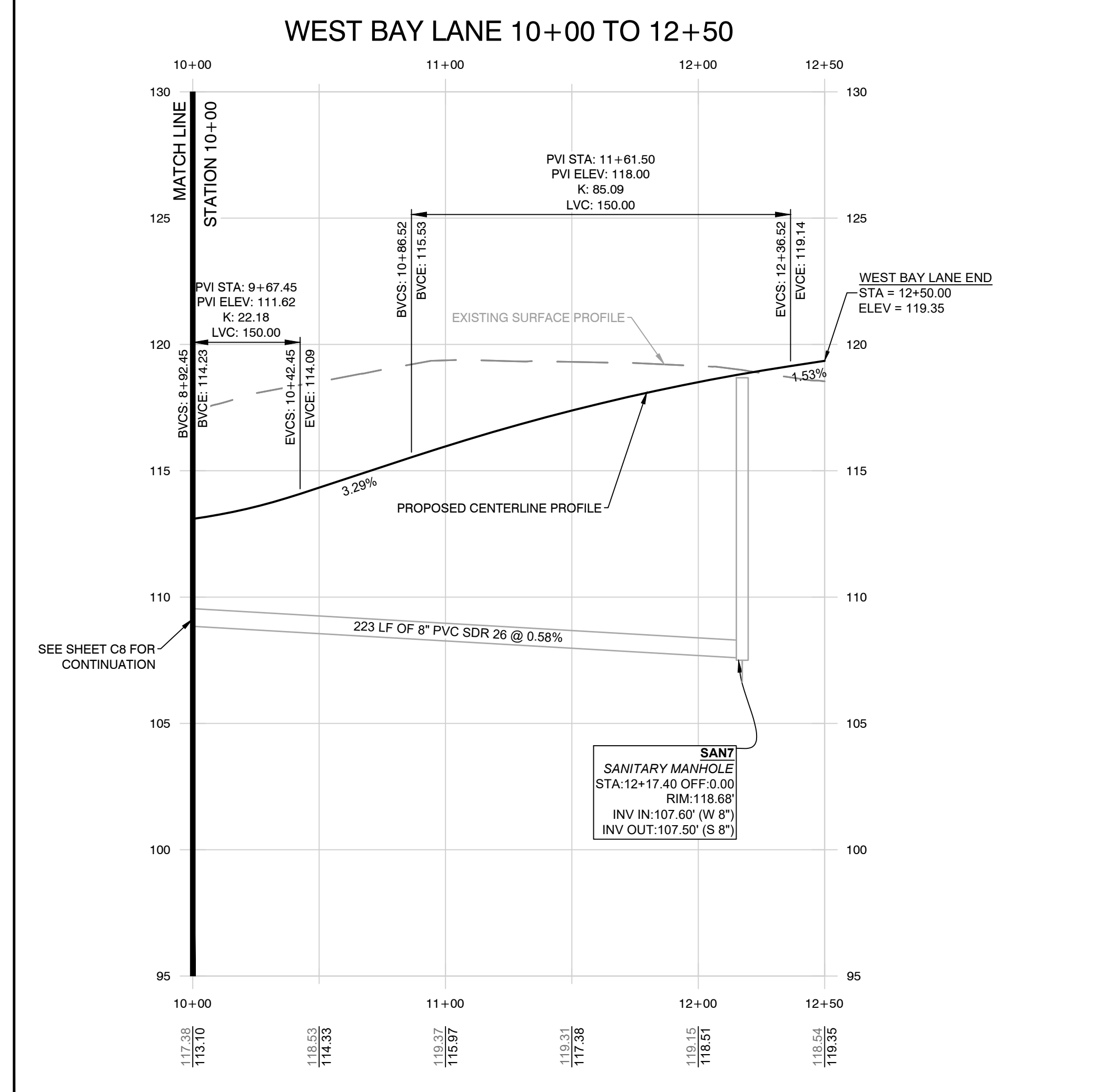
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Date: 2023.05.01 16:26:09 -04'00'

CHRISTOPHER M. GERMANA, P.E.
FLORIDA PROFESSIONAL ENGINEER # 61682
ENGINEERING FIRM REGISTRY # 29279



- LEGEND**
- WAT — EXISTING WATER MAIN
 - WAT — PROPOSED WATER MAIN
 - WAT — PROPOSED WATER SERVICE (TYPICAL)
 - SAN — EXISTING SANITARY MAIN
 - SAN — PROPOSED SANITARY MAIN
 - SAN — PROPOSED SANITARY SERVICE (TYPICAL)
 - WAT — PROPOSED RECLAIM WATER MAIN
 - WAT — PROPOSED RECLAIMED SERVICE (TYPICAL)
 - SW — PROPOSED STORMWATER LINE
 - — PROPOSED PAVEMENT CENTERLINE
 - — EASEMENT LINE
 - — EXTERIOR PARCEL LINE
 - — EXISTING FENCE LINE
 - — EXISTING CONCRETE
 - — PROPOSED CONCRETE

SEE SHEET C8 FOR CONTINUATION



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CHRISTOPHER M. GERMANA, P.E.
FLORIDA PROFESSIONAL ENGINEER # 61682
ENGINEERING FIRM REGISTRY # 29279

REVISIONS	DATE
1. REVISED BASED ON CITY COMMENTS	04-03-2023

**WEST BAY LANE
PLAN AND PROFILE
10+00 TO 12+50**

**HIDDEN COVE
SUBDIVISION**

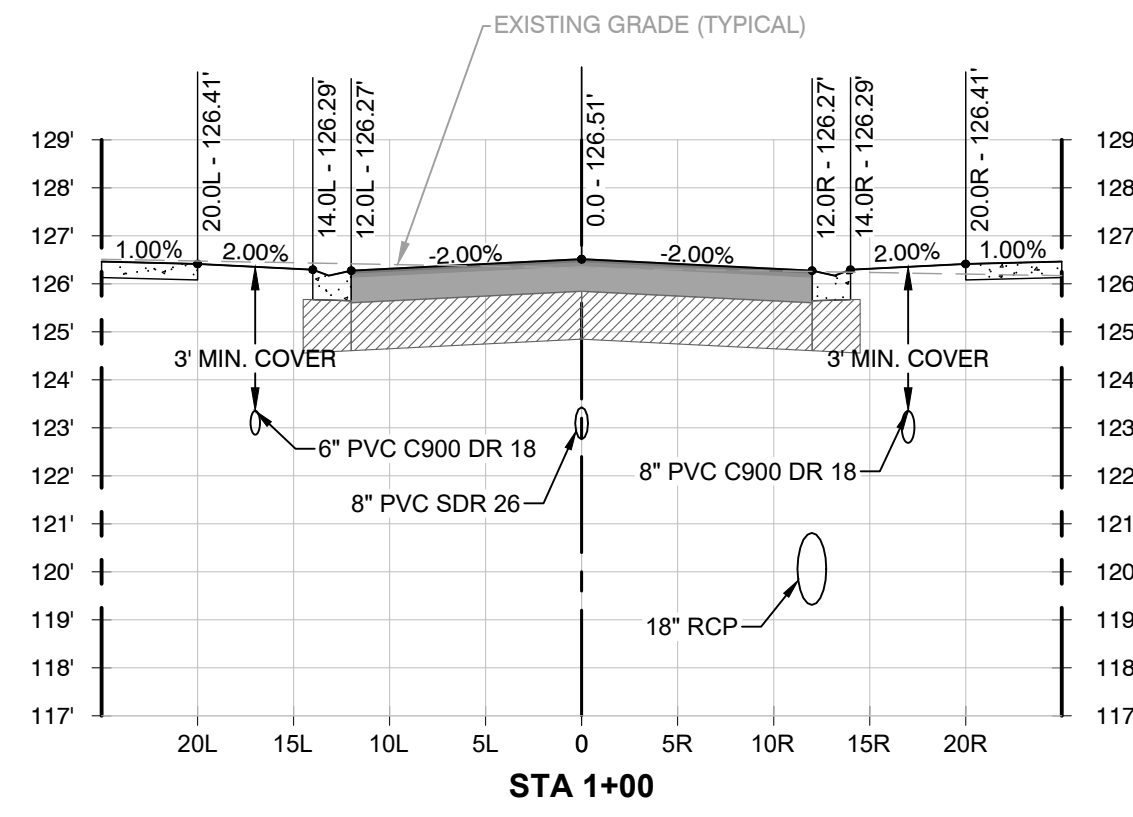
PROJECT # GE072022
EUSTIS, FLORIDA

GERMANA ENGINEERING AND ASSOCIATES, LLC
1120 WEST MINNEOLA AVENUE
CLERMONT, FL 34711
WWW.GERMANAENGINEERING.COM
ENGINEERING FIRM REGISTRY # 29279

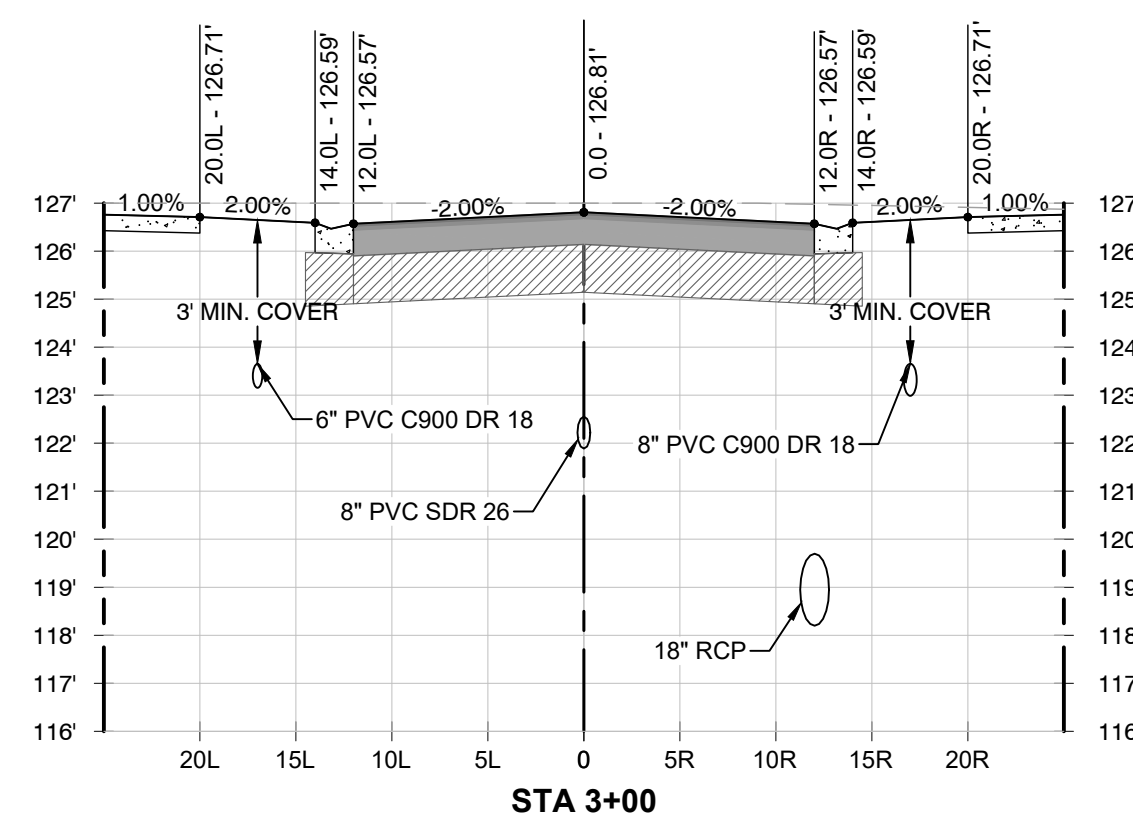
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DATE: 03-01-2023

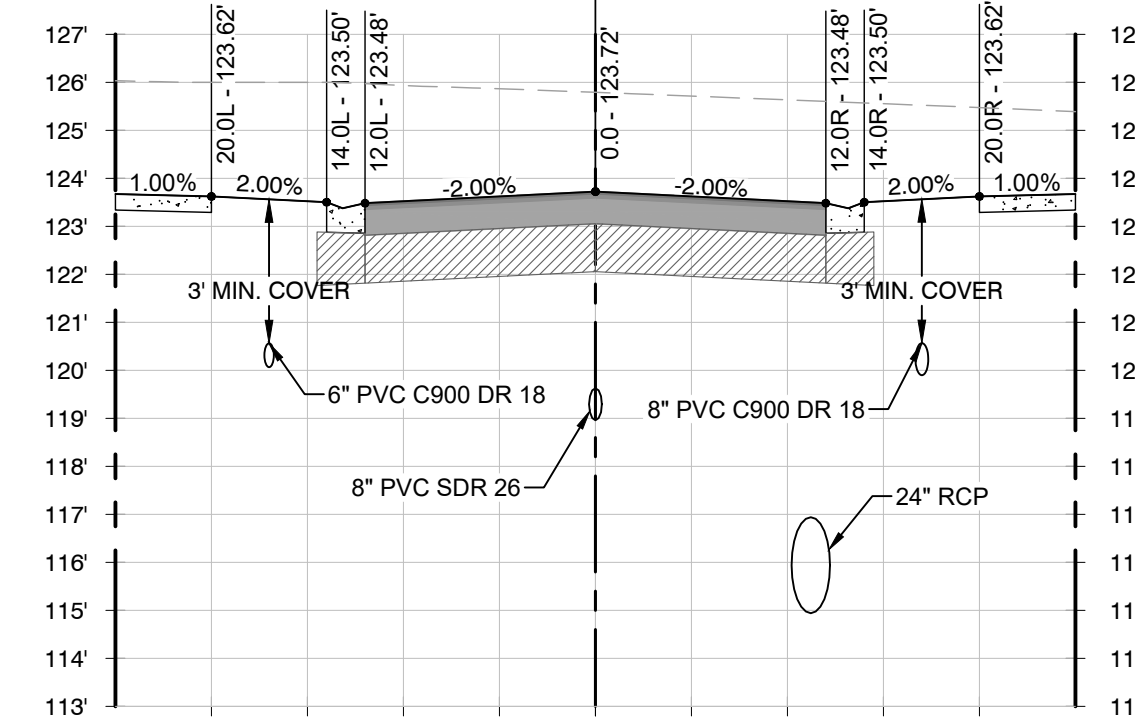
SHEET
C9



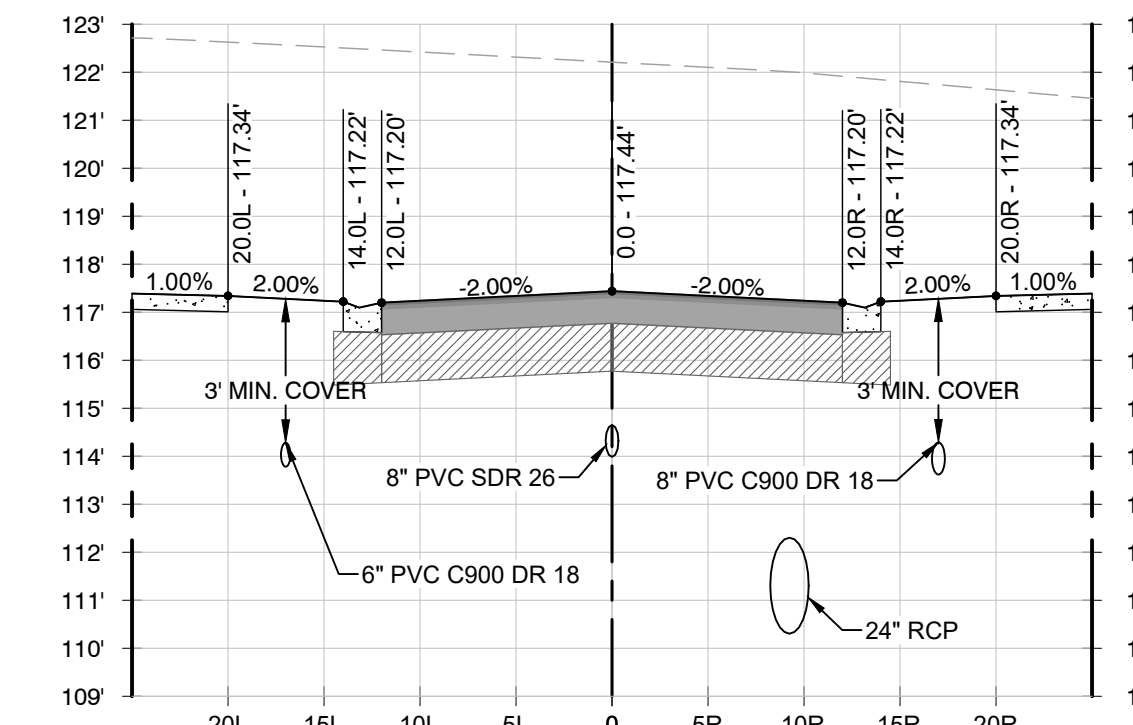
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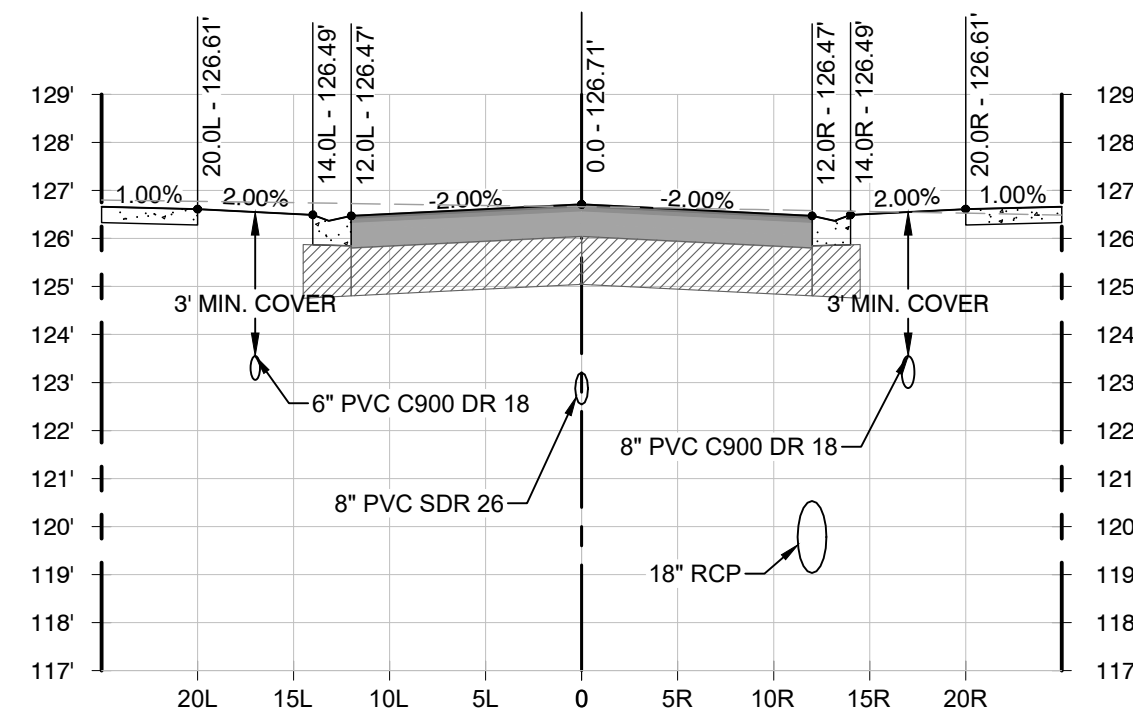
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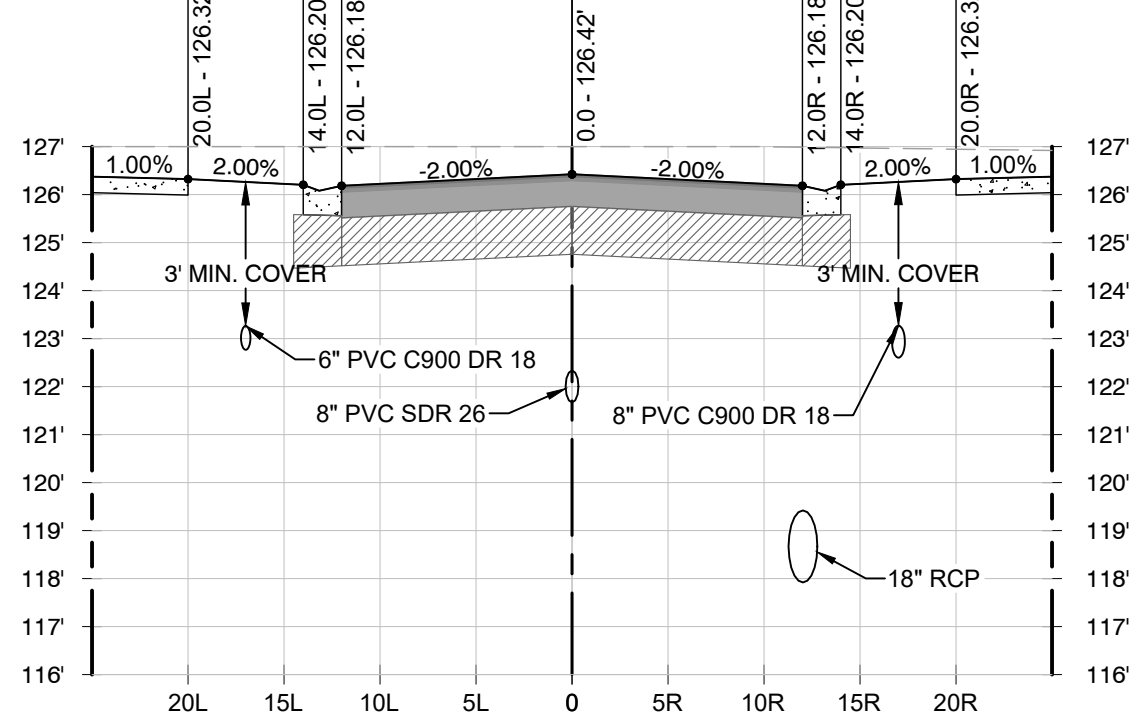
STA 6+00



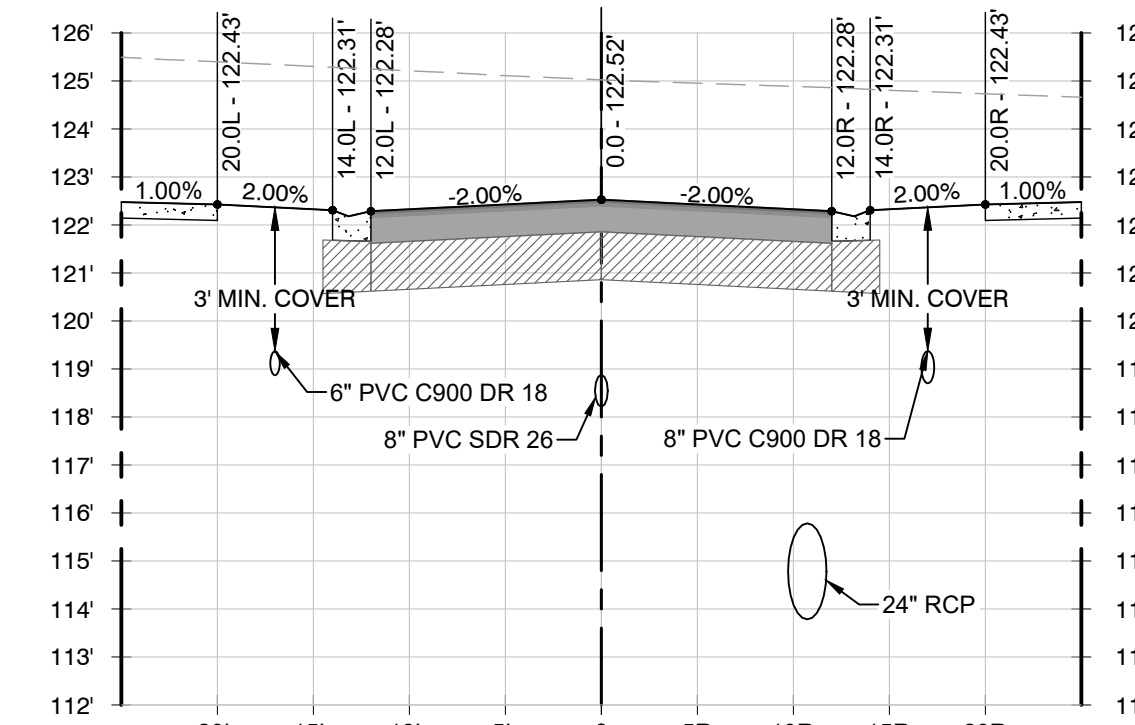
STA 8+00



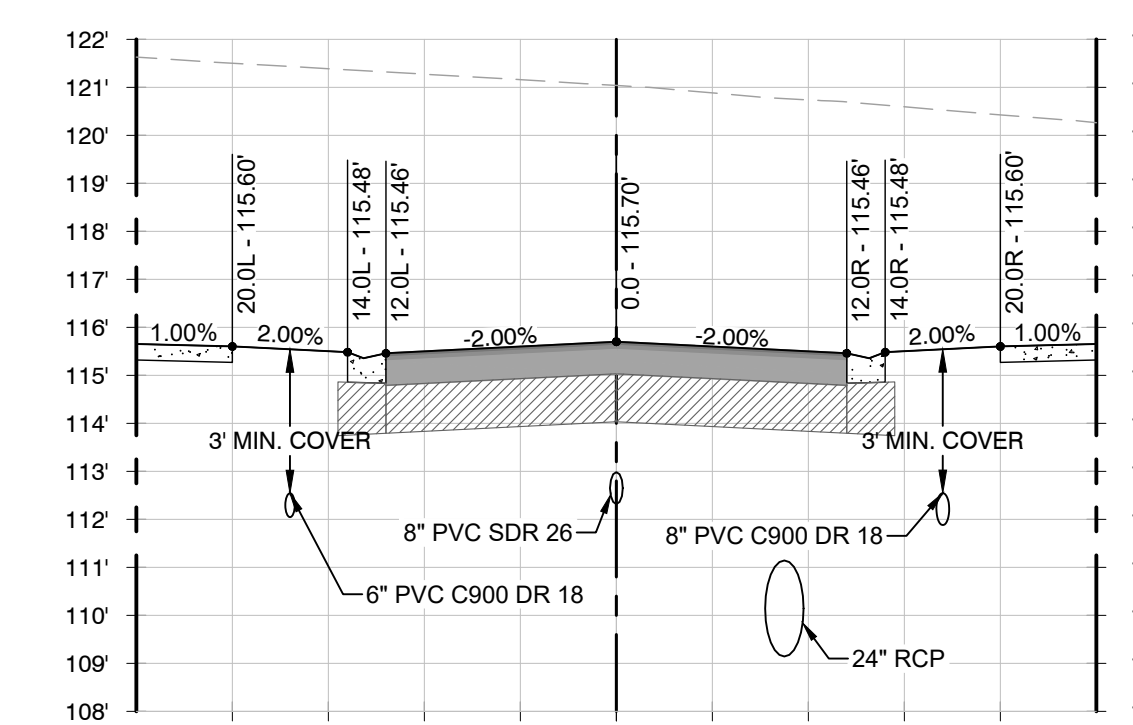
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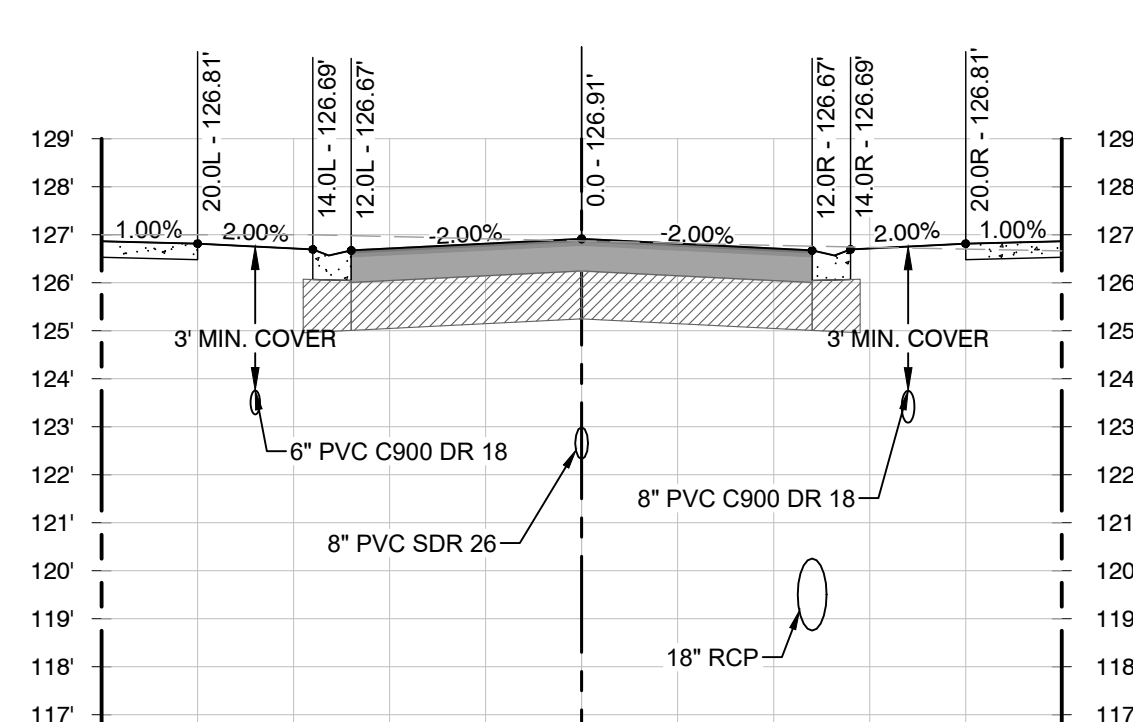
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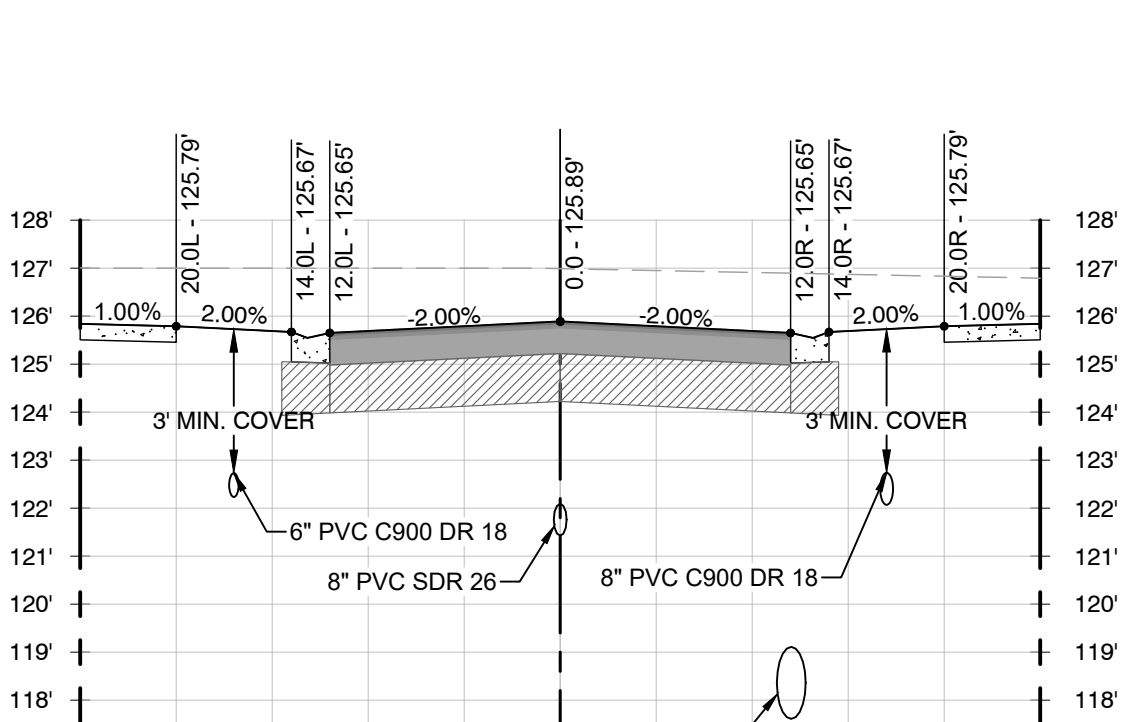
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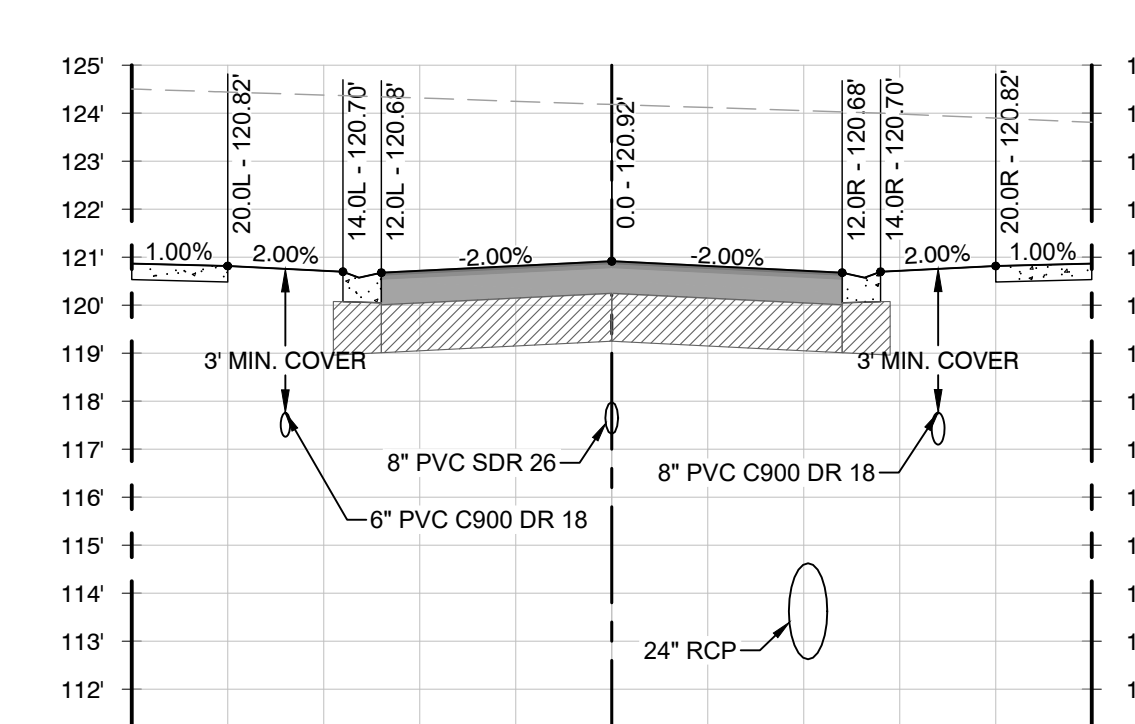
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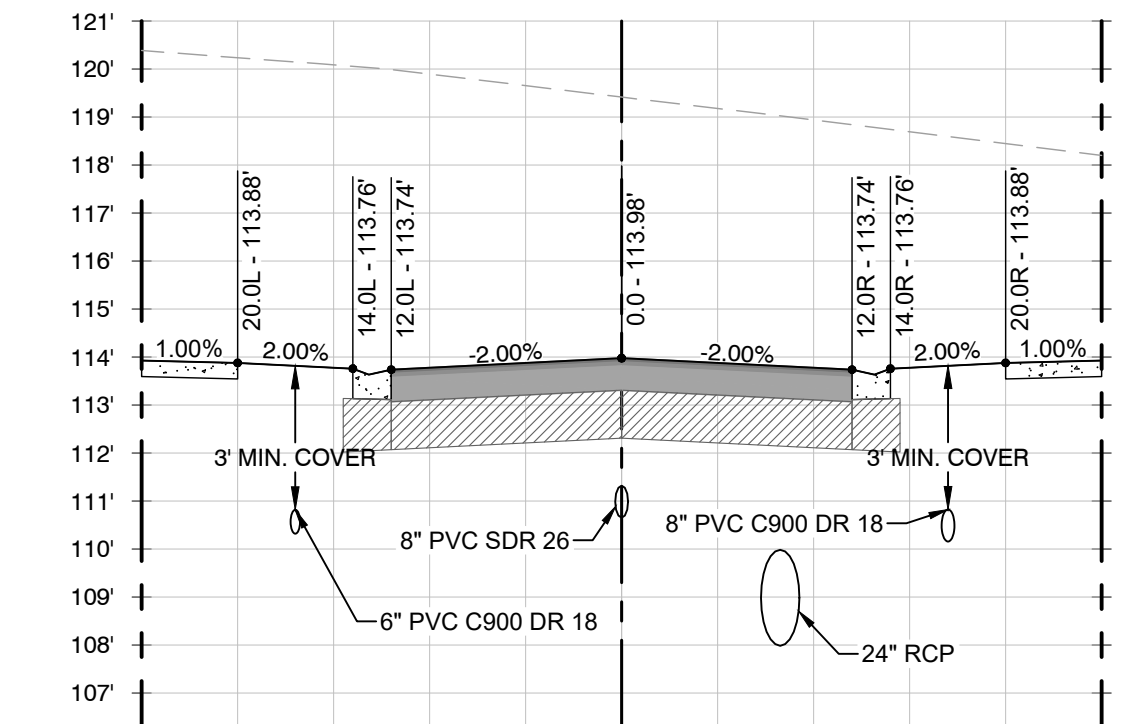
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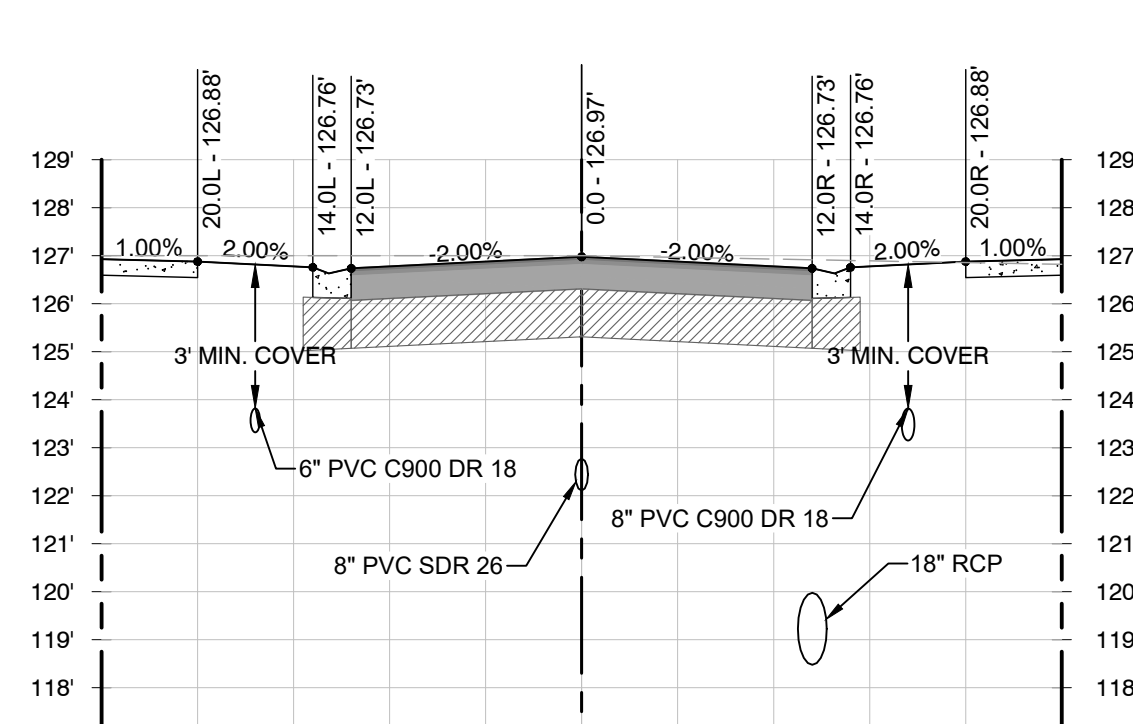
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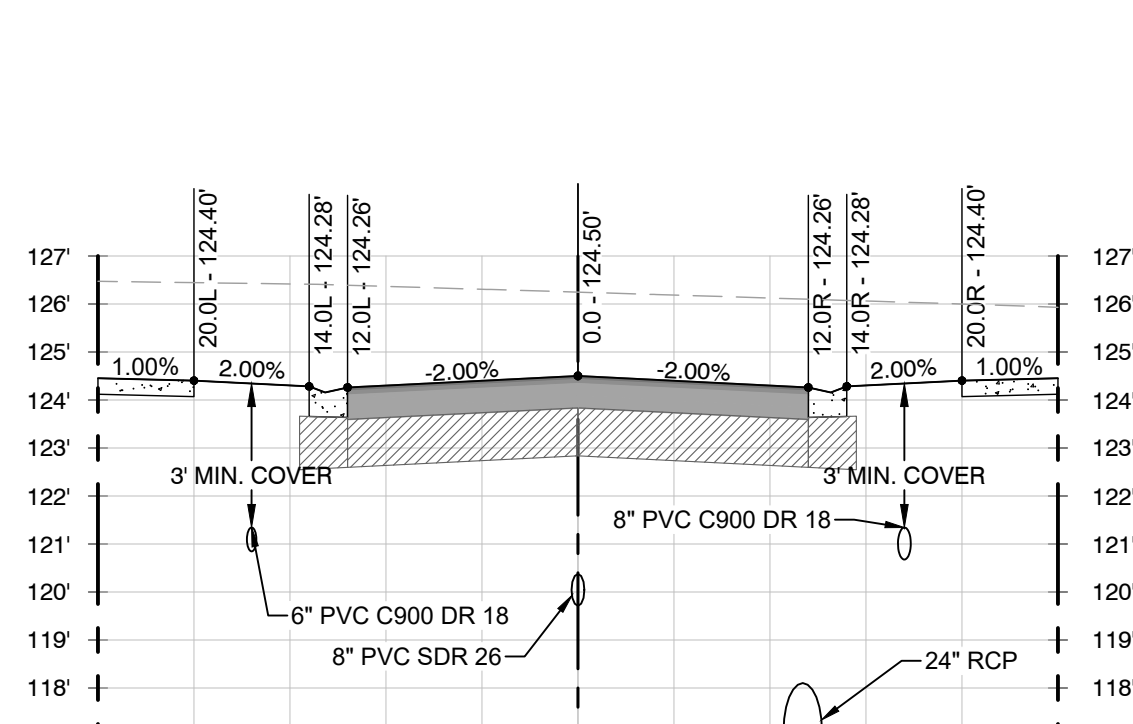
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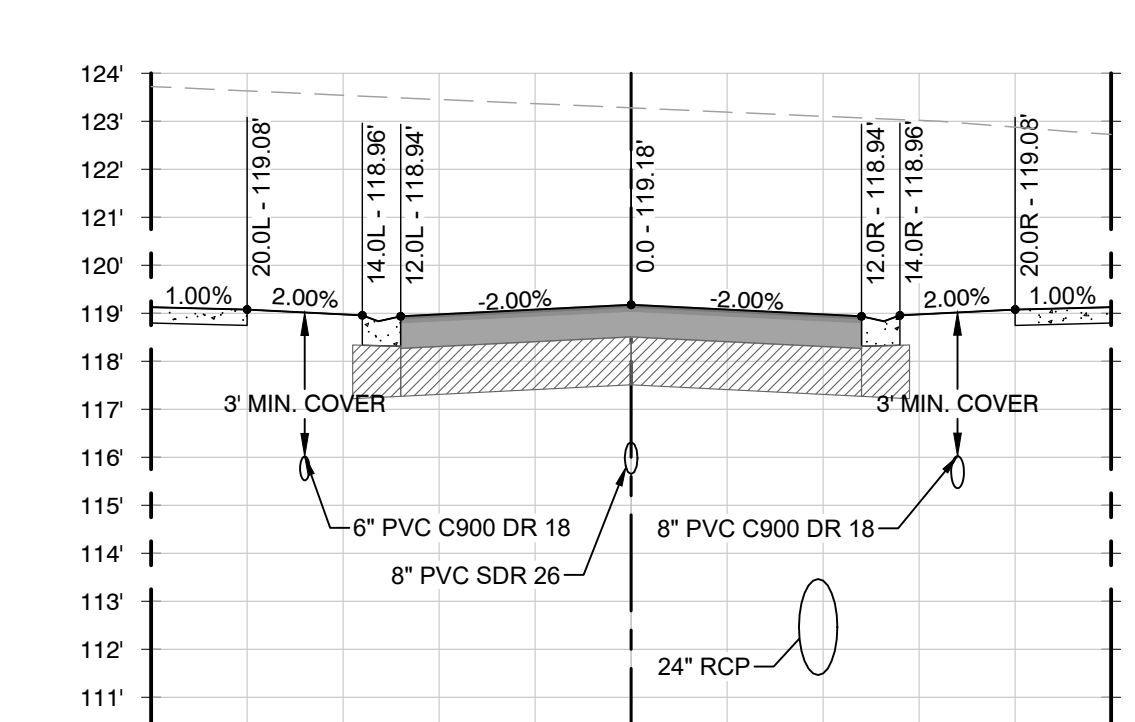
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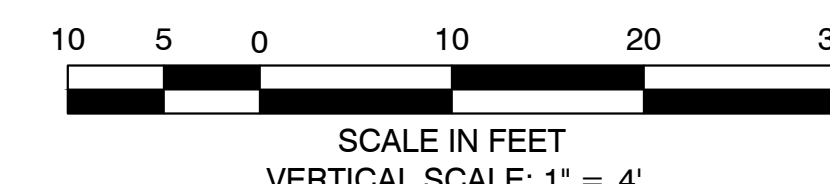
STA 2+50



STA 5+50



STA 7+50



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Date: 2023.05.01
16:28:13 -04'00'



CHRISTOPHER M. GERMANA, P.E.
FLORIDA PROFESSIONAL ENGINEER # 61682
ENGINEERING FIRM REGISTRY # 29279

#	REVISIONS	DATE

WEST BAY LANE
CROSS SECTIONS
1+00 TO 9+00

HIDDEN COVE
SUBDIVISION

PROJECT # GE072022

EUSTIS, FLORIDA

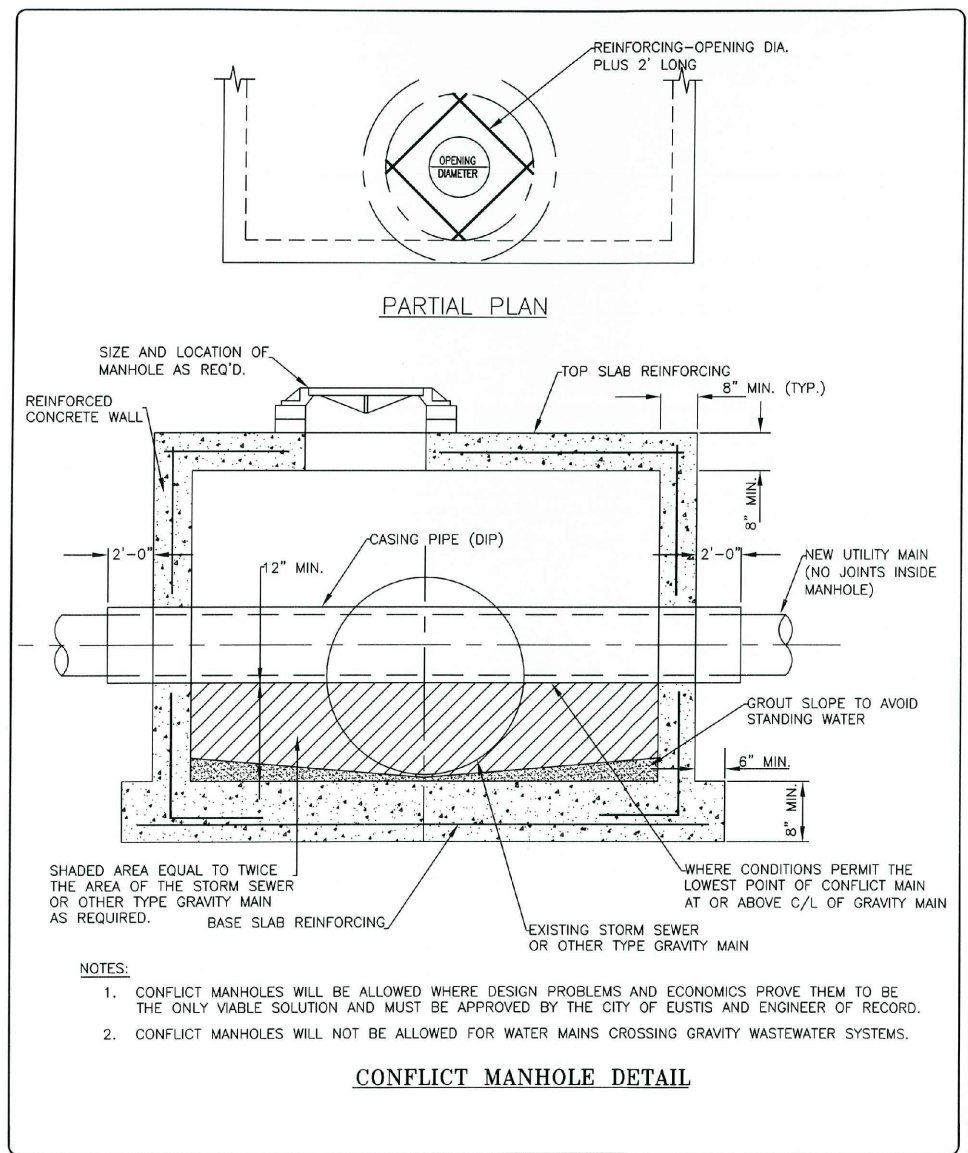
GERMANA ENGINEERING
AND ASSOCIATES, LLC
1120 WEST MINNEOLA AVENUE
CLERMONT, FL 34711
WWW.GERMANAENGINEERING.COM
ENGINEERING FIRM REGISTRY # 29279

SCALE: NTS

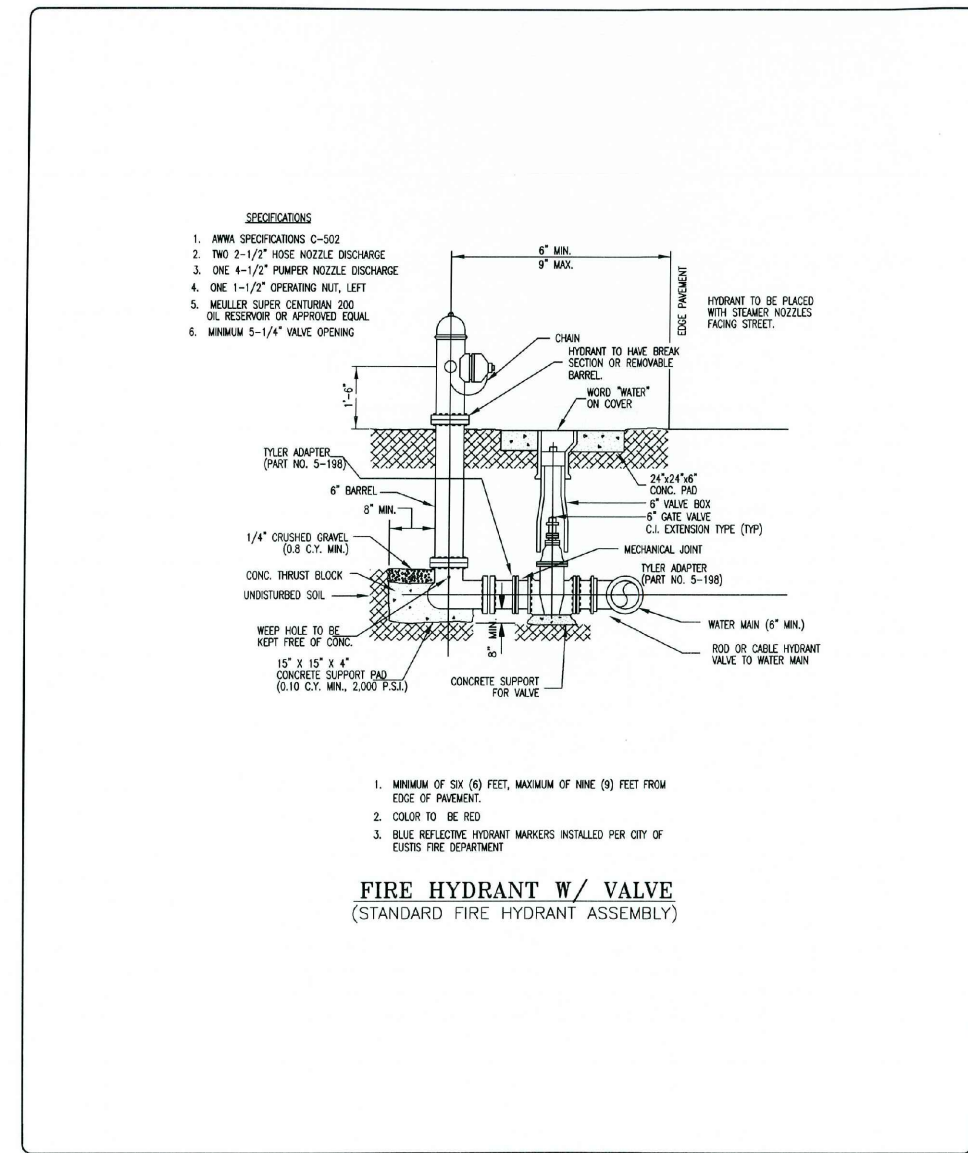
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SHEET

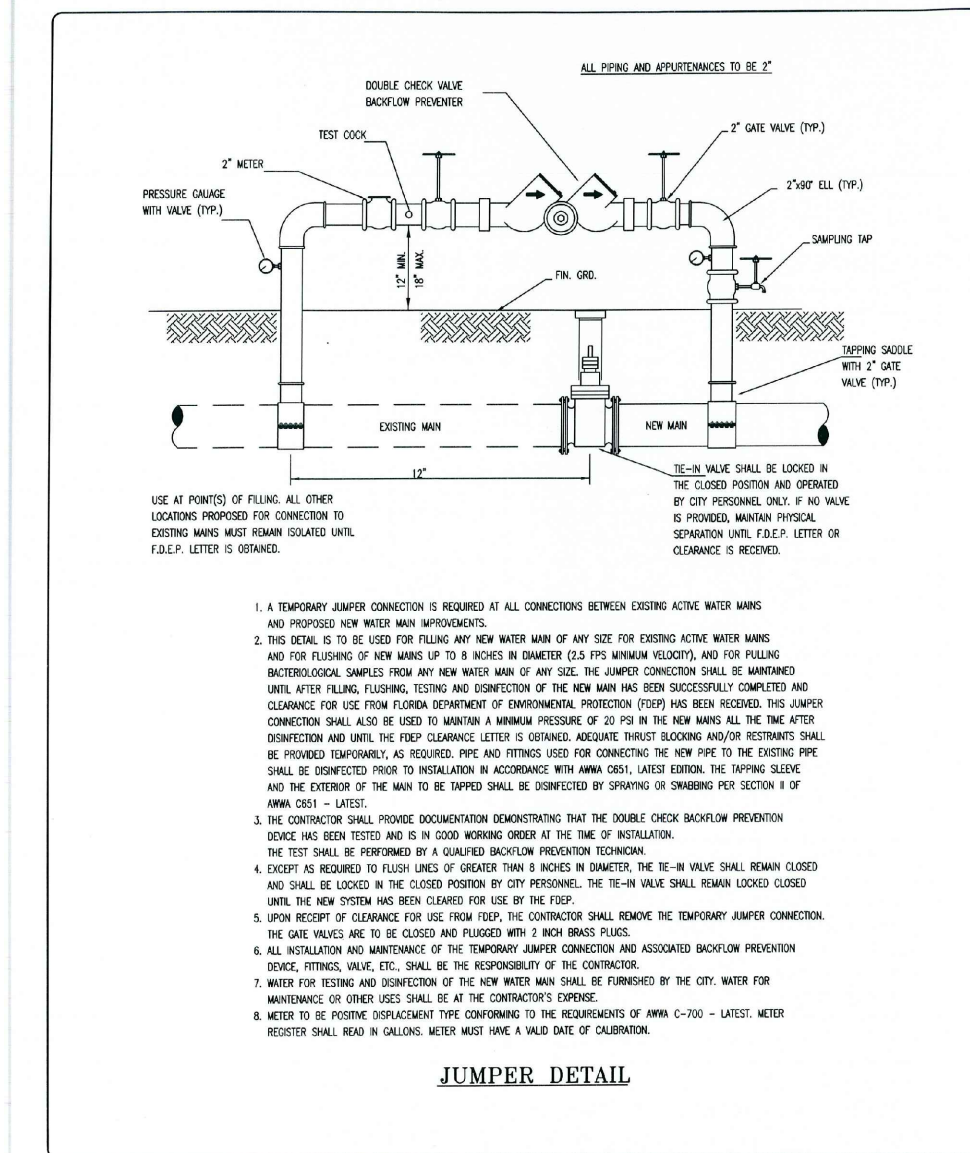
C11



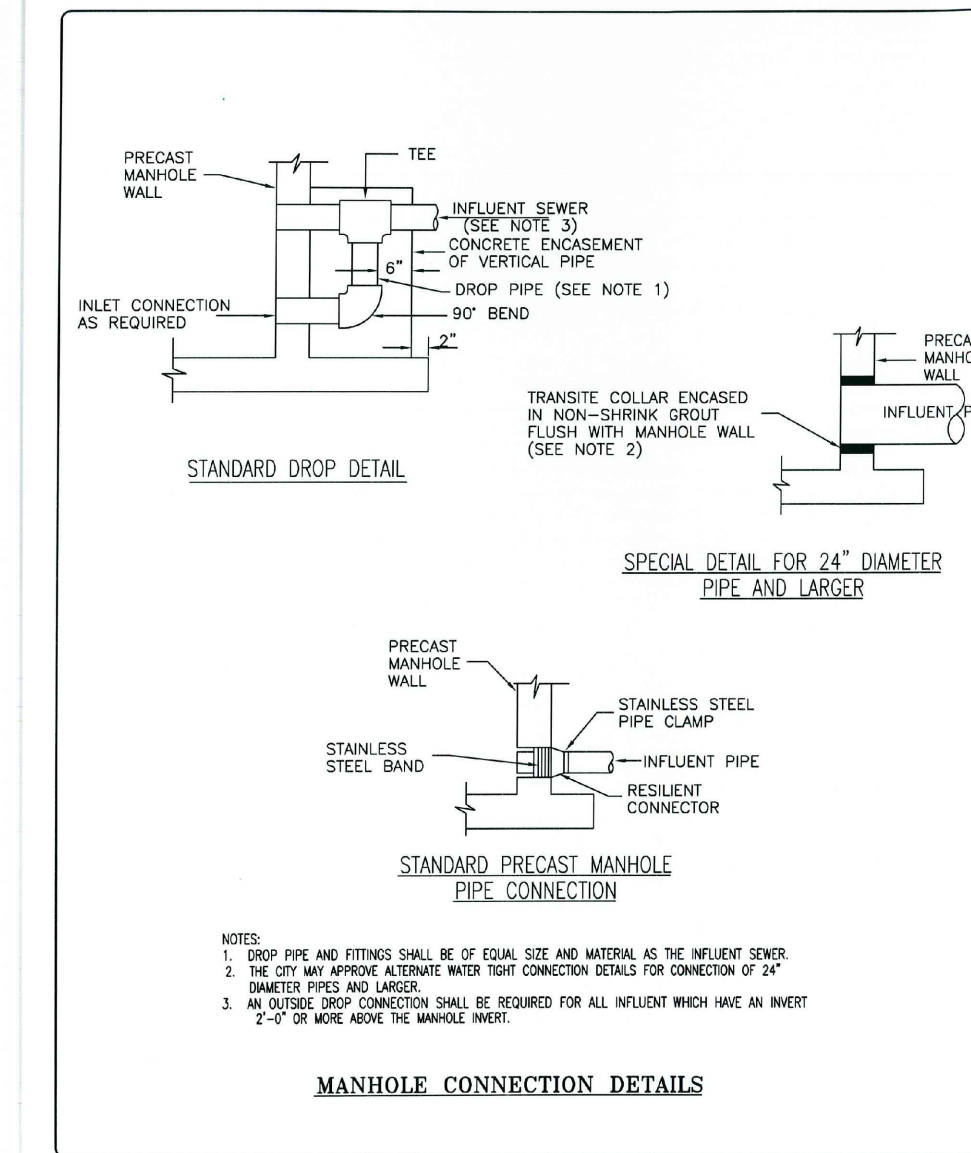
CITY OF EUSTIS ENGINEERING DEPT. P.O. BOX 618 1120 WEST MINNEOLA AVENUE EUSTIS, FL 32727-0618 352-483-5480	CONFLICT MANHOLE	JOB NAME	DESIGN BY: MGR CHECKED BY: MGR DATE: 05/11/2016 SHEET 07
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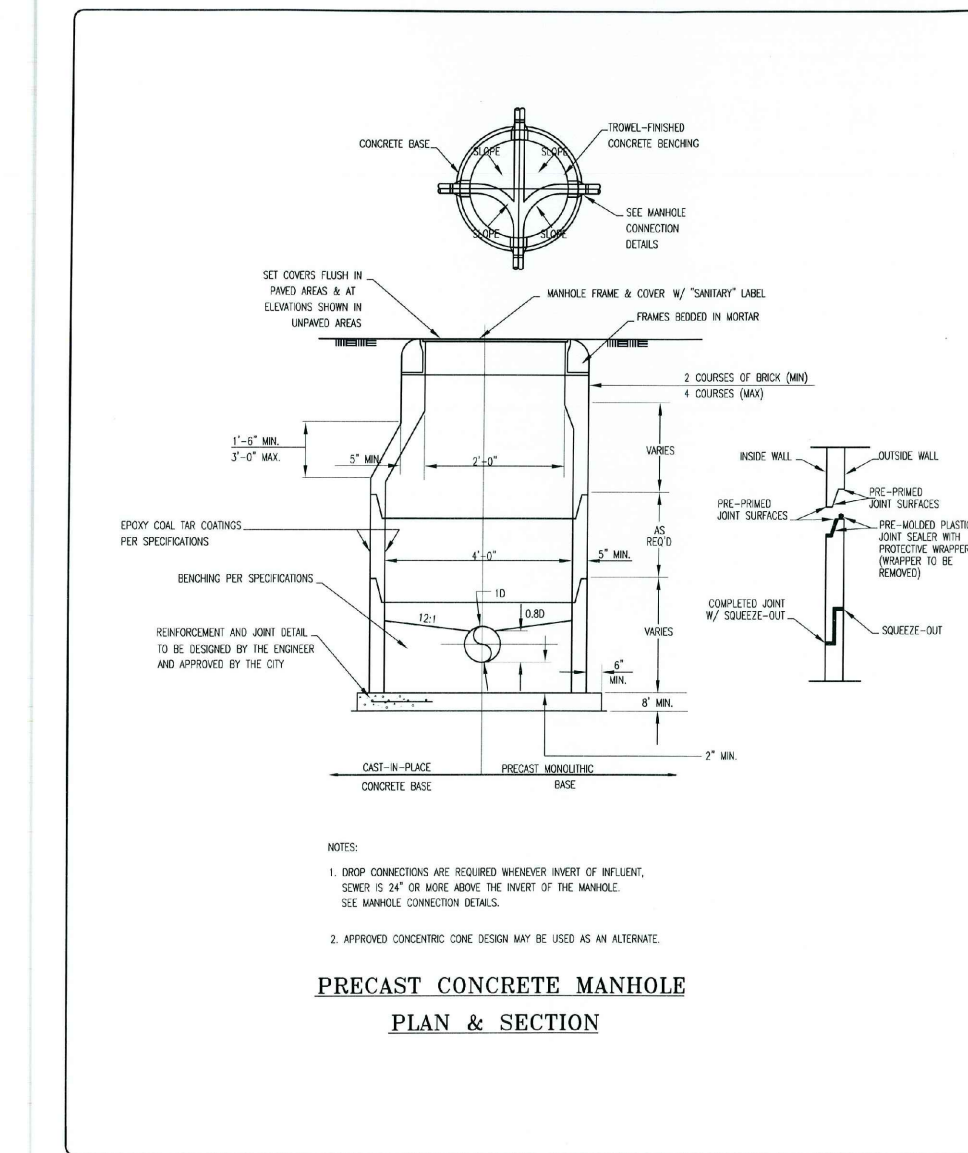
CITY OF EUSTIS ENGINEERING DEPT. P.O. BOX 618 1120 WEST MINNEOLA AVENUE EUSTIS, FL 32727-0618 352-483-5480	FIRE HYDRANT (ASSEMBLY)	JOB NAME	DESIGN BY: MGR CHECKED BY: MGR DATE: 05/11/2016 SHEET 07
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CITY OF EUSTIS ENGINEERING DEPT. P.O. BOX 618 1120 WEST MINNEOLA AVENUE EUSTIS, FL 32727-0618 352-483-5480	JUMPER DETAIL	JOB NAME	DESIGN BY: MGR CHECKED BY: MGR DATE: 05/11/2016 SHEET 07
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CITY OF EUSTIS ENGINEERING DEPT. P.O. BOX 618 1120 WEST MINNEOLA AVENUE EUSTIS, FL 32727-0618 352-483-5480	MANHOLE CONNECTION DETAILS	JOB NAME	DESIGN BY: MGR CHECKED BY: MGR DATE: 05/11/2016 SHEET 07
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CITY OF EUSTIS ENGINEERING DEPT. P.O. BOX 618 1120 WEST MINNEOLA AVENUE EUSTIS, FL 32727-0618 352-483-5480	PRECAST CONCRETE MANHOLE	JOB NAME	DESIGN BY: MGR CHECKED BY: MGR DATE: 05/11/2016 SHEET 07
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PIPE RESTRAINT LENGTHS												
PIPE SIZE - INCHES												
PIPE TYPE	4	6	8	10	12	14	16	18	20	24	30	36
11-1/2" BEND	2	3	4	5	6	7	8	9	10	11	12	13
20-1/2" BEND	4	6	8	10	12	14	16	18	20	22	24	26
48 BEND	8	12	16	20	24	28	32	36	40	44	48	52
90 BEND	12	18	24	30	36	42	48	54	60	66	72	78
180 BEND	24	36	48	60	72	84	96	108	120	132	144	156
270 BEND	36	54	72	90	108	126	144	162	180	204	228	252
360 BEND	48	72	96	120	144	168	192	216	240	276	312	348
450 BEND	60	90	120	150	180	210	240	270	300	336	372	408
540 BEND	72	108	144	180	216	252	288	324	360	408	456	504
630 BEND	84	126	168	216	252	288	324	360	408	456	504	552
720 BEND	96	144	192	240	288	336	384	432	480	528	576	624
810 BEND	108	162	216	270	324	372	420	468	516	564	612	660
900 BEND	120	180	240	300	360	420	480	540	600	660	720	780
990 BEND	132	198	264	324	384	444	504	564	624	684	744	804
1080 BEND	144	216	288	360	432	504	576	648	720	792	864	936
1170 BEND	156	234	312	396	474	552	630	708	786	864	942	1020
1260 BEND	168	252	336	420	504	588	672	756	840	924	1008	1092
1350 BEND	180	270	360	444	528	612	696	780	864	948	1032	1116
1440 BEND	192	288	384	468	552	636	720	804	888	972	1056	1140
1530 BEND	204	306	408	492	576	660	744	828	912	996	1080	1164
1620 BEND	216	324	432	516	600	684	768	852	936	1020	1104	1188
1710 BEND	228	342	456	540	624	708	792	876	960	1044	1128	1212
1800 BEND	240	360	480	564	648	732	816	900	984	1068	1152	1236
1890 BEND	252	378	504	588	672	756	840	924	1008	1092	1176	1260
1980 BEND	264	396	528	612	696	780	864	948	1032	1116	1200	1284
2070 BEND	276	414	552	636	720	804	888	972	1056	1140	1224	1308
2160 BEND	288	432	576	660	744	828	912	996	1080	1164	1248	1332
2250 BEND	300	450	600	684	768	852	936	1020	1104	1188	1272	1356
2340 BEND	312	468	624	708	792	876	960	1044	1128	1212	1296	1380
2430 BEND	324	486	648	732	816	900	984	1068	1152	1236	1320	1404
2520 BEND	336	504	672	756	840	924	1008	1092	1176	1260	1344	1428
2610 BEND	348	522	696	780	864	948	1032	1116	1200	1284	1368	1452
2700 BEND	360	540	720	804	888	972	1056	1140	1224	1308	1392	1476
2790 BEND	372	558	744	828	912	996	1080	1164	1248	1332	1416	1500
2880 BEND	384	576	768	852	936	1020	1104	1188	1272	1356	1440	1524
2970 BEND	396	594	792	876	960	1044	1128	1212	1296	1380	1464	1548
3060 BEND	408	612	816	900	984	1068	1152	1236	1320	1404	1488	1566
3150 BEND	420	630	840	924	1008	1092	1176	1260	1344	1428	1512	1584
3240 BEND	432	648	864	948	1032	1116	1200	1284	1368	1452	1536	1608
3330 BEND	444	666	888	972	1056	1140	1224	1308	1392	1476	1560	1632
3420 BEND	456	684	912	996	1080	1164	1248	1332	1416	1500	1584	1656
3510 BEND	468	702	936	1020	1104	1188	1272	1356	1440	1524	1608	1680
3600 BEND	480	720	960	1044	1128	1212	1296	1380	1464	1548	1632	1704
3690 BEND	492	738	984	1068	1152	1236	1320	1404	1488	1572	1656	1728
3780 BEND	504	756	1008	1092	1176	1260	1344	1428	1512	1596	1680	1752
3870 BEND	516	774	1032	1116	1200	1284	1368	1452	1536	1620	1704	1776
3960 BEND	528	792	1056	1140	1224	1308	1392	1476	1560	1644	1728	1800
4050 BEND	540	810	1080	1164	1248	1332	1416	1500	1584	1668	1752	1824
4140 BEND	552	828	1104	1188	1260	1344	1428	1512	1596	1680	1764	1848
4230 BEND	564	846	1128	1200	1284	1368	1452	1536	1620	1704	1788	1872
4320 BEND	576	864	1152	1224	1308	1392	1476	1560	1644	1728	1812	1896
4410 BEND	588	882	1176	1248	1320	1404	1488	1572	1656	1740	1824	1908
4500 BEND	600	900	1200	1260	1344	1428	1512	1596	1680	1764	1848	1932
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4680 BEND	624	936	1248	1308	1392	1476	1560	1644	1728	1812	1896	1980
4770 BEND	636	954	1272	1320	1404	1488	1572	1656	1740	1824	1908	1992
4860 BEND	648	972	1296	1344	1428	1512	1596	1680	1764	1848	1932	2016
4950 BEND	660	990	1320	1368	1452	1536	1620	1704	1788	1872	1956	2040
5040 BEND	672	1008	1344	1380	1476	1560	1644	1728	1812	1896	1980	2064
5130 BEND	684	1026	1368	1404	1488	1572	1656	1740	1824	1908	1992	2076
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5400 BEND	720	1080	1440	1464	1548	1632	1716	1800	1884	1968	2052	2136
5490 BEND	732	1098	1464	1488	1560	1644	1728	1812	1896	1980	2064	2148
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5760 BEND	768	1152	1536	1560	1632	1716	1800	1884	1968	2052	2136	2212
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6030 BEND	804	1206	1608	1632	1700	1784	1868	1952	2036	2120	2204	2268
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6300 BEND	840	1260	1680	1704	1764	1848	1932	2016	2100	2184	2268	2332
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6480 BEND	864	1296	1728	1752	1800	1884	1968	2052	2136	2220	2304	2368
6570 BEND	876	1314	1752	1776	1824	1908	1992	2076	2160	2244	2328	2392
6660 BEND	888	1332	1776	1800	1848	1932	2016	2100	2184	2268	2352	2416
6750 BEND	900	1350	1800	1824	1872	1956	2040	2124	2208	2292	2376	2440
6840 BEND	912	1368	1824	1848	1896	1980	2064	2148	2232	2316	2400	2464
6930 BEND	924	1386	1848	1872	1920	2004	2088	2172	2256	2340	2424	2488
7020 BEND	936	1404	1872	1900	1944	20						