

# DEP SRF HARBOR ROAD WRF EXPANSION PHASE 2

## FOR CITY OF GREEN COVE SPRINGS, FLORIDA

M & A Project No. 8905-56-1

### D R A W I N G I N D E X

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G2	GENERAL NOTES, LEGEND & ABBREVIATIONS	D16.2	LINE CREW BUILDING - ELEVATIONS
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C1.5	YARD PIPING PLAN	D16.7	LINE CREW BUILDING - FOUNDATION DETAILS
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VAN ROYAL  
MAYOR

EDWARD GAW  
VICE MAYOR

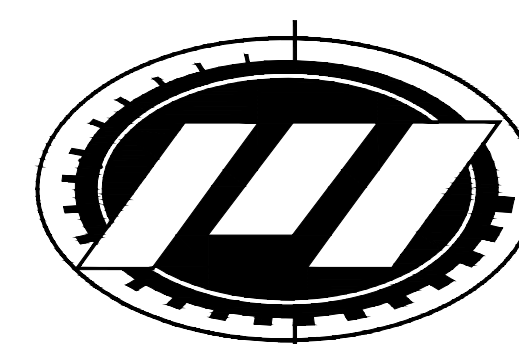
CONNIE BUTLER  
COUNCIL MEMBER

MATT JOHNSON  
COUNCIL MEMBER

STEVEN KELLEY  
COUNCIL MEMBER

STEVEN KENNEDY  
CITY MANAGER

MIKE NULL  
PUBLIC WORKS DIRECTOR

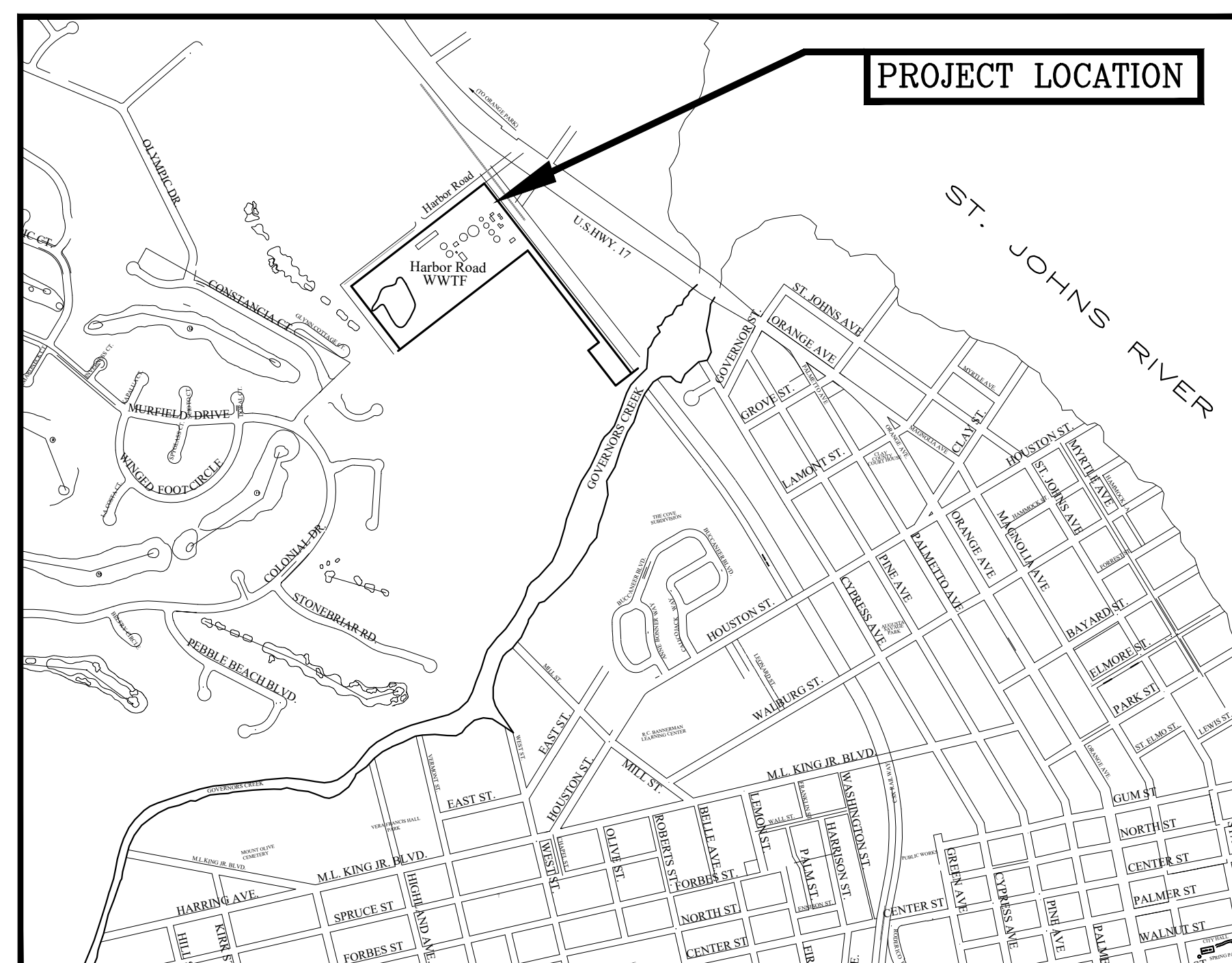
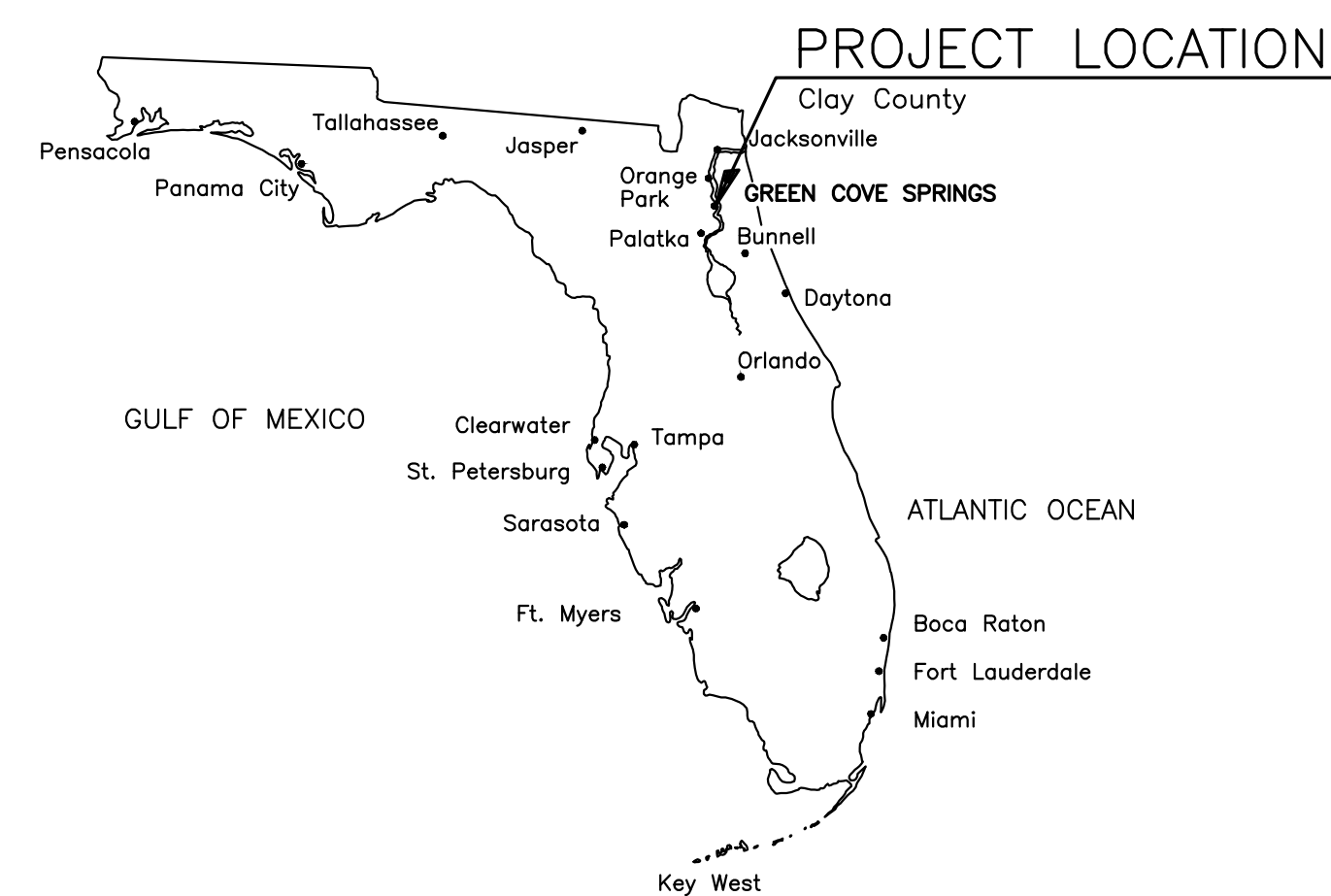


**MITTAUER**  
**& ASSOCIATES, INC.**  
CONSULTING ENGINEERS

580-1 WELLS ROAD, ORANGE PARK, FLORIDA 32073  
TEL. (904) 278-0030 FAX. (904) 278-0840 FLORIDA CA No. 6569

**CITY SITE PLAN SUBMITTAL**

12/14/20



VICINITY MAP

# GENERAL NOTES

## A. GENERAL CONSTRUCTION NOTES

- Existing underground utilities have been shown from the best available information. Contractor shall field determine the location, size, and depth of all existing utilities. Contractor shall provide complete piping system including all fittings necessary to interconnect piping systems and to avoid conflicts with existing and proposed pipes/structures.
- It shall be the sole responsibility of the Contractor to locate and avoid all utilities, structures and obstructions both above and below the ground surface. All damages resulting from the Contractor's failure to comply with this requirement shall be repaired at the Contractor's expense.
- Contractor is responsible for supporting/protecting all existing improvements (i.e., utilities, utility poles, structures, pavement, sidewalks, monitoring wells, foundations, etc.) which may be damaged/undermined as a result of his operations. Contractor may be required to shore, sheet, brace, or support work to protect existing improvements. All costs associated with supporting/protecting existing improvements shall be borne by the Contractor.
- All existing facilities (e.g., pipes, roadways, sidewalks, landscaping, structures, etc.) not indicated to be disturbed/restored which are disturbed/damaged as a result of Contractor's operations shall be restored to a condition equal to or better than that which existed prior to construction, at Contractor's expense.
- Horizontal and vertical controls are subject to adjustments in the field if necessary to avoid utility conflicts upon approval of the Engineer or his representative. Contractor shall not adjust location of pipe or other facilities (either vertically or horizontally) without approval of Engineer or his representative.
- Contractor shall provide constant slope between indicated pipe invert elevations unless otherwise directed by Engineer.
- All pipe shall be properly restrained using mechanical type joint restrainers (see specifications). No thrust blocking will be allowed unless specifically indicated on drawings or directed by Engineer. All exposed piping 3" in diameter and smaller shall be properly wrapped with foam insulation to prevent freezing.
- All pipe shall have the following minimum cover unless otherwise directed by Engineer:  

Pipe Type	Minimum Cover
PVC (< 3-inch)	30-inches
PVC (> 3-inch)	36-inches
DIP (All Sizes)	30-inches
Steel (All Sizes)	30-inches
- All aboveground piping shall be properly supported and/or secured to tanks, buildings, or other structures using S.S. straps and fasteners.
- Contractor shall be responsible for maintaining service to the existing treatment plant facilities. He shall perform all bypass pumping necessary to keep the plant operating properly during construction. He shall coordinate all diversions of flow, draining of tanks, demolition of existing facilities, etc. closely with Owner to avoid potential treatment violations and operating problems. Contractor may be required to perform some work during low demand hours (e.g. 12:00 a.m. to 5:00 a.m.). All arrangements for bypass pumping, diversion of flow, draining of tanks, demolition, etc. shall be subject to approval of Owner and Engineer. All costs associated with bypass pumping and other temporary facilities shall be borne by the Contractor.
- Contractor shall provide all fill required to achieve proposed grades at his expense.
- During any construction activity, including stabilization and revegetation of disturbed surfaces, the Contractor is responsible for the design, selection, permitting, implementation, and operation of all temporary construction phase erosion and sediment control measures required to retain on-site sediment and prevent violations of the State of Florida water quality standards. The Contractor shall use appropriate best management practices described in the State of Florida Erosion and Sediment Control Designer and Reviewer Manual, June 2007, with revisions. All turbidity/silt barriers must be in place downgradient from the construction zone prior to the start of any construction activity in general accordance with the plans and details provided in these documents. The barriers shall remain in place until all the disturbed areas have been properly stabilized.
- All grassed areas disturbed by construction shall be resodded unless otherwise directed by Engineer or his representative.
- The Contractor shall employ a land surveyor, registered in the State of Florida to reference and restore property corners and land markers which may be disturbed as a result of Contractor's operations.
- The Contractor shall be responsible for laying out the work and for establishing project temporary bench marks; elevation lines and grades; and right-of-way and property boundary limits for construction.
- Owner has the option of claiming any equipment/materials identified for removal by the Contractor. Contractor shall deliver any removed equipment/materials claimed by Owner to an onsite location as directed by Owner. Any equipment/materials identified for removal which are not claimed by the Owner shall become the property of the Contractor and shall be disposed of by the Contractor at his expense.
- Project Benchmark: See Sheet No. C1.1 for location and description of Benchmark.

## B. GENERAL STRUCTURAL NOTES

- All construction shall be in accordance with the local Building & Zoning Department requirements and the 2017 Florida Building Code with all Revisions. All design shall be in accordance with the 2017 Florida Building with all Revisions, ACI318, ACI350 and ASCE 7-16.

Live Loads (minimum):

Roofs & Canopies	=	20 psf
Storage Spaces	=	150 psf
Stairs & Walkways	=	100 psf

Dead Loads: Actual Material Weights  
 Aux. Load = 0 psf  
 Collateral Load = 5 psf

Geotechnical:  
 Design Load Bearing Value of Soil = 2,000 psf

Flood Zone: X; Map No. 12019C0170E

Windload Design Criteria  
 Items per Florida Building Code Section 1603.1.4:  
 Basic Wind Speed: (Vult) = 135 MPH  
 (Vasd) = 105 MPH  
 Building Risk Category: III  
 Wind Exposure Category: C  
 Mean Roof Height: N/A  
 Roof Slope: N/A  
 Internal Pressure Coefficients: +/- 0.00 (Open Tanks)  
 +/- 0.18 (Electrical Bldg., Operations, Line Crew Bldg.)  
 +/- 0.56 (Chemical Feed Bldg.)

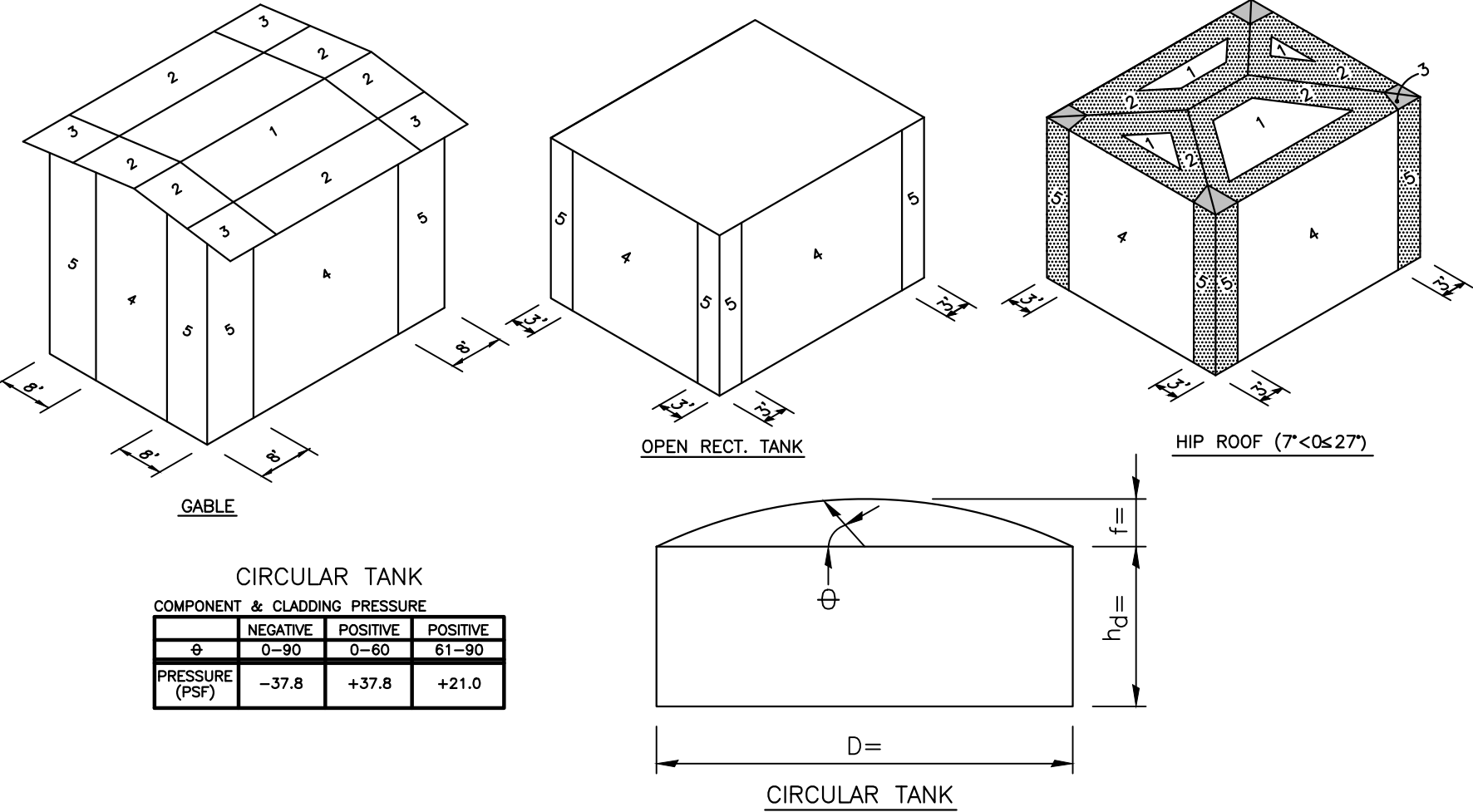
## B. GENERAL STRUCTURAL NOTES (continued)

### COMPONENT & CLADDING PRESSURE

GABLE ROOF		WIND PRESSURE (PSF)	
ZONE	EFFECTIVE AREA (SF)	POSITIVE	NEGATIVE
1	10	26.88	-45.40
	20	25.68	-44.49
	50	25.15	-43.58
2	100	24.63	-42.68
	10	26.20	-76.20
	20	25.68	-75.33
	50	25.15	-74.43
3	100	24.63	-73.53
	10	26.20	-116.90
	20	25.68	-116.00
	50	25.15	-115.10
4	100	24.63	-114.20
	10	45.40	-49.20
	20	42.90	-47.46
	50	39.95	-45.26
5	100	37.46	-43.30
	500	31.78	-39.36

OPEN RECT. TANK		WIND PRESSURE (PSF)	
ZONE	EFFECTIVE AREA (SF)	POSITIVE	NEGATIVE
1	10	N/A	-45.40
	20	N/A	-44.49
	50	N/A	-43.58
2	100	N/A	-42.68
	10	N/A	-76.20
	20	N/A	-75.33
	50	N/A	-74.43
3	100	N/A	-73.53
	10	35.8	-35.8
	20	34.6	-34.6
	50	33.0	-33.0
4	100	31.6	-31.6
	500	28.7	-28.7
	10	35.8	-65.7
	20	33.2	-64.9
	50	29.6	-54.3
5	100	27.4	-53.3
	500	21.5	-39.5

HIP ROOF		WIND PRESSURE (PSF)	
ZONE	EFFECTIVE AREA (SF)	POSITIVE	NEGATIVE
1	10	26.20	-41.50
	20	25.68	-40.67
	50	25.15	-39.84
2	100	24.63	-39.01
	10	26.20	-76.20
	20	25.68	-75.33
	50	25.15	-74.43
3	100	24.63	-73.53
	10	45.40	-49.20
	20	42.90	-47.46
	50	39.95	-45.26
4	100	37.46	-43.30
	500	31.78	-39.36
	10	41.50	-76.20
	20	39.22	-74.49
	50	36.52	-62.87
5	100	34.24	-58.29
	500	29.05	-45.72



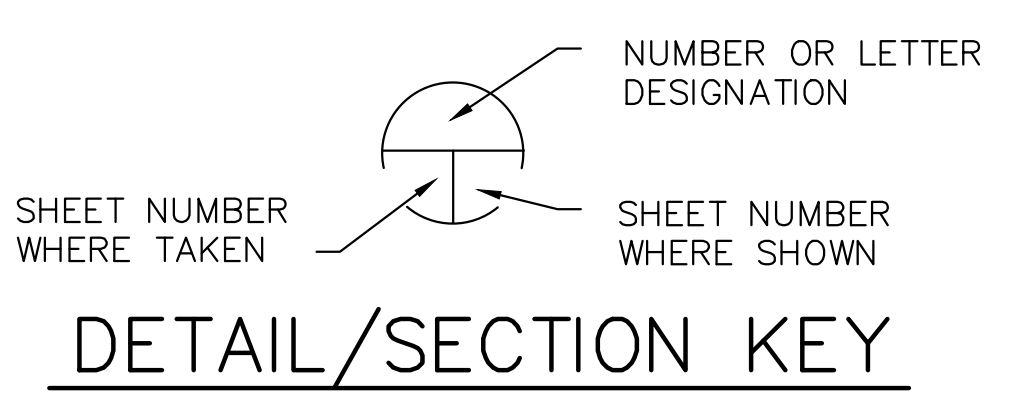
- All structural concrete shall have a min. compressive strength of 4,000 psi after 28 days unless otherwise noted.
- All reinforcing steel shall conform to ASTM A615 Grade 60, except bars to be welded shall conform to ASTM A706.
- For size and location of embedded items and openings, the Contractor must refer to mechanical, structural, piping and vendors drawings.
- Equipment anchor bolts and rods shall be set from templates made to fit holes in equipment according to approved manufacturers shop drawings.
- Contractor shall verify all dimensions and existing conditions at the site before proceeding with construction.
- Unless otherwise shown on drawings, min. cover for reinforcing steel shall be as follows:  
 Concrete Cast Against Earth - 3"  
 Slabs on Grade - Centered  
 All Other - 2"  
 Note: 6 mil polyethylene membrane required under all building base slabs.
- All reinforcing shall be fabricated and held securely in position with standard accessories in accordance with ACI 315 "Details and Detailing Concrete Reinforcement", latest edition.
- Splices in reinforcing, where permitted, shall be as noted, or as follows:  
 9.1. Welded Wire Fabric - Two Mesh or 12" (min.)  
 9.2. Temperature Reinforcing - 44 bar diameters but not less than 12"  
 9.3. All Other Bars - Class "B" lap.  
 9.3.1. For Top Bars (12" or more concrete below steel) multiply table lengths by 1.3  
 9.3.2. For lightweight concrete multiply table lengths by 1.3.

Class B Lap Length in Inches (fy=60ksi)			
Bar Size	fc = 3,000 psi	fc = 4,000 psi	fc = 5,000 psi
#3	22	19	17
#4	29	25	23
#5	36	31	28
#7	43	38	34
#8	54	44	41
#9	63	54	49
#10	72	62	56
#11	81	70	63

- Splices in top reinforcing shall be made at midspan, bottom reinforcing at support, or as noted on drawings.
- Provide 3/4" chamfer on all exposed edges of concrete.
- Provide 1/2" premolded expansion joint material where slab on grade is cast around columns or against walls.
- All masonry shall utilize standard precast masonry units and be laid true and plumb.
- All concrete lintels shall be reinforced with 2-#5 bars top and bottom as a minimum and have a masonry end bearing each end of 2" per foot of span with a minimum of 8."
- Compaction: unless otherwise noted, the required percentage of maximum compaction shall be as follows: (per modified proctor max. Dry density)  
 Under Structures and Slabs - 95%  
 Under Paved Areas (subgrade) - 98%  
 Under Paved Areas (below 12") - 95%  
 Landscaped Areas and Other - 90%  
 Adjacent to Walls and Above Footing - 92%  
 The more stringent requirement shall govern between any conflict of these compaction requirements & those listed within the specifications.
- Coating: Apply asphalt point coating between different metals and for aluminum set against concrete.
- The design of all structural concrete for tanks conforms to ACI 350: Code Requirements for Environmental Engineering Structures.
- Location of construction joints, proposed by the Contractor, shall be submitted to the Engineer for approval prior to initiating any construction or fabrication which could be affected by the location. All construction joints below either the plant liquid or ground level shall incorporate a properly designed and fabricated PVC waterstop.
- All structural anchoring systems shall be hot-dipped galvanized or S.S. as noted or specified.

# LEGEND

- |                               |                               |                               |
|-------------------------------|-------------------------------|-------------------------------|
| PROPOSED 8" S                 | EXISTING 8" SAN               | SANITARY SEWER                |
| 8" FM                         | 4" FM                         | SANITARY FORCE MAIN           |
| CO                            | MH                            | SANITARY MANHOLE              |
| 8" W                          | 6" W                          | CLEANOUT                      |
| VALVE                         | VALVE                         | VALVE                         |
| FIRE HYDRANT                  | FIRE HYDRANT                  | FIRE HYDRANT                  |
| WATER SERVICE (SIZE VARIES)   | WATER SERVICE (SIZE VARIES)   | WATER SERVICE (SIZE VARIES)   |
| TELEPHONE PEDESTAL            | TELEPHONE PEDESTAL            | TELEPHONE PEDESTAL            |
| MAIL BOX                      | MAIL BOX                      | MAIL BOX                      |
| 18" SD                        | 18" RCP                       | STORM DRAIN PIPE              |
| STORM DRAIN INLET/MES         | STORM DRAIN INLET/MES         | STORM DRAIN INLET/MES         |
| 84.0                          | 84.0                          | GRADE CONTOURS                |
| 63.00                         | 63.0                          | SPOT ELEVATIONS               |
| PP                            | PP                            | POWER POLE/ W/ANCHOR          |
| WIRING PULL BOX               | WIRING PULL BOX               | WIRING PULL BOX               |
| ELECTRICAL METER              | ELECTRICAL METER              | ELECTRICAL METER              |
| ELECTRICAL CABINET            | ELECTRICAL CABINET            | ELECTRICAL CABINET            |
| TRANSFORMER                   | TRANSFORMER                   | TRANSFORMER                   |
| BOLLARD                       | BOLLARD                       | BOLLARD                       |
| UTILITY POLE, LIGHT POLE      | UTILITY POLE, LIGHT POLE      | UTILITY POLE, LIGHT POLE      |
| BURIED TELEPHONE              | BURIED TELEPHONE              | BURIED TELEPHONE              |
| FIBER CABLE                   | FIBER CABLE                   | FIBER CABLE                   |
| CABLE TELEVISION              | CABLE TELEVISION              | CABLE TELEVISION              |
| OVER HEAD ELEC                | OVER HEAD ELEC                | OVER HEAD ELEC                |
| SWALE                         | SWALE                         | SWALE                         |
| RIGHT-OF-WAY                  | RIGHT-OF-WAY                  | RIGHT-OF-WAY                  |
| FENCING                       | FENCING                       | FENCING                       |
| BUILDING OR STRUCTURE         | BUILDING OR STRUCTURE         | BUILDING OR STRUCTURE         |
| ASPHALT PAVED DRIVE           | ASPHALT PAVED DRIVE           | ASPHALT PAVED DRIVE           |
| CONCRETE SLAB OR SIDEWALK     | CONCRETE SLAB OR SIDEWALK     | CONCRETE SLAB OR SIDEWALK     |
| DEMOLISH, REMOVE & DISPOSE OF | DEMOLISH, REMOVE & DISPOSE OF | DEMOLISH, REMOVE & DISPOSE OF |
| LIMITS OF WOODS               | LIMITS OF WOODS               | LIMITS OF WOODS               |
| TREE                          | TREE                          | TREE                          |
| TEST PIT (SEE S.U.E. REPORT)  | TEST PIT (SEE S.U.E. REPORT)  | TEST PIT (SEE S.U.E. REPORT)  |



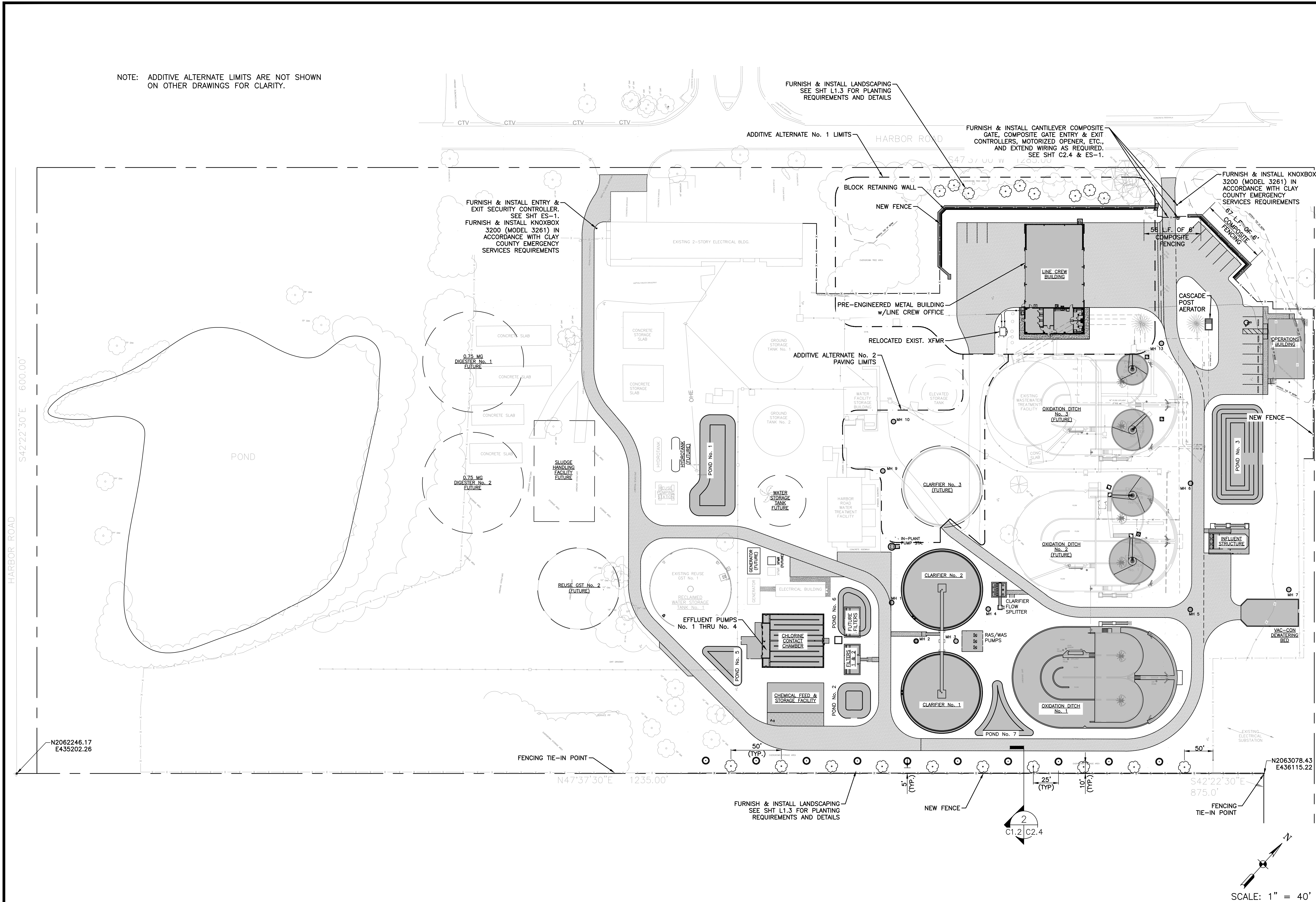
# ABBREVIATIONS

ABBREVIATION	DESCRIPTION	DESCRIPTION
ABS	ACRYLONITRILE BUTADIENE STYRENE	MAINT
MAN	MANUALLY	MAX
MAX	MAXIMUM	MCC
MCC	MOTOR CONTROL CENTER	MES
MES	MECHANICAL END SECTION	MECH
MECH	MECHANICAL	MFR
MFR	MANUFACTURE	MG
MG	MILLION GALLON(S)	MGD
MGD	MILLION GALLONS PER DAY	MNH
MNH	MANNING	MIN
MIN	MINIMUM; MINUTE(S)	MISC
MISC	MISCELLANEOUS	MJ
MJ	MECHANICAL JOINT	MON
MON	MONUMENT	MPH
MPH	MILES PER HOUR	MPT
MPT	MALE PIPE THREAD	MTD
MTD	MOUNTED	NW
NW	MANWAY; MONITORING WELL	N
N	NORTH	NC
NC	NORMALLY CLOSED	NE
NE	NORTHEAST	NIC
NIC	NOT IN CONTRACT; NOT INCLUDED	NO
NO	NORMALLY OPEN	NOM
NOM	NOMINAL	NP
NP	NO NUMBER	NPT
NPT	NATIONAL PIPE THREAD	NPW
NPW	NON-POTABLE WATER	NTS
NTS	NOT TO SCALE	NW
NW	NORTHWEST	OA
OA	NOT APPLICABLE	OC
OC	OVERALL DIMENSION	OD
OD	OUTSIDE DIAMETER	OH
OH	OVER HEAD	OHE
OHE	OVER HEAD ELECTRIC	OPT
OPT	OPTIONAL	OBM
OBM	OPERATION AND MAINTENANCE	PAVT
PAVT	PAVEMENT	PC
PC	POINT OF CURVE	PF
PF	POINT OF INTERSECTION	PI
PI	PLATE	PL
PL	POUNDS PER LINEAR FOOT	PLT
PLT	POINT OF BEGINNING	POB
POB	POINT OF BEGINNING	PP
PP	POUNDS PER DAY	PPD
PPD	POUNDS PER DAY	PPM
PPM	PARTS PER MILLION	PPRES
PPRES	PRESSURE	PRV
PRV	PRESSURE REDUCING VALVE	PS
PS	PUMP STATION	PSI
PSI	POUNDS PER SQUARE FOOT	PSI
PSI	POUNDS PER SQUARE INCH	PSIA
PSIA	POUNDS PER SQUARE INCH ABSOLUTE	PSIG
PSIG	POUNDS PER SQUARE INCH GAGE	PT
PT	POINT OF TANGENCY	PV
PV	POLYVINYL CHLORIDE	PVC
PVC	POLYVINYL CHLORIDE	PW
PW	RAW WATER MAIN	R
R	RADIUS	R, RAD
R, RAD	RADIUS	RD
RD	REINFORCED CONCRETE PIPE	RED
RED	REDUCER	REBAR
REBAR	REINFORCING STEEL BARS	REF
REF	REFERENCE	REIN
REIN	REINFORCE(D)(ING)(MENT)	REQD
REQD	REQUIRED	REST
REST	RESTRAINED	RM
RM	ROOM	RPM
RPM	REVOLUTIONS PER MINUTE	RR
RR	RAILROAD	RT
RT	RIGHT	RW
RW	RAW WATER MAIN	RWM
RWM	RAW WATER MAIN	R/W
R/W	RIGHT-OF-WAY	S
S	SEWER; SOUTH	SAN
SAN	SANITARY SEWER	SCHED
SCHED	SCHEDULE	SE
SE	SECTION	SECT
SECT	SECTION	SF
SF	SQUARE FOOT OR FEET	SHT
SHT	SHEET(D)(ING)	SLV
SLV	SLIP JOINT	SP
SP	SERVICE POLE, DROP POLE	SPEC
SPEC	SPECIFICATION	SQ
SQ	SQUARE	SR
SR	STATE ROAD	SS
SS	SANITARY SEWER, STAINLESS STEEL	ST
ST	STATION	STA
STA	STANDARD	STD
STD	STANDARD	STEE
STEE	STRUCTURAL	STRUC
STRUC	STRUCTURAL	SW
SW	SOUTHWEST	SWD
SWD	SIDEWATER DEPTH	SYM
SYM	SYMBOL	S/W
S/W	SYMBOLICAL	TAN
TAN	TANGENT	TBM
TBM	TEMPORARY BENCH MARK	TC, TOC
TC, TOC	TOP OF CONCRETE	TDC
TDC	TOTAL DYNAMIC HEAD	TEL
TEL	TELEPHONE	TELE
TELE	TELEPHONE	TF
TF	TEMPORARY	THD
THD	THREADED JOINT	THK
THK	THICKNESS	TK
TK	TOP OF BANK	TOB
TOB	TOP OF BANK	TOE
TOE	TOE OF SLOPE	TOS
TOS	TOE OF SLOPE; TOP OF STEEL	TP
TP	TELEPHONE POLE, TOP OF PAVEMENT	TRP
TRP	TRIPIC	T&B
T&B	TOP AND BOTTOM	UG
UG	UNDERGROUND	USE
USE	HEATING, VENTILATION, AND AIR CONDITIONING	UN
UN	UNION	UTL
UTL	UTILITY	V
V	VOLTS	VAC
VAC	VACUUM	VAR
VAR	VARIABLE	VCP
VCP	VITRIFIED CLAY PIPE	VEL
VEL	VELOCITY	VERT
VERT	VERTICAL	VFD
VFD	VARIABLE FREQUENCY DRIVE	VOL
VOL	VOLUME	W
W	WEST	WL
WL	WATER LINE	WM
WM	WATER MAIN	WS
WS	WATER SURFACE	WTP
WTP	WATER TREATMENT PLANT	WT
WT	WEIGHT	WWF
WWF	WELDED WIRE FABRIC	WWM
WWM	WELDED WIRE MESH	WTR
WTR	WASTEWATER TREATMENT PLANT	W/
W/	WITH	W/O
W/O	WITHOUT	XFR
XFR	TRANSFER	YD
YD	TRANSFORMER	YR
YR	YEAR(S)	

## PROJECT CONTACTS



NOTE: ADDITIVE ALTERNATE LIMITS ARE NOT SHOWN ON OTHER DRAWINGS FOR CLARITY.

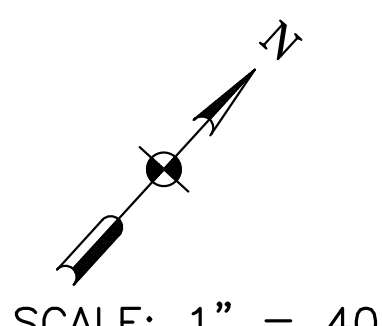


HARBOR ROAD  
S42°22'30"E 600.00'

N2062246.17  
E435202.26

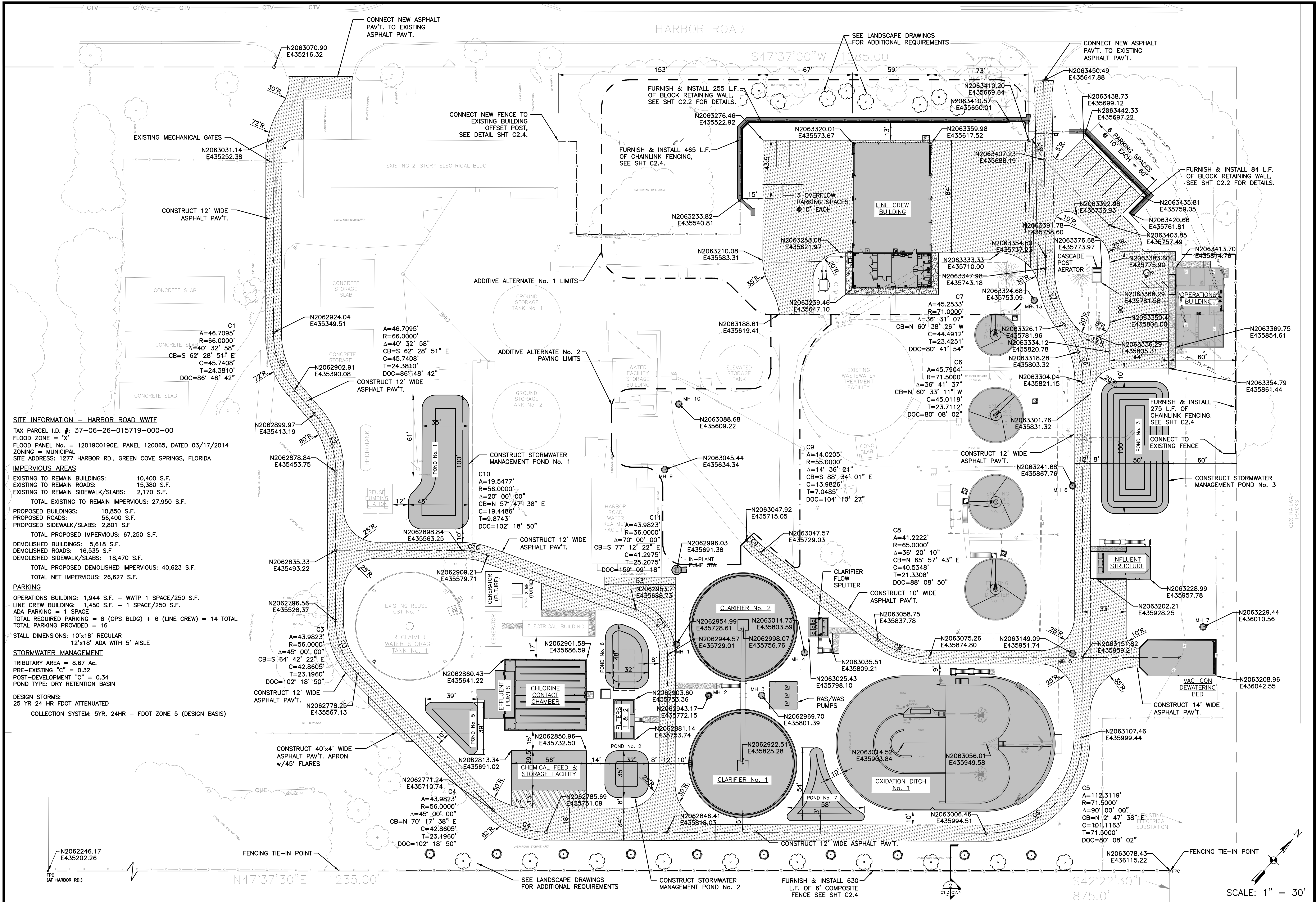
N47°37'30"E 1235.00'

S42°22'30"E 875.0'  
N2063078.43  
E436115.22



SCALE: 1" = 40'

<p><b>MITTALNER &amp; ASSOCIATES, INC.</b> CONSULTING ENGINEERS</p> <p>580-1 WELLS ROAD, ORANGE PARK, FLORIDA 32073 TEL. (904) 278-0030 FAX. (904) 278-0840</p>		<p>REVISION DESCRIPTION</p>
<p>DESC: MPT DRWN: KDH/USA PROJ: JRS MGR: JRS</p>	<p>DATE: 11/16/20</p>	<p>NO. DATE BY</p>
<p>CITY OF GREEN COVE SPRINGS DEP SRF Harbor Road WRF Expansion Phase 2 Site Master Plan &amp; Landscape Plan Clay County, Florida</p>		<p>JOB NO. 8905-56-1 SHEET NO. C1.2</p>



**SITE INFORMATION - HARBOR ROAD WWT**  
 TAX PARCEL I.D. #: 37-06-26-015719-000-00  
 FLOOD ZONE = 'X'  
 FLOOD PANEL No. = 12019C0190E, PANEL 120065, DATED 03/17/2014  
 ZONING = MUNICIPAL  
 SITE ADDRESS: 1277 HARBOR RD., GREEN COVE SPRINGS, FLORIDA

**IMPERVIOUS AREAS**

EXISTING TO REMAIN BUILDINGS:	10,400 S.F.
EXISTING TO REMAIN ROADS:	15,380 S.F.
EXISTING TO REMAIN SIDEWALK/SLABS:	2,170 S.F.
<b>TOTAL EXISTING TO REMAIN IMPERVIOUS:</b>	<b>27,950 S.F.</b>
PROPOSED BUILDINGS:	10,850 S.F.
PROPOSED ROADS:	56,400 S.F.
PROPOSED SIDEWALK/SLABS:	2,801 S.F.
<b>TOTAL PROPOSED IMPERVIOUS:</b>	<b>67,250 S.F.</b>
DEMOLISHED BUILDINGS:	5,618 S.F.
DEMOLISHED ROADS:	16,535 S.F.
DEMOLISHED SIDEWALK/SLABS:	18,470 S.F.
<b>TOTAL PROPOSED DEMOLISHED IMPERVIOUS:</b>	<b>40,623 S.F.</b>
<b>TOTAL NET IMPERVIOUS:</b>	<b>26,627 S.F.</b>

**PARKING**

OPERATIONS BUILDING: 1,944 S.F. - WWT 1 SPACE/250 S.F.  
 LINE CREW BUILDING: 1,450 S.F. - 1 SPACE/250 S.F.  
 ADA PARKING = 1 SPACE  
 TOTAL REQUIRED PARKING = 8 (OPS BLDG) + 6 (LINE CREW) = 14 TOTAL  
 TOTAL PARKING PROVIDED = 16

STALL DIMENSIONS: 10'x18' REGULAR  
 12'x18' ADA WITH 5' AISLE

**STORMWATER MANAGEMENT**

TRIBUTARY AREA = 8.67 AC.  
 PRE-EXISTING "C" = 0.32  
 POST-DEVELOPMENT "C" = 0.34  
 POND TYPE: DRY RETENTION BASIN

**DESIGN STORMS:**  
 25 YR 24 HR FDOT ATTENUATED  
 COLLECTION SYSTEM: 5YR, 24HR - FDOT ZONE 5 (DESIGN BASIS)

CITY OF GREEN COVE SPRINGS  
 DEP SRP Harbor Road WRF Expansion Phase 2  
 Site Plan - Horizontal Control  
 Clay County, Florida

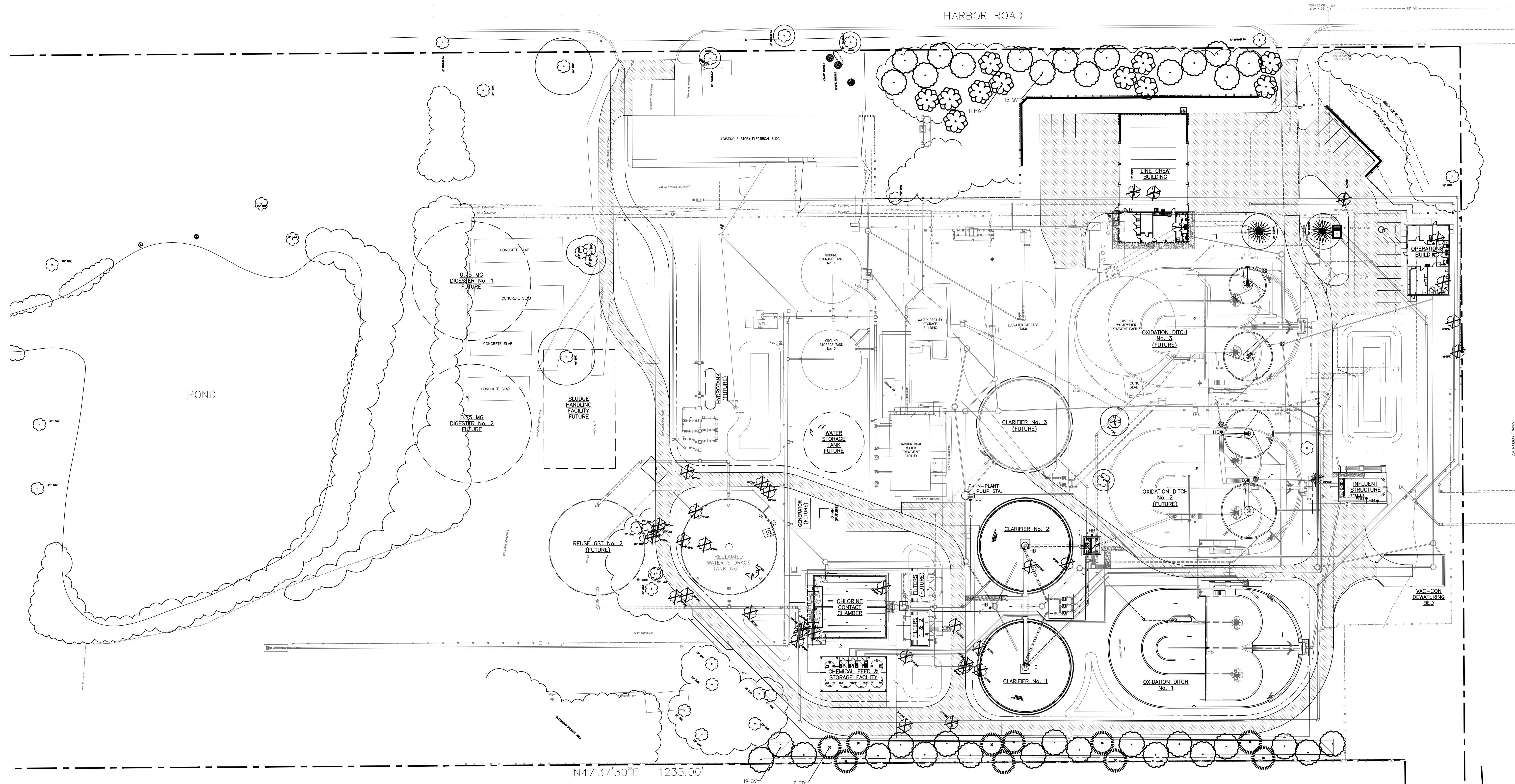
**MITTALNER & ASSOCIATES, INC.**  
 CONSULTING ENGINEERS  
 580-1 WELLS ROAD, ORANGE PARK, FLORIDA 32073  
 TEL. (904) 278-0030 FAX. (904) 278-0840

NO.	DATE	BY	REVISION DESCRIPTION

JOB NO. 8905-56-1  
 SHEET NO. C1.3

SCALE: 1" = 30'





CITY GREEN COVE SPRINGS HARBOR ROAD WWTF  
PLANT LIST

QTY	SYM	DESCRIPTION	SIZE	SPACING	NOTES*	TOTAL INCHES
34	QV	QUERCUS VIRGINIANA "CATHEDRAL LIVE OAK"	15'-17' x 7-8', 6" CAL., 4' CT., MATCHED	AS SHOWN	N, FYN, FF, WW	204
11	MG	MAGNOLIA GRANDIFLORA "SOUTHERN MAGNOLIA"	14-16' x 6-7', 6" CAL., 6' CT., MATCHED	AS SHOWN	N, FYN, FF, WW	66
10	TD	TAXODIUM DISTICHUM "BALD CYPRESS"	14-16' x 6-7', 6' CAL., 6' CT., MATCHED	AS SHOWN	N, FYN, FF, WW	60

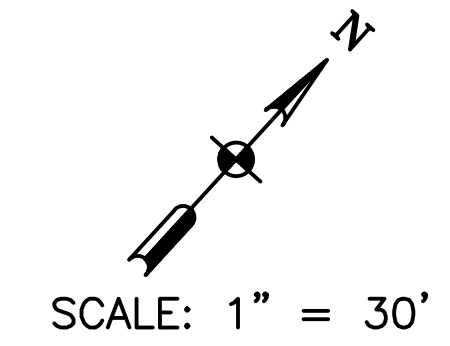
SOD PASPALUM NOTATUM "ARGENTINE BAHIA" - TSA FREE (WEED FREE)  
 SOD ALL 4:1 SLOPES OR GREATER, 10' FROM EOP AND ALL DISTURBED ROW. COORDINATE FURTHER GRASSING WITH GENERAL CONTRACTOR  
 SELECTED SOD SPECIES MEETS ALL CURRENT LANDSCAPE AND IRRIGATION REQUIREMENTS. ANY VARIABLE WILL REQUIRE GOVERNMENT APPROVAL

48 HOURS BEFORE YOU DIG  
CALL SUNSHINE  
1-800-432-4770  
IT'S THE LAW IN FLORIDA

FIELD ADJUST TREES AS NECESSARY.  
CGC TO IRRIGATE TREES UNTIL ESTABLISHED.

\*PLANT LIST LEGEND: N-NATIVE, FYN- FLORIDA YARDS & NEIGHBORHOODS 2006, FF- FLORIDA FRIENDLY, WW- WATER WISE 2008,  
OHE - JEA OVERHEAD ELECTRIC (ACCEPTABLE PLANT LIST)

prepared by:  
**JANET O. WHITMILL, R.L.A.**  
P.O. Box 5212, Jacksonville, FL 32247-5212  
Telephone (904) 398 7688



DESIG: JOW  
DRAWN: DHM  
CHECKED: JOW  
DATE: 4/7/18

NO. 1  
DATE: 1/1  
BY: TW

LANDSCAPE REVISION  
REVISION DESCRIPTION

**MITTAUER & ASSOCIATES, INC.**  
CONSULTING ENGINEERS  
580-1 WELLS ROAD, ORANGE PARK, FLORIDA 32073  
TEL. (904) 278-0030 FAX. (904) 278-0840

CITY OF GREEN COVE SPRINGS  
DEP SRF Harbor Road WWTF  
LANDSCAPE PLAN  
Clay County, Florida

JOB No. 19118  
SHEET No. L1.3

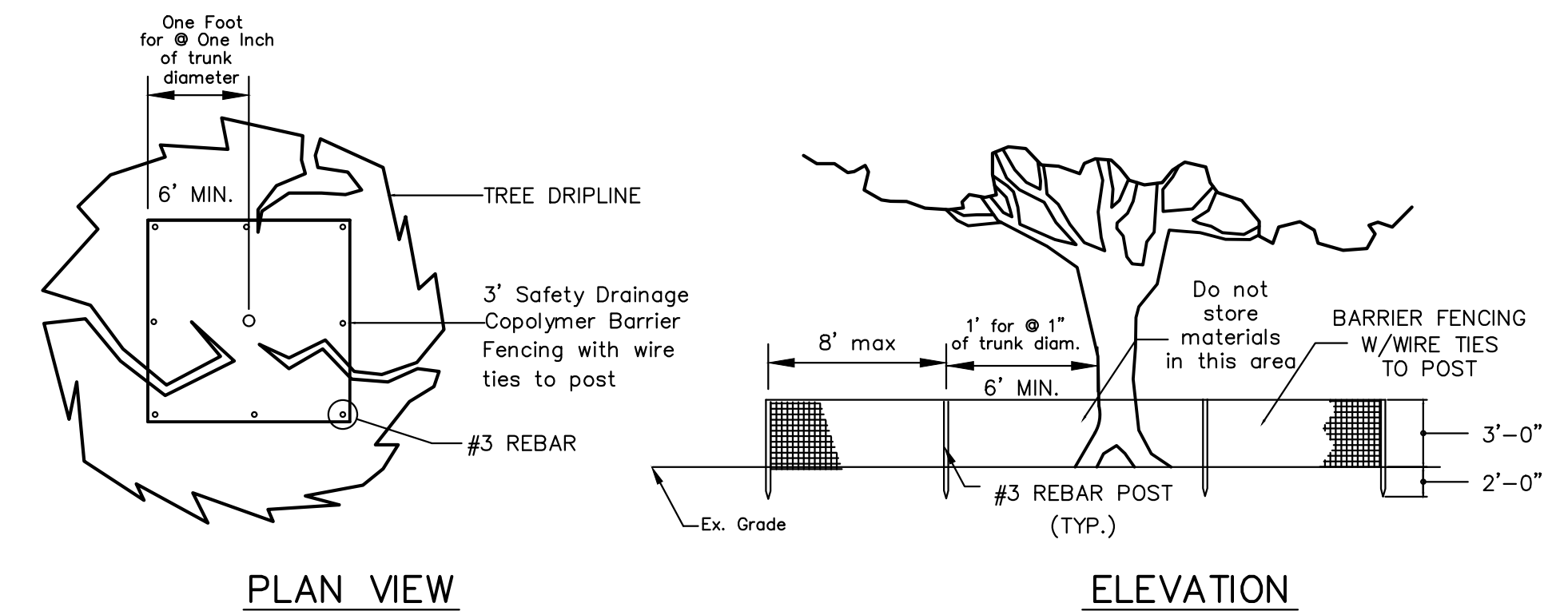
## CITY GREEN COVE SPRINGS HARBOR ROAD WWTF PLANT LIST

QTY	SYM	DESCRIPTION	SIZE	SPACING	NOTES*	TOTAL INCHES
34	QV	QUERCUS VIRGINIANA "CATHEDRAL LIVE OAK"	15'-17' x 7-8', 6" CAL., 4' CT., MATCHED	AS SHOWN	N, FYN, FF, WW	204
11	MG	MAGNOLIA GRANDIFLORA "SOUTHERN MAGNOLIA"	14-16' x 6-7', 6" CAL., 6' CT., MATCHED	AS SHOWN	N, FYN, FF, WW	66
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SOD PASPALUM NOTATUM "ARGENTINE BAHIA" - TSA FREE (WEED FREE)  
 SOD ALL 4:1 SLOPES OR GREATER, 10' FROM EOP AND ALL DISTURBED ROW. COORDINATE FURTHER GRASSING WITH GENERAL CONTRACTOR  
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 OHE - JEA OVERHEAD ELECTRIC (ACCEPTABLE PLANT LIST)



### TREE PROTECTION FENCING DETAIL

THE TREE PROTECTION BARRICADE SHALL BE AT LEAST THREE (3) FEET HIGH. THE BARRIER SHALL CONSIST OF EITHER WOOD FENCE WITH 2X4 POSTS PLACED A MAXIMUM EIGHT (8) FEET APART, WITH A 2X4 MINIMUM TOPRAIL, OR A TEMPORARY WIRE MESH FENCE, OR OTHER SIMILAR BARRIER WHICH WILL LIMIT ACCESS TO PROTECTED AREA.

THE BARRICADE SHALL BE AT LEAST ONE FOOT IN DIAMETER FOR EACH INCH OF TRUNK DIAMETER. FOR TREES LESS THAN 12" DBH, THE MINIMUM BARRICADE SHALL BE PLACED AT LEAST SIX (6) FEET AWAY FROM THE BASE OF THE TREE.

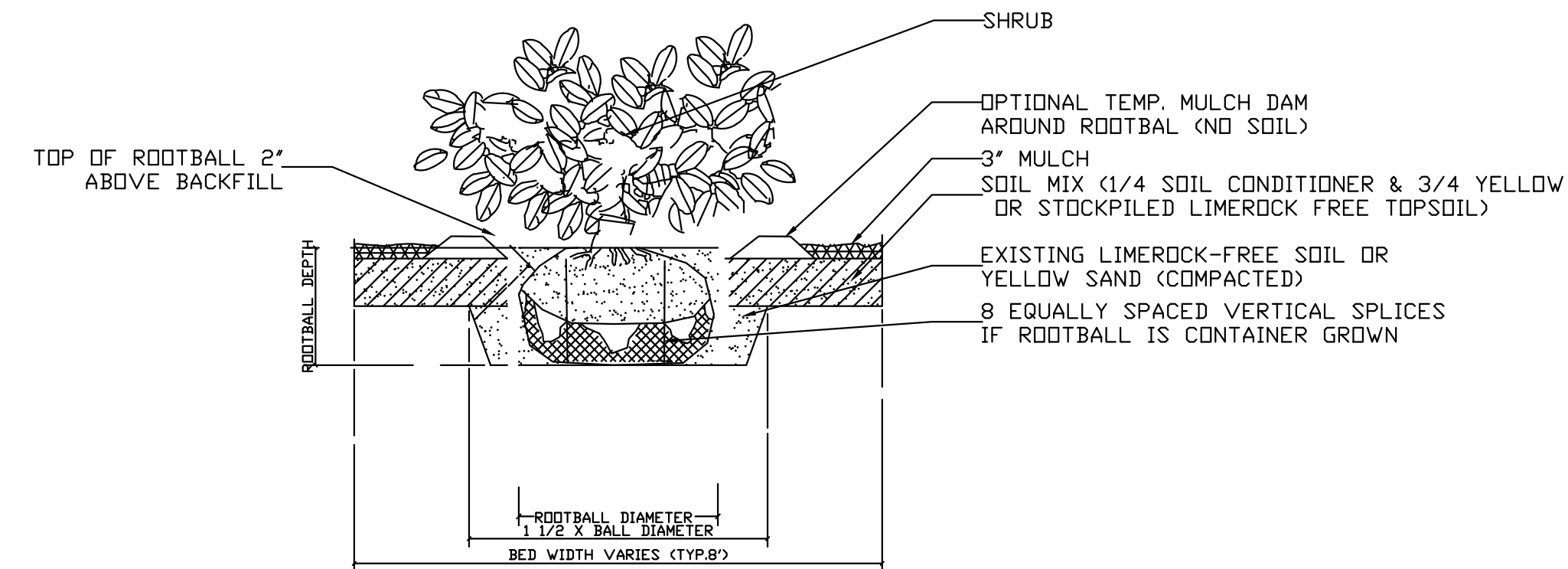
TREE BARRICADE APPROVAL: OBTAIN CITY APPROVAL OF TREE BARRICADES BEFORE BEGINNING CLEARING OPERATIONS OR ANY SITE DEVELOPMENT.

## PLANTING NOTES

- The LANDSCAPE CONTRACTOR is responsible for verifying project site conditions and all quantities indicated on these plans before commencing any work. LANDSCAPE CONTRACTOR shall notify the LANDSCAPE ARCHITECT if soil conditions are poorly drained to determine if substitution of materials is necessary.
- Soil tests shall be provided to evaluate various areas of the landscape (especially the parking lot islands) for pH, available nutrients, phosphorus content, bulk density, etc. This will serve to ensure proper plant selection according to prevailing soil conditions, what lime/sulphur applications are needed (if any) and long-term survival of plant material.
- All plant material shall be Florida Grade No. 1 or better nursery grown in accordance to Florida Grades and Standards handbook.
- All plant material shall be container grown or B&B. B&B materials shall be "hardened off" root pruned during field production and shall be dug at least several weeks before planting is performed.
- Plants shall be sound, healthy and vigorous, well branched and densely foliated when in leaf. They shall be free of disease, insects, eggs or larvae and shall have healthy, well developed root systems. They shall be free from physical damage or adverse conditions that would prevent thriving growth.
- All plants shall conform to the varieties indicated in the plant list.
- Substitution of plant materials will not be permitted unless authorized in writing by the LANDSCAPE ARCHITECT. If proof is submitted that any plant specified is not obtainable, a proposal will be considered for use of the nearest equivalent size or variety with corresponding adjustment of contract price.
- Plant material locations and bed outlines shall be staked or flagged on site by the CONTRACTOR and shall be adjusted if required to fit actual as-built conditions on site and approved by the owner or owners representative.
- All proposed tree planting locations shall be staked or flagged before installation by the LANDSCAPE ARCHITECT and approved by the owner or owners representative.
- The CONTRACTOR shall estimate the depth of the planting hole by measuring the distance between the point where the topmost root emerges from the trunk and the bottom of the root ball. The planting hole shall be slightly shallower than this distance. No more than 2 to 3 inches of the root ball needs to be above the soil unless the site is poorly drained. Poorly drained soil requires planting depths even or higher. Planting holes dug too deep are required to have soil added to the bottom and loosely compacted. If planting holes should fill with water as it is dug, position the bottom of the root ball above the water and mound soil to cover the sides of the ball. The hole shall be at least 1.5 times the diameter of the root ball. Wider holes shall be used for compacted soil and wet sites.
- The soil shall be freshly tilled and large clods of soil broken up. The growing medium shall be settled and firm at the time of herbicide application. Herbicides may be mechanically incorporated by mixing into top layer at a depth of 1-3 inches.
- All backfill around plant material shall be worked firmly by slicing a shovel down into the backfill 20 to 30 times around the tree as you add backfill soil. Large clumps shall be broken up. Do not pack the backfill. Only step firmly on backfill soil to stabilize the root ball. The top of the root ball shall remain 1 inch (small trees) to 3 inches (large trees) or approximately 10% above grade. Do not over-pack the loosened soil when wet. Add 10 to 20 gallons of water to the rootball and backfill. Fill in any holes or depressions with backfill soil. Do not attempt to eliminate air pockets by compaction. Water infiltrating the backfill soil will eliminate large air pockets.
- LANDSCAPE CONTRACTOR shall bear final responsibility for proper surface drainage of planted areas. Any discrepancy in the drawings, obstruction on the site, or prior to work done by any other party, which the CONTRACTOR feels precludes establishing proper drainage shall be brought to the attention of the LANDSCAPE ARCHITECT for correction or relief of said responsibility.
- When planting on slopes, set tree so top-most root in the ball on the uphill side is even with the soil. The side of the root ball on the downhill side will be well above the surrounding soil. Soil shall cover the sides of the root ball. Mulch shall cover the edge of the rootball and not piled on top.
- Planting beds shall be cut or edged to form a uniform clean line between beds and lawn areas.
- After all plant material in a plant bed area has been installed and approved, the areas between plants shall be raked to an even grade to conform to pre-mulching finish grades. All planting beds and plant saucers shall then be uniformly covered with a minimum depth of three (3) inches of #2 grade or better of mini pine bark nuggets with a maximum diameter of two (2) inches. Contractor to provide a sample prior to installation.
- Before fertilization of a soil and/or foliar nutrient analysis shall be performed to determine whether phosphorus fertilizer with 30% slow release nitrogen will be required. All planting bed areas shall be fertilized approximately 4-6 weeks after installation.
- Plant material soil shall be "native" soil that was removed from the planting hole. If soil is badly contaminated, good quality soil shall be used as replacement after contaminated soil has been completely removed from planting area.
- After sodding is completed, the entire site areas shall be watered by hand or irrigation system each day for two weeks. After approximately one month of installation, sodded areas shall then be top dressed with a 15-0-15 commercial slow-release fertilizer at a rate of 6.67 pounds per 1,000 square feet of area in an evenly broad-case pattern.
- The LANDSCAPE CONTRACTOR is responsible for all fine grading preparation for planting. Apply pre-emergent to all beds prior to planting.
- Rough grades will be established by the owners general contractor at approximately 3 inches below curbs, sidewalks, hardscape amenities, mowing strips and abutments. All materials shall be a minimum 30" from buildings or walks.
- CONTRACTOR shall coordinate construction of planting areas with installation of irrigation system.
- Where seeding may be required on the plans, germination rate shall be the maximum percentage required for the variety specified at the rate of application specified.
- Sod areas shall be SPECIFIED Grass. Grass for sodding shall be freshly cut in squares one foot wide by two feet long. Sod shall be healthy, free of insects and weeds, in naturally flourishing conditions. Dry, brown and unfresh sod will be rejected.
- Sod shall be laid end to end and side to side in a staggered line to form a uniform layer. All uneven edges shall be squarely trimmed to allow close and firm fitting of each piece.
- After sodding is completed, the entire sod areas shall be watered by hand or irrigation system each day for two weeks. Sodded areas shall then be top dressed with a commercial fertilizer as directed herein at the rate of 12 pounds per 1000 square feet of area in an evenly broad case pattern.
- The LANDSCAPE CONTRACTOR is responsible for fully maintaining all plant material on site during and before planting, until the work is accepted by the LANDSCAPE ARCHITECT and/or owner. The LANDSCAPE CONTRACTOR is responsible for removing tree stakes after tree is established.
- All plants shall be guaranteed by the LANDSCAPE CONTRACTOR to be healthy plants and in flourishing condition of active growth for ninety (90) days from final inspection and acceptance. All trees shall be guaranteed an additional one year from final inspection and acceptance.
- The LANDSCAPE ARCHITECT, owner or owners representative shall have the right to reject any and all work which in his opinion does not meet with the requirements of the specifications at any stage of the project operation.
- In general, the work shall proceed as rapidly as the site becomes available. Keep all areas of work clean, neat, and orderly at all times.
- There will be special care to all existing trees to be retained on site to avoid construction damage.
- An automatic irrigation system is to be provided and a shop drawing of the layout and design must be submitted to the governmental agency, for review and approval, prior to installation.
- Irrigation system shall be fully automatic, providing 100% coverage to all planting areas, with all pop up heads in lawn area.
- Irrigation station shall be set where there will be no mixing of shrub and lawn areas, fixed spray heads with gear driven heads or impacts. Shrub risers shall be minimum 2.5' from eop and all heads minimum 2' from buildings.
- A double check backflow prevention (or approved equal); equal to a DCA-100; to be mounted in a rectangular valve box (12"x10") on the service side of the meter and immediately adjacent to the water meter.
- After the landscape plan is approved by the governmental agency any subsequent changes must be resubmitted for review and approval.
- Shade trees shall be planted minimum 5' from EOP and 15' from OHE.
- Do not plant trees below Normal Water Line (NWL) see civil drawings. Sod all 4:1 or greater slopes. Seed all other disturbed areas.

### CITY OF GREEN COVE SPRINGS HARBOR ROAD WWTF TREES TO BE REMOVED

TREE QTY	TREE SPECIES	SIZE (INCHES)	SUBTOTAL (INCHES)
10	OAK	12	120
15	OAK	15	225
8	OAK	18	144
4	OAK	24	96
1	OAK	30	30
2	OAK	36	72
1	OAK	42	42
1	OAK	48	48
1	CEDAR	24	24
TOTAL			801
NON-PROTECTED			
7	PINE	12	84
1	PINE	14	14
3	PINE	15	45
2	PINE	16	32
1	PINE	18	18
2	PINE	20	40
2	PINE	24	48
TOTAL			267



### SHRUB PLANTING DETAIL

NOT TO SCALE

### CITY OF GREEN COVE SPRINGS HARBOR ROAD WWTF MITIGATION REQUIREMENTS

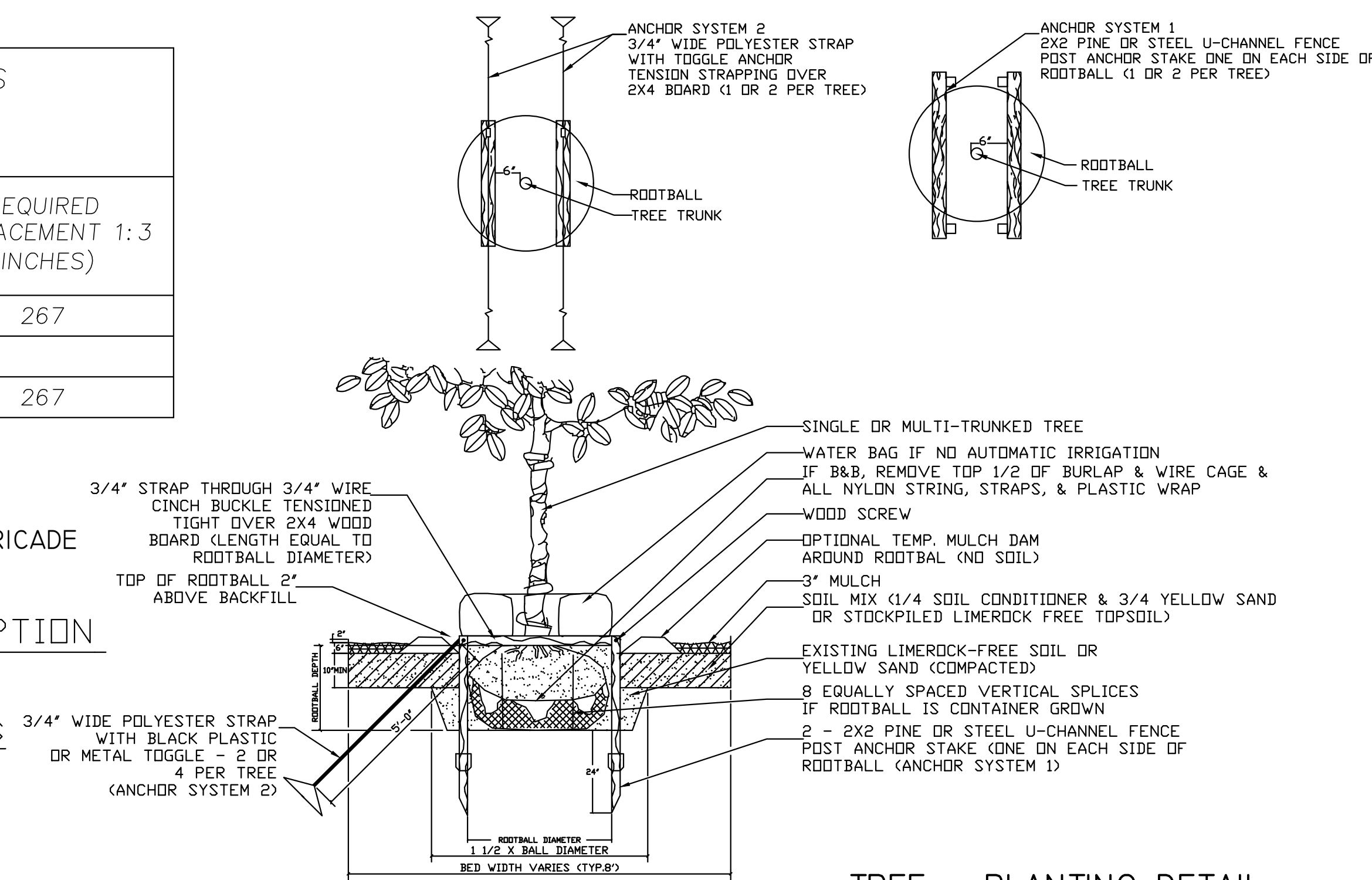
TREE INCHES REMOVED	TOTAL INCHES	REQUIRED REPLACEMENT 1:3 (INCHES)
TREES GREATER THAN 12"	801	267
TOTAL		267

### LEGEND

- TREE TO BE REMOVED
- TREE TO BE PRESERVED W/ BARRICADE

### ESTIMATED WATER CONSUMPTION TREE ESTABLISHMENT

MONTH	NET IRR REQ.	GALLONS
MONTH 1	20 GPD X15	200
MONTH 2	20 GPD X10	200
MONTH 3	20 GPD X10	200
MONTH 4	10 GPD X10	100
MONTH 5	10 GPD X10	100
MONTH 6	10 GPD X10	100
MONTH 7	0	0



### TREE PLANTING DETAIL

NOT TO SCALE

prepared by:  
**JANET O. WHITMILL, R.L.A.**  
 P.O. Box 5212, Jacksonville, FL 32247-5212  
 Telephone (904) 398 7688

**MITTAUER & ASSOCIATES, INC.**  
 CONSULTING ENGINEERS

580-1 WELLS ROAD, ORANGE PARK, FLORIDA 32073  
 TEL. (904) 278-0030 FAX. (904) 278-0840

CITY OF GREEN COVE SPRINGS  
 DEP SRF Harbor Road WWTF  
 LANDSCAPE DETAILS  
 Clay County, Florida

JOB No. 19118  
 SHEET No.

L2.3

NO.	DATE	BY	REVISION DESCRIPTION
2	12/14/2020	JOW	LANDSCAPE REVISION
1	8/9/2020	TW	LANDSCAPE REVISION

DESIGN	DATE	SCALE
JOW	4/7/15/18	1" = 1"
DHW		
JOW		
MRSU		