

Prepared By: Shantel W. Ocampo, Counsel, Duke Energy
Return To: Duke Energy Florida, LLC
Data & Document Management
452 East Crown Point Road, WG13
Winter Garden, FL 34787

Property No.: 107830,
108109, 108486, 108487,
108712, 108783, 108108,
108109
Land Unit No.: 1187380 &
1198554

STATE OF FLORIDA

ENCROACHMENT AGREEMENT

COUNTY OF SEMINOLE

THIS ENCROACHMENT AGREEMENT (“Agreement”), made this _____ day of _____, 2026 (“Effective Date”) by and between **DUKE ENERGY FLORIDA, LLC**, a Florida limited liability company (“Grantor”), and **SEMINOLE COUNTY**, a charter county and political subdivision of the State of Florida, whose address is 1101 East First Street, Sanford, Florida 32771. (“Grantee”).

WHEREAS, Grantor owns an easement and right of way of one hundred feet (100’) in total width (the “Easement Area”) pursuant to that certain document recorded in Official Records Book 117 at Page 96, Official Records Book 149 at Page 364, Official Records Book 149 at Page 365, Official Records Book 149 at Page 368, Official Records Book 149 at Page 369, and Official Records Book Page 149 at Page 372, in the Public Records of SEMINOLE County, Florida, (the “Easement Documents”) that permits the construction, operation, and maintenance of electric facilities (“Facilities”) on certain property located in Seminole County, Florida;

WHEREAS, Grantee has placed (or caused to be placed) **utility infrastructure including, but not limited to, a sewer pump station, force mains, gravity mains, manholes, and water mains (“Existing Encroachments”)** within the Easement Area which encroach upon a portion of the Easement Area for the provision of public utility purposes , and Grantor acknowledges it has permitted and allowed the Existing Encroachments to remain and operate within the Easement Area in the locations shown on Exhibit “A”, attached hereto and incorporated herein by reference; and

WHEREAS, Grantee will place (or cause to be placed) **flow meter assembly(s), valves, associated gates and fencing, and any other associated facilities or equipment (“Additional Encroachments”)** within the Easement Area, as shown in Exhibit “A”, and desires authority to encroach upon a portion of the Easement Area for the purposes described herein; and

WHEREAS, Grantor is willing to permit the Existing Encroachments and Additional Encroachments within the Easement Area pursuant to the terms and conditions of this Agreement.

NOW, THEREFORE, Grantor for and in consideration of the sum of Ten and No/100 Dollars (\$10.00) and other valuable consideration to it paid by Grantee, the receipt and sufficiency of which are hereby acknowledged, does hereby grant unto Grantee, the non-perpetual right to

encroach upon the identified portions of the Easement Area as described herein and shown on Exhibit "A" pursuant to the following terms and conditions:

1. **Permitted Encroachments.** Grantor agrees to allow Grantee to encroach upon the Easement Area for the installation, maintenance, repair, replacement, and operation of the Existing Encroachments and the Additional Encroachments over those portions of the Easement Area identified in Exhibit "A" showing the locations of the Existing Encroachments and the Additional Encroachments (whether one or more, collectively and individually the "Permitted Encroachments")
2. **Alterations.** The Permitted Encroachment must be constructed in strict compliance with the design shown on the plans identified as Rinehart Rd. Force Main Valves and Flow Meter Installation, by CPH LLC (the "Plans"). No alterations from the Plans may be made during or after the construction of the Permitted Encroachments, other than to make the Permitted Encroachments take up less of the footprint shown on the Plans, to make them closer to ground level within the footprint shown on the Plans or with approval by Grantor, which will not be unreasonably withheld. Compliance with the Plans and these limitations on alterations are necessary and essential to render Grantee's use of Easement Area consistent with the safe, reliable, and efficient construction, operation, and maintenance of the existing and future Facilities located on the Easement Area.

All applicable Federal, State, and Local laws, rules, and regulations, and the then existing Transmission Line Asset Protection Guidelines govern any alterations to the Permitted Encroachments, including, without limitation, any minimum distances that must be maintained from the Facilities. Nothing in this Agreement may be construed to permit changes in elevation of grade to occur other than as expressly allowed or required on the Plans or in this Agreement.

Grantor may, from time to time, require Grantee to install, at Grantee's expense, radio frequency identification markers on the Permitted Encroachments. Such markers must meet Grantor's specifications for installation and operation.

3. **Reaffirmation.** Notwithstanding anything to the contrary herein, by executing this Agreement the parties reaffirm the terms of the Easement Documents and acknowledge that this Agreement does not permanently alter, limit, or amend those terms. This Agreement only identifies the Permitted Encroachments as non-hostile and permits them to be installed and remain pursuant to the terms of this Agreement. This Agreement does not constitute a transfer of an interest in land or Grantor's rights granted in the Easement Documents.

To the extent the Easement Area constitutes the public right-of-way of Grantee, this Agreement in no way alters or diminishes Grantor's responsibility to comply with all applicable laws for such public right-of-way, including Chapter 75 of the Seminole County Land Development Code concerning right-of-way use permitting.

4. **Wetlands and Vegetation.** The Easement Area may not be used by Grantee to satisfy wetland mitigation requirements. Grantee shall not plant any trees or shrubbery in the Easement Area without prior written approval from Grantor.

5. **Grantor Free From Liability.** Grantor will not be liable for any damages to the Permitted Encroachment resulting from Grantor's use of the Easement Area, nor for any damage to landscaping, driveways, or irrigation systems that may result from Grantor's access to the Easement Area.

6. **Additional Consent May Be Required.** Grantor makes no warranties or representations as to Grantee's contemplated use of the Easement Area, and in no way may be deemed to have consented to such use on behalf of the owner of the property on which the Easement Area exists. Grantee acknowledges that Grantor's entering into this Agreement does not, by itself, grant any rights to Grantee to use any portion of the Easement Area, and that the consent of other parties (including, without limitation, the owner of the property and any mortgagee of such owner) may be required for Grantee to obtain any rights over the property encumbered by the Easement Area.

7. **Grantee's Sole Risk and Expense.** Grantee acknowledges that the use of the Easement Area will be at Grantee's sole risk and expense. Grantor will in no way be liable to Grantee for any costs, expenses, losses, damages, or liabilities incurred by Grantee's use of the Easement Area. Subject to the monetary and other limitations of Section 768.28, Florida Statutes, as this statute may be amended from time to time, which limitations are deemed to apply to this Agreement regardless of whether the nature of the liability is based on tort, contract, or otherwise, Grantee shall indemnify and hold harmless Grantor, its affiliates, subsidiaries, members, managers, officers, agents, employees, successors and assigns (collectively, "Grantor Parties") from liabilities, damages, losses and costs, including, but not limited to, reasonable attorney's fees, to the extent caused by the negligence, recklessness, or intentional wrongful misconduct of Grantee and persons employed or utilized by Grantee in the performance of this Agreement. Grantee's indemnity obligations will survive the termination of this Agreement.

All of Grantee's operations, activities, and equipment used within the Easement Area or in proximity to any of the Facilities must, at all times, be in strict compliance with applicable provisions of the National Electrical Safety Code (NESC), the Occupational Safety and Health Act of 1971 (OSHA), and the OSHA Crane Construction Standards For Power Line Safety, Sections 1926.1408 & .1409. Grantee is further notified and hereby agrees to so notify any of Grantee's employees, agents, contractors, representatives, or other persons engaging in Grantee's activities upon the Easement Area with Grantee's knowledge and under Grantee's supervision or control, that extreme caution is necessary around the Facilities, and in the event of any damages or injuries, Grantee shall immediately report the nature and extent thereof to Grantor's nearest local office or corporate toll free number.

Grantee shall not use any equipment within the Easement Area that is capable of extending over twelve (12) feet in height above natural ground surface level without prior written approval from Grantor unless an observer, approved by Grantor, is present during the use. Grantee shall bear all costs associated with the observer.

8. **Transferability.** The rights granted and retained under this Agreement inure to the benefit of the heirs, successors, and assigns of the parties, and will run with the land.

9. **Notice.** Any notices and other communications required under this Agreement or relating hereto must be in writing and delivered via personal delivery, certified United States mail (return receipt requested), or overnight delivery through a reputable carrier to:

Grantor: Duke Energy Florida, LLC
Attn: Transmission Asset Protection
299 1st Ave N.
St. Petersburg, Florida 33701

Grantee: Seminole County
Attn: Director, Seminole County Utilities Department
1101 East First Street
Sanford, Florida 32771

10. **Termination.** This Agreement will terminate or may be terminated in the following instances.

a. If construction of the Permitted Encroachment does not begin within twelve (12) months of the Effective Date, and continue thereafter at a reasonable pace, then this Agreement will automatically terminate.

b. If at any point following the Effective Date, Grantor, in its sole discretion, determines that the Permitted Encroachment needs to be removed in order to continue furnishing safe and reliable electric service to its customers, then upon six (6) months' notice from Grantor, Grantee will remove the Permitted Encroachment at the sole expense of Grantee.

c. If Grantee violates any provision of this Agreement, then Grantor may terminate this Agreement with written notice to Grantee. If the violation is non-material then Grantee will be entitled to six (6) months to remove the Permitted Encroachment following notice of Grantor's termination. If the breach is material, then such termination will be immediate. Without limitation, the parties agree that Sections 1, 2, 3, and 4 are material.

d. If Grantee removes or reduces the size of any Permitted Encroachment, it will not be entitled to restore or expand the Permitted Encroachment to its original size as of the Effective Date. If the Permitted Encroachment is removed in full then this Agreement will automatically terminate.

11. **Recitals.** The recitals set forth at the opening of this Agreement are incorporated herein as if fully restated in this Section 11.

12. **Law and Venue.** This Agreement is governed by the laws of the State of Florida without regard to the conflicts of law provisions therein. The parties agree that the proper venue

for any dispute related to this agreement are the state or federal courts located in Seminole County, and the parties hereby submit to the jurisdiction thereof.

13. **Entire Agreement.** This Agreement contains the complete understanding of the parties and supersedes any prior and contemporaneous communications, agreements, and assurances related to the subject matter of this Agreement. Any modification of this Agreement must be agreed to in writing and signed by the parties. This Agreement may be executed in any number of counterparts, each of which will be deemed an original, but all of which together constitute but one and the same Agreement.
14. **No Waiver.** The failure of Grantor in any one or more instances to insist upon compliance with any provision or covenant herein or to exercise any right or privilege herein will not constitute or be construed as a waiver of such or any similar provision or covenant.
15. **Severability.** If any term of this Agreement is to any extent illegal, otherwise invalid, or incapable of being enforced, such term will be excluded to the extent of such invalidity or unenforceability. All other terms of this Agreement will remain in full force and effect. To the extent permitted and possible, the invalid or unenforceable term will be deemed replaced by a term that is valid and enforceable and that comes closest to expressing the intention of such invalid or unenforceable term.
16. **Cost Recovery.** In the event of litigation over this Agreement, the prevailing party in such litigation will be entitled to recover from the other party the prevailing party's reasonable costs, including attorneys' fees, incurred in bringing or defending any action or proceeding related to this Agreement.
17. **No Third-Party Beneficiaries.** Nothing in this Agreement operates to create any rights in any third parties to this Agreement, there are no third-party beneficiaries to this Agreement, and no third party to this Agreement will be entitled to assert a claim against any of the parties to this Agreement based upon this Agreement.
18. **Headings and Captions.** All headings and captions contained in this Agreement are provided for convenience only, do not constitute a part of this Agreement, and may not be used to define, describe, interpret, or construe any provision of this Agreement.

(Remainder of page intentionally blank. Signature pages follow.)

IN WITNESS WHEREOF, the parties hereby have affixed their names under seal by their duly authorized officers the day and year first above written.

GRANTOR:

Witnesses:

DUKE ENERGY FLORIDA, LLC, (SEAL)
a Florida limited liability company

By: _____ (SEAL)

Name: _____

Name: Karen Adams

Address: _____

Title: Manager, Land Services – Florida Region



Name: _____

Address: _____

STATE OF FLORIDA

COUNTY OF _____

The foregoing instrument was acknowledged before me this ____ day _____, 2026 by Karen Adams, as Manager, Land Services – Florida Region of DUKE ENERGY FLORIDA, LLC, a Florida limited liability d/b/a Duke Energy, on behalf of said company. She is personally known to me or has produced _____ as identification.

(Affix Seal) _____
Print Name: _____
My Commission Expires: _____

[Signatures Continue on Following Page]

BOARD OF COUNTY COMMISSIONERS
SEMINOLE COUNTY, FLORIDA

ATTEST:

GRANT MALOY
Clerk to the Board of
County Commissioners of
Seminole County, Florida.

By: _____
ANDRIA HERR, Chairman

Date: _____

For the use and reliance of
Seminole County only.

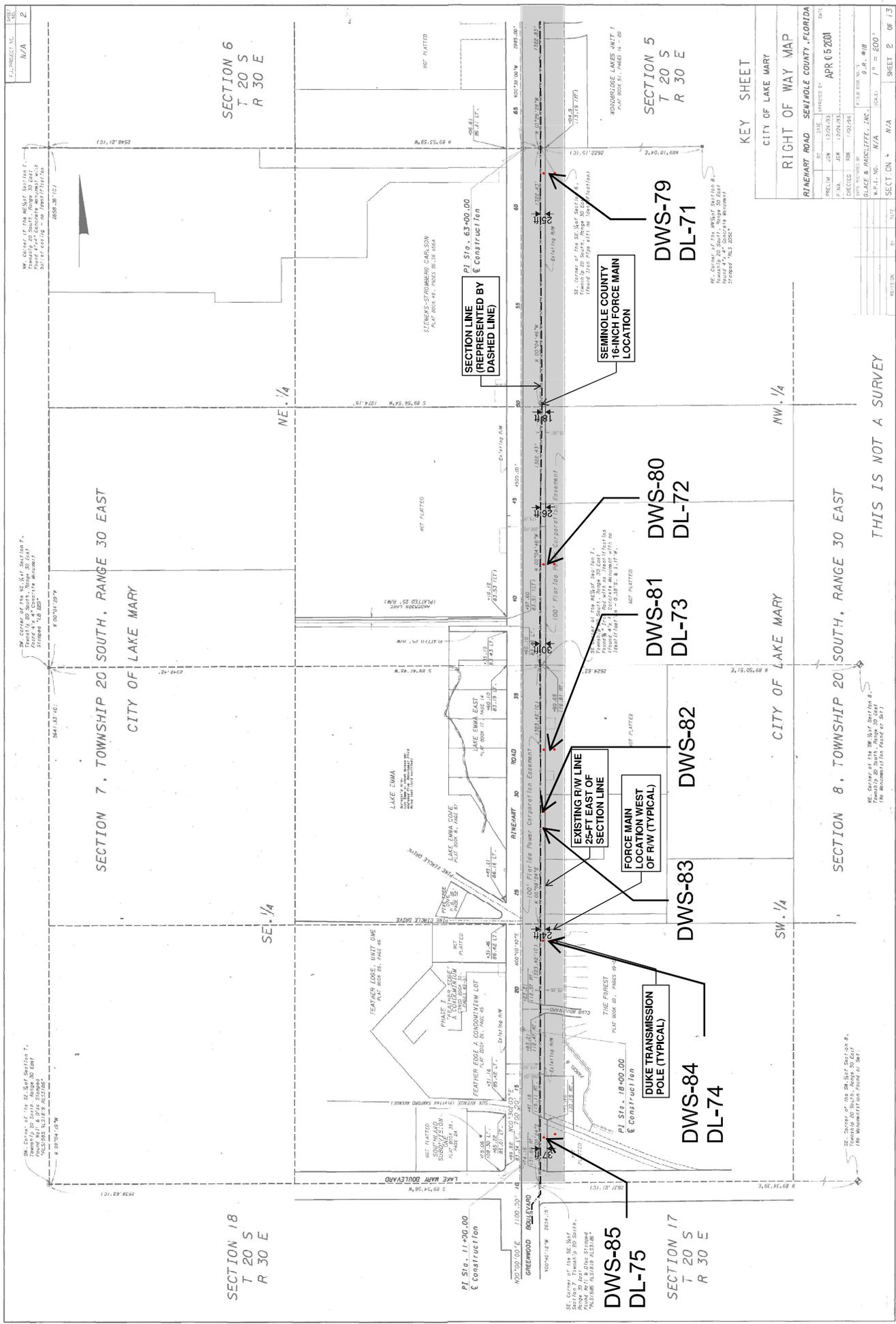
As authorized for execution by the Board of
County Commissioners at its _____,
20___, regular meeting.

Approved as to form and
legal sufficiency.

County Attorney

Attachment:

Exhibit "A" Existing and Encroachments and Additional Encroachments



FILE NAME = KENRHW01.DGN
 DATE = 6/4/97
 ROTATION =
 CAD OPERATOR =

THIS IS NOT A SURVEY

SECTION 18
 T 20 S
 R 30 E

SECTION 7
 T 20 S
 R 30 E

SECTION 5
 T 20 S
 R 30 E

SECTION 6
 T 20 S
 R 30 E

SECTION 17
 T 20 S
 R 30 E

SECTION 8
 T 20 S
 R 30 E

SECTION 18
 T 20 S
 R 30 E

PROJECT NO. N/A
 SHEET NO. 2

CITY OF LAKE MARY
 RINEHART ROAD

SEMINOLE COUNTY, FLORIDA
 APPROVED BY: APR 05 2001

DESIGNED BY: J. R. #18
 CHECKED BY: J. R. #18
 DATE: 4/5/97

SCALE: 1" = 200'
 SHEET 2 OF 13

KEY SHEET

THIS IS NOT A SURVEY

SECTION 18
 T 20 S
 R 30 E

SECTION 7
 T 20 S
 R 30 E

SECTION 5
 T 20 S
 R 30 E

SECTION 6
 T 20 S
 R 30 E

SECTION 17
 T 20 S
 R 30 E

SECTION 8
 T 20 S
 R 30 E

City of Lake Mary
SECTION 6, TOWNSHIP 20 SOUTH, RANGE 30 EAST

SECTION 31
TOWNSHIP 19 SOUTH
RANGE 30 EAST

SECTION 32
TOWNSHIP 19 SOUTH
RANGE 30 EAST

SECTION 5, TOWNSHIP 20 SOUTH, RANGE 30 EAST

CITY OF LAKE MARY

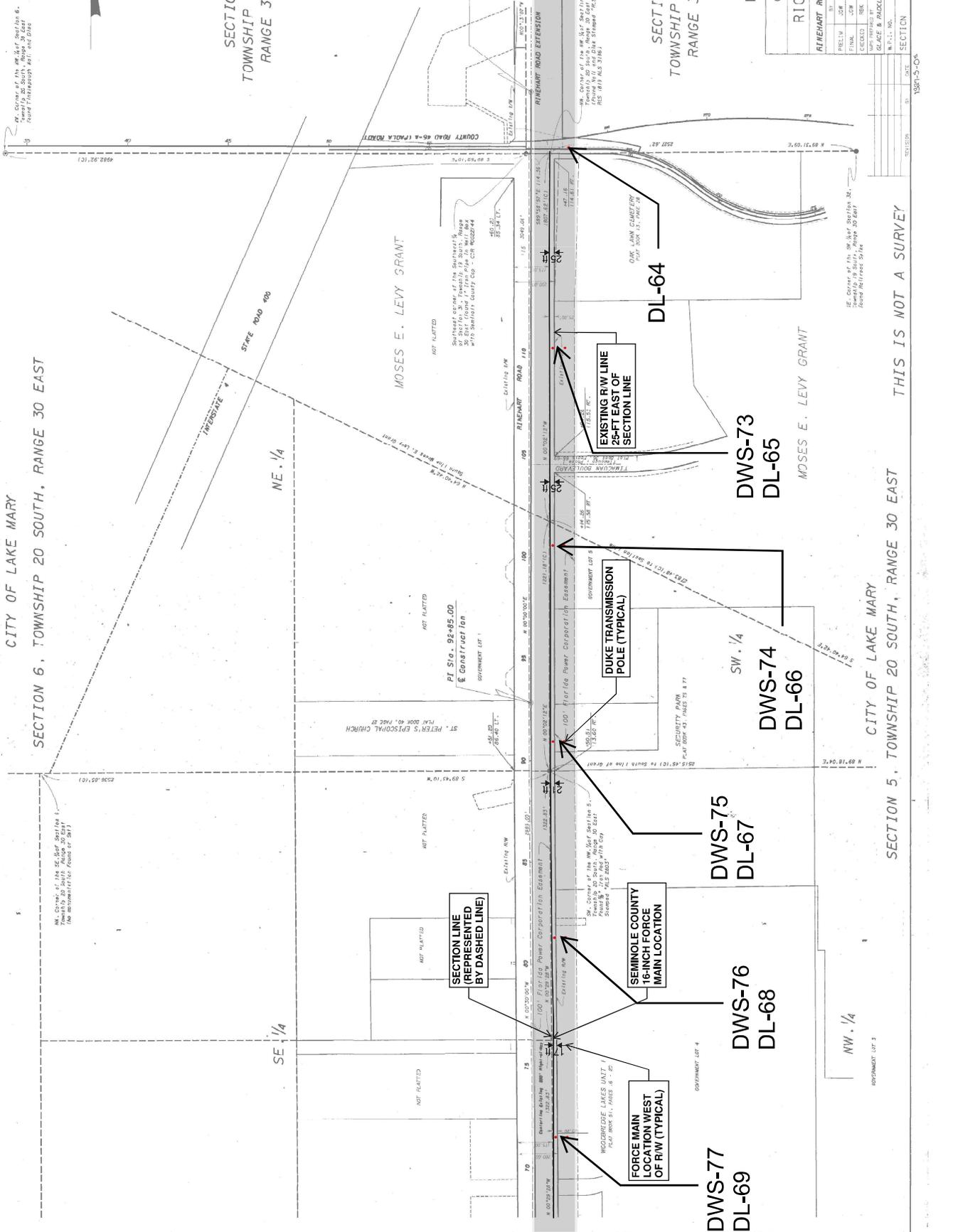
RIGHT OF WAY MAP

APPROVED BY: APR 05 2001

FILED IN: 12/29/00

DATE: 8/4/97

FILE NAME: KEWIRW02.DGN



THIS IS NOT A SURVEY

CITY OF LAKE MARY

SECTION 5, TOWNSHIP 20 SOUTH, RANGE 30 EAST

SECTION 31

SECTION 32

KEY SHEET

CITY OF LAKE MARY

RIGHT OF WAY MAP

APPROVED BY: APR 05 2001

FILED IN: 12/29/00

DATE: 8/4/97

FILE NAME: KEWIRW02.DGN

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SECTION 31

SECTION 32

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RIGHT OF WAY MAP

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KEY SHEET

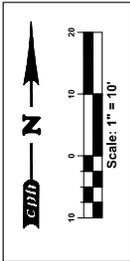
CITY OF LAKE MARY

RIGHT OF WAY MAP

APPROVED BY: APR 05 2001

FILED IN: 12/29/00

DATE: 8/4/97



PANEL DSR 18-20-20-04-0000-0000
OWNER: BENEIT, LARRY E. DUFFETT & BENEIT, LARRY E.
ADDRESS: 1411 E. RICHMOND STREET
LOT 57
CREATED: 04/11/2016
FR 23, 205 86 & 87

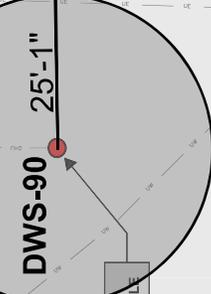
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CREATED: 04/11/2016
FR 23, 205 86 & 87

EXISTING GENERATOR

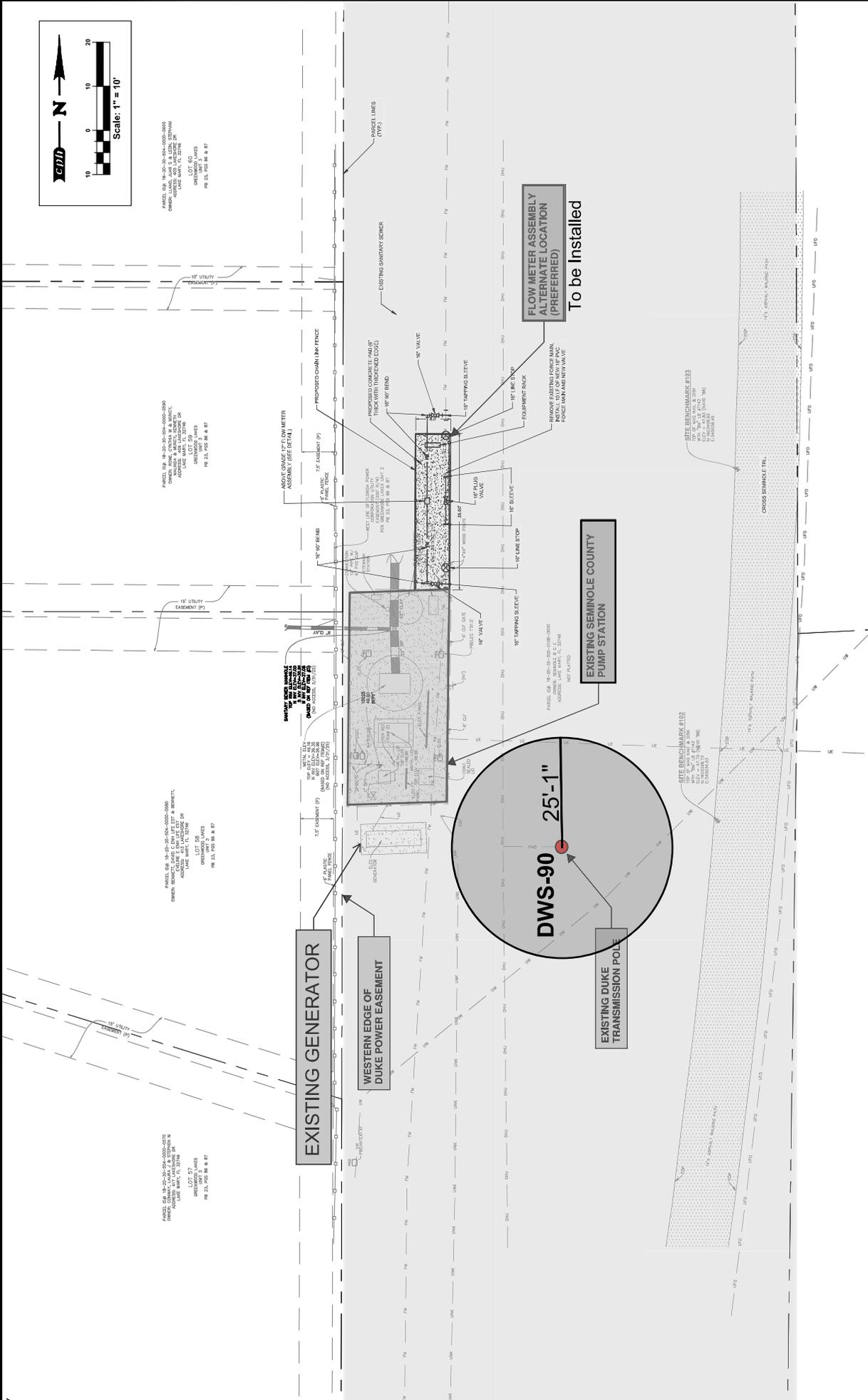
WESTERN EDGE OF DUKE POWER EASEMENT



EXISTING DUKE TRANSMISSION POLE

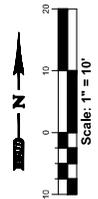
EXISTING SEMINOLE COUNTY PUMP STATION

FLOW METER ASSEMBLY ALTERNATE LOCATION (PREFERRED) To be Installed



<table border="1"> <tr><th>Rev</th><th>Date</th><th>Revision</th></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </table>	Rev	Date	Revision										<p>Prepared by: gph www.gphcorp.com</p>	<p>Checked by: COMMUNITAS TOGETHER 1111 East Richmond Street Tampa, FL 33604 PH: 813.252.8152 © 2022</p>	<p>Checked by: CRH CONSULTING, LLC A Full Service A.E.F.Firm 1411 E. Richmond Street Tampa, FL 33604 PH: 813.252.8152 © 2022</p>	<p>Checked by: W. SCHWARTZ W. SCHWARTZ R. MASSE L. MASSE Date: 4/20/22 Job No.: 1599105</p>	<p>RINEHART RD FORCE MAIN VALVES AND FLOW METER INSTALLATION SEMINOLE COUNTY</p>	<p>Sheet No. C4.0</p>
Rev	Date	Revision																

THIS SHEET IS VALID FOR CONSTRUCTION WITHOUT COMPLETE SET OF PLANS.



TRAIL CLOSURE ALLOWED AT NIGHT ONLY, DURING DAYLIGHT HOURS. THE TRAILS TO BE OPEN FOR USE, AS APPLICABLE, SHALL BE MAINTAINED IN SUCH A MANNER AS TO BE SAFE FOR USE. SUCH TEMPORARY SURFACE MATERIAL AS APPROVED BY THE ENGINEER SHALL BE MAINTAINED AS APPROVED BY THE ENGINEER TO MAINTAIN THE TEMPORARY SURFACE UNTIL FINAL PAVING OCCURS.

RINEHART
 (200' NORTH) SEE S
 FILE NAME-A

STMH
 TOP ELEV=61.09
 N INV ELEV(30" RCP)=55.86
 S INV ELEV(30" RCP)=55.86
 BOTTOM ELEV=55.86

FGI
 TOP ELEV=60.84
 W INV ELEV(18" RCP)=56.34
 BOTTOM ELEV=56.34

FGI
 TOP ELEV=62.24
 N INV ELEV(30" RCP)=57.29
 S INV ELEV(30" RCP)=57.11
 BOTTOM ELEV=56.1



<table border="1"> <tr><th>Rev</th><th>Date</th><th>Revision</th></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </table>	Rev	Date	Revision										<p>© 2024 www.gphcorp.com</p>	<p>gph A Full Service A & E Firm 800 West 8th Street Ft. Worth, TX 76102 P: 817.332.2221</p>	<p>Prepared By: CPH, LLC A Full Service A & E Firm</p>	<p>PROJECT: RINEHART FILE NO: 2407</p>	<p>Drawn By: R. MASSO Date: 2/20/24 Job No.: 250105</p>	<p>Checked By: R. MASSO Date: 2/20/24 Job No.: 250105</p>	<p>Reviewed By: CPH, LLC A Full Service A & E Firm</p>	<p>RINEHART RD. FORCE MAIN VALVES AND FLOW METER INSTALLATION SEMINOLE COUNTY</p>	<p>Sheet No. C6.0</p>
Rev	Date	Revision																			

THIS SHEET NOT VALID FOR CONSTRUCTION WITHOUT COMPLETE SET OF PLANS.



TRAIL CLOSURE ALLOWED AT NIGHT ONLY. DURING DAYLIGHT HOURS, THE TRAIL IS TO BE OPEN FOR USE. AS ASPHALT MILLINGS OR OTHER COMPACTED MATERIALS ARE USED TO REPAIR THE TRAIL, THE CONTRACTOR SHALL MAINTAIN THE TEMPORARY SURFACE UNTIL THE MILLING OCCURS.

STHM W/ CURB INLET
 TOP ELEV=52.99
 N INV ELEV(18" RCP)=48.62
 S INV ELEV(24" RCP)=48.19
 W INV ELEV(18" RCP)=48.21
 BOTTOM ELEV=48.19

OPEN CUT AS NEEDED
 ENTIRE WIDTH OF TRAIL
 AS SHOWN (108.5')
 STHM W/ CURB INLET
 TOP ELEV=50.85
 S INV ELEV(8" PVC)=41.07
 E INV ELEV(10" PVC)=40.93
 W INV ELEV(10" PVC)=40.93

STHM W/ CURB INLET
 TOP ELEV=47.74
 N INV ELEV(24" RCP)=47.64
 S INV ELEV(30" RCP)=47.68
 W INV ELEV(18" RCP)=47.68
 BOTTOM ELEV=47.64

DUKE OVERHEAD TRANSMISSION LINES
 DISTRIBUTION POLE
 CONC BLK WALL
 APPROXIMATE E R/W LINE OF RINEHART RD

100' PP&C EASEMENT
 PER DB 1449, PG 364
 50' LANDSCAPE & WALL EASEMENT
 PER 51, PGS 16-20

TRACT A (RETENTION AREA)
 WOODLAND LAKES UNIT 1
 FB 51, PGS 16-20

CONC BLK WALL
 WATER FOUNTAIN

16" LINE STOP
 16" LINE STOP
 16" LINE STOP

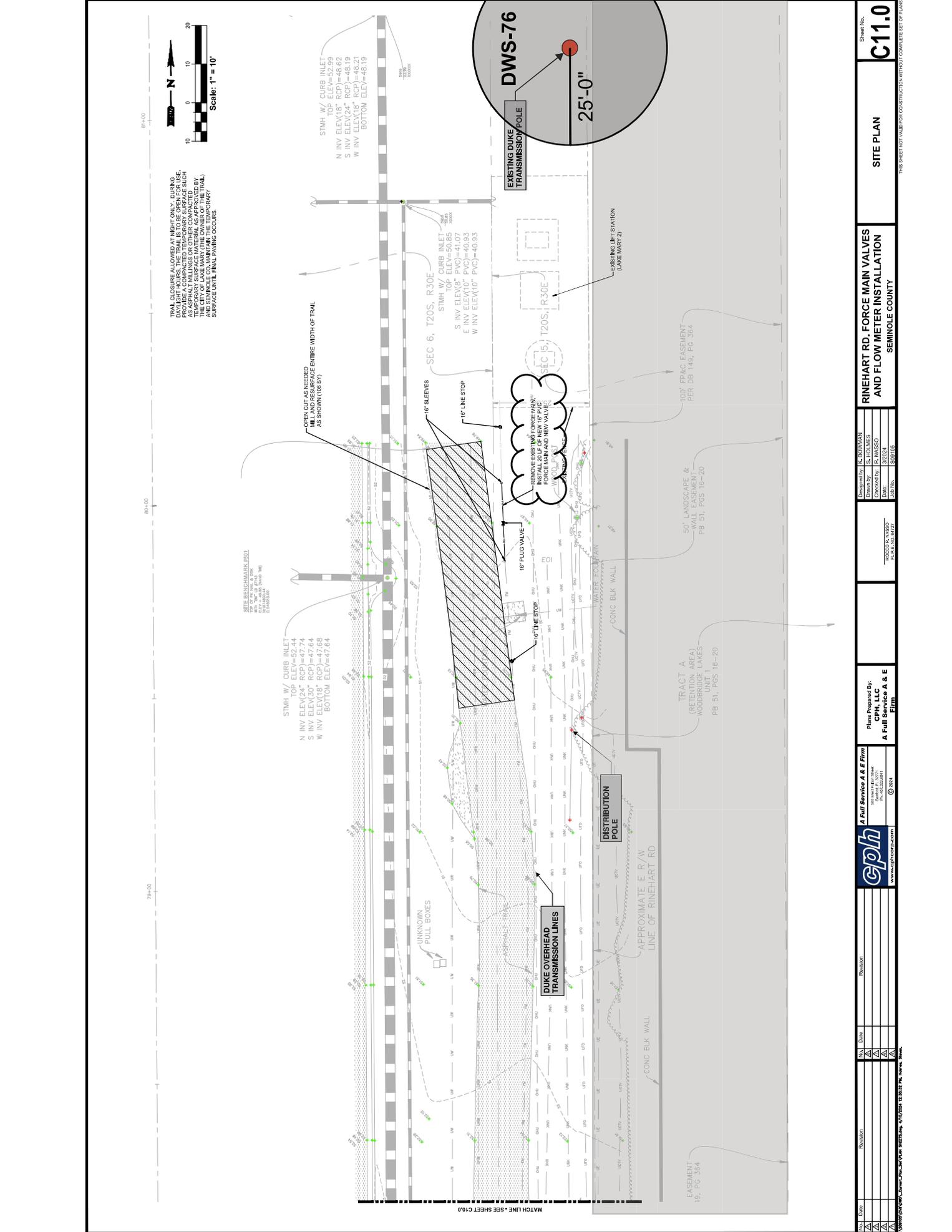
16" SLEEVES
 SEC 6, T20S, R30E
 SEC 5, T20S, R30E

EXISTING DUKE TRANSMISSION POLE
 DWS-76
 25'-0"

BASELINE (T) STATION (BASE MARK 4)

UNKNOW PULL BOXES

MATCH LINE - SEE SHEET C10.0



NO.	Date	Revision
1		
2		
3		

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Prepared By:
CPH, LLC
 A Full Service A & E Firm

DESIGNED BY: R. MASSO
 CHECKED BY: J. COOK
 DATE: 3/20/24
 JOB NO.: 259105

PROJECT: RINEHART RD, WOODLAND LAKES UNIT 1
 PER DB 1449, PG 364

RINEHART RD, FORCE MAIN VALVES AND FLOW METER INSTALLATION
 SEMINOLE COUNTY

Sheet No. **C11.0**

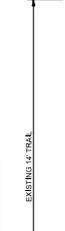
THIS SHEET NOT VALID FOR CONSTRUCTION WITHOUT COMPLETE SET OF PLANS.

PIPE RESTRAINT FOR PVC PIPE (C-500/C-605 OR 18) MINIMUM RESTRAINED LENGTH (FT) - EACH SIDE OF FITTING

FITTING TYPE	4	6	8	10	12	14	16	18	20	24	30
VERTICAL OR HORIZONTAL BEND											
1" x 1/4" BEND	2	3	4	5	6	7	8	9	10	12	15
2" x 1 1/2" BEND	3	4	5	6	7	8	9	10	11	12	13
3" x 2" BEND	4	5	6	7	8	9	10	11	12	13	14
4" BEND	5	6	7	8	9	10	11	12	13	14	15
6" BEND	7	8	9	10	11	12	13	14	15	16	17
8" BEND	9	10	11	12	13	14	15	16	17	18	19
10" BEND	11	12	13	14	15	16	17	18	19	20	21
12" BEND	13	14	15	16	17	18	19	20	21	22	23
14" BEND	15	16	17	18	19	20	21	22	23	24	25
16" BEND	17	18	19	20	21	22	23	24	25	26	27
18" BEND	19	20	21	22	23	24	25	26	27	28	29
20" BEND	21	22	23	24	25	26	27	28	29	30	31
24" BEND	25	26	27	28	29	30	31	32	33	34	35
30" BEND	31	32	33	34	35	36	37	38	39	40	41
42" BEND	35	36	37	38	39	40	41	42	43	44	45
60" BEND	41	42	43	44	45	46	47	48	49	50	51
84" BEND	47	48	49	50	51	52	53	54	55	56	57
108" BEND	53	54	55	56	57	58	59	60	61	62	63
144" BEND	59	60	61	62	63	64	65	66	67	68	69
180" BEND	65	66	67	68	69	70	71	72	73	74	75
216" BEND	71	72	73	74	75	76	77	78	79	80	81
252" BEND	77	78	79	80	81	82	83	84	85	86	87
288" BEND	83	84	85	86	87	88	89	90	91	92	93
324" BEND	89	90	91	92	93	94	95	96	97	98	99
360" BEND	95	96	97	98	99	100	101	102	103	104	105
420" BEND	111	112	113	114	115	116	117	118	119	120	121
480" BEND	127	128	129	130	131	132	133	134	135	136	137
540" BEND	143	144	145	146	147	148	149	150	151	152	153
600" BEND	159	160	161	162	163	164	165	166	167	168	169
660" BEND	175	176	177	178	179	180	181	182	183	184	185
720" BEND	191	192	193	194	195	196	197	198	199	200	201
780" BEND	207	208	209	210	211	212	213	214	215	216	217
840" BEND	223	224	225	226	227	228	229	230	231	232	233
900" BEND	239	240	241	242	243	244	245	246	247	248	249
960" BEND	255	256	257	258	259	260	261	262	263	264	265
1020" BEND	271	272	273	274	275	276	277	278	279	280	281
1080" BEND	287	288	289	290	291	292	293	294	295	296	297
1140" BEND	303	304	305	306	307	308	309	310	311	312	313
1200" BEND	319	320	321	322	323	324	325	326	327	328	329
1260" BEND	335	336	337	338	339	340	341	342	343	344	345
1320" BEND	351	352	353	354	355	356	357	358	359	360	361
1380" BEND	367	368	369	370	371	372	373	374	375	376	377
1440" BEND	383	384	385	386	387	388	389	390	391	392	393
1500" BEND	399	400	401	402	403	404	405	406	407	408	409
1560" BEND	415	416	417	418	419	420	421	422	423	424	425
1620" BEND	431	432	433	434	435	436	437	438	439	440	441
1680" BEND	447	448	449	450	451	452	453	454	455	456	457
1740" BEND	463	464	465	466	467	468	469	470	471	472	473
1800" BEND	479	480	481	482	483	484	485	486	487	488	489
1860" BEND	495	496	497	498	499	500	501	502	503	504	505
1920" BEND	511	512	513	514	515	516	517	518	519	520	521
1980" BEND	527	528	529	530	531	532	533	534	535	536	537
2040" BEND	543	544	545	546	547	548	549	550	551	552	553
2100" BEND	559	560	561	562	563	564	565	566	567	568	569
2160" BEND	575	576	577	578	579	580	581	582	583	584	585
2220" BEND	591	592	593	594	595	596	597	598	599	600	601
2280" BEND	607	608	609	610	611	612	613	614	615	616	617
2340" BEND	623	624	625	626	627	628	629	630	631	632	633
2400" BEND	639	640	641	642	643	644	645	646	647	648	649
2460" BEND	655	656	657	658	659	660	661	662	663	664	665
2520" BEND	671	672	673	674	675	676	677	678	679	680	681
2580" BEND	687	688	689	690	691	692	693	694	695	696	697
2640" BEND	703	704	705	706	707	708	709	710	711	712	713
2700" BEND	719	720	721	722	723	724	725	726	727	728	729
2760" BEND	735	736	737	738	739	740	741	742	743	744	745
2820" BEND	751	752	753	754	755	756	757	758	759	760	761
2880" BEND	767	768	769	770	771	772	773	774	775	776	777
2940" BEND	783	784	785	786	787	788	789	790	791	792	793
3000" BEND	799	800	801	802	803	804	805	806	807	808	809
3060" BEND	815	816	817	818	819	820	821	822	823	824	825
3120" BEND	831	832	833	834	835	836	837	838	839	840	841
3180" BEND	847	848	849	850	851	852	853	854	855	856	857
3240" BEND	863	864	865	866	867	868	869	870	871	872	873
3300" BEND	879	880	881	882	883	884	885	886	887	888	889
3360" BEND	895	896	897	898	899	900	901	902	903	904	905
3420" BEND	911	912	913	914	915	916	917	918	919	920	921
3480" BEND	927	928	929	930	931	932	933	934	935	936	937
3540" BEND	943	944	945	946	947	948	949	950	951	952	953
3600" BEND	959	960	961	962	963	964	965	966	967	968	969
3660" BEND	975	976	977	978	979	980	981	982	983	984	985
3720" BEND	991	992	993	994	995	996	997	998	999	1000	1001

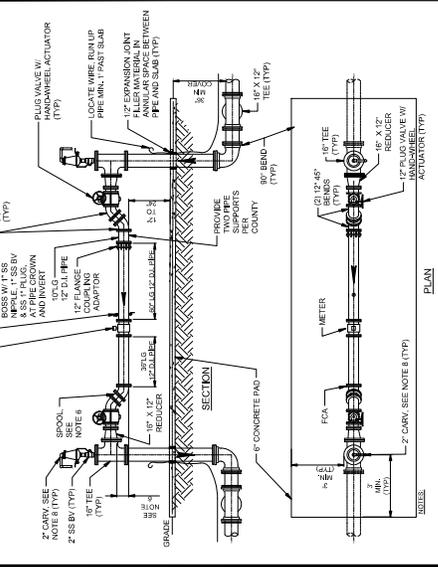
- NOTES:**
- INCREASE RESTRAINED LENGTH WHEN TEST PRESSURES EXCEED 100 PSI.
 - RESTRAINED LENGTHS SHOWN ARE BASED ON LAYING CONDITION TYPE 3, AND MINIMUM COVER OF 3 FT.
 - RESTRAINED LENGTH BASED ON SOILS BEING CLASSIFICATION TYPE SANDS, $\gamma = 30$, SOIL DENSITY = 90 PCF, TRENCH LAYING CONDITION 3, TRENCH FACTOR = 0.60, PIPE TO SOIL INT. FRICTION ANGLE = 90 DEGREE, $\mu = 0.30$, ADJUST RESTRAINED LENGTHS FOR DIFFERENT SOIL TYPES.
 - IN-LINE VALVES ARE TO BE RESTRAINED ON EACH SIDE OF THE VALVE AT THE CONNECTION TO ADJOINING PIPE.
 - FOR VERTICAL OFFSETS (CROSSINGS) USE THE EQUATION FOR THE VERTICAL DOWN BEND FOR THE UPPER BEND AND THE EQUATION FOR THE HORIZONTAL BEND FOR THE LOWER BEND.
 - TEE RESTRAINT SHOWN IS FOR NONREDUCING TEES. FOR REDUCING TEES, THE RESTRAINED LENGTH OF THE BRANCH REDUCER FITTING, WHICH IS GREATER.
 - AT ALL TEES, THE TOTAL LENGTH BETWEEN THE FIRST JOINTS OR RESTRAINED LENGTH ON EITHER SIDE OF TEE (RUN) SHALL BE A MIN. TOTAL DISTANCE OF 30 FT. SEE THE ABOVE TABLE FOR RESTRAINT LENGTH ON TEE BRANCH LINE.
 - THE SAFETY FACTOR UTILIZED FOR THE ABOVE TABLE IS 1.5.
 - SUBMIT CALCULATIONS SIGNED AND SEALED BY A FLORIDA LICENSED PROFESSIONAL ENGINEER FOR ALL PROPOSED REVISIONS TO THE ABOVE TO THE CITY FOR APPROVAL. CALCULATIONS SHALL BE BASED ON THE THRU-TRUST RESTRAINT DESIGN EQUATIONS AND SOIL PARAMETERS FOR DUCTILE IRON AND PVC PIPE PUBLISHED BY SEMA, IRON, INC.

PIPE RESTRAINT FOR PVC PIPE
FM



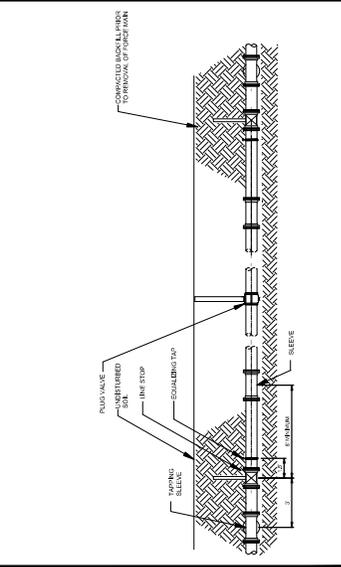
- 1.5" TYPE SP STRUCTURAL COURSE (SP44)
- 2" FRESH CONCRETE BASE (RECYCLED CONCRETE AGGREGATE), MINIMUM LAYER OF 150
- 4" FRESH CONCRETE BASE (RECYCLED CONCRETE AGGREGATE), MINIMUM LAYER OF 150
- MINIMUM LAYER OF 150 PER FOOT SPECIFICATION SECTION 91.11 (NO ADDITIONAL COST)

ASPHALT TRAIL OPEN CUT DETAIL
N.T.S.

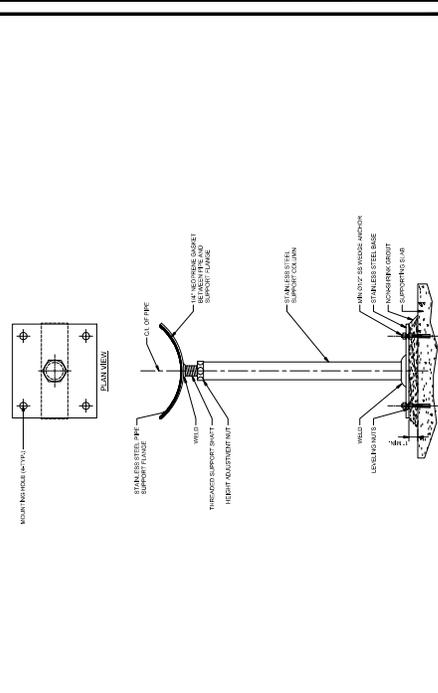


- PLAN**
- SECTION**
- THE FLOW METER SHALL BE CALIBRATED TO MEASURE FLOW OF WATER. PROVIDE A 90° FLANGED 1/2" DIA. FLANGE TO THE FLOW METER. PROVIDE A 90° FLANGED 1/2" DIA. FLANGE TO THE FLOW METER. PROVIDE A 90° FLANGED 1/2" DIA. FLANGE TO THE FLOW METER.
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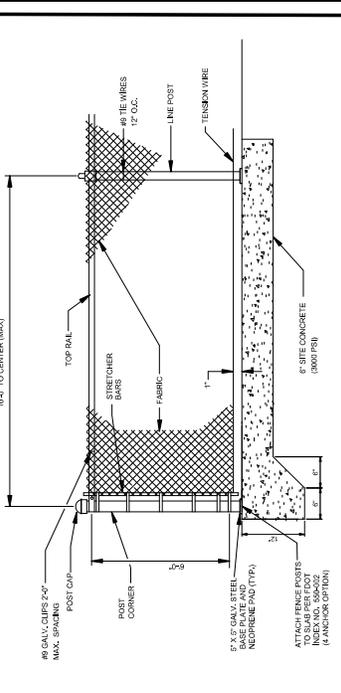
SEMINGOLE COUNTY ENVIRONMENTAL SERVICES - UTILITY ENGINEERING DIVISION
ABOVE GRADE WASTEWATER FLOW METER ASSEMBLY



BELLOW GRADE WASTEWATER FLOW BYPASS
N.T.S.



PIPE SUPPORT
N.T.S.



CHAIN LINK FENCE DETAIL
N.T.S.

- NOTES:**
- MIN. 1/2" GALV. STEEL POSTS PER LINE FT. 1/4" DIA. GALV. STEEL WIRE, GALV. COATED, VINYL COATED BLACK CLASS 1 FENCE. TOP AND BOTTOM SECURAGE TO BE TWISTED AND BARBED.
 - INSTALL THE REQUIRED DOUBLE SWING GATE CONSTRUCTED OF THE SAME MATERIALS AND ATTACHMENTS AS THE 3/4" FENCING.
 - REFER TO THE TECHNICAL SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

Revision: _____ Date: _____

Scale: _____

Project: _____

Client: _____

Contract No.: _____

Sheet No.: **C13.0**

UTILITY DETAILS

RINEHART RD. FORCEMAIN VALVES AND FLOW METER INSTALLATION

SEMINGOLE COUNTY

Prepared By: _____

Checked By: _____

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UTILITY DETAILS

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