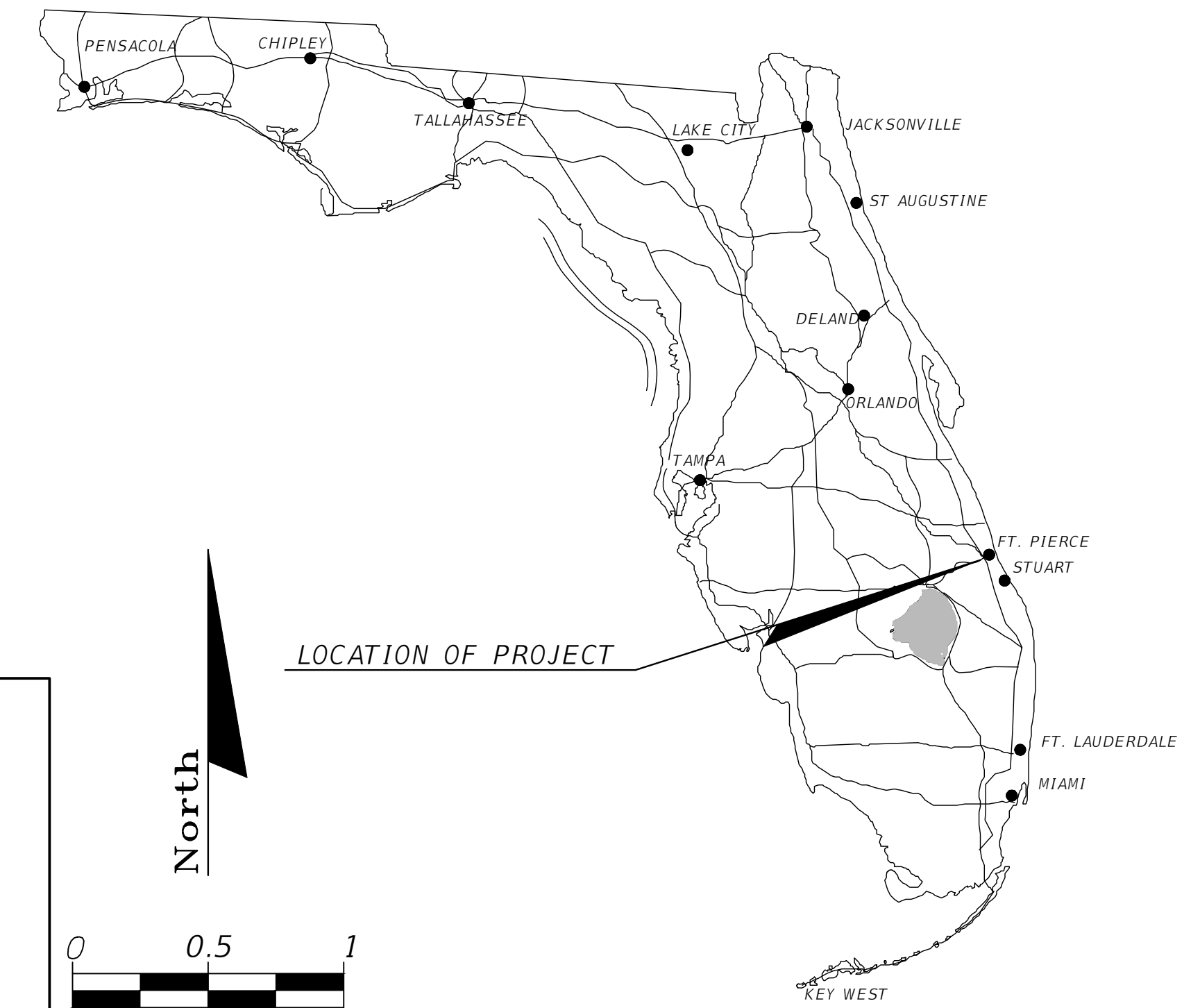


PLANS PREPARED FOR

THE CITY OF FORT PIERCE

CONTRACT PLANS

LITTLE JIM CAMP SANITARY IMPROVEMENT
ST LUCIE COUNTY, FLORIDA



COMPONENTS OF CONTRACT PLANS SET
SANITARY IMPROVEMENT CONSTRUCTION PLANS

A DETAILED INDEX APPEARS ON THE
KEY SHEET OF EACH COMPONENT

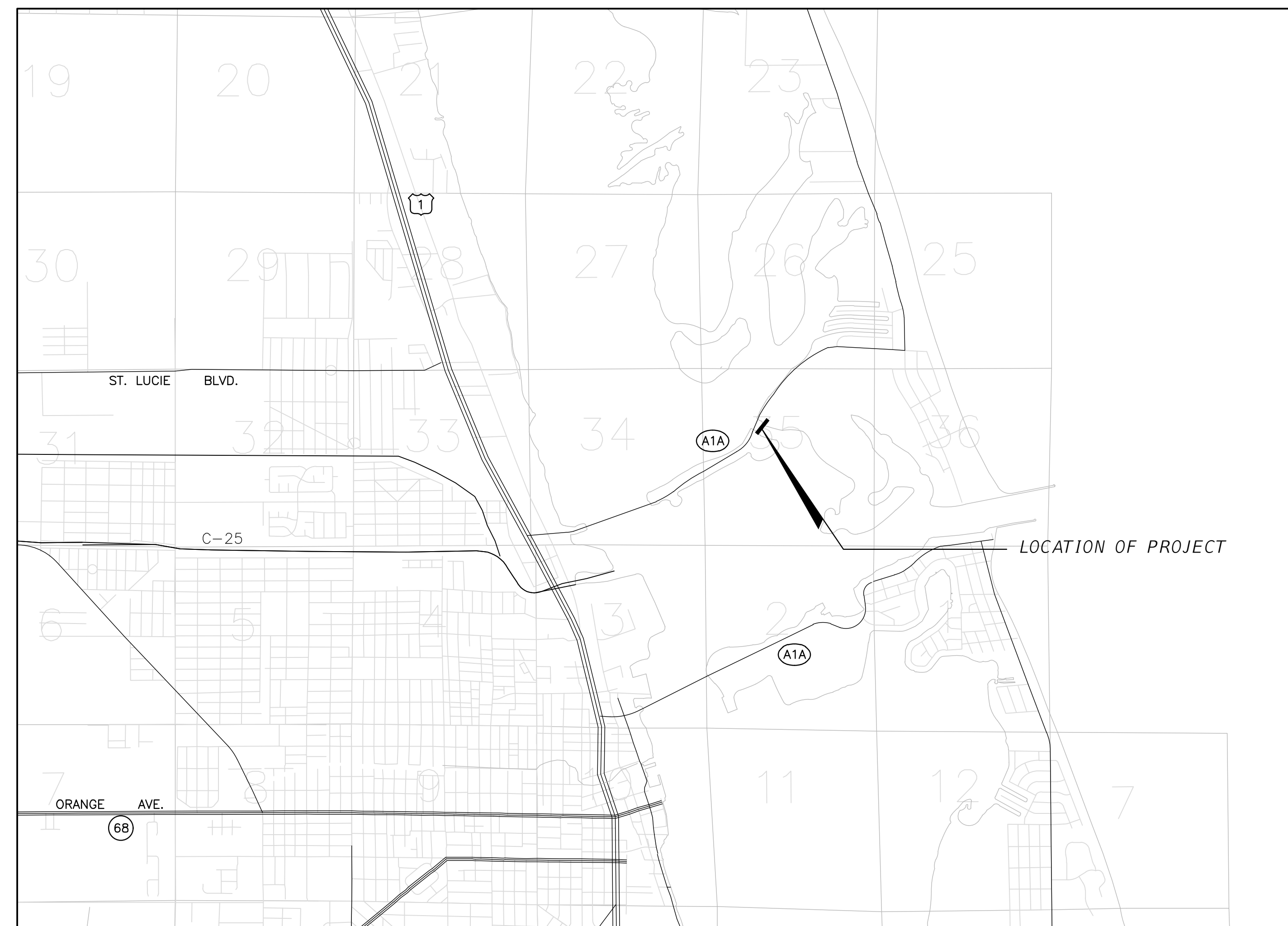
INDEX OF PLANS

SHEET NO.	SHEET DESCRIPTION
1	COVER SHEET
2	PROJECT LAYOUT/LOCATION
3	MASTER PLAN VIEW
4	SANITARY PLAN VIEW
5	SANITARY PROFILE VIEW
6	DIRECTIONAL BORE PLAN & PROFILE VIEW
7	SWPP PLAN
8	SWPP DETAILS
9	UTILITY DETAILS
10-11	LIFT STATION DETAILS
12	SPECIFICATIONS

GOVERNING STANDARDS AND SPECIFICATIONS:
FLORIDA DEPARTMENT OF TRANSPORTATION,
STANDARD SPECIFICATIONS FOR ROAD AND
BRIDGE CONSTRUCTION DATED 2023-2024,
AND STANDARD SPECIFICATIONS FOR ROAD
AND BRIDGE CONSTRUCTION DATED 2020. AS
AMENDED BY CONTRACT DOCUMENTS.

For Design Standards Modifications click on
"Standard Plans For Road and Bridge Construction" at
the following web site:
<http://www.fdot.gov/design/standardplans/Default.shtm>

For the Standard Specifications for Road and Bridge
Construction click on the "January 2024 Standard
Specifications eBook " link at the following web site:
<http://www.fdot.gov/programmanagement/Implemented/SpecBooks/>



CONSTRUCTION SHOP DRAWINGS
TO BE SUBMITTED TO:

STEFAN K. MATTHES, PE
CULPEPPER & TERPENING, INC.
2980 SOUTH 25TH STREET
FORT PIERCE, FLORIDA 34981

PLANS PREPARED BY:



**CULPEPPER &
TERPENING INC**

2980 SOUTH 25TH STREET • FORT PIERCE, FLORIDA 34981
PHONE 772-464-3537 • FAX 772-464-9497 • www.ct-eng.com
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NOTE: THE SCALE OF THESE PLANS MAY
HAVE CHANGED DUE TO REPRODUCTION.

THIS DOCUMENT HAS BEEN DIGITALLY SIGNED
AND SEALED BY STEFAN K. MATTHES, PE ON
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COPIES OF THIS DOCUMENT ARE NOT CONSIDERED
SIGNED AND SEALED AND THE SHA
AUTHENTICATION CODE MUST BE VERIFIED ON
ANY ELECTRONIC COPIES.

REVISIONS

LENGTH OF PROJECT		
	LIN. FT.	MILES
UTILITY	210	0.040
DIRECTIONAL BORE	617	0.117
NET LENGTH OF PROJ.	827	0.157
EXCEPTIONS	0	0
GROSS LENGTH OF PROJ.	827	0.157

KEY SHEET REVISIONS		
DATE	BY	DESCRIPTION

ROADWAY PLANS
ENGINEER OF RECORD: STEFAN K. MATTHES, P.E.

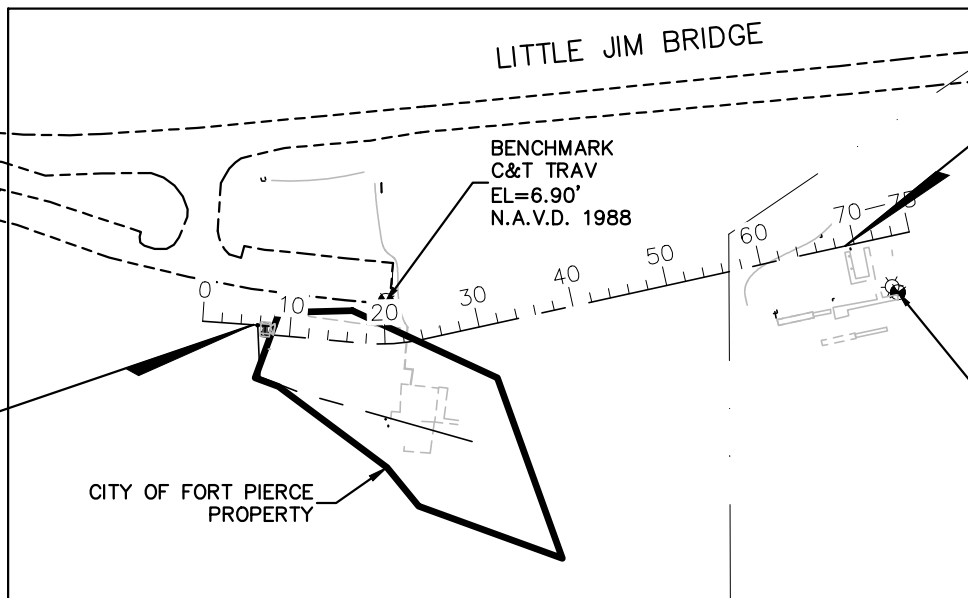
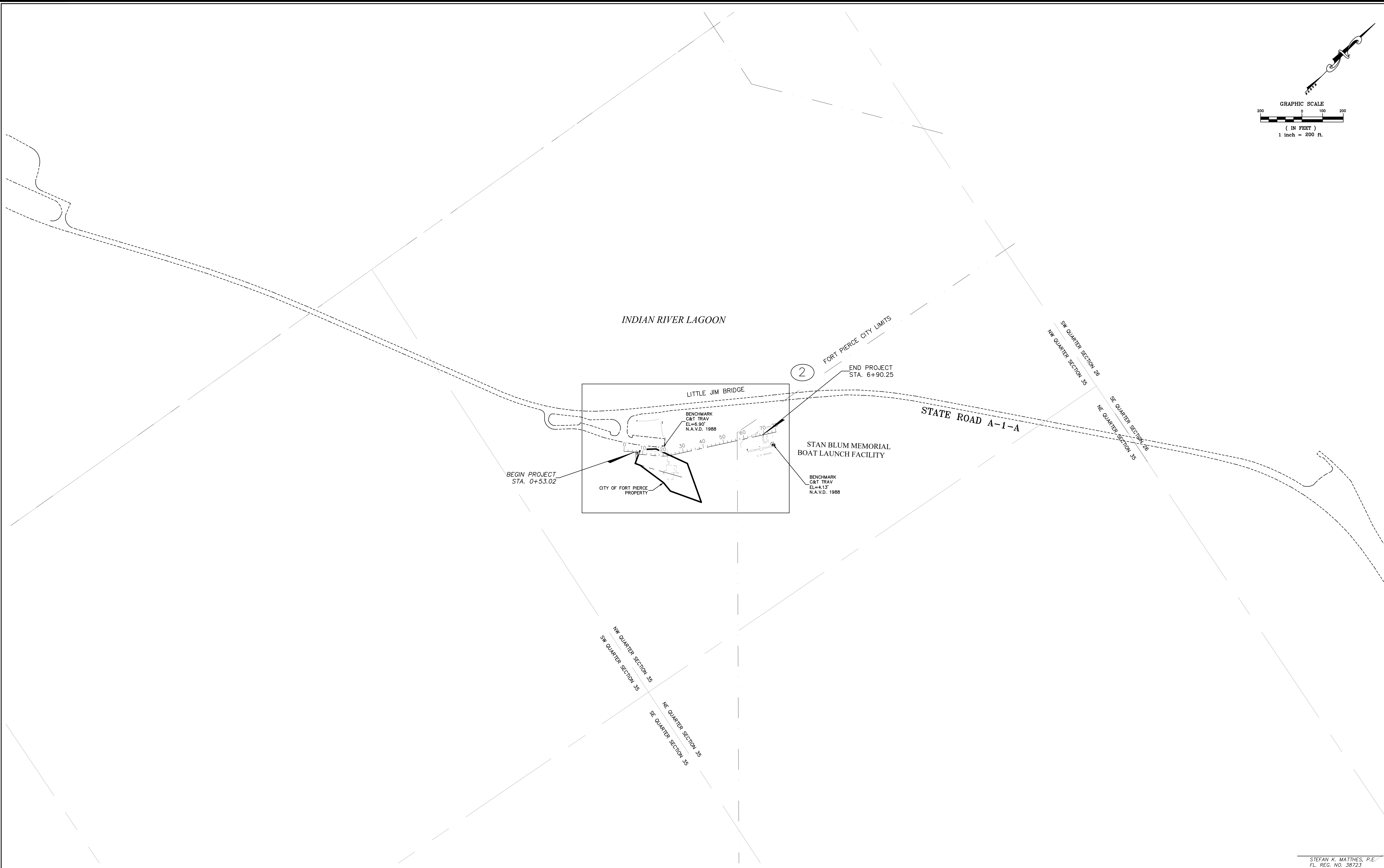
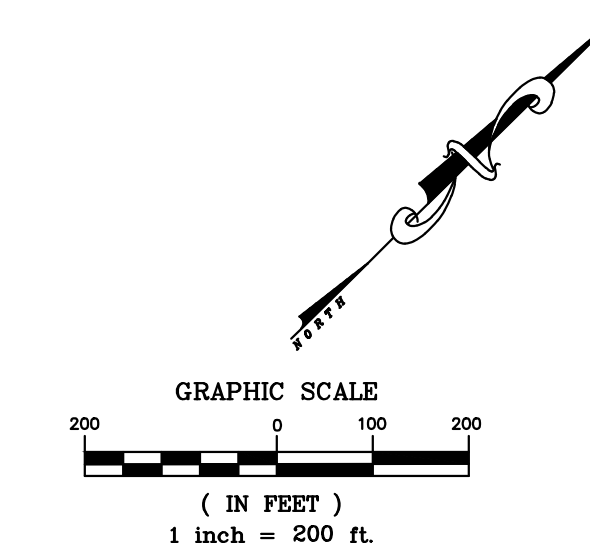
P.E. NO. : 38723

PROJECT MANAGER: JOHN R ANDREWS

BID PLAN SET
SEPTEMBER 4, 2024

C&T JOB NO.: 21-122

FISCAL YEAR	SHEET NO.
24	1




P:\Proj-2021\21-122 COFP - Little Jim Camp Sanitary Connection\Eng\21-1-122 Base.dwg Plotted: 9/4/2024 2:14 PM By: KITHSIRI UDUGAMA

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COMPUTER FILE REF.	FIELD BK./PG.
21-122 COFP	21-05/72

COMPUTER FILE REF.	FIELD BK./PG.
21-122 COFP	21-05/72



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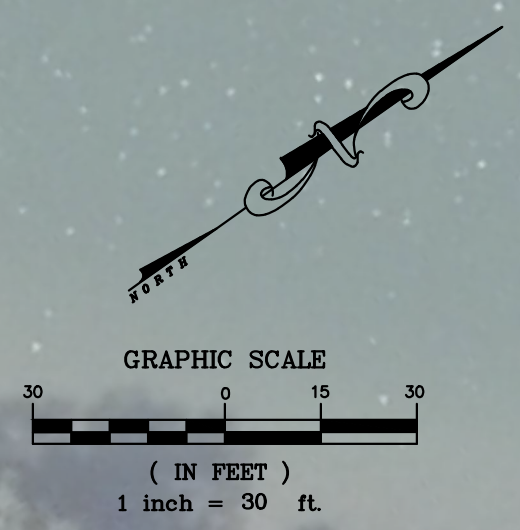
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	BY	DATE
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CALCS.	SKM	2/2/22
DRAWN	KU	9/4/24
DETAILED	----	----
CHECKED	SKM	9/4/24
APPROVED	SKM	9/4/24

LITTLE JIM CAMP SANITARY IMPROVEMENTS

PROJECT LAYOUT

DATE: 9/4/24
HORIZ. SCALE: 1"=200'
VERT. SCALE: N/A
JOB No. 21-122
SHEET 2 of 12



PROJECT END
BORE ENTRY/EXIT POINT:
N: 1144176.34
E: 879216.34


BEGIN PROJECT
STA. 0+53.03
CONST. 8" PLUG
(FUTURE)
BORE ENTRY/EXIT
N: 1143623.52
E: 878952.16

NOTE:
CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL UTILITIES, INCLUDING BUT NOT NECESSARILY LIMITED TO WATER, WASTEWATER, ELECTRICAL, COMMUNICATIONS AND GAS, AND ALL STRUCTURES ABOVE AND BELOW GRADE THROUGHOUT ALL PHASES OF THE PROJECT. CONTRACTOR SHALL LOCATE AND MARK ALL UTILITIES ABOVE AND BELOW GRADE INCLUDING THE PROPOSED POINT OF CONNECTION PRIOR TO CONSTRUCTION.

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21-122 COFF	21-05/72



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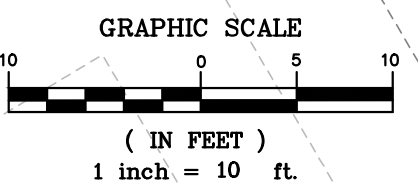
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	BY	DATE
FIELD	SKM	1/20/22
CALCS.	SKM	2/2/22
DRAWN	KU	9/4/24
DETAILED	----	----
CHECKED	SKM	9/4/24
APPROVED	SKM	9/4/24

LITTLE JIM CAMP SANITARY IMPROVEMENTS

MASTER PLAN VIEW

DATE: 9/4/24
HORIZ. SCALE: 1"=30'
VERT. SCALE: N/A
JOB No. 21-122
SHEET 3 of 12



SANITARY STRUCTURE TABLE	
Structure Name	Structure Details
CO-01	RIM = 1.36 NW INV OUT = -2.44 BOT. EL = -2.66
CO-02	RIM = 2.32 W INV OUT = -2.39 BOT. EL = -2.47
LS-01	RIM = 5.50 SW INV IN = -3.61 SE INV OUT = 1.11 BOT. EL = -6.61
SS-01	RIM = 5.50 SW INV IN = -3.00 SE INV IN = -3.48 NE INV OUT = -3.58 BOT. EL = -3.68
SS-02	RIM = 2.50 NE INV IN = -3.17 NW INV OUT = -3.27 BOT. EL = -3.29
SS-03	RIM = 2.50 NE INV IN = -2.89 SW INV OUT = -2.99 BOT. EL = -3.01
SS-04	RIM = 2.44 SW INV OUT = -2.50 BOT. EL = -2.52

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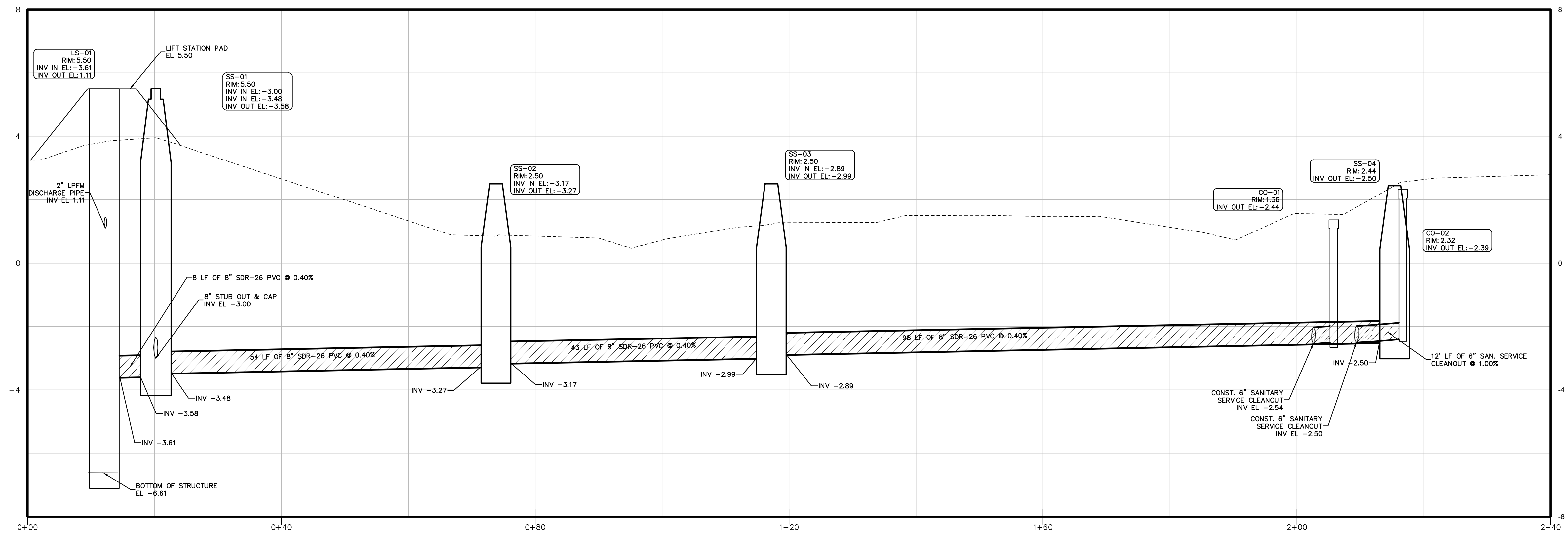
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- REVISIONS -		
	BY	DATE

	BY	DATE
FIELD	SKM	1/20/22
CALCS.	SKM	2/2/22
DRAWN	KU	9/4/24
DETAILED	----	----
CHECKED	SKM	9/4/24
APPROVED	SKM	9/4/24

LITTLE JIM CAMP SANITARY IMPROVEMENTS
SANITARY PLAN VIEW

DATE: 9/4/24
 HORIZ. SCALE: 1"=10'
 VERT. SCALE: N/A
 JOB No. 21-122
 SHEET 4 of 12



HORI. SCALE: 1"=10'
 VET. SCALE: 1"=2'

SANITARY STRUCTURE TABLE	
Structure Name	Structure Details
CO-01	RIM = 1.36 NW INV OUT = -2.44 BOT. EL = -2.66
CO-02	RIM = 2.32 W INV OUT = -2.39 BOT. EL = -2.47
LS-01	RIM = 5.50 SW INV IN = -3.61 SE INV OUT = 1.11 BOT. EL = -6.61
SS-01	RIM = 5.50 SW INV IN = -3.00 SE INV IN = -3.48 NE INV OUT = -3.58 BOT. EL = -3.68
SS-02	RIM = 2.50 NE INV IN = -3.17 NW INV OUT = -3.27 BOT. EL = -3.29
SS-03	RIM = 2.50 NE INV IN = -2.99 SW INV OUT = -2.99 BOT. EL = -3.01
SS-04	RIM = 2.44 SW INV OUT = -2.50 BOT. EL = -2.52

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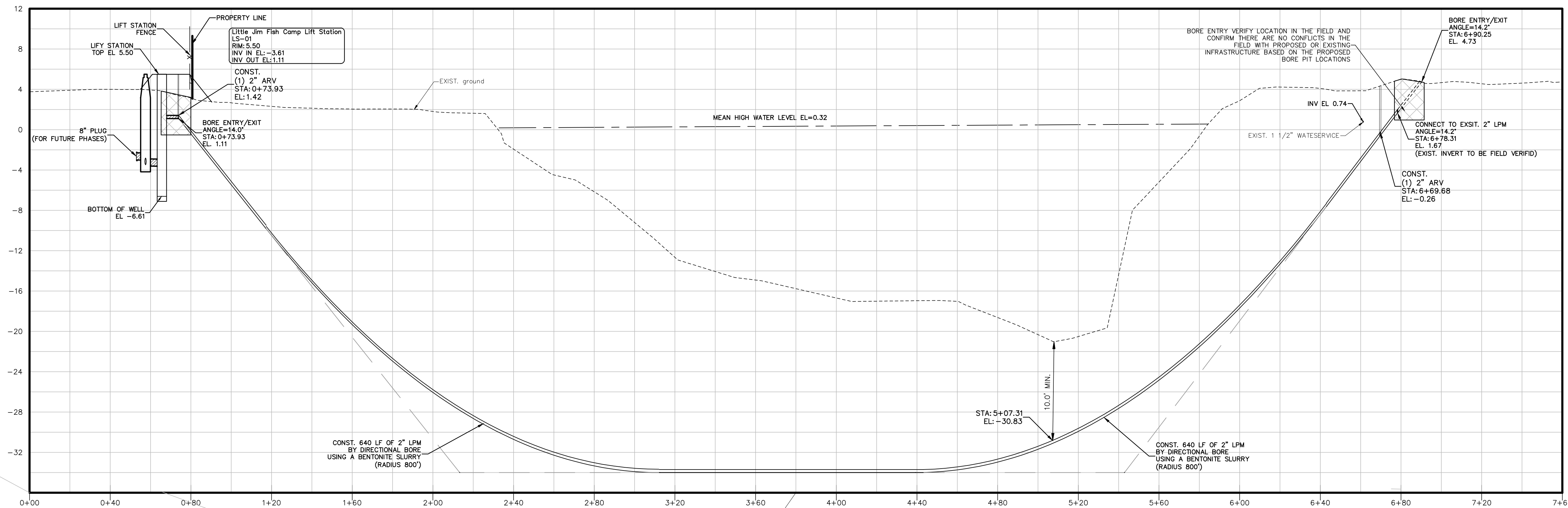
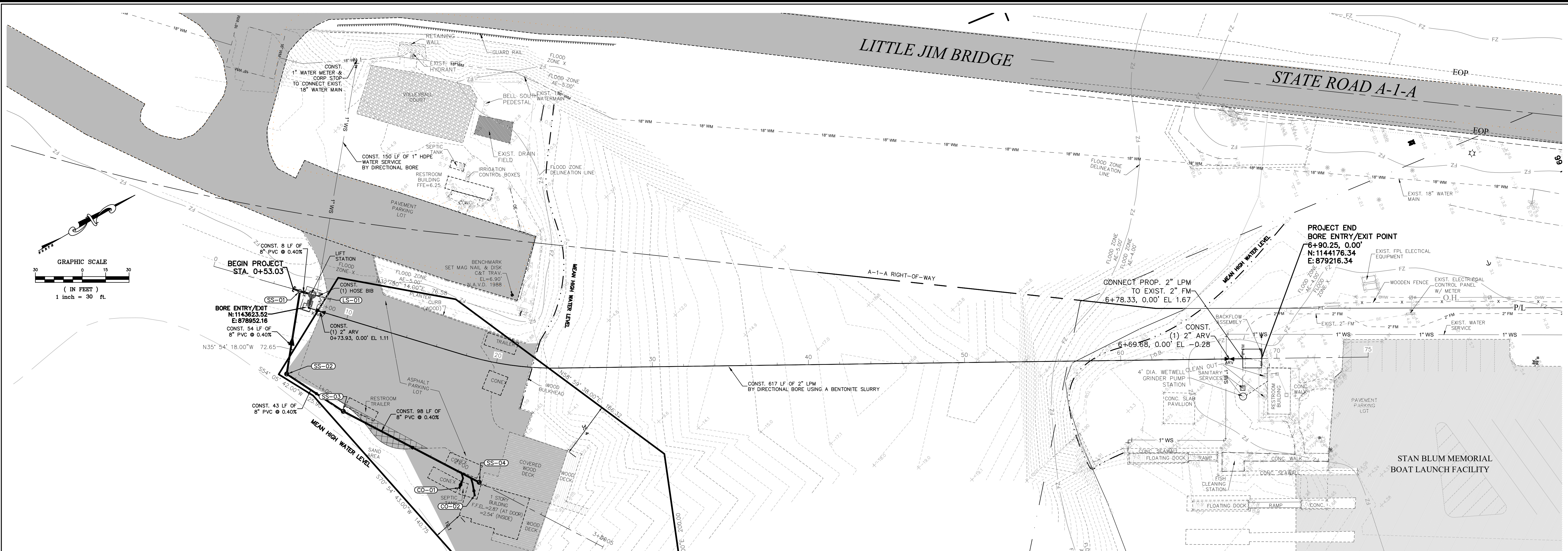
COMPUTER FILE REF.	FIELD BK./PG.
21-122 COFF	21-05/72

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- REVISIONS -		BY	DATE

	BY	DATE
FIELD	SKM	1/20/22
CALCS.	SKM	2/2/22
DRAWN	KU	9/4/24
DETAILED	----	----
CHECKED	SKM	9/4/24
APPROVED	SKM	9/4/24

LITTLE JIM CAMP SANITARY IMPROVEMENTS
SANITARY PROFILE VIEW



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COMPUTER FILE REF. 21-122 COFF	FIELD BK./PG. 21-05/72

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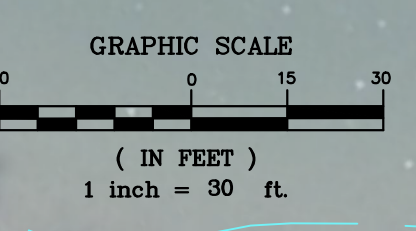
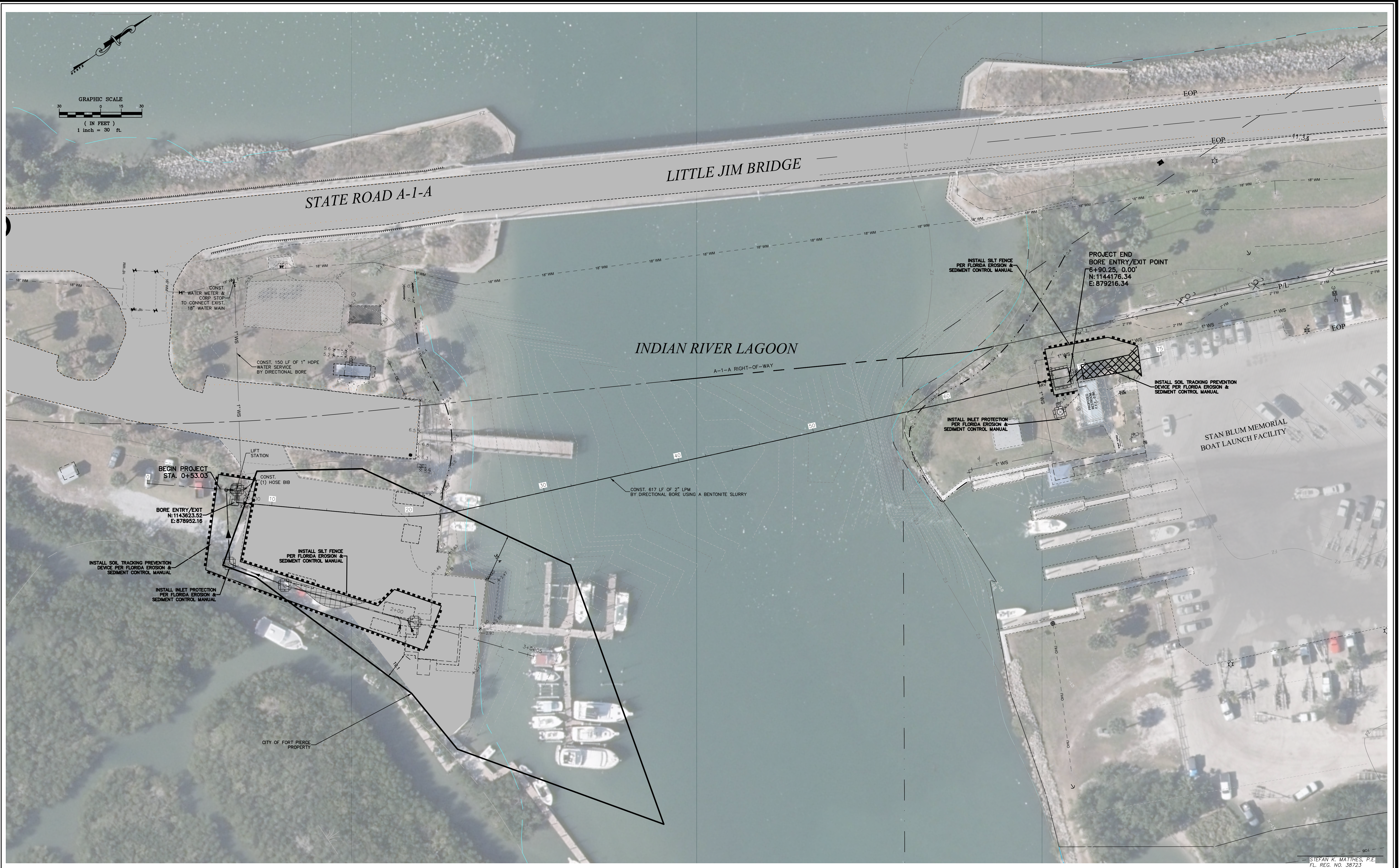
- REVISIONS -		
	BY	DATE

	BY	DATE
FIELD	SKM	1/20/22
CALCS.	SKM	2/2/22
DRAWN	KU	9/4/24
CHECKED	SKM	9/4/24
APPROVED	SKM	9/4/24

LITTLE JIM CAMP SANITARY IMPROVEMENTS
DIRECTIONAL BORE PLAN & PROFILE VIEW


DATE: 9/4/24
HORIZ. SCALE: 1"=30'
VERT. SCALE: 1"=6'
JOB No. 21-122
SHEET 6 of 12

STEFAN K. MATTHEWS, P.E.
FL. REG. NO. 38723



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COMPUTER FILE REF. 21-122 COFP	FIELD BK./PG. 21-05/72



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- REVISIONS -		BY	DATE

	BY	DATE
FIELD	SKM	1/20/22
CALCS.	SKM	2/2/22
DRAWN	KU	9/4/24
DETAILED	----	----
CHECKED	SKM	9/4/24
APPROVED	SKM	9/4/24

LITTLE JIM CAMP SANITARY IMPROVEMENTS

SWPP PLAN

DATE: 9/4/24
HORIZ. SCALE: 1"=30'
VERT. SCALE: N/A
JOB No. 21-122
SHEET 7 of 12

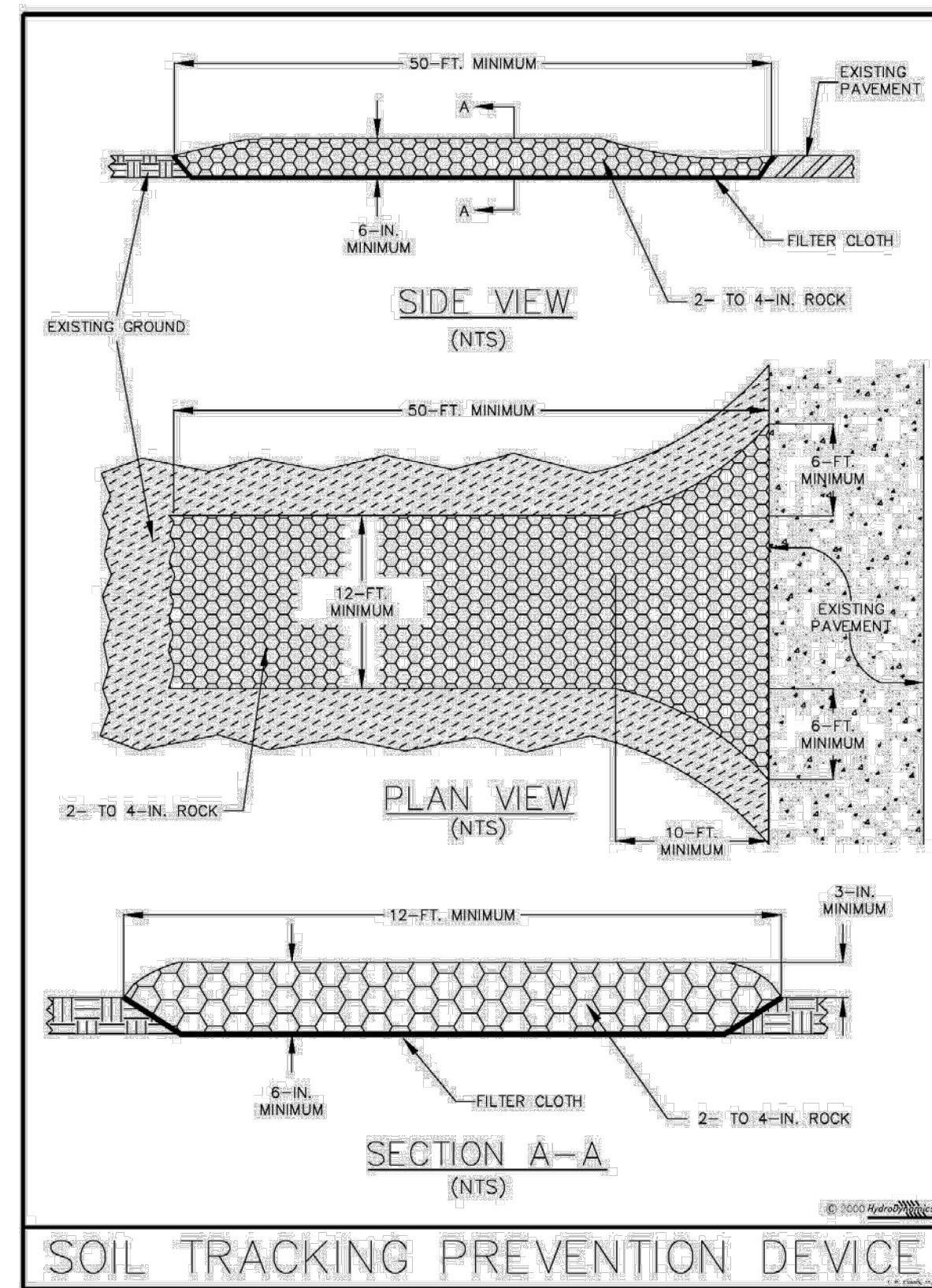


Figure V-14: Illustration of a Soil Tracking Prevention Device

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V-31

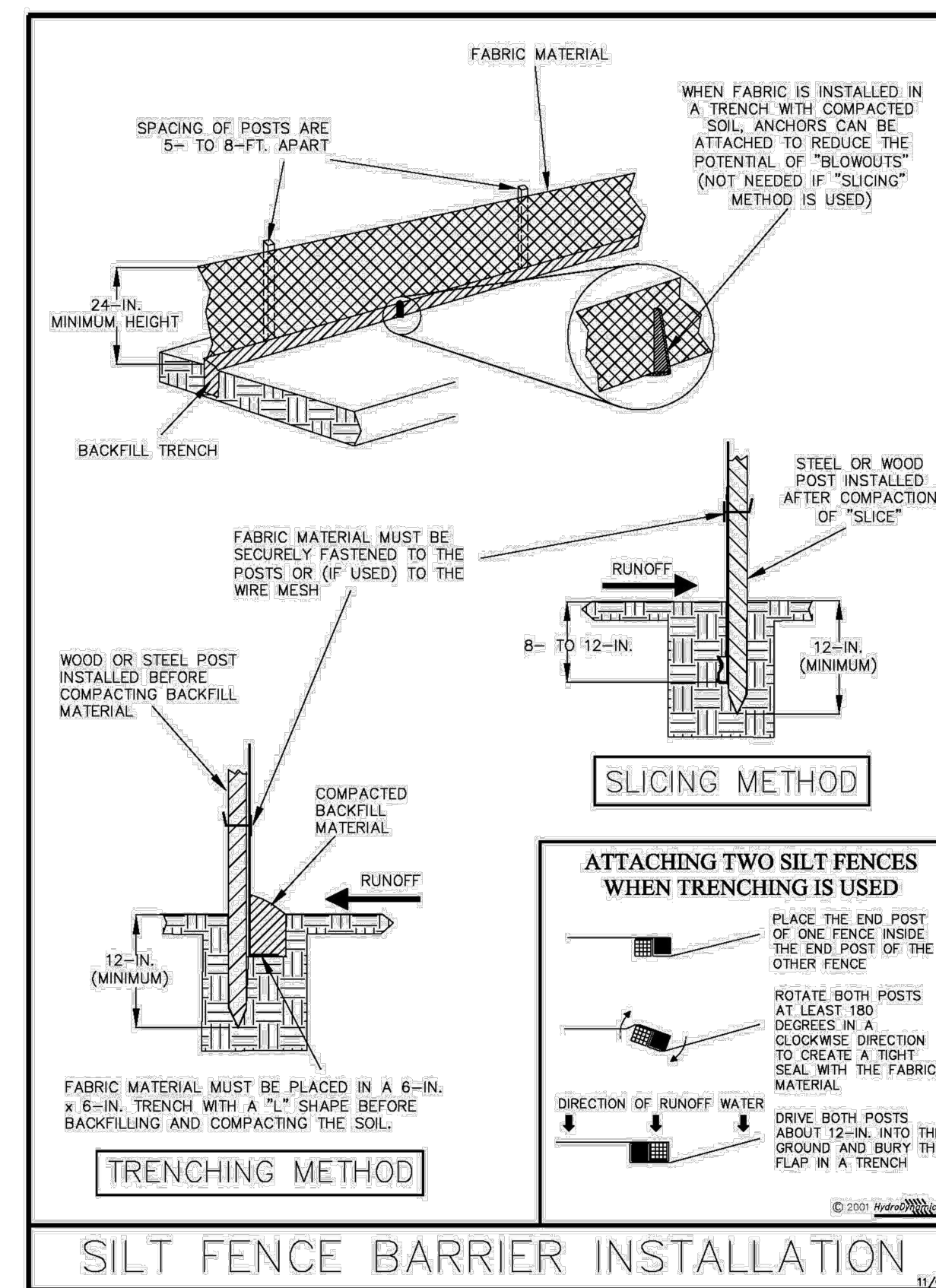


Figure V-40: Illustration of a Silt Fence Barrier

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V-7

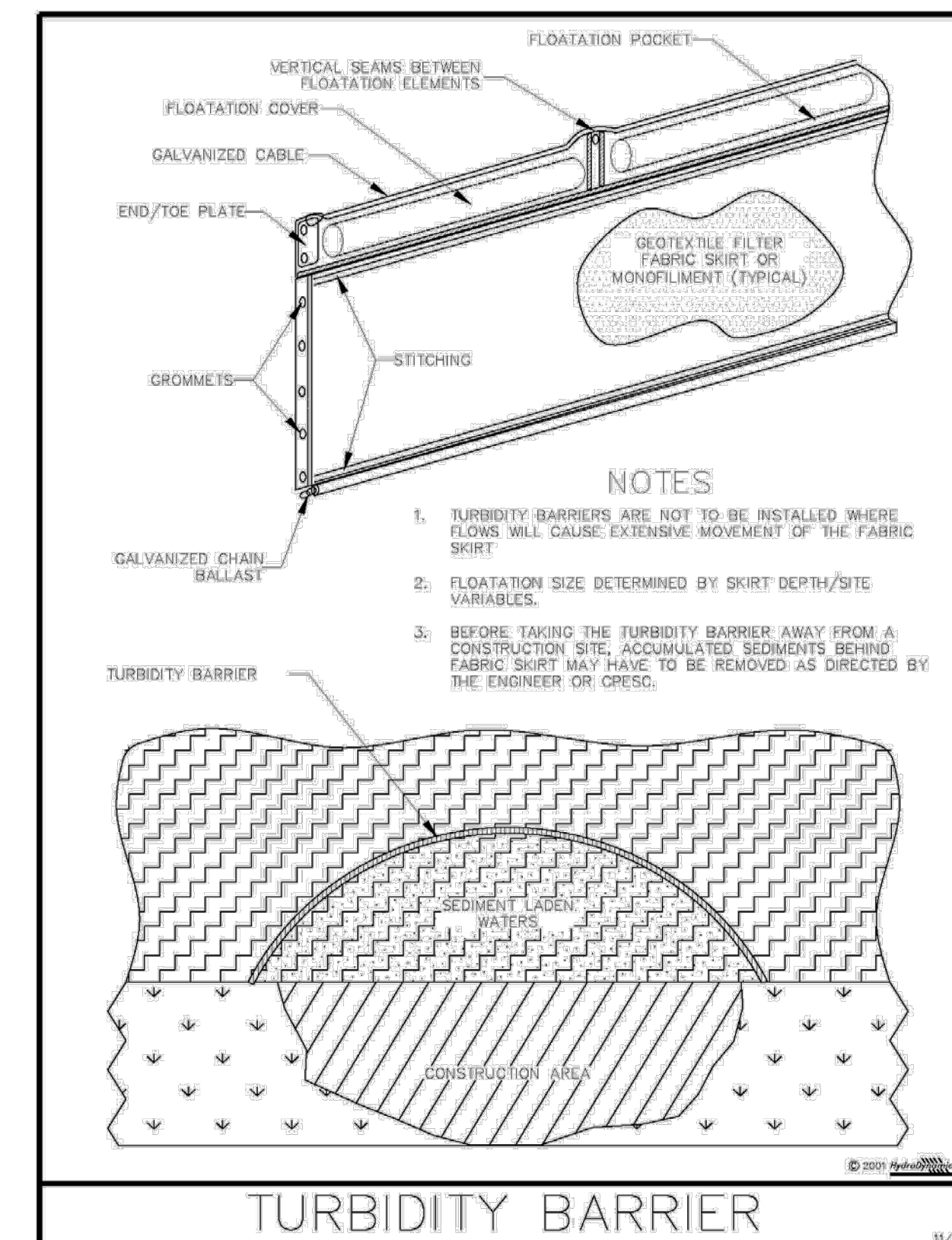


Figure V-6: Illustration of a Turbidity Barrier Curtain

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V-15

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21-122 COFF	21-05/72

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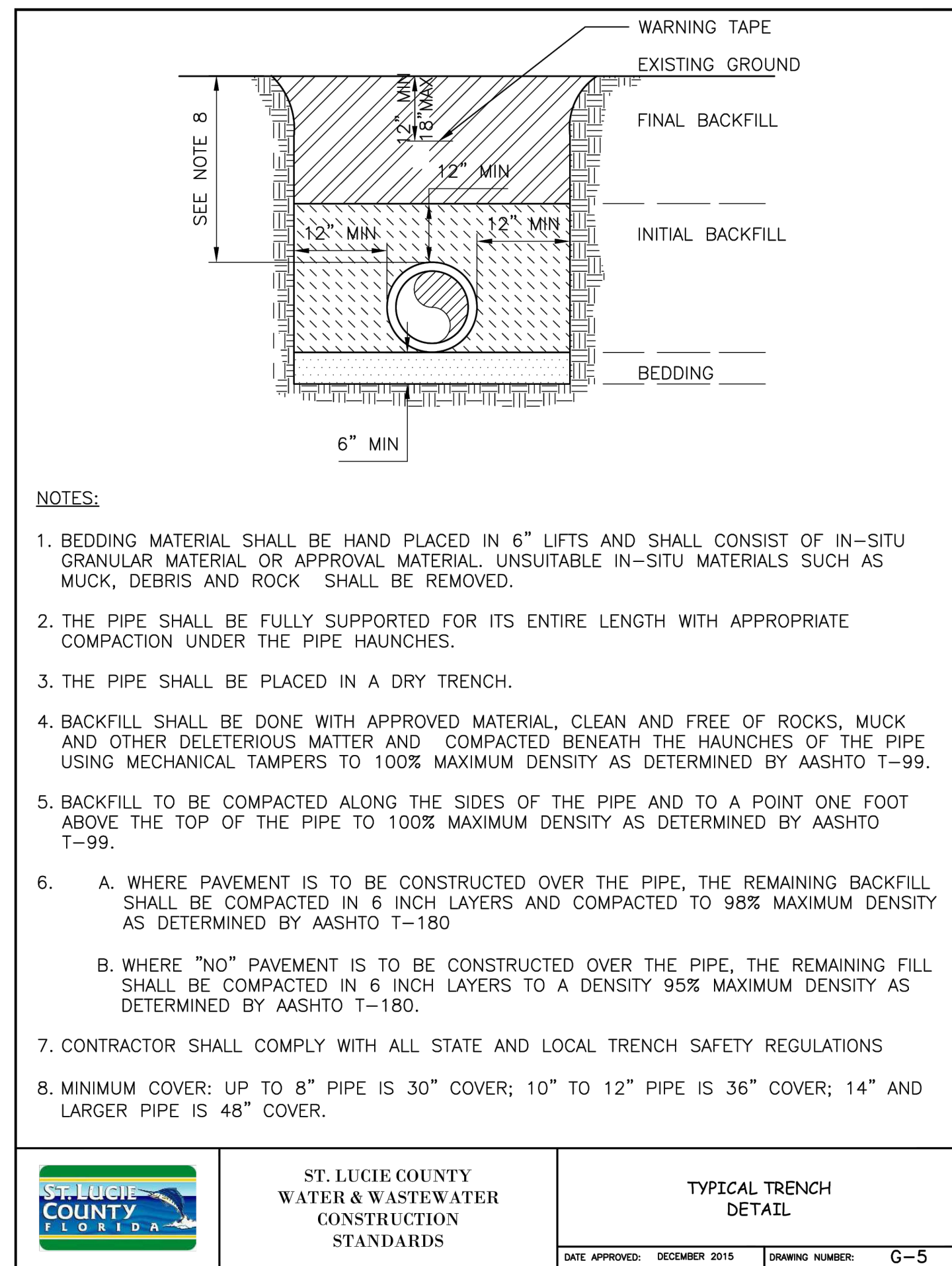
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	BY	DATE
FIELD	SKM	1/20/22
CALCS.	SKM	2/2/22
DRAWN	KU	9/4/24
DETAILED	----	----
CHECKED	SKM	9/4/24
APPROVED	SKM	9/4/24

LITTLE JIM CAMP SANITARY IMPROVEMENTS

SWPP DETAILS

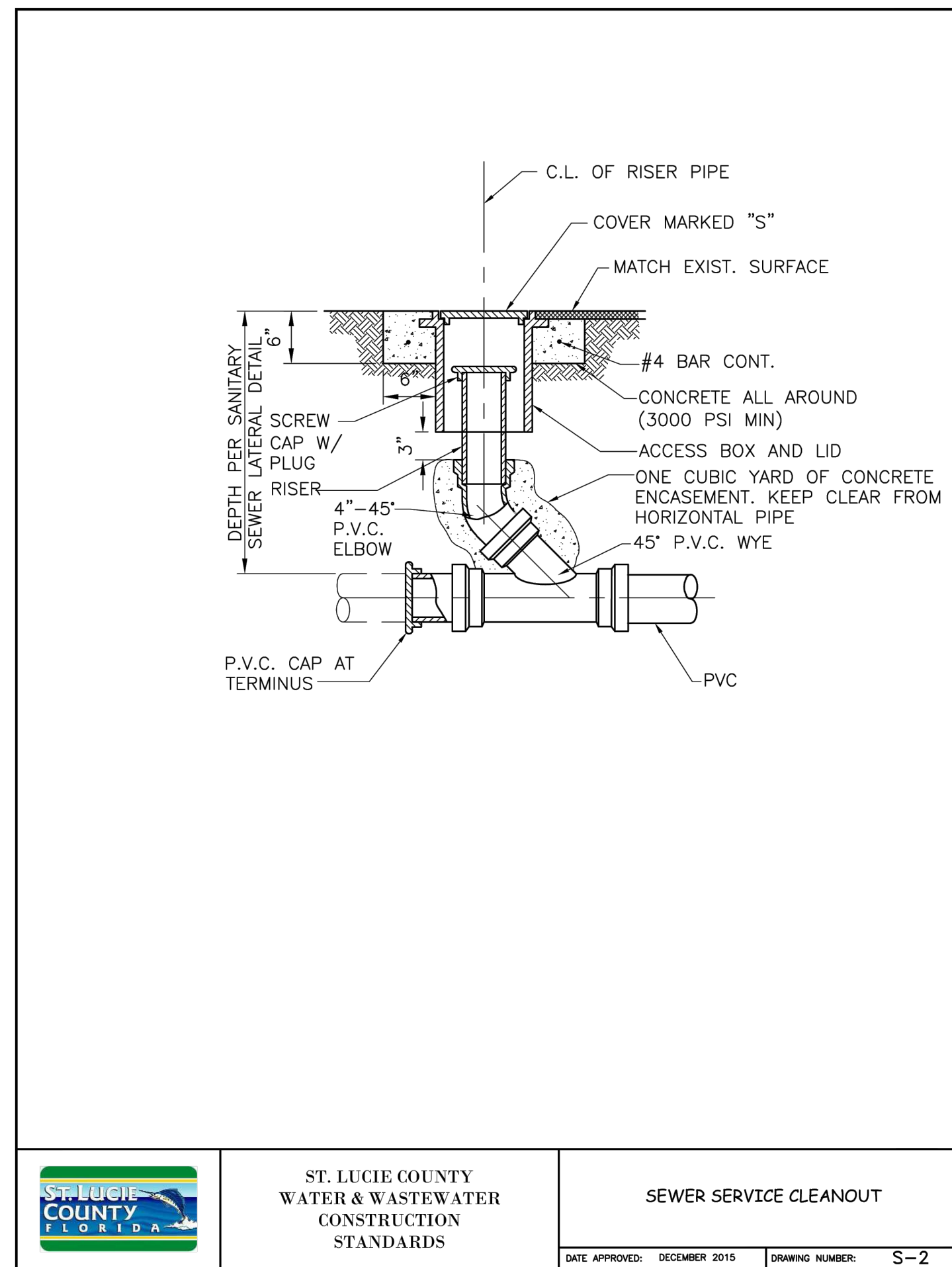
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HORIZ. SCALE: N/A
VERT. SCALE: N/A
JOB No. 21-122
SHEET 8 of 12



ST. LUCIE COUNTY WATER & WASTEWATER CONSTRUCTION STANDARDS

TYPICAL TRENCH DETAIL

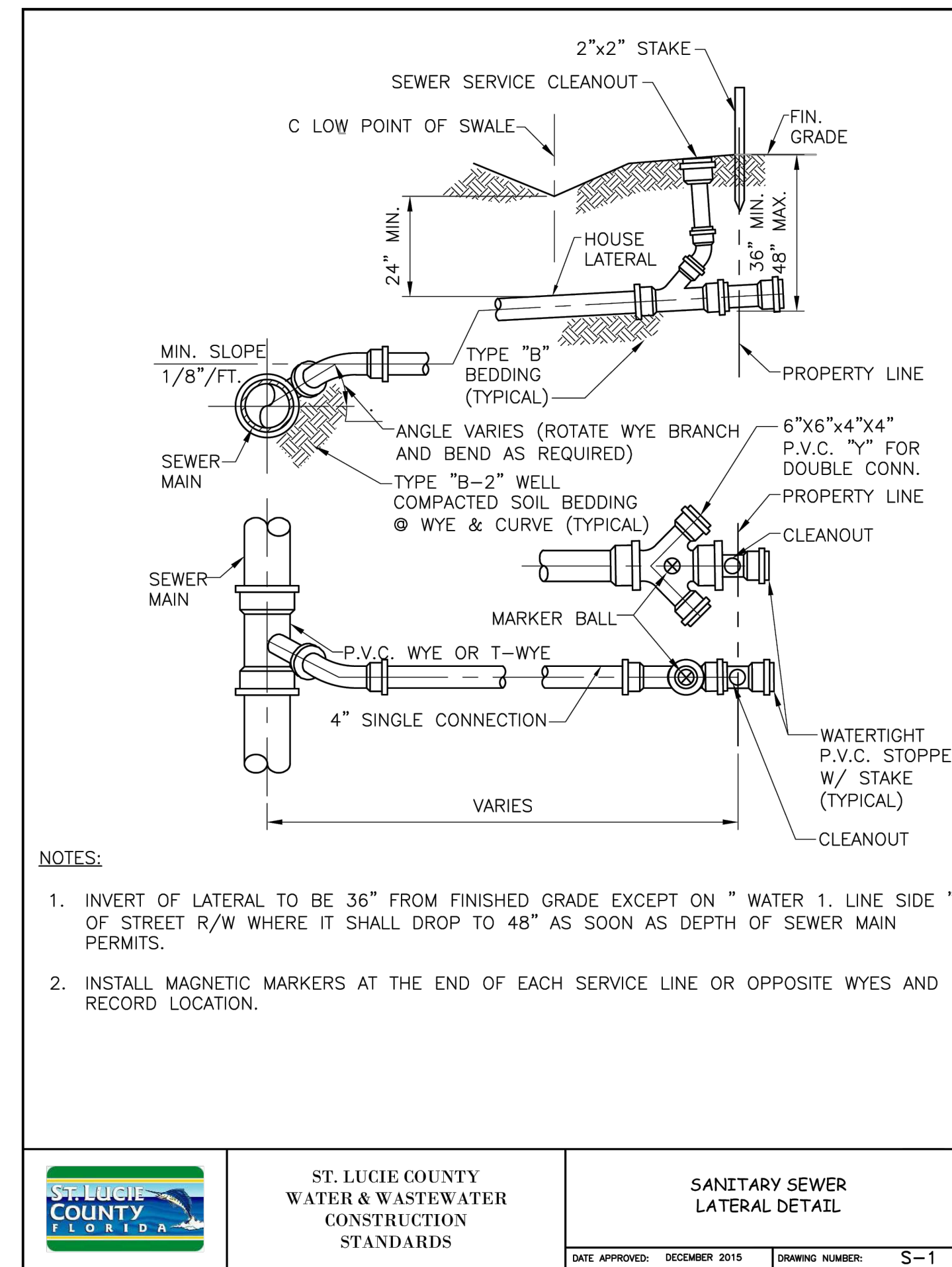
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ST. LUCIE COUNTY WATER & WASTEWATER CONSTRUCTION STANDARDS

SEWER SERVICE CLEANOUT

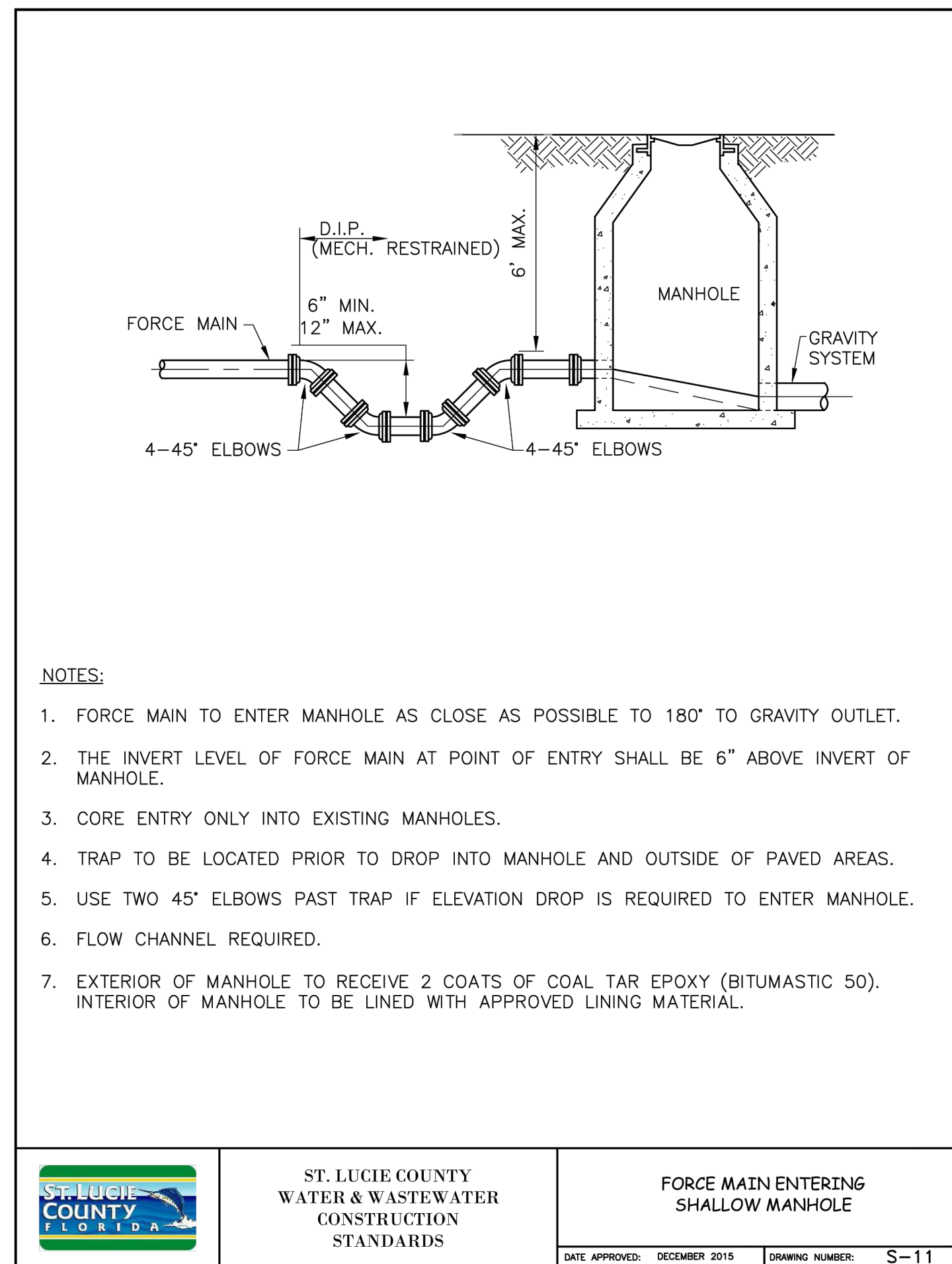
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ST. LUCIE COUNTY WATER & WASTEWATER CONSTRUCTION STANDARDS

SANITARY SEWER LATERAL DETAIL

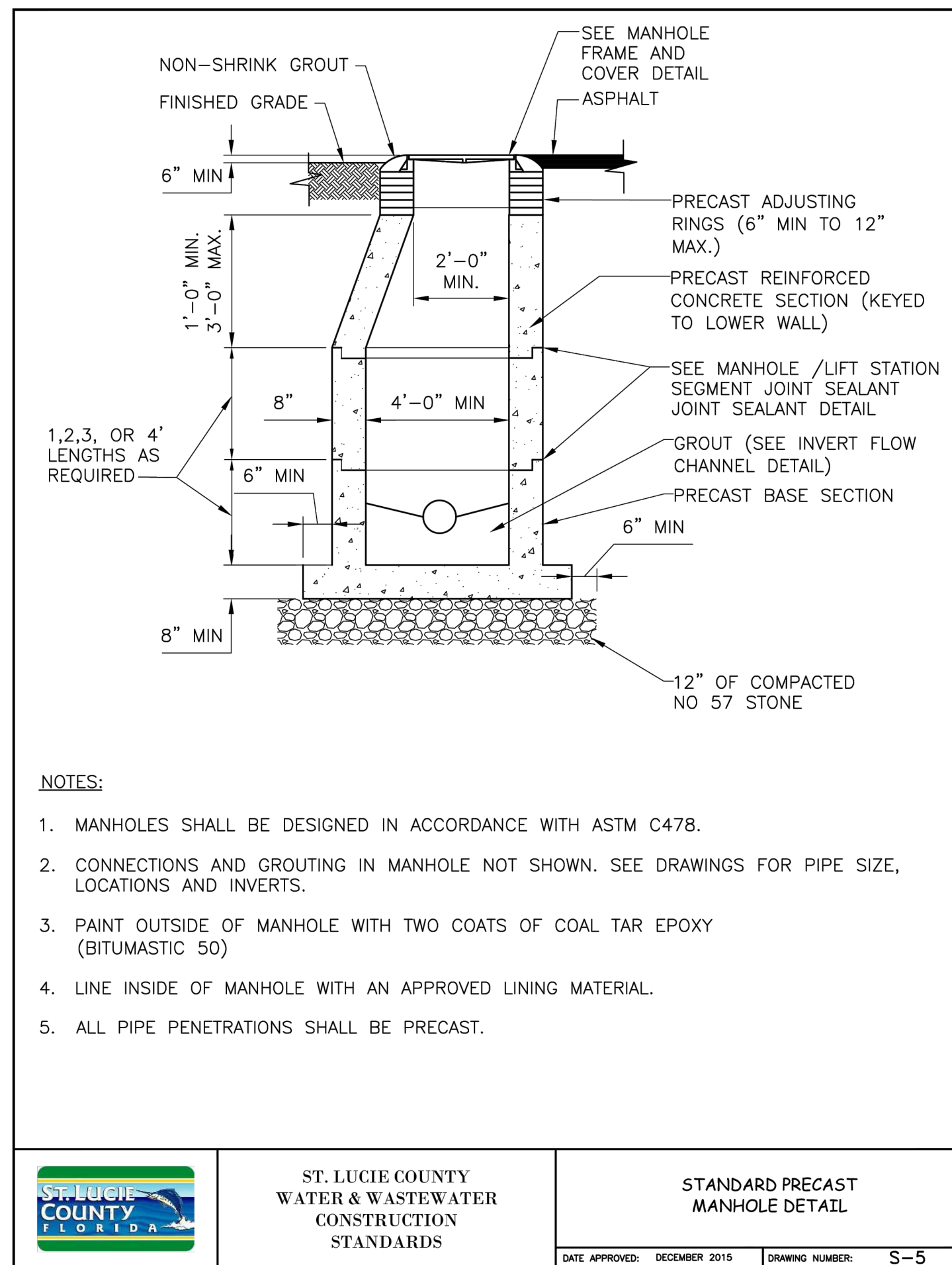
DATE APPROVED: DECEMBER 2015 DRAWING NUMBER: S-1



ST. LUCIE COUNTY WATER & WASTEWATER CONSTRUCTION STANDARDS

FORCE MAIN ENTERING SHALLOW MANHOLE

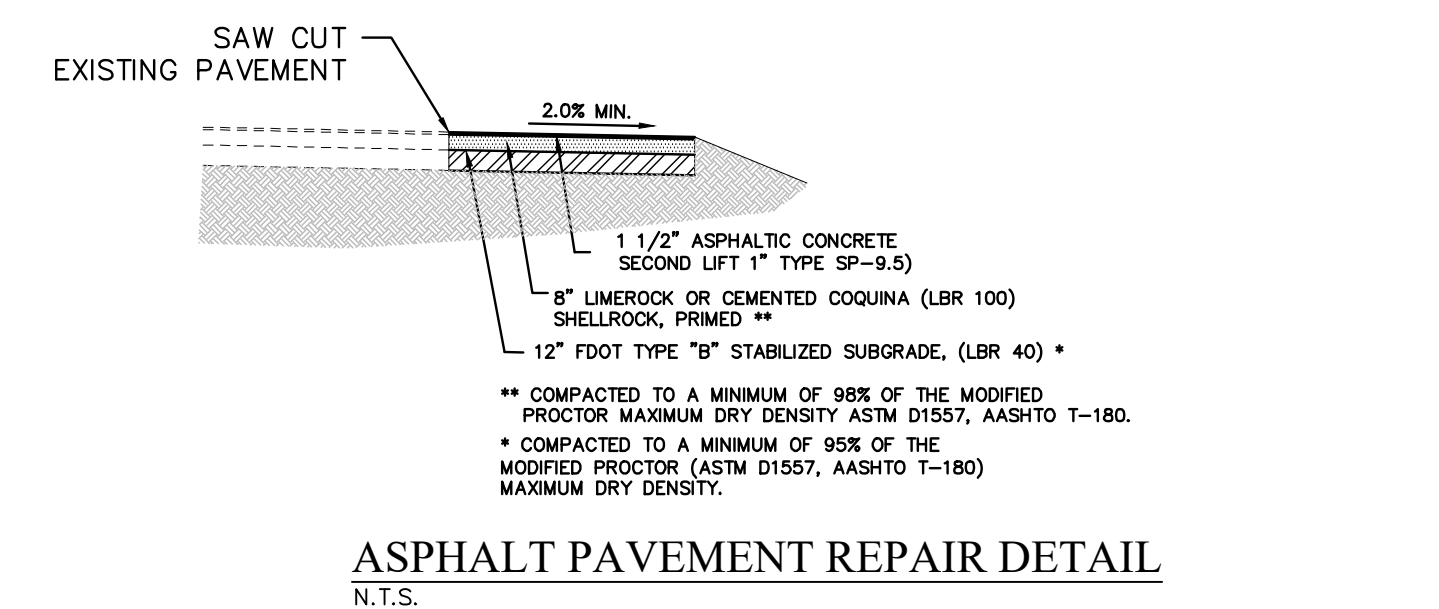
DATE APPROVED: DECEMBER 2015 DRAWING NUMBER: S-11



ST. LUCIE COUNTY WATER & WASTEWATER CONSTRUCTION STANDARDS

STANDARD PRECAST MANHOLE DETAIL

DATE APPROVED: DECEMBER 2015 DRAWING NUMBER: S-5



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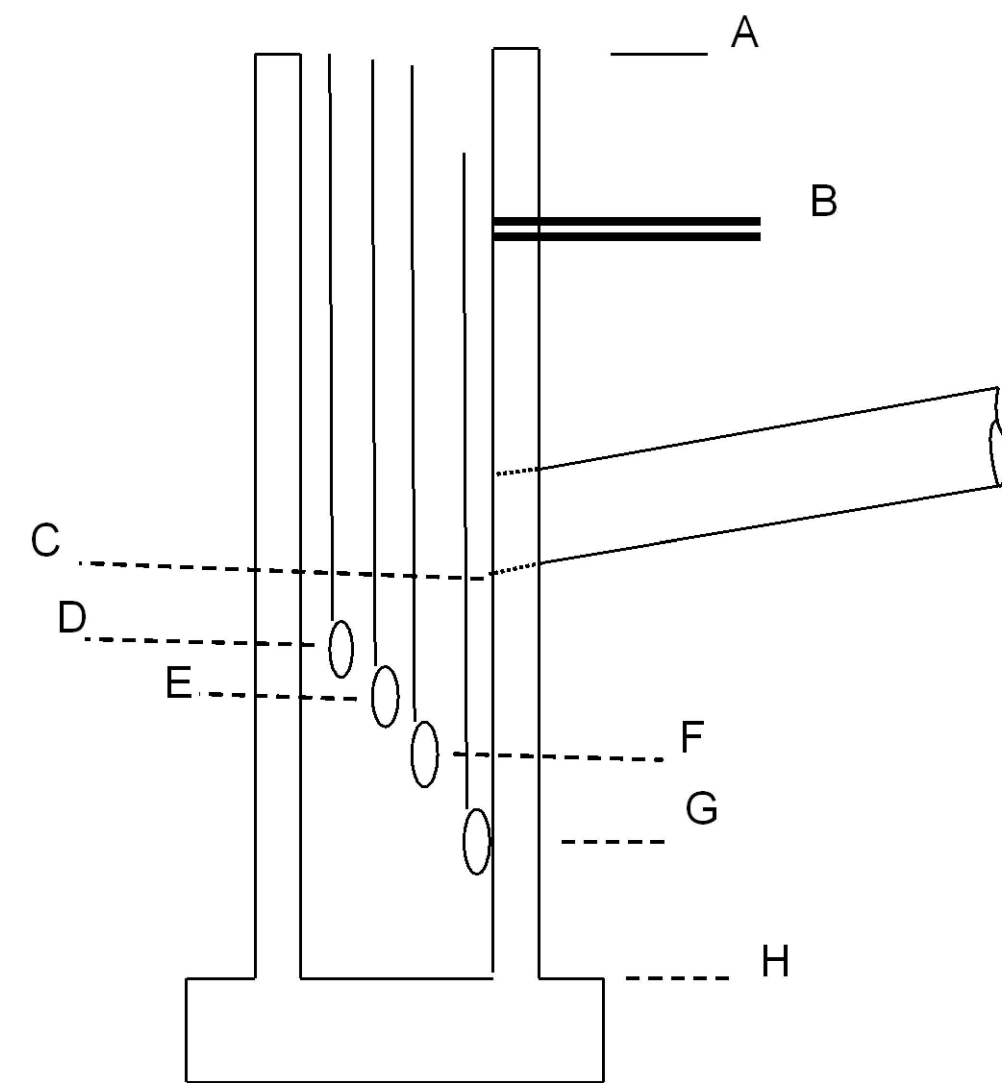
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	BY	DATE
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DRAWN	KU	9/4/24
DETAILED	----	----
CHECKED	SKM	9/4/24
APPROVED	SKM	9/4/24

LITTLE JIM CAMP SANITARY IMPROVEMENTS

UTILITY DETAILS

DATE: 9/4/24
HORIZ. SCALE: N/A
VERT. SCALE: N/A
JOB No. 21-122
SHEET 9 of 12



Pumps:	YEAR 2024
Make	Starnes
Model	SGVF202L
HP	2 HP
Impeller	5.13"
Voltage	200
Phase	1 (Single)
RPM	3450
Shutoff Head	101
Discharge Dia.	1.25"
FLA	17
Locked Rotor Amps	53
Start Up Amps	

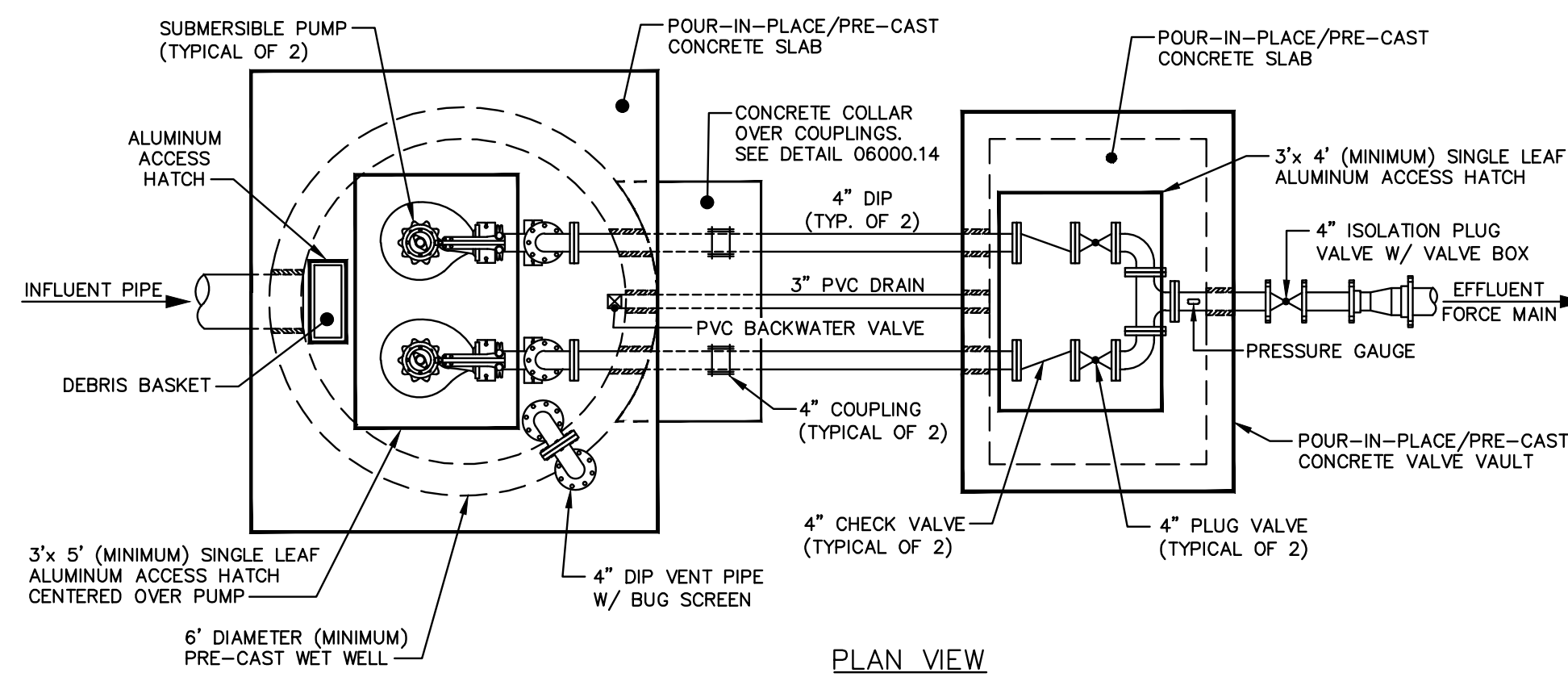
Proposed Lift Station Elevations		
Elevation	Description	Elevation (ft)
A	Rim	5.5
FZ	SHT 4 of 9, Flood Zone X Flood Zone AE shown as Elev. 5.0	5.00
MHWL	SHT 4 of 9, Mean High Water Level Est. 09-23-21	0.32
Grade	Existing Grade at Pump Station	3.68
B	Discharge (LPFM)	1.11
C	Influent from SS-01	-3.61
D	High Water Alarm	-4.11
E	Lag Pump ON	-4.61
F	Lag Pump ON	-5.11
G	Pumps Off	-5.61
H	Bottom Wet Well	-6.61

Proposed SS-01 Drains to Proposed Little Jim FC Lift Station, Elevations per Plan Set		
Elevation	Description	Elevation (ft)
A	Grinder Station Rim	5.5
B	Rim Manhole SS-01	5.5
C	Inv. Manhole SS-01 (approx)	-2.08
D	Inv. Into MH SS-01 from SS-02	-1.98
E	Inv. Existing MH SS-01	
F	Prop Inv into LS	-3.58
G		
H		
I		

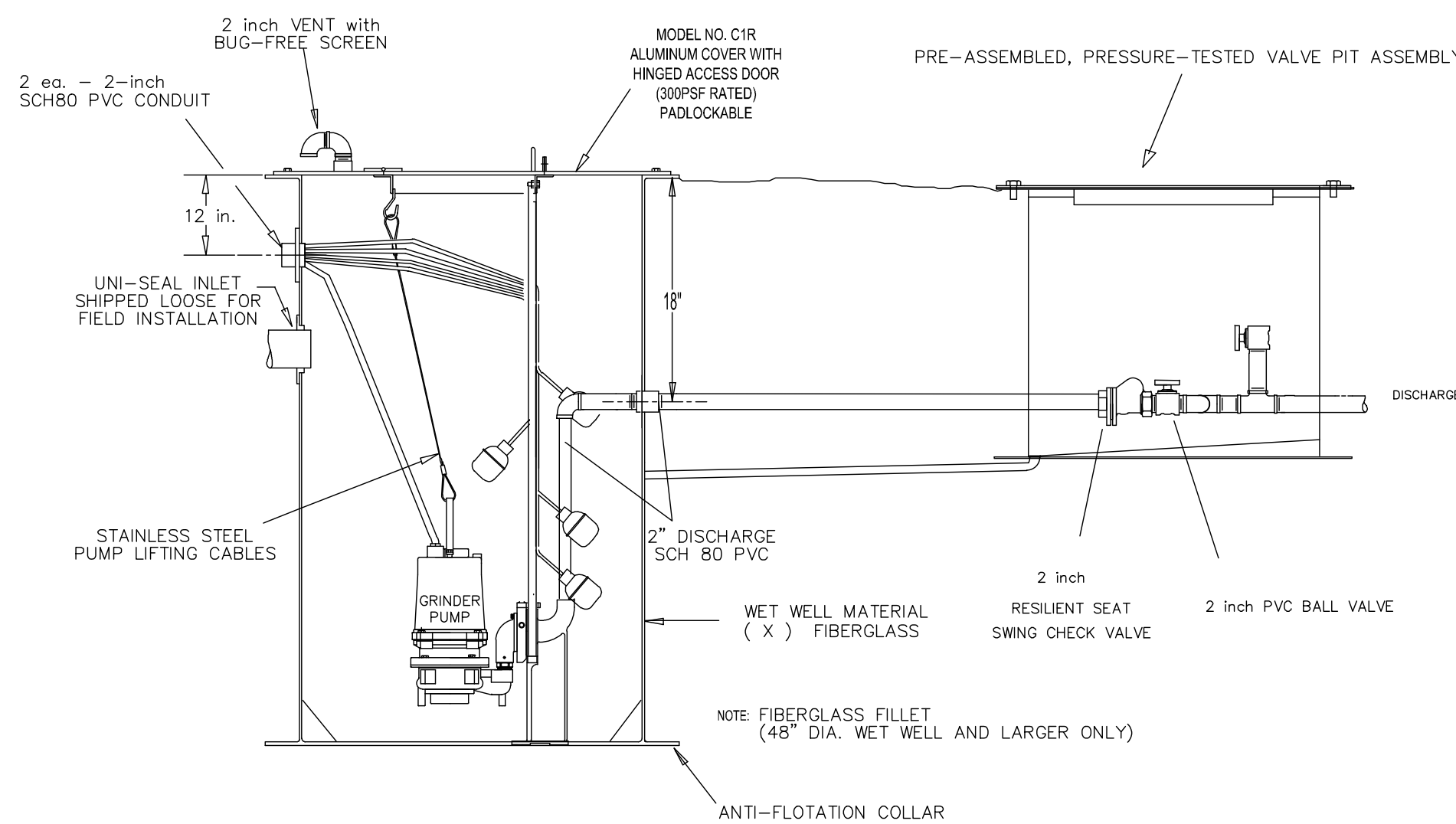
DESIGN AND COMPLIANCE NOTES

- SYSTEM SPECIFIED THIS PAGE COMPLIES WITH THE FOLLOWING REFERENCE STANDARDS:
 - FLORIDA ADMINISTRATIVE CODE (FAC) CHAPTER 62-604 "COLLECTION SYSTEMS AND TRANSMISSION FACILITIES" AND ALL RELATED AND CROSS REFERENCED STANDARDS
 - NFPA 820
 - RECOMMENDED STANDARDS FOR WASTEWATER FACILITIES (TEN STATES STANDARDS).
- PUMPS SHALL BE SUITABLE FOR HAZARDOUS LOCATIONS CLASS I, GROUP D, DIVISION 1 <or> DIVISION 2 (AS CATEGORIZED BY NFPA 820).
- CONTROL PANELS SHALL BE U.L. LISTED PER 698A FOR OPERATING MOTORS LOCATED WITHIN CLASS I, GROUP D LOCATION.
- WET WELL TOP AND CONTROLS MUST BE APPROPRIATELY LOCATED ABOVE THE 25 YEAR AND 100 YEAR FLOOD ELEVATIONS, RESPECTIVELY, PER F.A.C. 62-604.400(2)(e).

LITTLE JIM FISH CAMP-LIFT STATION DETAILS

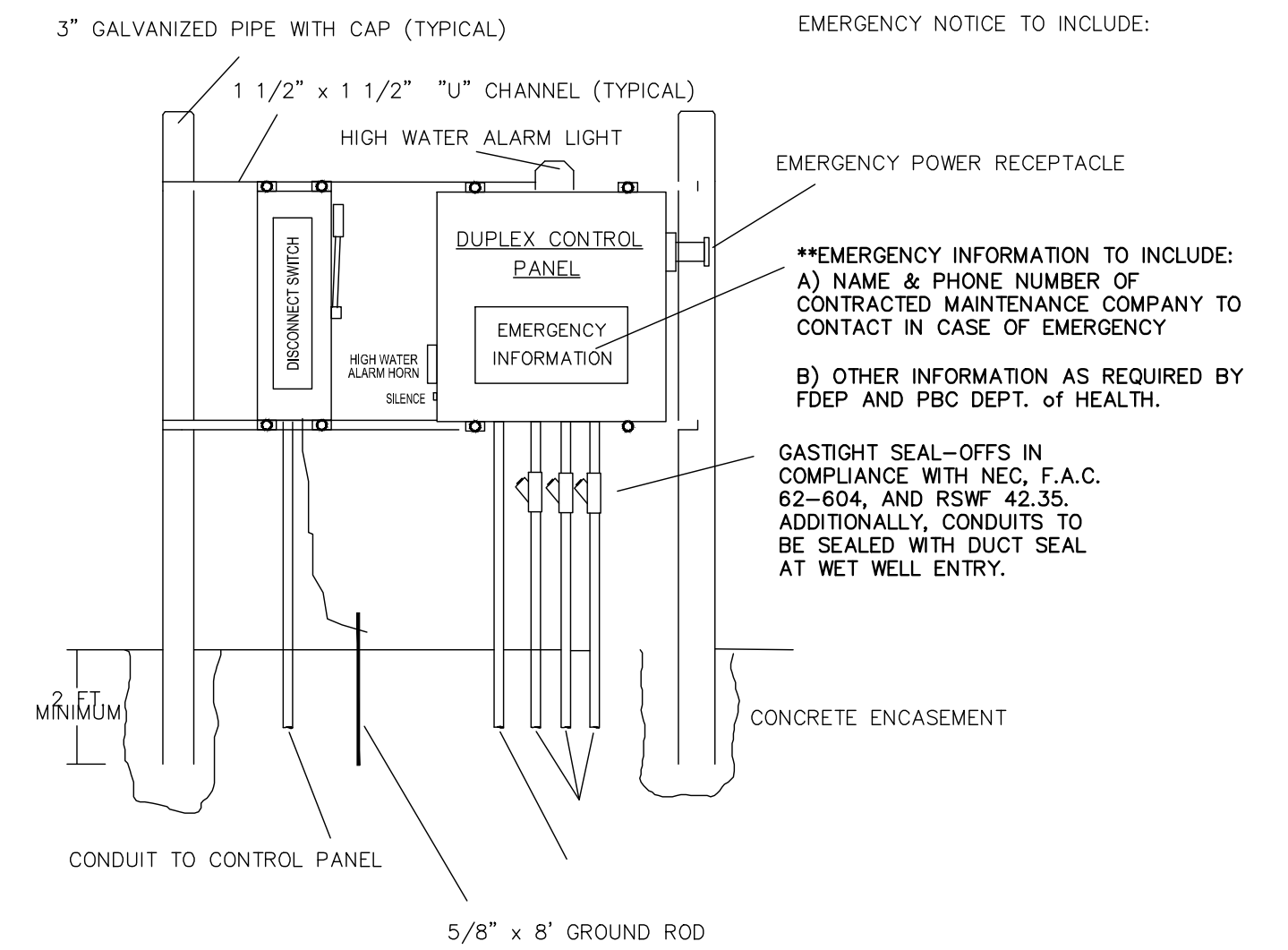


- NOTES:**
- PUMP STATIONS SHALL MEET ALL STATE MINIMUM DESIGN REQUIREMENTS AND BE APPROVED BY THE DIRECTOR OF UTILITIES.
 - WET WELLS SHALL BE EPOXY COATED (80 mils).
 - ALL PIPE AND VALVE SIZES DISPLAYED ARE MINIMUM SIZES, AND THE ACTUAL SIZES WILL BE DETERMINED BY THE HYDRAULIC DESIGN OF A PROFESSIONAL ENGINEER.
 - ISOLATION VALVE WILL BE INCLUDED DOWNSTREAM OF FLOW METER VAULT WHEN A FLOW METER IS REQUIRED.

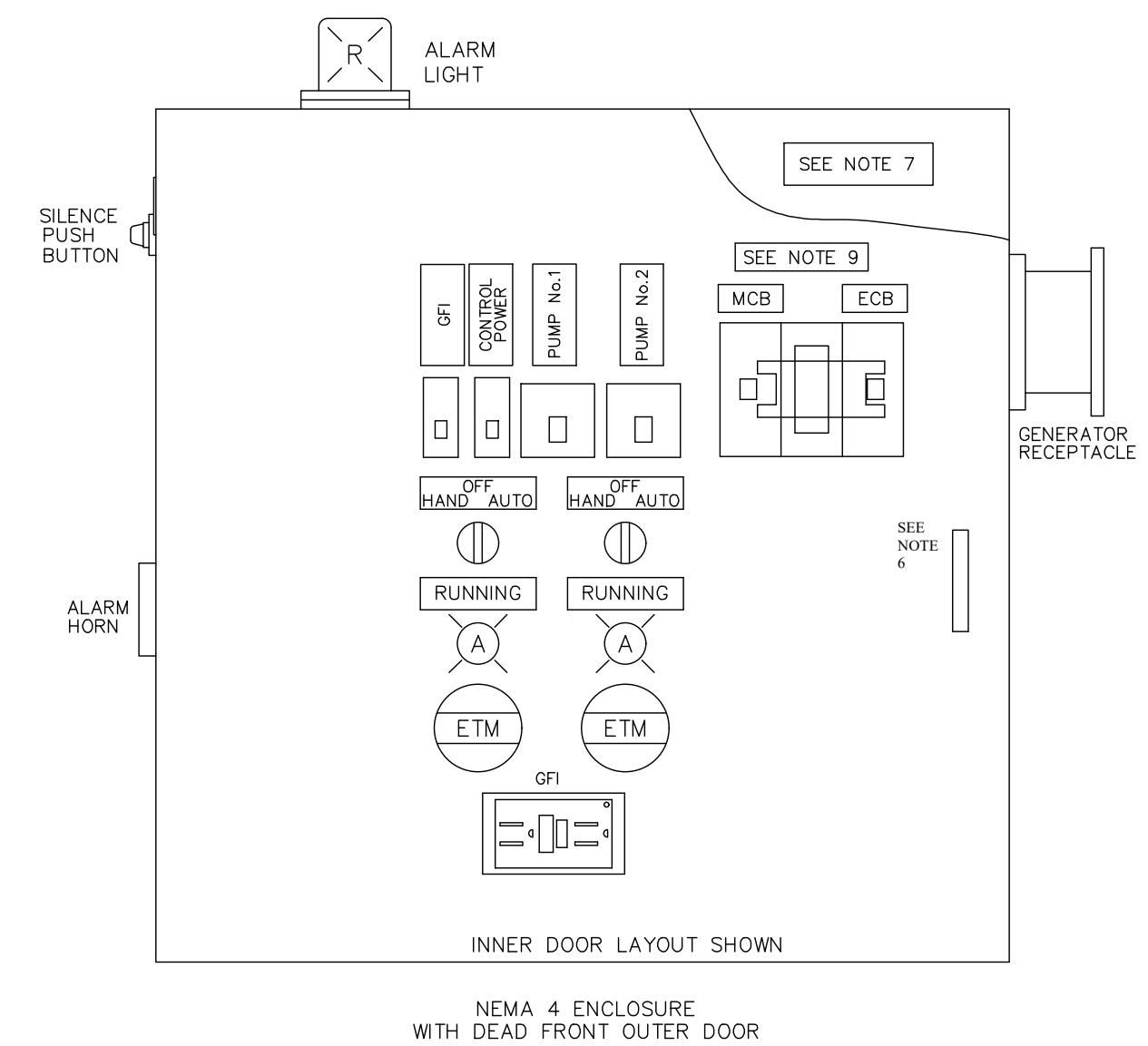


- ASSEMBLED VALVE PIT ASSEMBLY SHALL BE PRESSURE TESTED @150 PSIG FOR MINIMUM 15 MINUTES WITH ZERO LOSS (TEST AGAINST CHECK VALVES AND CLOSED DISCHARGE).
- CHECK VALVES AND ISOLATION VALVES ARE PROVIDED FOR EACH PUMP PER RSWF 42.5 AND FDEP PERMIT ITEM 50.
- VALVE PIT SHALL HAVE ENCLOSED BOTTOM WITH SLOPED FLOOR AND DRAIN LINE RETURNING TO THE WET WELL (COMPLETE WITH P-TRAP ASSEMBLY) PER RSWF 44.33 AND FDEP PERMIT ITEM 70.
- BY-PASS PUMP CONNECTION IS PROVIDED PER FAC 62-604.400(2)(a)(3).
- COVER MUST INCLUDE TAMPER RESISTANT HARDWARE AND PADLOCK.

PRE-ASSEMBLED & PRESSURE TESTED VALVE PIT ASSEMBLY GRINDER PUMP DETAILS



****PROOF OF MAINTENANCE CONTRACT WILL BE REQUIRED PRIOR TO RELEASING LIFT STATION FOR OPERATION.**



- ALL WIRING AND GROUNDING IS TO BE IN ACCORDANCE WITH NEC AND LOCAL CODES.
- WET WELL IS CLASSIFIED AS A CLASS I, GROUP D HAZARDOUS LOCATION. CONDUITS TO/FROM WET WELL MUST INCLUDE SEAL-OFFS, ETC. TO COMPLY WITH NEC AND LOCAL CODES.
- ALL EQUIPMENT GROUNDING TO BE PROVIDED IN ACCORDANCE WITH NEC AND LOCAL CODES.
- ALL PENETRATIONS INTO THE PUMP CONTROL PANEL ARE TO BE MADE IN THE BOTTOM OF THE ENCLOSURE ONLY.
- POWER SERVICE METER CAN (IF PROVIDED) IS TO BE MOUNTED TO THE LEFT OF THE DISCONNECT SWITCH <OR> ON THE "REAR" OF THE EQUIPMENT RACK SHOWN.
- CONTROL PANEL TO INCLUDE LIGHTNING ARRESTOR AND SURGE CAPACITOR IN ACCORDANCE WITH F.A.C. CHAPTER 62-604.400(2)(b).

ALL PRODUCTS SHOWN THIS PAGE ARE AVAILABLE FROM:

SOUTHEASTERN PUMP
 Pompano Beach (800) 396-4182
 Tampa (800) 688-5927
 Jacksonville (904) 425-6931

ELECTRICAL RISER DETAILS

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21-122 COFF	21-05/72

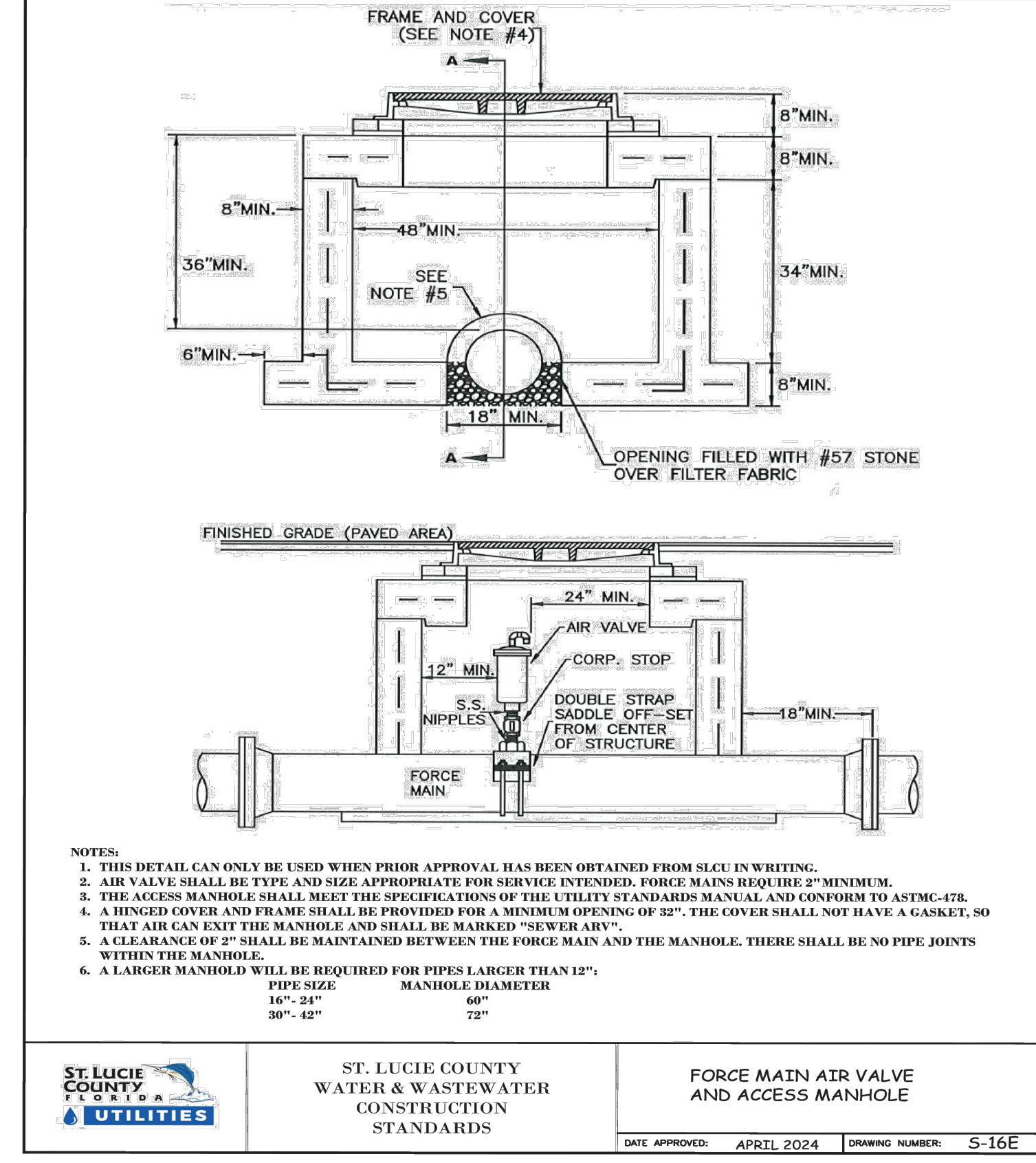
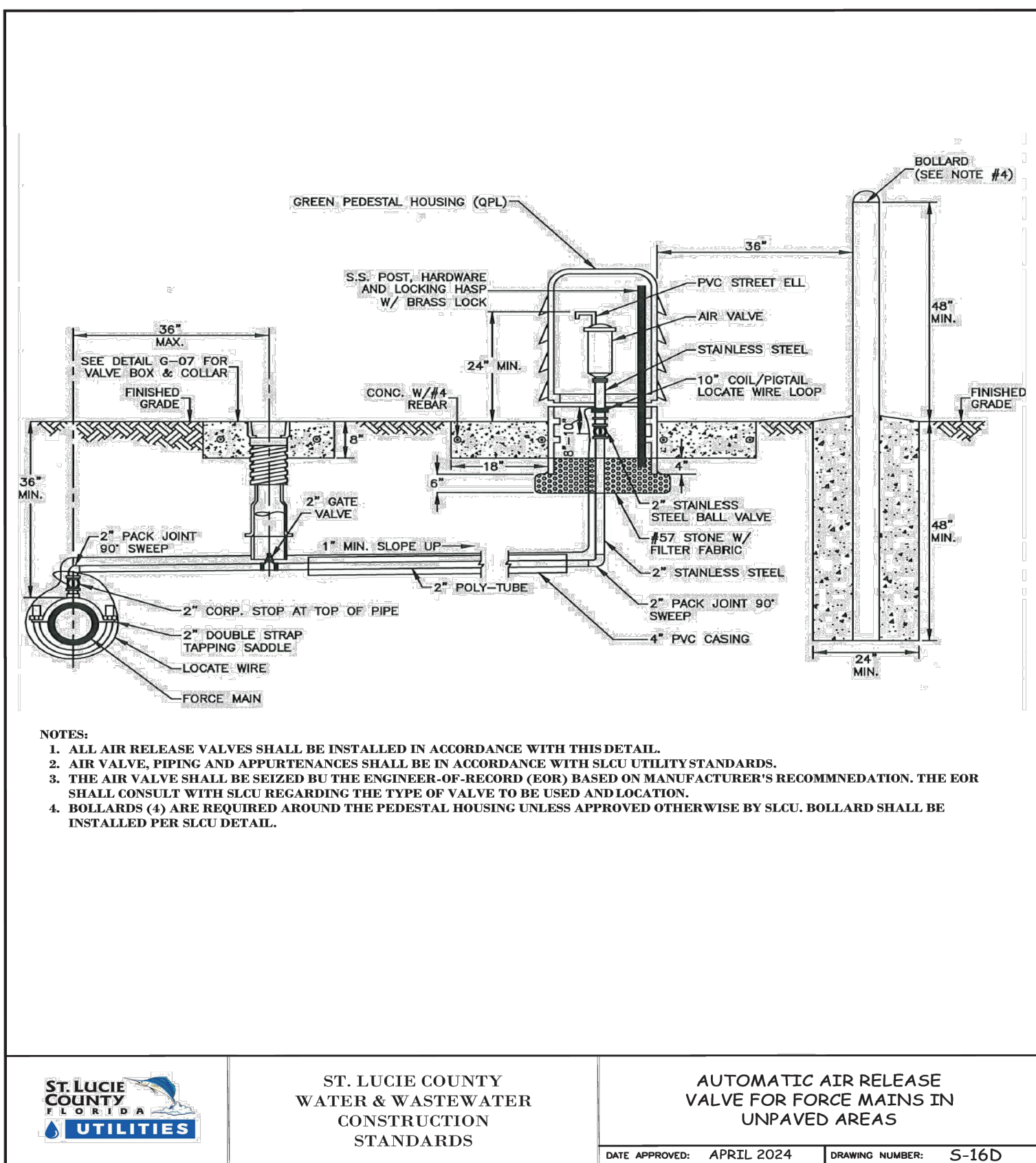
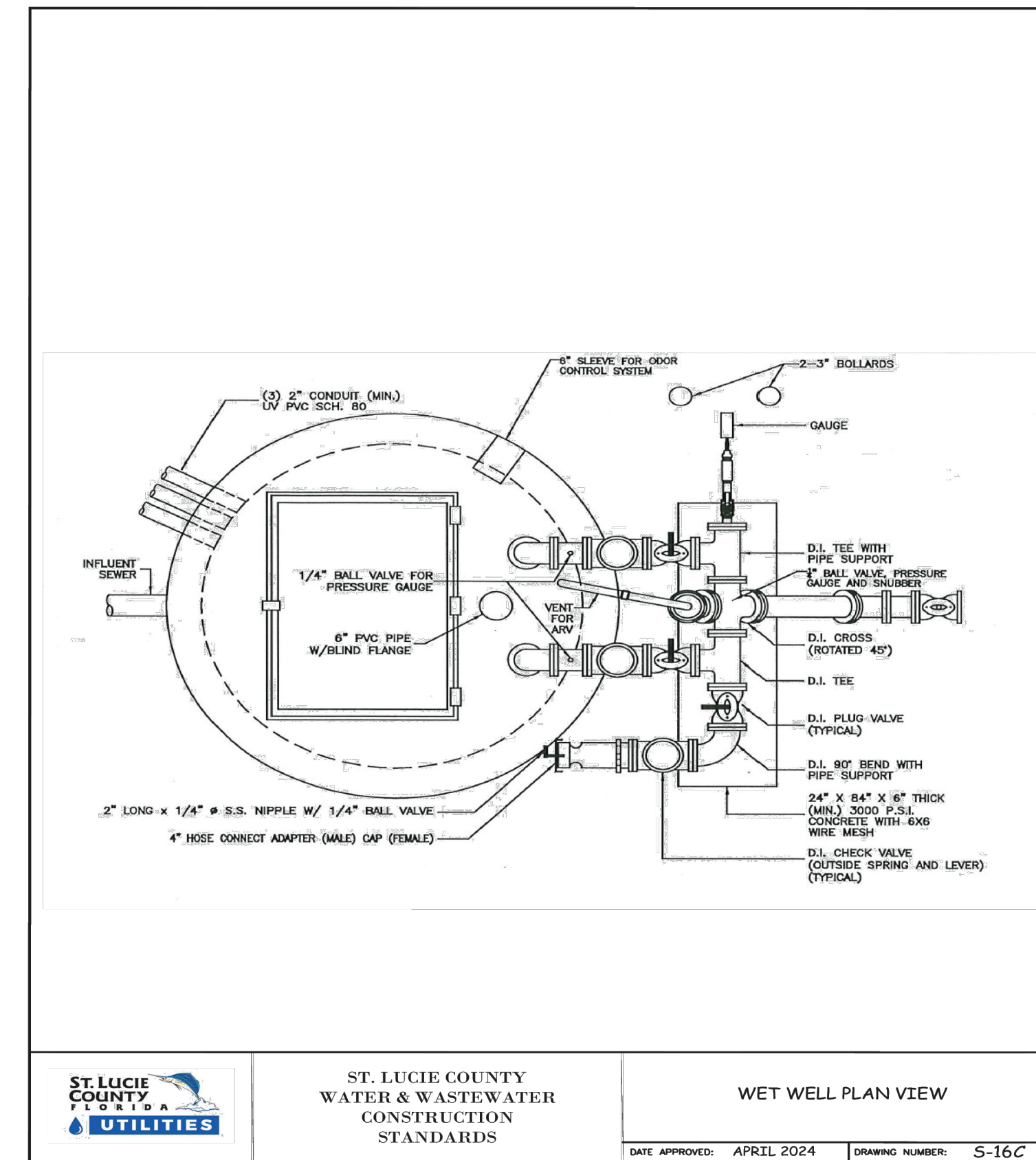
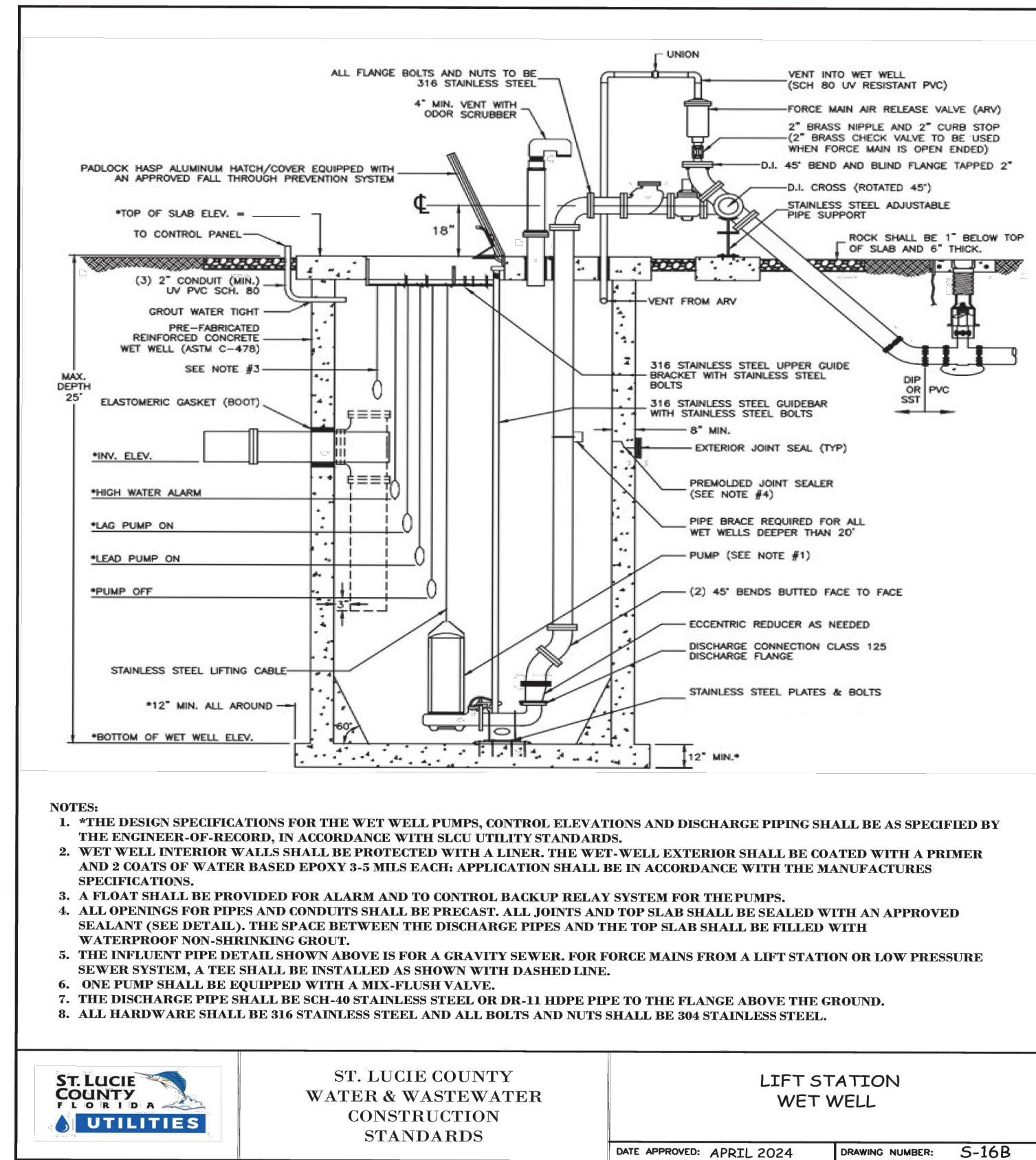
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- REVISIONS -			BY	DATE

	BY	DATE
FIELD	SKM	1/20/22
CALCS.	SKM	2/2/22
DRAWN	KU	9/4/24
DETAILED	---	---
CHECKED	SKM	9/4/24
APPROVED	SKM	9/4/24

LITTLE JIM CAMP SANITARY IMPROVEMENTS
LIFT STATION DETAILS

DATE: 9/4/24
HORIZ. SCALE: N/A
VERT. SCALE: N/A
JOB No. 21-122
SHEET 10 of 12



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LITTLE JIM CAMP SANITARY IMPROVEMENTS

LIFT STATION DETAILS

DATE: 9/4/24
HORIZ. SCALE: SCALE
VERT. SCALE: SCALE
JOB No. 21-122
SHEET 11 of 12

1. GENERAL

- Mobilization:** Mobilization shall meet the requirements of FDOT Section 101. This work shall include, but is not limited to, operations necessary for the movement of personnel, equipment, supplies, and incidentals to the project site, and for the establishment of temporary offices, buildings, safety equipment and first aid supplies, sanitary and other facilities, as required by State and local laws and regulations. The costs of bonds and any required insurance, and any other preconstruction expense necessary for the start of work, excluding the cost of construction materials, shall also be included in this section. This section also includes any and all work related to the final cleanup.
- Construction Surveying:** The Owner shall provide horizontal control consisting of four control points. The Owner shall also provide vertical benchmarks as shown on the plans. This control shall be provided one time only. The Contractor is responsible for all other construction surveying. The Contractor is responsible to protect these reference points and the construction staking throughout the job. The Contractor shall bear the cost of any necessary restaking.
- Soil Testing:** Soil Testing shall be performed by a certified testing laboratory. The contractor shall be responsible for payment of any failed tests and inspections.

2. EARTHWORK AND GRADING

Materials and construction methods for earthwork, excavation, embankment and grading shall meet the requirements of FDOT Section 120 and shall be performed to achieve final grades, elevations and typical sections as shown on the plans for the proposed work.

- Clearing and Grubbing:** Clearing and grubbing shall meet the requirements of FDOT Section 110 and shall be performed within the limits of the project work. This work shall include, but is not limited to, the removal of existing trees, brush stumps, roots and other objectionable material to a depth of 18 inches below the natural ground or design grade, whichever is lower. The areas to be cleared and grubbed generally consist of rights-of-way, utility easements, water management tracts, and portions of the lots as detailed on the plans. The Contractor shall confirm with the Owner the removal of any trees for possible preservation. All material shall be removed from the site of the project and shall be disposed of in accordance with local, regional, State and Federal laws, regulations and ordinances.
- Rough Grade:** The Contractor shall grade the rights-of-way and lots to meet the requirements of FDOT Sections 110 and 120 and shall conform to the lines, grades, and typical sections as shown on the plans.
- Fine Grade:** The Contractor shall fine grade the roadway to meet the requirements of FDOT Sections 110 and 120 and shall conform to the lines, grades and typical sections as shown on the plans.
- Sod:** Sod shall meet the requirements of FDOT Section 570, 575, and 981 and shall be placed adjacent to the curbing for a minimum width of 24 inches.
- Seed and Mulch:** Seed and mulch shall meet the requirements of FDOT Sections 570, 575, and 981 and shall be placed in all disturbed areas not otherwise addressed in plans provided by the owner.

3. POTABLE WATER DISTRIBUTION AND WASTEWATER COLLECTION SYSTEM

Materials, construction methods, required tests, testing methods and construction tolerances for the wastewater collection and transmission system shall meet the requirements of the current AWWA Specifications, FDEP, and St. Lucie County Utilities.

- The Contractor and/or construction surveyor shall verify the elevation of the benchmark shown on construction plans. Verify all elevations of existing pavement, stubouts, and structures before starting construction and notify the Engineer if any discrepancy in elevations exist.
- The Contractor is herein advised that "as-built drawings" will be performed on the project which will reflect the elevation and location of all structures and improvements on the project. These "as-built drawings" will be utilized by the Engineer to determine conformance of the project to required tolerances as set forth by permitting and/or approving public agencies. Tolerances established by these agencies must be met in order for the project to be accepted for final certification and approval. As-Builts shall be in accordance with the St. Lucie County Utilities Systems Department Standards.
- All construction shall be in accordance with the St. Lucie County Utility Systems Department's Technical Specifications and Construction Standards, latest revision, and with all applicable Florida Department of Environmental Protection Rules and Regulations.
- No field changes or deviations from design are to be made without prior written approval of the Engineer of Record and St. Lucie County Utilities Systems Department.
- The contractor shall coordinate service grades and location with the Engineer.
- All materials, construction methods, testing and disinfection shall conform to the requirements of the St. Lucie County Utility Systems Department and AWWA current standards.
- PVC Water Main:** The Dimension Ratio (DR) and Pressure Rating shall be C900, DR-18 (Pressure 6 class 235) for 4" to 12" pipe and C 905, DR-18 (Pressure rating 235) for 14" to 24" pipe. Minimum cover shall be 36 inches, unless otherwise noted. Water mains shall be blue in color.
- Ductile Iron Fittings:** Ductile iron fittings shall be used on all PVC C900 & C905 mains. Fittings shall conform to AWWA/ANSI C153/A21.53.06 with a minimum pressure rating of 350 psi. Fittings shall be coated as specified under c.(1) (d) Coating & Linings for DIP. Fittings shall be restrained with restrained joints as per the detail.
- Gate Valve with Box:** Valves 2" and larger shall be gray or ductile iron body, conforming to AWWA C509 or CS15, with mechanical joints or flanged ends, and shall be equipped with a 2" square gray or ductile iron wrench nut. Valves shall be rated for 250-psi working pressure.
- Water/Sewer lines** shall be laid on undisturbed ground, compacted to 98% of maximum density in accordance with AASHTO T-180. Backfill shall be compacted to 98% of maximum density in accordance with AASHTO T-180. The contractor shall submit certified density tests on each 12" lift.

- The contractor shall contact the Engineer of Record, the appropriate governmental jurisdictional agency and all utility companies at least 48 hours prior to commencement of construction for coordination of any utilities. The contractor shall schedule a pre-construction meeting with the Engineer, St. Lucie County Utilities Systems Department and the City of Fort Pierce Engineering Department a minimum of ten (10) working days prior to starting construction.
- Areas to be open cut shall be overlaid within the limits of the open cut as indicated in the plans.
- Minimum cover shall be 36" for water mains.

4. POTABLE WATER DISTRIBUTION SYSTEM

- The contractor shall repair or replace any damage caused by construction activity. Disturbed areas shall be restored to their original condition. Any disturbed areas within Public rights-of-way shall be sodded. All other unpaved and sodded areas disturbed during the construction shall be seeded and mulched in accordance with Section 570 of the Florida Department of Transportation specifications.
- Existing utilities shall be field verified and protected by the contractor.
- The contractor shall tap existing lines under the supervision of St. Lucie County Utilities Systems Department only after preliminary testing and disinfection has been completed and approved.
- Water main shall be marked by the use of continuous Blue wire per the St. Lucie County Utility's Qualified Product list (QPL).
- Service taps (Bacteria Sample Points (BSP)) shall be placed approximately ten feet away from gate valves, as shown, for testing. Following testing and sterilization of waterline, the Contractor shall place a brass plug in all corporation stops which were used as BSP's and remove the tubing and curb stops.
- Mechanical restraints to be used on all fittings. No thrust blocks are to be utilized within the system.
- Hydrostatic and leakage tests shall be made between valves and/or connectors for each section tested using the procedure outlined in ANSI/AWWA C600 for DIP and C605 for PVC.

Allowable leakage formula:
$$L = \frac{SD\sqrt{P}}{148,000}$$
Where:
L = Allowable leakage in gallons per hour
D = Length of pipe tested in feet
S = Nominal diameter of the pipe in inches
P = Average test pressure maintained during test in pounds per square inch gauge
- Water main shall be disinfected and approved in accordance with the latest applicable Florida Department of Environmental Protection and AWWA requirements (AWWA C-651).
- All crossings will be inspected by the Engineer prior to backfilling.

5. WASTEWATER COLLECTION AND TRANSMISSION SYSTEM

Materials, trench excavation, pipe-laying and backfilling operations shall meet the requirements of FDOT Sections 125 and 430. Pipe shall be laid in true alignment in a dry pipe trench with an adequate supporting value. If normal dewatering efforts fail as specified in FDOT Section 430, a minimum six inch compacted rock bed shall be used. All backfill shall be compacted to a minimum density of 95 percent of the maximum density as determined by AASHTO T-180, unless otherwise shown on the plans. Pipe laying shall proceed upgrade with spigot ends pointing in the direction of the flow.

- 8" PVC Sanitary Sewer Main:** 8" PVC sewer main shall meet the requirements of ASTM D-3212 for SDR 26. Minimum cover shall be 48 inches, unless otherwise noted. Sewer mains shall be green in color or marked as approved by PLSUSD.
- Sanitary Manhole:**

A. Manhole interior shall be lined as detailed and specified by the manufacturer. The minimum inside diameter of manholes shall be 48". Non-penetrating lift pin inserts shall be installed by pre-cast fabricator. Pre-cast reinforced manholes shall be in accordance with ASTM C478, Class II, made with Type II acid resistant cement, shall attain a minimum compressive strength of 4000 psi in 28 days. The liner system shall be cast integrally into the manhole, pre-cast concrete surrounding it, with alignment/grade of channels/1 openings for connecting pipes matching drawing requirements. Liner integrally formed bell gaskets shall comply with ASTM F477 Standard Specification for Elastomeric Seal (Gaskets) for Joining Plastic Pipe. Installation of pre-cast manholes shall comply with the details shown in the Construction Standards and in accordance with the manufacturer's recommendations.

B. Manhole frames and covers shall be ductile iron or gray cast iron traffic rated heavy duty conforming to ASTM Design A48, Class 30 and on the Qualified Product List. Covers shall be marked with the word "SANITARY SEWER" in 2" raised letters. Frames and covers shall be set to the correct finish grade elevation.

C. The base slab and first ring of the pre-cast manhole shall be cast monolithically.

D. Lift holes shall be grouted once the manhole is in place.
- Sanitary Drop Manhole:** Drop manholes shall meet the requirements of St. Lucie County Utilities and shall be constructed in the locations, elevations, and dimensions as shown on the plans. Manholes shall be set plumb to line and grade and shall rest on a carefully graded, uniform bearing base.
- Service Connection:** Sewer services shall meet the requirements of St. Lucie County Utilities and shall be 6 inch PVC Schedule 40 with a minimum slope of 1/8" per foot of run. Sewer services shall terminate and be plugged water tight at the back of the right-of-way or utility easement line at a depth of three feet. The sewer service shall be marked with a treated stake and electronic marker. The Contractor is not responsible for installation of meters.

- PVC Force Main:** PVC force main shall meet the same requirements as PVC water main. Minimum cover shall be 36 inches, unless otherwise noted. Force mains shall be white in color and marked with red tape or marked as approved by the Owner. The price of ductile iron fittings, meeting the requirements ANSI A21.10 (AWWA C-100), shall be included in this cost. Fittings shall be restrained with restrained joints and/or thrust blocks of poured in place concrete as per the water distribution details.
- Testing:** The Contractor shall visually inspect all gravity sewer mains to verify conformance to the requirements of St. Lucie County Utilities with the aid of mirrors and lights. This inspection shall be performed after the completion of all manholes, connection of all services and all compaction efforts, but prior to paving. A full pipe diameter shall be verified between all manholes. The Contractor shall repair or replace any portion that does not meet the specifications at his own expense.

8. ST. LUCIE COUNTY UTILITIES SYSTEMS DEPARTMENT SEPARATION NOTES:

- Water mains shall cross over other pipes unless not feasible. Sewers and force mains should cross under water mains whenever possible. Sanitary sewers, force mains and storm sewers crossing water mains shall be laid to provide a minimum vertical distance of 18 inches between the invert of the upper pipe and the crown of the lower pipe whenever possible. All crossings shall be arranged so that the sewer pipe joints and the water main pipe joints are equidistant from the point of crossing (full length of pipe centered on the crossing).
- A minimum 10-foot horizontal separation shall be maintained between any type of sewer and water main in parallel installations whenever possible. In cases where it is not possible to maintain a 10-foot horizontal separation, the water main must be laid in a separate trench or on an undisturbed earth shelf located on one side of the sewer or force main at such an elevation that the bottom of the water main is at least 18 inches above the top of the sewer.
- Maximum obtainable separation of reclaimed water lines and domestic water lines shall be practiced. A minimum horizontal separation of five feet (outside to outside), shall be maintained between reclaimed water lines and either potable water mains or sewage collection lines. A minimum vertical clearance of 18 inches must be maintained between reclaimed water lines and potable water mains or sewage collection lines. At crossings, provisions of FAC Rule 17-604 and 10 States Standards apply.
- All potable water, wastewater, and reclaimed water facilities shall be located a minimum 5 feet horizontal (from edge of facility) from other public utilities, privately owned irrigation mains, drainage lines, drainage structures, power poles, and light poles.
- A minimum of 10 feet horizontal separation is also required from structures, buildings, walls, fountains, and fences unless specifically approved by the St. Lucie County Utilities in writing.
- TV cable, phone lines and irrigation lines shall cross Department's facilities with a minimum of 12 inches vertical clearance.
- Gas mains and electric power cables shall cross St. Lucie County Utilities facilities with a minimum of 18 inches vertical clearance.

THE WORK

Existing Utilities and Structures:

Existing utilities, structures and facilities shown on the Drawings were located as accurately as possible from the records examined. No guarantee is made that all existing facilities are shown or that those shown are entirely accurate. The Contractor shall assure himself of the actual location of the utilities, structures, or facilities prior to performance of any work in the vicinity. The utility companies or utility agencies will co-operate with the Contractor's operations. Prior to start of the work, the Contractor shall request each utility agency to advise him of the location of their facilities in the vicinity. The Owner will assume no liability for damages sustained or cost incurred because of the Contractor's operation in the vicinity of existing utilities or structures, or to the temporary bracing and shoring of same. In the event that it is necessary to shore, brace, or swing a utility, the utility company or department affected should be contacted and their permission secured as to the method used for any such work.

Restoration of Damaged Structures or Utilities:

It shall be the responsibility of the Contractor to repair, rebuild or restore to its former condition, any and all portions of existing utilities, structures, equipment, appurtenances or facilities, other than those to be paid for under this Contract, which may be disturbed or damaged due to this construction operation, at no cost to the Owner.

Final Cleanup:

Upon completion of the work, but before final payment will be made, the Contractor shall clear and remove from the Project area, all falsework, equipment, surplus and discarded materials, rubbish and temporary structures which result from the work under this Agreement, and shall restore in an acceptable manner, all property which has been damaged during the prosecution of the work.

Record Information:

Upon completion of the work, but prior to submittal of the request for final payment, the Contractor shall obtain and submit record information to the Owner. This information shall include the following:

- Water and Wastewater Systems:**

As-built plans for water/sewer mains shall be provided by the Contractor/Engineer of Record and shall be comprised of three (3) blue-line copies of a certified survey. The blue-line copies shall bear the original signature and embossed seal of the surveyor who performed the as-built survey. The as-builts shall be submitted after the completion of construction or as otherwise indicated herein, prior to submittal to St. Lucie County Utilities Systems Department. The as-built survey shall be prepared in plan and profile format by a professional land surveyor registered in the State of Florida, and shall comply with applicable provisions of the Florida Administrative Code and Chapter 472 of the Florida Statutes. The as-built drawing shall be at the same scale and reference the same baseline as the drawings prepared by the Engineer of Record. The horizontal and vertical location of the mains and appurtenances shall be accurately depicted to scale and shall be identified relative to the baseline and relative to readily identifiable permanent reference points existing after the completion of the construction. Locations shall be shown for all fittings, valves, hydrants, manholes, sample points, air releases, etc., both horizontal and vertical, and the location of the main at each baseline station as shown on the plans (100 feet maximum) both horizontal and vertical. Underground facilities (i.e. drainage, gas, electric, telephone, etc.) crossing the mains shall be accurately shown both horizontally and vertically and shall identify size, type, facility, material, and clearance. All information shall be based upon measurements and observations made in the field by the surveyor certifying the survey, or by personnel under his employment, direction and supervision. The cost for preparing and maintaining the as-built plans shall be incidental to the construction cost.

- Drainage System:**
 - High points and low points of swales;
 - Locations and grate and invert elevations of all structures;
 - Location, size, type, length and invert of all culverts.
- Paving and Grading:**

Location and elevation of high and low points in roadway and any other changes in grade.

The record information shall be certified by a Florida Professional Land Surveyor. Locations shall be made by reference to centerline stationing and offset or by other means acceptable to the Owner. Elevations shall be according to the North American Vertical Datum (NAVD).

Guarantee: All materials and the installation thereof which are furnished and installed by the Contractor, under the terms of the Agreement, shall be guaranteed by the Contractor against defective workmanship, mechanical and physical defects, leakage, breakage, and other damages and failure under normal operation for a period of one (1) year from the date of final payment, said date to constitute the commencement of the one (1) year warranty period. All materials and installations proving to be defective within the specified period of the warranty shall be replaced, without cost to the Owner, by the manufacturer or the Contractor. The period of guarantee of each such replacement shall be from and after the date of installation thereof.

Company	Contact	Telephone Numbers
St. Lucie County Utilities	Ray Muranokus	(772) 344-9751
Florida Power & Light	Patricia Biondelli	(772) 337-7011
Comcast Cable	Rick Johnson	(561) 402-4513
AT&T	Ivan Arill	(772) 460-4441
Florida City Gas	Ron Muller	(321) 638-3424


GENERAL NOTES

- Grassing shall be furnished and installed in conformance with the approved landscape plan. All disturbed areas not shown to be planted, mulched, etc. shall be sodded.
- Sod shall be placed such that the top of the grass is at the same elevation as the top of adjacent finish grade.
- The location of existing utilities shown is approximate only and must be field verified by the Contractor prior to beginning Work.
- These plans shall not be used for construction unless they are marked "Approved for Construction".
- Contractor to obtain and review all permits prior to starting construction
- Drawing scale may change due to reproduction
- Maintenance of traffic must be in conformance with FDOT Specifications.
- All nuisance exotic vegetation on-site must be removed in conjunction with site development. Contractor is to confirm limits of preserve areas appropriately prior to starting construction.

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LITTLE JIM CAMP SANITARY IMPROVEMENTS SPECIFICATIONS

 JOB NO. 21-122
 SHEET **12 of 12**

DATE: 9/4/24
HORIZ. SCALE: NA
VERT. SCALE: NA
JOB NO. 21-122
SHEET 12 of 12