GRAYLON OAKS
(PUBLIC ROADS)
FOR
GRAYLON OAKS LAND TRUST

VERMONT AVENUE
GREEN COVE SPRINGS, FLORIDA

LEGAL DESCRIPTION AS SHOWN OFFICIAL RECORD BOOK 2815, PAGE 524

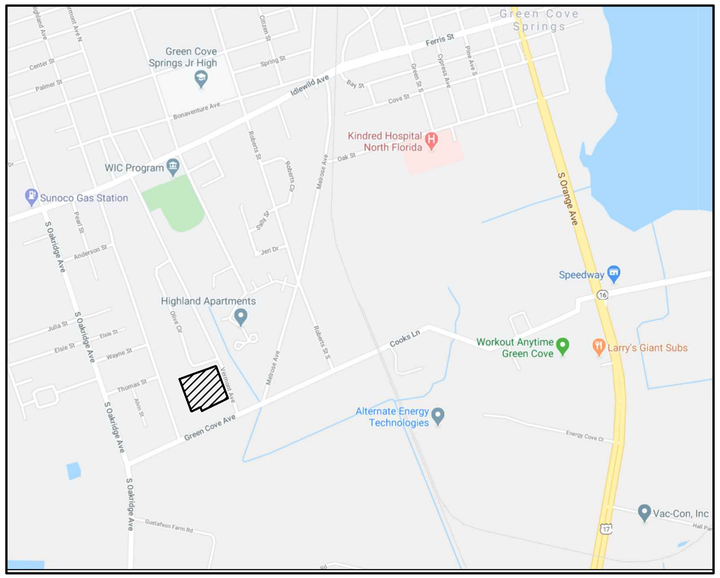
A PARCEL OF LAND SITUATED IN LOT "C", BLOCK, 102, PALMER AND FERRIS TRACT, GREEN COVE SPRINGS, CITY COUNTY, FLORIDA, ACCORDING TO PLAT THEREOF RECORDED IN PLAT BOOK I, PAGE 44 OF THE PUBLIC RECORDS OF CLAY COUNTY, FLORIDA, SAID PARCEL BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:
BEGIN AT THE SOUTHEAST CORNER OF LOT 1, ST. JOHNS MOBILE HOME VILLAGE. ACCORDING TO PLAT THEREOF RECORDED IN PLAT BOOK 7, PAGE 32 OFF SAID PUBLIC RECORDS, ; THENCE ON THE WEST LINE OF VERMONT STREET RUN SOUTH 20 DEGREES 17 MINUTES 22 SECONDS EAST, 278.73 FEET TO THE SOUTH LINE OF SAID LOT "C"; THENCE ON SAID SOUTH LINE, SOUTH 64 DEGREE 00 MINUTES 00 SECONDS WEST, 429.41 FEET TO THE WEST LINE OF OF SAID LOT "C"; THENCE ON SAID WEST LINE, NORTH 20 DEGREE 14 MINUTES 51 SECONDS WEST 326,09 FEET TO THE: SOUTH LINE OF SAID ST. JOHNS MOBILE HOME VILLAGE; THENCE ON SAID SOUTH LINE, NORTH 70 DEGREES 19 MINUTES 51 SECONDS EAST, 427.07 FEET TO THE POINT OF BEGINNING.

BEGINNING AT THE SE CORNER OF HENRY LENDERS LAND THENCE RUNNING EASTERLY SIX CHAINS AND THIRTY SIX LINKS PARALLEL WITH CIYDEVIEW AVENUE TO VERMONT AVENUE, THENCE ALONG THE WEST SIDE OF VERMONT AVENUE NORTHERLY NINETY–SIX FEET, THENCE WESTERLY SIX CHAINS AND THIRTY–SIX LINKS TO H. LENDERS EAST LINE, THENCE SOUTHERLY ALONG LENDERS EAST LINE ONE HUNDRED FEET TO THE PLACE OF BEGINNING; CONTAINING ONE ACRE MORE OR· LESS, THE SAME BEING A PORTION OF A CERTAIN FOUR ACRE LOT CONVEYED BY WM. THOMPSON CO MRS. M.E. BEMIS BY DEED DATED DECEMBER 21ST, 1883, RECORDED IN BOOK "L" PAGES 605 & 606 OF THE PUBLIC RECORDS OF CLAY COUNTY, FLORIDA.

LESS EXCEPT OFFICIAL RECORDS BOOK 3331, PAGE 1520, PARCEL 1

A PARCEL OF LAND SITUATED IN LOT "A" AND LOT "B", BLOCK 102, PALMER AND FERRIS TRACT, IN THE TOWN OF GREEN COVE SPRINGS, CLAY COUNTY, FLORIDA, ACCORDING TO PLAT THEREOF RECORDED IN PLAT BOOK 2, PAGE 1 OF THE PUBLIC RECORDS OF SAID COUNTY, SAID PARCEL BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE SOUTHWEST CORNER OF SAID LOT "A", BLOCK 102, PALMER AND FERRIS TRACT IN THE TOWN OF GREEN COVE SPRINGS, AND RUN NORTH 64 DEGREES 00 MINUTES 00 SECONDS EAST, ALONG THE SOUTH LINE OF LOT "A", WHICH IS ALSO THE SOUTH LINE OF THE TOWN OF GREEN COVE SPRINGS, FOR A DISTANCE OF 79.83 FEET TO THE POINT OF BEGINNING; THENCE CONTINUE ON LAST SAID LINE NORTH 64 DEGREES 00 MINUTES 00 SECONDS EAST, 30.17 FEET; THENCE NORTH 20 DEGREES 00 MINUTES 00 SECONDS WEST, 211.16 FEET; THENCE SOUTH 64 DEGREES 00 MINUTES 00 SECONDS WEST, 110.21 FEET TO THE WEST LINE OF SAID LOT "B"; THENCE ON LAST SAID LINE, AND ON THE WEST LINE OF SAID LOT "A', SOUTH 20 DEGREES 00 MINUTES 00 SECONDS EAST, 100.55 FEET; THENCE NORTH 64 DEGREES 00 MINUTES 00 SECONDS EAST, 79.83 FEET; THENCE SOUTH 20 DEGREES 00 MINUTES 00 SECONDS EAST, 110.61 FEET TO THE POINT OF BEGINNING.



LOCATION MAP
N.T.S.

INDEX OF DRAWINGS

DEG JOB No. 2103.007 (GRAYLON OAKS)

PROJECT OWNER AND CONSULTANTS

OWNER: GRAYLON OAKS LAND TRUST
4279 CEDAR ROAD
ORANGE PARK, FLORIDA 32065
CONTACT: BRENT WHITE
TEL: (904) 219-8358

ENGINEER: DOMINION ENGINEERING GROUP, INC.
4348 SOUTHPOINT BLVD, SUITE 201
JACKSONVILLE, FLORIDA 32216
CONTACT: MIKE BOWLES
TEL: (904) 854-4500 FAX: (904) 854-4505

LANDSCAPE: GODARD DESIGN ASSOCIATES, INC
541 OLEANDER STREET
NEPTUNE BEACH, FLORIDA 32266
CONTACT: BRETT GODARD
TEL: (904) 247-7729

SURVEYOR: BARTRAM TRAIL SURVEYING, INC.
1501 COUNTY ROAD 315, SUITE 106
GREEN COVE SPRINGS, FL 32043
CONTACT: XXXXXXX
TEL: (904) 284-2224

DEG
PLANNERS AND ENGINEERS
REGISTRY No. 26821

PIN # 38-06-26-016748-000-00

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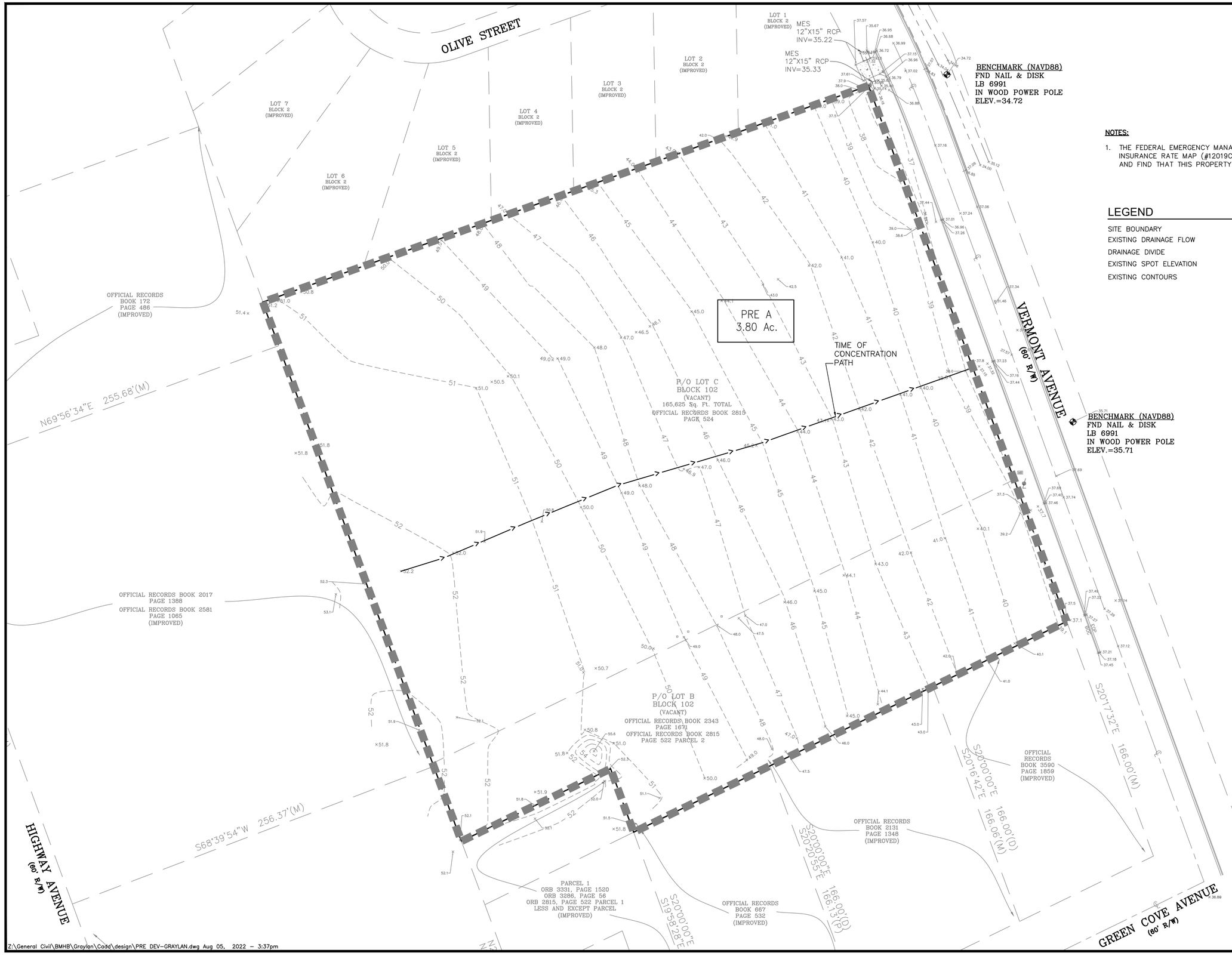
REVISIONS
FDEP 10-2 SUBMITTAL 06/15/2020
BID SET 08/18/2020
COUNTY SUBMITTAL 1 12/15/2020
COUNTY SUBMITTAL 2 01/11/2022
COUNTY SUBMITTAL 3 06/03/2022
COUNTY SUBMITTAL 3 08/08/2022

WILLIAM E SCHAEFER, P.E.
FLA. REGISTERED ENGINEER # 40229



NOTES:

1. THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP (#12019C0277E) DATED MARCH 17, 2014, AND FIND THAT THIS PROPERTY IS SITUATED IN FLOOD ZONE "X".

LEGEND

- SITE BOUNDARY
- EXISTING DRAINAGE FLOW
- DRAINAGE DIVIDE
- EXISTING SPOT ELEVATION (50.7)
- EXISTING CONTOURS (48)

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GRAYLON OAKS
FOR
GRAYLON OAKS LAND TRUST

PRE DEVELOPMENT PLAN

REVISIONS

PLOT DATE:
DRAWN BY: JMM
DESIGNED BY: WES
CHECKED BY: WES
SCALE: AS NOTED
JOB NO.:

SHEET NO.
C1
OF ___

WILLIAM E. SCHAEFER LICENSE No. 40229 STATE OF FLORIDA PROFESSIONAL ENGINEER
08/05/2022

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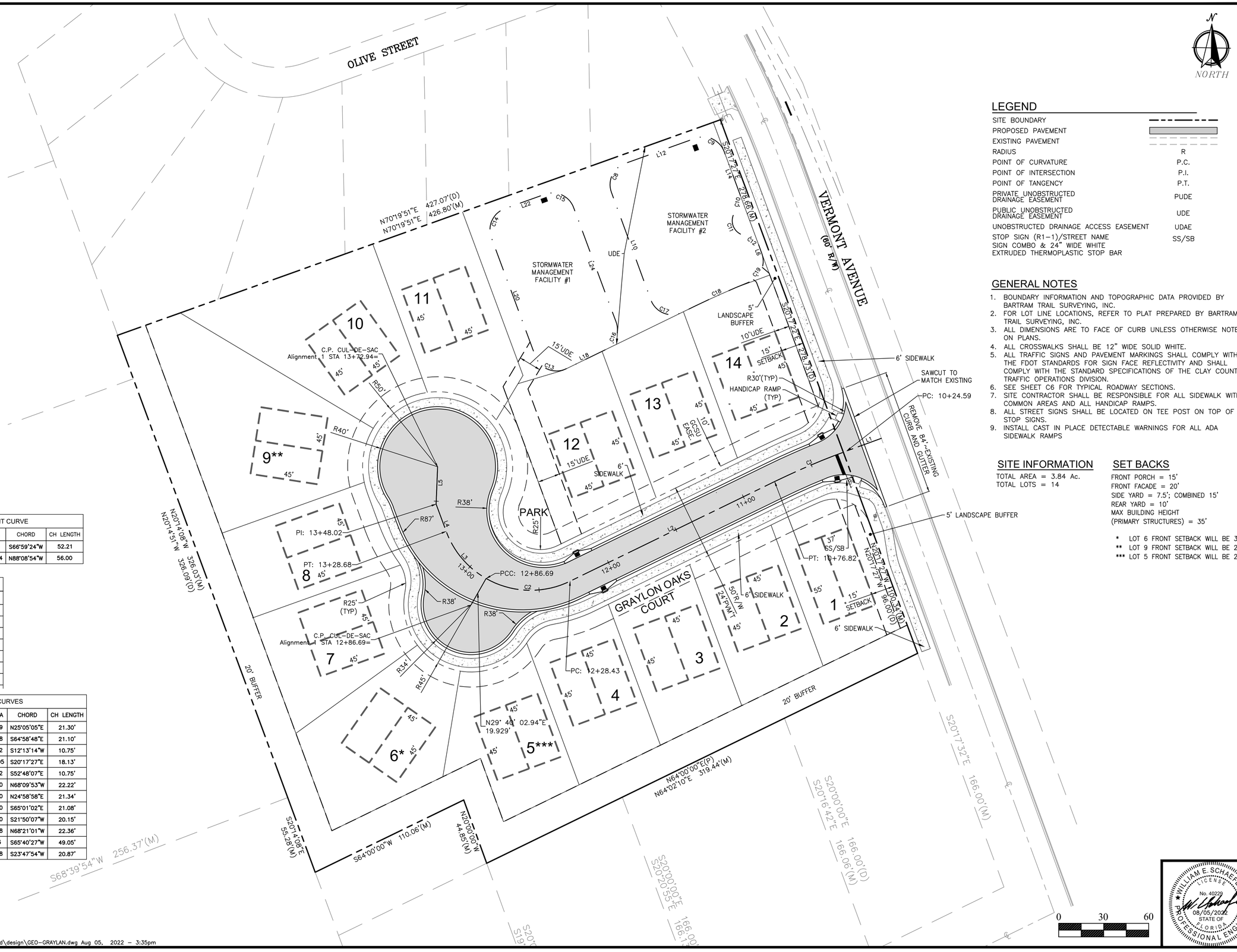

ALIGNMENT LINES		
L#	DISTANCE	BEARING
L1	24.59	S69°56'37"W
L2	151.61	S64°02'10"W
L3	41.99	N40°17'03"W
L4	19.34	N20°14'08"W
L5	74.92	N2°17'00"E

ALIGNMENT CURVE					
C#	LENGTH	RADIUS	DELTA	CHORD	CH LENGTH
C1	52.23	506.60	5.9075	S66°59'24"W	52.21
C2	58.26	60.00	55.6314	N88°08'54"W	56.00

SWMF LINES		
L#	DISTANCE	BEARING
L6	5.68'	S20°17'27"E
L10	76.37'	N20°09'40"W
L12	49.92'	N70°19'51"E
L14	30.35'	S20°17'27"E
L18	28.52'	S64°02'10"W
L20	84.35'	N20°21'56"W
L22	28.38'	N70°19'51"E

SWMF CURVES					
C#	LENGTH	RADIUS	DELTA	CHORD	CH LENGTH
C8	23.69'	15.00'	90.49	N25°05'05"E	21.30'
C9	23.40'	15.00'	89.38	S64°58'48"E	21.10'
C10	11.35'	10.00'	65.02	S12°13'14"W	10.75'
C11	22.70'	10.00'	130.05	S20°17'27"E	18.13'
C12	11.35'	10.00'	65.02	S52°48'07"E	10.75'
C13	25.03'	15.00'	95.60	N68°09'53"W	22.22'
C14	23.74'	15.00'	90.70	N24°58'58"E	21.34'
C15	23.38'	15.00'	89.30	S65°01'02"E	21.08'
C16	22.10'	15.00'	84.40	S21°50'07"W	20.15'
C17	25.23'	15.00'	96.38	N68°21'01"W	22.36'
C18	49.06'	635.00'	4.43	S65°40'27"W	49.05'
C19	23.09'	15.00'	88.18	S23°47'54"W	20.87'

NORTH

LEGEND

SITE BOUNDARY	
PROPOSED PAVEMENT	
EXISTING PAVEMENT	
RADIUS	R
POINT OF CURVATURE	P.C.
POINT OF INTERSECTION	P.I.
POINT OF TANGENCY	P.T.
PRIVATE UNOBSTRUCTED DRAINAGE EASEMENT	PUDE
PUBLIC UNOBSTRUCTED DRAINAGE EASEMENT	UDE
UNOBSTRUCTED DRAINAGE ACCESS EASEMENT	UDAE
STOP SIGN (R1-1)/STREET NAME SIGN COMBO & 24" WIDE WHITE EXTRUDED THERMOPLASTIC STOP BAR	SS/SB

GENERAL NOTES

1. BOUNDARY INFORMATION AND TOPOGRAPHIC DATA PROVIDED BY BARTRAM TRAIL SURVEYING, INC.
2. FOR LOT LINE LOCATIONS, REFER TO PLAT PREPARED BY BARTRAM TRAIL SURVEYING, INC.
3. ALL DIMENSIONS ARE TO FACE OF CURB UNLESS OTHERWISE NOTED ON PLANS.
4. ALL CROSSWALKS SHALL BE 12" WIDE SOLID WHITE.
5. ALL TRAFFIC SIGNS AND PAVEMENT MARKINGS SHALL COMPLY WITH THE FDOT STANDARDS FOR SIGN FACE REFLECTIVITY AND SHALL COMPLY WITH THE STANDARD SPECIFICATIONS OF THE CLAY COUNTY TRAFFIC OPERATIONS DIVISION.
6. SEE SHEET C6 FOR TYPICAL ROADWAY SECTIONS.
7. SITE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SIDEWALK WITHIN COMMON AREAS AND ALL HANDICAP RAMPS.
8. ALL STREET SIGNS SHALL BE LOCATED ON TEE POST ON TOP OF STOP SIGNS.
9. INSTALL CAST IN PLACE DETECTABLE WARNINGS FOR ALL ADA SIDEWALK RAMPS

SITE INFORMATION

TOTAL AREA = 3.84 Ac.
TOTAL LOTS = 14

SET BACKS

FRONT PORCH = 15'
FRONT FACADE = 20'
SIDE YARD = 7.5'; COMBINED 15'
REAR YARD = 10'
MAX BUILDING HEIGHT
(PRIMARY STRUCTURES) = 35'

* LOT 6 FRONT SETBACK WILL BE 30'
** LOT 9 FRONT SETBACK WILL BE 27.5'
*** LOT 5 FRONT SETBACK WILL BE 25'

0 30 60

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GRAYLON OAKS
FOR
GRAYLON OAKS LAND TRUST

GEOMETY PLAN

REVISIONS

PLOT DATE:
DRAWN BY: JMM
DESIGNED BY: WES
CHECKED BY: WES
SCALE: AS NOTED
JOB NO.:
© LATEST DATE HEREON
SHEET NO.
C2
OF ___

WILLIAM E. SCHAEFER LICENSE No. 40229 08/05/2022 STATE OF FLORIDA PROFESSIONAL ENGINEER

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Structure Table	
Structure Name	Structure Details
S1 DBL CURB INLET	RIM = 45.25 INV OUT = 41.75
S2 CURB INLET	RIM = 45.50 INV IN = 41.65 INV OUT = 41.65
S3 STORM MANHOLE	RIM = 47.50 INV IN = 41.30 INV OUT = 41.10
S4 24" MES	INV IN = 41.00
S5 CURB INLET	RIM = 37.65 INV OUT = 35.40
S6 CURB INLET	RIM = 37.55 INV IN = 35.30 INV OUT = 34.60
S7 STORM MANHOLE	RIM = 39.20 INV IN = 34.30 INV OUT = 34.30
S8 18" MES	INV IN = 34.20
S9 OUTFALL STRUCTURE	SEE SHEET C7
S10 OUTFALL STRUCTURE	SEE SHEET C7
S11 12"x18" FDOT HEADWALL	INV IN = 34.00

OLIVE STREET

BENCHMARK (NAVD88)
FND NAIL & DISK
LB 6991
IN WOOD POWER POLE
ELEV.=34.72

SEE SHEET C5 FOR ADDITIONAL STORM PIPE INSTALLATION INFORMATION

MES 12"X15" RCP INV=35.22

MES 12"X15" RCP INV=35.33

S11

EXISTING DITCH

S9

S10

SWMF 1
TOP=44.0
BOT=41.0

SWMF 2
TOP=38.0
BOT=34.5

S8

S7

S4

S3

S2

S1

S6

S5

POST 1 2.33 Ac.
(0.96 IMPERVIOUS)

POST 2 1.47 Ac.

POST 2 1.47 Ac.
(0.70 IMPERVIOUS)

PARK

GRAYLON OAKS COURT

VERMONT AVENUE

84'~VALLEY GUTTER

104'~VALLEY GUTTER

TYPE "A" SODDED SWALE TO BE CONSTRUCTED ON LOT LINE (TYP) (SEE C9 FOR DETAIL)

10
F.F. EL. 50.8
LOT TYPE A

11
F.F. EL. 50.7
LOT TYPE A

12
F.F. EL. 47.8
LOT TYPE A

13
F.F. EL. 44.8
LOT TYPE B

14
F.F. EL. 41.7
LOT TYPE B

9**
F.F. EL. 50.8
LOT TYPE A

8
F.F. EL. 50.8
LOT TYPE A

7
F.F. EL. 50.8
LOT TYPE A

6*
F.F. EL. 50.8
LOT TYPE A

5***
F.F. EL. 50.8
LOT TYPE A

4
F.F. EL. 49.6
LOT TYPE A

3
F.F. EL. 47.5
LOT TYPE A

2
F.F. EL. 44.9
LOT TYPE A

1
F.F. EL. 42.0
LOT TYPE A

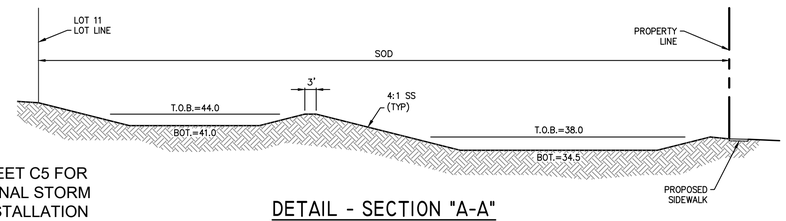
S38°39'54"W 256.37'(M)

S20°00'00"E 166.06'(M)

S20°16'42"E

S20°20'55"E

S2017



DETAIL - SECTION "A-A"
SCALE: 1" = 20'

NORTH

Pipe Table				
Pipe Name	Size	TYPE	Length	Slope
S1 DBL CURB INLET–S2 CURB INLET	24"	RCP	29'	0.35%
S2 CURB INLET–S3 STORM MANHOLE	24"	RCP	118'	0.30%
S3 STORM MANHOLE–S4 24" MES	24"	PP	37'	0.27%
S5 CURB INLET–S6 CURB INLET	12"x18"	ERCP	29'	0.35%
S6 CURB INLET–S7 STORM MANHOLE	18"	RCP	114'	0.26%
S7 STORM MANHOLE–S8 18" MES	18"	PP	15'	0.67%
S9 OUTFALL STRUCTURE–S10 OUTFALL STRUCTURE	15"	RCP	107'	0.19%
S10 OUTFALL STRUCTURE–S11 12"x18" FDOT HEADWALL	12"x18"	ERCP	67'	0.30%

LEGEND

- SITE BOUNDARY
- EXISTING PAVEMENT
- PROPOSED PAVEMENT
- PROPOSED PAVEMENT
- EXISTING SPOT ELEVATION — 41.0
- EXISTING ELEVATION — (46.8)
- PROPOSED ELEVATION — 40.3
- WETLAND LINE — JD — JD
- MAJOR DRAINAGE DIVIDE
- MINOR DRAINAGE DIVIDE
- PROPOSED SWALE CENTERLINE
- TOP OF BANK
- PROPOSED DRAINAGE FLOW
- EXISTING DRAINAGE FLOW
- PROPOSED INLET
- PROPOSED INLET — S10
- PUBLIC UNOBSTRUCTED DRAINAGE EASEMENT — UDE
- PRIVATE UNOBSTRUCTED DRAINAGE EASEMENT — PUDE
- UNOBSTRUCTED DRAINAGE ACCESS EASEMENT — UDAE

NOTES:

1. SEE THIS SHEET FOR STRUCTURE AND PIPE INFORMATION.
2. SIDE SLOPES GREATER THAN 4:1 SHALL BE SODDED.
3. CONTRACTOR TO UTILIZE TYPE IV SILT FENCE WHEN STANDARD EROSION CONTROL EFFORTS FAIL AND EXCESSIVE EROSION OCCURS. SEE DETAIL ON SHEET CXX.

0 30 60

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GRAYLON OAKS
FOR
GRAYLON OAKS LAND TRUST

PAVING AND DRAINAGE PLAN

REVISIONS

PLOT DATE:
DRAWN BY: JMM
DESIGNED BY: WES
CHECKED BY: WES
SCALE: AS NOTED
JOB NO.:

SHEET NO.
C3
OF ___

WILLIAM E. SCHAEFER
LICENSE
No. 40229
08/05/2022
STATE OF FLORIDA
PROFESSIONAL ENGINEER

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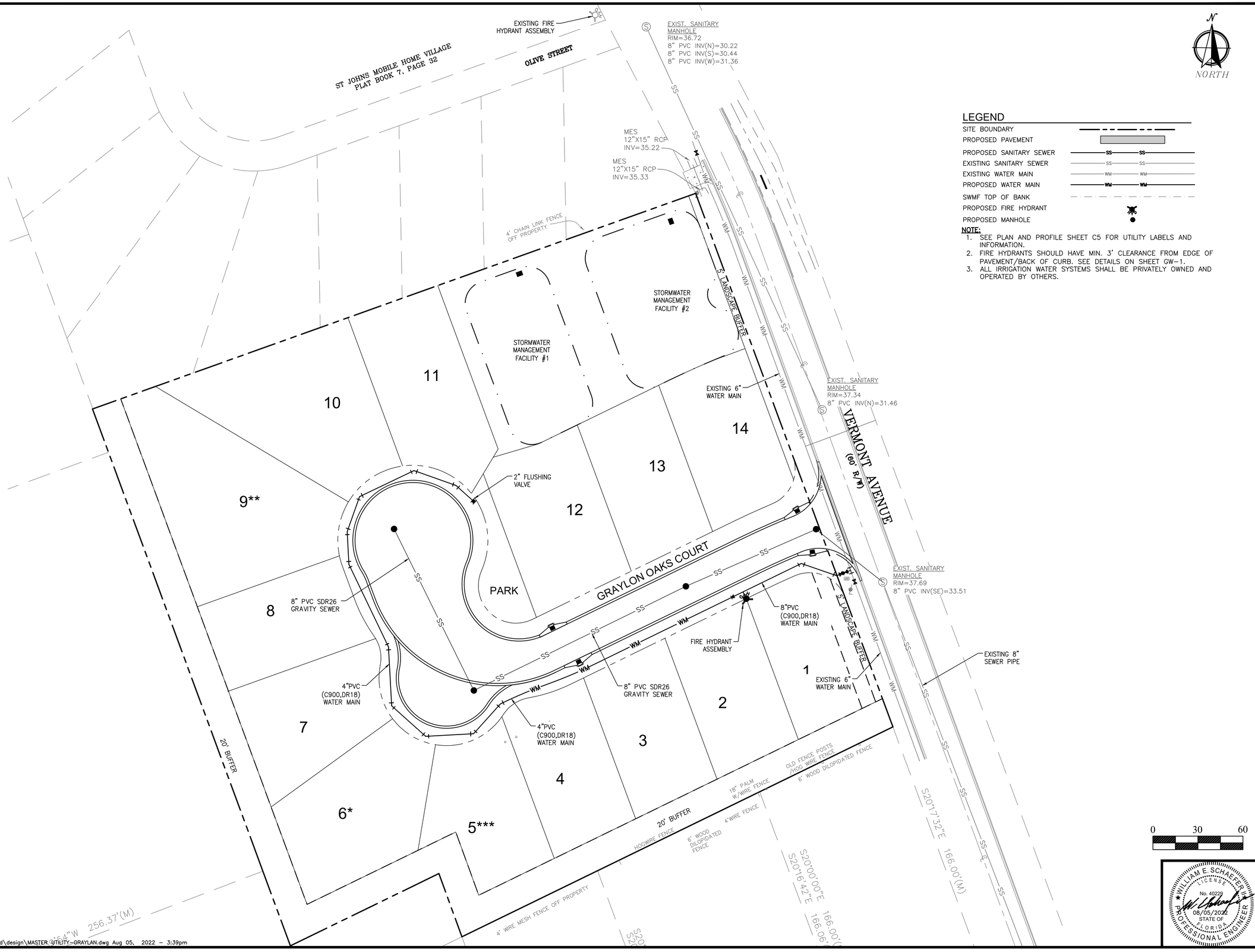

NORTH

LEGEND

- SITE BOUNDARY
- PROPOSED PAVEMENT
- PROPOSED SANITARY SEWER (SS)
- EXISTING SANITARY SEWER (SS)
- EXISTING WATER MAIN (WM)
- PROPOSED WATER MAIN (WM)
- SWMF TOP OF BANK
- PROPOSED FIRE HYDRANT
- PROPOSED MANHOLE

NOTE:

1. SEE PLAN AND PROFILE SHEET C5 FOR UTILITY LABELS AND INFORMATION.
2. FIRE HYDRANTS SHOULD HAVE MIN. 3' CLEARANCE FROM EDGE OF PAVEMENT/BACK OF CURB. SEE DETAILS ON SHEET GW-1.
3. ALL IRRIGATION WATER SYSTEMS SHALL BE PRIVATELY OWNED AND OPERATED BY OTHERS.

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GRAYLON OAKS
FOR
GRAYLON OAKS LAND TRUST

MASTER UTILITY PLAN

REVISIONS

PLOT DATE:
DRAWN BY: JMM
DESIGNED BY: WES
CHECKED BY: WES
SCALE: AS NOTED
JOB NO.:

SHEET NO.
C4
OF ___

0 30 60

WILLIAM E. SCHAEFER LICENSE No. 40229 STATE OF FLORIDA PROFESSIONAL ENGINEER
08/05/2022

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CONTRACTOR TO COORDINATE WITH THE CITY OF GREEN COVE SPRINGS THE INSTALLATION TIME AND NUMBER OF CUSTOMERS AFFECTED BY WATER MAIN SHUT DOWN.

CUT EXISTING WATER MAIN AND INSTALL 6" GATE VALVE

EXISTING 6" WATER MAIN

EXISTING POLE

6" MJ TEE
6"X8" MJ REDUCER
8" GATE VALVE
8"-45° MJ BEND

FIRE HYDRANT ASSEMBLY 6"X4" MJ REDUCER

8"PVC(C900,DR18) WATER MAIN

4"PVC (C900,DR18) WATER MAIN

SINGLE WATER SERVICE (TYP)

4"-22.5° MJ BENDS

4"-45° MJ BENDS

GANG SERVICE TYP) SEE THIS SHEET FOR DETAIL

EXIST. SANITARY MANHOLE
RIM=37.69
8" PVC INV(SE)=33.51
CORE EXISTING MANHOLE AT EL. 33.6.

CASE X PAVEMENT REPAIR (SEE DETAIL ON SHEET C9)

INSTALL TYPE B UTILITY CROSSING WATER MAIN UNDER SEWER PIPE

EXISTING WATER SERVICE (CONTRACTOR TO VERIFY LOCATION PRIOR TO CONSTRUCTION

6' SIDEWALK

EXIST. SANITARY MANHOLE
RIM=37.34
8" PVC INV(N)=31.46

DOUBLE WATER SERVICE (TYP)

10' GCSE EASE.

2"FLUSHING VALVE

SEE SHEET C13 FDOT INDEX 102-603 MAINTENANCE OF TRAFFIC FOR DRIVEWAY AND UTILITY CONNECTION ON VERMONT AVE.

VERMONT AVENUE

EXISTING 8" SEWER MAIN

STORM PIPE OVER EXISTING SEWER MAIN

CASE X PAVEMENT REPAIR (SEE DETAIL ON SHEET C8)

EXISTING 6" WATER MAIN

INSTALL TYPE B UTILITY CROSSING WATER MAIN UNDER STORM PIPE

CUT EXISTING WATER MAIN AND INSTALL 6" GATE VALVE

EXISTING WOOD POWER POLE

EXISTING STORM PIPE AND MITERED END SECTIONS (TO REMAIN)

CONTRACTOR TO COORDINATE WITH THE CITY OF GREEN COVE SPRINGS THE INSTALLATION TIME AND NUMBER OF CUSTOMERS AFFECTED BY WATER MAIN SHUT DOWN.

GRAYLON OAKS COURT

100'VC
PVI STA 12+54.85
EL.47.61
HIGH PT STA 13+04.85
EL. 47.83

50'VC
PVI STA 10+46.38
EL.37.98
LOW PT STA 10+21.38
EL. 37.50

PVI STA = 10+12
ELEV = 37.32

PVI STA = 14+10
ELEV = 48.30

STA 10+21.38 EL. 37.50

STA 10+71.38 EL. 39.13

STA 12+04.85 EL. 45.30

STA 13+04.85 EL. 47.83

MH4 = 37.69 TOP
SW INV = 33.84
SE INV = 33.84

MH3 (DROP M.H.) TOP = 41.93
SW INV = 37.57
NE INV = 34.57

MH2 (DROP M.H.) TOP = 47.46
NW INV = 41.93
NE INV = 39.16

MH1 TOP = 48.12
SE INV = 43.12

EXISTING MANHOLE TOP = 37.69
NW INV = 33.61

1.93%

4.62%

0.44%

S5 CURB INLET
11"x18"ERCP

S1 DBL CURB INLET

S2 CURB INLET

A1 (GWL NOT ENCOUNTERED)

A2 (GWL NOT ENCOUNTERED)

157'~8 PVC SDR26 @1.01%

95'~8 PVC SDR26 @0.77%

120'~8 PVC SDR26 @0.99%

57'~8 PVC SDR26 @0.40%

EL: 33.72(ST)
EL: 32.72(WM)
EL: 35.10(ST)
EL: 34.59(ST)

S6 CURB INLET

PROPOSED 6" WATER MAIN

	EG=	EG=37.6	EG=39.4	EG=41.7	EG=43.9	EG=45.9	EG=47.9	EG=49.5	EG=49.6	EG=48.7	EG=
	FG=	FG=	FG=38.27	FG=40.46	FG=42.77	FG=45.08	FG=46.96	FG=47.81	FG=48.03	FG=48.25	FG=

9+50 10+00 11+00 12+00 13+00 14+00 14+50

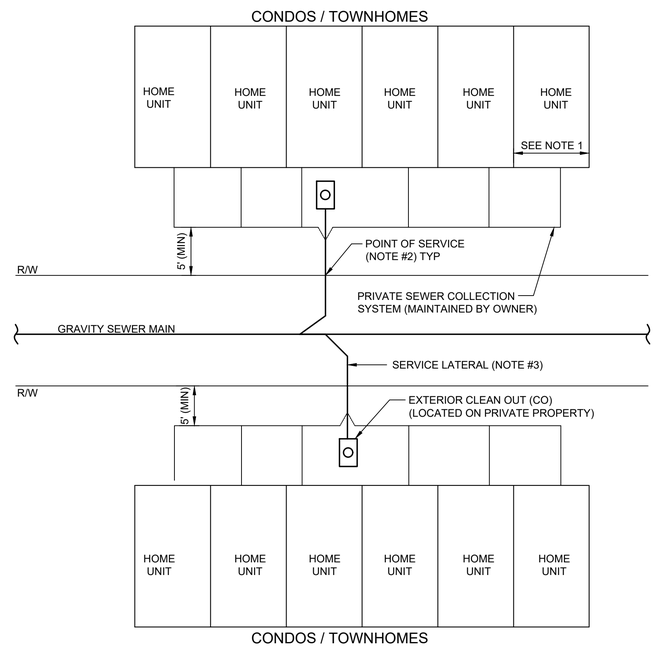
50 45 40 35 30

LEGEND

PROPOSED PAVEMENT	
EASEMENT	
PROPOSED STORM WATER	ST ST
PROPOSED SANITARY SEWER	SS SS
EXISTING WATER MAIN	WM WM
PROPOSED WATER MAIN	WM WM
PROPOSED FIRE HYDRANT	
PROPOSED WATER METER	W
PROPOSED GATE VALVE	
PROPOSED REDUCER	
PROPOSED SEWER MANHOLE	
STORM WATER STRUCTURE	S1
PROPOSED SANITARY SEWER MANHOLE	MH1
SOIL BORING	A1
SAMPLING POINT	S/P

WATER AND SEWER NOTES

1. ALL WATER AND SEWER CONSTRUCTION SHALL COMPLY WITH THE LATEST CITY OF GREEN COVE SPRINGS CONSTRUCTION STANDARDS AND SPECIFICATIONS.
2. MAINTAIN A MINIMUM OF 3' HORIZONTAL SEPARATION BETWEEN STORMWATER STRUCTURES & WATER MAIN.
3. CONTRACTOR TO VERIFY ALL EXISTING UTILITIES LOCATION AND ELEVATIONS PRIOR TO CONSTRUCTION. CONTRACTOR TO IMMEDIATELY NOTIFY ENGINEER OF ANY DISCREPANCIES



GANG SEWER SERVICES

NOTES:

1. THIS STANDARD MAY APPLY TO CONDOS AND/OR TOWNHOMES WITH PRIVATE LOT LINES LESS THAN 40 FEET WIDE.
2. THE " POINT OF SERVICE " (POS) SHALL BE DEFINED AT THE R/W LINE FOR ALL LATERALS. GREEN COVE SPRINGS WILL ONLY BE RESPONSIBLE FOR O&M (EXCLUDING STOPPAGES) BEGINNING AT THE P.O.S. TO THE MAIN (60 FEET MAX). THEREFORE, O&M RESPONSIBILITY BETWEEN THE P.O.S. AND THE CUSTOMER IS BY OTHER (HOME OWNER ASSOCIATION OR OTHER). CUSTOMER WILL CONTINUE TO BE RESPONSIBLE FOR FREE FLOW OF SEWAGE BETWEEN CUSTOMER TO MAIN.
3. SERVICE LATERALS BETWEEN MAIN AND R/W SHALL BE 6" SDR-26 (PVC) AT 1/4" SLOPE, AT A MINIMUM, AND SERVE A MAXIMUM OF 6 HOME UNITS. ENGRAVE AN "S" IN CURB TO SHOW LOCATION OF LATERAL. MANHOLE SHALL BE REQUIRED AT THE MAIN IF THE LATERAL IS LARGER THAN 6 INCH SIZE. LARGER LATERALS SHALL BE SIZED BY DESIGN ENGINEER. ALL PIPING ON PRIVATE PROPERTY SHALL MEET LOCAL PLUMBING CODE REQUIREMENTS AND BE MAINTAINED BY OWNER. ALL CLEANOUTS LOCATED IN PAVED AREAS SHALL BE CAST IRON FRAME AND TOP.

GANG SEWER SERVICES FOR CONDOS AND TOWNHOMES

SCALE: 1"=30' H, 1"=3' V (0, 30, 60)

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TEL: 904-854-4500 C.A. NUMBER: 26821 FAX 904-854-4505
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GRAYLON OAKS FOR GRAYLON OAKS LAND TRUST

PLAN AND PROFILE

REVISIONS

PLOT DATE:
DRAWN BY: JMM
DESIGNED BY: WES
CHECKED BY: WES
SCALE: AS NOTED
JOB NO.:

SHEET NO.
C5
OF ___

WILLIAM E. SCHAEFER LICENSE No. 40229 STATE OF FLORIDA PROFESSIONAL ENGINEER
08/05/2022

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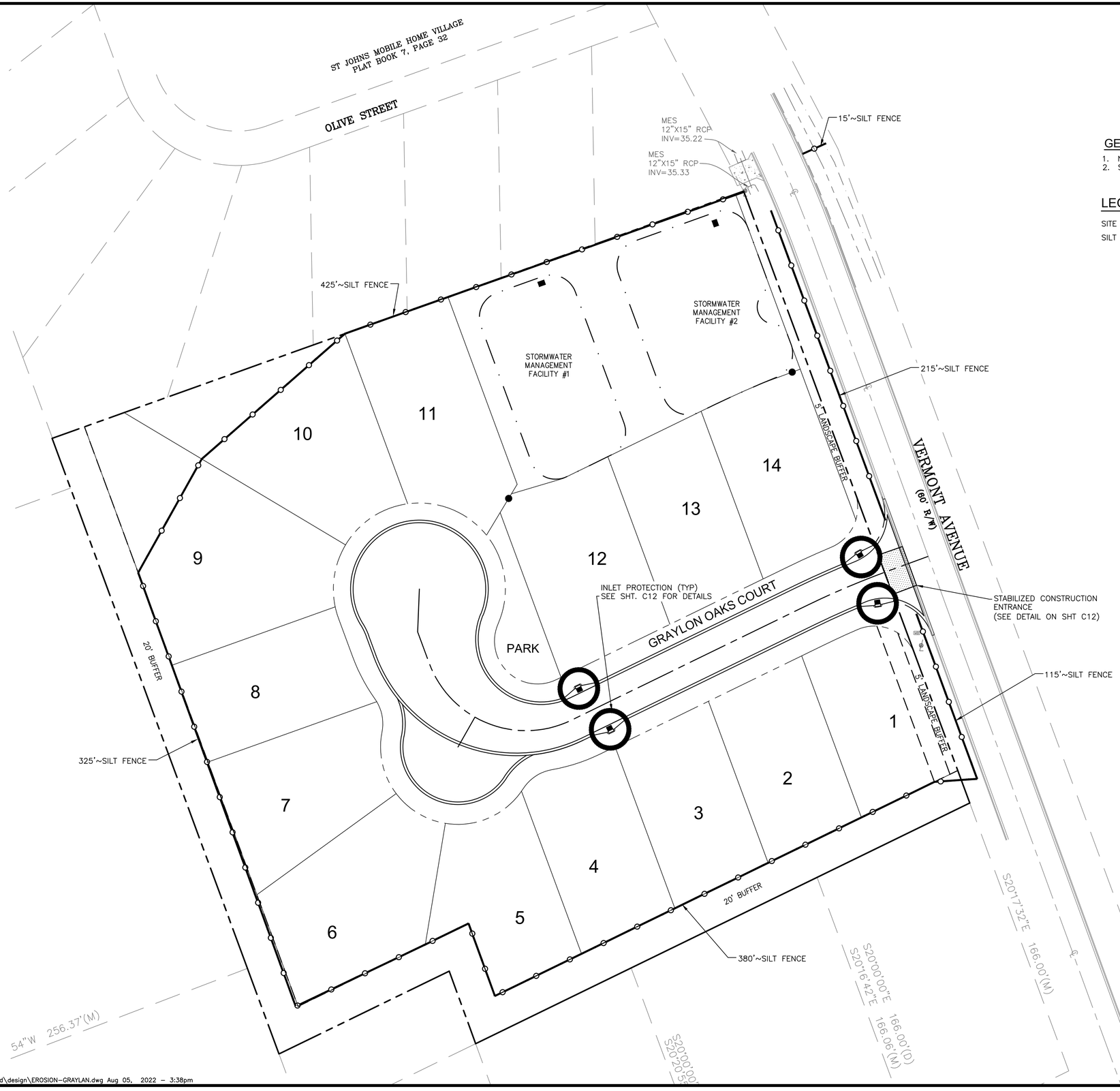

NORTH

GENERAL NOTES

1. NO CLEARING SHALL BEGIN UNTIL SILT FENCE INSTALLED.
2. SILT FENCE SHALL BE INSTALLED AS SHOWN ON PLAN

LEGEND

SITE BOUNDARY

SILT FENCE

DOMINION ENGINEERING GROUP, INC.
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EROSION CONTROL PLAN

REVISIONS
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DRAWN BY: JMM
DESIGNED BY: WES
CHECKED BY: WES
SCALE: AS NOTED
JOB NO.:
© LATEST DATE HEREON
SHEET NO.
C6
OF ___

WILLIAM E. SCHAEFER
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No. 40229
08/05/2022
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

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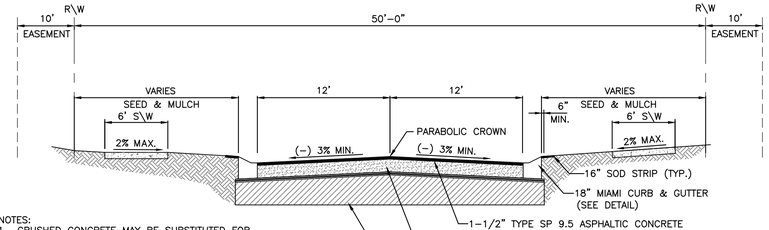
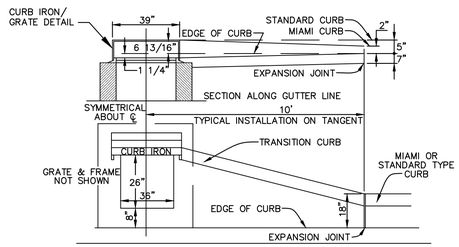
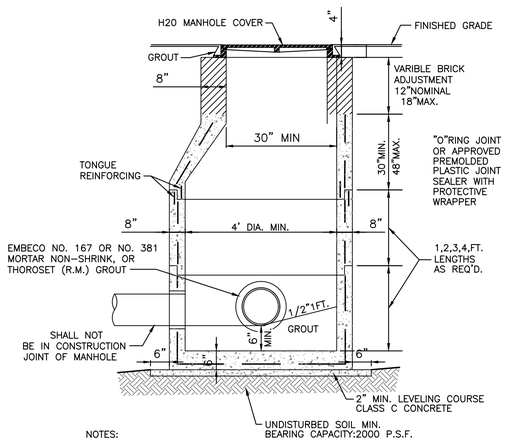


NOTES:
1. CRUSHED CONCRETE MAY BE SUBSTITUTED FOR LIMEROCK IF APPROVED BY CITY OF GREEN COVE SPRINGS ENGINEER.
2. ALL UNSUITABLE MATERIAL SHALL BE REMOVED A MINIMUM OF TWO FEET, BELOW THE FINISHED SUBBASE AND TWO FEET BEYOND THE BACK OF CURB AND REPLACED WITH A-3 FREE-DRAINING MATERIAL.

TYPICAL ROADWAY SECTION
N.T.S.

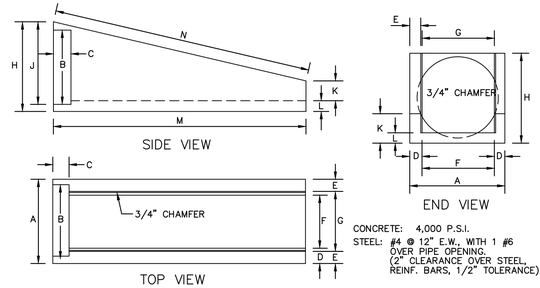


STANDARD CURB INLET INSTALLATION
N.T.S.



NOTES:
1. PRECAST MANHOLE SECTIONS TO BE MFRD. IN ACCORDANCE WITH LATEST EDITIONS OF ASTM C478 WITH 4000 LB. CONCRETE, TYPE II CEMENT.

STORM WATER MANHOLE
NTS



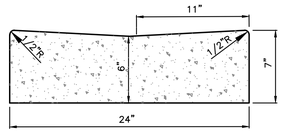
CONCRETE: 4,000 P.S.I.
STEEL: #4 @ 12" E.W., WITH 1 #6 OVER PIPE OPENING. (2" CLEARANCE OVER STEEL. REINF. BARS, 1/2" TOLERANCE).

MITERED END SECTION FOR RCP OR CMP
N.T.S.

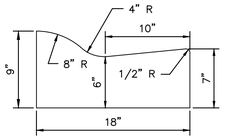
RCP/CMP	A	B	C	D	E	F	G
15" - 18"	2'-7"	2'-1"	8"	6"	6 3/4"	1'-6"	1'-7"
24"	2'-11"	2'-8"	6"	5"	4 1/2"	1'-11"	2'-10"
30"	3'-6"	3'-2"	6"	6"	5 1/2"	2'-5"	2'-6 1/2"
36"	4'-1"	3'-10"	6"	7"	5 1/2"	2'-9"	3'-0"

RCP/CMP	H	J	K	L	M	N
15" - 18"	2'-10"	2'-4"	8"	6"	6'-10"	7'-0"
24"	3'-6"	3'-1"	7 1/2"	5"	10'-0"	10'-3 1/2"
30"	3'-9"	3'-5"	7"	5"	11'-5"	11'-8 1/4"
36"	4'-6"	4'-0"	6"	6"	14'-0"	14'-4 1/2"

TABLE FOR MITERED END SECTION
N.T.S.

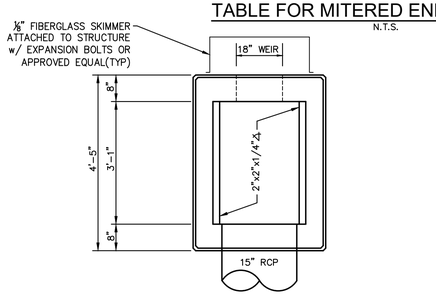


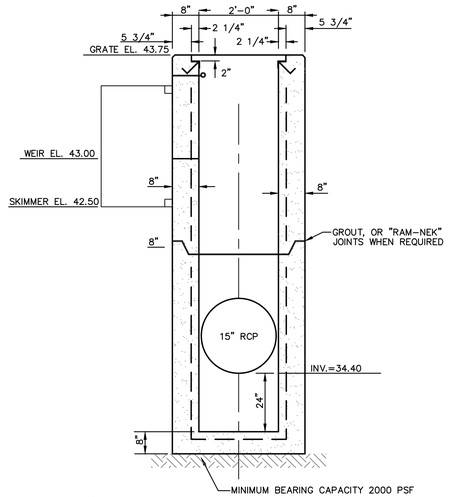
VALLEY GUTTER
N.T.S.



NOTES:
1. MATERIALS AND CONSTRUCTION SHALL TO THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
2. CONCRETE SHALL BE CLASS 1 CONCRETE WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI.

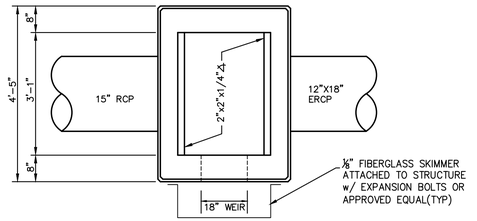
MIAMI TYPE CURB & GUTTER
N.T.S.

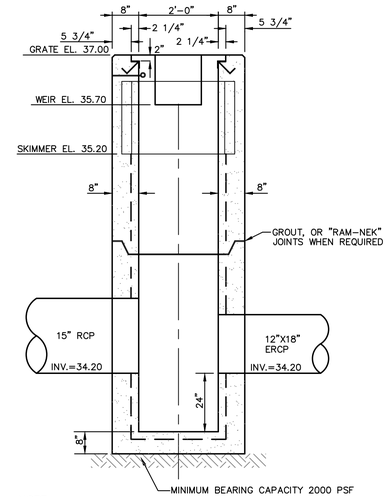




NOTE
INLETS WITH SLOTS GREATER THAN 6" SHALL BE CONSTRUCTED WITH HORIZONTAL BARS AT THE MAXIMUM VERTICAL SPACING OF 6-INCHES. 1" DIA. GALVANIZED PIPE IMBEDDED 2" IN PRECAST STRUCTURE OR OTHER APPROVED METHOD.

SWMF 1 OUTFALL STRUCTURE - MODIFIED STORM SEWER TYPE "C" INLET (S9)
N.T.S.





NOTE
INLETS WITH SLOTS GREATER THAN 6" SHALL BE CONSTRUCTED WITH HORIZONTAL BARS AT THE MAXIMUM VERTICAL SPACING OF 6-INCHES. 1" DIA. GALVANIZED PIPE IMBEDDED 2" IN PRECAST STRUCTURE OR OTHER APPROVED METHOD.

SWMF 2 OUTFALL STRUCTURE - MODIFIED STORM SEWER TYPE "C" INLET (S10)
N.T.S.

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WILLIAM E. SCHAEFER LICENSE No. 40229 STATE OF FLORIDA PROFESSIONAL ENGINEER
08/05/2022

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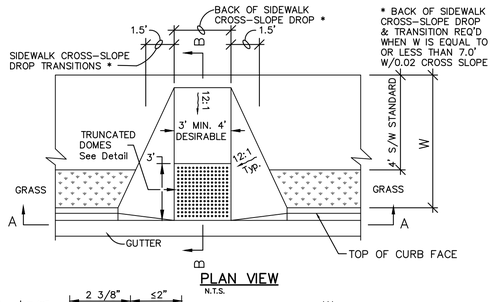
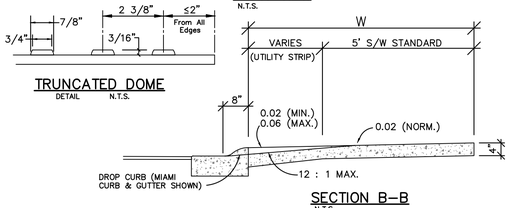


PLAN VIEW
N.T.S.



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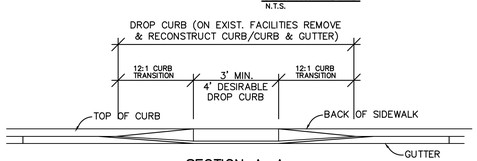
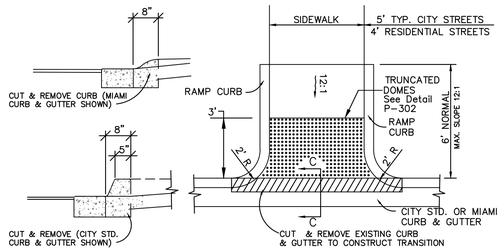
DETAIL N.T.S.

SECTION B-B
N.T.S.



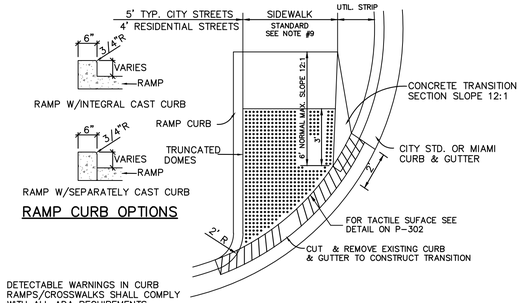
SECTION A-A
N.T.S.

CURB CUT RAMP FACILITY FOR PHYSICALLY HANDICAPPED MIAMI CURB & GUTTER
N.T.S.



SECTION C - C

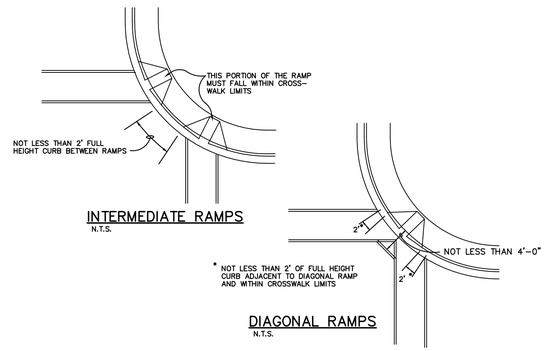
PLAN VIEW
N.T.S.



RAMP CURB OPTIONS

PLAN VIEW
N.T.S.

CURB CUT RAMP FACILITY FOR PHYSICALLY HANDICAPPED
N.T.S.

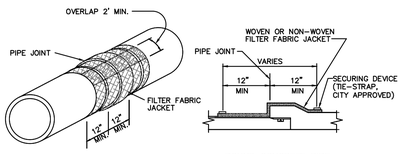


NOTE: DIAGONAL RAMPS ARE ONLY TO BE USED WITH THE APPROVAL OF THE CITY TRAFFIC ENGINEER.

GENERAL NOTES

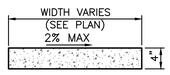
1. CURB CUT RAMPS ARE TO BE CONSTRUCTED ON ALL CURBED FACILITIES, BUT ONLY AT THOSE LOCATIONS WHERE A MARKED CROSSWALK ADJOINS A SIDEWALK; THE CROSSWALK & SIDEWALK EACH CAN BE EITHER EXISTING TO REMAIN OR NEW MARKINGS & CONSTRUCTION.
2. RAMP LOCATIONS ARE TO BE COORDINATED WITH & IN CONFORMANCE WITH CROSSWALK MARKING DETAILS AS SHOWN IN THE PLANS.
3. IF A CURB RAMP IS LOCATED WHERE PEDESTRIANS MUST WALK ACROSS THE RAMP, THEN IT SHALL HAVE FLARED SIDES; THE MAXIMUM SLOPE OF THE FLARE SHALL BE 12:1.
4. RAMPS TO BE CONSTRUCTED AT ALL LOCATIONS SHOWN ON PLANS EVEN WHEN SIDEWALK IS NOT CONSTRUCTED CONCURRENTLY.
5. BASIS OF PAYMENT: CONTRACT UNIT PRICE ESTABLISHED IN THE PROPOSAL FOR CURB & GUTTER.
6. THIS STANDARD IS NOT INTENDED TO BE ABSOLUTE. FINAL DETERMINATIONS TO BE MADE IN THE FIELD.
7. MIAMI CURB WITHIN LIMITS OF WHEEL CHAIR RAMP TO BE "LOW CURB" TO ACCOMODATE 12:1 MAXIMUM RATE FROM GUTTER TO END OF TRANSITION. MAIMI TYPE CURB & GUTTER DETAILS SIMULAR, CURB TRANSITION LENGTH SHALL BE 3'-0".
8. SIDEWALK WIDTH TO MEET REQUIREMENTS OF THE GOVERNING STANDARDS, REGULATIONS AND SPECIFICATIONS, BUT NOT LESS THAN 4'-0"
9. ALL NEW CONCRETE RAMP SURFACES TO RECEIVE TURNCATED DOMES.
10. DIAGONAL RAMPS ARE TO BE USED AT RADIUS LESS THAN 50'

CURB CUT RAMP FACILITY FOR PHYSICALLY HANDICAPPED
N.T.S.



COST OF FILTER FABRIC TO BE INCLUDED IN COST OF PIPE CULVERTS.

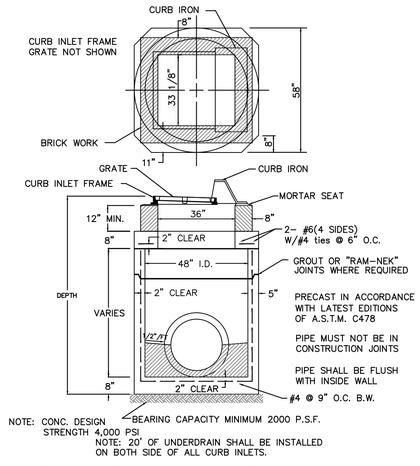
FILTER FABRIC JACKET DETAIL
NTS



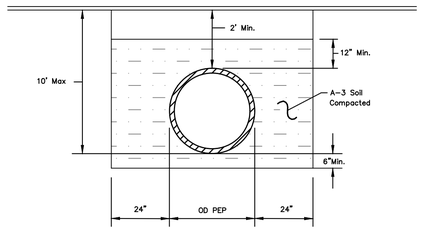
SECTION

1. 1/2" EXPANSION JOINTS PLACED AT 18' O.C. WITH TOOLED CONTRACTION JOINTS (1 1/2" DEEP) EVERY 6' O.C.
2. SIDEWALKS SHALL BE CONSTRUCTED OF PORTLAND CEMENT CONCRETE, CLASS NON-STRESS (NS), AND ALL METHODS OF CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDING TO THE LATEST EDITION OF THE CITY OF GREEN COVE SPRINGS LDC.

CONCRETE SIDEWALK AND JOINT DETAIL
N.T.S



STORM SEWER 48" I.D. CURB INLET
N.T.S.



* PIPE SIZES ALLOWED 15" THROUGH 36"
* PIPE SIZES LARGER THAN 24 INCHES MAY NOT BE INSTALLED UNDER ROADWAYS.
* RUBBER OR NEOPRENE GASKETS REQUIRED
* HYDROSTATIC FIELD TESTING REQUIRED OR FILTER FABRIC
* MAXIMUM FILL HEIGHT IS TEN FEET
* MINIMUM COVER OVER PIPE IS TWO FEET
* MAXIMUM DEFLECTION IS 5%
* PIPES SIZES LARGER THAN 24" SHALL BE TESTED FOR DEFELCTION USING A MANDREL. HOWEVER DURING VISUAL INSPECTION, SHOULD THE CITY ENGINEER [OR HIS DESIGNEE] DETERMINE THAT THESE APPLICATIONS [FOR PIPE 24" OR LESS] WARRANT MANDREL TESTING, A MANDREL TEST WILL BE REQUIRED
* PIPE TRENCH SHALL BE EXCAVATED A MINIMUM OF 6" BELOW AND 24" ON EITHER SIDE OF THE PIPE
* BEDDING AND BACKFILL SHALL BE EITHER CRUSED STONE / GRAVEL OR A - 3 SOIL
* MITERED END SECTIONS MUST BE FABRICATED FROM ANOTHER APPROVED CULVERT MATERIAL
* PIPE SPECIFICATIONS TO BE IN ACCORDANCE WITH THE CITY'S LAND DEVELOPMENT PROCEDURES MANUAL

POLYETHYLENE PIPE DETAIL
N.T.S.

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PAVING AND DRAINAGE PLAN

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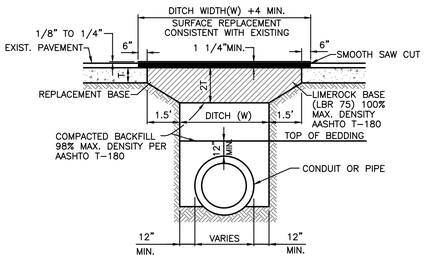
GENERAL NOTES:

1. ALL WORK AND MATERIALS SHALL BE IN COMPLETE ACCORDANCE WITH ALL RELATIVE SECTIONS OF COUNTY STANDARDS, (LATEST REVISION) AND ALL CURRENT COUNTY STANDARD DETAILS AS WELL AS ALL APPLICABLE STATE AND LOCAL REGULATIONS. THE WORK SHALL ALSO BE PERFORMED AND TESTED IN ACCORDANCE WITH THE RECOMMENDATIONS SET FORTH IN THE GEOTECHNICAL INVESTIGATION REPORT PROVIDED BY AGES, INC. (REPORT #J19275), IF MORE STRINGENT THAN COUNTY REQUIREMENTS.
2. ALL WORK SHALL BE PERFORMED IN A SAFE MANNER. ALL SAFETY RULES AND GUIDELINES OF O.S.H.A. SHALL BE FOLLOWED. THE CONTRACTOR SHALL BE WHOLLY RESPONSIBLE FOR ANY INJURIES OF HIS EMPLOYEES, AND ANY DAMAGE TO PRIVATE PROPERTY OR PERSONS DURING THE COURSE OF THIS PROJECT. ALL COSTS ASSOCIATED WITH COMPLYING WITH O.S.H.A. REGULATIONS AND THE FLORIDA TRENCH SAFETY ACT MUST BE INCLUDED IN THE CONTRACTORS BID.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VISITING THE JOB SITE PRIOR TO PREPARING THE BID FOR THE PURPOSE OF FAMILIARIZING HIMSELF WITH THE NATURE AND THE EXTENT OF THE WORK AND LOCAL CONDITIONS, EITHER SURFACE OR SUBSURFACE, WHICH MAY AFFECT THE WORK TO BE PERFORMED, AND THE EQUIPMENT, LABOR AND MATERIALS REQUIRED. FAILURE TO DO SO WILL NOT RELIEVE THE CONTRACTOR OF COMPLETE PERFORMANCE UNDER THIS CONTRACT. THE CONTRACTOR IS ALSO URGED TO TAKE COLOR PHOTOGRAPHS ALONG THE ROUTE OF THE PROJECT TO RECORD EXISTING CONDITIONS PRIOR TO CONSTRUCTION, AND TO AID IN RESOLVING POSSIBLE FUTURE COMPLAINTS THAT MAY OCCUR DUE TO THE CONSTRUCTION OF THE PROJECT.
4. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO EITHER CONDUCT ANY FIELD EXPLORATION OR ACQUIRE ANY GEOTECHNICAL ASSISTANCE REQUIRED TO ESTIMATE THE AMOUNT OF UNSUITABLE MATERIAL THAT WILL REQUIRE REMOVAL AND/OR TO ESTIMATE THE AMOUNT OF OFF SITE BORROW THAT WILL BE REQUIRED.
5. ALL IMPROVEMENTS SHOWN ARE TO BE WARRANTED BY THE CONTRACTOR TO THE DEVELOPER, AND/OR THE COUNTY FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE BY THE OWNER AND THE COUNTY. CCUA AND COUNTY WARRANTIES PER THEIR REQUIREMENTS.
6. ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88.) UNITED STATES COASTAL AND GEODETIC SURVEY (U.S.C. & G.S.), AS DETERMINED BY BARTRAM TRAIL SURVEYING, INC.
7. FOR BOUNDARY, ROADWAY AND LOT GEOMETRY INFORMATION SEE PLAT.
8. THE CONTRACTOR WILL CONTRACT WITH AN INDEPENDENT TESTING LABORATORY TO PERFORM MATERIAL TESTING AND SOIL TESTING IN ACCORDANCE WITH COUNTY AND/OR COSA REQUIREMENTS. THIS SHALL INCLUDE DENSITY TESTS IN ALL PAVEMENT AREAS AND IN ALL UTILITY TRENCHES LOCATED IN PAVEMENT AREAS CONCRETE TESTING AND ALL OTHER MATERIAL TESTING. PRIOR TO LIMEROCK PLACEMENT, THE PROJECT GEOTECHNICAL ENGINEER SHALL MAKE RECOMMENDATION FOR UNDERDRAIN PLACEMENT.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND INSURANCE REQUIRED FOR THE PROJECT INCLUDING COUNTY RIGHT-OF-WAY PERMITS FOR WORK IN THE COUNTY RIGHT- OF-WAY OR EASEMENT.
10. THE CONTRACTOR SHALL COORDINATE THE WORK WITHIN COUNTY OR STATE RIGHT-OF-WAY WITH THE PROPER AGENCIES FOR MAINTENANCE OF TRAFFIC AND METHOD OF CONSTRUCTION AND REPAIR.
11. ALL PUBLIC DRAINAGE EASEMENTS SHALL BE "UNOBSTRUCTED" EASEMENTS. ALL "UNOBSTRUCTED" EASEMENTS TO BE CLEAR AND DRIVEABLE.
12. "AS-BUILT" DRAWINGS – AS-BUILTS TO THE OWNER AND THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT ARE REQUIRED TO BE SIGNED AND SEALED BY A FLORIDA REGISTERED LAND SURVEYOR THEREFORE, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTRACT WITH A LAND SURVEYOR REGISTERED IN THE STATE OF FLORIDA FOR THE PREPARATION, FIELD LOCATIONS, CERTIFICATION AND SUBMITTAL OF "AS-BUILT" DRAWINGS IN ACCORDANCE WITH CURRENT COUNTY STANDARDS AND SPECIFICATIONS AND SJRWMD REGULATIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROCESS THE "AS-BUILT" DRAWINGS FOR APPROVAL BY THE COUNTY AND OWNER.
13. THE CONTRACTOR SHALL COORDINATE THEIR CONSTRUCTION WITH ALL OTHER CONTRACTORS. IN THE EVENT OF ANY CONFLICT WHATSOEVER, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND OWNER PRIOR TO PROCEEDING WITH CONSTRUCTION.
14. ALL CLEARING AND GRUBBING REQUIRED FOR ALL ROADWAY, UTILITIES, DITCHES, AND BERMS INCLUDED IN THIS PROJECT AND THE CLEARING AND GRUBBING OF ALL RIGHT-OF-WAY OR EASEMENTS SHALL BE CONSIDERED AS PART OF THE PROJECT.
15. ALL AREAS SHOWN TO BE FILLED SHALL BE CLEARED AND GRUBBED IN ACCORDANCE WITH COUNTY STANDARDS AND SHALL BE FILLED WITH CLEAN STRUCTURAL FILL COMPACTED AND TESTED IN ACCORDANCE WITH THE GEOTECHNICAL INVESTIGATION REPORT.
16. CONTRACTOR IS RESPONSIBLE FOR PROTECTION OF ALL SURVEY AND PROPERTY MONUMENTS. IF A MONUMENT IS DISTURBED, THE CONTRACTOR SHALL CONTRACT WITH THE SURVEYOR OF RECORD FOR REINSTALLATION OF THE MONUMENT.
17. ALL DEBRIS RESULTING FROM ALL ACTIVITIES SHALL BE PROPERLY DISPOSED OF OFF-SITE BY CONTRACTOR.
18. ALL EXCESS SUITABLE AND UNSUITABLE MATERIAL SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR UNLESS DIRECTED OTHERWISE BY ENGINEER OR OWNER.
19. ALL EXISTING TREES TO REMAIN SHALL BE PRESERVED AND PROTECTED.
20. BURNING OF TREES, BRUSH AND OTHER MATERIAL SHALL BE APPROVED, PERMITTED AND COORDINATED WITH COUNTY FIRE MARSHAL.
21. ROADWAY UNDERDRAINS SHALL BE AS REQUIRED ON THE PLANS OR AS MAY BE DETERMINED NECESSARY BY THE GEOTECHNICAL ENGINEER DURING CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IF HIGH GROUND WATER CONDITIONS ARE PRESENT DURING THE PREPARATION OF THE ROADWAY SUB-BASE.
22. CONTRACTOR SHALL PROVIDE CONTRACTION JOINTS AT 10' INTERVALS AND EXPANSION JOINTS SHALL BE CONSTRUCTED AT 50' INTERVALS AND AT ALL RADIUS POINTS ON ALL CURBING.
23. CONTRACTOR SHALL PROVIDE EXPANSION JOINTS AT 18' INTERVALS AND CONTRACTION JOINTS SHALL BE SPACED AT 6' INTERVALS BETWEEN EXPANSION JOINTS.
24. MAINTENANCE OF TRAFFIC SHALL CONFORM TO F.D.O.T. STANDARD INDEX 600, LATEST EDITION.
25. ALL SIGNING AND PAVEMENT MARKINGS SHALL BE IN ACCORDANCE WITH F.D.O.T. STANDARD INDEXES 11860, 17346, AND 17352 LATEST EDITION.
26. ALL EXISTING PAVEMENT MARKINGS THAT CONFLICT WITH THE PROPOSED ROADWAY/SITE DEVELOPMENT SHALL BE REMOVED BY THE CONTRACTOR UTILIZING THE HYDRO-BLASTING METHOD.
27. ALL AREAS DISTURBED IN THE COUNTY RIGHT OF WAY SHALL BE SODDED.
28. ANY CONCERNS OR CONFLICTS WITH ADA GRADING OR ANY OTHER GRADING ON SITE THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY.

EROSION & SEDIMENT CONTROL NOTES:

1. THESE PLANS INDICATE THE MINIMUM EROSION & SEDIMENT CONTROL MEASURES REQUIRED FOR THIS PROJECT. FOR ADDITIONAL INFORMATION ON SEDIMENT AND EROSION CONTROL REFER TO "THE FLORIDA DEVELOPMENT MANUAL-A GUIDE TO SOUND LAND AND WATER MANAGEMENT" FROM THE STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (F.D.E.P.) CHAPTER 6. THE CONTRACTOR SHALL PROVIDE EROSION PROTECTION AND TURBIDITY CONTROL AS REQUIRED TO INSURE CONFORMANCE TO STATE AND FEDERAL WATER QUALITY STANDARDS AND MAY NEED TO INSTALL ADDITIONAL CONTROLS TO CONFORM TO AGENCIES REQUIREMENTS. IF A WATER QUALITY VIOLATION OCCURS, THE CONTRACTOR SHALL BE WHOLLY RESPONSIBLE FOR ALL DAMAGE AND ALL COSTS WHICH MAY RESULT INCLUDING LEGAL FEES, CONSULTANT FEES, CONSTRUCTION COSTS AND FINES.
2. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING THE BEST EROSION AND SEDIMENT CONTROL PRACTICES AS OUTLINED IN THE PLANS AND SPECIFICATIONS AND THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT SPECIFICATIONS AND CRITERIA.
3. EROSION AND SEDIMENT CONTROL BARRIERS SHALL BE PLACED ADJACENT TO ALL WETLAND AREAS WHERE THERE IS POTENTIAL FOR DOWNSTREAM WATER QUALITY DEGRADATION.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING A PERMANENT STAND OF SOD AND/OR GRASS PER COUNTY STANDARDS AND MEETING THE N.P.D.E.S. FINAL STABILIZATION REQUIREMENTS.
5. IF DEWATERING CAPACITIES REQUIRES A CONSUMPTIVE USE PERMIT (C.U.P.) IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO OBTAIN THE PERMIT THROUGH THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT.
6. PRIOR TO COMMENCEMENT OF CONSTRUCTION AND EXCAVATION ACTIVITIES, THE CONTRACTOR SHALL PERFORM GROUNDWATER TESTING IN ACCORDANCE WITH THE ENVIRONMENTAL PROTECTION AGENCY FEDERAL REGISTER, PAGE 42739, PART 1A.3, TO DETERMINE PETROLEUM CONTAMINATION LEVELS. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING N.P.D.E.S. PERMIT, IF REQUIRED, IN ORDER TO DISCHARGE ANY GROUNDWATER ENCOUNTERED DURING CONSTRUCTION AND DEWATERING OPERATIONS.
7. 48 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR WILL SUBMIT A "NOTICE OF INTENT" TO THE EPA IN ACCORDANCE WITH NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM RULES AND REGULATIONS.



NOTE:
1. METHOD AND MATERIALS OF REPAIR SUBJECT TO CITY OF GREEN COVE SPRINGS CONSTRUCTION REQUIREMENTS FOR NEW PVMT. TYPE OF ASPHALT CONC. SHALL BE THE SAME AS EXIST. ROAD.
2. IN SOME CASES PORTLAND CEMENT CONCRETE MAY BE CONSIDERED OR REQUIRED BY CITY ENGINEER FOR SURFACE REPLACEMENT.

CASE X PAVEMENT REPAIR
N.T.S.

LOT GRADE TYPE A
ALL DRAINAGE TO STREET

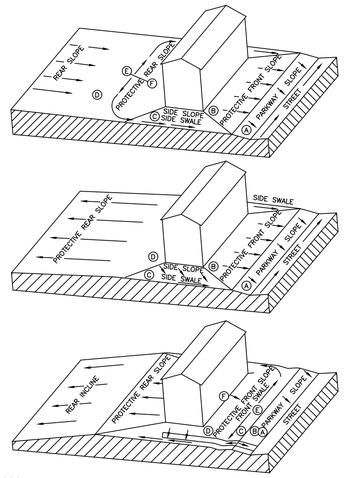
SAMPLE COMPUTATION OF GRADING CONTROL LINE A-F FOR LOT WITH SETBACK	USING 1% SWALE	USING 2% SWALE
A CURB TOP AT HIGHEST CORNER		
A-B PARKWAY SLOPE: GRASS AT 1/4"FT.		
B-C SIDE SWALE: GRASS		
C-D SWALE TURN W/ 10' RADIUS: 16' GRASS		
D-E REAR SWALE: GRASS		
E-F PROTECTIVE REAR SLOPE		
SUB-TOTAL A-F FROM CURB TO GROUND @ REAR		
MINIMUM RISE FROM CURB-TOP TO SLAB FLOOR		

LOT GRADE TYPE B
DRAINAGE TO BOTH STREET AND TO REAR LOT LINE

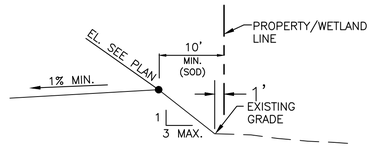
SAMPLE COMPUTATION OF GRADING CONTROL LINE A-D FOR LOT WITH SETBACK	USING 1% SWALE	USING 2% SWALE
A CURB TOP AT HIGHEST CORNER		
A-B PARKWAY SLOPE: GRASS AT 1/4"FT.		
B-C SIDE SWALE: GRASS		
C-D PROTECTIVE REAR SLOPE		
SUB-TOTAL A-D FROM CURB TO GROUND @ REAR		
MINIMUM RISE FROM CURB-TOP TO SLAB FLOOR		

LOT GRADE TYPE C
ALL DRAINAGE TO REAR LOT LINE

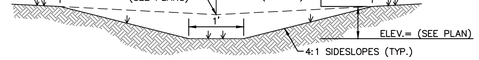
SAMPLE COMPUTATION OF GRADING CONTROL LINE A-F FOR LOT WITH SETBACK	USING 1% SWALE	USING 2% SWALE
A CURB TOP AT HIGH SIDE OF DRIVE		
A-B PARKWAY SLOPE: GRASS AT 1/4"FT.		
B-C DRIVEWAY GRADE CHANGE: 4" VERTICAL CURVE		
C-D DRIVEWAY DOWNGRADE TO POINT 10' FROM BUILDING LINE: @ 1.0%		
D-E FRONT SWALE: GRASS		
E-F PROTECTIVE FRONT SLOPE		
SUB-TOTAL A-F FROM CURB TO GROUND @ REAR		
MINIMUM RISE/FALL FROM CURB-TOP TO SLAB FLOOR		



LOT GRADING PLAN
N.T.S.



REAR/SIDE LOT GRADING DETAIL
N.T.S.



TYPE "A" GRASSED SWALE
N.T.S.

DOMINION ENGINEERING GROUP, INC.
PLANNERS AND ENGINEERS
4348 SOUTHPOINT BLVD, SUITE 204, JACKSONVILLE, FLORIDA 32216
TEL: 904-854-4500 C.A. NUMBER: 26821 FAX 904-854-4505
www.dom-eng.com

GRAYLON OAKS
FOR
GRAYLON OAKS LAND TRUST

GENERAL NOTES AND DETAILS

REVISIONS
PLOT DATE:
DRAWN BY: JMM
DESIGNED BY: WES
CHECKED BY: WES
SCALE: AS NOTED
JOB NO.:

SHEET NO.
C9
OF ___

WILLIAM E. SCHAEFER LICENSE No. 40229 STATE OF FLORIDA PROFESSIONAL ENGINEER
05/05/2022

Z:\General Civil\BMHB\Graylan\Cadd\design\P-D DETAILS-GRAYLAN.dwg Aug 05, 2022 - 3:41pm

Clay County General Notes

1. Clay County Engineering Division requires twenty-four hours (24-hr) notice on all meetings and or testing procedures.
2. Construction warning signs are to be post mounted and erected before construction can commence. These and all traffic control devices shall follow the standards set forth by the Manual of Uniform Traffic Control Devices (MUTCD) and the Florida Department of Transportation Standard Specifications and Details.
3. All construction projects 1 acre or more in size shall be required to abide by the provisions of the National Pollutant Discharge Elimination (NPDES) permit. The owner or contractor is responsible for preparing the Stormwater Pollution Prevention Plan (SWPPP) and submitting the NPDES "Notice of Intent" (NOI) and "Notice of Termination" (NOT) to the EPA or local state agency having jurisdiction over the NPDES program. The contactor shall keep onsite copies of the SWPPP, NOI, and water management district permits.
4. It is the responsibility of the contractor to recognize and abide by all OSHA safety standards.
5. All disturbed Clay County Rights-of-Way shall be sodded to the discretion and approval of the Clay County Engineering Division.
6. Contractor shall provide roadway stationing markers through-out the roadway construction phase on 50 foot stations.
7. The contractor shall verify all utility locations prior to excavation and take all measures necessary to protect utilities during construction. Should any utility line or component become damaged or require relocation the contractor shall immediately notify the responsible utility company, the engineer, and the county.
8. Updated November 18, 2014

CALL BEFORE YOU DIG
1-800-432-4770
&
904-269-6359

- Call 800-432-4770 two full business days before digging. Call 10 days before digging when digging under water.
- Call 904-269-6359 (Clay County Signal & Maintenance Division) two full business days before digging
- Wait the required time for buried utilities to be located and marked.
- Protect the marks during your project. If marks are destroyed, call again.
- Dig safely, using extreme caution when digging within 24 inches on either side of the marks to avoid hitting the buried utility lines.

9. Before working in existing county rights-of-way, the contractor shall be required to obtain a right-of-way permit. The permit can be obtained at the Clay County Engineering Division, 477 Houston Street, 3rd Floor, Green Cove Springs, Florida.
10. All swale sections and ponds are to be sodded within 15 days of their final grading.
11. Any offsite swales or ditches impacted by the development, the contactor shall re-grade and restore, to obtain positive drainage.
12. A copy of the contractors' general license and the under ground utility license shall be provided at the time of the pre-construction conference.
13. Any applicable Saint Johns River Water Management District (SJRWMD), FDEP (Generic Permit for Stormwater Discharge from Large and Small Construction Activities, Army Corp of Engineers, and a Florida Department of Transportation (FDOT) permits shall be provided to the county by the pre-construction conference. No work shall begin without all applicable permits on file.
14. The contractor must obtain approval from the Saint Johns River Water Management District (SJRWMD) before the county will accept the project.
15. All storm pipes shall be videoed prior to a final inspection and all data shall be recorded in High quality DVD format with sound or any equipment approved by the Engineering Division (Ref. FDOT SSRBC latest edition).
16. There shall be a minimum five (5) days notice given for scheduling the final inspection.
17. At the final inspection a letter of compliance will need to be filled out and signed by the State of Florida Registered Professional Engineer of record for the project. The letter shall state that the project has been built in accordance of the approved design plans and other agency permits.
18. All soil and debris tracked out of the project shall be cleaned in accordance with the approved SWPPP or at the discretion of the Clay County Engineering Division.
19. Prior to any inspection or testing, all pipe line, structures, roadway, etc. shall be cleaned.

Erosion Control

20. Pursuant to Comprehensive Plan Policy 9:1 of the conservation element, the use of one or more erosion control measures, as requested by the Clay County Engineering Division, shall be used during construction. These will be, but not limited to, items such as temporary grass cover, sediment basins or ponds, mulching, temporary fences, diversion channels, and hay bales.
21. Pursuant to Comprehensive Plan Policy 9:1 of the conservation element, scheduling of construction shall be given special consideration to minimize exposure of bare soil. The contractor will formulate a construction schedule to be given to the county representative.
22. The governing publications for erosion control are current FDOT Roadway and Traffic Design Standards, Index 100-105, current FDOT STD. Spec. for Roadway & Bridge Const., Section 104, and the NPDES Stormwater and Erosion Control Manual latest edition.
23. The contractor shall check each day to insure that all erosion control devices are in place and working properly.
24. All erosion control measures shall be in compliance with the rules, regulations and standards of the Saint Johns River Water Management District, The Florida Department of Environmental Protection, and The United States Army Corp of Engineers and Clay County Regulations and Ordinances.
25. The contractor shall take whatever means necessary to prevent the erosion of soil and deposition of sediment on adjacent and downstream properties.
26. All erosion control measures shall be installed prior to commencement of construction. Sediment control consists of silt fencing, hay bales, and floating turbidity barriers per FDOT Index No. 102 &103. Erosion control consists of seeding and mulching, sodding, wetting surfaces, placement of coarse aggregate, temporary paving.
27. The contactor shall respond to erosion and sediment control maintenance with 24-hours of being informed by Clay County, unless the situation requires an immediate response. The contractor will then respond immediately after notification by the county. The contactors erosion control inspector shall be a qualified stormwater management inspector by the Florida Department of Environmental Protection.
28. The contractor shall be required to incorporate permanent erosion control measures at the earliest practical time so as to minimize the need for temporary controls.
29. The erosion and sediment control measures shown on the plans are minimum requirements. The contractor shall be responsible for additional erosion control measures as determined by the county or the contactor to insure quality control.
30. All disturbed areas shall be grassed within 7 days of the initial disturbance. Types of grassing shall be as follows: Sodding is required for around all drainage structures, retention/detention areas, swales, ditches, and where 4:1 slopes are exceeded. Seed and mulch may be used at all other locations unless specifically called out for on these drawings. There shall be a standing row of grass at the time of final acceptance. If seed and mulch has been used and has not taken to, sod will be required for established grass.
31. The contractor shall inspect and report erosion and sediment control methods every week and after ½ inch of rain during construction. The contractor shall remove any sediment build up, repair or reinstall any control measures.
32. The county requires background testing of local waterways and additional periodic testing during construction for water quality and conformity with Clay County Standards.
33. A stabilized construction entrance is required with all developments. Where the development is built in phases, a secondary construction entrance will be required that does not allow construction equipment to access through the existing development if possible.

Public Safety

34. Blue, all-directional highway-style reflective markers shall be provided on all roadways, alleys, access roads, and all paved area in front of each hydrant. Said markers shall be located in the center of travel lane on the same side as the hydrant. These markers shall be in place by the time of the final inspection or approval.
35. A disk shall be provided to the Public Safety Department, in Auto Cad format, showing the location of all fire hydrants before final approval.

Excavation & Embankments

36. The governing publications for roadway excavation and embankment are the current FDOT Roadway and Traffic Design Standards, indexes 500-505 and section 120 of the FDOT standard specifications for road and bridge construction latest edition. All soils shall be classified per ASSHTO soil classification system.
37. The Contactor is to rough excavate and grade any proposed ponds at the start of the site grading. The Contractor will direct site runoff to the ponds to minimize runoff to offsite areas. These ponds will not be allowed to discharge prior to the grassing and inspection to make sure the water quality is acceptable.
38. Contactor shall provide barriers, warning lights and other protective devices at all excavations.
39. Sidewalks, roads, streets, or any other type of pedestrian or vehicular pathways shall not be blocked or obstructed by excavated materials or the excavated trench unless approved by Clay County.
40. All unsuitable material shall be removed three feet (3') beyond the back of the curb and two feet (2') below the bottom of the 12" stabilized subgrade. It shall be the determination of Clay County if more excavation shall be required due to soil condition evaluated in the field.

Signage & Pavement Markings

41. All signs and pavement markings shall be in accordance with the "Manuel of Uniform Traffic Control Devices" and the latest implemented addition of the FDOT Roadway and Traffic Design Standards Index numbers 9535, 11860, 11862, 11865, 17302, 17346 and 17349.
42. All final pavement markings within the rights-of-way shall be thermoplastic.
43. All signs shall be on a ten-foot (10') pole a minimum seven feet (7') from the ground.
44. Street signs shall be mounted with tee caps and include both crossing street names
45. Street signs shall be a six inches (6") high with green backings and white letters and bordering.
46. Stop signs shall meet the minimum size requirements of the MUTCD.
47. Stop signs are to be placed four feet (4') from back of curb, four feet (4') behind cross walks and on the right hand side of the road.
48. All regulatory signs shall be black and white. All construction warning signs shall be orange and black. All warning signs shall be yellow and black. All no parking and stop signs shall be red and white.
49. Stop bars shall be twenty-four inches (24") wide and lane width. All stop bars shall be thermoplastic.
50. All signs must meet MUTCD and Florida Department of Transportation (FDOT) standards for reflectivity.
51. For county maintained roads, street signs shall be colored with a green background and white lettering. For private roads, the sign shall be a white background with green lettering.
52. All pavement markings require layout approval by Clay County.

Sidewalks

53. The governing publications for sidewalk are the current FDOT Roadway and Traffic Design Standards, Index 304-310 and the current FDOT STD. Spec. for Roadway & Bridge Const. Section 522.
54. Sidewalks are a minimum of 5' in width for a local road and 6' in width for a residential collector. All other roadway classifications shall refer to the details herein. In no case shall the sidewalk be less than 5' without written approval from the Engineering Division.
55. All sidewalks that are not in front of a build able lot, shall be installed prior to the final inspection
56. Pedestrian crossing/handicap ramps shall be installed wherever the sidewalk meets the curb. The ramps shall be in accordance with Florida Department of Transportation standard index number 304. All ADA ramps shall be installed prior to final acceptance unless otherwise approved by the Engineering Division.
57. Whether depicted on the plans or not, a sidewalk is to be installed at the subdivision entrance running parallel to the right of way for the extent of the property.
58. Sidewalks are to be placed, at a minimum, 3' from the property line or as otherwise approved by the Engineering Division.

Type "B" Stabilized Subgrade

59. The governing publications for sub-grade are the current FDOT Roadway and Traffic Design Standards, Index 505 and the current FDOT STD. Spec. for Roadway & Bridge Const. Section 160 and Section 914.
60. Limerock Bearing Ratios for subgrade shall be a minimum of 40 with no under tolerance.
61. All stabilized sub-grade shall meet FDOT Type "B" stabilization as defined by the standard specifications

Base Course

62. The governing publications for base materials are the current FDOT STD. Spec. for Roadway & Bridge Const.
63. The limerock bearing ratio for base course is a minimum of 100 with no under tolerance.
64. All limerock base courses shall be primed before paving. If the limerock is not paved within one (1) day of the priming, the base shall be required to be covered with sand.
65. Any contaminated base material shall be removed. All base material shall be in its virgin state.

Asphalt

66. The governing publications for asphalt are FDOT 2002 Roadway and Traffic Design Standards or the current edition, Index 513 and FDOT 2000 STD. Spec. for Roadway & Bridge Const or current edition. Section 330, 331, and 333.
67. The minimum asphalt thickness for a local road is 1 ½"with no under tolerance.
68. The minimum asphalt thickness for a residential collector is 2" with no under tolerance.
69. The asphalt shall be cored for thickness. . If however the county's representative is present at pour and feels comfortable with the requirements then he or she may wave this policy with the direction of the Construction Project Manager.
70. The maximum recycled rap allowed in asphalt mixes is 20%.

Drainage Structures & Pipe Installation

71. The governing publications for pipe are the current FDOT Roadway and Traffic Design Standards, Index 205 and the current FDOT STD. Spec. for Roadway & Bridge Const. Section 430.
72. The governing publications for Inlets, Junction Boxes and Manholes are the current FDOT Roadway and Traffic Design Standards, Index 201, 209, 215 and the current FDOT STD. Spec. for Roadway & Bridge Const. Section 425.
73. All drainage pipe joints, inlet joint, and pipe connections to inlets shall be wrapped with filter fabric and secured.
74. All joints of pipe regardless of material type shall be wrapped with fabric filter cloth per Florida Department of Transportation index number 199, type D-3, A.O.S. 70-100. The fabric shall be installed in accordance with FDOT index number 280. The contractor will provide a minimum 12" overlap in the fabric.
75. All storm sewer pipes are to be steel reinforced concrete pipe (SRCP) unless otherwise noted on these drawings. Round concrete pipe shall comply with ASTM C76. Elliptical pipe shall comply with ASTM C507. Pipe joints and O ring gaskets shall comply with ASTM C443.
76. All storm sewer pipes shall be subjected to leakage testing and shall be videoed/ TV after limerock has been compacted and prior to the final inspection.
77. All storm sewer pipes shall be cut flush with the interior wall of any type manhole or curb and ditch bottom inlets.
78. If the approved design requires the inlet or storm run be surcharged, all inlets shall be inspected before being exposed to the system.
79. Mitered End Sections shall meet the requirements under the current FDOT Roadway and Traffic Design Standards, Index 272 & 273.
80. No manhole shall be placed within 2.5' of the curb.
81. No brick adjustment shall be allowed for manholes underneath the pavement.
82. The maximum threshold for manhole adjustment underneath the roadway shall be between 0 to 4".
83. Final Pipe Inspection in the Right-of-Way or County's easement: After the final base course operation, the contractor shall dewater and video the pipe/culvert; the County will only review the video Data post base compaction and supplied by the contractor/developer, and the tests and DVD must meet section 430 of the latest edition of the FDOT Standard Specifications for Road and Bridge Construction.

Underdrain

84. The governing publications for underdrain are the current FDOT Roadway and Traffic Design Standards, Index 286 and the current FDOT STD., Spec. for Roadway & Bridge Const. Section 440.
85. All underdrain lines shall have a forty-five degree clean out at two hundred feet intervals and at the end of the pipe run. The curb shall be marked with teal or hunter green paint as to the location of the clean out.
86. All underdrain filter material shall be fully wrapped with filter cloth. The county will not permit any ½ or ¼ wrapped piping.
87. Underdrain shall be placed, at a minimum, 2' from back off curbing.
88. A 20' stub out is required for all drainage structures. All stub outs shall be capped with an underdrain clean out.
89. No tree root barrier or roots shall be placed within a horizontal distance of 2' from the underdrain.
90. If unsuitable material is found within the limits of the road or if material is hauled in for roadway fill at a depth grater than one-foot (1') then the entire roadway shall be underdrained in accordance with the geotechnical report and installed per the approved Clay County Detail.

Curb & Miscellaneous Concrete

91. The governing publications for curb are FDOT 2004 Roadway and Traffic Design Standards, Index 300-304 and FDOT 2004 STD. Spec. for Roadway & Bridge Const. Section 520.
92. The curb shall be checked for flow at any stage of the project. A water truck is to be provided at the pre- final inspection in order to check flow for proper drainage.

Maintenance of Traffic

93. The governing publications for maintenance of traffic are the current FDOT Roadway and Traffic Design Standards, Index 600 and the current FDO STD. Spec. for Roadway & Bridge Const., Section 102, and the latest edition of the MUTCD.
94. When FDOT Standard Indexes do not apply and hauling is necessary for the construction of the site, additional MOT maybe necessary. Installation of "Trucks Entering and Leaving Highway" signs shall be installed and maintained throughout the limits of the construction schedule.

AS-BUILT REQUIREMENTS
PAVING AND DRAINAGE

General

1) Submit one signed and sealed paper copy (24"x36") of the as-builts overlaid on the approved plans. Submit a CAD file compatible with AutoCad 2017 and a pdf that exactly matches the paper copy.

2) All as-builts must use the NAVD 1988 vertical datum and the State Plane Coordinate NAD 83 horizontal datum.

3) As-built must contain at least the following:
   a) Project name
   b) Project/Development number
   c) Street names
   d) Physical address (commercial sites)
   e) North arrow
   f) Scale
   g) 4 boundary corners
   h) The word "as-built" must be in at least one inch high letters.
   i) Reference all benchmarks by station and offset
   j) Minimum of 2 benchmarks for every 1000' feet of road

Paving

As-builts should include elevation, station, and offset at the following every 100':

1) Centerline or profile grade line
2) Top of curb
3) Gutter or edge of pavement (specify width)
4) Back of sidewalks (minimum ever 100')

As-builts should include elevation, station, and offset at each:

1) PC, and PT
2) Low and high points
3) Centerline intersections
4) Beginning and end valley gutter
5) Begin and end super elevation transition
6) Gutter line (Cul-De-Sac every 25')

Drainage

1) Location of all drainage structures by station and offset, including
   a) Structure throat top and/or grate elevation (specify which)
   b) Weir and slot elevations and orifice sizes
   c) Pipe invert elevation and flow direction. Including underdrain.
2) Size, lengths and types of drainage pipes to include underdrain.
3) Cross sections through all swale and ditches. Minimum of every 25'. Must include elevation and locations of centerline, toe of slope, and top of bank.
4) Pond details to include:
   a) Elevations located top of bank a minimum of every 100'
   b) Dated elevation of pond water level at time of the as-built
   c) Elevations along bottom of the pond, two shots per acre minimum
5) Show all drainage easements to include water flow direction

Signage

Location of all street signs by station and offset

Lot Information

Lot elevations need to be included for each individual parcel. This must be at every elevation shown on the approved plans.

Letter of Certification

The as-built needs to be reviewed by the EOR and their approval must be included in the Engineers Certification letter and submitted with the close-out package.

Revised - 10/15/19

DOMINION ENGINEERING GROUP, INC.
PLANNERS AND ENGINEERS
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GRAYLON OAKS
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CLAY COUNTY GENERAL NOTES

REVISIONS

PLOT DATE:
DRAWN BY: JMM
DESIGNED BY: WES
CHECKED BY: WES
SCALE: AS NOTED
JOB NO.:

SHEET NO.
C10
OF ___

WILLIAM E. SCHAEFER
LICENSE
No. 40229
08/05/2022
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Z:\General Civil\BMHB\Graylan\Cadd\design\P-D DETAILS-GRAYLAN.dwg Aug 05, 2022 - 3:41pm

STORM WATER POLLUTION PREVENTION PLAN

REQUIREMENTS

SITE DESCRIPTION

PROJECT NAME AND LOCATION:
GRAYLON OAKS
VERMONT AVENUE
CLAY COUNTY
OWNER NAME AND ADDRESS:
GRAYLON OAKS LAND TRUST
4279 CEDAR ROAD
ORANGE PARK, FL 32065

DESCRIPTION:
SINGLE FAMILY

SOIL DISTURBING ACTIVITIES WILL INCLUDE:
CLEARING AND GRUBBING; EARTHWORK, PAVEMENT AND GRADING; STORM SEWER, UTILITIES, AND PREPARATION FOR FINAL PLANTING AND SEEDING.

RUNOFF CURVE NUMBERS:
1. PRE-CONSTRUCTION = 50
2. DURING CONSTRUCTION = 60
3. POST-CONSTRUCTION = 69

SOILS:
SEE SOIL BORING REPORT FOR SOILS DATA
SITE MAPS:
* SEE ATTACHED GRADING PLAN FOR PRE & POST DEVELOPMENT GRADES, AREAS OF SOILS, DISTURBANCE, LOCATION OF SURFACE WATERS, WETLANDS, PROTECTED AREAS, MAJOR STRUCTURAL AND NONSTRUCTURAL CONTROLS AND STORM WATER DISCHARGE POINTS.
* SEE ATTACHED EROSION & TURBIDITY CONTROL PLAN FOR LOCATION OF TEMPORARY STABILIZATION PRACTICES, AND TURBIDITY BARRIERS
* SEE GENERAL NOTES FOR REQUIRMENTS FOR TEMPORARY AND PERMANENT STABILIZATION.

SITE AREA:
1. TOTAL AREA OF SITE = 3.82 +/- Ac.
2. TOTAL AREA TO BE DISTURBED = 3.82 +/- Ac.

NAME OF RECEIVING WATERS: EXISTING DITCH

CONTROLS

THIS PLAN UTILIZES BEST MANAGEMENT PRACTICES TO CONTROL EROSION AND TURBIDITY CAUSED BY STORM WATER RUN OFF. AN EROSION AND TURBIDITY PLAN HAS BEEN PREPARED TO INSTRUCT THE CONTRACTOR ON PLACEMENT OF THESE CONTROLS. IT IS THE CONTRACTORS RESPONSIBILITY TO INSTALL AND MAINTAIN THE CONTROLS PER PLAN AS WELL AS ENSURING THE PLAN IS PROVIDING THE PROPER PROTECTION AS REQUIRED BY FEDERAL, STATE AND LOCAL LAWS. REFER TO "CONTRACTORS RESPONSIBILITY" FOR A VERBAL DESCRIPTION OF THE CONTROLS THAT MAY BE IMPLEMENTED.

STORM WATER MANAGEMENT

STORM WATER DRAINAGE WILL BE PROVIDED BY (DESRIPTION:) DETENTION PONDS

FOR THE PROJECT. AREAS WHICH ARE NOT TO BE CONSTRUCTED ON, BUT WILL BE REGRADED SHALL BE STABILIZED IMMEDIATELY AFTER GRADING IS COMPLETE, WHEN CONSTRUCTION IS COMPLETE, A TOTAL OF 3.82± ACRES WILL HAVE BEEN REGRADED, 0.00± ACRES LEFT UNDISTURBED. THE SITE DISCHARGES TO A WET DETENTION SYSTEM. WHERE PRACTICAL, TEMPORARY SEDIMENT BASINS WILL BE USED TO INTERCEPT SEDIMENT BEFORE ENTERING THE PERMANENT DETENTION BASIN. THE WET DETENTION SYSTEM IS DESIGNED WITH A 14 DAY MINIMUM RESIDENCE VOLUME. THIS IS IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH BY THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT FOR THIS TYPE OF DEVELOPMENT AT THE TIME OF PERMITTING.

TIMING OF CONTROLS/MEASURES

REFER TO " CONTRACTORS RESPONSIBILITY" FOR THE TIMING OF CONTROL/MEASURES.

CERTIFICATION OF COMPLIANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS

IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL LAWS RELATED TO STORM WATER MANAGEMENT AND EROSION AND TURBIDITY CONTROLS, THE FOLLOWING PERMITS HAVE BEEN OBTAINED.

D.E.R. DREDGE/FILL PERMIT # ________N/A________
C.O.E. DREDGE/FILL PERMIT # ___________________
S.J.R.W.M.D. M.S.S.W. PERMIT #___________________

POLLUTION PREVENTION PLAN CERTIFICATION

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

SIGNED:____
ENGINEER: WILLIAM E SCHAEFER, II #40229

DATED:____________________________

CONTRACTOR'S REQUIREMENTS

GENERAL

THE CONTRACTOR SHALL AT A MINIMUM IMPLEMENT THE CONTRACTOR'S REQUIREMENTS OUTLINED BELOW AND THOSE MEASURES SHOWN ON THE EROSION AND TURBIDITY CONTROL PLAN. IN ADDITION THE CONTRACTOR SHALL UNDERTAKE ADDITIONAL MEASURES REQUIRED TO BE IN COMPLIANCE WITH APPLICABLE PERMIT CONDITIONS AND STATE WATER QUALITY STANDARDS. DEPENDING ON THE NATURE OF MATERIALS AND METHODS OF CONSTRUCTION THE CONTRACTOR MAY BE REQUIRED TO ADD FLOCCULANTS TO THE RETENTION SYSTEM PRIOR TO PLACING THE SYSTEM INTO OPERATION.

SEQUENCE OF MAJOR ACTIVITIES:

THE ORDER OF ACTIVITIES WILL BE AS FOLLOWS:

1. INSTALL STABILIZED CONSTRUCTION ENTRANCE
2. INSTALL SILT FENCES AND HAY BALES AS REQUIRED
3. CLEAR AND GRUB FOR DIVERSION SWALES/DIKES AND SEDIMENT BASIN
4. CONSTRUCT SEDIMENTATION BASIN
5. CONTINUE CLEARING AND GRUBBING
6. STOCK PILE TOP SOIL IF REQUIRED
7. PERFORM PRELIMINARY GRADING ON SITE AS REQUIRED
8. STABILIZE DENUDED AREAS AND STOCKPILES AS SOON AS PRACTICABLE
9. INSTALL UTILITIES, STORM SEWER, CURBS & GUTTER.
10. APPLY BASE TO PROJECT
11. COMPLETE GRADING AND INSTALL PERMANENT SEEDING/SOD AND PLANTING
12. COMPLETE FINAL PAVING
13. REMOVE ACCUMULATED SEDIMENT FROM BASINS
14. WHEN ALL CONSTRUCTION ACTIVITY IS COMPLETE AND THE SITE IS STABILIZED, REMOVE ANY TEMPORARY DIVERSION SWALES/DIKES AND RESEED/SOD AS REQUIRED

TIMING OF CONTROLS/MEASURES

AS INDICATED IN THE SEQUENCE OF MAJOR ACTIVITIES, THE SILT FENCES AND HAY BALES, STABILIZED CONSTRUCTION ENTRANCE AND SEDIMENT BASIN WILL BE CONSTRUCTED PRIOR TO CLEARING OR GRADING OF ANY OTHER PORTIONS OF THE SITE. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICAL IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED. ONCE CONSTRUCTION ACTIVITY CEASES PERMANENTLY IN AN AREA, THAT AREA WILL BE STABILIZED PERMANENTLY IN ACCORDANCE WITH THE PLANS. AFTER THE ENTIRE SITE IS STABILIZED, THE ACCUMULATED SEDIMENT WILL BE REMOVED FROM THE SEDIMENT TRAPS AND THE EARTH DIKE/SWALES WILL BE REGRADED/REMOVED AND STABILIZED IN ACCORDANCE WITH THE EROSION & TURBIDITY CONTROL PLAN.

CONTROLS

IT IS THE CONTRACTORS RESPONSIBILITY TO IMPLEMENT THE EROSION AND TURBIDITY CONTROLS AS SHOWN ON THE EROSION AND TURBIDITY CONTROL PLAN. IT IS ALSO THE CONTRACTORS RESPONSIBILITY TO ENSURE THESE CONTROLS ARE PROPERLY INSTALLED , MAINTAINED AND FUNCTIONING PROPERLY TO PREVENT TURBID OR POLLUTED WATER FROM LEAVING THE PROJECT SITE. THE CONTRACTOR WILL ADJUST THE EROSION AND TURBIDITY CONTROLS SHOWN ON THE EROSON AND TURBIDITY CONTROL PLAN AND ADD ADDITIONAL CONTROL MEASURES, AS REQUIRED,TO ENSURE THE SITE MEETS ALL FEDERAL, STATE AND LOCAL EROSION AND TURBIDITY CONTROL REQUIREMENTS. THE FOLLOWING BEST MANAGEMENT PRACTICES WILL BE IMPLEMENTED BY THE CONTRACTOR AS REQUIRED BY THE EROSION AND TURBIDITY CONTROL PLAN AND AS REQUIRED TO MEET THE EROSION AND TURBIDITY REQUIREMENTS IMPOSED ON THE PROJECT SITE BY THE REGULATORY AGENCIES.

EROSION AND SEDIMENT CONTROLS
STABILIZATION PRACTICES

1. HAY BALE BARRIER: HAY BALE BARRIERS CAN BE USED BELOW DISTURBED AREAS SUBJECT TO SHEET AND RILL EROSION WITH THE FOLLOWING LIMITATIONS:
   A. WHERE THE MAXIMUM SLOPE BEHIND THE BARRIER IS 33 PERCENT.
   B. IN MINOR SWALES OR DITCH LINES WHERE THE MAXIMUM CONTRIBUTING DRAINAGE AREA IS NO GREATER THAN 2 ACRES.
   C. WHERE EFFECTIVENESS IS REQUIRED FOR LESS THAN 3 MONTHS.
   D. EVERY EFFORT SHOULD BE MADE TO LIMIT THE USE OF STRAW BALE BARRIERS CONSTRUCTED IN LIVE STREAMS OR IN SWALES WHERE THERE IS THE POSSIBILITY OF A WASHOUT. IF NECESSARY, MEASURES SHALL BE TAKEN TO PROPERLY ANCHOR BALES TO INSURE AGAINST WASHOUT.
   REFER TO CITY STANDARD DETAIL D-913 FOR CONSTRUCTING THE HAY BALE BARRIER. ALSO REFER TO D-901, D-911 AND D-12 FOR PROPER LOCATION, MATERIAL & USAGE.
2. FILTER FABRIC BARRIER: FILTER FABRIC BARRIERS CAN BE USED BELOW DISTURBED AREAS SUBJECT TO SHEET AND RILL EROSION WITH THE FOLLOWING LIMITATIONS:
   A. WHERE THE MAXIMUM SLOPE BEHIND THE BARRIER IS 33 PERCENT.
   B. IN MINOR SWALES OR DITCH LINES WHERE THE MAXIMUM CONTRIBUTING DRAINAGE AREA IS NO GREATER THAN 2 ACRES.
   REFER TO CITY STANDARD DETAIL D-910 FOR PROPER CONSTRUCTION OF THE FILTER FABRIC BARRIER.
3. BRUSH BARRIER WITH FILTER FABRIC: BRUSH BARRIER MAY BE USED BELOW DISTURBED AREAS SUBJECT TO SHEET AND RILL EROSION WHERE ENOUGH RESIDUE MATERIAL IS AVAILABLE ON SITE.
4. LEVEL SPREADER: A LEVEL SPREADER MAY BE USED WHERE SEDIMENT-FREE STORM RUNOFF IS INTERCEPTED AND DIVERTED AWAY FROM THE GRADED AREAS ONTO UNDISTURBED STABILIZED AREAS. THIS PRACTICE APPLIES ONLY IN THOSE SITUATIONS WHERE THE SPREADER CAN BE CONSTRUCTED ON UNDISTURBED SOIL AND THE AREA BELOW THE LEVEL LIP IS STABILIZED. THE WATER SHOULD NOT BE ALLOWED TO RECONCENTRATE AFTER RELEASE. LEVEL SPREADER SHALL BE CONSTRUCTED IN ACCORDANCE TO CITY STANDARD DETAIL D-914.
5. STOCKPILING MATERIAL: NO EXCAVATED MATERIAL SHALL BE STOCKPILED IN SUCH A MANNER AS TO DIRECT RUNOFF DIRECTLY OFF THE PROJECT SITE INTO ANY ADJACENT WATER BODY OR STORM WATER COLLECTION FACILITY.
6. EXPOSED AREA LIMITATION: THE SURFACE AREA OF OPEN, RAW ERODIBLE SOIL EXPOSED BY CLEARING AND GRUBBING OPERATIONS OR EXCAVATION AND FILLING OPERATIONS SHALL NOT EXCEED 10 ACRES. THIS REQUIREMENT MAY BE WAIVED FOR LARGE PROJECTS WITH AN EROSION CONTROL PLAN WHICH DEMONSTRATES THAT OPENING OF ADDITIONAL AREAS WILL NOT SIGNIFICANTLY AFFECT OFF-SITE DEPOSIT OF SEDIMENTS.
7. INLET PROTECTION: INLETS AND CATCH BASINS WHICH DISCHARGE DIRECTLY OFF-SITE SHALL BE PROTECTED FROM SEDIMENT-LADEN STORM RUNOFF UNTIL THE COMPLETION OF ALL CONSTRUCTION OPERATIONS THAT MAY CONTRIBUTE SEDIMENT TO THE INLET.
8. TEMPORARY SEEDING: AREAS OPENED BY CONSTRUCTION OPERATIONS AND THAT ARE NOT ANTICIPATED TO BE RE-EXCAVATED OR DRESSED AND RECEIVE FINAL GRASSING TREATMENT WITHIN 30 DAYS SHALL BE SEEDED WITH A QUICK GROWING GRASS SPECIES WHICH WILL PROVIDE AN EARLY COVER DURING THE SEASON IN WHICH IT IS PLANTED AND WILL NOT LATER COMPETE WITH THE PERMANENT GRASSING.
9. TEMPORARY SEEDING AND MULCHING: SLOPES STEEPER THAN 6:1 THAT FALL WITHIN THE CATEGORY ESTABLISHED IN PARAGRAPH 8 ABOVE SHALL ADDITIONALLY RECEIVE MULCHING OF APPROXIMATELY 2 INCHES LOOSE MEASURE OF MULCH MATERIAL CUT INTO THE SOIL OF THE SEEDED AREA ADEQUATE TO PREVENT MOVEMENT OF SEED AND MULCH.
10. TEMPORARY GRASSING: THE SEEDED OR SEEDED AND MULCHED AREA(S) SHALL BE ROLLED AND WATERED OR HYDROMULCHED OR OTHER SUITABLE METHODS IF REQUIRED TO ASSURE OPTIMUM GROWING CONDITIONS FOR THE ESTABLISHMENT OF A GOOD GRASS COVER. TEMPORARY GRASSING SHALL BE THE SAME MIX & AMOUNT REQUIRED FOR PERMANENT GRASSING IN THE CONTRACT SPECIFICATIONS.
11. TEMPORARY REGRASSING : IF, AFTER 14 DAYS FROM SEEDING, THE TEMPORARY GRASSED AREAS HAVE NOT ATTAINED A MINIMUM OF 75 PERCENT GOOD GRASS COVER, THE AREA WILL BE REWORKED AND ADDITIONAL SEED APPLIED SUFFICIENT TO ESTABLISH THE DESIRED VEGETATIVE COVER.
12. MAINTENANCE: ALL FEATURES OF THE PROJECT DESIGNED AND CONSTRUCTED TO PREVENT EROSION AND SEDIMENT SHALL BE MAINTAINED DURING THE LIFE OF THE CONSTRUCTION SO AS TO FUNCTION AS THEY WERE ORIGINALLY DESIGNED AND CONSTRUCTED.
13. PERMANENT EROSION CONTROL: THE EROSION CONTROL FACILITIES OF THE PROJECT SHOULD BE DESIGNED TO MINIMIZE THE IMPACT ON THE OFFSITE FACILITIES.
14. PERMANENT SEEDING: ALL AREAS WHICH HAVE BEEN DISTURBED BY CONSTRUCTION WILL, AS A MINIMUM, BE SEEDED. THE SEEDING MIX MUST PROVIDE BOTH LONG-TERM VEGETATION AND RAPID GROWTH SEASONAL VEGETATION. SLOPES STEEPER THAN 4:1 SHALL BE SEEDED AND MULCHED OR SODDED.

STRUCTURAL PRACTICES

1. TEMPORARY DIVERSION DIKE: TEMPORARY DIVERSION DIKES MAY BE USED TO DIVERT RUNOFF THROUGH A SEDIMENT-TRAPPING FACILITY. AND IT SHALL BE CONSTRUCTED IN ACCORDANCE TO D-914.
2. TEMPORARY SEDIMENT TRAP: A SEDIMENT TRAP SHALL BE INSTALLED IN AN DRAINAGEWAY AT A STORM DRAIN INLET OR AT OTHER POINTS OF DISCHARGE FROM A DISTURBED AREA.
   THE FOLLOWING SEDIMENT TRAPS MAY BE CONSTRUCTED EITHER INDEPENDANTLY OR IN CONJUNCTION WITH A TEMPORARY DIVERSION DIKE:
   A. BLOCK & GRAVEL SEDIMENT FILTER - THIS PROTECTION IS APPLICABLE WHERE HEAVY FLOWS AND/OR WHERE AN OVERFLOW CAPACITY IS NECESSARY TO PREVENT EXCESSIVE PONDING AROUND THE STRUCTURE. REFER TO D-902 FOR CONSTRUCTION OF A CURB INLET SEDIMENT FILTER, AND D-904 FOR CONSTRUCTION OF A DROP INLET SEDIMENT FILTER.
   B. GRAVEL SEDIMENT TRAP - THIS PROTECTION IS APPLICABLE WHERE HEAVY CONCENTRATED FLOWS ARE EXPECTED, BUT NOT WHERE PONDING AROUND THE STRUCTURE MIGHT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES & UNPROTECTED AREAS. REFER TO D-903 FOR CONSTRUCTION OF CURB INLET & DROP SEDIMENT TRAP.
   C. DROP INLET SEDIMENT TRAP - THIS PROTECTION IS APPLICABLE WHERE THE INLET DRAINS A RELATIVELY FLAT AREA (S < 5%) AND WHERE SHEET OR OVERLAND FLOWS (Q < 0.5 CFS) ARE TYPICAL. THIS METHOD SHALL NOT APPLY TO INLETS RECEIVING CONCENTRATED FLOWS SUCH AS IN STREET OR HIGHWAY MEDIANS. REFER TO D-905 FOR CONSTRUCTION OF HAY BALE & FABRIC SEDIMENT FILTER.
3. OUTLET PROTECTION: APPLICABLE TO THE OUTLETS OF ALL PIPES AND PAVED CHANNEL SECTIONS WHERE THE FLOW COULD CAUSE EROSION & SEDIMENT PROBLEM TO THE RECEIVING WATER BODY. SILT FENCES & HAY BALES ARE TO BE INSTALLED IMMEDIATELY DOWNSTREAM OF THE DISCHARING STRUCTURE AS SHOWN ON THE OUTLET PROTECTION DETAIL.
4. SEDIMENT BASIN: WILL BE CONSTRUCTED AT THE COMMON DRAINAGE LOCATIONS THAT SERVE AN AREA WITH 10 OR MORE DISTURBED ACRES AT ONE TIME, THE PROPOSED STORM WATER PONDS (OR TEMPORARY PONDS) WILL BE CONSTRUCTED FOR USE AS SEDIMENT BASINS. THESE SEDIMENT BASINS MUST PROVIDE A MINIMUM OF 3,600 CUBIC FEET OF STORAGE PER ACRE DRAINED UNTIL FINAL STABILIZATION OF THE SITE.

THE 3,600 CUBIC FEET OF STORAGE AREA PER ACRE DRAINED DOES NOT APPLY TO FLOWS FROM OFFSITE AREAS AND FLOWS FROM ONSITE AREAS THAT ARE EITHER UNDISTURBED OR HAVE UNDERGONE FINAL STABILIZATION WHERE SUCH FLOWS ARE DIVERTED AROUND BOTH THE DISTURBED AREA AND THE SEDIMENT BASIN. ANY TEMPORARY SEDIMENT BASINS CONSTRUCTED MUST BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH THE SPECIFICATIONS FOR STRUCTURAL FILL. ALL SEDIMENT COLLECTED IN PERMANENT OR TEMPORARY SEDIMENT TRAPS MUST BE REMOVED UPON FINAL STABILIZATION.

OTHER CONTROLS

WASTE DISPOSAL

WASTE MATERIALS

ALL WASTE MATERIALS EXCEPT LAND CLEARING DEBRIS SHALL BE COLLECTED AND STORED IN A SECURELY LIDDED METAL DUMPSTER. THE DUMPSTER WILL MEET ALL LOCAL AND STATE SOLID WASTE MANAGEMENT REGULATIONS. THE DUMPSTER WILL BE EMPTIED AS NEEDED AND THE TRASH WILL BE HAULED TO A STATE APPROVED LANDFILL. ALL PERSONNEL WILL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL. NOTICES STATING THESE PRACTICES WILL BE POSTED AT THE CONSTRUCTION SITE BY THE CONSTRUCTION SUPERINTENDENT, THE INDIVIDUAL WHO MANAGES THE DAY-TO-DAY SITE OPERATIONS, WILL BE RESPONSIBLE FOR SEEING THAT THESE PROCEDURES ARE FOLLOWED.

HAZARDOUS WASTE

ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATION OR BY THE MANUFACTURER. SITE PERSONNEL WILL BE INSTRUCTED IN THESE PRACTICES AND THE SITE SUPERINTENDENT, THE INDIVIDUAL WHO MANAGES DAY-TO-DAY SITE OPERATIONS,WILL BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED.

SANITARY WASTE

ALL SANITARY WASTE WILL BE COLLECTED FROM THE PORTABLE UNITS AS NEEDED TO PREVENT POSSIBLE SPILLAGE. THE WASTE WILL BE COLLECTED AND DEPOSED OF IN ACCORDANCE WITH STATE AND LOCAL WASTE DISPOSAL REGULATIONS FOR SANITARY SEWER OR SEPTIC SYSTEMS.

OFFSITE VEHICLE TRACKING

A STABILIZED CONSTRUCTION ENTRANCE WILL BE PROVIDED TO HELP REDUCE VEHICLE TRACKING OF SEDIMENTS. THE PAVED STREET ADJACENT TO THE SITE ENTRANCE WILL BE SWEPT DAILY TO REMOVE ANY EXCESS MUD, DIRT OR ROCK TRACKED FROM THE SITE. DUMP TRUCKS HAULING MATERIAL FROM THE CONSTRUCTION SITE WILL BE COVERED WITH A TARPAULIN.

INVENTORY FOR POLLUTION PREVENTION PLAN

THE MATERIALS OR SUBSTANCES LISTED BELOW ARE EXPECTED TO BE PRESENT ONSITE DURING CONSTRUCTION:

☒ Concrete	☒ Fertilizers	☒ Wood
☒ Asphalt	☒ Petroleum Based Products	☒ Masonry Blocks
☒ Tar	☒ Cleaning Solvents	☒ Roofing Materials
☐ Detergents	☒ Paints	☐ Metal Studs
☐ ________	☐ ________	☐ ________

SPILL PREVENTION

MATERIAL MANAGEMENT PRACTICES

THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORM WATER RUNOFF.

GOOD HOUSEKEEPING

THE FOLLOWING GOOD HOUSEKEEPING PRACTICES WILL BE FOLLOWED ONSITE DURING THE CONSTRUCTION PROJECT.

* AN EFFORT WILL BE MADE TO STORE ONLY ENOUGH PRODUCT REQUIRED TO DO THE JOB.
* ALL MATERIALS STORED ONSITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND, IF POSSIBLE, UNDER A ROOF OR OTHER ENCLOSURE.
* PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL.
* SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
* WHENEVER POSSIBLE, ALL OF A PRODUCT WILL BE USED UP BEFORE DISPOSING OF THE CONTAINER.
* MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED.
* THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE MATERIALS ONSITE RECEIVE PROPER USE AND DISPOSAL.

HAZARDOUS PRODUCTS

THESE PRACTICES ARE USED TO REDUCE THE RISKS ASSOCIATED WITH HAZARDOUS MATERIALS.

* PRODUCTS WILL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE.
* ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED; THEY CONTAIN IMPORTANT PRODUCT INFORMATION.
* IF SURPLUS PRODUCT MUST BE DISPOSED OF, MANUFACTURER'S OR LOCAL AND STATE RECOMMENDED METHODS FOR PROPER DISPOSAL WILL BE FOLLOWED.

PRODUCT SPECIFIC PRACTICES
THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ONSITE:

PETROLEUM PRODUCTS

ALL ONSITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY ASPHALT SUBSTANCES USED ONSITE WILL BE APPLIED ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

FERTILIZERS

FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER. ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORM WATER. STORAGE WILL BE IN A COVERED AREA. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER WILL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.

PAINTS

ALL CONTAINERS WILL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT WILL NOT BE DISCHARGED TO THE STORM SEWER SYSTEM BUT WILL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURERS' INSTRUCTIONS OR STATE AND LOCAL REGULATIONS.

CONCRETE TRUCKS

CONCRETE TRUCKS WILL NOT BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ON THE SITE.

SPILL CONTROL PRACTICES

IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTIONS OF THIS PLAN, THE FOLLOWING PRACTICES WILL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:

MANUFACTURERS' RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED ON SITE AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.

MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREA ONSITE. EQUIPMENT AND MATERIALS WILL INCLUDE BUT NOT BE LIMITED TO BROOMS, DUST PANS, MOPS, RAGS, GLOVES, GOGGLES, LIQUID ABSORBENT (i.e. KITTY LITTER OR EQUAL), SAND, SAWDUST, AND PLASTIC AND METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.

ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.

THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.

SPILL OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE OF THE SPILL.

THE SPILL PREVENTION PLAN WILL BE ADJUSTED TO INCLUDE MEASURES TO PREVENT THIS TYPE OF SPILL FROM REOCCURRING AND HOW TO CLEAN UP THE SPILL IF THERE IS ANOTHER ONE. A DESCRIPTION OF THE SPILL, WHAT CAUSED IT, AND THE CLEANUP MEASURES WILL ALSO BE INCLUDED.

THE SITE SUPERINTENDENT RESPONSIBLE FOR THE DAY-TO-DAY SITE OPERATIONS, WILL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. HE/SHE WILL DESIGNATE AT LEAST ONE OTHER SITE PERSONNEL WHO WILL RECEIVE SPILL PREVENTION AND CLEANUP TRAINING. THESE INDIVIDUALS WILL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEANUP. THE NAMES OF RESPONSIBLE SPILL PERSONNEL WILL BE POSTED IN THE MATERIAL STORAGE AREA AND IF APPLICABLE, IN THE OFFICE TRAILER ONSITE.

MAINTENANCE/INSPECTION PROCEDURES

EROSION AND SEDIMENT CONTROL INSPECTION AND MAINTENANCE PRACTICES

THE FOLLOWING ARE INSPECTION AND MAINTENANCE PRACTICES THAT WILL BE USED TO MAINTAIN EROSION AND SEDIMENT CONTROLS.

* NO MORE THAN 10 ACRES OF THE SITE WILL BE DENUDED AT ONE TIME WITHOUT WRITTEN PERMISSION FROM THE ENGINEER.
* ALL CONTROL MEASURES WILL BE INSPECTED BY THE SUPERINTENDENT, THE PERSON RESPONSIBLE FOR THE DAY TO DAY SITE OPERATION OR SOMEONE APPOINTED BY THE SUPERINTENDENT, AT LEAST ONCE A WEEK AND FOLLOWING ANY STORM EVENT OF 0.50 INCHES OR GREATER.
* ALL TURBIDITY CONTROL MEASURES WILL BE MAINTAINED IN GOOD WORKING ORDER; IF A REPAIR IS NECESSARY, IT WILL BE INITIATED WITHIN 24 HOURS OF REPORT.
* BUILT UP SEDIMENT WILL BE REMOVED FROM SILT FENCE WHEN IT HAS REACHED ONE-THIRD THE HEIGHT OF THE FENCE.
* SILT FENCE WILL BE INSPECTED FOR DEPTH OF SEDIMENT, TEARS, TO SEE IF THE FABRIC IS SECURELY ATTACHED TO THE FENCE POSTS, AND TO SEE THAT THE FENCE POSTS ARE FIRMLY IN THE GROUND.
* THE SEDIMENT BASINS WILL BE INSPECTED FOR THE DEPTH OF SEDIMENT, AND BUILT UP SEDIMENT WILL BE REMOVED WHEN IT REACHES 10 PERCENT OF THE DESIGN CAPACITY OR AT THE END OF THE JOB, WHICHEVER COMES FIRST.
* DIVERSION DIKES/SWALES WILL BE INSPECTED AND ANY BREACHES PROMPTLY REPAIRED.
* TEMPORARY AND PERMANENT SEEDING AND PLANTING WILL BE INSPECTED FOR BARE SPOTS, WASHOUTS, AND HEALTHY GROWTH.
* A MAINTENANCE INSPECTION REPORT WILL BE MADE AFTER EACH INSPECTION. A COPY OF THE REPORT FORM TO BE COMPLETED BY THE INSPECTOR IS ATTACHED.
  THE REPORTS WILL BE KEPT ON SITE DURING CONSTRUCTION AND AVAILABLE UPON REQUEST TO THE OWNER, ENGINEER OR ANY FEDERAL, STATE OR LOCAL AGENCY APPROVING SEDIMENT AND AND EROSION PLANS, OR STORM WATER MANAGEMENT PLANS.
  THE REPORTS SHALL BE MADE AND RETAINED AS PART OF THE STORM WATER POLLUTION PREVENTION PLAN FOR AT LEAST THREE YEARS FROM THE DATE THAT THE SITE IS FINALLY STABILIZED AND THE NOTICE OF TERMINATION IS SUBMITTED THE REPORTS SHALL IDENTIFY ANY INCIDENTS OF NON-COMPLIANCE.
* THE SITE SUPERINTENDENT WILL SELECT UP TO THREE INDIVIDUALS WHO WILL BE RESPONSIBLE FOR INSPECTIONS, MAINTENANCE AND REPAIR ACTIVITIES, AND FILLING OUT THE INSPECTION AND MAINTENANCE REPORT.
* PERSONNEL SELECTED FOR INSPECTION AND MAINTENANCE RESPONSIBILITIES WILL RECEIVE TRAINING FROM THE SITE. SUPERINTENDENT. THEY WILL BE TRAINED IN ALL THE INSPECTION AND MAINTENANCE PRACTICES NECESSARY FOR KEEPING THE EROSION AND SEDIMENT CONTROLS USED ONSITE IN GOOD WORKING ORDER.

NON-STORM WATER DISCHARGES

IT IS EXPECTED THAT THE FOLLOWING NON-STORM WATER DISCHARGES WILL OCCUR FROM THE SITE DURING THE CONSTRUCTION PERIOD:

* WATER FROM WATER LINE FLUSHING
* PAVEMENT WASH WATERS (WHERE NO SPILLS OR LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE OCCURRED).
* UNCONTAMINATED GROUNDWATER (FROM DEWATERING EXCAVATION).

ALL NON-STORM WATER DISCHARGES WILL BE DIRECTED TO THE SEDIMENT BASIN PRIOR TO DISCHARGE.

CONTRACTOR'S CERTIFICATION

I CERTIFY BELOW UNDER PENALTY OF LAW THAT I UNDERSTAND THE TERMS AND CONDITIONS OF THE GENERAL NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT THAT AUTHORIZES THE STORM WATER DISCHARGES ASSOCIATED WITH INDUSTRIAL ACTIVITY FROM THE CONSTRUCTION SITE IDENTIFIED AS PART OF THIS CERTIFICATION.

RESPONSIBLE FOR/DUTIES	BUSINESS NAME AND ADDRESS OF CONTRACTOR & ALL SUBS	SIGNATURE
GENERAL CONTRACTOR		
SUB-CONTRACTOR		
SUB-CONTRACTOR		
SUB-CONTRACTOR		
SUB-CONTRACTOR		

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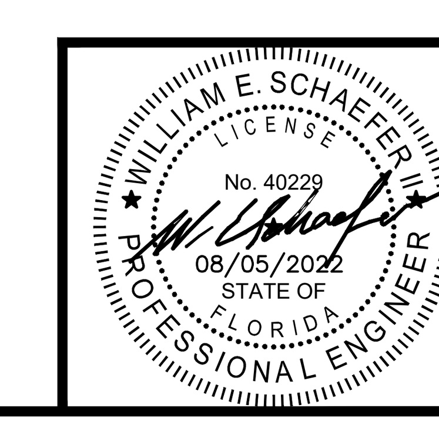
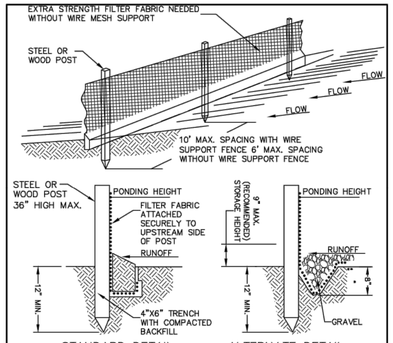
SWPPP-CONTRACTOR'S REQUIREMENTS

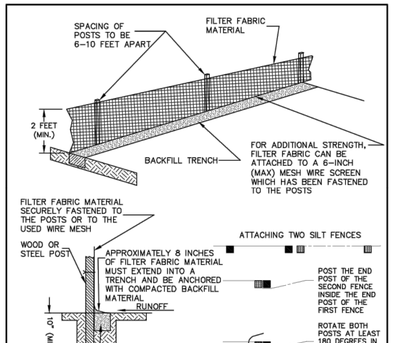
REVISIONS

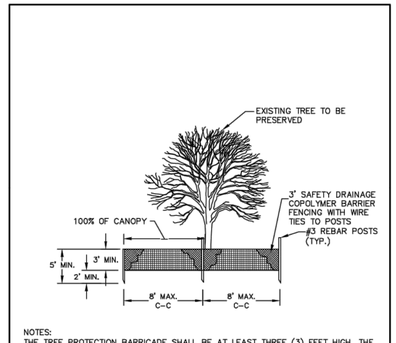
PLOT DATE:
DRAWN BY: JMM
DESIGNED BY: WES
CHECKED BY: WES
SCALE: AS NOTED
JOB NO.:

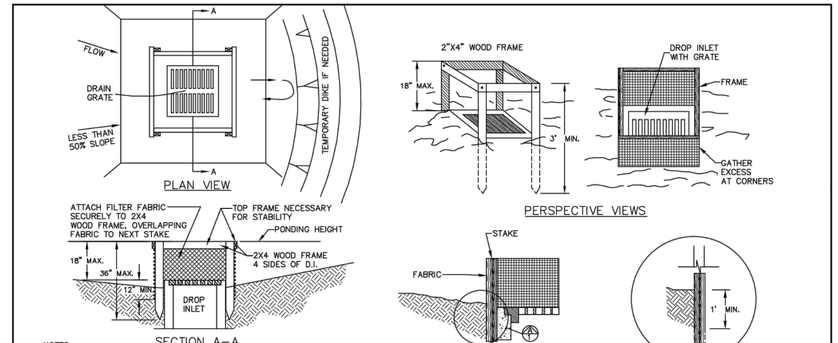
SHEET NO.
C11
OF ____

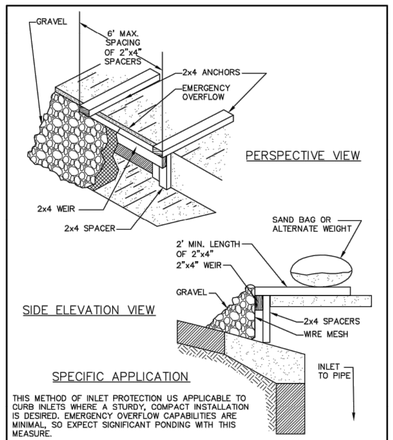


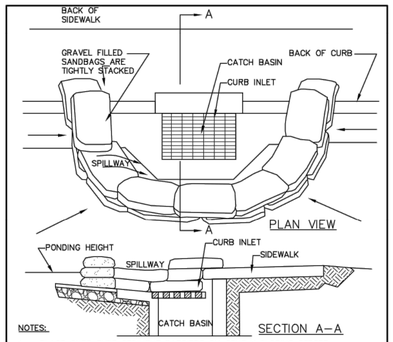


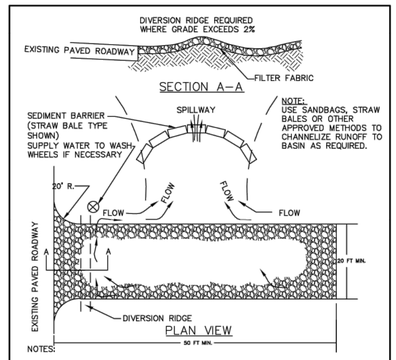


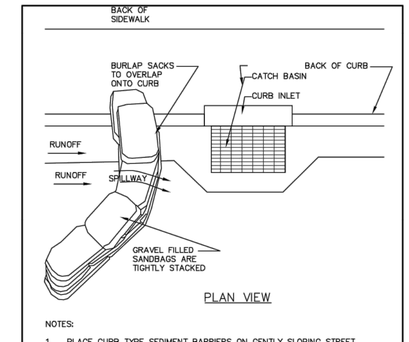


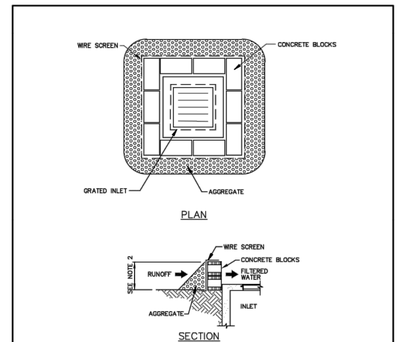


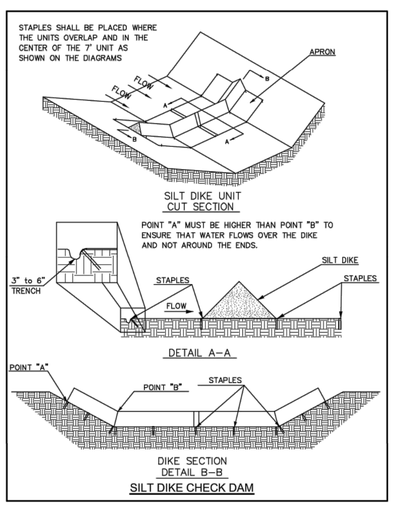


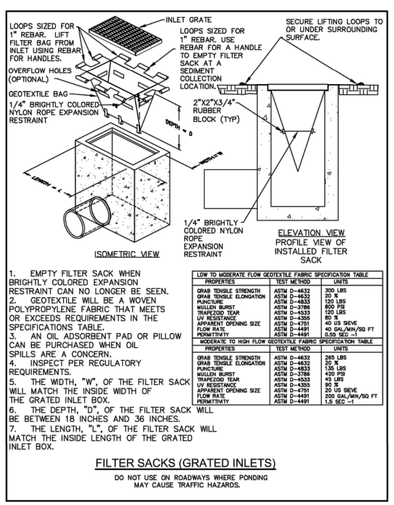


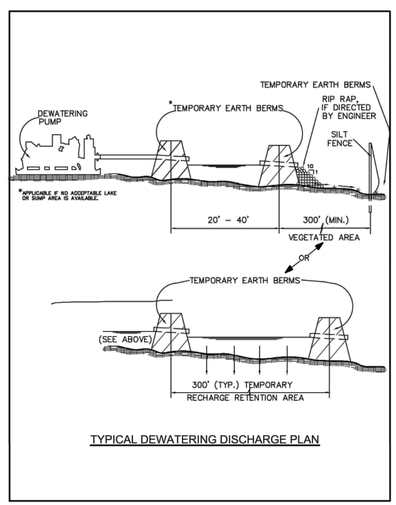


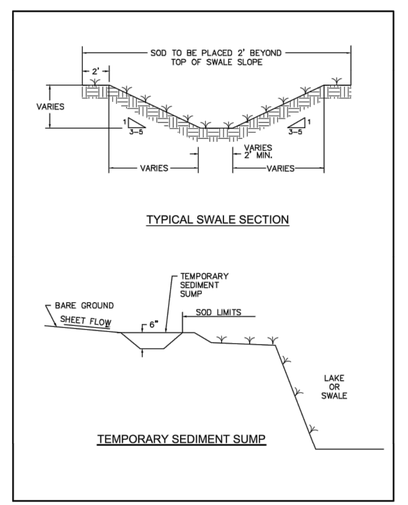












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EROSION AND SEDIMENT CONTROL DETAILS

REVISIONS

PLOT DATE:
DRAWN BY: JMM
DESIGNED BY: WES
CHECKED BY: WES
SCALE: AS NOTED
JOB NO.:

SHEET NO.
C12
OF ___

WILLIAM E. SCHAEFER LICENSE No. 40229 STATE OF FLORIDA PROFESSIONAL ENGINEER
08/05/2022

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PROJECT:

STORM WATER POLLUTION PREVENTION PLAN

INSPECTION AND MAINTENANCE REPORT FORM

TO BE COMPLETED EVERY 7 DAYS AND WITHIN 24 HOURS OF
A RAINFALL EVENT OF 0.50 INCHES OR MORE

INSPECTOR: _____ DATE: _____

INSPECTOR'S QUALIFICATIONS:
_____
_____
_____
_____

DAYS SINCE LAST RAINFALL: _____ AMOUNT OF LAST RAINFALL _____ INCHES

STABILIZATION MEASURES

INSPECTION AREA (DESCRIPTION OF LOCATION)	DATE SINCE LAST DISTURBED	DATE OF NEXT DISTURBANCE	STABLIZED ? (YES/NO)	STABILIZED WITH	CONDITION

STABILIZATION REQUIRED:
_____
_____
_____
_____

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

PAGE 1 OF 4

PROJECT:

STORM WATER POLLUTION PREVENTION PLAN

INSPECTION AND MAINTENANCE REPORT FORM

STRUCTURAL CONTROLS

DATE: _____

EARTH DIKES/SWALES

DIKE OR SWALE	FROM	TO	IS DIKE/SWALE STABILIZED ?	IS THERE EVIDENCE OF WASHOUT OR OVERTOPPING

MAINTENANCE REQUIRED FOR EARTH DIKE/SWALE:
_____
_____
_____
_____

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

CATCH BASIN/CURB INLET/OUTFALL TURBIDITY CONTROLS

STRUCTURE/ OUTFALL	ARE TURBIDITY CONTROLS IN PLACE	ANY EVIDENCE OF CLOGING/WASHOUT OR BYPASSING ?	ARE TURBIDITY CONTROLS IN NEED OF REPLACING	DOES SILT NEED TO BE REMOVED FROM AROUND CONTROL

MAINTENANCE REQUIRED FOR CATCH BASIN/CURB INLETS/OUTFALLS TURBIDITY CONTROLS:
_____
_____
_____
_____

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

PAGE 2 OF 4

PROJECT:

STORM WATER POLLUTION PREVENTION PLAN

INSPECTION AND MAINTENANCE REPORT FORM

SEDIMENT BASIN

DEPTH OF SEDIMENT IN BASIN	DEPTH OF SEDIMENT SIDE BASIN	ANY EVIDENCE OF OVERTOPPING OF THE EMBANKMENT ?	CONDITION OF OUTFALL FROM SEDIMENT BASIN

MAINTENANCE REQUIRED FOR SEDIMENT BASIN:
_____
_____
_____
_____

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

OTHER CONTROLS

STABILIZED CONSTRUCTION ENTRANCE

DOES MUCH SEDIMENT GET TRACKED ON TO ROAD ?	IS THE GRAVEL CLEAN OR IS IT FILLED WITH SEDIMENT?	DOES ALL TRAFFIC USE THE STABILIZED ENTRANCE TO LEAVE THE SITE ?	IS THE CULVERT BENEATH THE ENTRANCE WORKING? (IF APPLICABLE)

MAINTENANCE REQUIRED FOR STABILIZED CONSTRUCTION ENTRANCE:
_____
_____
_____

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

PAGE 3 OF 4

PROJECT:

STORM WATER POLLUTION PREVENTION PLAN

INSPECTION AND MAINTENANCE REPORT FORM

CHANGES REQUIRED TO THE POLLUTION PREVENTION PLAN:
_____
_____
_____
_____
_____
_____
_____
_____
_____

REASONS FOR CHANGES:
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

SIGNATURE: _____

DATE: _____

PAGE 4 OF 4

NOTE TO CONTRACTOR:

THIS IS THE CONTRACTORS CERTIFICATION REQUIRED BY THE EPA'S NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES). STORM WATER POLLUTION PREVENTION PLAN FOR CONSTRUCTION ACTIVITIES. THIS CERTIFICATION MUST BE COMPLETED WEEKLY AND AFTER EVERY RAINFALL EVENT OVER 0.50 INCHES. IT IS SUGGESTED THAT THIS SHEET BE REMOVED FROM THE PLAN SET AND DUPLICATED AS NEEDED BY THE CONTRACTOR.

PROFESSIONAL ENGINEER
WILLIAM E. SCHNEIDER
No. 42229
STATE OF FLORIDA
08/05/2022

JOB NO.:	
SCALE:	AS NOTED
DESIGNED BY: WES	
DRAWN BY: JMM	
CHECKED BY: WES	
PLOT DATE:	
REVISIONS	

© LATEST DATE HEREON

SHEET NO. C13 OF ___

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SWPPP-CONTRACTOR'S CERTIFICATION

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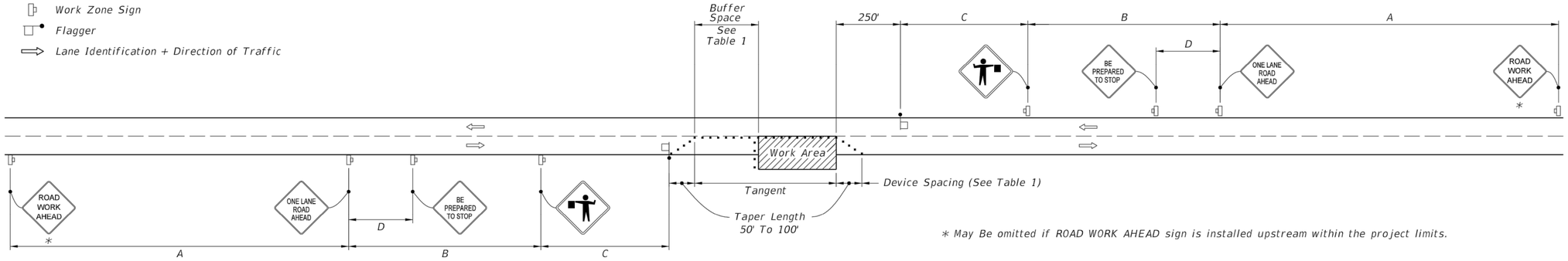
SYMBOLS:

- Work Area
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Flagger
- Lane Identification + Direction of Traffic



WITHOUT TEMPORARY RAISED RUMBLE STRIPS

GENERAL NOTES:

1. Special Conditions may be required in accordance with these notes and the following sheets:
   - A. Railroad Crossings:
     - a. If an active railroad crossing is located closer to the Work Area than the queue length plus 300 feet, extend the Buffer Space as shown on Sheet 3.
     - b. If the queuing of vehicles across an active railroad crossing cannot be avoided, provide a uniformed traffic control officer or flagger at the highway-rail grade crossing to prevent vehicles from stopping within the highway-rail grade crossing, even if automatic train warning devices are in place.
   - B. If the Work Area encroaches on the Centerline, use the Layout for Temporary Lane Shift to Shoulder on Sheet 3 only if the Existing Paved Shoulder width is sufficient to provide for an 11' lane between the Work Area and the Edge of Existing Paved Shoulder. Reduce the posted speed when appropriate.
2. Temporary Raised Rumble Strips:
   - A. Use when both of the following conditions are met concurrently:
     - a. Existing Posted Speed is 55 mph or greater;
     - b. Work duration is greater than 60 minutes.
   - B. Use a consistent Strip color throughout the work zone.
   - C. Place each Rumble Strip Set transversely across the lane at locations shown.
   - D. Use Option 1 or Option 2 as shown on Sheet 2. Use only one option throughout work zone.
3. Additional one-way control may be provided by the following means:
   - A. Flag-carrying vehicle;
   - B. Official vehicle;
   - C. Pilot vehicles;
   - D. Traffic signals.

   When flaggers are the sole means of one-way control, the flaggers must be in sight of each other or in direct communication at all times.
4. When a side road intersects the highway within the TTC zone, place additional TTC devices in accordance with other applicable TCZ Indexes.
5. The two channelizing devices directly in front of the work area may be omitted provided vehicles in the work area have high-intensity rotating, flashing, oscillating, or strobe lights operating.
6. When Buffer Space cannot be attained due to geometric constraints, use the greatest attainable length, not less than 200 ft, for posted speeds greater than 25 mph.
7. ROAD WORK AHEAD and the BE PREPARED TO STOP signs may be omitted if all of the following conditions are met:
   - A. Work operations are 60 minutes or less.
   - B. Speed limit is 45 mph or less.
   - C. There are no sight obstructions to vehicles approaching the work area for a distance equal to the Buffer Space shown in Table 1.
   - D. Vehicles in the work area have high-intensity, rotating, flashing, oscillating, or strobe lights operating.
   - E. Volume and complexity of the roadway has been considered.
   - F. If a railroad crossing is present, vehicles will not queue across rail tracks.
   - G. AFADs are not in use.
8. See Index 102-600 for general TCZ requirements and additional information.
9. Automated Flagger Assistance Devices (AFADs) may be used in accordance with Specifications Section 102, 990 and the APL vendor drawings.

TABLE 1

Posted Speed	DEVICE SPACING: Maximum Spacing of Cones or Tubular Markers		DEVICE SPACING: Maximum Spacing of Type I or Type II Barricades/Panels/Drums		Distance Between Signs				Buffer Space
	On a Taper	On a Tangent	On a Taper	On a Tangent	A	B	C	D	
25	20'	50'	20'	50'	200'	200'	200'	100'	155'
30	20'	50'	20'	50'	200'	200'	200'	100'	200'
35	20'	50'	20'	50'	200'	200'	200'	100'	250'
40	20'	50'	20'	50'	200'	200'	200'	100'	305'
45	20'	50'	20'	50'	350'	350'	350'	175'	360'
50	20'	50'	20'	100'	500'	500'	500'	250'	425'
55	20'	50'	20'	100'	2640'	1500'	1000'	500'	495'
60	20'	50'	20'	100'	2640'	1500'	1000'	500'	570'
65	20'	50'	20'	100'	2640'	1500'	1000'	500'	645'
70	20'	50'	20'	100'	2640'	1500'	1000'	500'	730'

CONDITIONS

WHERE ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES ENCROACH THE AREA BETWEEN THE CENTERLINE AND A LINE 2' OUTSIDE THE EDGE OF TRAVEL WAY.

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2019-20 STANDARD PLANS	TWO-LANE, TWO-WAY, WORK WITHIN THE TRAVEL WAY	INDEX	SHEET
11/01/17						102-603	1 of 3

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MAINTENANCE OF TRAFFIC

REVISIONS

PLOT DATE:
DRAWN BY: JMM
DESIGNED BY: WES
CHECKED BY: WES
SCALE: AS NOTED
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C14
OF ___

WILLIAM E. SCHAEFER LICENSE No. 40229 08/05/2022 STATE OF FLORIDA PROFESSIONAL ENGINEER

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OUTLINE SPECIFICATIONS FOR CONSTRUCTION OF SEWAGE COLLECTION SYSTEM

01. INTENTION. It is the declared and acknowledged intention to secure a new sewerage system, complete, in accordance with the plans, specifications, and contract documents. All new work shall be in accordance with the City of Green Cove Springs Specifications and Details and with C.G.C.S. Approved Materials Manual and C.G.C.S. Public Works Department Details and Specifications and any other Government Regulatory Agency. All work shall conform to the above whether or not specifically called out or noted on the plans.

02. GENERAL. All materials shall be of those listed in the C.G.C.S. Approved Materials Manual. The installation shall be warranted by the Contractor as to materials, workmanship and accuracy of the As–built drawings for a period of two years from the date of completion of the work or beneficial use of the facilities. Workmanship shall be of good quality; i.e., sewers shall be laid true to line and grade, fittings shall be properly installed and restrained, trenches shall be properly excavated and backfilled, manholes shall be installed at locations and to elevations shown on the plans.

02.1 CONTRACTOR LICENSE AND APPROVAL. Utility reserves the right to approve or deny approval of contractor prior to construction of any on–site or off–site utility facilities. Contractor must hold a State Of Florida Under Ground Utility contractors license, that named contracting company being the one doing the work on project, and demonstrate acceptable experience in the field of utility construction.

03. SURVEYS. The Utility Contractor shall provide all surveys necessary for the layout and construction of the work of his contract.

04. EARTHWORK. Earthwork shall include all excavation, fill and backfill (hand/machine), compaction and rough grading of materials encountered. No unsuitable materials clay, muck, or peat removed from pipe trenches are to be used for backfill. All fill or backfill shall be either sand or sandy clay, free of roots, trash or other debris. All backfill alongside of and to a height twenty–four inches above all pipe shall be free of clay or organic material, compacted in lifts, the first of which shall be to the spring line of the pipe by either hand or machine operation carefully to 98%. All other backfill shall be compacted by either hand or machine operation carefully to 95% (outside of paving), 98% (under paving) of its optimum moisture content as determined by ASTM D698, latest. Copies of compaction density test reports from a licensed testing agency shall be made available to C.G.C.S. if requested.

05. MANHOLES. Manhole bases, sections and cones shall conform to the requirements of ASTM C478, Specifications for Precast Reinforced Concrete Manhole Sections. Cement shall meet the requirements of ASTM C150, Specifications for Portland Cement, Type II. Concrete shall meet the minimum requirements for Class "A" Concrete Work. Minimum wall thickness shall be 1/12 the inside diameter in inches plus one (1) inch. Bases for manholes shall be cast integrally with the bottom manhole section. Joint contact surfaces shall be formed with machined castings; they shall be exactly parallel with a 2 degree slope and nominal 1/16 inch clearance with the tongue equipped with a proper recess for the installation of an O–ring rubber gasket, conforming to ASTM C443, Joints for circular Concrete sewer and Culvert pipe using Rubber gasket, or RAM–NEK premolded Plastic Joint Sealer with joints Manhole adjustment materials shall be Precast concrete adjustment rings only as manufactured by Taylor Precast Co. (or equal). Precast manhole walls shall not be coated, unless otherwise noted. Cement grout for manhole bottoms shall be a stiff rich mix of Type II Portland Cement and sharp plaster sand. Calcium chloride may be added (maximum of 2%) to aid in obtaining a faster set. At permanent pump station locations, the first upstream manhole from the station shall be lined with a polyethylene liner as manufactured and installed by Taylor Precast Co. or approved equal.

05.1 CAST IRON MANHOLE FRAMES AND COVERS. Cast iron manhole frames and covers shall be as detailed on drawings. Castings shall meet the requirements of ASTM A48, Specifications for Gray Iron Castings, Class No. 30, or Grade 65–45–12, Ductile Iron meeting the requirements of ASTM A536, Standard Specification for Ductile Iron Castings. In either case, manhole frame and cover shall be designed to withstand an HS20–44 loading defined in the AASHTO Specifications. Frames and covers shall be machined or ground at touching surfaces so as to seat firmly and prevent rocking.

05.2 FLEXIBLE MANHOLE CONNECTOR. All connections between sewer pipe and pre–cast concrete manholes shall be accomplished by a Flexible Connector, "Kor–N–Seal", as manufactured by National Pollution Control Systems, Inc. or approved equal.

05.3 FLOW CHANNELS. Flow channels in manhole base shall be formed of D.O.T. Class I, Type II cement grout with brick or rubble and trowel to a smooth surface finish. Grout surface shall be 1" min. thickness over brick or rubble. While the manholes are under construction, cut off pipes at inside face of the manhole and construct the invert to the shape and sizes of pipe indicated. All inverts shall provide a constant gradient from influent pipe to effluent pipe through manhole. Changes in direction of the sewer and entering branch or branches shall be laid out in smooth curves of the longest possible radius which is tangent to the center lines of adjoining pipelines.

05.4 DROP INLETS. Where shown on the drawings, drop inlets to the manholes shall be constructed as shown on the drawings and specified herein.

06. POLYVINYL CHLORIDE PIPE. Polyvinyl Chloride Sewer Pipe shall conform to the requirements of ASTM D–3034, SDR 26. The PVC compound conforming to ASTM D–1784. Pipe shall be clearly marked in 5 Ft. intervals or less, indicating manufacturers name, nominal size, cell classification and legend. Joints shall be push–on rubber gasketed, conforming to ASTM D–3034. Pipe and fittings shall be installed in accordance with recommended practice ASTM D–2321. Maximum depth of gravity sewer without prior approval shall be 15 feet. Sewers over 15' in depth shall be DR–18 P.V.C. pipe and shall have C.G.C.S. approval prior to design or installation of said sewer.

07. PIPE BETWEEN MANHOLES. All piping installed between manholes shall be the same material and class. No dissimilar pipe material will be allowed anywhere within a single run of pipe.

08. SANITARY SERVICE LATERALS. Sanitary service laterals shall be Polyvinyl Chloride Pipe conforming to the requirements of ASTM D–3034, SDR 26 where cover over top of pipe is 36 inches or greater. Where cover over top of pipe is less than 36 inches, specific construction conditions shall be directed by the City of Green Cove Springs. All sanitary service laterals shall be a minimum of 4'–0" deep at the right–of–way line to top of pipe. Any sanitary service lateral which must be more than 5'–0" deep shall not be installed prior to obtaining permission from the C.G.C.S. field inspector or C.G.C.S. Public Works Department. All sanitary service laterals shall be 6–inch diameter from the main to the right–of–way line with a minimum slope of 0.60% (0.6 feet per hundred feet). In single family residential developments, services shall reduce to 4" in size and terminated at the property line with a cleanout constructed of a PVC wye and bend with a maximum angle of 45 degrees (see Standard Sewer System Cleanout Detail) utilizing the proper fittings for the type of pipe specified.

09. FORCE MAINS. Force mains shall be C900 DR–18 PVC and conform to the requirements of ASTM D–1784, D–2241, D–3139 and F–477. Pipe shall be color coded and marked "FORCE MAIN" on at least two sides and at every 12" along the barrel of the pipe. Ductile iron pipe for force main service shall be polylined. Ductile iron pipe is not to be used without prior approval of the Clay County Utility Authority. Fittings shall be C110 gray iron and shall be polylined. Force mains less than 3" shall be SCH.80 PVC. All force mains shall be installed with tracer wire per C.G.C.S. standard location wire details.

09.1 LIFT STATION VALVES. Plug valves shall be Dezurik, Clow or M&H. with full port opening. Check valves shall be M&H, Mueller or American Darling.

09.2 FORCE MAIN VALVE. Gate valve, resilient seated, same as specified in Water Distribution System Specifications Section 12 below. Except valve bodies shall be gray iron. Valve box shall have the word "SEWER" cast into the cover.

09.3 FORCE MAIN JOINT RESTRAINT. All fittings shall be properly and adequately restrained against lateral movement at all force main tees, crosses, valves and bends. Restrainers shall be Uni–Flange Series 1300, 1350, 1390 or approved equal installed per manufacturer's recommendations and C.G.C.S. standand details and specifications.

09.4 FORCE MAIN PIPE FLUSHING. All force main piping shall be flushed clean with water utilizing full pipe diameter flushing for all piping up to and including 8" diameter.

10. INSTALLATION. All sewer lines, manholes, and appurtenances shall be constructed to the dimensions and elevations indicated on the drawings. Trenches shall be excavated to a width approximately twelve inches greater than the outside diameter of the pipe. Machine excavation shall be to a depth one–fourth pipe diameter above proposed pipe grade; the remaining depth shall be hand excavated and shaped to give full support to the lower one–fourth of each pipe. Each section of pipe shall be inspected for defects prior to being lowered into the trench. The inside of each bell and the outside of each spigot shall be thoroughly cleaned of all foreign matter, prior to making the joint. All sewer lines shall be constructed with the spigot ends pointing in the direction of the flow. Both the bell and the spigot of each joint shall be lubricated with the lubricant recommended by the pipe manufacturer. All sewer lines shall be cleaned of foreign matter as construction progresses, and shall be in a clean condition upon completion of construction operations. Pipe materials shall remain the same on runs between manholes and / or other structures.

11. INSPECTIONS. Each section of the completed sewer system shall be inspected for proper alignment. Inspection shall consist of "lamping" from manhole to manhole. Any section of the sewer system which does not display true, concentric alignment shall be reinstalled at no additional expense to the Owner. A written log of inspection shall be kept indicating location of test, potential problems in sewer, dips and depth of water, service locations, and other irregularities in the pipe lines. A video tape in VCR format shall be made of the television inspection and submitted to the Engineer and the City of GCS. Copies of compaction density test reports from a licensed testing agency shall be made available to City of GCS if requested.

11.1 Television inspection will be required on all new gravity sewers constructed. This service shall be provided by the Contractor as a part of this Contract. The newly constructed sewers shall be televised in the presence of the Inspector of the City of GCS. A full report as to the condition of pipe, type, depth, location of services, length, type, joint and distance between manholes, etc. shall be furnished to the City of GCS inspector prior to the final acceptance of the system. Any pipe found to be cracked, leaking or otherwise defective shall be removed and replaced with new pipe at no additional costs to the Owner. Deflection testing with 7.5% mandrel also required. Any section not passing the mandrel test shall be corrected. Sewer mains shall be televised after curb and lime rock are in place but prior to paving. Curb and limerock shall be installed, finish graded prior to televising the gravity sewer. Limerock priming and paving operations shall not take place until the City of GCS inspector has reviewed the television tape and approves the gravity sewer system. This will be strictly enforced. All gravity sewers must be flushed no sooner than 4 hours prior to any television inspection. Force main lines shall be pressure tested and approved prior to paving, but not prior to subgrade mixing operation and limerock installation, finish graded and compacted. Sewer services shall be viewed by a camera capable of viewing into service lateral connections. Adequate water must be placed within the upstream manhole to flow through the downstream manhole before inspecting with the camera. All work must be accomplished in the presence of the City of GCS inspector and a 48 hour notice must be provided. Contractor shall provide City of GCS with a 48 hr. notice of intent to televise and inspect sewer main. City of GCS inspector shall report to job site at the time specified by contractor at the time of the call–in. City of GCS inspectors will wait at the job site no more than one hour for the televising to begin before leaving the job site. Contractor shall reschedule televising giving City of GCS 48 hrs. notice if the above occurs.

11.2 TEST, INFILTRATION: After completion, the sewers or sections thereof, shall be tested and gauged for infiltration. To check the amount of infiltration, the Contractor, at no added compensation over the contract price for the sewers, shall furnish, and install and maintain a V–notch sharp crested weir in a wood frame on the main sewers as directed by the Engineer. Maximum allowable infiltration shall be 50 gallons per mile, per inch of dia. of sewer per 24 hour day at any time.

11.3 TEST, EXFILTRATION: In areas where ground water is not encountered in sewer construction, or it is desired to run exfiltration tests, the Contractor shall furnish and install all necessary materials, equipments, shall supply water, etc., and shall run exfiltration tests to determine acceptance of the sewer. The maximum allowable exfiltration shall be 50 gallons per mile per inch of diameter of sewer per 24 hour day at any time based on two foot minimum internal head.

OUTLINE SPECIFICATIONS FOR CONSTRUCTION OF WATER DISTRIBUTION SYSTEM

01. INTENTION. It is the declared and acknowledged intention to secure a new water distribution system, complete, in accordance with the plans and specifications, and contract documents. All new work shall be in accordance with C.G.C.S. Specifications and Details and Approved Materials Manual and C.G.C.S. Public Works Department Details and Specifications and any other Government Regulatory Agency. All work shall conform to the above whether or not specifically called out or noted on the plans.

02.1 CONTRACTOR LICENSE AND APPROVAL. Utility reserves the right to approve or deny approval of contractor prior to construction of any on–site or off–site utility facilities. Contractor must hold a State Of Florida Under Ground Utility contractors license, that named contracting company being the one doing the work on project, and demonstrate acceptable experience in the field of utility construction.

02. GENERAL. All materials shall be of those listed in the C.G.C.S. Approved Materials Manual. Materials shall be warranted by the Contractor as to materials, workmanship and accuracy of As–built drawings for a period of two years from the date of completion of the work or beneficial use of the facilities. Workmanship shall be of good quality; i.e., mains shall be laid in a uniform alignment, fittings shall be properly restrained, trenches shall be properly excavated and backfilled, fire hydrants and valve boxes shall be adjusted to finished grade. All water mains shall be installed with tracer wire per C.G.C.S. standard location wire details.

03. SURVEYS. The Utility Contractor shall provide all surveys necessary for the layout and construction of the work of his contract.

04. EARTHWORK. Earthwork shall include all excavation, fill and backfill (hand/machine), compaction and rough grading of materials encountered. No unsuitable materials clay, muck, or peat removed from pipe trenches are to be used for backfill. All fill or backfill shall be either sand or sandy clay, free of roots, trash or other debris. All backfill alongside of and to a height twenty–four inches above all pipe shall be free of clay or organic material, compacted by either hand or machine operation carefully to 98%. All other backfill shall be compacted by either hand or machine operation carefully to 95% (outside of paving), 98% (under paving) of its optimum moisture content as determined by ASTM D698, latest. Copies of compaction density test reports from a licensed testing agency shall be made available to C.G.C.S. if requested.

05. JOINT RESTRAINT. All fittings shall be properly and adequately restrained against lateral movement at all water main tees, crosses, valves bends and fire hydrants. Restrainers shall be Uni–Flange Series 1300, 1350, 1390 or approved equal installed per manufacturer's recommendations and C.G.C.S. Details and Specifications.

06. DUCTILE IRON PIPE. Ductile iron pipe shall conform to ANSI Specification A21.50 (AWWA C150) latest, "Thickness Design of Ductile Iron Pipe", Table 50.5, laying condition Type 2, internal operating pressure of 250 p.s.i. for an 8–foot depth of cover, Class 51 minimum and shall be ANSI A21.51 (AWWA C151), latest centrifugally cast pipe. Laying lengths shall each length clearly marked with pressure rating, thickness be 20 feet or less, class, height of pipe without lining, length, and manufacturer. Ductile iron pipe for water service shall be furnished with cement lining per AWWA C110, C115 and C151. The pipe shall have design values of 60,000 P.S.I. minimum tensile strength, and 42,000 P.S.I. minimum yield strength. Ductile iron pipe for water or service lines shall be used in any easement, right–of–way, between lots, and any instance where a building foundation or other permanent appurtenance is within 10' of the water main or a service line larger than 3".

07. DUCTILE IRON FITTINGS shall be C153 cement lined and suitable for the type and class of pipe to which connected. Gaskets shall be suitable for potable, domestic water service. Minimum working pressure shall be 150 P.S.I.

08. POLYVINYL CHLORIDE PIPE. Polyvinyl chloride pipe for water mains 4 inch in diameter and larger, shall be P.V.C. C900, DR–18, conforming to ASTM D–1784, D–2241, D–3139 and F–477, latest, and shall bear the seal of the National Sanitation Foundation. Pipe shall be color coded and marked on at least 2 sides with the word "WATER" and at every 12" along the barrel of the pipe. Couplings shall be rubber gasketed, push–on type conforming to ASTM D–2122. DR–18 shall be used for fire mains.

09. STEEL CASING PIPE. Steel casing pipe shall be of size indicated on the Drawings and shall conform to ASTM A139, with a minimum yield strength of 35,000 p.s.i.

10. POLYETHYLENE PIPE shall be SDR 9, AWWA C901, ASTM D2737, PE 3408, colored blue, NSF Seal, with Type 316 stainless steel inserts. Fittings shall be suitable for type of installation required. All piping smaller than 4" shall be Polyethylene.

11. GATE VALVES AND BOXES. Gate valves shall be non–rising stem type and shall be suitable for a 200 p.s.i. non–shock working pressure Gate valves shall be mechanical joint, flanged or screwed. Gate valves shall have a 2" operating nut and open left. Gate valves shall have joints suitable for the type of main on which installed. Valves 2" & 3" shall be iron body, bronze fitted (distribution mains only). Valves 4" and larger shall be iron body, bronze fitted with resilient seat. Valves shall be of domestic (American) manufacture and shall be A.F.C., M&H, Mueller or approved equal. Valves 16" and larger shall be AWWA C–509, M&H Valve Co. Valve boxes with screw extensions shall be provided for all gate valves. Boxes shall be of cast iron construction, 7/32" minimum wall thickness and shall be nontacky tar enamel coated. The word "WATER" shall be cast in the cover. Other ball valves 2" and smaller shall be Ford Ball Valve or Mueller with F.I.P.T.

12. WATER METER BOXES. Meter boxes for flushing hydrants and 3/4" meters shall be DFW Plastics, Inc., model DFW36C–12–3T. Meter boxes for 1" meters shall be DFW Plastics, Inc., model DFW37C–12–3T. Meter boxes for 1–1/2" and 2" meters shall be DFW Plastics, Inc., model DFW1730C–12–3T. Developer shall be responsible for installation of meter boxes on all water services as part of the water main installation. All curb stops shall be adjusted to the proper elevation and shall be accessible for the installation of the water meter. The contractor shall be required to open all boxes for the C.G.C.S. inspector at the final inspection. A treated 6'–6" fence post marker shall be painted blue for identification.

13. CURB STOPS. Curb stops shall be cast bronze, inverted key stop, roundway, with check, lock wing type, for locking in the closed position. Curb stops shall be Ford Ball Valve or Mueller.

14. CORP STOPS. Corp stops shall be cast bronze, inverted key stop, roundway, with check, lock wing type, for locking in the closed position. Corp stops shall be Ford Ball Valve or Mueller.

15. FIRE HYDRANTS. Fire hydrants shall be traffic type, 150 pound working pressure, AWWA Standard C502, latest revisions, with two 2 1/2" nozzles, one 4 1/2" nozzle and 5 1/4" main valve. Fire hydrant shall be be compression type with breakable coupling and bolts. Pipe connection shall be mechanical joint. American Flow Control, AFC B–84–B, painted red w/white bonnets and with 1 1/2" penta nuts, opening left.

16. INSTALLATION. The minimum cover over top of potable water main shall be 36" minimum. All water lines and appurtenances shall be thoroughly cleaned of all foreign matter before being lowered into the trench and shall be kept clean during laying operations by means of plugs or other approved methods. All pipe shall be checked for defects before being lowered into the trench. Defective pipe shall not be used. Pipe found to be defective, after installation, shall be removed and replaced with sound pipe at no additional expense to the Owner. The full length of each section of pipe shall rest solidly upon the pipe bed, with recesses excavated to accommodate the bells and joints. All pipe that has the grade or joint disturbed after laying shall be taken up and reinstalled. The pipe shall not be laid in water, or, when trench or weather conditions are unsuitable for the work. All joints shall be cleaned of all foreign matter before making the joint. Fittings at bends in the pipe shall be properly restrained with joint restrainers adequately sized to prevent movement and dislocating or blowing off when the line is under pressure. Service laterals shall terminate at the point noted in the details.

17. TESTS. After the pipe is laid, the joints completed, and the trench backfilled, the newly laid pipe and appurtenances shall be subjected to a Hydrostatic and Leakage test of 150 pounds per square inch for a period of at least two hours. During this period, all joints shall be inspected to determine water tightness of the system. Any leaks detected shall be corrected. Tests shall be in accordance with the C.G.C.S.'s requirements and specifications. Water main lines shall be pressure tested and approved prior to paving, but not prior to subgrade mixing operation and limerock installation, finish graded and compacted. If C.G.C.S. inspector detects the water main has been damaged during priming or paving he shall require the contractor to repair the water main and retest the water main.

18. STERILIZATION. After completion of construction and testing, the water system shall be sterilized with chlorine in accordance with AWWA Standard C651 latest, and State of Florida Department of Environmental Protection requirements before acceptance for domestic operation. The amount of chlorine applied shall be sufficient to provide a dosage of 50 parts per million or more. The chlorine solution shall remain in the system for a period of at least 8 hours, during which time every valve in the system shall remain opened and closed several times to assure contact with every surface of the system. After completion of sterilization procedures, the system shall be flushed using chlorinated water from a domestic water source having a chlorine residual of at least 1 part per million. The contractor shall obtain all bacteriological clearances as required by the Florida Department of Environmental Protection. After bacteriological clearances, the pressure in the main shall not drop below 20 P.S.I. Clearance report to be submitted to the Engineer. The contractor should be aware that there is a timing maximum related to bacteriological clearance of the main, completion of as–built drawings and Engineer / C.G.C.S. completion of Certificate of Completion. In any project where the bacteriological clearances are greater than 30 days old at the time of submittal of Certificate of Completion to F.D.E.P., the contractor may be required to pull more samples and obtain more bacteriological clearances. Prior to introducing the chlorine solution, the lines shall be thoroughly flushed with clean water utilizing full pipe diameter flushing for pipe up to and including 8" diameter. Contractor shall be responsible for dechlorination of the disinfectant water prior to any discharge to any ditch or surface waters.

19. BACTERIOLOGICAL SAMPLING. Contractor shall assure the project construction is completely finished prior to any bacteriological sampling and testing.

GENERAL NOTES

1. AS–BUILT DRAWINGS AND ASSOCIATED COSTS. All cost records pertaining to the cost of water, reclaim and sewer facilities donated to the utility shall be provided to the Utility by applicant. Prior to acceptance of any extension to the Utility's system that is completed by a licensed underground utility contractor, the Utility will require that the applicant's contractor provide the Utility, to retain for its permanent records, all field as–built data. During the daily progress of the work, the contractor's job superintendent shall record on his field set of drawings all work installed. All manholes, gravity sewers, force mains, laterals, valves, fittings, fire hydrants, etc. shall be located in two directions. One location shall be referenced perpendicular to the right–of–way lines and or property lines (preferably both) or existing permanent utility structures are acceptable (i.e. manholes, catch basins, fire hydrants, head/end walls, etc.). No power/utility poles may be used for reference. Elevations of manhole inverts and center of cover shall be shown to the nearest hundredth of a foot. Size, type, class and slope of sewer main shall be shown (i.e. 8" PVC, SDR–35). The top elevation of each manhole may be determined by measuring from a surveyed pipe invert to the final adjusted manhole top. Size, type and class of water mains, valves, fittings, fire hydrants, etc. shall be shown (i.e., 8" D.I.P., 6" gate valve). All locations where the top of the water main is less than 36" deep or more than 50" deep shall be noted on the as–builts. Water as–builts, sewer as–builts and reclaim water as–builts shall be on separate sheets. ASBUILTS SHALL BE IN NAD 1983 FL EAST–FOOT––STATE PLANE COORDINATES AND REFERENCE THE BM USED FOR THE PROJECT.

Each page of the as–built drawings shall bear the name, date and original signature of the general contractor responsible for the Work and the name, date, original signature and seal of the registered land surveyor or registered professional engineer who provided the horizontal and vertical dimensions and elevations on the as–built drawing. The signatures shall certify that the as–built drawings do, in fact, reflect the true as–built conditions as located under the direct supervision of the registered surveyor and/or professional engineer. The as–builts shall be at the contractor's expense. A copy of the AutoCAD® ASBUILT DATA SHALL BE FURNISHED ON COMPACT DISK (CD) PLUS (2) SIGNED FULL SIZE PRINTED SET PLUS (1) MYLAR SET by either the design engineer or the applicant's contractor.

2. CONSTRUCTION WARRANTY AND WARRANTY SECURITY PERIOD. Developer shall warranty Utility against defects in material and workmanship for the portion of the onsite system to be owned by the Utility. Developer shall secure from its Contractor a written and fully assignable warranty that the system installed will be and remain free from all defects, latent or otherwise with respect to workmanship. materials, installation, and accuracy of his as–built drawings in accordance with the Utility approved plans and specifications for a period of two years from the date of the system acceptance by the Utility and immediately assign the same and the right to enforce the same to Utility on or before the date of the Utility's acceptance of the system for ownership and maintenance.

3. CLEAN–UP. All surplus materials of construction shall be removed from the site and disposed of by the Contractor as part of his contract with the owner.

4. RESTORATION. New Sanitary Sewer and Water Main Construction in earthen areas shall be seeded and mulched in accordance with Section 570 of Standard Specifications of the Florida Dept. of Transportation (latest edition). In locations where existing grassed (sodded) areas are disturbed, sod shall be replaced to preconstruction condition and to limits of construction or where directed by the engineer.

5. PERMITS. The Contractor shall be responsible for obtaining all permits required for performing work under this contract, except that the F.D.E.P. permits, and wetland permits, if required, will be secured by the owner or developer.

6. PIPE BEDDING. In the event unsuitable or unstable bedding material is encountered at or below the limits of the excavation required for installation, such material shall be removed and replaced with suitable compacted backfill material specified by the design engineer and approved by the C.G.C.S so as to provide a stable trench bedding surface suitable for proper pipe installation.

6–A. Pipe Bedding (Rock Bedding Material) Rock material used for pipe bedding shall be #57 stone or crushed concrete (crush–crete) in a #57 size. Rock bedding material shall be completely wrapped in a heavy filter fabric material, overlapped a minimum of one foot, rock bedding shall be installed to the correct grade and compacted to a density which will prevent any settlement, either by mechanical tamping equipment or by compressing the rock using the bottom of the backhoe bucket. The compaction shall be approved by C.G.C.S. inspector. The contractor shall be required to have submittal approved by design engineer and C.G.C.S. prior to use of such rock bedding material.

7. DEWATERING. The contractor shall at all time during construction provide ample means and equipment with which to promptly remove and dispose of all water entering the trench and structure excavations and shall keep said excavations acceptably dry until the piping and / or structures to be built therein are completed. All water pumped or drained from the work area shall be disposed of in a manner as to not damage sewer, water, electrical or any other piping, structures or property. No pipe shall be laid in water and no water shall be allowed to rise above the bottom of any pipe while it is being jointed, except as may be approved in writing by the C.G.C.S.

8. HYDROSTATIC TESTING. After all pressure pipes (water mains, services, and force mains) are laid, the joints completed, and the trench backfilled, the newly laid pipe and appurtenances shall be subjected to a hydrostatic test of 150 P.S.I. for a period of at least two hours. The engineer and the C.G.C.S. Public Works must be notified 48 hours before a test is to be performed. Test shall be as set forth in AWWA standard C600. Any leaks detected shall be corrected and the section of pipeline retested. The two hour test period shall begin when all joints have been determined to be water tight. Leakage shall be limited to that allowance set forth in Section 4 of AWWA Standard C600–87. Hydrostatic and leakage test and blow–down (zeroing of gage) must occur before sampling for bacteriological test. The maximum allowable pressure loss is 5 P.S.I. regardless of the length of pipe.

9. REPORTS. Reports of hydrostatic and leakage tests and sterilization of the newly completed systems shall be submitted to the C.G.C.S. prior to requesting acceptance of the system.

10. DENSITY TESTING. In–place density tests are required at intervals not to exceed 150' along pipelines for every other lift. A minimum of one test between manholes is required for every other lift regardless of the distance between sanitary sewer manholes.

11. CONCRETE. All Portland Cement concrete shall be of Type II Portland Cement, 2,500 P.S.I. minimum, ready mixed. All concrete shall be placed before the initial set has taken place. Stale or retempered concrete shall not be used.

12. GATE VALVES AND BOXES. Gate valves shall have a 2" operating nut and open left. Gate valves shall have joints suitable for the type main on which installed. Valves 2" and 3" shall be iron body, bronze fitted. Valves 4" and larger shall be iron body, bronze fitted with resilient seat. The word "WATER" on water boxes and "SEWER" on force main boxes shall be cast in the covers.

13. SEPARATION OF WATER AND SEWER MAINS. Horizontal and vertical separation between potable water system mains and or appurtenances and sanitary or storm sewers, wastewater or storm water force mains, and reclaimed water mains shall be in accordance with Rule 62–555.314 FAC.

(a) New or relocated, underground water mains shall be laid to provide a horizontal distance of at least three feet between the outside of the water main and the outside of any existing or proposed storm sewer, storm water force main, reclaimed water main regulated under Part III of Chapter 62–610, F.A.C, or proposed vacuum–type sanitary sewer.

(b) New or relocated, underground water mains shall be laid to provide a horizontal distance of at least six feet, and preferably ten feet, between the outside of the water main and the outside of any existing or proposed gravity– or pressure–type sanitary sewer, wastewater force main, or pipeline conveying reclaimed water not regulated under Part III of Chapter 62–610, F.A.C. The minimum horizontal separation distance between water mains and gravity–type sanitary sewers shall be reduced to three feet where the bottom of the water main is laid at least six inches above the top of the sewer.

(c) New or relocated, underground water mains crossing any existing or proposed gravity– or vacuum–type sanitary sewer or storm sewer shall be laid so the outside of the water main is at least six inches, and preferably 12 inches, above or at least 12 inches below the outside of the other pipeline. However, it is preferable to lay the water main above the other pipeline.

(d) New or relocated, underground water mains crossing any existing or proposed pressure–type sanitary sewer, wastewater or storm water force main, or pipeline conveying reclaimed water shall be laid so the outside of the water main is at least 12 inches above or below the outside of the other pipeline. However, it is preferable to lay the water main above the other pipeline.

(e) At the utility crossings described in paragraphs (c) and (d) above, one full length of water main pipe shall be centered above or below the other pipeline so the water main joints will be as far as possible from the other pipeline. Alternatively, at such crossings, the pipes shall be arranged so that all water main joints are at least three feet from all joints in vacuum–type sanitary sewers, storm sewers, storm water force mains, or pipelines conveying reclaimed water regulated under Part III of Chapter 62–610, F.A.C., and at least six feet from all joints in gravity– or pressure–type sanitary sewers, wastewater force mains, or pipelines conveying reclaimed water not regulated under Part III of Chapter 62–610, F.A.C.

14. NEW CONNECTION TO EXISTING MAIN. New connection to existing main in service shall be accomplished by the "wet tap" method utilizing full circle stainless steel tapping sleeve and mechanical joint tapping valve. Tapping sleeve shall be rated at 200 P.S.I., non–shock working pressure conforming to AWWA Standard C110, latest revision. Stainless steel tapping sleeves shall be from those listed in C.G.C.S. approved material manual. Tapping valve shall be mechanical joint one end and standard flanged joint on other end. Valve shall conform to Section 12. of these specifications.

15. JOBSITE SAFETY. While on the job site, the contractor shall at all times observe all Federal, State and local safety rules, regulations and laws. This includes, but not limited to, confined spaces and excavation protection systems as per O.S.H.A. standards.

GENERAL NOTES

16. CLOSE OUT / COMPLETION. Minimum items required for Close Out / Completion for submittal to the City of Green Cove Springs will include:
(a.) Construction Warranty from Developer in the form of a Bond, Letter of Credit or Cashier's Check for a two–year period.
(b.) Warranty Certificate for a two–year warranty from the contractor to the Developer and assignment of same to the City of Green Cove Springs (C.G.C.S.).
(c.) Developer's Affidavit certifying there is no outstanding debt against utility assets to be deeded to C.G.C.S.
(d.) Value of Acceptance Report showing value of assets to be deeded to the C.G.C.S.
(e.) Bill of Sale to C.G.C.S.
(f.) Bacteriological Test(s)
(g.) Pressure Test(s)
(h.) Television Reports and Tapes
(i.) Density Reports
(j.) PROPER Final As–Built Drawings and disks

17. C.G.C.S. Shop Drawing and Submittal Process. A signed acknowledgment by the Contractor and the Material Supplier, on the "Shop Drawings and C.G.C.S.'s Approved Materials List Form", that all materials will be in accordance with C.G.S.S.'s Specifications, C.G.C.S.'s Details and C.G.C.S.'s Approved Materials Manual, is the only submittal C.G.C.S. will require for each item of materials with the following exception: any alternate materials requested by the Engineer; any materials not listed in the C.G.C.S. Materials Manual; and materials associated with pumping stations and plant installations. Those exceptions shall have an individual shop drawing submitted for C.G.C.S.'s review and approval prior to any installation of said materials.

This is C.G.C.S.'s procedure and it does not preclude the design engineer from requiring additional submittals and shop drawings as he deems necessary for the project.

18. PUMP STATIONS (TEMPORARY OR PERMANENT). All pump stations shall be constructed in accordance with C.G.C.S. standards, rules and regulations and be approved by C.G.C.S. All work and materials shall meet the requirements of C.G.C.S. Standard Pump Station Details and Specifications or the plans, details and specifications for that specific pump station. A driveway shall be provided from the street (roadway) to within 2 feet of the pump station wetwell, minimum 10 feet wide x 5 inches thick 3,000 P.S.I. concrete. Submersible pump stations shall be fenced completely about the perimeter of the pump station site (location of the pump station site as noted on the plans), including gates and all other items required to make a completely fenced installation. The entire pump station site within the fenced area shall be covered with #57 stone, 6 inch thick minimum, placed over 8 mil visqueen.

19. Information shown on the Drawings as to the location of existing utilities has been prepared from the most reliable data available to the Engineer. The Contractor shall be responsible for requesting underground utility locates and shall assist the utility companies, by every means possible to determine said locations and the locations of recent additions to the systems not shown. Extreme caution shall be exercised to eliminate any possibility of any damage to utilities resulting from Contractor's activities. The locations of all overhead utilities shall also be verified by the Contractor. The Engineer shall be notified of any conflict that may occur. The Contractor shall be responsible for determining which poles will need shoring during excavation and shall provide such shoring and support as required.

20. C.G.C.S. details and specifications (latest available copy) shall be included in all plans submitted for work within the C.G.C.S. utility system. No person shall modify, change, omit, replace any portion of those details and specifications without the express written consent of C.G.C.S.. In any instance where the design engineer has included his written specifications or details in the plans then the more stringent of the two shall govern.

21. All materials to be used for any project within C.G.C.S.'s utility system shall conform to those materials listed in the C.G.C.S. approved material manual in effect at the time final plans for that project are approved by C.G.C.S.

22. Under no circumstance shall any trees be planted within a C.G.C.S. utility easement without;
a.) C.G.C.S. approving landscape and irrigation plans.
b.) C.G.C.S. being notified prior to the planting of trees and giving approval.
c.) C.G.C.S. inspecting the installation of root barrier material (required at all trees which are closer than 10' to any C.G.C.S. utility line) as shown in C.G.C.S. approved material manual and C.G.C.S. roadway cross section details, whether or not shown on the plans.

23. At all Jack & Bore locations a C.G.C.S. inspector shall inspect the casing spacers to verify they are the correct size and have been installed correctly on the pipe prior to the pipe being installed into the pipe casing. The pipe casing shall be clean and free of all dirt, and shall be cleaned with a Vac–Con if necessary. A C.G.C.S. inspector shall be present at all time during this work.

FINAL INSPECTION PROCEDURES

PRIOR TO FINAL INSPECTION, THE CONTRACTOR shall PROVIDE THE FOLLOWING:
1. The sewer line T.V. report and tape
2. The pressure test and bacteriological clearance analysis report.
3. The engineer of record certification to D.E.P. This can be done with completed as–builts.
4. Completed as–builts showing at least the following:
  a.) Location of valves, mains, services, manholes and locate wire boxes.
  b.) Elevation of sewer lines in the manhole, and stub–outs.
5. All services and valves to be plainly marked with a treated fence post, and electronic locate marker when needed.
6. Pump station start–up report with draw down data for each pump and with both pumps in operation. All electrical components to be completely installed and in proper working condition.

PRIOR TO FINAL ACCEPTANCE FOR OWNERSHIP, THE FOLLOWING MUST BE COMPLETED:
1. All manhole rings and covers have to be adjusted to finish grade.
2. Water services must be lowered and meter boxes installed, valve boxes must be set on all gate valves.
3. As–built drawings shall have been updated to accommodate the C.G.C.S. comments and the final elevation of the manhole tops must be included.
4. All valves, locate wire boxes, sewer, water and reclaimed services shall be scribed in curb and painted the correct color.
5. As–builts, must be accepted and approved by the City of Green Cove Springs Public Works.

PRIOR TO FINAL ACCEPTANCE FOR OWNERSHIP, THE FOLLOWING MUST BE COMPLETED:
1. A preliminary inspection must be coordinated by the underground utility contractor and held a minimum of fifteen (15) working days prior to the final inspection/start–up. The preliminary inspection will compare the approved design drawings to the actual site installation, noting any deficiencies.
2. The following must be represented at the preliminary and final inspection:
  a.) The C.G.C.S.'s inspection and distribution and collection departments
  b.) The project's developer and/or general contractor
  c.) The underground utility contractor
  d.) All subcontractors associated with the lift station (electrical, pump manufacturer, control panel manufacturer, etc.)

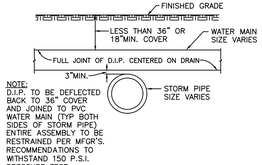
NO	DATE	BY	REVISION DESCRIPTION
1	FEB. 2016	SS	GENERAL UPDATE

DESG
DRWN
CHKD
APRV
DATE

PROJECT:
STANDARD WATER AND SEWER SYSTEM
TECHNICAL SPECIFICATIONS

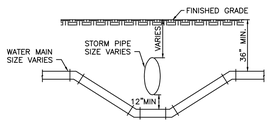
CITY OF
GREEN COVE SPRINGS
321 WALNUT STREET
GREEN COVE SPRINGS, FLORIDA 32043

ACAD FILE NAME
SPECIF_D.DWG
SHEET NO.
C15
1 OF 1



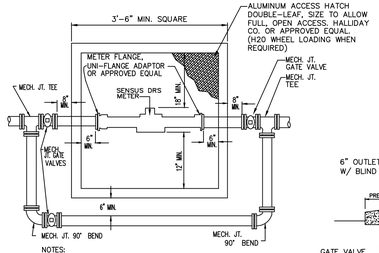
NOTE:
D.I.P. TO BE DEFLECTED BACK TO 36" COVER AND JOINED TO PVC WATER MAIN (TYP. BOTH SIDES OF STORM PIPE) ENTIRE ASSEMBLY TO BE RESTRAINED PER MFGR'S. RECOMMENDATIONS TO WITHSTAND 150 P.S.I. PRESSURE TEST

DRAIN CONFLICT CASE "A"



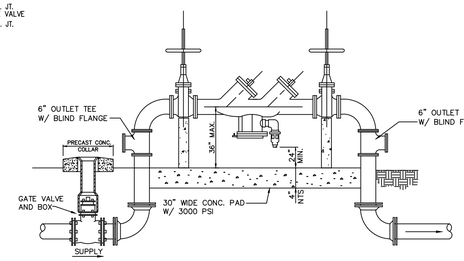
ALL BENDS TO BE RESTRAINED IN BOTH DIRECTIONS PER UTILITY'S REQUIREMENTS.

DRAIN CONFLICT CASE "B"



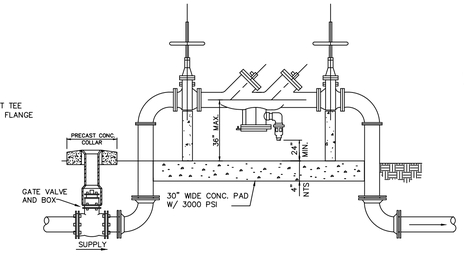
NOTES:
1. ALL PIPE TO BE D.I.
2. ALL VALVES & FITTINGS TO BE DUCTILE IRON.
3. MINIMUM LENGTH OF 8 DIAMETERS OF STRAIGHT PIPE TO BE INSTALLED ON INLET SIDE OF METER.
4. ALL PIPE AND FITTINGS TO BE SAME SIZE AS METER.
5. CONC. BOX SHALL BE 42" DEEP WITH OPEN BOTTOM, PRECAST WITH NOTCH TO ACCOMODATE PIPE INSTALLED 36" DEEP, INSTALLED ON 12" OF #57 STONE
6. CONTRACTOR SHALL PROVIDE SHOP DRAWING OF BOX WITH DIMENSIONS FOR APPROVAL BY C.C.U.A.
7. DIMENSIONS SHOWN ARE MINIMUM AND SHALL BE INCREASED BASED UPON ACTUAL SIZE OF METER PROVIDED.
8. THE COST OF THE METER WILL BE ASSESSED TO DEVELOPER UNDER SEPARATE AGREEMENT. THE METER ONLY WILL BE FURNISHED TO THE CONTRACTOR BY THE CLAY COUNTY UTILITY AUTHORITY AND THE CONTRACTOR SHALL INSTALL THE METER TO COMPLETE THE INSTALLATION SHOWN HEREON.

METER VAULT - 3" AND LARGER METERS



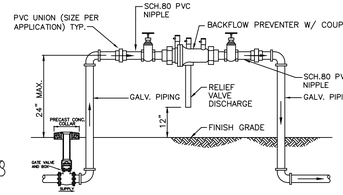
BACKFLOW PREVENTER SIZES 6" & ABOVE WHERE BACKFLOW IS BETWEEN RECLAIMED & POTABLE

BACKFLOW PREVENTER NOTE:
DESIGNS SHOWN FOR BACKFLOW PREVENTER INSTALLATIONS ARE REQUIRED FOR C.C.U.A. OWNED INSTALLATIONS AND ARE OPTIONAL FOR THOSE TO BE OWNED AND MAINTAINED BY DEVELOPER OR CUSTOMER.



REDUCED PRESSURE ZONE BACKFLOW PREVENTER SIZES 3" & ABOVE

BACKFLOW PREVENTER NOTE:
DESIGNS SHOWN FOR BACKFLOW PREVENTER INSTALLATIONS ARE REQUIRED FOR C.C.U.A. OWNED INSTALLATIONS AND ARE OPTIONAL FOR THOSE TO BE OWNED AND MAINTAINED BY DEVELOPER OR CUSTOMER.



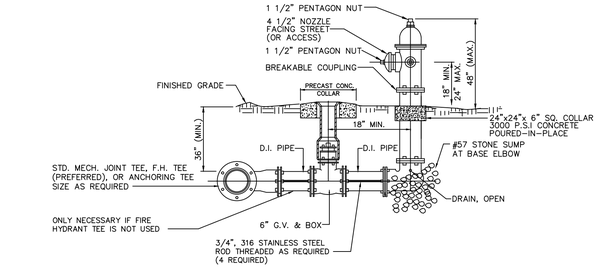
REDUCED PRESSURE ZONE BACKFLOW PREVENTER DETAIL 2" DIAMETER AND SMALLER

L= MINIMUM LENGTH TO BE RESTRAINED ON EACH SIDE OF FITTING (IN FEET)

NOMINAL PIPE SIZE (INCHES)	11 1/4° HORIZONTAL BEND	22 1/2° HORIZONTAL BEND	45° HORIZONTAL BEND	90° HORIZONTAL BEND	HORIZONTAL TEES	HORIZONTAL PLUGS AND VALVES	45° VERTICAL OFFSET (UPPER LENGTH)	45° VERTICAL OFFSET (LOWER LENGTH)	45° VERTICAL OFFSET (UPPER LENGTH)	45° VERTICAL OFFSET (LOWER LENGTH)	REDUCER TO ONE SIZE SMALLER LENGTH ON LARGER SIZE SIDE
4	2	4	7	18	20 – RUN / 1 – BRANCH	39	16 / 3	8 / 1	N/A		
6	2	5	10	25	20 – RUN / 1 – BRANCH	55	23 / 4	11 / 2	28		
8	3	6	13	32	20 – RUN / 1 – BRANCH	72	30 / 5	14 / 3	30		
10	4	8	16	38	20 – RUN / 1 – BRANCH	86	36 / 6	17 / 3	29		
12	4	9	19	45	20 – RUN / 1 – BRANCH	102	42 / 8	20 / 4	50		
14	5	10	21	51	20 – RUN / 10 – BRANCH	116	48 / 9	23 / 4	30		
16	6	11	23	57	20 – RUN / 26 – BRANCH	131	54 / 10	26 / 5	30		
18	6	12	26	62	20 – RUN / 41 – BRANCH	145	60 / 11	29 / 5	29		
20	7	13	28	68	20 – RUN / 55 – BRANCH	158	66 / 12	36 / 6	29		
24	8	16	32	78	20 – RUN / 58 – BRANCH	185	77 / 11	37 / 7	55		
30	9	18	38	92	20 – RUN / 77 – BRANCH	221	92 / 17	44 / 8	77		
36	10	21	44	105	20 – RUN / 115 – BRANCH	256	106 / 20	51 / 10	77		

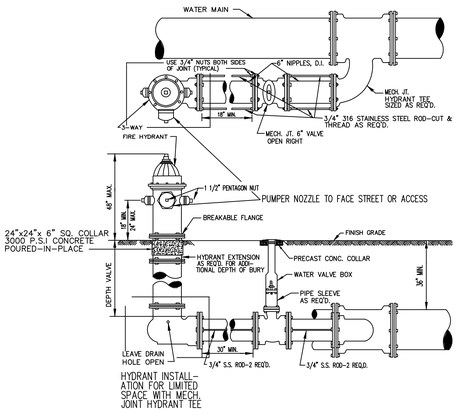
NOTES:
1. TABLE ASSUMPTIONS: PVC PIPE, SAFETY FACTOR = 1.5, SOIL = GM OR SM, 3 FT. BURY DEPTH TO TOP OF PIPE, TRENCH TYPE 3, BRANCH ON TEE IS ONE SIZE SMALLER THAN RUN OF TEE SIZE AND 20 FEET OF PIPE IS INSTALLED PAST THE TEE ON THE RUN SIDE (SMALLER BRANCH SIZES MUST BE CALCULATED BY THE ENGINEER). VERTICAL OFFSETS ARE 3 FEET DEEP ON TOP AND 8 FEET DEEP ON BOTTOM. REDUCERS ARE CALCULATED FOR ONE SIZE REDUCTION. OTHER CONDITIONS WILL REQUIRE ADDITIONAL CALCULATIONS.
2. ALL FITTINGS MUST BE RESTRAINED. ONE OF THE FOLLOWING METHODS MAY BE USED:
   A. MECHANICAL RESTRAINTS AT FITTING AND AT ADJACENT JOINTS TO A LENGTH AS SPECIFIED ON CHART.
   B. TIE RODS AT FITTING AND THROUGH JOINTS TO A LENGTH AS SPECIFIED IN CHART.
3. APPROVED RESTRAINTS: UNI-FLANGE SERIES 1300 & 1350 OR APPROVED EQUAL.
4. VALVES SHALL BE RESTRAINED THE SAME DISTANCE AS HORIZONTAL PLUGS.

RESTRAINED JOINT SCHEDULE



FH TO BE AFC 8-84-B
ALL FIRE HYDRANTS TO BE PAINTED RED w/WHITE BONNET

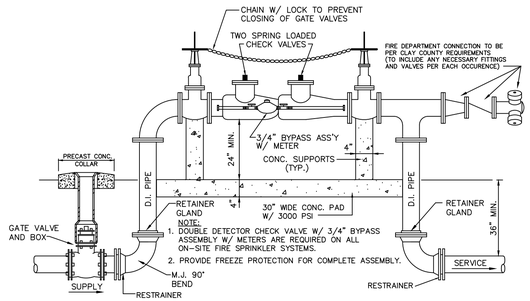
FIRE HYDRANT - STANDARD



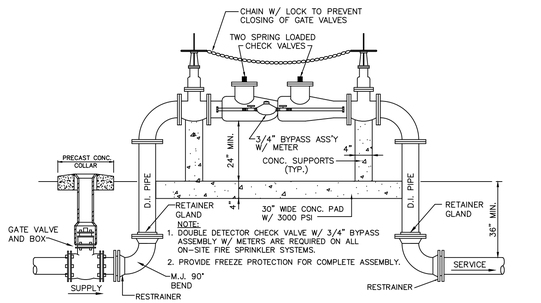
HYDRANT INSTALLATION FOR LIMITED SPACE WITH MECH. JOINT HYDRANT TEE

FIRE HYDRANT - LIMITED SPACE

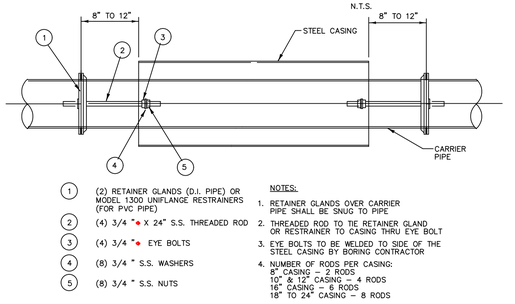
FIRE HYDRANT NOTE:
FIRE HYDRANT CANNOT BE LOCATED LESS THAN 5'-0" FROM BACK OF CURB AND NO MORE THAN 20'-0" BACK OF CURB.



DOUBLE DETECTOR CHECK VALVE BACKFLOW PREVENTER WITHOUT ABOVE GROUND ENCLOSURE - 3" AND ABOVE WITH FIRE DEPARTMENT CONNECTION

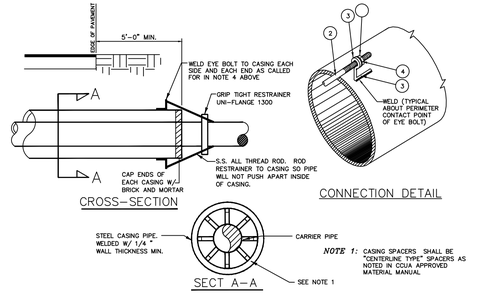


DOUBLE DETECTOR CHECK VALVE BACKFLOW PREVENTER WITHOUT ABOVE GROUND ENCLOSURE - 3" & ABOVE WITHOUT FIRE DEPARTMENT CONNECTION



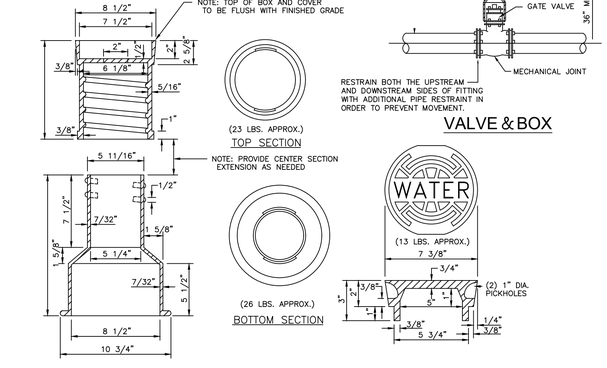
1	(2) RETAINER GLANDS (D.I. PIPE) OR MODEL 1300 UNIFLANGE RESTRAINERS (FOR PVC PIPE)
2	(4) 3/4 "ø X 24" S.S. THREADED ROD
3	(4) 3/4 "ø EYE BOLTS
4	(8) 3/4 " S.S. WASHERS
5	(8) 3/4 " S.S. NUTS

NOTES:
1. RETAINER GLANDS OVER CARRIER PIPE SHALL BE SNUG TO PIPE
2. THREADED ROD TO TIE RETAINER GLAND OR RESTRAINER TO CASING THRU EYE BOLT
3. EYE BOLTS TO BE WELDED TO SIDE OF THE STEEL CASING BY BORING CONTRACTOR
4. NUMBER OF RODS PER CASING:
   8" CASING – 2 RODS
   10" & 12" CASING – 4 RODS
   16" CASING – 6 RODS
   18" TO 24" CASING – 8 RODS

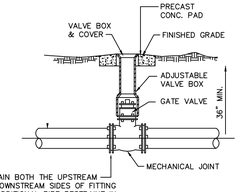


CASING DETAIL

N.T.S.
(FOR PRESSURE LINES)



VALVE BOX AND COVER



RESTRAIN BOTH THE UPSTREAM AND DOWNSTREAM SIDES OF FITTING WITH ADDITIONAL PIPE RESTRAINT IN ORDER TO PREVENT MOVEMENT.

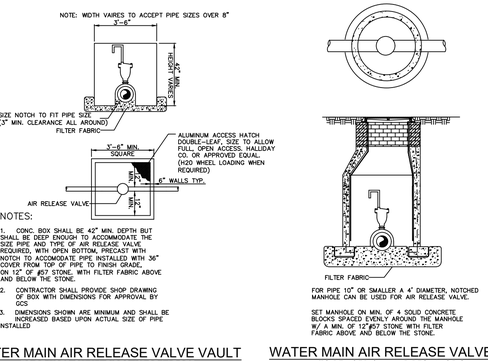
VALVE & BOX

O.D. OF BELL (DR-18)	CARRIER PIPE SIZE	OUTSIDE DIAMETER OF STEEL CASING PIPE												
		10"	12"	16"	18"	20"	24"	30"	36"	42"	48"	54"	60"	66"
6.5"	4"	NR												
9.0"	6"		NR											
11.6"	8"			NR										
14.1"	10"				NR									
16.7"	12"					NR								
21.23"	16"						NR							
23.74"	18"							NR						
26.18"	20"							NR						
31.22"	24"								NR					

NR = CENTERED, NON-RESTRAINED

CASING SIZE SCHEDULE

NTS



NOTES:
1. CONC. BOX SHALL BE 42" MIN. DEPTH BUT SHALL BE DEEP ENOUGH TO ACCOMMODATE THE SIZE PIPE AND TYPE OF AIR RELEASE VALVE REQUIRED, WITH OPEN BOTTOM, PRECAST WITH NOTCH TO ACCOMODATE PIPE INSTALLED WITH 36" COVER FROM TOP OF PIPE TO FINISH GRADE, ON 12" OF #57 STONE, WITH FILTER FABRIC ABOVE AND BELOW THE STONE.
2. CONTRACTOR SHALL PROVIDE SHOP DRAWING OF BOX WITH DIMENSIONS FOR APPROVAL BY GCS
3. DIMENSIONS SHOWN ARE MINIMUM AND SHALL BE INCREASED BASED UPON ACTUAL SIZE OF PIPE INSTALLED

WATER MAIN AIR RELEASE VALVE VAULT

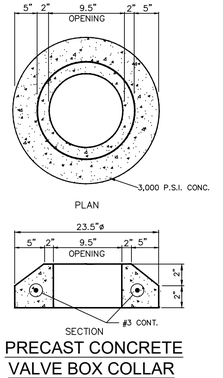
TO BE USED ON ALL PIPES 12" OR LARGER

FOR PIPE 10" OR SMALLER A 4" DIAMETER, NOTCHED MANHOLE CAN BE USED FOR AIR RELEASE VALVE.

SET MANHOLE ON MIN. OF 4 SOLID CONCRETE BLOCKS SPACED EVENLY AROUND THE MANHOLE W/ A MIN. OF 12"#57 STONE WITH FILTER FABRIC ABOVE AND BELOW THE STONE.

WATER MAIN AIR RELEASE VALVE VAULT

TO BE USED ON ALL PIPES 10" OR SMALLER



PRECAST CONCRETE VALVE BOX COLLAR

PROJECT:
STANDARD WATER SYSTEM DETAILS

CITY OF
GREEN COVE SPRINGS
321 WALNUT STREET
GREEN COVE SPRINGS, FLORIDA 32043

WATSTAND.DWG

C16
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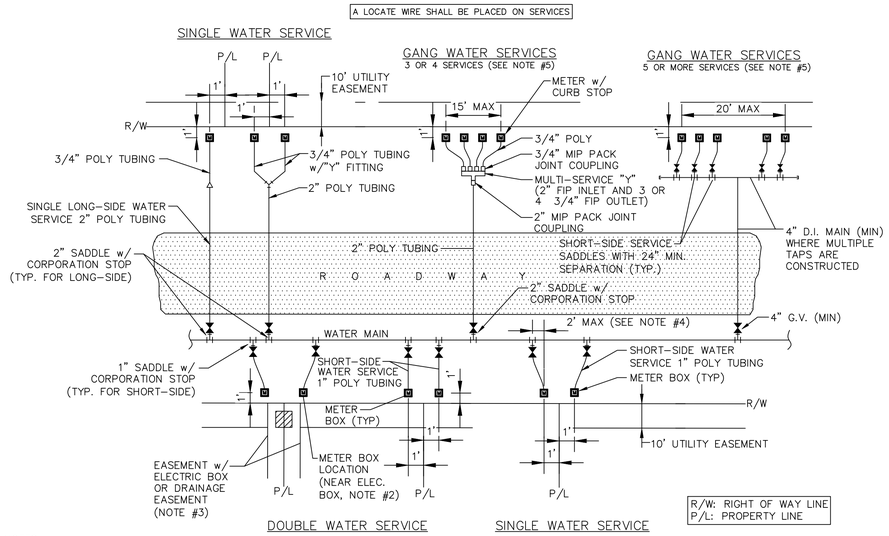


NOTES

1. THE SKETCHES ABOVE INDICATE TYPICAL WATER SERVICE AND METER BOX LOCATIONS. ACTUAL LOCATIONS OF BOXES MAY VARY SLIGHTLY ACCORDING TO FIELD CONDITIONS ENCOUNTERED. TYPICALLY, THE METER BOX SHALL BE LOCATED 1.0' OFF OF THE R/W LINE.

2. UNLESS SPECIFIED OTHERWISE BY THE CITY OF GREEN COVE SPRINGS, THE METER BOX SHALL BE LOCATED 1.0' OFF OF THE R/W LINE, AND 1.0' FOOT INSIDE OF THE PROLONGATION OF ONE OF THE SIDE PROPERTY LINES. IF A CONFLICT EXISTS WITH OTHER UTILITIES, THE METER BOX MAY BE ADJUSTED TO FOUR FEET (MAX.) INSIDE PROPERTY LINES (IN LIEU OF 1.0' FEET). UNLESS APPROVED OTHERWISE BY THE CITY, THE WATER METER BOX SHALL BE LOCATED IN NON-TRAFFIC AREAS (NOT IN SIDEWALKS OR DRIVEWAYS). IF AN UNAPPROVED METER BOX IS IDENTIFIED BY THE CITY, THEN THE CONTRACTOR OR CUSTOMER SHALL BE RESPONSIBLE FOR THE COST OF RELOCATING ANY METER BOX WHICH IS LOCATED IN THE SIDEWALK OR DRIVEWAY OR THE COST TO PROVIDE THE CORRECT METER BOX. THE CITY SHALL APPROVE ALL DEVIATIONS TO THE ABOVE PRIOR TO CONSTRUCTION.

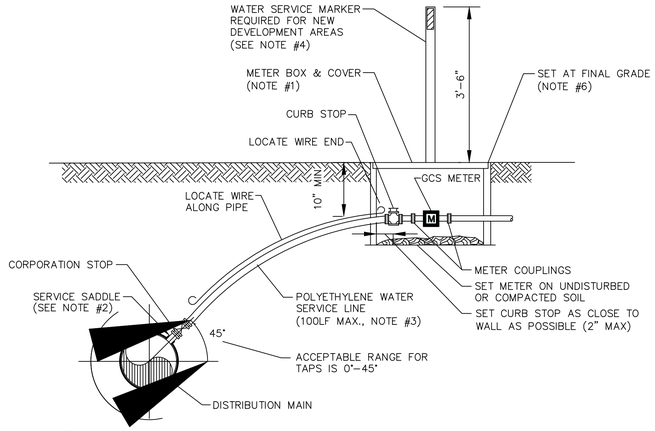
3. IF DRAINAGE OR OTHER EASEMENT IS LOCATED BETWEEN LOTS, METER BOXES SHALL BE LOCATED AT THE EASEMENT LINE BUT OUTSIDE THE EASEMENT AREA.

4. FOR SINGLE SERVICES, THE HORIZONTAL DISTANCE (PERPENDICULAR TO THE MAIN) BETWEEN THE SERVICE'S SADDLE AND THE METER BOX SHALL BE 2 FEET MAXIMUM. FOR DOUBLE 3/4"SERVICES, THE 2"POLY MAIN SHALL BE LOCATED CENTERED BETWEEN THE TWO METER BOXES. LOCATE WIRE IS REQUIRED ON ALL SERVICES. THE WIRE SHALL RUN FROM THE METER BOX TO THE MAIN (WITH NO CONNECTION TO MAIN WIRE WITH THE LAST 24 INCHES STRIPPED OF INSULATION/BARE WIRE AS GROUND). ALL EXCEPTIONS TO THIS REQUIREMENT MUST BE APPROVED BY THE CITY OF GREEN COVE SPRINGS. THIS WILL ASSIST IN LOCATING EXISTING SERVICE LINES IN THE FUTURE.

5. GANG WATER SERVICES: FOR 3 OR 4 SERVICES IN ONE AREA, A DUCTICLE IRON PIPE (D.I.P.) WATER MAIN EXTENSION W/LOCATE WIRE MAY BE UTILIZED ON EITHER SHORT-SIDE OR LONG-SIDE SERVICES WHERE SHOWN ON THE DRAWINGS. LOCATE WIRE SHALL EXTEND FROM ONE METER BOX TO CURB STOP AT WATER MAIN. FOR 5 OR MORE SERVICES IN ONE AREA, A WATER MAIN EXTENSION W/LOCATE WIRE MAY BE UTILIZED ON EITHER SHORT-SIDE OR LONG-SIDE SERVICES WHERE SHOWN ON THE DRAWINGS (TAPS STAGGERED AND AT 2 FEET ON CENTER (MIN). FOR WATER SUPPLY HEADERS WHERE 5 OR MORE TAPS ARE CONSTRUCTED, THE HEADER PIPE SHALL BE 4" AT A MINIMUM. EXAMPLE: CONSTRUCT A 4" MAIN D.I. CROSSING THE STREET FOR 5 RESIDENTIAL CUSTOMERS, UTILIZING 4" G.V., 4" PIPE, 4"X1" SADDLES AND 1" CURB STOPS (NO GLUED TEE FITTINGS). THE 4" OR LARGER D.I.P. WATER MAIN MUST BE SIZED AND DESIGNED BY THE ENGINEER.

6. ALL COMMERCIAL WATER SERVICES SHALL BE 2" POLYETHYLENE PIPING CONNECTED TO 2" CURB STOP IN METER BOX, UNLESS OTHERWISE APPROVED BY THE CITY.

WATER SERVICE INSTALLATIONS 2" AND SMALLER METER



NOTES

1. SEE CITY OF GREEN COVE SPRINGS APPROVED MATERIALS MANUAL AND SYSTEM DETAILS FOR REQUIREMENTS.

2. SINGLE BAND SADDLES MAYBE UTILIZED ON NEW 1" WATER SERVICES WHICH ARE INSTALLED ON A DRY 10" SIZE OR SMALLER WATER MAIN (NEW WATER MAIN CONSTRUCTION). FOR WET TAPS OR WATER MAINS 12" SIZE AND LARGER, A DOUBLE BAND SADDLE IS REQUIRED.

3. NO OPEN CUT UNDER ROADWAY PAVING ALLOWED UNLESS THE ROADWAY IS BEING RECONSTRUCTED OR IF DIRECTED OTHERWISE BY CITY OF GREEN COVE SPRINGS. CONSTRUCT POLY LINE WITH 36" (MIN.) COVER UNDER ROADWAYS. THE POLY WATER SERVICE LINE SHALL BE SAME SIZE AS THE METER (3/4" MINIMUM) AND BE INSTALLED PERPENDICULAR TO THE MAIN AND NOT EXCEED 100LF UNLESS OTHERWISE APPROVED BY CITY OF GREEN COVE SPRINGS.

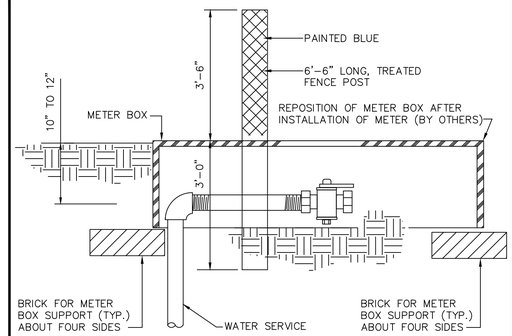
4. INSTALL PVC PLUG IN ALL CURB STOPS IF WATER SERVICE IS "NOT IN USE" (I.E.: IF NO METER IS INSTALLED). IN ADDITION, INSTALL A 6', 6" P.T. FENCE POST (TOP PAINTED BLUE) 12" OFF SIDE OF METER BOX. THE REMOVAL OR TRANSFER OF A WATER SERVICE SHALL INCLUDE BRASS METER COUPLINGS (HEX ON BARREL TYPE).

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF THE BOXES, METERS OR ELECTRONIC DEVICES IF DAMAGED BY THE CONTRACTOR DURING THE CONSTRUCTION PERIOD.

6. METER BOX AND TOP SHALL BE CLEAR OF ALL DEBRIS TO ALLOW FULL ACCESS TO BOX (I.E., NO DIRT, TRASH OR OTHER DEBRIS PLACED ON TOP OF BOX).

7. LOCATE WIRING REQUIRED ON ALL LONG AND SHORT SERVICES.

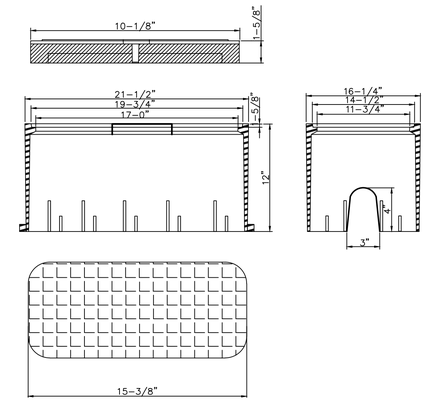
WATER SERVICE DETAIL- 2" AND SMALLER METER



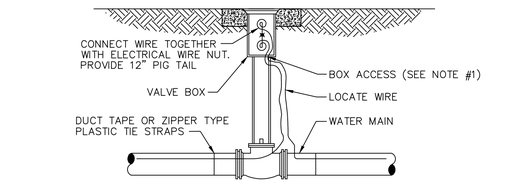
WATER SERVICE MARKER POST

NOTE:
ALL SERVICES ARE TO BE CLEARLY MARKED BY A TREATED 6'-6" LONG MARKER POST PAINTED BLUE. ALL SERVICES ARE TO BE EXTENDED ABOVE GRADE UNTIL COMPLETION OF ALL GRADING ACTIVITIES. ONCE FINAL ROAD GRADING IS COMPLETE, LOWER SERVICES BY CUTTING OFF RISER 10" TO 12" BELOW FINAL GRADE AND INSTALL 90° BEND, NIPPLE AND LW BALL VALVE AT THAT ELEVATION, SET METER BOX OVER ENTIRE HORIZONTAL SECTION OF SERVICE LINE FROM LAST 90° BEND TO THE END OF THE CURB STOP. BOX TO BE REPOSITIONED WHEN THE METER IS INSTALLED. MARKER POST TO BE INSTALLED ADJACENT TO AND LOCATED AT THE MID SECTION OF THE METER BOX.

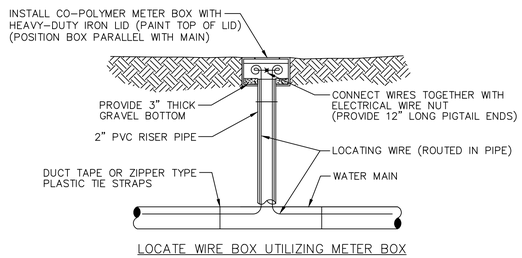
NOTE:
MIN. WALL THIKNESS: .25"
DOUBLE WALL BODY w/STRUCTURAL SUPPORT RIBS
w/MIN. THINCKNESS: 3/16"
1" BOTTOM FLANGE
BOX IS INJECTED MOLDED STRUCTURAL FOAM RECYCLED POLYPROPYLENE MATERIAL



METER BOX & SOLID BLUE LID



LOCATE WIRE BOX UTILIZING VALVE BOX

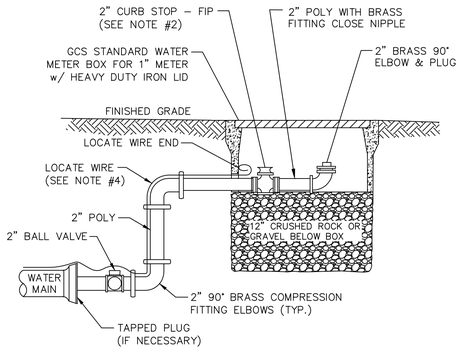


LOCATE WIRE BOX UTILIZING METER BOX

NOTES

1. LOCATE WIRE SHALL ENTER THE VALVE BOX THROUGH A "V" CUT IN THE 6" PVC RISER PIPE.

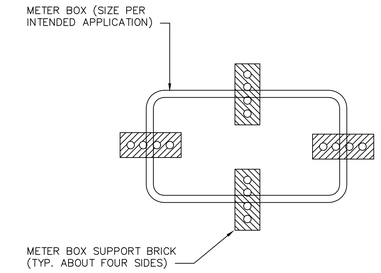
LOCATE WIRE BOX



NOTES

1. PIPE SHALL BE POLYETHYLENE. FITTINGS SHALL BE BRASS.
2. THE 2" CURB STOP SHALL BE ALL BRONZE. FITTINGS SHALL BE BRASS.
3. CANNOT BE PLACED UNDER CONCRETE OR PAVEMENT.
4. PLACE 2 FEET PAST LAST WATER MAIN SERVICE CONNECTION.

FLUSHING VALVE BELOW GRADE



METER BOX SUPPORT DETAIL

NO	DATE	BY	REVISION DESCRIPTION
1	FEB.2016	SS	GENERAL UPDATES

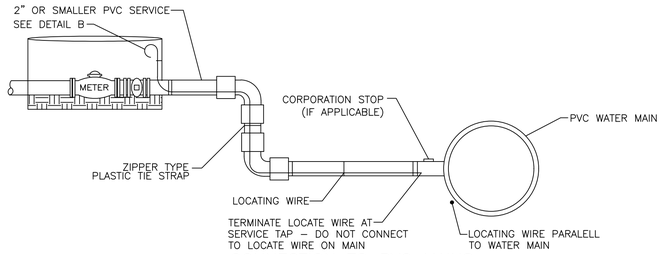
DESG
DRWN
CHKD
APRV
DATE

PROJECT:

STANDARD WATER SERVICE DETAILS

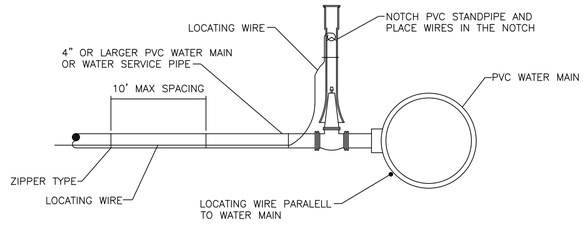
CITY OF
GREEN COVE SPRINGS
321 WALNUT STREET
GREEN COVE SPRINGS, FLORIDA 32043

ACAD FILE NAME
SERVICES.DWG
SHEET NO.
C17
1 OF 1



CONNECTION TO PVC MAINS

2" OR SMALLER WATER SERVICE
(LONG SERVICES ONLY)



CONNECTION TO PVC MAINS

4" OR LARGER PVC WATER MAIN OR WATER SERVICE PIPE

DETAIL – A

LOCATE WIRE

LOCATE WIRE TESTING REQUIREMENTS

Installed locate wiring shall be tested by the contractor as part of the final inspection procedure, using a certified tester and approved testing equipment. The contractor shall request and obtain approval from the GCS field representative (inspector), of the locate wire field testing schedule. The GCS field representative may elect to be present during the testing period, and have the authority to request tester to retest sections if inspector suspects any problems within that section. The contractor shall provide the Certified Tester a copy of the project site drawings (as–builts preferred). A tone shall be put on the locate wire. The technician shall trace the entire length of the installed wire and spot paint the location at least at 100–foot intervals along the route. The depth shall be tested at 100–foot intervals and tester shall record the depth of pipe/wire on the report at each 100' interval. The certified tester shall report (show on drawings), where the pipe/wire has less than the allowable minimum cover (36 inches) or more than the maximum allowable cover (60 inches) unless called for on the plans or requested and approved by GCS during the installation of said piping. All lateral stub–outs shall be marked with pain and the depth recorded. A final Locate Wire Report (statement by the certified tester), shall be submitted to GCS for review and approval. The report shall include a signed statement from the certified tester which certifies that all installed wire (where shown on the drawing), was successfully (sounded), traced with no open breaks. The report shall also include a copy of the project site drawings which indicate all field notes, breaks found/repaired, depths (if installed outside the acceptable cover limits), and other applicable field remarks by the certified tester. A Certified copy of the report and marked–up drawings shall be furnished to GCS prior to final acceptance of the project or as approved otherwise by GCS.

Definitions: Approved Testing Equipment shall include variable frequency controls, digital depth read–out and tone continuity. The following is a list of approved equipment – Dynatel (3M)–2273 Cable/Fault Locator, Metrotech 9800XT, Ditch Witch 950 R/T or GCS pre–approved equal.

Certified Tester – A person or company that has been certified by the Manufacturer of the approved testing equipment as proficient in the use of the equipment has 8 months experience in the use of the equipment including documented proof of past performance.

GCS Approval: Green Cove Springs Public Works shall have the authority to approve Certified Tester, or deny the approval of Certified Tester to work on Utility's System. GCS shall have the authority to remove any previously Certified Tester from its approved list of Certified Testers as GCS deems necessary.

LOCATE WIRE INSTALLATION

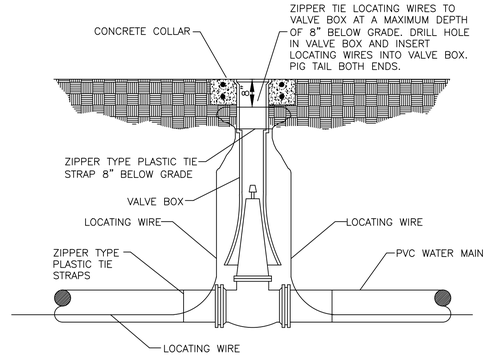
Contractor shall furnish and install locate wiring on all water mains, sewer force mains, and reclaimed water mains (both PVC and ductile iron) and on all service mains, any size. Locate wire must be attached to mains and services with duct tape or approved plastic zipper ties, (pulled tight to keep wire from rotating out of location), at each side of bell joint or fitting and at 10 foot intervals along pipeline (at a minimum). Locate wire shall be brought to grade within a valve box or locating station box, as required, at 475 foot intervals (see note # 2 this page). Locate wire shall be installed in box and along pipeline as detailed in the GCS Standard Details. Locate wire shall be installed beneath the pipe line at the 5:00 to 7:00 o'clock position on the pipe. Connection or splices underground which are not inside a locate box (or valve box), shall be prohibited unless approved otherwise by GCS. The request to make an underground connection or wire splice shall be done in writing to GCS. The request shall contain the complete job name, name of street, station number as shown on plans and scaled as close as possible to the location of splice or connection, and the reason for request. GCS shall have at least 48 hrs. to respond verbally and 5 working days to resond in writing. If an underground connection is unavoidable and approved by GCS, then the wire shall be first tied in a knot (to minimize future separation), then the wire ends shall be connected utilizing an electric wire nut, then make the connection water tight by using either vinyl mastic tape (4" wide X 0.09" thick by 3M–Scotch 2210), or plastic enclosure (Snaploo Model LV 9500/951–4 large by TKH) or GCS approved equipment.

LOCATE WIRE BOX INSTALLATION

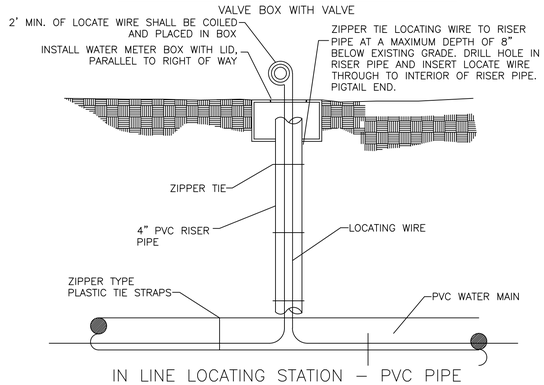
Where utility mains are to be installed beneath sidewalks, valve boxes shall be installed instead of locate wire boxes. The valve box lids shall indicate the type of line (i.e. water, sewer, or reclaimed water). The valve box shall be adjusted so the top of valve box is flush with the finished sidewalk grade. If for any reason a locate wire box must be offest from the C/L of pipeline, then the contractor shall have installed an adequate length of wire to avoid splices and the exact location of the locate box including the amount of the offest distance shall be recorded on the As–builts.

AS–BUILT DRAWINGS

See general note No. 1 of standard water and sewer system outline technical specifications for submitting as–builts on locate wire boxes.



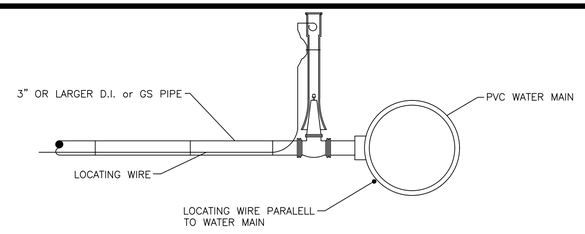
IN LINE LOCATING STATION– PVC PIPE



IN LINE LOCATING STATION – PVC PIPE

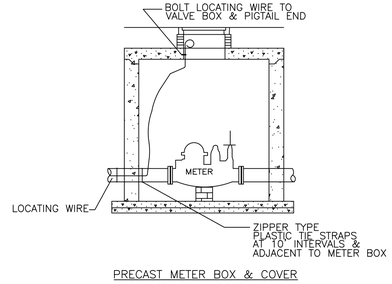
METER BOX

DETAIL – C



CONNECTION TO PVC MAINS

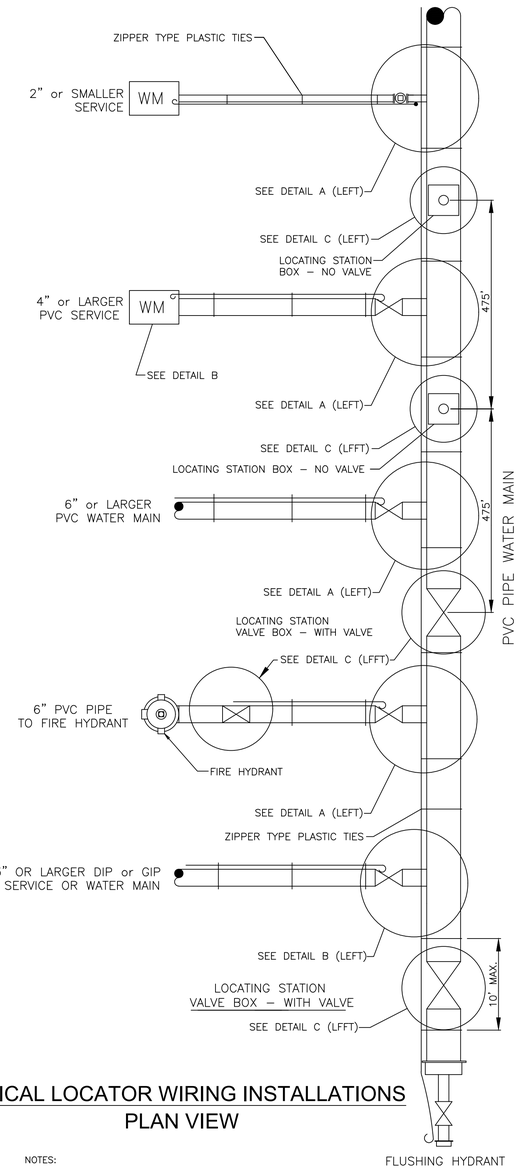
w/3" OR LARGER D.I. OR GS WATER SERVICE OR WATER MAIN



PRECAST METER BOX & COVER
(3" OR LARGER)

CONNECTION AT METERS BOXES
w/ PVC WATER SERVICE

DETAIL – B



TYPICAL LOCATOR WIRING INSTALLATIONS

PLAN VIEW

NOTES:

1. LOCATING WIRE SHALL BE 10 GAUGE, SINGLE STRAND UF RATED (DIRECT BURIAL), COPPER WIRE.

2. LOCATE BOXES SHALL BE INSTALLED AT THE LOT LINE IN RESIDENTIAL SUBDIVISIONS, OR COMMERCIAL PROPERTIES, BOXES SHALL NOT BE LOCATED IN SIDEWALKS OR DRIVEWAYS. LOCATE BOXES SPACING SHALL NOT EXCEED 500 FEET.

3. WHERE IT IS NOT POSSIBLE TO LOCATE THE BOX OUTSIDE OF A PAVED STREET OR PARKING LOT THE LOCATE WIRE SHALL BE PLACED IN A VALVE BOX INSTEAD OF A ROME BOX. VALVE BOX LID SHALL BE MARKED ACCORDING TO THE TYPE OF PIPE SERVED.

NO	DATE	BY	REVISION DESCRIPTION
4	JUN 15	M&A	GENERAL UPDATES & REVISIONS FOR GREEN COVE SPRINGS
3	DEC 07	VLF	GENERAL UPDATES & REVISIONS
2	JUNE 06	MRS	GENERAL UPDATES & REVISIONS
1			

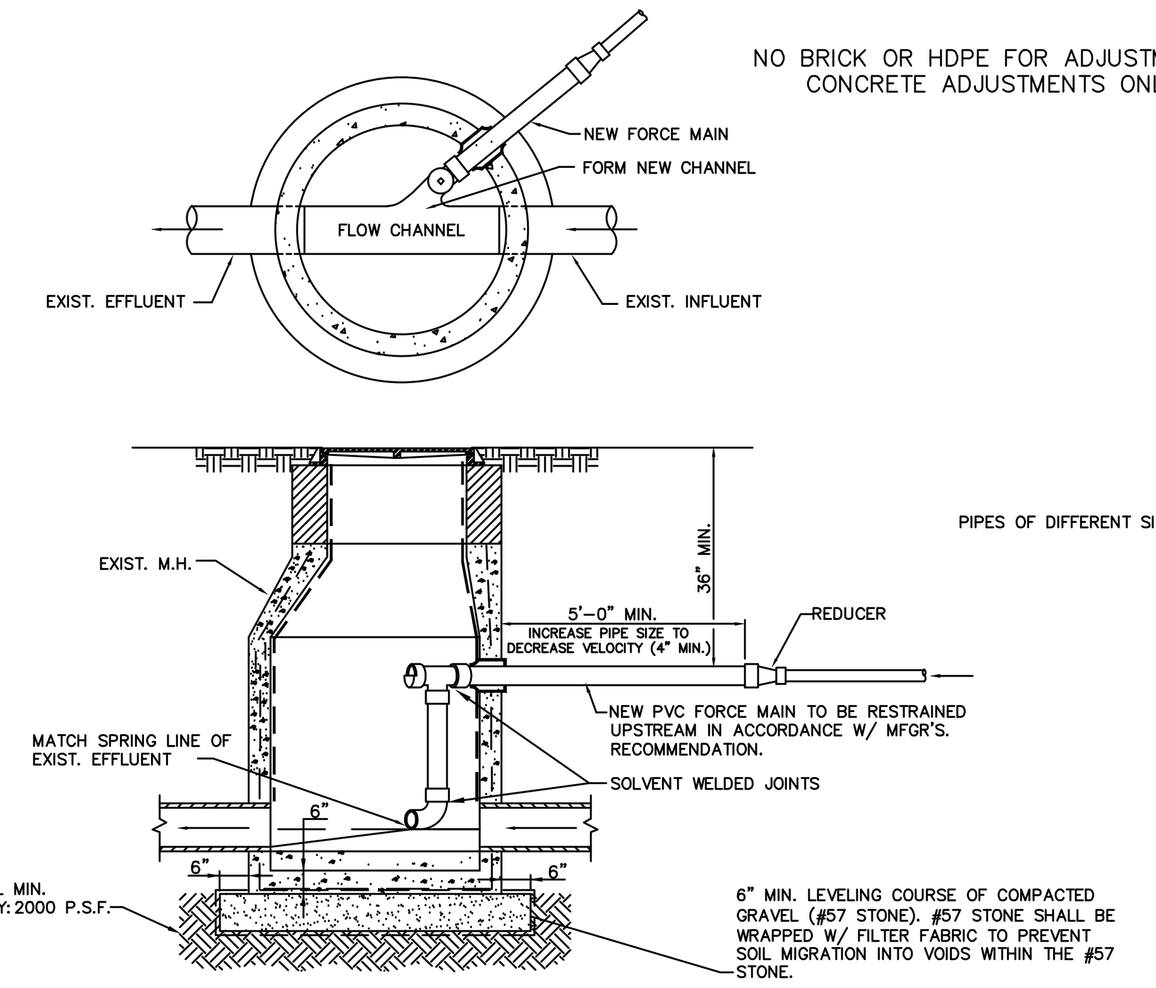
DESG
DRWN
CHKD
APRV
DATE

PROJECT:
STANDARD LOCATOR WIRING INSTALLATIONS

CITY OF
GREEN COVE SPRINGS
321 WALNUT STREET
GREEN COVE SPRINGS, FLORIDA 32043

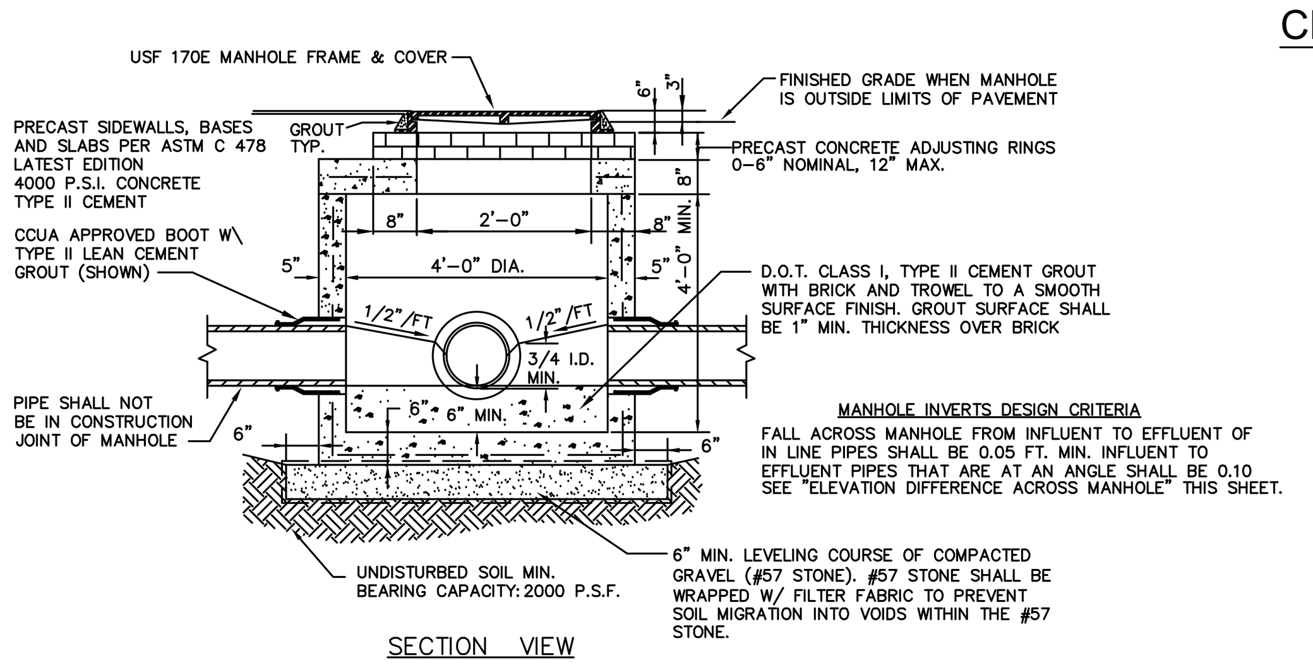
ACAD FILE NAME
TRACERWIRE.DWG
SHEET NO.
C18
1 OF 1

NO BRICK OR HDPE FOR ADJUSTMENTS, CONCRETE ADJUSTMENTS ONLY



TYP. FORCE MAIN CONNECTION TO MANHOLE

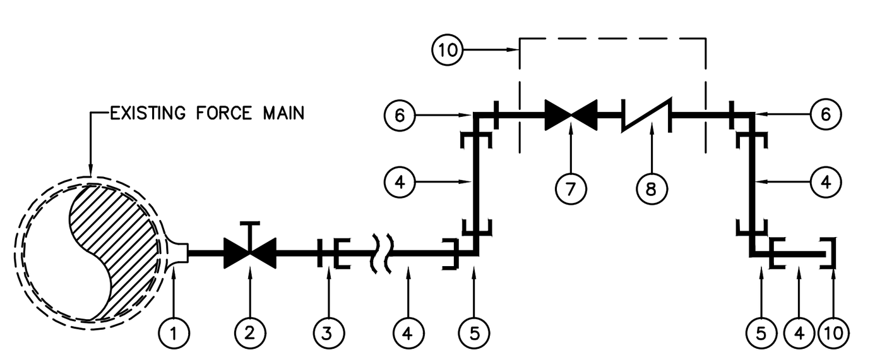
NOTE:
1. THIS MANHOLE AND THE NEXT TWO MANHOLES DOWNSTREAM (AS REQUIRED BY UTILITY) ARE TO HAVE POLYETHYLENE LINER AS MANUFACTURED BY STANDARD PRECAST CO. (AGRU SURE GRIP) OR APPROVED EQUAL.
2. IF CONNECTION IS BEING MADE TO AN EXISTING MANHOLE, THAT MANHOLE AND THE NEXT TWO MANHOLES DOWNSTREAM (AS REQUIRED BY UTILITY), SHALL BE LINED WITH "SPECTRASHIELD" OR APPROVED EQUAL.
3. SIZE OF DROP PIPE CONNECTION TO MANHOLE SHALL BE DESIGNED BY THE PROJECT ENGINEER. MINIMUM SIZE SIZE SHALL BE 4". CONNECTION AND DROP PIPE SHALL BE SIZED TO REDUCE THE VELOCITY AND PREVENT "SPLASHOVER" WITHIN THE MANHOLE. 5'-0" MINIMUM DISTANCE FROM MANHOLE TO REDUCER MAY BE INCREASED TO ASSIST IN THIS VELOCITY REDUCTION.



MANHOLE INVERTS DESIGN CRITERIA

FALL ACROSS MANHOLE FROM INFLUENT TO EFFLUENT OF IN LINE PIPES SHALL BE 0.05 FT. MIN. INFLUENT TO EFFLUENT PIPES THAT ARE AT AN ANGLE SHALL BE 0.10 SEE "ELEVATION DIFFERENCE ACROSS MANHOLE" THIS SHEET.

SHALLOW SANITARY SEWER MANHOLE

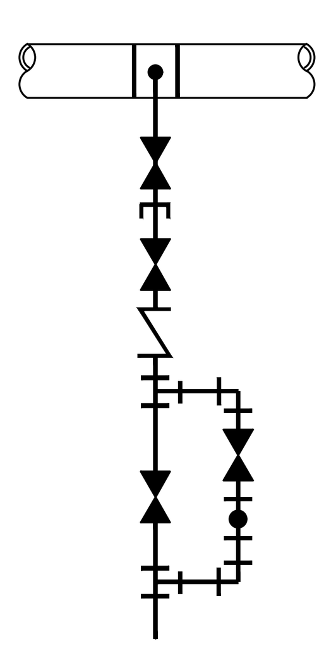


MATERIAL LIST

1. STAINLESS STEEL TAPPING SADDLE
2. 2" H.D. BRONZE BALL VALVE CORP STOP (FULL OPENING)
3. 2" SCH.80 FEMALE ADAPTER (S x FIPT)
4. 2" SCH.80 PIPE
5. 2", 90° SCH.80 BEND (S x S)
6. 2", 90° SCH.80 BEND (S x T)
7. 2" BRONZE BALL VALVE W/ LOCKING WING (SEE TABLE ON WATER SHEET)
8. 2" TRU-UNION PVC BALL CHECK VALVE
9. RUSSELL C.I. VALVE BOX W/ "SEWER" ON LID
10. 2" SCH.40 CAP (S)

NOTE: ENGINEER TO VERIFY THAT THE SIZE OF SERVICE IS ADEQUATE AND IS TO ADJUST ACCORDING TO HIS FINDING.

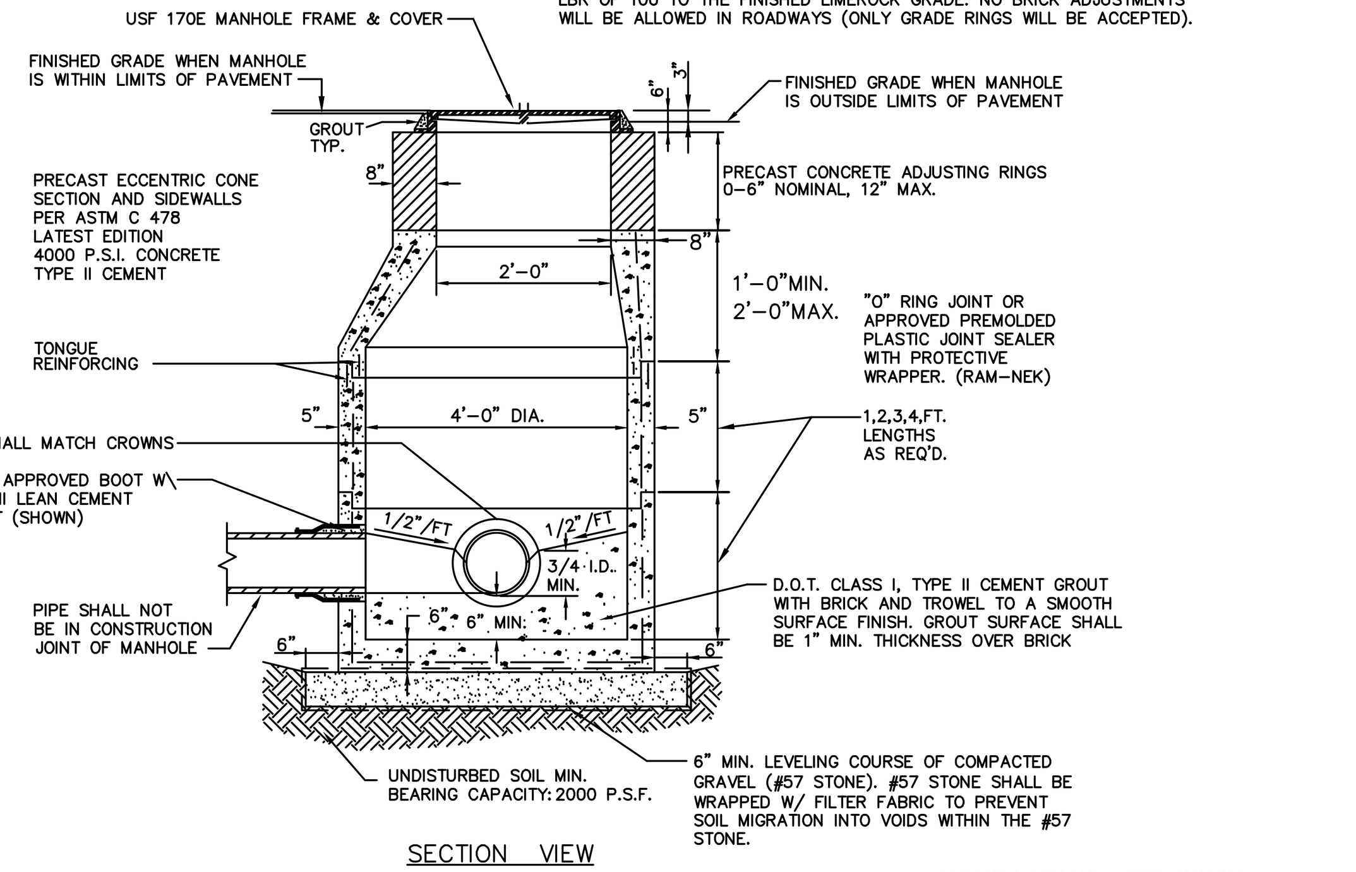
2" SEWAGE FORCE MAIN MANIFOLD SERVICE CONNECTION DETAIL FOR MEDIUM TO HIGH PRESSURE CONNECTION SYSTEMS



TOP VIEW

COMPACTION IN ROADWAYS AROUND MANHOLES

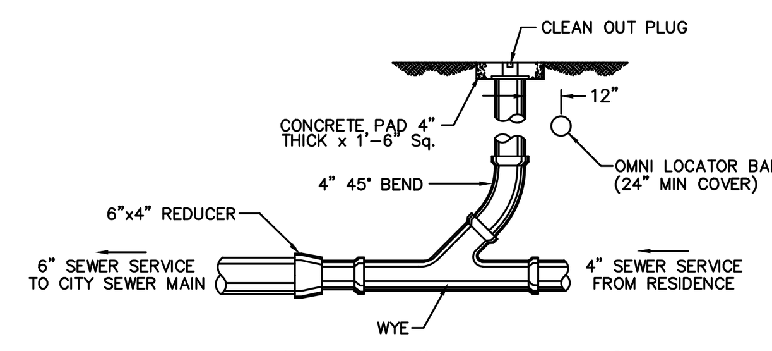
COMPACTION SHALL BE IN 12" LIFTS. THE LAST 18" WILL BE LIMEROCK, 2' AROUND MANHOLE TOP COMPACTED TO 98% MAXIMUM DENSITY WITH LBR OF 100 TO THE FINISHED LIMEROCK GRADE. NO BRICK ADJUSTMENTS WILL BE ALLOWED IN ROADWAYS (ONLY GRADE RINGS WILL BE ACCEPTED).



SANITARY SEWER MANHOLE

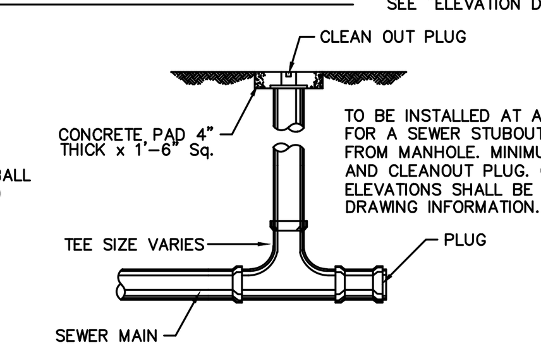
MANHOLE INVERTS DESIGN CRITERIA

FALL ACROSS MANHOLE FROM INFLUENT TO EFFLUENT OF IN LINE PIPES SHALL BE 0.05 FT. MIN. INFLUENT TO EFFLUENT PIPES THAT ARE AT AN ANGLE SHALL BE 0.10 SEE "ELEVATION DIFFERENCE ACROSS MANHOLE" THIS SHEET.



CLEANOUT DETAIL

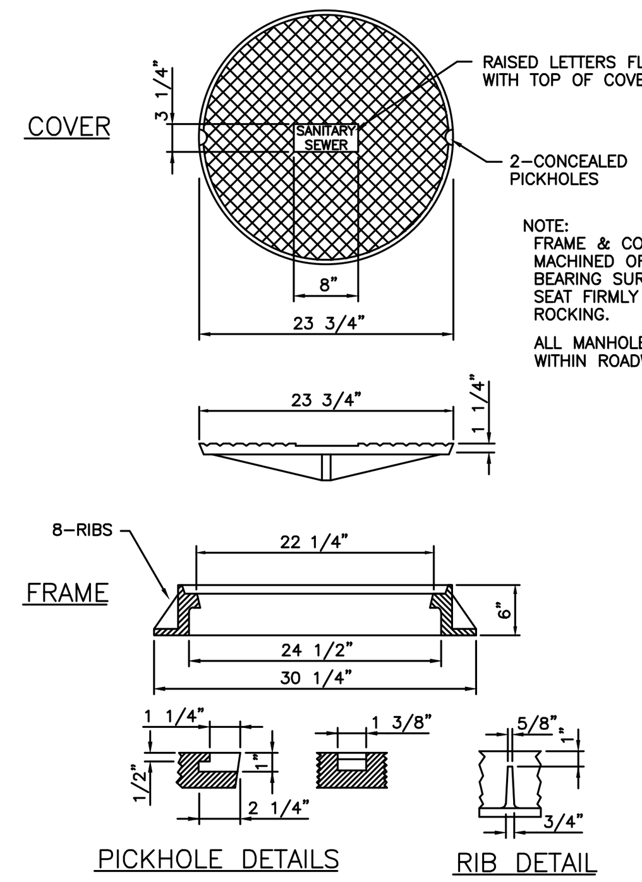
N.T.S.



TO BE INSTALLED AT ALL LOCATIONS CALLING FOR A SEWER STUBOUT REGARDLESS OF DISTANCE FROM MANHOLE. MINIMUM SIZE SHALL BE 6" PIPE AND CLEANOUT PLUG. CORRECT INVERT AND ELEVATIONS SHALL BE INCLUDED W/ THE AS-BUILT DRAWING INFORMATION.

STANDARD STUBOUT SURVEY ACCESSIBLE CLEANOUT

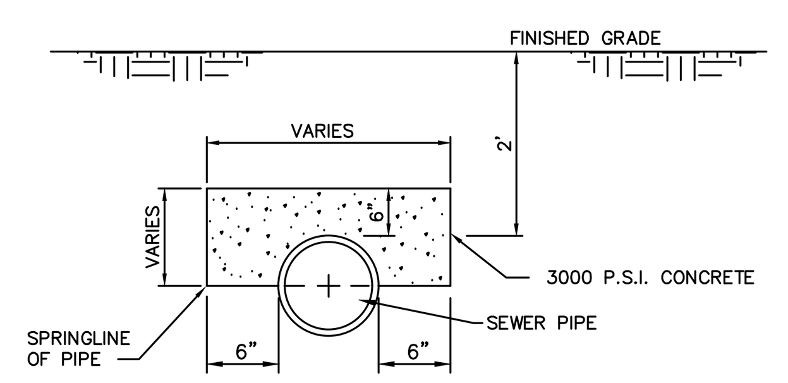
N.T.S.



NOTE:
FRAME & COVER SHALL BE MACHINED OR GROUND AT ALL BEARING SURFACES SO AS TO SEAT FIRMLY AND PREVENT ROCKING.
ALL MANHOLES INSTALLED WITHIN ROADWAY (see specifications)

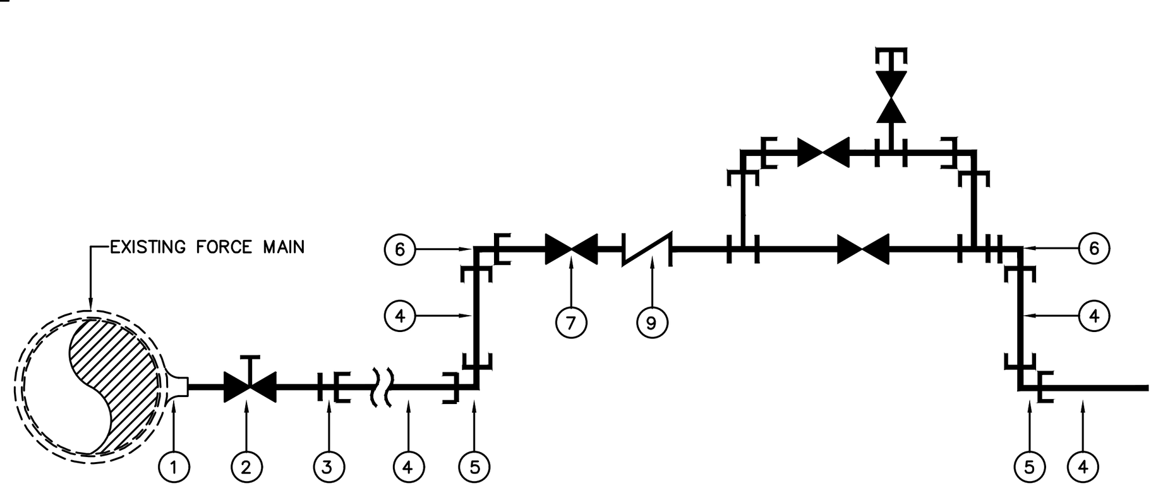
MANHOLE FRAME AND COVER SHALL BE USF CO. MOD. NO. 170E

SANITARY SEWER MANHOLE FRAME & COVER



REQUIRED WHERE TOP OF SEWER PIPE IS WITHIN 2' OF FINISHED GRADE UNLESS ALTERNATE DETAIL IS APPROVED BY THE CLAY COUNTY UTILITY AUTHORITY.

CONCRETE CAP FOR SEWER PIPES



MATERIAL LIST

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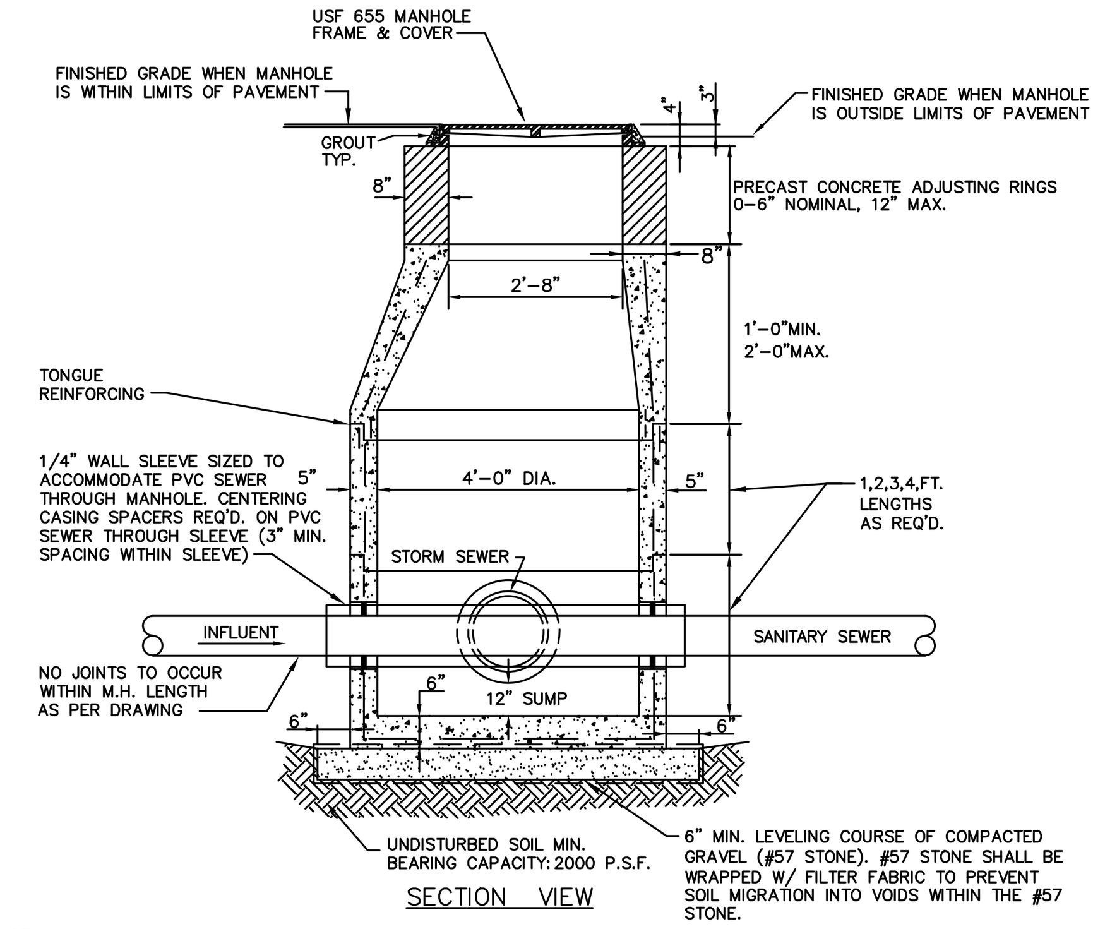
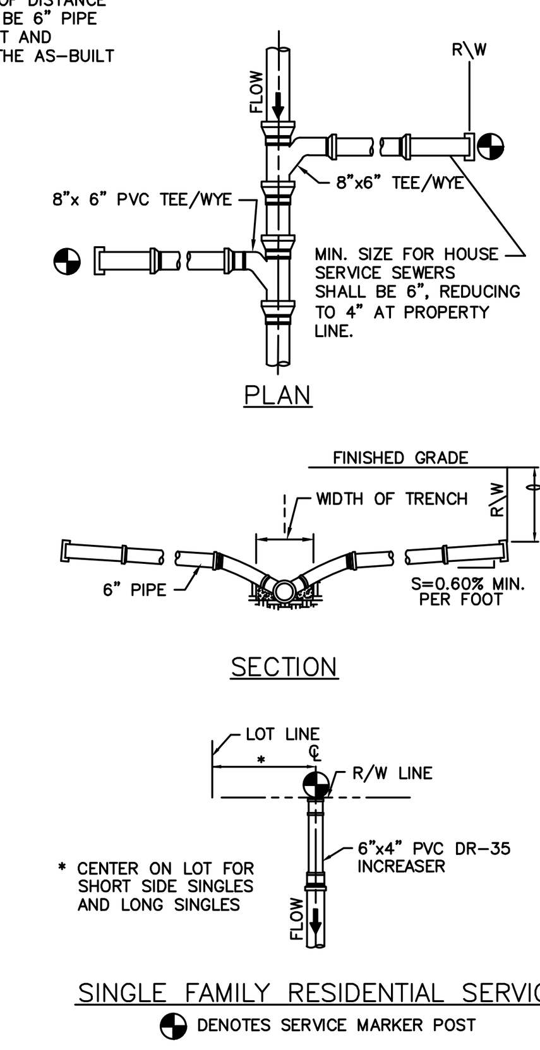
6. 2", 90° SCH.80 BEND (S x T)
7. (3) 2" BRONZE BALL VALVE CURB STOP W/ LOCKING WING (SEE TABLE ON WATER SHEET)
8. 2" TRU-UNION PVC BALL CHECK VALVE
9. RUSSELL C.I. VALVE BOX W/ "SEWER" ON LID
10. 2" SCH.40 CAP (S)
11. 2" TEE W/ 2 X 1/2" BUSHING
12. 1/2" STAINLESS STEEL NIPPLE W/ BALL VALVE & PLUG

NOTE: ENGINEER TO VERIFY THAT THE SIZE OF SERVICE IS ADEQUATE AND IS TO ADJUST ACCORDING TO HIS FINDING.

" SEWAGE FORCE MAIN MANIFOLD SERVICE CONNECTION / WITH PRESSURE GAUGE FITTING / FOR LOW PRESSURE RECEIVING SYSTEMS FOR CREATING ARTIFICIAL HEAD PRESSURE

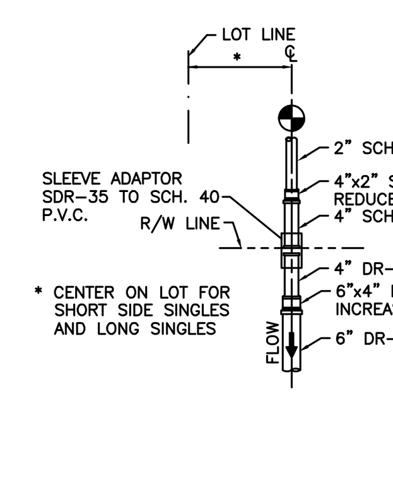


STORM CONFLICT MANHOLE

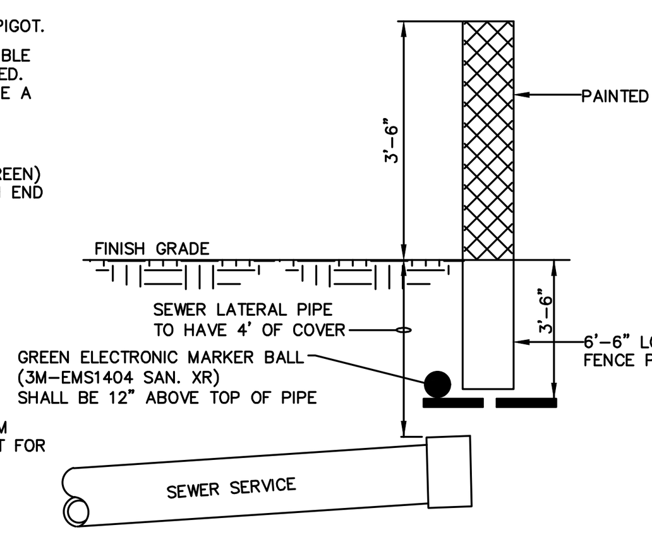


NOTE:
1. GRAVITY SEWER AND SERVICE PIPE SHALL BE INSTALLED WITH THE DIRECTION OF FLOW FROM SPIGOT TO BELL.
2. ALL TEE-WYES SHALL BE BELL-SPIGOT.
3. ALL TEE-WYES SHALL BE COMPATIBLE WITH SEWER PIPE BELLS BEING USED. SPIGOT END OF TEE-WYE SHALL BE A MINIMUM OF 2" BEYOND THE BELL GASKET WHEN "HOMED UP".
4. ALL SEWER SERVICE PIPES SHALL HAVE AN ELECTRONIC MARKER (GREEN) PLACED ON TOP OF PIPE AT EACH END OF PIPE.
5. DETAIL SHOWN IS FOR RESIDENTIAL CONNECTION. COMMERCIAL OR OTHER USE REQUIRING A 6" LATERAL CAN ELIMINATE THE 6"X4" REDUCER.

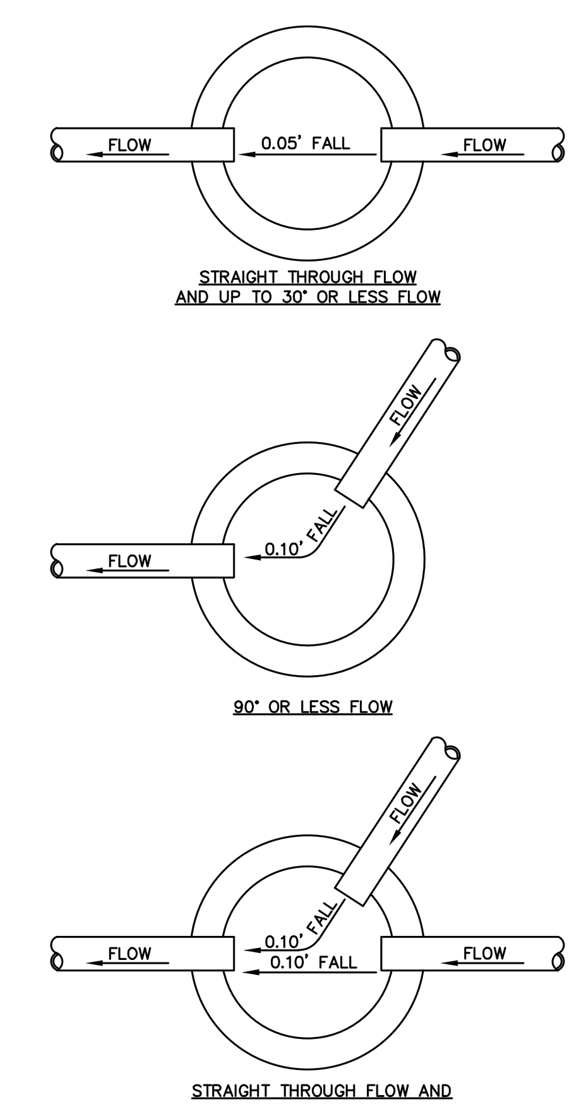
STANDARD SINGLE SEWER SERVICE LATERALS



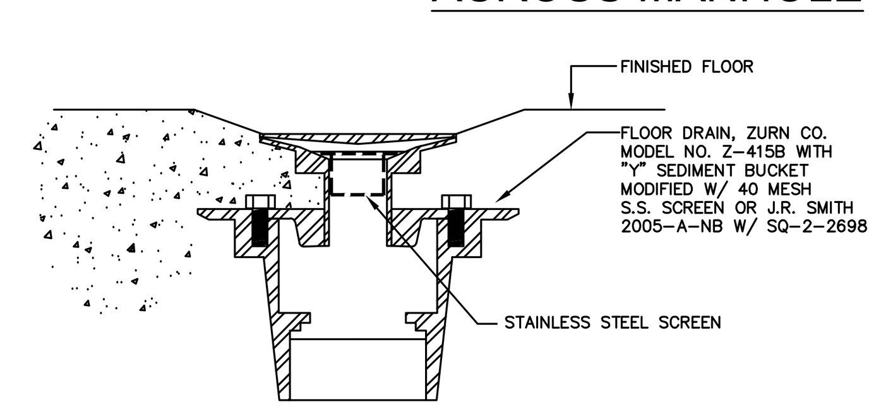
GRINDER PUMP STATION FORCE MAIN CONNECTION TO SINGLE GRAVITY SERVICE



SEWER SERVICE MARKER POST

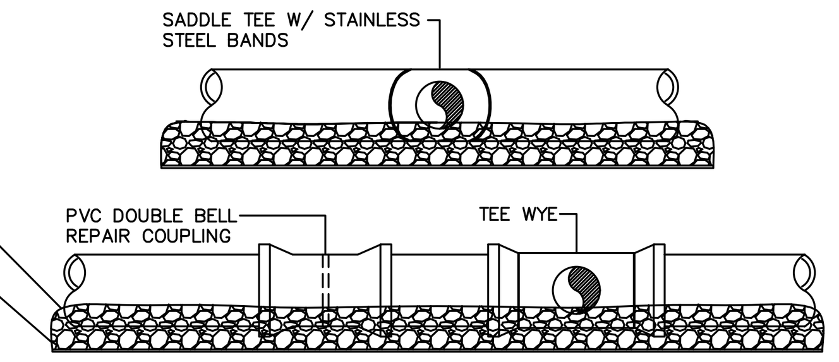


ELEVATION DIFFERENCE ACROSS MANHOLE



NOTE:
FACILITIES WITH FLOOR DRAINS AND WITHOUT A GREASE TRAP SHALL INSTALL THIS MODEL FLOOR DRAIN AND ONLY WITH PRIOR APPROVAL FROM THE CLAY COUNTY UTILITY AUTHORITY.

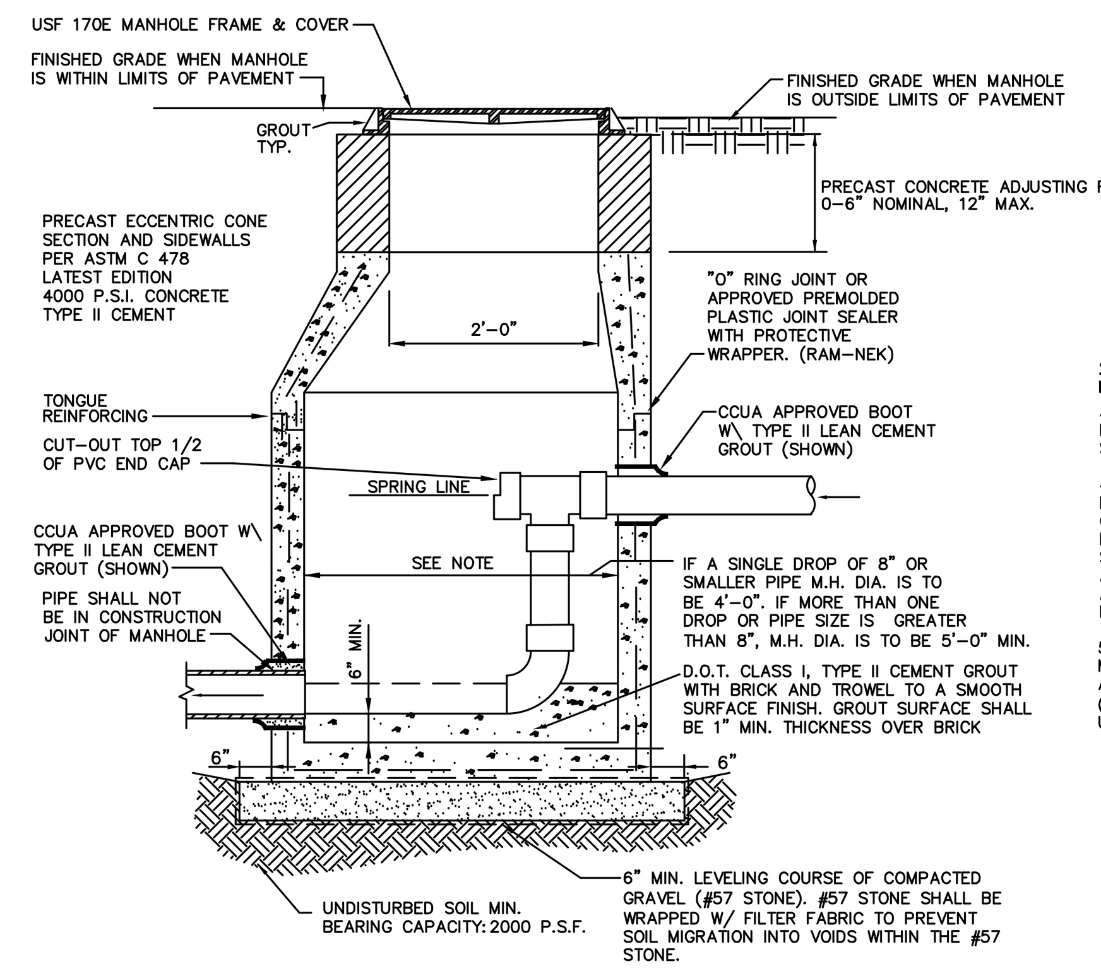
FLOOR DRAIN WITH STRAINER DETAIL



#57 STONE BACKFILL TIGHTLY COMPACTED TO SPRING LINE OF SEWER MAIN

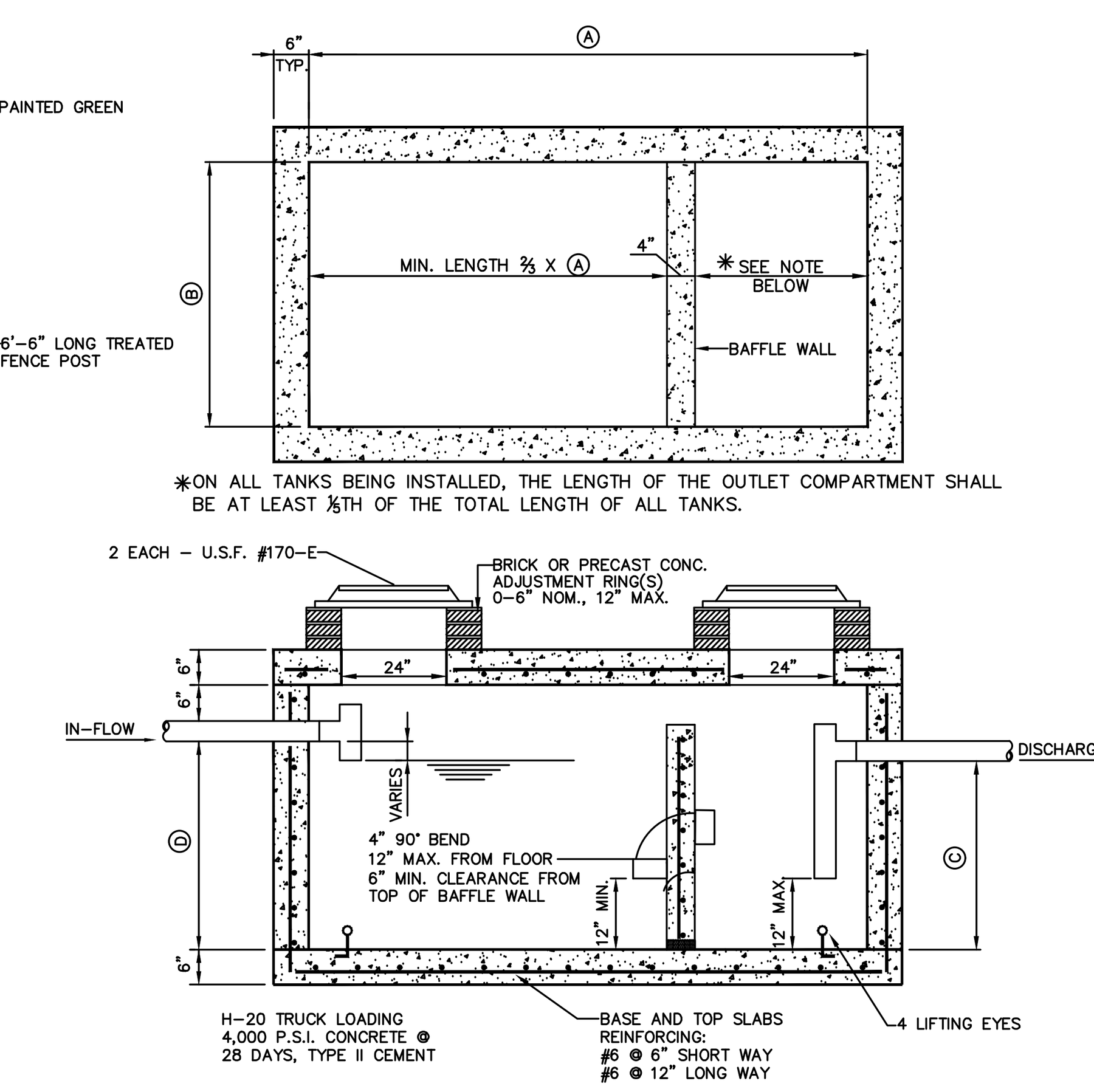
MIN. 6" #57 UNDER BOTTOM OF SEWER MAIN AND FITTING, COMPACTED TO GRADE PRIOR TO INSTALLING TEE WYE, AND REPAIR COUPLING STONE BACKFILL TO EXTEND MIN. OF 1.5' BEYOND ALL FITTINGS, AND UP TO SPRING LINE OF SEWER MAIN. COVER ALL OF THE ROCK BEDDING MATERIAL W/ FILTER FABRIC BEFORE CONTINUING BACKFILL. EXCAVATION TO BE DEWATERED AND DRY DURING ALL PHASES OF THE TAPPING OR CUTTING IN NEW WYE.

TAPPING OR CUTTING IN SERVICE LATERAL TO EXISTING SEWER MAIN



NOTE: FOR ADDITIONAL MANHOLE SPECIFICATIONS, SEE "SANITARY SEWER MANHOLE" DETAIL THIS SHEET. MAXIMUM ALLOWABLE DIFFERENCE IN INVERT ELEVATION WITHOUT INTERNAL DROP CONNECTION IS 24". SEE "ELEVATION DIFFERENCE ACROSS MANHOLE" THIS SHEET.

TYPICAL GRAVITY SEWER DROP PIPE CONNECTION TO MANHOLE



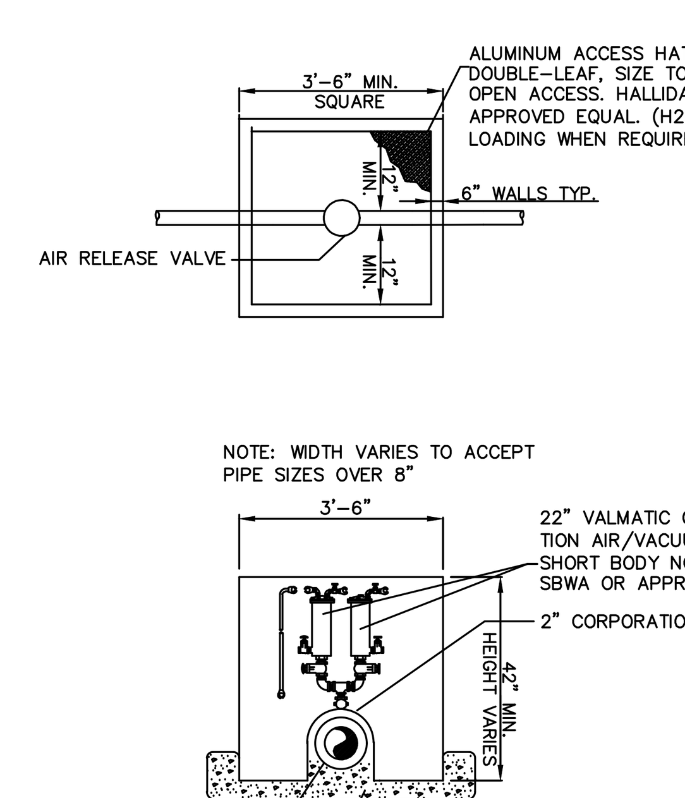
*ON ALL TANKS BEING INSTALLED, THE LENGTH OF THE OUTLET COMPARTMENT SHALL BE AT LEAST ⅓TH OF THE TOTAL LENGTH OF ALL TANKS.

CAPACITY IN GALLONS		
DIM	1,000 MIN.	1,250
A	7'-0"	10'-0"
B	5'-0"	4'-0"
C	4'-0"	4'-2"
D	5'-0"	5'-0"

COMPLIES WITH A.S.T.M. C-913, PRECAST CONCRETE WATER AND WASTEWATER STRUCTURES AND A.S.T.M. C-890, MINIMUM STRUCTURAL DESIGN LOADING FOR MONOLITHIC OR SECTIONAL PRECAST CONCRETE WATER AND WASTEWATER STRUCTURES

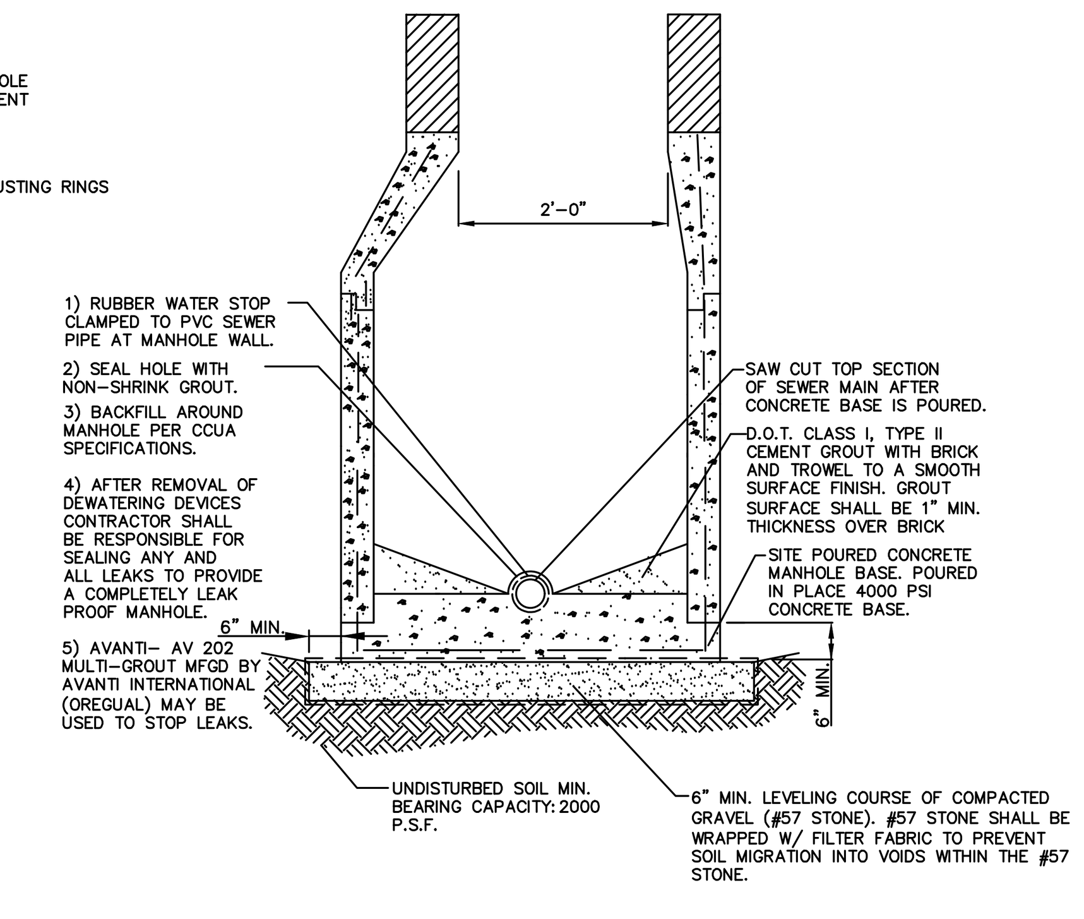
NOTES:
1. GREASE TRAP SHALL BE SIZED BY THE PROJECT ENGINEER USING THE ANTICIPATED PEAK FLOW OF WATER ENTERING THE GREASE TRAP IN ACCORDANCE WITH THE 2003 STATE OF FLORIDA BUILDING CODE – PLUMBING.
2. ROUND-UP TO MATCH THE CLOSEST CAPACITY IN GALLONS PER THE CHART.

GREASE INTERCEPTOR DETAIL



SANITARY SEWAGE FORCE MAIN AIR RELEASE VALVE VAULT

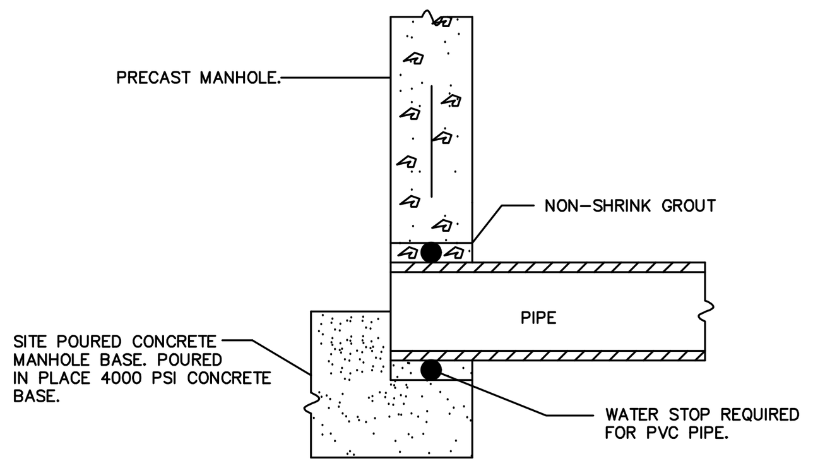
TO BE USED ON ALL PIPES 12" OR LARGER



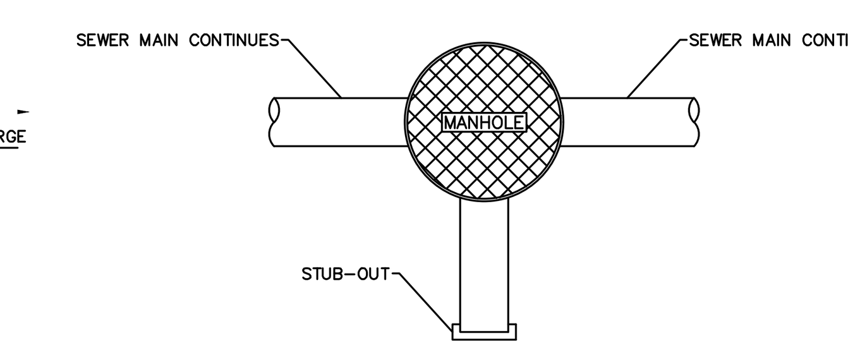
NOTE: 1) FOR ADDITIONAL MANHOLE SPECIFICATIONS, SEE "SANITARY SEWER MANHOLE" DETAIL THIS SHEET. MAXIMUM ALLOWABLE DIFFERENCE IN INVERT ELEVATION WITHOUT INTERNAL DROP CONNECTION IS 24".

SADDLE MANHOLE DETAIL

THIS DETAIL IS ONLY TO BE USED WITH SPECIFIC APPROVAL BY CITY OF GCS.



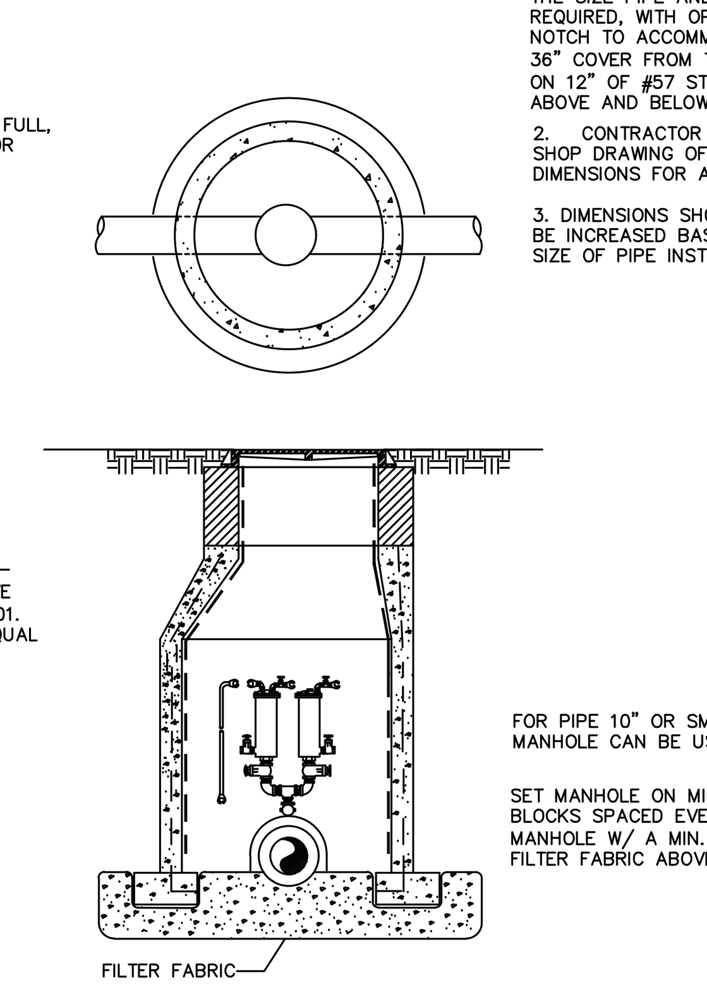
SADDLE MANHOLE DETAIL SECTION



PROCEDURES FOR CONNECTING TO A GRAVITY STUB

NOTE: BEFORE CONNECTING TO ANY GRAVITY STUB, EXCAVATE AND SHOOT THE ELEVATION OF THE STUB INVERT AND THE ELEVATION OF THE INVERT OF THE SAME PIPE COMING OUT OF THE IMMEDIATE DOWNSTREAM MANHOLE. MEASURE THE DISTANCE FROM THE MANHOLE TO THE STUB, CALCULATE THE PIPE GRADE. IF THE GRADE ON THE PIPE IS LESS THAN PLAN DESIGN THEN CONTACT THE C.G.C.S. PUBLIC WORKS DEPARTMENT AND THE PROJECT ENGINEER BEFORE PROCEEDING FURTHER. THE PROJECT ENGINEER AND THE C.G.C.S. PUBLIC WORKS DEPARTMENT WILL MAKE THE DECISION ON HOW TO RESOLVE THE DISCREPANCY BEFORE THE CONTRACTOR CAN PROCEED FURTHER.

NO WORK WILL BE ALLOWED ON A GRAVITY LINE UPSTREAM OF THE CONNECTION POINT TO THE C.G.C.S. SYSTEM WITHOUT PRIOR APPROVAL OF THE C.G.C.S. PUBLIC WORKS DEPARTMENT..



NOTES:
1. CONC. BOX SHALL BE 42" MIN. DEPTH BUT SHALL BE DEEP ENOUGH TO ACCOMMODATE THE SIZE PIPE AND TYPE OF AIR RELEASE VALVE REQUIRED, WITH OPEN BOTTOM, PRECAST WITH NOTCH TO ACCOMMODATE PIPE INSTALLED WITH 36" COVER FROM TOP OF PIPE TO FINISH GRADE, ON 12" OF #57 STONE. WITH FILTER FABRIC ABOVE AND BELOW THE STONE.
2. CONTRACTOR SHALL PROVIDE SHOP DRAWING OF BOX WITH DIMENSIONS FOR APPROVAL BY CITY.
3. DIMENSIONS SHOWN ARE MINIMUM AND SHALL BE INCREASED BASED UPON ACTUAL SIZE OF PIPE INSTALLED

FOR PIPE 10" OR SMALLER A 4' DIAMETER, NOTCHED MANHOLE CAN BE USED FOR AIR RELEASE VALVE.

SET MANHOLE ON MIN. OF 4 SOLID CONCRETE BLOCKS SPACED EVENLY AROUND THE MANHOLE W/ A MIN. OF 12"#57 STONE WITH FILTER FABRIC ABOVE AND BELOW THE STONE.

SANITARY SEWAGE FORCE MAIN AIR RELEASE VALVE VAULT

TO BE USED ON ALL PIPES 10" OR SMALLER

NO	DATE	BY	REVISION DESCRIPTION
1	FEB.2016	SS	GENERAL UPDATE

DESG ____
DRWN ____
CHKD ____
APRV ____
DATE ____

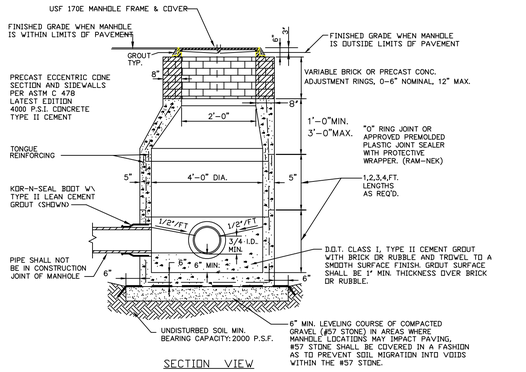
PROJECT:
STANDARD SEWER SYSTEM DETAILS

CITY OF GREEN COVE SPRINGS
321 WALNUT STREET
GREEN COVE SPRINGS, FLORIDA 32043

ACAD FILE NAME
SEWSTAND.DWG
SHEET NO.
C19
1 OF 1

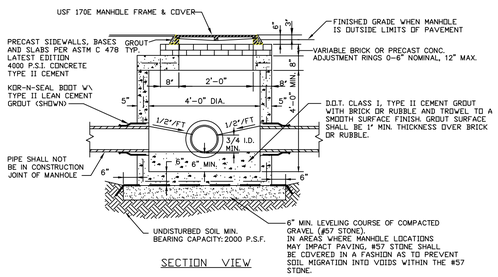
COMPACTION IN ROADWAYS AROUND MANHOLES

COMPACTION SHALL BE IN 12" LIFTS. THE LAST 18" WILL BE LIMEROCK, 2' AROUND MANHOLE TOP COMPACTED TO 98% MAXIMUM DENSITY WITH LBR OF 100 TO THE FINISHED LIMEROCK GRADE. NO BRICK ADJUSTMENTS WILL BE ALLOWED IN ROADWAYS (ONLY GRADE RINGS WILL BE ACCEPTED).



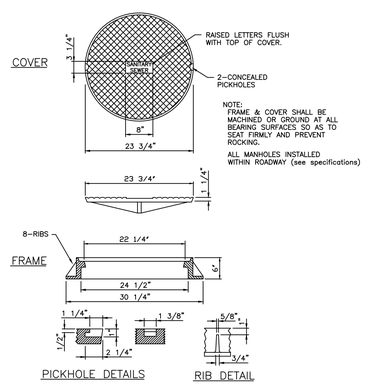
SECTION VIEW

SANITARY SEWER MANHOLE



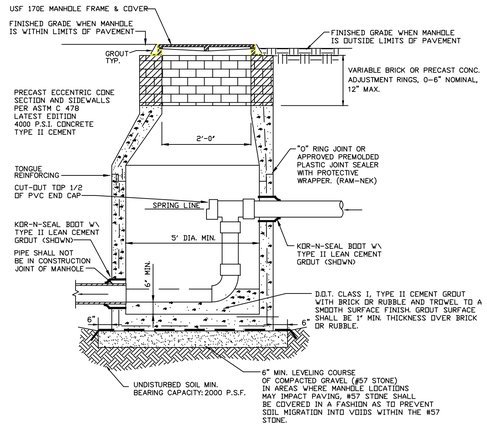
SECTION VIEW

SHALLOW SANITARY SEWER MANHOLE



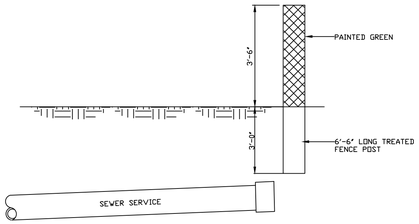
MANHOLE FRAME AND COVER SHALL BE USF CO. MOD. NO. 170E

SANITARY SEWER MANHOLE FRAME + COVER

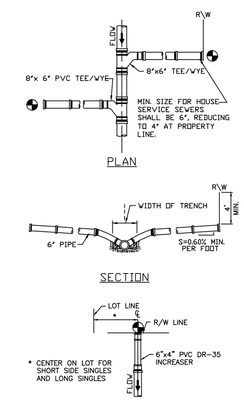


NOTE: FOR ADDITIONAL MANHOLE SPECIFICATIONS, SEE "SANITARY SEWER MANHOLE" DETAIL THIS SHEET.
MAXIMUM ALLOWABLE DIFFERENCE IN INVERT ELEVATION WITHOUT INTERNAL DROP CONNECTION IS 24".

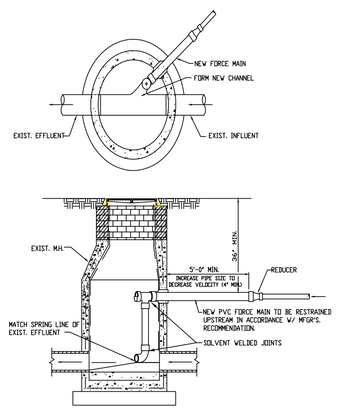
TYPICAL GRAVITY SEWER DROP PIPE CONNECTION TO MANHOLE



SEWER SERVICE MARKER POST



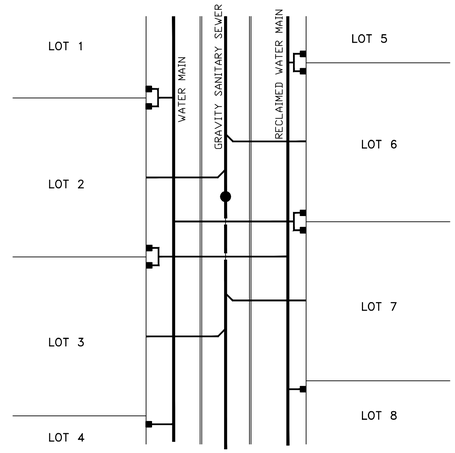
STANDARD SINGLE SEWER SERVICE LATERALS



TYP. FORCE MAIN CONNECTION TO MANHOLE

NOTE: 1. THIS MANHOLE AND THE NEXT TWO MANHOLES DOWNSTREAM (AS REQUIRED BY UTILITY) ARE TO HAVE POLYETHYLENE LINER AS MANUFACTURED BY TAYLOR PRECAST CO. OR APPROVED EQUAL.

2. SIZE OF DROP PIPE CONNECTION TO MANHOLE SHALL BE DESIGNED BY THE PROJECT ENGINEER. MINIMUM SIZE SIZE SHALL BE 4". CONNECTION AND DROP PIPE SHALL BE SIZED TO REDUCE THE VELOCITY AND PREVENT "SPLASHOVER" WITHIN THE MANHOLE. 5'-0" MINIMUM DISTANCE FROM MANHOLE TO REDUCER MAY BE INCREASED TO ASSIST IN THIS VELOCITY REDUCTION.



TYPICAL WATER AND SEWER SERVICE LOCATION PLAN

1.) ALL WATER AND REUSE DOUBLE SERVICES ON PROPERTY LINE.
2.) ANY SINGLE WATER OR REUSE SERVICE LINES ON LOT LINE.
3.) ALL SEWER SERVICES ARE TO CENTER OF LOTS.

NO	DATE	BY	REVISION DESCRIPTION
1	FEB.2016	SS	GENERAL UPDATES

DRWN
CHKD
APRV
DATE

GRAVITY SEWER SERVICE DETAILS

CITY OF
GREEN COVE SPRINGS
321 WALNUT STREET
GREEN COVE SPRINGS, FLORIDA 32043

ACAD FILE NAME
SERVICES.DWG
SHEET NO.
C20
1 OF 1