CITY OF DELAND
REGULAR MEETING OF THE PLANNING BOARD
SEPTEMBER 13, 2023 AT 5:00 PM
CITY HALL, COMMISSION CHAMBERS
120 SOUTH FLORIDA AVENUE

AGENDA

CALL TO ORDER

PLEDGE OF ALLEGIANCE

ROLL CALL

VERBAL REPORT ON CITY COMMISSION MEETINGS

MINUTES

1. Approval of the minutes from the August 9, 2023 meeting.

VARIANCE OLD BUSINESS

VARIANCE NEW BUSINESS

PUBLIC PARTICIPATION PROCEEDINGS

PLANNING - OLD BUSINESS

PLANNING - NEW BUSINESS

1. Applicant Name: Mark Watts Esq, Cobb Cole
   Project Name: PSB23-057 Spring Garden Townhomes
   Project Location: ±14.72 acres located on the west side of S Spring Garden south of Plymouth Ave
   Project Description: Preliminary Plat, 90-unit Townhouse development
   Staff Planner: Belinda Williams-Collins

2. Applicant: Strickland Smith, Heidt Design, LLC
   Project Name: PSB23-086, Cresswind Phase 2, 3
   Project Location: ± 89.08 acres located east of Lake Winnemissett and north of Service Road (a.k.a. the old alignment of E. SR 44)
   Project description: Preliminary plat, Phase 2,3 improvements for 233 single-family lots
   Staff Planner: Belinda Williams-Collins

3. Applicant Name: Michael Woods – Cobb Cole
   Project Name: AN23-103 – Annexation for Taylor Ridge
   Project Location: ±28.667 acres located at 1298 S Blue Lake Ave
   Project Description: To annex 28.667 acres into the corporate limits of DeLand
   Staff Planner: Kendall Story

4. Applicant Name: Michael Woods – Cobb Cole
   Project Name: SMLU23-102 – Comprehensive Plan Amendment for Taylor Ridge
   Project Location: ±26.011 acres located at 1298 S Blue Lake Ave

Project Description: Change of FLU from VC Rural to TRD Transitional Residential Development
Staff Planner: Kendall Story

5. Applicant Name: Michael Woods – Cobb Cole
Project Name: Z23-104 – PD Rezoning for Taylor Ridge
Project Location: ±26.011 acres located 1298 S Blue Lake Ave
Project Description: Change of Zoning from VC A-2 Rural Agriculture, to Taylor Ridge PD, for 65 single family homes
Staff Planner: Kendall Story

6. Applicant Name: Mark Watts, Esq., Cobb Cole
Project Name: Z23-123 – Manchester Neighborhood PD Amendment
Project Location: ±38.5 acres located at 801 Sol Y Sombra
Project Description: 1st Amendment to the Manchester Neighborhood PD to permit multi-family and single-family uses in the Future Development Tract (Phase 2A and 2B).
Staff Planner: Kendall Story

7. Applicant Name: Nick Everly, Evans Engineering
Project Name: Z23-167 – Pointe Grand Apartments PD Amendment
Project Location: ±14.57 acres located southeast of the intersection of Clear Lake Rd. and N. Spring Garden Ave.
Project Description: 1st Amendment to the Pointe Grand Apartments PD, requesting a reduction in parking spaces required to allow for 27 covered parking spaces
Staff Planner: Kendall Story

8. Applicant Name: Nick Everly, Evans Engineering
Project Name: SP23-068 – Pointe Grand Apartments – Class IV Site Plan
Project Location: ±14.57 acres located southeast of the intersection of Clear Lake Rd. and N. Spring Garden Ave.
Project Description: Class IV site plan for 204 multi-family apartments known as Pointe Grand Apartments
Staff Planner: Kendall Story

OTHER BUSINESS

ADJOURNMENT

CITY OF DELAND
PLANNING BOARD REGULAR MEETING

MINUTES

WEDNESDAY, AUGUST 9, 2023 - 5:00 P.M.

CITY HALL

CALL TO ORDER

The meeting began at 5:00 p.m.

PLEDGE OF ALLEGIANCE

Pledge of Allegiance – Mr. Owens, Chairperson

ROLL CALL

Nora Lewis	Absent
Don Liska	Present
Buz Nesbit	Present
Albert Neumann	Present
Virginia Comella	Present
Harper Hill, *Vice Chairperson*	Present
Jeremy Owens, *Chairperson*	Present

Quorum: Yes

Present – Carol Kuhn, Planning Director; Deborah Glick, Deputy Planning Director; Rick Werbiskis, Community Development Director; Darren Elkind, City Attorney; Belinda Williams-Collins, Senior Planner; Kendall Story, Senior Planner; Sam Nelson, Planner I; Emily Ragusa, Community Development Coordinator; applicants; and members of the public.

VERBAL REPORT ON CITY COMMISSION MEETINGS

Ms. Kuhn provided a verbal report.

MINUTES

1. Mr. Hill moved to approve the May 17, 2023 Meeting Minutes. Mr. Liska seconded the motion. The motion passed unanimously.

2. Mr. Hill moved to approve the June 21, 2023 Meeting Minutes. Mr. Liska seconded the motion. The motion passed unanimously.

VARIANCE OLD BUSINESS

None.

VARIANCE NEW BUSINESS

1. Applicant Name: Mark Brenchley
   Project Number: V23-147 – Variance
   Project Location: 1712 N. Woodland Blvd.
   Project Description: Variance to (1) increase the maximum height of a proposed ground sign from 8' to 12'; and (2) increase the maximum area of combined wall signage from 45.75 s.f. to 347.5 s.f.
   Staff Planner: Kendall Story, presented by Carol Kuhn

Public Participation: Applicant, Mark Brenchley, requested to modify the request due to staff's denial recommendation. He was advised to resubmit updated plans and allow for staff review.

Mr. Nesbit moved to continue to the next meeting to allow for resubmittal and staff review. Ms. Comella seconded the motion. The motion to continue passed unanimously.

PUBLIC PARTICIPATION PROCEEDINGS

Mr. Owens read the Public Participation procedures.

PLANNING – OLD BUSINESS

None.

PLANNING – NEW BUSINESS

1. Applicant Name: Carol Kuhn
   Project Number: LDR23-139 – LDR Text Amendment
   Project Location: N/A
   Project Description: Ordinance to modify the conditional use requirements for Tattoo Establishments.
   Staff Planner: Carol Kuhn

Staff presented and answered questions from the board.

Mr. Hill moved to approve the request with the below conditions and request to staff. Ms. Comella seconded the motion. The motion to approve passed unanimously.

Conditions:

a) Spacing between establishments shall be 150 feet, rather than the 1,000 feet proposed by staff; and
b) Windows shall not be obscured by the use of black-out window tinting, and shall be unobstructed.

Request to staff:

a) Clarify that permanent makeup facilities be allowed in beauty salons, barber shops, and day spas.

2. Applicant Name: Carol Kuhn
   Project Number: LDR23-148 – LDR Text Amendment
   Project Location: N/A

Project Description: Ordinance to remove the minimum acreage for Planned Developments in the Core Gateway Overlay District.
Staff Planner: Carol Kuhn

Staff presented and answered questions from the board.

Ms. Comella moved to approve the request. Mr. Liska seconded the motion. The motion to approve passed 5 to 1, with member Nesbit dissenting.

3. Applicant Name: Carol Kuhn
Project Number: Z23-152 – Amendment to Lakewood Park PD
Project Location: 198.02 acres generally located at the north side of Martin Luther King Blvd. and E. Beresford Ave.
Project Description: Amend +/-198.02-acre PD to remove a 6.105-acre parcel, designated as right-of-way and Tree Protection Area, from the overall PD to accommodate modified right-of-way dedication requirements
Staff Planner: Carol Kuhn

Staff presented and answered questions from the board.

Ms. Comella moved to approve the request. Mr. Liska seconded the motion. The motion to approve passed unanimously.

4. Applicant Name: Carol Kuhn
Project Number: SMLU23-153 – Comprehensive Plan Amendment
Project Location: 6.105 acres generally located at the SW intersection of State Road 44 and N. Summit Ave., on the northern side of the future Beresford Ave. extension.
Project Description: Land use change for +/-6.105 acres from County Urban Medium Intensity to City Highway Commercial
Staff Planner: Carol Kuhn

Staff presented and answered questions from the board.

Ms. Comella moved to approve the request. Mr. Liska seconded the motion. The motion to approve passed unanimously.

5. Applicant Name: Carol Kuhn
Project Number: Z23-154 – Rezoning for Lakewood Park PD
Project Location: 6.105 acres generally located at the SW intersection of State Road 44 and N. Summit Ave., on the northern side of the future Beresford Ave. extension.
Project Description: Rezone +/-6.105 acres located within the Lakewood Park PD to E-1 (Educational).
Staff Planner: Carol Kuhn

Staff presented and answered questions from the board.

Ms. Comella moved to approve the request. Mr. Liska seconded the motion. The motion to approve passed unanimously.

OTHER BUSINESS

None.

ADJOURNMENT

The meeting ended at 7:32 p.m.

PLANNING STAFF REPORT
to
PLANNING BOARD

September 13, 2023



APPLICATION: PSB23-057

STAFF PLANNER: Belinda Williams-Collins

SUBJECT: Spring Garden Townhomes

1. **Location:** Parcel No. 700700000043
2. **Applicant**: Mark Watts, Cobb Cole
3. **Size:** 14.72 ± acres
4. **Existing Zoning & Land Use:**
   Land Use: Highway Commercial
   Zoning: Spring Garden Townhomes PD
5. **Surrounding Conditions:**

	SURROUNDING USE:	SURROUNDING ZONING:
North	Highway Commercial	C-2 (General Commercial)
South	Highway Commercial Medium Density Residential	C-2 (General Commercial) R-16 (Multi-family)
East	Highway Commercial	C-2 (General Commercial)
West	Low Density Residential	R-1AA (Single-family)

6. **Applicable Regulations:** Land Development Regulations, Article 13. Subdivision of land Sec. 33-146.05,

7. **Physical Characteristics:** The heavily wooded site is vacant and undeveloped.

8. **Public Utilities and Service:**

Water: The proposed development will be served by City potable water facilities.

Sewer: The proposed development will be served by City sanitary sewer facilities.

Irrigation: The proposed development will be served by City reclaimed water facilities.

Stormwater: Stormwater management will be addressed on-site.

Electricity: The site is served by Duke Energy.

9. **Type of Development**:

The project site is vacant/undeveloped land located on the west side of Spring Garden Ave. between Plymouth and Minnesota Avenues. The applicant seeks to develop the subject property into a 90-unit multi-family residential development and a commercial parcel. The

property was rezoned from C-2 (General Commercial) to Spring Garden Townhomes PD (PD approved on March 6, 2023) and the PD agreement agreement allows the development of residential and commercial use. A use for the commercial portion of the property has not yet been determined and it will be developed separately from the residential portion. The residential development also proposes to include 2 open spaces/stormwater ponds which will double as amenity spaces (playgrounds etc.) for the residents.

10. Analysis:

- The development is comprised of 90 townhouse units and a 1.38 acre commercial area. Access will be provided via a full access driveway on Spring Garden. The Fire Department requires an emergency access road to be able to support a fire truck. A 20-foot wide emergency access point, using grass pavers that will support the vehicles including a gate will be provided along the roadway.
- The property is adjacent to a residential subdivision to the west and some of the existing vegetation will be maintined through a 100-foot conservation easement as agreed during the PD approval process. This easement will provide a buffer between this development and the single family residential to the west.
- The drainage report was reviewed with the submittal and on-site stormwater retention will be provided through dry retention basins. Specifically, stormwater management is comprised of five (5) stormwater dry retention basins, with the majority of the site draining to one (1) primary dry retention pond. Due to two (2) tree protection areas, 2.23 acres of the site will not be disturbed by construction and will not be contributing stormwater to any of the proposed facilities; therefore the disturbed area for the site is 12.49 acres.
- The applicant requested a waiver of the full TIA for the residential portion of the development asserting that it would not be warranted. The TIA guidelines required an analysis of the overall tract, residential and commercial, in order to determine the full impacts to traffic in the area. It was concluded that based on the results of the trip generation analyses for both development scenarios a TIA would not be required. In the event, however, when the commercial tract is actually proposed for development with a specific use, the City may require a traffic impact analysis. Since the total trips for daily and p.m. peak-hour do not exceed the thresholds based on both scenarios, it was recommended that the requirement for a TIA be waived for the Spring Garden Townhome project at this time.
- The city will own/maintain the internal potable water system and hydrants and reclaimed water will be used for irrigation of the property. The sewer system will be maintained by the HOA.
- The proposed elevations do not meet the architectural design criteria in the community design standards. Revised elevations that are consistent with the community design standards must be provided. The city's review architect issued concerns about the building architecture, its lack of variety in shape, size, and color. The resubmittal provided on July 31, 2023 did not address these concerns. Architectural review comments must be addressed prior to scheduling this item for City Commission, as architecture, site design, and landscaping must be reviewed with the preliminary plat. A condition of approval has been added to the staff recommention.

During the TRC review, there were a number of comments generated by the City's Forester that have not been completed as of the time of this report. The comments focused on preservation of historic trees, specimen tree replacement, and plant schedule (see attached comments). The Forestry comments must be addressed prior to scheduling this item for City Commission and a condition of approval has been added to the staff recommendation.

On July 20, 2023 the Technical Review Committee voted to conditionally forward the application to the September 13, 2023 Planning Board meeting conditioned upon receiving the revised plans by July 31, 2023. Updated plans were provided on July 31, 2023 and are included in the staff report.

E. STAFF RECOMMENDATION:

Staff recommends that the Planning Board forward the Spring Garden Townhomes Preliminary Plat on to the City Commission with a recommendation of approval, subject to subject to the following condition(s):

1. All outstanding City Forestry comments shall be addressed prior to scheduling this item for City Commission.
2. All outstanding architectural comments shall be address prior to scheduling this item for City Commission.

BC

Issues for record PSB23-057
Job Address: 0 N SPRING GARDEN AV, DELAND FL 32720
Job Description: Preliminary Plat application for Spring Garden Townhomes project.

Discipline	Status	Details	Attached To	Created By	Last Updated By	Modifications Required
Forestry	In Review	**Tree Protection Areas** Show Tree Protection Areas on the plat. **Last comment from reviewer:** Tree Protection Areas have not been shown on the plat. **Last response:** Tree Protection Area is shown on sheet 2.0 of the preliminary plat.	2	Mariellen Calabro	Deborah Glick	Yes
Forestry	In Review	**Tree 3004** This tree is listed as a 12" DBH removal. Change the "To be Removed DBH" from 11" to 12", and the mitigation from 3.7" to 4". **Last response:** The data for tree 3004 has been corrected.	C2.10	Kit Dennis	Deborah Glick	Yes
Forestry	In Review	**Tree 2992** This tree is listed as a 16" DBH removal. Change the "To be Removed DBH" from 14" to 16", and the mitigation from 4.7" to 5.3". **Last response:** The data for tree 2992 has been corrected.	C2.10	Kit Dennis	Deborah Glick	Yes
Forestry	In Review	**Tree 3070** This tree is listed as a 18" DBH removal. Change the "To be Removed DBH" from 28" to 18" and the mitigation from 9.3" to 6". **Last response:** The data for tree 3070 has been corrected.	C2.11	Kit Dennis	Deborah Glick	Yes
Forestry	In Review	**Tree 5013** This tree is listed as a 14" DBH removal. Change the "To be Removed DBH" from 12" to 14" and the mitigation from 4" to 4.7". **Last response:** The data for tree 5013 has been corrected.	C2.12	Kit Dennis	Deborah Glick	Yes
Forestry	In Review	**Tree 5056** This tree is listed as a 17" specimen removal. Change the mitigation from 9" to 8.5".	C2.13	Kit Dennis	Deborah Glick	Yes

Discipline	Status	Details	Attached To	Created By	Last Updated By	Modifications Required
		Last response: The data for tree 5056 has been corrected.				
Forestry	In Review	**Tree 5051** Remove the 4" stem from this tree and change the "To be Removed DBH" from 14" to 10". Also change the mitigation from 4.7" to 3.3". **Last response:** The data for tree 5051 has been corrected.	C2.13	Kit Dennis	Deborah Glick	Yes
Forestry	In Review	**Tree 5037** This tree is listed as a 13" DBH removal. Change the "To be Removed DBH" from 14" to 13" and the mitigation from 4.7" to 4.3". **Last response:** The data for tree 5037 has been corrected.	C2.13	Kit Dennis	Deborah Glick	Yes
Forestry	In Review	**Tree 5153** This tree is listed as a 24" DBH specimen removal. Change the mitigation from 11" to 12". **Last response:** The data for tree 5153 has been corrected.	C2.14	Kit Dennis	Deborah Glick	Yes
Forestry	In Review	**Tree 5107** This tree is listed as a 23" DBH removal. Change the "To be Removed DBH" from 22" to 23" and mitigation from 7.3" to 7.6". **Last response:** The data for tree 5107 has been corrected.	C2.14	Kit Dennis	Deborah Glick	Yes
Forestry	In Review	**Tree Replacement - Total DBH Protected Tree Replacement Inches** Based on my calculations (which will most likely change once you revise your spreadsheet), your replacement required will be: Protected trees: 3,451" Specimen trees: 146" Deteriorated Laurel Oaks: 56" Historic Trees (if approved): 53" --- Total 3,706" DBH Your landscape plan (with revisions) appears to provide 533.5" DBH of trees and 416" DBH of palms. This would leave you 2,756.5" DBH deficient in tree replacement. If you do not plant additional trees, you would need to contribute $75 per inch not planted into the Tree Replacement Reserve Account. This would result in a $206,737.50 contribution based on the data provided and suggested revisions.	C2.14	Mariellen Calabro	Deborah Glick	Yes

Discipline	Status	Details	Attached To	Created By	Last Updated By	Modifications Required
		These numbers will change during your next submission as none of the trees provided in the landscape plan are large enough for historic tree replacement. **Last comment from reviewer:** Based on my calculations (once the revisions to your spreadsheet are made), your replacement required will be: Protected trees: 3,689" Specimen trees: 65.5" Deteriorated Laurel oaks: 58" Historic trees: 0" Toatal: 3,812.5" Your Plant Schedule (with revisions) provides 502" DBH of trees and 416" DBH of palms. If you do not plant additional trees, you would need to contribute $75 per inch not planted into the Tree Replacement Reserve Account. This would result in a $217,087.50 contribution based on the data provided and suggested revisions. **Last response:** The proposed DBH inches of trees and palms is correct. A contribution to the Tree Replacement Reserve Account will be necessary.				
Forestry	In Review	**Tree Replacement -- Total DBH of Proposed Trees** I'm not sure where these numbers come from. Your proposed trees would be the trees on your landscape plan, which looks like it will provide 533.5" DBH of trees and 416" DBH of palms. I'm not sure where the 1,589 (1,531) caliper comes from, and your plan doesn't provide 961" DBH of palms. Up to 25% of the canopy tree replacement requirement can be palms; it is not required. **Last comment from reviewer:** Your plant Schedule(with the required specifications modifications) provides 502" DBH of non-palm tress and 416" DBH of palms. Totaling 918" of replacement. **Last response:** Agreed. These figures are correct.	C2.14	Mariellen Calabro	Deborah Glick	Yes
Forestry	In Review	**Tree Replacement -- Other Protected Tree Removal** Please revise based on comments in tables. It looks like you will have about 10,354" DBH of protected tree removals based on my calculations. Please recheck these numbers once you have made the requested changes as your numbers do not match my calculations. **Last comment from reviewer:** Please revise based on additional comments. By my calculations you have 11,978 removal inches of protected non specimen trees. After subtracting the 798" of reduced replacement Laurel oaks, you have a total of 11,180" with a mitigation of 3,689". Total mitigation with the reduced replacement for the deteriorated Laurel oaks would be 3,747".	C2.14	Mariellen Calabro	Deborah Glick	Yes

Discipline	Status	Details	Attached To	Created By	Last Updated By	Modifications Required
		Last response: The tree mitigation calculations on Sheet 2.16 have been updated based on the attached Tree Disposition Chart (spreadsheet).				
Forestry	In Review	**Tree Replacement - Deteriorated Laurel Oaks** Update based on comments on table. It looks like you will have about 28 deteriorated Laurel Oaks, with a replacement requirement of 56" DBH. **Last comment from reviewer:** There appear to be 29 deteriorated Laurel oaks with a replacement requirement total of 58". **Last response:** Agreed. These figures are correct.	C2.14	Mariellen Calabro	Deborah Glick	Yes
Forestry	In Review	**Tree Replacement - Specimen Trees** Update based on revised table. It looks like it should go from 304" to 291" and from 152" to 146" DBH. **Last comment from reviewer:** Based on the spreadsheet, there is 131" of specimen trees being removed. Mitigation should be 65.5" **Last response:** Agreed. These figures are correct.	C2.14	Mariellen Calabro	Deborah Glick	Yes
Forestry	In Review	**Tree 5281** This tree is listed as a 17" DBH removal. Change the "To be Removed DBH" from 16" to 17" and the mitigation from 5.3" to 5.7". **Last response:** The data for tree 5281 has been corrected.	C2.15	Kit Dennis	Deborah Glick	Yes
Forestry	In Review	**Tree 5247** This tree is being shown as being removed and saved. Please correct. I've factored it into my calculations as saved. Note: It is a 14" DBH tree that is shown as a 12" removal and 14" preserved. **Last response:** The data for tree 5247 has been corrected.	C2.15	Kit Dennis	Deborah Glick	Yes
Forestry	In Review	**Deteriorated Laurels** Your spreadsheet lists 29 Laurel oaks as eligible for reduced replacement. The total DBH removed with those 29 trees is 798". Mitigation for the 29 trees is 58" All other Laurel oak replacement will be factored in with the Non Specimen Protected Tree mitigation. Please make the changes to the "Tree Replacement" section on this page.	C2.16	Kit Dennis	Deborah Glick	Yes

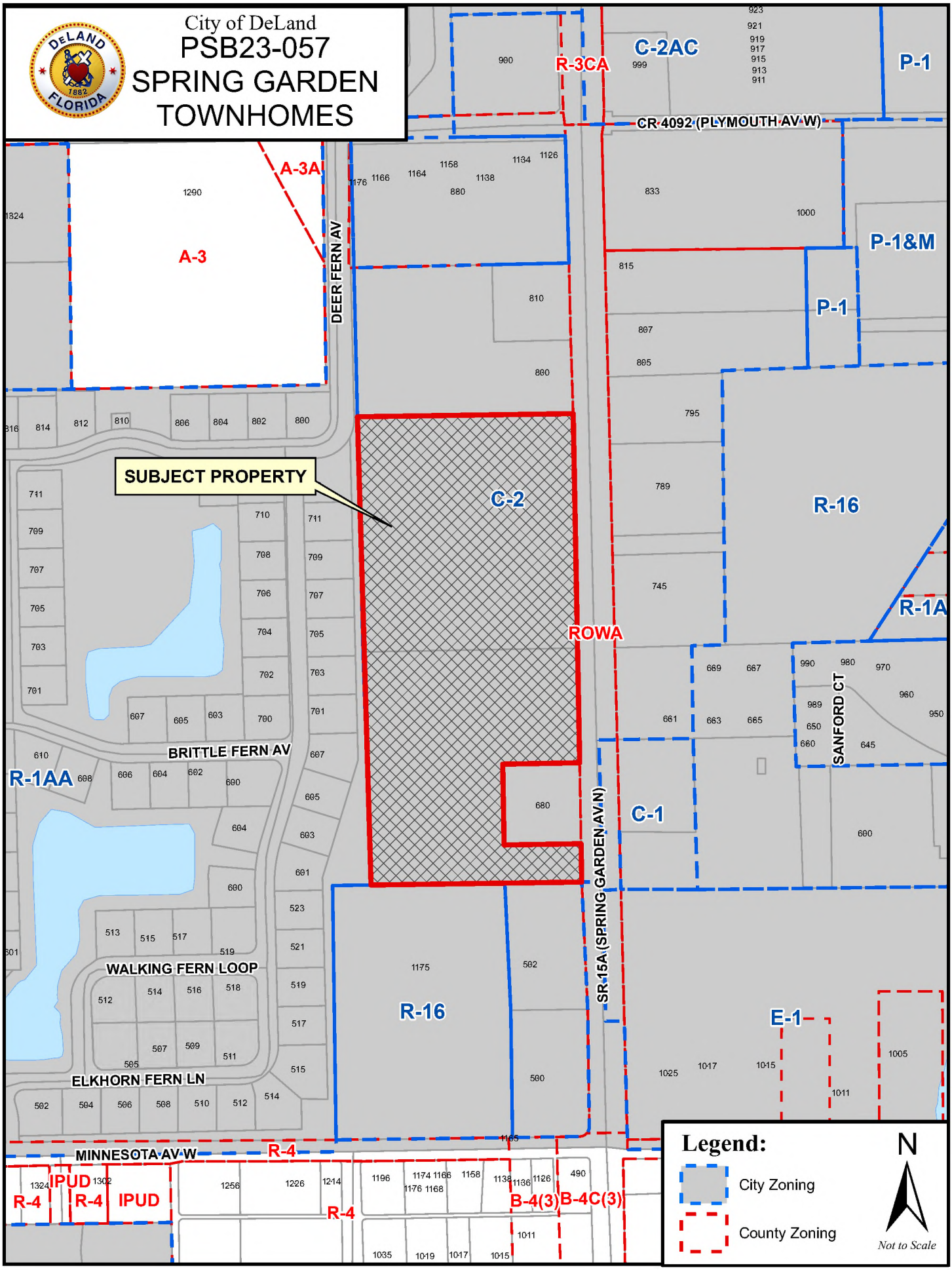
Discipline	Status	Details	Attached To	Created By	Last Updated By	Modifications Required
		Last response: This sheet has been revised as requested. Please see the attached revised site plan packet.				
Forestry	In Review	**Specimen Tree Replacement** You are removing 131" DBH of specimen trees. Mitigation is 50% DBH removed. Change Specimen Tree Replacement Inches from 64" to 65.5". **Last response:** This sheet has been revised as requested. Please see the attached revised site plan packet.	C2.16	Kit Dennis	Deborah Glick	Yes
Forestry	In Review	**DBH Preserved** You are preserving 78" of Historic trees, 203" of specimen trees, and 2,439" of non specimen trees. That totals to 2,720". Change "Total DBH inches after development (preserved)" to 2,720". **Last response:** This sheet has been revised as requested. Please see the attached revised site plan packet.	C2.16	Kit Dennis	Deborah Glick	Yes
Forestry	In Review	**Non Specimen Preserved** By my calculations, your spreadsheet (with any changes required in previous comments) totals to 2,439" DBH preserved. Change "Non specimen DBH inches after development" to 4,439". **Last response:** The correct number of non-specimen DBH inches is 2,439. Please see the attached revised sheet C2.16.	C2.16	Kit Dennis	Deborah Glick	Yes
Forestry	In Review	**Historic Inches** According to the spreadsheet you've provided, you are preserving three Historic trees with a total DBH of 78". Change "Historic DBH inches after development to 78". **Last response:** Sheet C2.16 has been revised as requested. Please see the attached.	C2.16	Kit Dennis	Deborah Glick	Yes
Forestry	In Review	**Tree 5352** This tree is listed as a 11" DBH removal. Change the "To be Removed DBH" from 10" to 11" and the mitigation from 3.3" to 3.7". **Last response:** The data for tree 5352 has been corrected.	C2.16	Kit Dennis	Deborah Glick	Yes
Forestry	In Review	**Deteriorated Laurel Oaks** The provision for reduced replacement of Laurel Oaks is only for 20" DBH trees. The way our code is written, each trunk is considered a separate tree, so only the 20" DBH trunks	C2.3	Mariellen Calabro	Deborah Glick	Yes

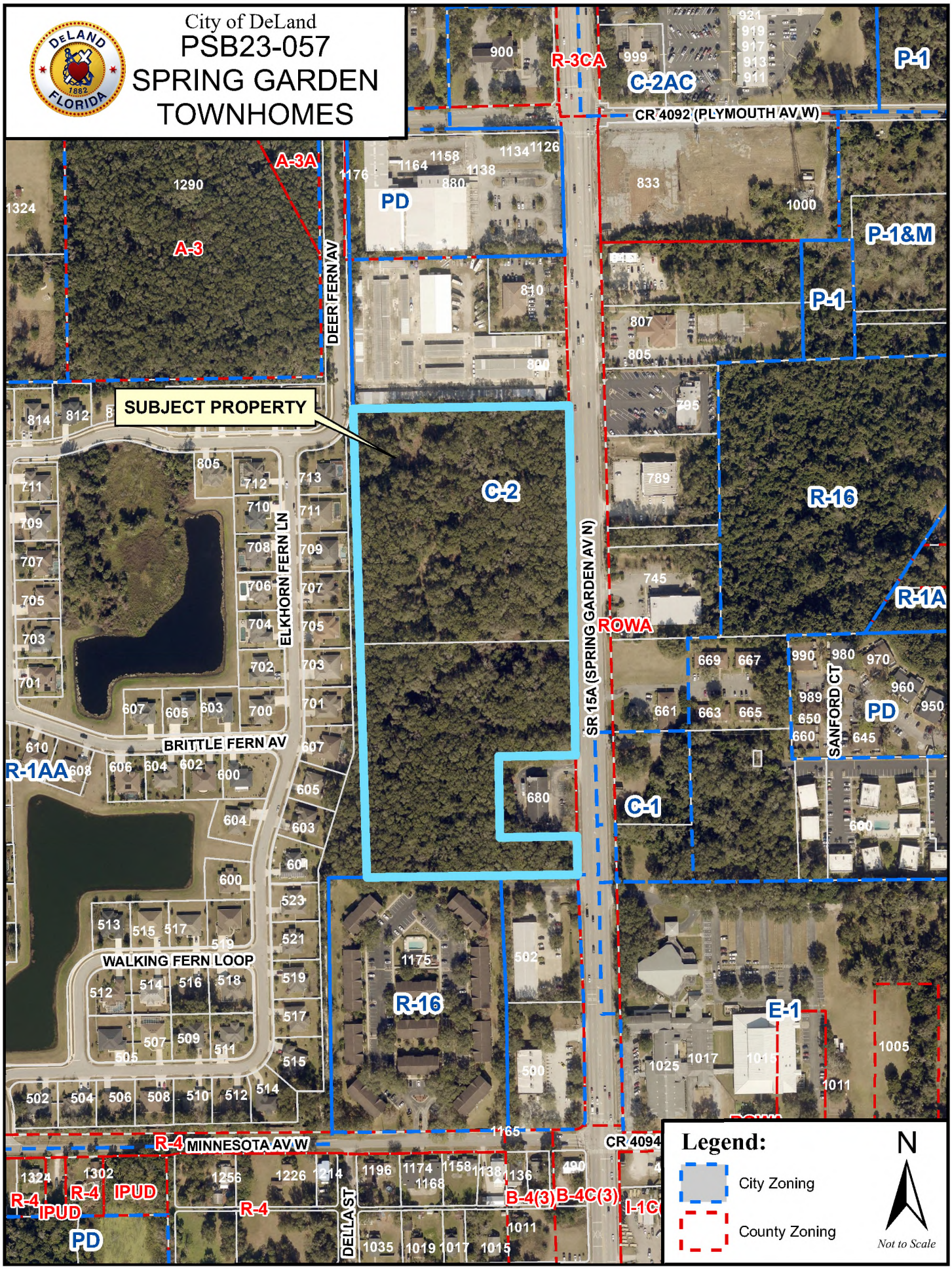
Discipline	Status	Details	Attached To	Created By	Last Updated By	Modifications Required
		of multi-trees can be considered for reduced replacement. Trees with several smaller trunks that add up to 20 would not meet the requirement. Please update your table to address this issue. Trees 2566, 2568, and 2600 will need to be recalculated. This will change your replacement calculations on subsequent pages. **Last comment from reviewer:** More changes needed. The following trees do not meet the requirement for reduced replacement: 2551, 2560. The Replacement Ratio cell for tree 2824 should say 1/3 DBH+(2) 2" DBH Trees. The total of 10.7" replacement is correct. **Last response:** The data for these trees have been corrected.				
Forestry	In Review	**Historic Trees** There may be several historic trees on site. Please schedule a field visit with Forestry staff to identify potentially historic trees. The 24 inch DBH oak should be included in this review. **Last comment from reviewer:** There are three historic trees identified in your tree survey: 2536, 3152, and 5110. Tree 2529 is listed as a 24" Live oak and we recommend a member of the Forestry staff should also confirm the DBH. As of today no site visit has been scheduled. **Last response:** The LAOR met w/ Forestry staff on 8/25/23. At the meeting it was determined that a site visit would not be necessary if we were able to revise the plans to demonstrate that there was no disturbance within 30' of the historic trees along the north property line. The swale/pond and the trees in the buffer have been redesigned to demonstrate no disturbance as requested. Please see the attached revised grading and landscape plans.	C2.3	Mariellen Calabro	Deborah Glick	Yes
Forestry	In Review	**Tree 2589** This tree is listed as "Dead" and does not require any mitigation. Remove the replacement inches. **Last response:** The data for tree 2589 has been corrected.	C2.5	Kit Dennis	Deborah Glick	Yes
Forestry	In Review	**Tree 2660** This tree is listed as a 21" DBH removal. Change the removed DBH from 18" to 21" and mitigation from 6" to 7". **Last response:** The data for tree 2660 has been corrected.	C2.6	Kit Dennis	Deborah Glick	Yes
Forestry	In Review	**Tree 2659** This tree is listed as a 25" DBH removal. Change the removed DBH from 24" to 25", and	C2.6	Kit Dennis	Deborah Glick	Yes

Discipline	Status	Details	Attached To	Created By	Last Updated By	Modifications Required
		mitigation from 8" to 8.3". **Last response:** The data for tree 2659 has been corrected.				
Forestry	In Review	**Tree 2686** This tree is listed as a 20" DBH removal. Change the removed DBH from 22" to 20", and mitigation from 7.3" to 6.7". **Last response:** The data for tree 2686 has been corrected.	C2.7	Kit Dennis	Deborah Glick	Yes
Forestry	In Review	**Tree 2840** This is listed as two 13" DBH removal stems. Change the "To be Removed DBH" from 20" to 26", and mitigation from 6.7" to 8.7". **Last response:** The data for tree 2840 has been corrected.	C2.8	Kit Dennis	Deborah Glick	Yes
Forestry	In Review	**Tree 2831** Please show the second stems DBH in the "Actual DBH" column. It should show two 12" stems. **Last response:** The data for tree 2831 has been corrected.	C2.8	Kit Dennis	Deborah Glick	Yes
Forestry	In Review	**Tree 2818** Change the replacement inches from 6" to 7" as this tree is listed as a 14" specimen Live oak. (Mitigation 50%=7") **Last response:** The data for tree 2818 has been corrected.	C2.8	Kit Dennis	Deborah Glick	Yes
Forestry	In Review	**Tree 2773** Remove this tree from the list as it would be considered three different 4" trees and no mitigation would be required. **Last response:** Tree 2773 has been removed from the list as requested.	C2.8	Kit Dennis	Deborah Glick	Yes
Forestry	In Review	**Tree 2918** This is listed as three stems, 38", 21", and 12". Change the "To be Remove DBH" from 70" to 71". **Last response:** The data for tree 2918 has been corrected.	C2.9	Kit Dennis	Deborah Glick	Yes

Discipline	Status	Details	Attached To	Created By	Last Updated By	Modifications Required
Forestry	In Review	**Tree Barricade detail** This would be a good place to add the tree layer and tree barricade detail. Rather than circling each tree, you could show tree barricade fencing around the perimeter of the Tree Protection Area. **Last comment from reviewer:** Change the label "Tree Protection" to "Tree Barricade" in the legend for consistency. **Last response:** The label has been changed from "Tree Protection" to "Tree Barricade" on the attached Sheet C3.0.	C3.0	Mariellen Calabro	Deborah Glick	Yes
Forestry	In Review	**Update Tree Specifications** AR: Change height to 9', add 5' sp., and 65 gallon container size. QV: Change height to 10', 6' spread, and 100 gallon container size. TD: Change height to 10', 3' spread, and 100 gallon container size. UP: Change height to 9', spread to 5', and 65 gallon container size. Holly: Add 42" spread and 45 gallon container size. LI: Add 8' height, 4' spread, and 65 gallon container size. Magnolia: This tree does not meet minimum size requirements. Increase to 3" caliper, 8' height, 42" spread, and 45 gallon container size. **Last comment from reviewer:** With the proposed calipers/DBHs provided, you will need to update the following specs: TD: Change height to 8', 2' spread, and 45 gallon container size. UP: Change height to 10', 3' spread, and 100 gallon container size. Holly: Change height to 7'. Magnolia: Change spread to 2.5'. With those changes the specs will meet grade one standards for the caliper/DBHs provided in your plant schedule. The plant schedule you propose provides the following DBH totals: Red maple = 10" Live oak= 117" Bald cypress= 102" Elm= 90" Holly= 18" Crape myrtle= 97.5" Magnolia= 67.5" Palm= 416" Total 918" Proposed planting DBH **Last response:** The Plant Schedule has been revised as requested.	L1.1	Mariellen Calabro	Deborah Glick	Yes
Forestry	In Review	**Plant Schedule** Update Plant Schedule to match changes made on Sheet L1.1.	L1.2	Mariellen Calabro	Deborah Glick	Yes

Discipline	Status	Details	Attached To	Created By	Last Updated By	Modifications Required
		Last comment from reviewer: Update with changes proposed on L1.1 **Last response:** The Plant Schedule has been updated.				
Forestry	In Review	**Plant Schedule** Update based on changes made on Sheet L1.1. **Last comment from reviewer:** Update with changes proposed to L1.1 **Last response:** The Plant Schedule has been updated.	L1.3	Mariellen Calabro	Deborah Glick	Yes


City of DeLand
PSB23-057
SPRING GARDEN TOWNHOMES
SUBJECT PROPERTY
C-2
ROWA
A-3A
A-3
R-3CA
C-2AC
P-1
P-1&M
R-16
R-1A
R-1AA
C-1
E-1
R-4
IPUD
B-4(3)
B-4C(3)
CR-4092 (PLYMOUTH AV W)
DEER FERN AV
BRITTLE FERN AV
WALKING FERN LOOP
ELKHORN FERN LN
SANFORD CT
SR-15A (SPRING GARDEN AV N)
MINNESOTA AV W
Legend:
City Zoning
County Zoning
N
Not to Scale


City of DeLand
PSB23-057
SPRING GARDEN TOWNHOMES
SUBJECT PROPERTY
C-2
R-16
R-1A
R-1AA
C-1
C-2AC
R-3CA
P-1
P-1&M
PD
A-3A
A-3
E-1
R-4
IPUD
B-4(3)
B-4C(3)
I-1C
ROWA
CR 4092 (PLYMOUTH AV W)
CR 4094
SR 15A (SPRING GARDEN AV N)
DEER FERN AV
ELKHORN FERN LN
BRITTLE FERN AV
WALKING FERN LOOP
SANFORD CT
DELLA ST
MINNESOTA AV W
Legend:
City Zoning
County Zoning
N
Not to Scale

CITY OF DELAND, FLORIDA
SITE DEVELOPMENT PLAN
FOR
SPRING GARDEN AVE
DELAND, FLORIDA

OWNER/DEVELOPER:
FRANK A. FORD TRUST
P.O.BOX 457
DELAND, FL 32721
CONTACT: FRANK FORD

CONSTRUCTION MANAGER:
DDC MANAGEMENT, LLC
1323 BROOKHAVEN DRIVE
ORLANDO, FL 32803
CONTACT: CLAYTON SEARS
EMAIL: CLAYTON.SEARS@DDCMGMT.COM

ENGINEER:
CESO, INC.
1323 BROOKHAVEN DR.
ORLANDO, FL 32803
PHONE:(407) 670-2305
CONTACT: GARRETT GEORGE, P.E.
EMAIL: GARRETT.GEORGE@CESOINC.COM

GOVERNING AGENCIES AND UTILITY COMPANIES:

SEWER:
CITY OF DELAND, FL
1101 SOUTH AMELIA AVENUE
DELAND, FL 32724
PHONE: (386) 626-7250

GAS SERVICE:
TECO PEOPLES GAS
P.O. BOX 2562
TAMPA, FLORIDA 33601-2562
PHONE: (877) 832-6747

WATER:
CITY OF DELAND, FL
1101 SOUTH AMELIA AVENUE
DELAND, FL 32724
PHONE:(386) 626-7250

COMMUNICATIONS:
XFINITY COMCAST
PHONE: 1-800-934-6489

STORMWATER:
ST. JOHNS FLORIDA WATER MANAGEMENT DISTRICT
4049 REDI STREET
PALATKA, FL 32177
PHONE: (386) 329-4500

ELECTRIC:
DUKE ENERGY
P.O. BOX 14042
ST. PETERSBURG, FL 33733
PHONE: (866) 372-4663

ZONING:
CITY OF DELAND, FL
120 S. FLORIDA AVE.
DELAND, FL 32720
PHONE:(386) 626-7016

PROPERTY DATA:

PARCEL OWNER:	FORD FRANK A TR - TRUST
PARCEL ID:	700700000047 / 700700000043
ADDRESS:	610 N SPRING GARDEN AVENUE DELAND, FL 32720
TOTAL SITE AREA:	641,254 SQ FT. / 14.72 ACRES
ZONING:	SPRING GARDEN TOWNHOUSE PD
PROPOSED USE:	RESIDENTIAL/COMMERCIAL
PROJECT AREA:	14.72 ACRES
IMPERVIOUS AREA:	3.9 ACRES
PERVIOUS AREA:	9.43 ACRES
OPEN SPACE:	PARCEL B = 0.57 ACRES POND AREA = 1.96 ACRES TOTAL= 2.53 ACRES

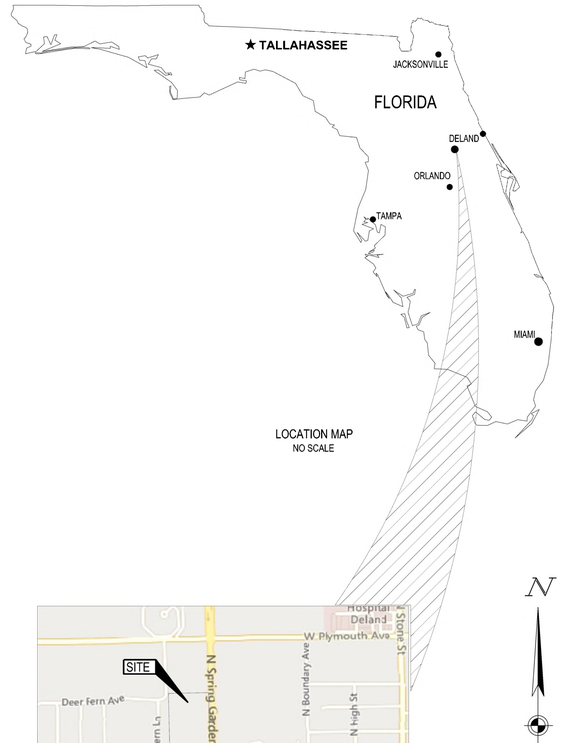
	REQUIRED	PROPOSED
BUILDING SETBACKS FROM PROPERTY LINE:		
NORTH PROPERTY SETBACK	25.0	25.0
EAST PROPERTY SETBACK	25.0	25.0
SOUTH PROPERTY SETBACK	25.0	25.0
WEST PROPERTY SETBACK	25.0	25.0
FRONT YARD SETBACK:	20.0'	20.0'
SIDE YARD SETBACK:	0.0'	0.0'
REAR YARD SETBACK:	10.0'	10.0'
TREE PROTECTION AREA:	96,188 SF	98,479 SF
BETWEEN BUILDINGS:		
SIDE TO SIDE:	15.0'	15.0'
REAR TO REAR / FRONT TO FRONT	40'	N/A
COMMERCIAL AREA:		
INTERNAL SIDE:	10'	NA
FRONT:	20'	NA
REAR:	10'	NA
STREET SIDE:	20'	20'

PARKING CALCULATIONS:
2 SPACES/UNIT, PLUS 0.5 SPACES PER UNIT PER VISITOR = 2.5 SPACES/ UNIT
90 UNITS * 2.5 SPACES / UNIT = 225 SPACES.
2 PARKING "SPACES" PER UNIT IN GARAGE & DRIVEWAY = 90 SPACES
45 TOTAL STALLS REMAINING (ON-STREET PARKING)

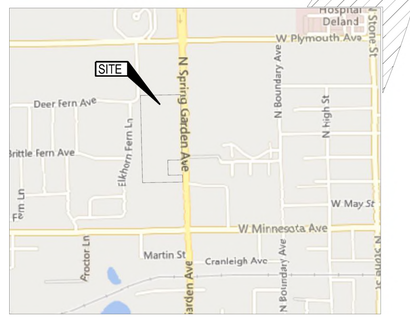
FLOODPLAIN DESIGNATION: ZONE X PER FEMA FIRM PANEL 12127C0465H DATED FEBUARY 19, 2014.

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C1.3	SUBDIVISION PLAN
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L3.4	IRRIGATION PLAN
L3.5	IRRIGATION DETAILS AND NOTES
L3.6	IRRIGATION DETAILS AND NOTES



LOCATION MAP
NO SCALE



VICINITY MAP NO
SCALE 1" = 1000'

FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD CONSTRUCTION DETAILS

DWG #	DESCRIPTION	DWG #	DESCRIPTION
425-053	DITCH BOTTOM INLET TYPE G	522-002	DETECTABLE WARNINGS & SIDEWALK CURB RAMPS
425-052	DITCH BOTTOM INLET TYPE D	520-001	CONCRETE SIDEWALK
520-001	TYPE D CONCRETE CURB	700-102	SPECIAL SIGN DETAILS
711-001	PAVEMENT MARKINGS	520-001	MIAMI CURB
430-021	MITERED END SECTION		

ORIGINAL SURVEY DRAWINGS:

SHEET 1 OF 1	ALTA SURVEY, MIZO & ASSOCIATES, P.A. (08/11/2022)
SHEET 1 OF 3	TOPOGRAPHIC SURVEY, ELLIS SURVEYS, P.A. (10/10/2022)
SHEET 2 OF 3	TOPOGRAPHIC SURVEY, ELLIS SURVEYS, P.A. (10/10/2022)
SHEET 3 OF 3	TOPOGRAPHIC SURVEY, ELLIS SURVEYS, P.A. (10/10/2022)

BENCHMARKS

	ELEVATION*	EASTING**	NORTHING**	DESCRIPTION
BM #1	79.66	E 552420.75	N 1710969.94	STORM DRAIN MANHOLE RIM
BM #2	84.51	E 552432.28	N 1709912.72	SANITARY MANHOLE RIM

*VERTICAL DATUM: NAVD88
**HORIZONTAL DATUM: NAD83
REFER TO SITE PLAN FOR BENCHMARK LOCATIONS

ALTA SURVEY PROVIDED BY:
MIZO & ASSOCIATES, LLC
1407 CUMBIE STREET
ORLANDO, FL 32804
PHONE: (321) 200-4904
CONTACT: EDWARD J. MIZO
DATED: 08/11/2022

CESO PROVIDES NO GUARANTEE TO THE ACCURACY OF THE SURVEY PROVIDED BY MIZO & ASSOCIATES. CONTRACTOR TO VERIFY EXISTING CONDITIONS PRIOR TO BID AND CONSTRUCTION.

TOPOGRAPHIC SURVEY PROVIDED BY:
ELLIS SURVEYS, LLC
P.O. BOX 160952
ALTAMONTE SPRINGS, FL 32716
PHONE: (407) 834-4003
CONTACT: ROBERT ELLIS P.L.S.
DATED: 10/10/2022

CESO PROVIDES NO GUARANTEE TO THE ACCURACY OF THE SURVEY PROVIDED BY ELLIS SURVEYING. CONTRACTOR TO VERIFY EXISTING CONDITIONS PRIOR TO BID AND CONSTRUCTION.

FDOT NOTES:
1. ALL CONSTRUCTION IN THE FDOT ROW SHALL CONFORM TO THE LATEST EDITIONS OF THE FDOT DESIGN STANDARDS (INDEXES), THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AND THE FDOT UTILITY ACCOMMODATION MANUAL.

FLOODPLAIN DESIGNATION:

THE PROPERTY IS IN ZONE "X" OF THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 12127C0465H WHICH HAS AN EFFECTIVE DATE OF 02/19/2014 AND IS NOT IN A SPECIAL FLOOD HAZARD AREA. FIELD SURVEYING WAS NOT PERFORMED TO DETERMINE THIS ZONE. AN ELEVATION CERTIFICATE MAY BE NEEDED TO VERIFY THIS DETERMINATION OR APPLY FOR AN AMENDMENT FROM THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

* VERTICAL DATUM: NAVD88
** HORIZONTAL DATUM: NAD83 - 2011, US FOOT

Sunshine 811

FORTY-EIGHT (48) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: FLORIDA UTILITIES PROTECTION SERVICE AT 811 OR 800-432-4770 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF OHIO UTILITIES PROTECTION SERVICE

CESO
WWW.CESOINC.COM

REVISION DESCRIPTION
NO. DATE

GARRETT MICHAEL GEORGE
LICENSE
No. 85805
STATE OF FLORIDA
PROFESSIONAL ENGINEER
7/31/23

SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

COVER SHEET

ISSUE:
NOT FOR CONSTRUCTION
DATE:
07/31/2023

JOB NO.:	761391
DESIGN:	RSH
DRAWN:	RSH
CHECKED:	CSG

SHEET NO.
C1.0

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GENERAL NOTES

DEMOLITION NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR THE DEMOLITION, REMOVAL AND DISPOSAL, IN A LOCATION APPROVED BY THE GOVERNING AUTHORITIES, OF ALL STRUCTURES, PADS, WALLS, FOUNDATIONS, DRAINAGE STRUCTURES, UTILITIES, ETC. SUCH THAT THE IMPROVEMENTS SHOWN ON THE REMAINING PLANS CAN BE CONSTRUCTED. ALL FACILITIES TO BE REMOVED SHALL BE UNDERCUT TO SUITABLE MATERIAL AND BROUGHT TO GRADE WITH SUITABLE COMPACTED FILL MATERIAL AS SPECIFIED IN THE GEOTECHNICAL REPORT PERFORMED BY TIERRA, LLC, DATED 09/16/2022. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS REQUIRED FOR DEMOLITION AND DISPOSAL.
2. FEDERAL, STATE AND LOCAL CODE REQUIREMENTS SHALL GOVERN THE DISPOSAL OF DEBRIS INCLUDING ANY POTENTIALLY HAZARDOUS AND TOXIC MATERIALS. ALL MATERIALS AND STRUCTURES DESIGNATED AS "TO BE REMOVED" SHALL BE DISPOSED OF OFF SITE AND AT THE COST OF THE CONTRACTOR.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING JOB SITE SAFETY PER OSHA REQUIREMENTS AT ALL TIMES DURING DEMOLITION AND CONSTRUCTION, CONTRACTOR SHALL PROVIDE SAFETY RAILINGS AT ALL AREAS WHERE FALL PROTECTION IS REQUIRED.
4. PRIOR TO DEMOLITION, IT IS THE CONTRACTOR'S RESPONSIBILITY TO CALL FLORIDA SUNSHINE ONE CALL 811 AND NOTIFY ALL UTILITY COMPANIES TO SCHEDULE UTILITY SERVICE REMOVAL AND/OR ABANDONMENT. ALL UTILITIES SHALL BE REMOVED/RELOCATED PER THE SPECIFICATIONS OF THE UTILITY COMPANIES. THE CONTRACTOR IS RESPONSIBLE TO PAY ALL FEES AND CHARGES ASSOCIATED WITH THIS WORK
5. CONTRACTOR SHALL MAINTAIN ALL UTILITY SERVICES TO INHABITED BUILDINGS ON SITE AND ADJACENT PROPERTIES AT ALL TIMES. INTERRUPTIONS SHALL BE APPROVED BY THE OWNERS OF THE BUILDINGS/PROPERTIES.
6. THE LOCATIONS OF ALL EXISTING UTILITIES SHOWN ON THIS PLAN HAVE BEEN DETERMINED FROM THE BEST INFORMATION AVAILABLE AND ARE GIVEN FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY. PRIOR TO THE START OF ANY DEMOLITION ACTIVITY, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES FOR ONSITE LOCATIONS OF EXISTING UTILITIES. IF THE LOCATION OR ELEVATION OF THE EXISTING UTILITIES ARE FOUND TO BE DIFFERENT FROM THE PLANS, CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY.
7. CONTRACTOR SHALL PROTECT EXISTING SITE FEATURES TO REMAIN INSIDE AND OUTSIDE CONSTRUCTION LIMITS. CONTRACTOR IS RESPONSIBLE TO DOCUMENT ALL EXISTING DAMAGES AND NOTIFY THE CITY/COUNTY PRIOR TO CONSTRUCTION START. ANY EXISTING SITE FEATURE TO REMAIN THAT IS DAMAGED DURING CONSTRUCTION, SUCH AS, BUT NOT LIMITED TO, DRAINAGE, UTILITIES, PAVEMENT, CURB, ETC. SHALL BE REPAIRED TO A CONDITION THAT IS EQUAL TO, OR BETTER THAN, THE EXISTING CONDITIONS. PRIOR TO BEING DAMAGED, THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO THE SATISFACTION OF THE OWNER AT NO ADDITIONAL COST.
8. CONTINUOUS ACCESS SHALL BE MAINTAINED TO THE SURROUNDING PROPERTIES WHENEVER POSSIBLE DURING DEMOLITION OF THE EXISTING FACILITIES.
9. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING TRAFFIC CONTROL. ALL TRAFFIC CONTROL MEASURES SHALL BE IN ACCORDANCE WITH STATE DEPARTMENT OF TRANSPORTATION REGULATIONS AND LOCAL REGULATIONS.
10. THE CONTRACTOR IS RESPONSIBLE FOR PLACING AND MAINTAINING CONSTRUCTION FENCE, SIGNS, ETC. TO WARN AND KEEP UNAUTHORIZED PEOPLE OFF SITE FOR THE DURATION OF THE PROJECT.
11. PRIOR TO DEMOLITION, ALL EROSION CONTROL DEVICES ARE TO BE INSTALLED PER THE GOVERNING AGENCIES GUIDELINES AND STANDARDS. DUST CONTROL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
12. SAWCUT LINE PROVIDED IS FOR REFERENCE ONLY AND PAVEMENT SAWCUT REMOVAL SHALL BE TO FULL DEPTH AT ALL PAVEMENT/SIDEWALK LIMITS. CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING THE EXTENT OF THE SAWCUT THAT WILL BE REQUIRED AS WELL AS PAVEMENT REPAIRS TO INSTALL UTILITY TRENCHING. IF ANY DAMAGE OCCURS ON ANY OF THE SURROUNDING PAVEMENT, ETC. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ITS REMOVAL AND REPAIR. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING THAT WHICH IS NECESSARY TO COMPLETE THE INTENT OF THE PROPOSED IMPROVEMENTS. SAWCUT EXISTING PAVEMENT TO FULL DEPTH, USING CARE TO CUT NEAT, STRAIGHT LINES. CUT AT EXISTING JOINTS WHERE POSSIBLE.
13. THE CONTRACTOR SHALL MAINTAIN A WELL-DRAINED SITE, FREE OF STANDING WATER DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TEMPORARY DRAINAGE MEASURES DURING CONSTRUCTION.
14. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO STUDY THE PLANS AND VISIT THE SITE TO DETERMINE THE ITEMS THAT MUST BE REMOVED TO COMPLY WITH THE SITE DEVELOPMENT PLANS. NO EXTRA FEE WILL BE PAID FOR THE REMOVAL OF ANY ITEM NOT LISTED THAT IS VISIBLE UPON A SITE VISIT. THE DEMOLITION PLAN IS INTENDED TO PRESENT THE SCOPE OF THE DEMOLITION, AND DOES NOT GUARANTEE THAT ALL ITEMS ARE ADDRESSED.
15. THE CONTRACTOR SHALL OBTAIN ALL PERMITS FOR ALL SITE DEVELOPMENT WORK, PAY ALL FEES FOR PERMITS AND CHECK ALL GOVERNING AUTHORITIES' SPECIFICATIONS FOR BUT NOT LIMITED TO, GUTTERS, SIDEWALKS, POLES, AND OTHER STRUCTURES, INCLUDING THE REMOVAL OR RELOCATION OF EXISTING UTILITIES OR OTHER PHYSICAL OBJECTS SHOWN ON PLANS OR NOTED OTHERWISE.
16. ALL TRENCHES, HOLES AND PITS RESULTING FROM THE REMOVAL AND ABANDONMENT OF ANY STRUCTURE OR OBSTRUCTION SHALL BE BACKFILLED AND COMPACTED IN ACCORDANCE WITH THE GEOTECHNICAL REPORT PERFORMED BY FES GROUP, LLC, DATED 12/27/21
17. TREE REMOVAL AND CLEARING AND GRUBBING SHALL BE PERFORMED PER STATE AND LOCAL REGULATIONS. STUMP SHALL BE REMOVED COMPLETELY, INCLUDING ALL ROOTS. NO BURNING ALLOWED.
18. DEAD SEWER CONNECTIONS OR MAINS BEING REMOVED SHALL BE REMOVED TO THE RIGHT OF WAY (UNLESS PLANS OR CITY ENGINEER SPECIFY OTHERWISE) AND SEALED AND MADE WATERTIGHT.
19. ALL MATERIALS AND STRUCTURES DESIGNATED AS "TO BE REMOVED" SHALL BE DISPOSED OF OFF SITE AND AT THE COST OF THE CONTRACTOR.
20. THE CONTRACTOR SHALL CREATE AND IMPLEMENT AN EROSION AND SEDIMENTATION CONTROL PLAN FOR ALL SITE CONSTRUCTION ACTIVITIES ASSOCIATED WITH THE PROJECT. THE PLAN MUST CONFORM TO THE EROSION AND SEDIMENTATION REQUIREMENTS OF THE CONSTRUCTION GENERAL PERMIT OR LOCAL STANDARDS AND CODES, WHICHEVER IS MORE STRINGENT.
21. ALL COSTS FOR INSPECTIONS AND/OR TESTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR UNLESS NOTED OTHERWISE.
22. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH CITY OF DELAND & VOLUSIA COUNTY, AND ALL UTILITY PROVIDERS LOCATED ON-SITE AND IN THE RIGHT OF WAY.
23. CONTRACTOR MAY LIMIT SAW-CUT AND PAVEMENT REMOVAL TO ONLY THOSE AREAS WHERE IT IS REQUIRED AS SHOWN ON THESE CONSTRUCTION PLANS BUT IF ANY DAMAGE IS INCURRED TO ANY OF THE SURROUNDING PAVEMENT ETC., THE CONTRACTOR SHALL BE RESPONSIBLE FOR ITS REMOVAL AND REPAIR.
24. SAWCUT AND REMOVE TO FULL DEPTH AT ALL PAVEMENT/SIDEWALK LIMITS OR TO EXISTING JOINTS.
25. ALL POTENTIALLY HAZARDOUS/TOXIC MATERIALS MUST BE REMOVED FROM THE SITE PRIOR TO DEMOLITION, AND PER DIRECTION OF THE ENVIRONMENTAL ENGINEER. CONTRACTOR TO REFERENCE PHASE I ENVIRONMENTAL REPORT PERFORMED BY TIERRA, DATED 09/16/2022.
26. THE REMOVAL OF STRUCTURES AND OBSTRUCTIONS SHALL BE IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.
27. FEDERAL, STATE AND LOCAL CODE REQUIREMENTS SHALL CONTROL THE DISPOSAL OF DEBRIS RESULTING FROM THE REMOVAL OPERATION.
28. THE CONTRACTOR SHALL STRIP AND REMOVE (OR STOCKPILE) ALL TOPSOIL PRIOR TO COMMENCING WITH ANY EXCAVATION OR DEMOLITION.

SITE NOTES

1. ALL WORK AND MATERIALS SHALL COMPLY WITH ALL CITY REGULATIONS AND CODES AND O.S.H.A. STANDARDS. THE CONTRACTOR SHALL OBTAIN FINAL APPROVALS/PERMITS AND INSPECTIONS AS NECESSARY PRIOR TO CONSTRUCTION.
2. ALL MATERIAL NOTED ON DRAWINGS WILL BE SUPPLIED BY THE CONTRACTOR UNLESS OTHERWISE NOTED.
3. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS TO COORDINATE ACCESS POINTS AND ELEVATIONS. REFER TO ARCHITECTURAL PLANS. FOR EXACT LOCATIONS AND DIMENSIONS OF DOORS, ENTRY RAMP, AND CANOPY.
4. NEW CURB AND GUTTER ALONG EXISTING STREETS TO MATCH EXISTING CURB AND GUTTER IN KIND. IF UNDER DRAIN EXISTS, IT SHALL BE REPLACED.
5. ALL COSTS FOR INSPECTIONS AND/OR TESTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR UNLESS NOTED OTHERWISE.
6. ACCESSIBILITY STANDARDS SHALL BE IN ACCORDANCE WITH FEDERAL AND LOCAL REQUIREMENTS FOR HANDICAP ACCESSIBILITY, INCLUDING BUT NOT LIMITED TO THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES. ADA PARKING STALLS SHALL MEET ADA GRADE GUIDELINES. CONTRACTOR SHALL FIELD VERIFY EXISTING GRADES AT ACCESS POINTS, ACCESSIBLE ROUTES, AND EXISTING PARKING TO REMAIN TO DETERMINE COMPLIANCE WITH STANDARDS.
7. ALL DISTURBED AREAS ARE TO RECEIVE 6" OF TOPSOIL, SEED, MULCH AND WATER UNTIL A HEALTHY STAND OF SOD IS ESTABLISHED.
8. ALL DIMENSIONS AND RADII ARE TO THE BACK OF THE CURB, EDGE OF PAVEMENT, OR BUILDING FACE, AS APPLICABLE, UNLESS OTHERWISE NOTED.
9. ALL CURB RADII ARE 20 FEET UNLESS OTHERWISE NOTED.
10. BOLLARDS SHALL BE PLACED TO PROTECT GAS METER, ELECTRICAL AND TELEPHONE EQUIPMENT, AND DUMPSTER ENCLOSURE.
11. PROVIDE SIGNAGE AND STRIPING AS SHOWN. PAVEMENT MARKINGS ON ASPHALT SHALL BE WHITE. PAVEMENT MARKINGS ON CONCRETE SHALL BE YELLOW. ALL PAVEMENT MARKINGS AND STRIPING SHALL COMPLY WITH FDOT INDEX 711-001 AND MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.)
    - 11.1. LANE LINE: 6" WHITE
    - 11.2. PARKING STALLS: 4" WHITE
    - 11.3. STOP LINE: 12" WHITE
12. REFER TO ARCHITECTURAL PLANS FOR PROPOSED BUILDING SIGNAGE.
13. REFER TO MECHANICAL PLANS FOR EQUIPMENT LAYOUT.
14. REFER TO ELECTRICAL PLANS FOR ELECTRICAL WORK.
15. REFER TO GEOTECHNICAL ENGINEERING REPORT FOR SITE WORK PREPARATION/RECOMMENDATIONS AND PAVEMENT SECTIONS.
16. REFER TO ORIGINAL SURVEY PROVIDED BY MIZO & ASSOCIATES (ALTA SUREY) & ELLIS SURVEYS (TOPOGRAPHIC SURVEY).
17. ALL LIGHT POLES TO BE LOCATED 3' FROM THE BACK OF CURB, AS MEASURED FROM THE FACE OF POLE FOUNDATION, UNLESS OTHERWISE DENOTED ON PLANS.

GRADING NOTES

1. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
2. THE TOPOGRAPHIC SURVEY WAS PERFORMED BY A REGISTERED LAND SURVEYOR. IF CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS, WITHOUT EXCEPTION, HE SHALL HAVE MADE, AT HIS EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR, AND IN THE SAME DATUM, AND SUBMIT IT TO THE OWNER FOR REVIEW.
3. CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE GOVERNING CODES AND BE CONSTRUCTED TO SAME.
4. THE CONTRACTOR SHALL ADHERE TO ALL TERMS & CONDITIONS AS OUTLINED IN THE EPA OR APPLICABLE STATE GENERAL N.P.D.E.S. PERMIT FOR STORM WATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES.
5. EXISTING AND PROPOSED GRADE CONTOUR INTERVALS ARE SHOWN AT 1 FOOT INTERVALS.
6. ALL SPOT ELEVATIONS REFER TO FINISHED PAVEMENT ELEVATIONS UNLESS OTHERWISE NOTED.
7. ALL ADA ACCESSIBLE PARKING SPACED AND LOADING AREAS SHALL BE GRADED WITH A 2.0% MAXIMUM SLOPE IN ALL DIRECTIONS. ALL ADA ACCESSIBLE ROUTES SHALL BE GRADED WITH A 2.0% MAXIMUM CROSS SLOPE AND 5.0% MAXIMUM RUNNING SLOPE.
8. MAINTAIN EXISTING DRAINAGE PATTERN THROUGHOUT THE SITE, EXCEPT WITHIN THE LIMITS OF DISTURBANCE (LOD).
9. COORDINATE GRADES AT BUILDING ENTRIES WITH ARCHITECTURAL PLANS.
10. EXISTING DRAINAGE STRUCTURES SHALL BE INSPECTED AND REPAIRED AS NEEDED, AND EXISTING PIPES ARE TO BE CLEANED TO REMOVE ALL SILT AND DEBRIS AFTER CONSTRUCTION IS COMPLETE.
11. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO A CONDITION EQUAL TO OR BETTER THAN IT'S CONDITION PRIOR TO DAMAGE.
12. CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM BUILDING AND WITHIN PAVED AREAS.
13. ALL TOPSOIL MUST BE REMOVED BEFORE FILL MATERIAL IS PLACED.
14. ALL WET, OR OTHERWISE UNSUITABLE SOILS MUST BE STABILIZED. THIS MAY BE ACCOMPLISHED BY DRYING, REMOVAL & REPLACEMENT, REMOVAL & DRYING & RECOMPACTION, OR SOIL TREATMENT (LIME/CEMENT) UNDER THE SUPERVISION OF A QUALIFIED PROFESSIONAL GEOTECHNICAL ENGINEER.
15. ALL UNSURFACED AREAS, DISTURBED BY GRADING, OPERATION SHALL RECEIVE 6" OF TOPSOIL. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES STEEPER THAN 3H:1V AND SEED WITH LOW MAINTENANCE GRASS SEED MIX. CONTRACTOR SHALL SEED DISTURBED AREAS IN ACCORDANCE WITH SPECIFICATIONS UNTIL A HEALTHY STAND OF GRASS IS OBTAINED. ALL EXPOSED SURFACE AREAS SHALL BE STABILIZED PER THE SWPPP AND LANDSCAPE REQUIREMENTS AS PART OF THIS PLAN SET.
16. ALL STORM PIPE ENTERING STRUCTURES SHALL BE GROUTED TO ASSURE CONNECTION AT STRUCTURE IS SOIL TIGHT.
17. ALL STORM STRUCTURES SHALL HAVE A SMOOTH UNIFORM POURED MORTAR INVERT FROM INVERT IN TO INVERT OUT.
18. STORM PIPE SHALL BE AS FOLLOWS UNLESS OTHERWISE NOTED:

MATERIAL	TYPE	PIPE SPEC	JOINT SPEC	INSTALLATION	ACCEPTABLE AREAS OF USE
REINFORCED CONCRETE PIPE (RCP)	CLASS III, IV, V	ASTM C-76	ASTM C443	ASTM C1479	WITHIN R/W, COVER VARIES WITH PIPE CLASS
HIGH DENSITY POLY-ETHYLENE (HDPE)	SMOOTH-WALLED CORRUGATED ADS-N12 OR EQUAL	AASHTO M294 (TYPE S)	ASTM F477	ASTM D2321	ON SITE, 12" TO 60" DIA.

19. ALL STORM SEWER STRUCTURE GRATES AND FRAMES WITHIN PAVEMENT SHALL BE HEAVY DUTY (FDOT TYPE 'G').
20. ALL STORM DRAINAGE INSTALLATION SHALL BE PERFORMED IN ACCORDANCE WITH ALL CITY OF DELAND & FDOT STANDARDS.
21. ROOF DRAINS, FOUNDATION DRAINS, AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER SYSTEM ARE PROHIBITED.
22. THE STORM SEWER GRADE WILL BE SUCH THAT A MINIMUM COVER IS MAINTAINED TO WITHSTAND AASHTO HS-25 LOADING ON THE PIPE. PROVIDE MINIMUM 3.0 FEET OF COVER FOR ALL STORM SEWERS UNLESS OTHERWISE NOTED.
23. WHEN A SANITARY SEWER MAIN LIES ABOVE A STORM SEWER, OR WITHIN 12 INCHES BELOW, THE SANITARY SEWER WILL HAVE AN IMPERVIOUS ENCASEMENT OR BE CONSTRUCTED OF STRUCTURAL SEWER PIPE FOR A MINIMUM OF 10 FEET ON EACH SIDE OF WHERE THE STORM SEWER CROSSES.
24. CONTRACTOR SHALL CONSTRUCT SIDEWALKS SUCH THAT 2% IS THE MAXIMUM CROSS SLOPE, AND 5% IS THE MAXIMUM TRANSVERSE SLOPE EXCEPT AT RAMPS. CURB RAMPS SHALL BE CONSTRUCTED PER FDOT INDEX 522-022 'CR-E' AND 'CR-F' AND THE MAXIMUM SLOPES SHALL NOT BE EXCEEDED. FORMS SHALL BE PLACED FOR SIDEWALK AREA, AND THE SLOPES ARE TO BE VERIFIED PRIOR TO PLACING CONCRETE. IF SLOPES BECOME AN ISSUE, CONTRACTOR SHALL CONTACT THE ENGINEER.
25. CURB SHALL BE FDOT TYPE 'D' PER INDEX 520-001.
26. REFER TO GEOTECHNICAL REPORT AND CITY OF DELAND ENGINEERING STANDARDS MANUAL, ARTICLE 8 FOR SUBGRADE PREPARATION.
27. ALL ADA ACCESSIBLE ROUTES, WITHIN THE PUBLIC RIGHT-OF-WAY, SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT EDITION OF THE "PUBLIC RIGHTS-OF-WAY ACCESSIBILITY GUIDELINES" AND ANY APPLICABLE LOCAL OR STATE REQUIREMENTS. THE MORE STRINGENT REQUIREMENT SHALL GOVERN.
28. ALL ADA ACCESSIBLE ROUTES, INCLUDING SIGNAGE AND STRIPING WITHIN THE PROJECT LIMITS, SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT EDITION OF THE "ADA STANDARDS FOR ACCESSIBLE DESIGN" AND ANY LOCAL OR STATE REQUIREMENTS. THE MORE STRINGENT REQUIREMENT SHALL GOVERN.

UTILITY NOTES

1. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.
2. CONTRACTOR SHALL COMPLY TO THE FULLEST EXTENT WITH THE LATEST STANDARDS OF O.S.H.A. DIRECTIVES OR ANY OTHER AGENCY HAVING JURISDICTION FOR EXCAVATION AND TRENCHING PROCEDURES. THE CONTRACTOR SHALL USE SUPPORT SYSTEMS, SLOPING, BENCHING, AND OTHER MEANS OF PROTECTION. THIS TO INCLUDE BUT NOT LIMITED FOR ACCESS AND EGRESS FROM ALL EXCAVATION AND TRENCHING. CONTRACTOR IS RESPONSIBLE TO COMPLY WITH PERFORMANCE CRITERIA FOR O.S.H.A.
3. CONTRACTOR IS RESPONSIBLE FOR REPAIRS OF DAMAGE TO ANY EXISTING UTILITY DURING CONSTRUCTION AT NO COST TO THE OWNER.
4. ALL FILL AND BEDDING MATERIAL IS TO BE PLACED AND COMPACTED BEFORE INSTALLATION OF PROPOSED UTILITIES.
5. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES FOR INSTALLATION REQUIREMENTS AND SPECIFICATIONS. THE CONTRACTOR SHALL CONDUCT ALL REQUIRED TESTS TO THE SATISFACTION OF THE RESPECTIVE UTILITY REGULATIONS AND THE OWNER'S INSPECTION AUTHORITIES.
6. CONTRACTOR SHALL NOTIFY THE UTILITY AUTHORITY'S INSPECTORS 72 HOURS BEFORE CONNECTING TO ANY EXISTING LINE.
7. WATER AND SANITARY UTILITIES SHALL HAVE TEN (10') FEET OF HORIZONTAL CLEARANCE WHEN PARALLEL OR 18" VERTICAL CLEARANCE WHEN CROSSING. ALL CLEARANCE DISTANCES SHALL BE MEASURE FROM OUTSIDE EDGE OF PIPE TO OUTSIDE EDGE OF PIPE. THE CROSSING SHALL BE ARRANGED SO THAT THE SANITARY SEWER JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE WATER LINE JOINTS.
8. IF A WATER LINE PASSES UNDER THE SANITARY SEWER LINE, THE SEWER LINE SHOULD BE CONSTRUCTED OF A WATERTIGHT MATERIAL APPROVED BY THE REGULATORY AGENCY FOR USE IN WATER MAIN CONSTRUCTION AND SHALL EXTEND TEN (10') FEET ON BOTH SIDES OF THE CROSSING, AS MEASURED PERPENDICULAR TO THE WATER LINES. ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO MAINTAIN LINE AND GRADE.
9. UNDERGROUND LINES SHALL BE INSTALLED, INSPECTED AND APPROVED BEFORE BACKFILLING.
10. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY COMPANIES FOR INSTALLATION REQUIREMENTS AND SPECIFICATIONS. THE CONTRACTOR SHALL CONDUCT ALL REQUIRED TESTS TO THE SATISFACTION OF THE RESPECTIVE UTILITY REGULATIONS AND THE OWNER'S INSPECTION AUTHORITIES.
11. UTILITY TRENCHES WITHIN PAVED AREAS TO BE BACKFILLED PER UTILITY TRENCH DETAIL PROVIDED WITHIN THE CONSTRUCTION DETAILS SHEET.
12. ALL WATER LINE WORK SHALL BE PERFORMED IN ACCORDANCE WITH CITY OF DELAND WATER NOTES (FOUND ON RESIDENTIAL WATER DETAILS REFERENCE #W422) AND FDEP REGULATIONS.
13. INSTALL ALL WATER LINES WITH A MINIMUM COVER OF 3'-0".
14. ON-SITE WATER LINE MATERIAL SHALL BE PER CITY OF DELAND WATER NOTES (FOUND ON RESIDENTIAL WATER DETAILS REFERENCE #W422) AS FOLLOWS:

MATERIAL	PRESSURE RATING	PIPE SPEC	FITTINGS	INSTALLATION	ACCEPTABLE AREAS OF USE
POLY VINYL CHLORIDE (PVC)	AWWA DR-11 PRESSURE CLASS 350	AWWA DR-11	BRASS AWWA C800 AWWA C901	ASTM D2241	6" DIAMETER WATER MAIN

15. ON-SITE SANITARY SEWER LINE MATERIAL SHALL BE PER CITY OF DELAND WATER NOTES (FOUND ON RESIDENTIAL SEWER DETAILS) AS FOLLOWS:

MATERIAL	PRESSURE RATING	PIPE SPEC	FITTINGS	INSTALLATION	ACCEPTABLE AREAS OF USE
POLY VINYL CHLORIDE (PVC)	SDR 26	ASTM D3034	ASTM D3212 ASTM F477	ASTM D1598	ON SITE, 8" & LARGER IN RIGHT OF WAYS AND EASEMENTS

16. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT BUILDING UTILITY CONNECTION LOCATIONS, SERVICE SIZES TO BE DETERMINED BY ARCHITECT.
17. CLEAN OUTS AND CURB BOXES WITHIN THE PAVED AREAS MUST HAVE TRAFFIC LOADING FRAMES AND COVERS.
18. AS CONSTRUCTION ACTIVITIES APPROACH AN EXISTING UTILITY LINE, THE CONTRACTOR SHALL LOCATE THE LINE, DETERMINE IT'S EXACT LOCATION, AND MAKE GRADE ADJUSTMENTS BY DEFLECTING THE PIPELINE FITTINGS. MAXIMUM FITTING DEFLECTION SHALL BE PER MANUFACTURER'S WRITTEN INSTRUCTIONS.
19. UNLESS OTHERWISE NOTED IN DEMOLITION PLAN, IT IS THE OWNER'S INTENTION TO PRESERVE ALL EXISTING SITE FEATURES AND UTILITY LINES. CONTRACTOR TO FIELD VERIFY LOCATION OF ALL UTILITIES PRIOR TO STARTING WORK. IF CONFLICT IS IDENTIFIED, CONTACT OWNER'S ENGINEER IMMEDIATELY. RELOCATION OF ANY CONFLICTING UTILITY HAS TO BE DONE WITH APPROVAL OF THE UTILITY OWNER.

EXISTING FEATURES LEGEND

APPLIES TO ALL CIVIL SHEETS

- R/W — RIGHT OF WAY LINE
- PARCEL LINE
- SUBJECT PROPERTY BOUNDARY LINE
- EASEMENT LINE
- CURB
- EDGE OF PAVEMENT
- EDGE OF WALK
- PAVEMENT MARKINGS
- STM — STORM SEWER
- SAN — SANITARY SEWER
- W — WATER LINE
- G — GAS LINE
- OHE — OVHD ELECTRIC LINE
- UGE — UGND ELECTRIC LINE
- UGT — UGND TELECOMM LINE
- 100 — MAJOR CONTOUR
- 102 — MINOR CONTOUR
- WATER METER
- WV — WATER VALVE
- POWER/TELEPHONE POLE
- POWER POLE
- AC — AIR CONDITIONER
- ELECTRIC BOX
- LIGHT POLE
- GV — GAS VALVE
- GAS METER
- STORM CATCH BASIN
- STORM INLET BASIN
- STORM MANHOLE
- STORM CLEAN OUT
- SANITARY MANHOLE
- SANITARY CLEAN OUT
- TRAFFIC/ SIGNAL POLE
- TMH — TRAFFIC MANHOLE
- SIGN

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NO.	DATE	REVISION DESCRIPTION

GARRETT MICHAEL GEORGE
LICENSE
No. 85805
STATE OF FLORIDA
PROFESSIONAL ENGINEER
7/31/23

SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

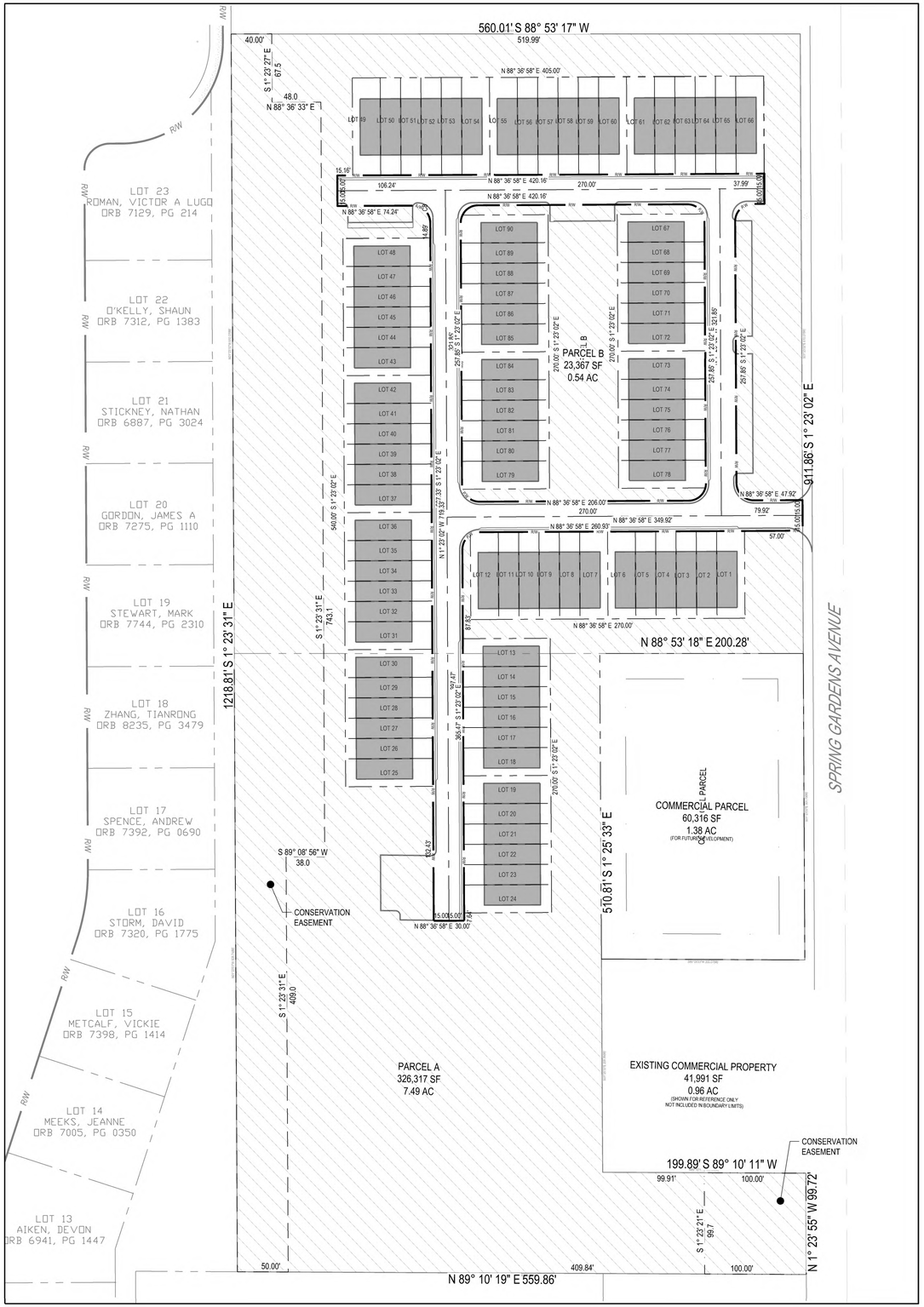
GENERAL NOTES

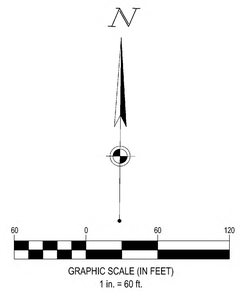
ISSUE:
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DATE:
07/31/2023

JOB NO.:	761391
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SHEET NO.
C1.1

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SUBDIVISION PLANS LEGEND	
EXISTING	
PROPOSED	
	PROPERTY LINE
R/W	RIGHT-OF-WAY
	CENTERLINE
	PAVEMENT/WALK
	PARCEL BOUNDARY
	CONSERVATION EASEMENT BOUNDARY

Parcel Table	
Parcel #	Area
LOT 1	2365.00 SF
LOT 2	1720.00 SF
LOT 3	1720.00 SF
LOT 4	1720.00 SF
LOT 5	1720.00 SF
LOT 6	2365.00 SF
LOT 7	2365.00 SF
LOT 8	1720.00 SF
LOT 9	1720.00 SF
LOT 10	1720.00 SF
LOT 11	1720.00 SF
LOT 12	2357.32 SF
LOT 13	2365.00 SF
LOT 14	1720.00 SF
LOT 15	1720.00 SF
LOT 16	1720.00 SF
LOT 17	1720.00 SF
LOT 18	2365.00 SF
LOT 19	2365.00 SF
LOT 20	1720.00 SF
LOT 21	1720.00 SF
LOT 22	1720.00 SF
LOT 23	1720.00 SF
LOT 24	2365.00 SF
LOT 25	2365.00 SF
LOT 26	1720.00 SF
LOT 27	1720.00 SF
LOT 28	1720.00 SF
LOT 29	1720.00 SF
LOT 30	2365.00 SF
LOT 31	2365.00 SF
LOT 32	1720.00 SF
LOT 33	1720.00 SF
LOT 34	1720.00 SF
LOT 35	1720.00 SF
LOT 36	2365.00 SF
LOT 37	2365.00 SF
LOT 38	1720.00 SF
LOT 39	1720.00 SF
LOT 40	1720.00 SF

Parcel Table	
Parcel #	Area
LOT 41	1720.00 SF
LOT 42	2365.00 SF
LOT 43	2365.00 SF
LOT 44	1720.00 SF
LOT 45	1720.00 SF
LOT 46	1720.00 SF
LOT 47	1720.00 SF
LOT 48	2365.00 SF
LOT 50	1920.00 SF
LOT 51	1920.00 SF
LOT 52	1920.00 SF
LOT 53	1920.00 SF
LOT 54	2640.00 SF
LOT 55	2640.00 SF
LOT 56	1920.00 SF
LOT 57	1920.00 SF
LOT 58	1920.00 SF
LOT 59	1920.00 SF
LOT 60	2640.00 SF
LOT 61	2640.00 SF
LOT 62	1920.00 SF
LOT 63	1920.00 SF
LOT 64	1920.00 SF
LOT 65	1920.00 SF
LOT 66	2640.00 SF
LOT 67	2360.47 SF
LOT 68	1720.00 SF
LOT 69	1720.00 SF
LOT 70	1720.00 SF
LOT 71	1720.00 SF
LOT 72	2365.00 SF
LOT 73	2365.00 SF
LOT 74	1720.00 SF
LOT 75	1720.00 SF
LOT 76	1720.00 SF
LOT 77	1720.00 SF
LOT 78	2364.10 SF
LOT 79	2364.10 SF
LOT 80	1720.00 SF
LOT 81	1720.00 SF

Parcel Table	
Parcel #	Area
LOT 82	1720.00 SF
LOT 83	1720.00 SF
LOT 84	2365.00 SF
LOT 85	1720.00 SF
LOT 86	1720.00 SF
LOT 87	1720.00 SF
LOT 88	1720.00 SF
LOT 89	1720.00 SF
LOT 90	2360.47 SF
LOT COMMERCIAL PARCEL	60316.14 SF

Parcel Table	
Parcel #	Area
COMMERCIAL PARCEL	60316.14 SF
EXISTING COMMERCIAL PROPERTY	41990.60 SF
PARCEL A	326317.09 SF
PARCEL B	23367.43 SF
RIGHT OF WAY	52853.19 SF

REFER TO SHEET C1.1 FOR GENERAL UTILITY NOTES

REFER TO SHEET C7.0-C7.2 FOR UTILITY DETAILS

LOT & R/W CURVE TABLE						
CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE	TANGENT
C1	17.00'	7.93'	7.86'	N14° 45' 02"W	026° 44' 01"	4.04'
C2	17.00'	26.70'	24.04'	S46° 23' 02"E	090° 00' 00"	17.00'
C3	17.00'	4.55'	4.54'	S09° 03' 31"E	015° 20' 58"	2.29'
C4	17.00'	9.57'	9.45'	S72° 29' 08"W	032° 15' 41"	4.92'
C5	17.00'	22.74'	21.08'	S50° 17' 59"W	076° 38' 00"	13.43'
C6	17.00'	26.70'	24.04'	S43° 36' 58"W	090° 00' 00"	17.00'
C7	17.00'	22.74'	21.08'	N53° 04' 02"W	076° 38' 00"	13.43'
C8	17.00'	26.70'	24.04'	S46° 23' 02"E	090° 00' 00"	17.00'
C9	17.00'	26.70'	24.04'	N43° 36' 58"E	090° 00' 00"	17.00'
C10	17.00'	18.77'	17.83'	N59° 45' 02"W	063° 15' 59"	10.47'
C11	17.00'	26.70'	24.04'	S46° 23' 02"E	090° 00' 00"	17.00'
C12	17.00'	26.70'	24.04'	S43° 36' 58"W	090° 00' 00"	17.00'
C13	17.00'	4.55'	4.54'	N06° 17' 27"E	015° 20' 58"	2.29'
C14	17.00'	22.15'	20.62'	N51° 17' 27"E	074° 39' 02"	12.96'
C15	17.00'	22.15'	20.62'	S54° 03' 31"E	074° 39' 02"	12.96'
C16	17.00'	18.77'	17.83'	S56° 58' 59"W	063° 15' 59"	10.47'
C17	17.00'	7.93'	7.86'	S11° 58' 59"W	026° 44' 01"	4.04'
C18	17.00'	17.13'	16.42'	S27° 29' 08"W	057° 44' 19"	9.37'

BENCHMARKS

	ELEVATION*	EASTING**	NORTHING**	DESCRIPTION
BM #1	79.66	E 552420.75	N 1710969.94	STORM DRAIN MANHOLE RIM
BM #2	84.51	E 552432.28	N 1709912.72	SANITARY MANHOLE RIM

*VERTICAL DATUM: NAVD88
**HORIZONTAL DATUM: NAD83
REFER TO SITE PLAN FOR BENCHMARK LOCATIONS

Sunshine811

FORTY-EIGHT (48) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: FLORIDA UTILITY PROTECTION SERVICE AT 811 OR (800)-432-4770 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF FLORIDA 811.

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NO.	DATE	REVISION DESCRIPTION

GARRETT MICHAEL GEORGE
LICENSE
No. 85005
7/31/23
STATE OF FLORIDA
PROFESSIONAL ENGINEER

SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

SUBDIVISION PLAN

ISSUE: NOT FOR CONSTRUCTION
DATE: 07/31/2023
JOB NO.: 761391
DESIGN: RSH
DRAWN: RSH
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SHEET NO. C1.2

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SUBDIVISION PLANS LEGEND

EXISTING	
PROPOSED	
	PROPERTY LINE
R/W	RIGHT-OF-WAY
	CENTERLINE
	PAVEMENT/WALK
	PARCEL BOUNDARY
	CONSERVATION EASEMENT

GRAPHIC SCALE (IN FEET)
1 in. = 30 ft.

CONSERVATION EASEMENT
SEE SHEET C1.2

PARCEL A
326,317 SF
7.49 AC

PARCEL B
23,367 SF
0.54 AC

COMMERCIAL PARCEL
60,316 SF
1.38 AC

SPRING GARDEN AVENUE

REFER TO SHEET C1.1 FOR GENERAL UTILITY NOTES

REFER TO SHEET C7.0-C7.2 FOR UTILITY DETAILS

Sunshine 811

FORTY-EIGHT (48) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: FLORIDA UTILITY PROTECTION SERVICE AT 811 OR (800)-432-4770 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF FLORIDA 811.

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REVISION DESCRIPTION

NO. DATE

GARRETT MICHAEL GEORGE
LICENSE
No. 85505
7/31/23
STATE OF FLORIDA
PROFESSIONAL ENGINEER

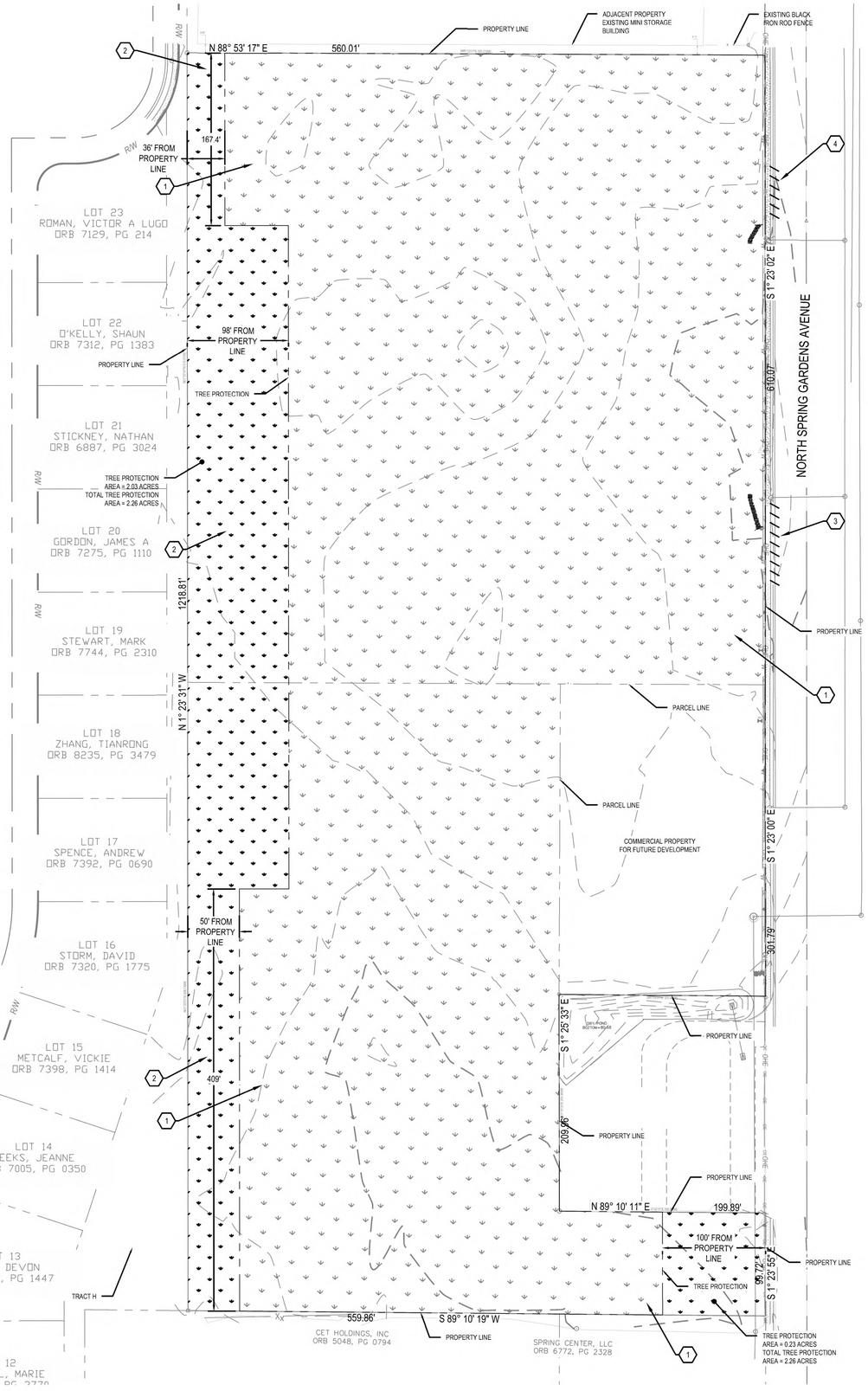
SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

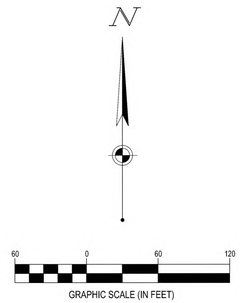
SUBDIVISION PLAN

ISSUE: NOT FOR CONSTRUCTION
DATE: 07/31/2023

JOB NO.:	761391
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DEMOLITION LEGEND

EXISTING

REFER TO XXX FOR EXISTING FEATURES LEGEND

PROPOSED

- SITE CLEARING LIMITS
- REMOVE EXISTING BUILDING
- REMOVE EXISTING GRAVEL PAVEMENT
- REMOVE EXISTING ASPHALT PAVEMENT (OR AS NOTED ON THE PLANS)
- TREE PROTECTION AREA
- SAWCUT LINE
- PROPERTY LINE
- UTILITY LINE TO BE REMOVED / RELOCATED
- REMOVE EXISTING CURB & GUTTER
- REMOVE EXISTING FENCE

CODED NOTES:

1. REMOVE EXISTING TREES.
2. TREE PROTECTION AREA
3. REMOVE EXISTING CURB, GUTTER, & SIDEWALK
4. REMOVE EXISTING SIDEWALK AND REPLACE WITH 6" SIDEWALK

REFER TO SHEET C1.1 FOR GENERAL DEMOLITION NOTES

TREE PRESERVATION AREA	
DESCRIPTION	AREA
PROTECTION AREA #1	2.03 AC.
PROTECTION AREA #2	0.23 AC.
TOTAL AREA	2.26 AC.

BENCHMARKS

	ELEVATION*	EASTING**	NORTHING**	DESCRIPTION
BM #1	79.66	E 552420.75	N 1710969.94	STORM DRAIN MANHOLE RIM
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REFER TO SITE PLAN FOR BENCHMARK LOCATIONS

Sunshine811

FORTY-EIGHT (48) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: FLORIDA UTILITIES PROTECTION SERVICE AT 811 OR 800-432-4770 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF OHIO UTILITIES PROTECTION SERVICE

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NO.	DATE	REVISION DESCRIPTION

GARRETT MICHAEL GEORGE
LICENSE
No. 85805
7/31/23
STATE OF FLORIDA
PROFESSIONAL ENGINEER

SPRING GARDEN TOWNHOMES DELAND, FL

610 N SPRING GARDEN AVENUE, DELAND, FL

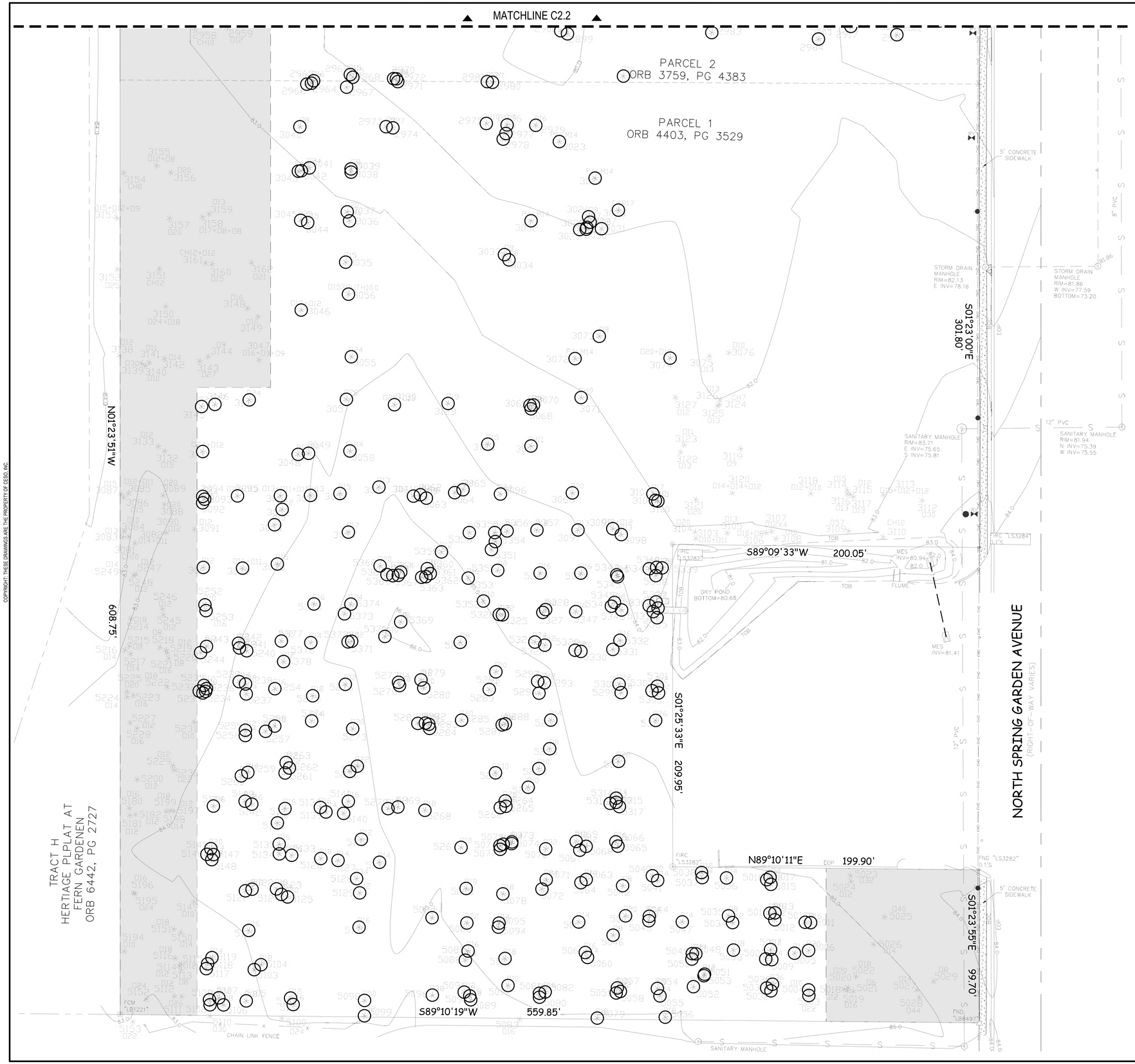
EXISTING CONDITIONS AND DEMO PLAN

ISSUE:	NOT FOR CONSTRUCTION
DATE:	07/31/2023
JOB NO.:	761391
DESIGN:	RSH
DRAWN:	RSH
CHECKED:	CSG

SHEET NO.
C2.0

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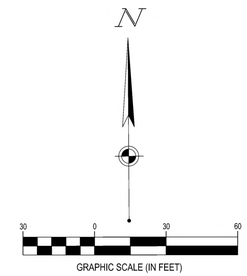


EROSION CONTROL PLAN LEGEND	
EXISTING	
REFER TO C2.0 FOR EXISTING FEATURES LEGEND	
PROPOSED	
✳	EXISTING TREE LOCATION
XXXX	TREE IDENTIFICATION NUMBER
○	TREE REMOVAL
▭	TREE PROTECTION AREA

TREE/TOPOGRAPHIC SURVEY PROVIDED BY:
ELLIS SURVEYS, LLC
P.O. BOX 160952
ALTAMONTE SPRINGS, FL 32716
PHONE: (407) 834-4003
CONTACT: ROBERT ELLIS P.L.S.
DATED: 10/10/2022

CESO PROVIDES NO GUARANTEE TO THE ACCURACY OF THE SURVEY PROVIDED BY ELLIS SURVEYING. CONTRACTOR TO VERIFY EXISTING CONDITIONS PRIOR TO BID AND CONSTRUCTION.

REFER TO SHEET C2.3 FOR TREE DISPOSITION LIST



GRAPHIC SCALE (IN FEET)
1 in. = 30 ft.

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NO.	DATE	REVISION DESCRIPTION

GARRETT MICHAEL GEORGE
LICENSE
No. 85905
STATE OF FLORIDA
PROFESSIONAL ENGINEER
7/31/23

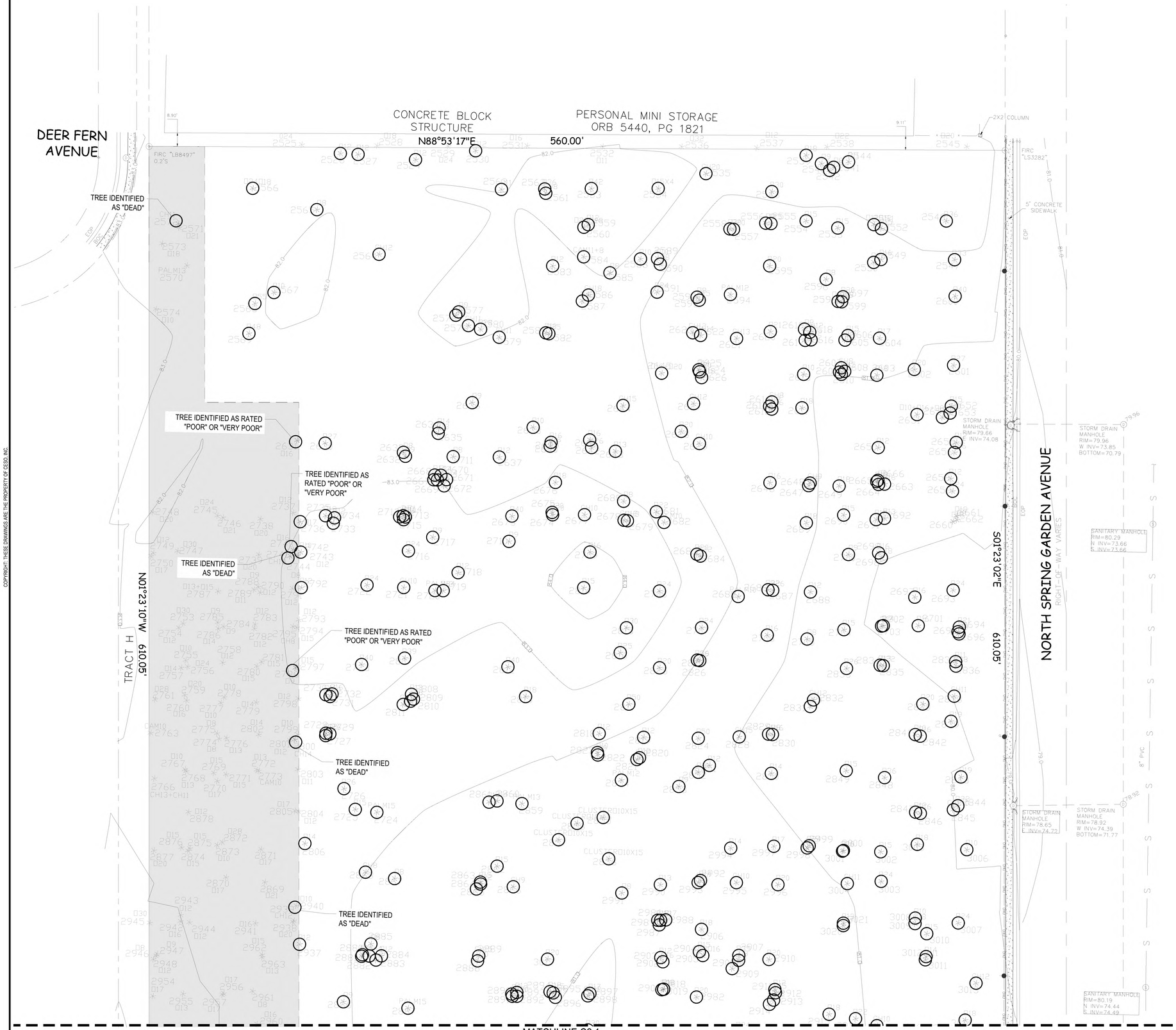
SPRING GARDEN TOWNHOMES DELAND, FL

610 N SPRING GARDEN AVENUE, DELAND, FL

TREE PROTECTION PLAN

ISSUE:	NOT FOR CONSTRUCTION
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SHEET NO.
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EROSION CONTROL PLAN LEGEND	
EXISTING	
REFER TO C2.0 FOR EXISTING FEATURES LEGEND	
PROPOSED	
	EXISTING TREE LOCATION
	TREE IDENTIFICATION NUMBER
	TREE REMOVAL
	TREE PROTECTION AREA

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REFER TO SHEET C2.3 FOR TREE DISPOSITION LIST

N

30 0 30 60
GRAPHIC SCALE (IN FEET)
1 in. = 30 ft.

CESO
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NO.	DATE	REVISION DESCRIPTION

GARRETT MICHAEL GEORGE
LICENSE
No. 85505
7/31/23
STATE OF FLORIDA
PROFESSIONAL ENGINEER

SPRING GARDEN TOWNHOMES DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

TREE PROTECTION PLAN

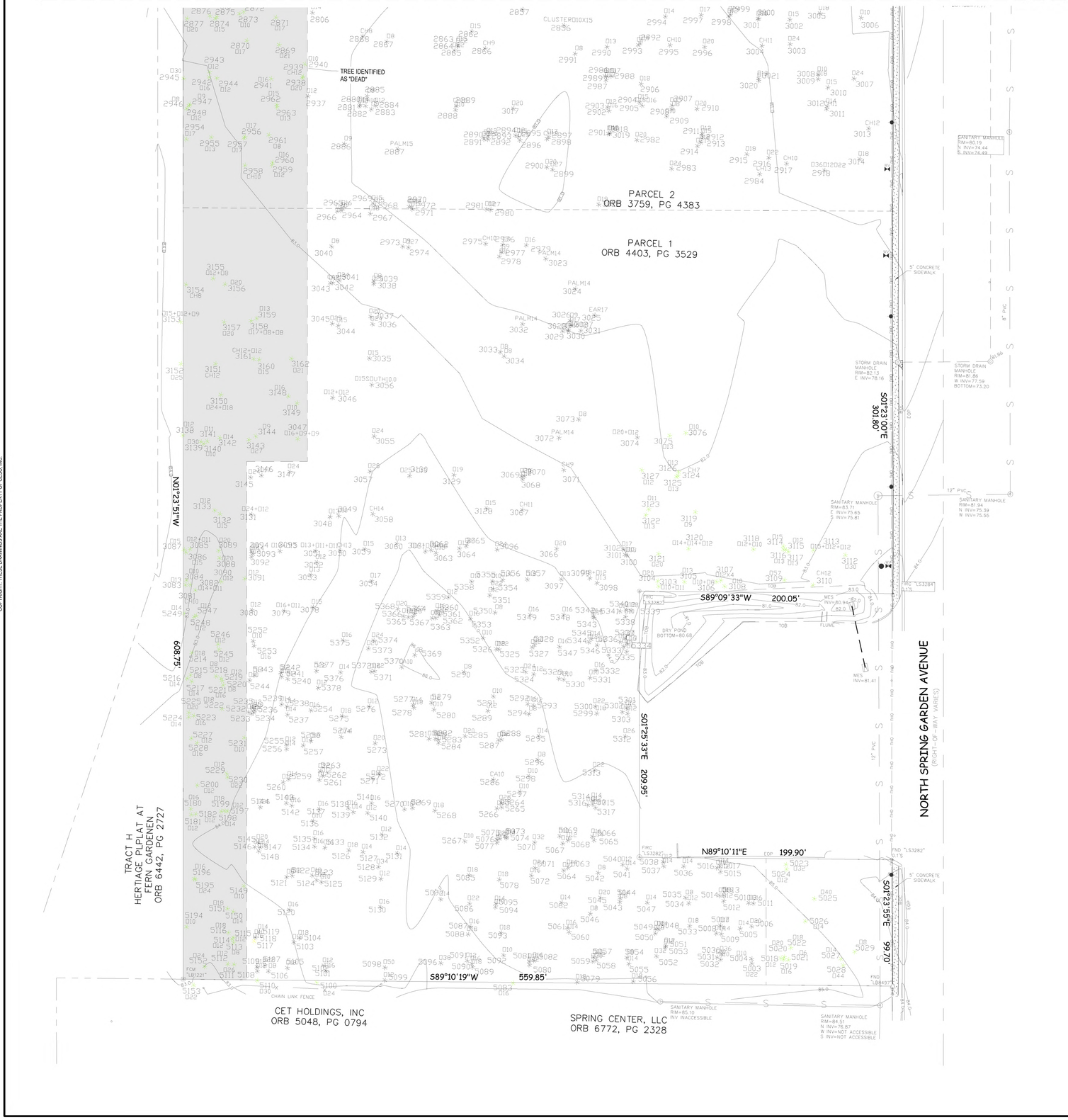
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MATCHLINE C2.4



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N

40 0 40 80

GRAPHIC SCALE (IN FEET)
1 in. = 40 ft.

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NO.	DATE	REVISION DESCRIPTION

SPRING GARDEN TOWNHOMES DELAND, FL

610 N SPRING GARDEN AVENUE, DELAND, FL

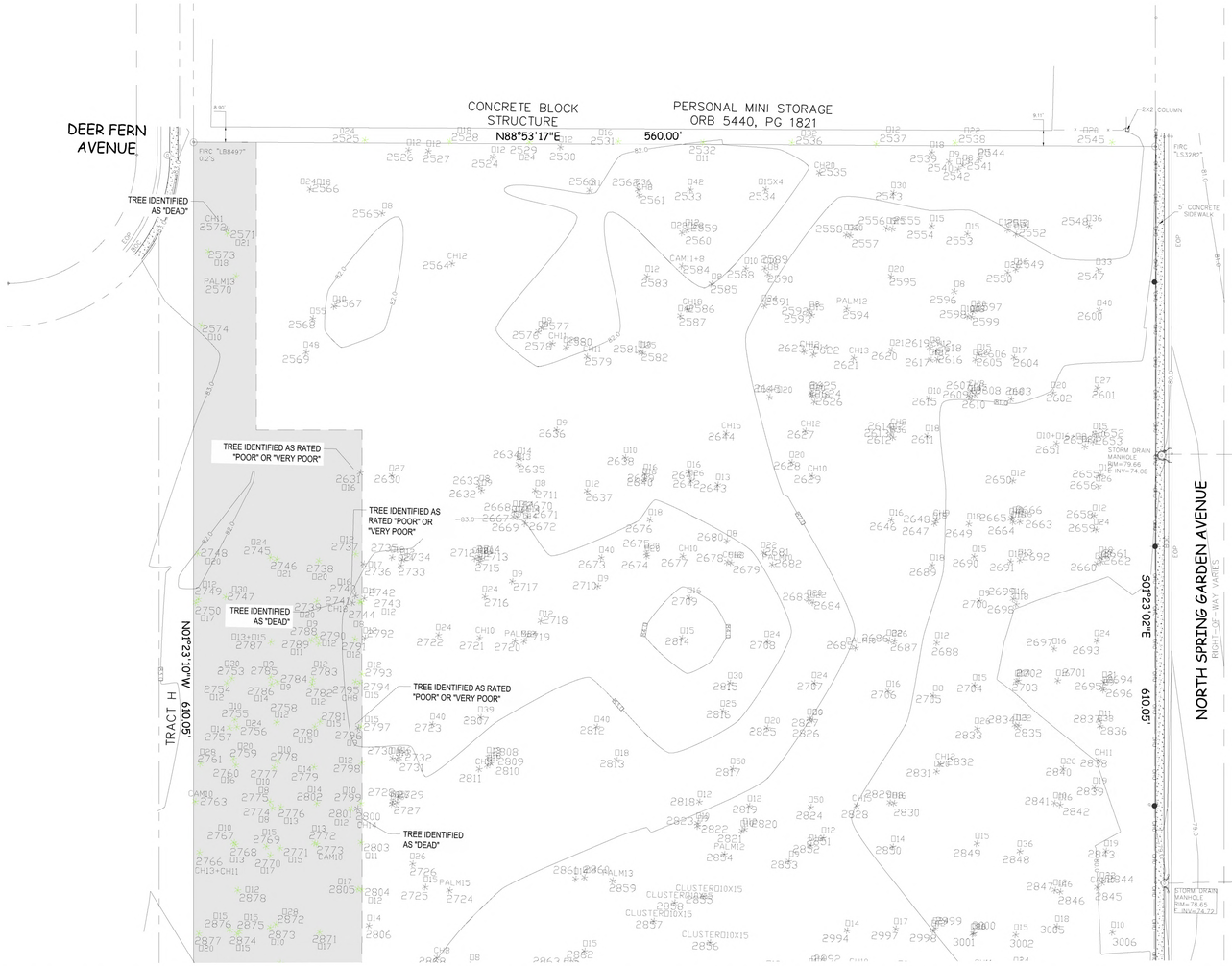
TREE SURVEY

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TREE SURVEY

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SHEET NO.
C2.4

TREE NO.	COMMON NAME	BOTANICAL NAME	LATITUDE	LONGITUDE	STEMS	ACTUAL DBH (inches)	ACTUAL TOTAL DBH (inches)	CONDITION RATING (%)	CONDITION RATING	CANOPY SPREAD North - South (feet)	CANOPY SPREAD East - West (feet)	SPECIMEN TREE	HISTORIC TREE	TO BE REMOVED (DBH)	REPLACEMENT RATIO	REPLACEMENT INCHES (DBH)	PRESERVED
2524	Laurel oak	*Quercus laurifolia*	29.04042982	-81.32590652	1	12	12	96	Very Good					12	1/3 DBH	4.0	
2525	Live oak	*Quercus virginiana*	29.04045126	-81.32613817	1	20	20	89	Good			Specimen					20
2526	Live oak	*Quercus virginiana*	29.0404377	-81.32605989	1	11	11	93	Good			Specimen		11	1/2 DBH	5.5	
2527	Laurel oak	*Quercus laurifolia*	29.04043779	-81.32602233	1	15	15	86	Good					15	1/3 DBH	5.0	
2528	Live oak	*Quercus virginiana*	29.04045439	-81.32598483	1	16	16	93	Good			Specimen					16
2529	Live oak	*Quercus virginiana*	29.04045749	-81.32584088	1	24	24	89	Good			Specimen					24
2530	Laurel oak	*Quercus laurifolia*	29.04044937	-81.32578453	1	12	12	93	Good					12	1/3 DBH	4.0	
2531	Live oak	*Quercus virginiana*	29.04046063	-81.32567816	1	16	16	89	Good			Specimen					16
2532	American holly	*Ilex opaca*	29.04046375	-81.32552482	2	6, 5	11	86	Good								11
2533	Laurel oak	*Quercus laurifolia*	29.0403867	-81.32554336	1	31	31	71	Fair					31	1/3 DBH	10.3	
2534	Laurel oak	*Quercus laurifolia*	29.04038978	-81.3254088	4	18, 15, 18, 13	64	79	Fair					64	1/3 DBH	21.3	
2535	Black cherry	*Prunus serotina*	29.04042027	-81.32531188	1	18	18	86	Good					18	1/3 DBH	6.0	
2536	Live oak	*Quercus virginiana*	29.0404669	-81.3253621	1	26	26	89	Good	28.6	59.5		Historic				26
2537	American holly	*Ilex opaca*	29.04046727	-81.32520876	1	12	12	79	Fair								12
2538	Live oak	*Quercus virginiana*	29.04047312	-81.32506482	1	23	23	89	Good			Specimen					23
2539	Laurel oak	*Quercus laurifolia*	29.04045652	-81.32510545	1	15	15	89	Good					15	1/3 DBH	5.0	
2540	Laurel oak	*Quercus laurifolia*	29.04044284	-81.32507411	1	9	9	96	Very Good					9	1/3 DBH	3.0	
2541	Laurel oak	*Quercus laurifolia*	29.0404374	-81.32504906	1	8	8	93	Good					8	1/3 DBH	2.7	
2542	Laurel oak	*Quercus laurifolia*	29.04043188	-81.32505843	1	15	15	96	Very Good					15	1/3 DBH	5.0	
2543	Laurel oak	*Quercus laurifolia*	29.04039035	-81.32517409	1	32	32	64	Poor					32	1, 2"DBH Tree	2.0	
2544	Laurel oak	*Quercus laurifolia*	29.04044847	-81.32502093	1	9	9	86	Good					9	1/3 DBH	3.0	
2545	Live oak	*Quercus virginiana*	29.04047931	-81.32477692	1	22	22	86	Good			Specimen					22
2547	Laurel oak	*Quercus laurifolia*	29.04027575	-81.32479819	1	33	33	89	Good					33	1/3 DBH	11.0	
2548	Laurel oak	*Quercus laurifolia*	29.04034721	-81.32481719	1	32	32	82	Good					32	1/3 DBH	10.7	
2549	Laurel oak	*Quercus laurifolia*	29.04027264	-81.3249484	1	19	19	64	Poor					19	1/3 DBH	6.3	
2550	Laurel oak	*Quercus laurifolia*	29.04026711	-81.3249609	1	28	28	75	Fair					26	1/3 DBH	8.7	
2551	Laurel oak	*Quercus laurifolia*	29.04033585	-81.32496424	2	15, 13	28	68	Poor					28	1, 2"DBH Tree	2.0	
2552	Laurel oak	*Quercus laurifolia*	29.04032764	-81.32494857	1	14	14	86	Good					14	1/3 DBH	4.7	
2553	Black cherry	*Prunus serotina*	29.04032742	-81.32503933	1	17	17	79	Fair					17	1/3 DBH	5.7	
2554	Laurel oak	*Quercus laurifolia*	29.04033827	-81.32510195	1	17	17	57	Very Poor					17	1/3 DBH	5.7	
2555	Laurel oak	*Quercus laurifolia*	29.0403326	-81.32517391	1	16	16	82	Good					16	1/3 DBH	5.3	
2556	Laurel oak	*Quercus laurifolia*	29.04033257	-81.32518643	1	7	7	93	Good					7	1/3 DBH	2.3	
2557	Laurel oak	*Quercus laurifolia*	29.04032141	-81.32525211	1	19	19	93	Good					19	1/3 DBH	6.3	
2558	Laurel oak	*Quercus laurifolia*	29.04032139	-81.32525837	1	31	31	68	Poor					31	1, 2"DBH Tree	2.0	
2559	Laurel oak	*Quercus laurifolia*	29.04032069	-81.32554941	1	14	14	89	Good					14	1/3 DBH	4.7	
2560	Laurel oak	*Quercus laurifolia*	29.04031791	-81.32555879	2	18, 19	37	68	Poor					37	1, 2"DBH Tree	2.0	
2561	Black cherry	*Prunus serotina*	29.04037548	-81.32563721	1	9	9	93	Good					9	1/3 DBH	3.0	
2562	Laurel oak	*Quercus laurifolia*	29.04038372	-81.32564036	1	31	31	82	Good					31	1/3 DBH	10.3	
2563	Live oak	*Quercus virginiana*	29.04038076	-81.32572798	1	13	13	89	Good			Specimen		13	1/2 DBH	6.5	
2564	Black cherry	*Prunus serotina*	29.04025915	-81.32597483	1	12	12	86	Good					12	1/3 DBH	4.0	
2565	Laurel oak	*Quercus laurifolia*	29.04033584	-81.32610338	1	8	8	89	Good					8	1/3 DBH	2.7	
2566	Laurel oak	*Quercus laurifolia*	29.04037127	-81.32623806	2	16, 23	39	61	Poor					39	1/3 DBH	13.0	
2567	Laurel oak	*Quercus laurifolia*	29.04018438	-81.3261874	1	10	10	93	Good								10
2568	Laurel oak	*Quercus laurifolia*	29.04016504	-81.32622489	2	42, 18	60	64	Poor					60	1/3 DBH	20.0	
2569	Laurel oak	*Quercus laurifolia*	29.04011001	-81.32623724	1	46	46	86	Good								46
2570	Cabbage palmetto	*Sabal palmetto*	29.04022794	-81.32636905	1	15	15	96	Very Good								15
2571	Laurel oak	*Quercus laurifolia*	29.04029666	-81.32638491	1	27	27	89	Good								27
2572	Black cherry	*Prunus serotina*	29.0403049	-81.32638807	1	11	11	0	Dead					11	0	0	
2573	Laurel oak	*Quercus laurifolia*	29.04026632	-81.32641924	1	21	21	89	Good								21
2574	Water oak	*Quercus nigra*	29.04014804	-81.32642826	1	9	9	82	Good								9
2576	Laurel oak	*Quercus laurifolia*	29.04015228	-81.32581489	1	10	10	82	Good					10	1/3 DBH	3.3	
2577	Laurel oak	*Quercus laurifolia*	29.0401578	-81.32580865	1	12	12	93	Good					12	1/3 DBH	4.0	
2578	Black cherry	*Prunus serotina*	29.04013585	-81.32578667	1	12	12	54	Very Poor					12	1/3 DBH	4.0	
2579	Black cherry	*Prunus serotina*	29.040114	-81.32572401	1	12	12	68	Poor					12	1/3 DBH	4.0	
2580	Laurel oak	*Quercus laurifolia*	29.04012766	-81.32576161	1	26	26	82	Good					26	1/3 DBH	8.7	
2581	Laurel oak	*Quercus laurifolia*	29.04012523	-81.32563016	1	9	9	82	Good					10	1/3 DBH	3.3	
2582	Laurel oak	*Quercus laurifolia*	29.04012524	-81.32562391	1	23	23	82	Good					23	1/3 DBH	7.7	
2583	Laurel oak	*Quercus laurifolia*	29.04024627	-81.32561803	1	12	12	89	Good					12	1/3 DBH	4.0	
2584	*Camphor	*Camphora officinarum*	29.04026292	-81.32555549	2	10, 7	17	89	Good					0	0	0	
2585	Laurel oak	*Quercus laurifolia*	29.04023555	-81.3255022	1	8	8	68	Poor					8	1/3 DBH	2.7	
2586	Black cherry	*Prunus serotina*	29.04019419	-81.32554276	1	17	17	64	Poor					17	1/3 DBH	5.7	
2587	Black cherry	*Prunus serotina*	29.04018316	-81.32555524	3	18, 13, 7	38	79	Fair					38	1/3 DBH	12.7	
2588	Laurel oak	*Quercus laurifolia*	29.0402632	-81.3254397	1	13	13	86	Good					13	1/3 DBH	4.3	
2589	Laurel oak	*Quercus laurifolia*	29.04026328	-81.32540527	1	8	8	0	Dead					8	1/3 DBH	2.7	
2590	Laurel oak	*Quercus laurifolia*	29.04025505	-81.32539899	1	7	7	64	Poor					7	1/3 DBH	2.3	
2591	Laurel oak	*Quercus laurifolia*	29.04020278	-81.32540509	1	24	24	79	Fair					24	1/3 DBH	8.0	
2592	Water oak	*Quercus nigra*	29.04019748	-81.32532057	1	8	8	89	Good					8	1/3 DBH	2.7	
2593	Water oak	*Quercus nigra*	29.04019199	-81.32531743	1	18	18	57	Very Poor					18	1/3 DBH	6.0	
2594	Black cherry	*Prunus serotina*	29.04020314	-81.32525487	1	13	13	96	Very Good					13	1/3 DBH	4.3	
2595	Black cherry	*Prunus serotina*	29.04025559	-81.32517367	1	22	22	82	Good					22	1/3 DBH	7.3	
2596	Laurel oak	*Quercus laurifolia*	29.04023662	-81.32505782	1	9	9	89	Good					9	1/3 DBH	3.0	
2597	Laurel oak	*Quercus laurifolia*	29.0402037	-81.32502329	1	19	19	89	Good					19	1/3 DBH	6.3	
2598	Laurel oak	*Quercus laurifolia*	29.04019543	-81.32503265	2	8, 8	16	82	Good					16	1/3 DBH	5.3	
2599	Laurel oak	*Quercus laurifolia*	29.04019545	-81.32502639	1	16	16	86	Good					16	1/3 DBH	5.3	
2600	Laurel oak	*Quercus laurifolia*	29.04021251	-81.32479487	3	14, 17, 15	46	64	Poor					46	1/3 DBH	15.3	
2601	Laurel oak	*Quercus laurifolia*	29.040086	-81.32479447	1	23	23	86	Good					23	1/3 DBH	7.7	
2602	Laurel oak	*Quercus laurifolia*	29.04007756	-81.32487268	1	17	17	82	Good					17	1/3 DBH	5.7	
2603	Laurel oak	*Quercus laurifolia*	29.04006637	-81.32495088	1	17	17	82	Good					17	1/3 DBH	5.7	

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TREE NO.	COMMON NAME	BOTANICAL NAME	LATITUDE	LONGITUDE	STEMS	ACTUAL DBH (inches)	ACTUAL TOTAL DBH (inches)	CONDITION RATING (%)	CONDITION RATING	CANOPY SPREAD North - South (feet)	CANOPY SPREAD East - West (feet)	SPECIMEN TREE	HISTORIC TREE	TO BE REMOVED (DBH)	REPLACEMENT RATIO	REPLACEMENT INCHES (DBH)	PRESERVED
2604	Laurel oak	*Quercus laurifolia*	29.04013239	-81.32494483	1	20	20	68	Poor					20	1/3 DBH	6.7	
2605	Laurel oak	*Quercus laurifolia*	29.04012672	-81.32501679	1	24	24	82	Good					24	1/3 DBH	8.0	
2606	Laurel oak	*Quercus laurifolia*	29.04013498	-81.32501056	1	12	12	82	Good					12	1/3 DBH	4.0	
2607	Black cherry	*Prunus serotina*	29.0400772	-81.32502289	1	9	9	96	Very Good					9	1/3 DBH	3.0	
2608	Laurel oak	*Quercus laurifolia*	29.04007171	-81.32501662	1	14	14	75	Fair					14	1/3 DBH	4.7	
2609	Laurel oak	*Quercus laurifolia*	29.04006894	-81.325026	1	14	14	89	Good					14	1/3 DBH	4.7	
2610	Laurel oak	*Quercus laurifolia*	29.0400662	-81.32502286	1	9	9	93	Good					9	1/3 DBH	3.0	
2611	Water oak	*Quercus nigra*	29.04000276	-81.3251009	1	19	19	75	Fair					19	1/3 DBH	6.3	
2612	Water oak	*Quercus nigra*	29.03999985	-81.32516348	2	14, 28	42	68	Poor					42	1/3 DBH	14.0	
2613	Water oak	*Quercus nigra*	29.04000535	-81.32516663	1	11	11	93	Good					11	1/3 DBH	3.7	
2614	Black cherry	*Prunus serotina*	29.04001085	-81.32516351	1	8	8	93	Good					8	1/3 DBH	2.7	
2615	Water oak	*Quercus nigra*	29.04006326	-81.32510109	1	9	9	93	Good					9	1/3 DBH	3.0	
2616	Laurel oak	*Quercus laurifolia*	29.04012655	-81.32508564	1	10	10	82	Good					10	1/3 DBH	3.3	
2617	Laurel oak	*Quercus laurifolia*	29.04012377	-81.32509815	1	12	12	86	Good					12	1/3 DBH	4.0	
2618	Black cherry	*Prunus serotina*	29.04014029	-81.32508881	1	11	11	89	Good					11	1/3 DBH	3.7	
2619	Laurel oak	*Quercus laurifolia*	29.04014576	-81.32510135	1	8	8	96	Very Good					8	1/3 DBH	2.7	
2620	Black cherry	*Prunus serotina*	29.04013734	-81.32517017	1	22	22	61	Poor					22	1/3 DBH	7.3	
2621	Black cherry	*Prunus serotina*	29.04012343	-81.32523897	1	14	14	93	Good					14	1/3 DBH	4.7	
2622	Black cherry	*Prunus serotina*	29.04012875	-81.3253141	1	12	12	68	Poor					12	1/3 DBH	4.0	
2623	Laurel oak	*Quercus laurifolia*	29.04013146	-81.32532975	1	9	9	96	Very Good					9	1/3 DBH	3.0	
2624	Laurel oak	*Quercus laurifolia*	29.04006275	-81.32531076	1	15	15	0	Dead					15	0	0	
2625	Laurel oak	*Quercus laurifolia*	29.04006549	-81.3253139	1	12	12	64	Poor					12	1/3 DBH	4.0	
2626	Laurel oak	*Quercus laurifolia*	29.04005176	-81.3253076	1	14	14	61	Poor					14	1/3 DBH	4.7	
2627	Water oak	*Quercus nigra*	29.04000497	-81.3253231	1	9	9	89	Good					9	1/3 DBH	3.0	
2628	Water oak	*Quercus nigra*	29.0399554	-81.32534798	1	19	19	82	Good					19	1/3 DBH	6.3	
2629	Water oak	*Quercus nigra*	29.03993349	-81.32531036	1	8	8	93	Good					8	1/3 DBH	2.7	
2630	Laurel oak	*Quercus laurifolia*	29.03991514	-81.32607389	2	15, 18	33	82	Good					33	1/3 DBH	11.0	
2631	Laurel oak	*Quercus laurifolia*	29.0399205	-81.32613337	1	18	18	68	Poor					18	1/3 DBH	6.0	
2632	Laurel oak	*Quercus laurifolia*	29.03989629	-81.3259111	1	11	11	93	Good					11	1/3 DBH	3.7	
2633	Laurel oak	*Quercus laurifolia*	29.03990453	-81.32591425	1	7	7	93	Good					7	1/3 DBH	2.3	
2634	Laurel oak	*Quercus laurifolia*	29.03994871	-81.32584242	1	18	18	68	Poor					18	1/3 DBH	6.0	
2635	Laurel oak	*Quercus laurifolia*	29.03994045	-81.32584552	1	14	14	82	Good					14	1/3 DBH	4.7	
2636	Live oak	*Quercus virginiana*	29.03999562	-81.32577684	1	12	12	89	Good			Specimen		12	1/2 DBH	6	
2637	Laurel oak	*Quercus laurifolia*	29.03989951	-81.32571708	1	14	14	61	Poor					14	1/3 DBH	4.7	
2638	Laurel oak	*Quercus laurifolia*	29.03995467	-81.32565154	1	12	12	82	Good					12	1/3 DBH	4.0	
2639	Laurel oak	*Quercus laurifolia*	29.03993001	-81.3256139	1	20	20	89	Good					20	1/3 DBH	6.7	
2640	Laurel oak	*Quercus laurifolia*	29.03992176	-81.32561388	1	17	17	79	Fair					17	1/3 DBH	5.7	
2641	Laurel oak	*Quercus laurifolia*	29.03993571	-81.32553256	2	9, 8	17	79	Fair					17	1/3 DBH	5.7	
2642	Laurel oak	*Quercus laurifolia*	29.03992196	-81.32552938	1	23	23	68	Poor					23	1, 2"DBH Tree	2.0	
2643	Laurel oak	*Quercus laurifolia*	29.03991658	-81.32547929	1	13	13	89	Good					13	1/3 DBH	4.3	
2644	Black cherry	*Prunus serotina*	29.03999912	-81.32546704	1	16	16	0	Dead					16	0	0	
2645	Laurel oak	*Quercus laurifolia*	29.04005981	-81.32538899	2	19, 24	43	86	Good					43	1/3 DBH	14	
2646	Laurel oak	*Quercus laurifolia*	29.03986785	-81.32516306	1	17	17	50	Very Poor					17	1/3 DBH	5.7	
2647	Laurel oak	*Quercus laurifolia*	29.03986254	-81.32508481	1	20	20	86	Good					20	1/3 DBH	6.7	
2648	Black cherry	*Prunus serotina*	29.03986804	-81.3250817	1	9	9	86	Good					9	1/3 DBH	3.0	
2649	Laurel oak	*Quercus laurifolia*	29.03986544	-81.32502223	1	19	19	68	Poor					19	1/3 DBH	6.3	
2650	Laurel oak	*Quercus laurifolia*	29.03993438	-81.32494421	1	13	13	79	Fair					13	1/3 DBH	4.3	
2651	Laurel oak	*Quercus laurifolia*	29.03999507	-81.32486616	3	9, 16, 12	37	82	Good					37	1/3 DBH	12.3	
2652	Laurel oak	*Quercus laurifolia*	29.0400145	-81.32479425	1	16	16	93	Good					16	1/3 DBH	5.3	
2653	Laurel oak	*Quercus laurifolia*	29.04000074	-81.32479733	1	12	12	75	Fair					12	1/3 DBH	4.0	
2654	Laurel oak	*Quercus laurifolia*	29.03999245	-81.32481295	1	25	25	68	Poor					25	1, 2" DBH Tree	2.0	
2655	Laurel oak	*Quercus laurifolia*	29.03994852	-81.32478465	1	16	16	82	Good					16	1/3 DBH	5.3	
2656	Laurel oak	*Quercus laurifolia*	29.03992926	-81.32478772	2	15, 16	31	75	Fair					31	1/3 DBH	10.3	
2658	Laurel oak	*Quercus laurifolia*	29.03988249	-81.32479383	1	13	13	93	Good					13	1/3 DBH	4.3	
2659	Laurel oak	*Quercus laurifolia*	29.03986051	-81.3247875	1	25	25	89	Good					24	1/3 DBH	8.0	
2660	Laurel oak	*Quercus laurifolia*	29.0398055	-81.32478733	1	21	21	93	Good					18	1/3 DBH	6.0	
2661	Laurel oak	*Quercus laurifolia*	29.03981653	-81.32477798	1	18	18	82	Good					18	1/3 DBH	6.0	
2662	Laurel oak	*Quercus laurifolia*	29.03980828	-81.32477795	1	8	8	89	Good					8	1/3 DBH	2.7	
2663	Laurel oak	*Quercus laurifolia*	29.03986842	-81.32492836	1	19	19	86	Good					19	1/3 DBH	6.3	
2664	Laurel oak	*Quercus laurifolia*	29.03986839	-81.32494087	1	17	17	93	Good					17	1/3 DBH	5.7	
2665	Laurel oak	*Quercus laurifolia*	29.03987388	-81.32494402	1	13	13	89	Good					13	1/3 DBH	4.3	
2666	Laurel oak	*Quercus laurifolia*	29.03987664	-81.3249409	1	8	8	0	Dead					8	0	0	
2667	Laurel oak	*Quercus laurifolia*	29.03985518	-81.32585151	1	13	13	93	Good					13	1/3 DBH	4.3	
2668	Laurel oak	*Quercus laurifolia*	29.03986344	-81.32584841	1	15	15	82	Good					15	1/3 DBH	5.0	
2669	Laurel oak	*Quercus laurifolia*	29.0398552	-81.32584212	1	14	14	93	Good					14	1/3 DBH	4.7	
2670	Laurel oak	*Quercus laurifolia*	29.03986347	-81.32583589	1	16	16	93	Good					16	1/3 DBH	5.3	
2671	Laurel oak	*Quercus laurifolia*	29.039858	-81.32582335	1	13	13	96	Very Good					13	1/3 DBH	4.3	
2672	Laurel oak	*Quercus laurifolia*	29.03984423	-81.32582957	1	16	16	61	Poor					16	1/3 DBH	5.3	
2673	Laurel oak	*Quercus laurifolia*	29.03979507	-81.32568859	1	36	36	75	Fair					36	1/3 DBH	12.0	
2674	Laurel oak	*Quercus laurifolia*	29.03979803	-81.3256041	1	21	21	89	Good					21	1/3 DBH	7.0	
2675	Laurel oak	*Quercus laurifolia*	29.03980352	-81.32560725	1	19	19	82	Good					19	1/3 DBH	6.3	
2676	Laurel oak	*Quercus laurifolia*	29.03985579	-81.32560115	1	17	17	54	Very Poor					17	1/3 DBH	5.7	
2677	Black cherry	*Prunus serotina*	29.03980093	-81.32554152	1	10	10	96	Very Good					10	1/3 DBH	3.3	
2678	Black cherry	*Prunus serotina*	29.03979287	-81.32546013	1	15	15	82	Good					15	1/3 DBH	5.0	
2679	Black cherry	*Prunus serotina*	29.03979015	-81.32545073	1	8	8	89	Good					8	1/3 DBH	2.7	
2680	Laurel oak	*Quercus laurifolia*	29.03982588	-81.32546023	1	8	8	79	Fair					8	1/3 DBH	2.7	
2681	Laurel oak	*Quercus laurifolia*	29.03980953	-81.32539446	1	24	24	79	Fair					24	1/3 DBH	8.0	
2682	Cabbage palmetto	*Sabal palmetto*	29.03979033	-81.32537563	1	12	12	96	Very Good					12	1/3 DBH	4.0	
2683	Laurel oak	*Quercus laurifolia*	29.03973549	-81.32530661	1	18	18	75	Fair					18	1/3 DBH	6.0	

TREE/TOPOGRAPHIC SURVEY PROVIDED BY:
ELLIS SURVEYS, LLC
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DATED: 10/10/2022

CESO PROVIDES NO GUARANTEE TO THE ACCURACY OF THE SURVEY PROVIDED BY ELLIS SURVEYING. CONTRACTOR TO VERIFY EXISTING CONDITIONS PRIOR TO BID AND CONSTRUCTION.

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NO. | DATE | REVISION DESCRIPTION

SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

TREE DISPOSITION LIST

ISSUE: NOT FOR CONSTRUCTION
DATE: 02/15/2023
JOB NO.: 761391
DESIGN: TH
DRAWN: TH
CHECKED: EAB
SHEET NO. C2.6

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TREE NO.	COMMON NAME	BOTANICAL NAME	LATITUDE	LONGITUDE	STEMS	ACTUAL DBH (inches)	ACTUAL TOTAL DBH (inches)	CONDITION RATING (%)	CONDITION RATING	CANOPY SPREAD North - South (feet)	CANOPY SPREAD East - West (feet)	SPECIMEN TREE	HISTORIC TREE	TO BE REMOVED (DBH)	REPLACEMENT RATIO	REPLACEMENT INCHES (DBH)	PRESERVED
2684	Laurel oak	*Quercus laurifolia*	29.03973276	-81.32530034	1	22	22	79	Fair					22	1/3 DBH	7.3	
2685	Cabbage palmetto	*Sabal palmetto*	29.03966144	-81.32522188	1	11	11	96	Very Good					10	1/3 DBH	3.3	
2686	Laurel oak	*Quercus laurifolia*	29.03967535	-81.32515933	1	20	20	89	Good					22	1/3 DBH	7.3	
2687	Laurel oak	*Quercus laurifolia*	29.03967262	-81.32514993	1	27	27	82	Good					27	1/3 DBH	9.0	
2688	Laurel oak	*Quercus laurifolia*	29.0396728	-81.32507483	1	13	13	86	Good					13	1/3 DBH	4.3	
2689	Laurel oak	*Quercus laurifolia*	29.03979653	-81.3250846	1	22	22	79	Fair					22	1/3 DBH	7.3	
2690	Laurel oak	*Quercus laurifolia*	29.03981322	-81.32500955	1	20	20	82	Good					20	1/3 DBH	6.7	
2691	Laurel oak	*Quercus laurifolia*	29.03980513	-81.3249438	1	12	12	93	Good					12	1/3 DBH	4.0	
2692	Laurel oak	*Quercus laurifolia*	29.03980792	-81.32492504	1	12	12	68	Poor					12	1/3 DBH	4.0	
2693	Laurel oak	*Quercus laurifolia*	29.03968176	-81.32478069	1	23	23	89	Good					23	1/3 DBH	7.7	
2694	Laurel oak	*Quercus laurifolia*	29.03961579	-81.32476796	1	20	20	82	Good					20	1/3 DBH	6.7	
2695	Laurel oak	*Quercus laurifolia*	29.03960753	-81.32477106	1	10	10	82	Good					10	1/3 DBH	3.3	
2696	Laurel oak	*Quercus laurifolia*	29.03960479	-81.32476793	1	8	8	82	Good					8	1/3 DBH	2.7	
2697	Laurel oak	*Quercus laurifolia*	29.03966782	-81.32485888	1	18	18	89	Good					18	1/3 DBH	6.0	
2698	Laurel oak	*Quercus laurifolia*	29.0397364	-81.32493107	1	19	19	82	Good					19	1/3 DBH	6.3	
2699	Laurel oak	*Quercus laurifolia*	29.03974464	-81.32493736	1	18	18	79	Fair					18	1/3 DBH	6.0	
2700	Laurel oak	*Quercus laurifolia*	29.03974174	-81.32499681	1	10	10	93	Good					10	1/3 DBH	3.3	
2701	Laurel oak	*Quercus laurifolia*	29.03961559	-81.32485246	1	18	18	82	Good					18	1/3 DBH	6.0	
2702	Laurel oak	*Quercus laurifolia*	29.03961542	-81.3249213	1	15	15	79	Fair					15	1/3 DBH	5.0	
2703	Laurel oak	*Quercus laurifolia*	29.0396154	-81.32492756	1	11	11	79	Fair					11	1/3 DBH	3.7	
2704	Laurel oak	*Quercus laurifolia*	29.03960697	-81.32500264	1	15	15	79	Fair					15	1/3 DBH	5.0	
2705	Laurel oak	*Quercus laurifolia*	29.03958754	-81.32507769	1	7	7	93	Good					7	1/3 DBH	2.3	
2706	Laurel oak	*Quercus laurifolia*	29.03959284	-81.32515907	1	15	15	86	Good					15	1/3 DBH	5.0	
2707	Laurel oak	*Quercus laurifolia*	29.03960352	-81.32529367	1	26	26	89	Good					26	1/3 DBH	8.7	
2708	Laurel oak	*Quercus laurifolia*	29.03966656	-81.3253815	1	25	25	79	Fair					25	1/3 DBH	8.3	
2709	Laurel oak	*Quercus laurifolia*	29.03973221	-81.32552566	1	18	18	86	Good					18	1/3 DBH	6.0	
2710	Laurel oak	*Quercus laurifolia*	29.0397483	-81.3256947	1	11	11	93	Good					11	1/3 DBH	3.7	
2711	Laurel oak	*Quercus laurifolia*	29.03989928	-81.32581097	1	8	8	89	Good					8	1/3 DBH	2.7	
2712	Black cherry	*Prunus serotina*	29.03978627	-81.32591701	1	7	7	93	Good					7	1/3 DBH	2.3	
2713	Laurel oak	*Quercus laurifolia*	29.03978629	-81.32590762	1	12	12	75	Fair					12	1/3 DBH	4.0	
2714	Laurel oak	*Quercus laurifolia*	29.03978903	-81.32591076	1	11	11	75	Fair					11	1/3 DBH	3.7	
2715	Laurel oak	*Quercus laurifolia*	29.03978353	-81.32591075	1	14	14	71	Fair					14	1/3 DBH	4.7	
2716	Laurel oak	*Quercus laurifolia*	29.03972581	-81.32589805	1	25	25	86	Good					25	1/3 DBH	8.3	
2717	Laurel oak	*Quercus laurifolia*	29.03975342	-81.32585119	1	10	10	93	Good					10	1/3 DBH	3.3	
2718	Laurel oak	*Quercus laurifolia*	29.03969031	-81.32579466	1	13	13	86	Good					13	1/3 DBH	4.3	
2719	Laurel oak	*Quercus laurifolia*	29.03965723	-81.32582585	1	24	24	86	Good					24	1/3 DBH	8.0	
2720	Cabbage palmetto	*Sabal palmetto*	29.03965719	-81.3258415	1	13	13	96	Very Good					13	1/3 DBH	4.3	
2721	Black cherry	*Prunus serotina*	29.03965978	-81.32590723	1	11	11	86	Good					11	1/3 DBH	3.7	
2722	Laurel oak	*Quercus laurifolia*	29.03966235	-81.32598234	2	15, 10	25	79	Fair					25	1/3 DBH	8.3	
2723	Laurel oak	*Quercus laurifolia*	29.03951933	-81.32598815	4	17, 15, 18, 15	65	57	Very Poor					65	1/3 DBH	21.7	
2724	Black cherry	*Prunus serotina*	29.03925541	-81.32594977	1	16	16	96	Very Good					16	1/3 DBH	5.3	
2725	Laurel oak	*Quercus laurifolia*	29.03925805	-81.32599359	1	17	17	89	Good					17	1/3 DBH	5.7	
2726	Laurel oak	*Quercus laurifolia*	29.03929649	-81.32601875	1	30	30	79	Fair					30	1/3 DBH	10.0	
2727	Laurel oak	*Quercus laurifolia*	29.03938991	-81.32605659	1	17	17	86	Good					17	1/3 DBH	5.7	
2728	Laurel oak	*Quercus laurifolia*	29.03939541	-81.32605661	1	16	16	89	Good								16
2729	Laurel oak	*Quercus laurifolia*	29.03939267	-81.32605034	1	17	17	89	Good					17	1/3 DBH	5.7	
2730	Laurel oak	*Quercus laurifolia*	29.03946415	-81.32605996	1	20	20	89	Good					20	1/3 DBH	6.7	
2731	Laurel oak	*Quercus laurifolia*	29.03946143	-81.32605056	1	11	11	96	Very Good					11	1/3 DBH	3.7	
2732	Laurel oak	*Quercus laurifolia*	29.03946693	-81.32604745	1	15	15	86	Good					15	1/3 DBH	5.0	
2733	Laurel oak	*Quercus laurifolia*	29.03977218	-81.32605467	2	17, 7	24	82	Good					24	1/3 DBH	8.0	
2734	Laurel oak	*Quercus laurifolia*	29.03978319	-81.32605157	1	10	10	0	Dead					10	0	0	
2735	Laurel oak	*Quercus laurifolia*	29.03978589	-81.32607036	1	18	18	86	Good					18	1/3 DBH	6.0	
2736	Laurel oak	*Quercus laurifolia*	29.03977477	-81.32612039	1	16	16	96	Very Good					16	1/3 DBH	5.3	
2737	Laurel oak	*Quercus laurifolia*	29.03978848	-81.32613608	1	10	10	82	Good								10
2738	Laurel oak	*Quercus laurifolia*	29.03977732	-81.32620177	1	19	19	64	Poor					19	1/3 DBH	6.3	
2739	Laurel oak	*Quercus laurifolia*	29.03971406	-81.3262047	1	20	20	82	Good								20
2740	Laurel oak	*Quercus laurifolia*	29.03972248	-81.32613588	1	14	14	46	Very Poor					14	1/3 DBH	4.7	
2741	Black cherry	*Prunus serotina*	29.03971147	-81.32613897	1	14	14	0	Dead					14	0	0	
2742	Laurel oak	*Quercus laurifolia*	29.03971977	-81.32612022	1	8	8	0	Dead					8	0	0	
2743	Laurel oak	*Quercus laurifolia*	29.03971151	-81.32612332	1	10	10	89	Good								10
2744	Laurel oak	*Quercus laurifolia*	29.03971425	-81.32612646	1	8	8	96	Very Good								8
2745	Laurel oak	*Quercus laurifolia*	29.03977985	-81.32629253	1	21	21	86	Good								21
2746	Laurel oak	*Quercus laurifolia*	29.03977713	-81.32628	1	19	19	86	Good								19
2747	Laurel oak	*Quercus laurifolia*	29.03971641	-81.32637057	1	28	28	82	Good								28
2748	Laurel oak	*Quercus laurifolia*	29.03978504	-81.32642398	1	22	22	86	Good								22
2749	Laurel oak	*Quercus laurifolia*	29.03971079	-81.32642062	1	12	12	96	Very Good								12
2750	Laurel oak	*Quercus laurifolia*	29.03970528	-81.32642373	1	18	18	93	Good								18
2753	Laurel oak	*Quercus laurifolia*	29.03958444	-81.3263545	1	28	28	68	Poor					28	1, 2" DBH Tree	2.0	
2754	Laurel oak	*Quercus laurifolia*	29.03957617	-81.32636387	1	12	12	96	Very Good								12
2755	Laurel oak	*Quercus laurifolia*	29.03951846	-81.32634804	1	10	10	89	Good								10
2756	Laurel oak	*Quercus laurifolia*	29.03950746	-81.32634487	1	24	24	89	Good								24
2757	Laurel oak	*Quercus laurifolia*	29.03950468	-81.32635738	1	14	14	0	Dead					14	0	0	
2758	Laurel oak	*Quercus laurifolia*	29.03951589	-81.32627292	1	13	13	0	Dead					13	0	0	
2759	Laurel oak	*Quercus laurifolia*	29.03945795	-81.32634785	1	16	16	93	Good								16
2760	Laurel oak	*Quercus laurifolia*	29.03944696	-81.32634468	1	14	14	96	Very Good								14
2761	Laurel oak	*Quercus laurifolia*	29.03944681	-81.32640727	2	14, 14	28	71	Fair								28
2763	*Camphor	*Camphora officinarum*	29.03938628	-81.32641647	1	10	10	82	Good					0	0		

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NO. | DATE | REVISION DESCRIPTION

SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

TREE DISPOSITION LIST

ISSUE: NOT FOR CONSTRUCTION
DATE: 02/15/2023
JOB NO.: 761391
DESIGN: TH
DRAWN: TH
CHECKED: EAB
SHEET NO. C2.7

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TREE NO.	COMMON NAME	BOTANICAL NAME	LATITUDE	LONGITUDE	STEMS	ACTUAL DBH (inches)	ACTUAL TOTAL DBH (inches)	CONDITION RATING (%)	CONDITION RATING	CANOPY SPREAD North - South (feet)	CANOPY SPREAD East - West (feet)	SPECIMEN TREE	HISTORIC TREE	TO BE REMOVED (DBH)	REPLACEMENT RATIO	REPLACEMENT INCHES (DBH)	PRESERVED
2766	Laurel oak	*Quercus laurifolia*	29.0393038	-81.32640682	2	11, 11	22	0	Dead					22	0	0	
2767	Laurel oak	*Quercus laurifolia*	29.0393232	-81.32634429	1	12	12	89	Good								12
2768	Laurel oak	*Quercus laurifolia*	29.03932046	-81.32634116	1	13	13	89	Good								13
2769	Laurel oak	*Quercus laurifolia*	29.03931785	-81.32628482	1	21	21	79	Fair								21
2770	Laurel oak	*Quercus laurifolia*	29.03930411	-81.32627852	1	17	17	82	Good								17
2771	Laurel oak	*Quercus laurifolia*	29.03931516	-81.32625977	1	19	19	93	Good								19
2772	Laurel oak	*Quercus laurifolia*	29.03932631	-81.32619722	1	16	16	93	Good								16
2773	Laurel oak	*Quercus laurifolia*	29.03932357	-81.32619408	3	4, 4, 4	12	75	Fair					12	1/3 DBH	4.0	
2774	Laurel oak	*Quercus laurifolia*	29.03938112	-81.32627563	1	9	9	86	Good								9
2775	Laurel oak	*Quercus laurifolia*	29.03938937	-81.32627878	1	9	9	86	Good								9
2776	Laurel oak	*Quercus laurifolia*	29.03938116	-81.32625998	1	15	15	86	Good								15
2777	Laurel oak	*Quercus laurifolia*	29.03944438	-81.32627583	1	9	9	96	Very Good								9
2778	Laurel oak	*Quercus laurifolia*	29.0394554	-81.32626647	1	12	12	96	Very Good					12	1/3 DBH	4.0	
2779	Laurel oak	*Quercus laurifolia*	29.03944731	-81.32620073	1	15	15	89	Good								15
2780	Laurel oak	*Quercus laurifolia*	29.03951056	-81.32620406	1	15	15	86	Good								15
2781	Laurel oak	*Quercus laurifolia*	29.03951884	-81.32619157	1	16	16	93	Good								16
2782	Laurel oak	*Quercus laurifolia*	29.03957929	-81.32621053	1	11	11	89	Good								11
2783	Laurel oak	*Quercus laurifolia*	29.03958755	-81.32620743	1	13	13	96	Very Good					13	1/3 DBH	4.3	
2784	Laurel oak	*Quercus laurifolia*	29.03958189	-81.32627313	1	10	10	68	Poor					10	1/3 DBH	3.3	
2785	Laurel oak	*Quercus laurifolia*	29.03959011	-81.32628567	1	16	16	93	Good					16	1/3 DBH	5.3	
2786	Laurel oak	*Quercus laurifolia*	29.03957912	-81.32628251	1	16	16	96	Very Good								16
2787	Laurel oak	*Quercus laurifolia*	29.03964511	-81.32628585	2	22, 14	36	86	Good								36
2788	Laurel oak	*Quercus laurifolia*	29.03965356	-81.32620451	1	11	11	96	Very Good								11
2789	Laurel oak	*Quercus laurifolia*	29.03965079	-81.32621389	1	11	11	0	Dead					11	0	0	
2790	Laurel oak	*Quercus laurifolia*	29.03964533	-81.32619822	1	12	12	93	Good								12
2791	Laurel oak	*Quercus laurifolia*	29.03965374	-81.32613253	1	16	16	86	Good					16	1/3 DBH	5.3	
2792	Laurel oak	*Quercus laurifolia*	29.03965652	-81.32611689	1	12	12	96	Very Good					12	1/3 DBH	4.0	
2793	Laurel oak	*Quercus laurifolia*	29.03959876	-81.32611984	1	13	13	82	Good								13
2794	Laurel oak	*Quercus laurifolia*	29.03958226	-81.32612292	1	17	17	89	Good								17
2795	Black cherry	*Prunus serotina*	29.03958498	-81.32613231	1	9	9	0	Dead					9	0	0	
2796	Laurel oak	*Quercus laurifolia*	29.03951075	-81.32612269	1	9	9	64	Poor					9	1/3 DBH	3.0	
2797	Laurel oak	*Quercus laurifolia*	29.03951351	-81.32611957	1	16	16	89	Good								16
2798	Laurel oak	*Quercus laurifolia*	29.03945577	-81.32611626	1	12	12	82	Good					12	1/3 DBH	4.0	
2799	Laurel oak	*Quercus laurifolia*	29.03938976	-81.32611605	1	9	9	93	Good								9
2800	Black cherry	*Prunus serotina*	29.0393815	-81.32612229	2	12, 7	19	0	Dead					19	0	0	
2801	Laurel oak	*Quercus laurifolia*	29.03938147	-81.32613167	1	13	0	82	Good								13
2802	Laurel oak	*Quercus laurifolia*	29.03938957	-81.32619429	1	16	16	96	Very Good					16	1/3 DBH	5.3	
2803	Laurel oak	*Quercus laurifolia*	29.03932927	-81.32611273	1	13	13	86	Good								13
2804	Laurel oak	*Quercus laurifolia*	29.03925227	-81.32610936	1	15	15	89	Good								15
2805	Laurel oak	*Quercus laurifolia*	29.03925226	-81.32611562	1	19	19	82	Good								19
2806	Laurel oak	*Quercus laurifolia*	29.03919456	-81.32609353	1	16	16	61	Poor					16	1/3 DBH	5.3	
2807	Laurel oak	*Quercus laurifolia*	29.03953329	-81.32590057	1	38	38	71	Fair					38	1/3 DBH	12.7	
2808	Laurel oak	*Quercus laurifolia*	29.03947008	-81.32588472	1	13	13	82	Good					13	1/3 DBH	4.3	
2809	Laurel oak	*Quercus laurifolia*	29.03945909	-81.32588156	1	8	8	82	Good					8	1/3 DBH	2.7	
2810	Laurel oak	*Quercus laurifolia*	29.03945633	-81.32588468	1	11	11	86	Good					11	1/3 DBH	3.7	
2811	Black cherry	*Prunus serotina*	29.03945079	-81.32590031	1	12	12	89	Good					12	1/3 DBH	4.0	
2812	Laurel oak	*Quercus laurifolia*	29.03952281	-81.32568773	1	41	41	79	Fair					41	1/3 DBH	13.7	
2813	Laurel oak	*Quercus laurifolia*	29.03947065	-81.32565002	1	21	21	89	Good					21	1/3 DBH	7.0	
2814	Laurel oak	*Quercus laurifolia*	29.03966893	-81.32553798	1	18	18	68	Poor					18	1/3 DBH	6.0	
2815	Laurel oak	*Quercus laurifolia*	29.03959765	-81.325447	1	31	31	79	Fair					31	1/3 DBH	10	
2816	Laurel oak	*Quercus laurifolia*	29.03955361	-81.32545938	2	12, 17	29	75	Fair					29	1/3 DBH	9.7	
2817	Laurel oak	*Quercus laurifolia*	29.03946291	-81.32544032	2	22, 26	48	57	Very Poor					48	2, 2"DBH Tree	4.0	
2818	Live oak	*Quercus virginiana*	29.03940776	-81.3254996	1	14	14	93	Good			Specimen		14	1/2 DBH	6.0	
2819	Laurel oak	*Quercus laurifolia*	29.03940249	-81.3254057	1	12	12	93	Good					12	1/3 DBH	4.0	
2820	Live oak	*Quercus virginiana*	29.03936671	-81.32541498	1	9	9	96	Very Good					9	1/3 DBH	3.0	
2821	Laurel oak	*Quercus laurifolia*	29.0393612	-81.32541809	2	8, 6	14	82	Good					14	1/3 DBH	4.7	
2822	Live oak	*Quercus virginiana*	29.03936926	-81.32549948	1	9	9	96	Very Good					9	1/3 DBH	3.0	
2823	Live oak	*Quercus virginiana*	29.03937201	-81.32549949	1	10	10	96	Very Good			Specimen		10	1/2 DBH	5.0	
2824	Laurel oak	*Quercus laurifolia*	29.03940275	-81.32529617	4	10, 10, 25, 26	71	64	Poor					71	1/3 DBH + 1, 2"DBH Tree	10.7	
2825	Laurel oak	*Quercus laurifolia*	29.03952906	-81.32537794	1	15	15	75	Fair					15	1/3 DBH	5.0	
2826	Laurel oak	*Quercus laurifolia*	29.03954301	-81.32529661	1	11	11	68	Poor					11	1/3 DBH	3.7	
2827	Laurel oak	*Quercus laurifolia*	29.039543	-81.32529974	1	34	34	61	Poor					34	1, 2"DBH Tree	2.0	
2828	Black cherry	*Prunus serotina*	29.03940846	-81.3252117	2	8, 12	20	86	Good					20	1/3 DBH	6.7	
2829	Laurel oak	*Quercus laurifolia*	29.0394141	-81.32515225	1	7	7	96	Very Good					7	1/3 DBH	2.3	
2830	Laurel oak	*Quercus laurifolia*	29.03941412	-81.32514287	1	17	17	82	Good					17	1/3 DBH	5.7	
2831	Laurel oak	*Quercus laurifolia*	29.03946656	-81.32506792	2	12	24	68	Poor					24	1/3 DBH	8.0	
2832	Black cherry	*Prunus serotina*	29.03947757	-81.3250617	1	13	13	89	Good					13	1/3 DBH	4.3	
2833	Water oak	*Quercus nigra*	29.03953548	-81.32499616	1	26	26	68	Poor					26	1/3 DBH	8.7	
2834	Water oak	*Quercus nigra*	29.0395439	-81.32492734	1	14	14	86	Good					14	1/3 DBH	4.7	
2835	Water oak	*Quercus nigra*	29.03954392	-81.32492108	1	22	22	93	Good					22	1/3 DBH	7.3	
2836	Laurel oak	*Quercus laurifolia*	29.03954703	-81.32477088	1	38	38	68	Poor					38	1, 2" DBH Tree	2.0	
2837	Laurel oak	*Quercus laurifolia*	29.03955527	-81.32477403	1	12	12	82	Good					12	1/3 DBH	4.0	
2838	Black cherry	*Prunus serotina*	29.03949202	-81.32477383	1	11	11	0	Dead					11	0	0	
2839	Laurel oak	*Quercus laurifolia*	29.03944525	-81.32477994	1	20	20	86	Good					20	1/3 DBH	6.7	
2840	Laurel oak	*Quercus laurifolia*	29.03947537	-81.32483637	2	13, 13	26	68	Poor					20	1/3 DBH	6.7	
2841	Laurel oak	*Quercus laurifolia*	29.03942033	-81.32485184	1	9	9	93	Good					9	1/3 DBH	3.0	
2842	Laurel oak	*Quercus laurifolia*	29.0394176	-81.32484245	1	18	18	82	Good					18	1/3 DBH	6.0	
2843	Laurel oak	*Quercus laurifolia*	29.03934631	-81.3247546	1	22	22	64	Poor					22	1/3 DBH	7.3	
2844	Laurel oak	*Quercus laurifolia*	29.03929404	-81.32476069	1	24	24	64	Poor					24	1, 2" DBH Tree	2.0	

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SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

TREE DISPOSITION LIST

TREE/TOPOGRAPHIC SURVEY PROVIDED BY:
ELLIS SURVEYS, LLC
P.O. BOX 160952
ALTAMONTE SPRINGS, FL 32716
PHONE: (407) 834-4003
CONTACT: ROBERT ELLIS P.L.S.
DATED: 10/10/2022

CESO PROVIDES NO GUARANTEE TO THE ACCURACY OF THE SURVEY PROVIDED BY ELLIS SURVEYING. CONTRACTOR TO VERIFY EXISTING CONDITIONS PRIOR TO BID AND CONSTRUCTION.

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DESIGN: TH
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SHEET NO. C2.8

W:\PROJECTS\DOCM\761391 - DELAND FL N SPRING GARDEN AVE - FORD TH\03-CIVIL\PLAN\PD PLAN\PLOT SHEETS\761391 - C2.1-2.3 - TREE SURVEY.DWG - 7/31/2023 8:51 AM

TREE NO.	COMMON NAME	BOTANICAL NAME	LATITUDE	LONGITUDE	STEMS	ACTUAL DBH (inches)	ACTUAL TOTAL DBH (inches)	CONDITION RATING (%)	CONDITION RATING	CANOPY SPREAD North - South (feet)	CANOPY SPREAD East - West (feet)	SPECIMEN TREE	HISTORIC TREE	TO BE REMOVED (DBH)	REPLACEMENT RATIO	REPLACEMENT INCHES (DBH)	PRESERVED
2845	*Camphor	*Camphora officinarum*	29.03928852	-81.32477007	1	12	12	50	Very Poor					0	0	0	
2846	Laurel oak	*Quercus laurifolia*	29.03928011	-81.32483576	1	16	16	89	Good					16	1/3 DBH	5.3	
2847	Laurel oak	*Quercus laurifolia*	29.03928009	-81.32484515	1	12	12	89	Good					12	1/3 DBH	4.0	
2848	Laurel oak	*Quercus laurifolia*	29.03934318	-81.32491106	3	12, 18, 20	50	68	Poor					50	1/3 DBH + 1, 2" DBH Tree	12.0	
2849	Laurel oak	*Quercus laurifolia*	29.03935399	-81.32498933	1	14	14	89	Good					14	1/3 DBH	4.7	
2850	Laurel oak	*Quercus laurifolia*	29.03934537	-81.32514265	1	13	13	54	Very Poor					13	1/3 DBH	4.3	
2851	Laurel oak	*Quercus laurifolia*	29.03935606	-81.32527099	1	13	13	93	Good					13	1/3 DBH	4.3	
2852	Laurel oak	*Quercus laurifolia*	29.03934226	-81.32529285	1	18	18	68	Poor					18	1/3 DBH	6.0	
2853	Laurel oak	*Quercus laurifolia*	29.03931741	-81.32533346	1	12	12	82	Good					12	1/3 DBH	4.0	
2854	Cabbage palmetto	*Sabal palmetto*	29.03932538	-81.32544927	1	13	13	96	Very Good					13	1/3 DBH	4.3	
2855	Laurel oak	*Quercus laurifolia*	29.03925653	-81.32548661	1	9	9	68	Poor					9	1/3 DBH	3.0	
2856	Laurel oak	*Quercus laurifolia*	29.03918232	-81.32547073	1	7	7	82	Good					7	1/3 DBH	2.3	
2857	Laurel oak	*Quercus laurifolia*	29.03921507	-81.32557411	1	9	9	79	Fair					9	1/3 DBH	3.0	
2858	Laurel oak	*Quercus laurifolia*	29.0392454	-81.32553978	1	8	8	86	Good					8	1/3 DBH	2.7	
2859	Cabbage palmetto	*Sabal palmetto*	29.03927813	-81.32565254	1	16	16	96	Very Good					16	1/3 DBH	5.3	
2860	Laurel oak	*Quercus laurifolia*	29.03928076	-81.32570262	1	18	18	82	Good					18	1/3 DBH	6.0	
2861	Laurel oak	*Quercus laurifolia*	29.03927797	-81.32571826	1	15	15	89	Good					15	1/3 DBH	5.0	
2862	Laurel oak	*Quercus laurifolia*	29.03916526	-81.32569913	2	7, 6	13	86	Good					13	1/3 DBH	4.3	
2863	Laurel oak	*Quercus laurifolia*	29.03913493	-81.32573346	1	16	16	82	Good					16	1/3 DBH	5.3	
2864	Laurel oak	*Quercus laurifolia*	29.03913218	-81.32573345	1	21	21	82	Good					21	1/3 DBH	7.0	
2865	Laurel oak	*Quercus laurifolia*	29.03912116	-81.32573967	1	28	28	82	Good					28	1/3 DBH	9.3	
2866	Black cherry	*Prunus serotina*	29.03912684	-81.32566458	1	9	9	96	Very Good					9	1/3 DBH	3.0	
2867	Laurel oak	*Quercus laurifolia*	29.03913725	-81.32590871	1	9	9	96	Very Good					9	1/3 DBH	3.0	
2868	Black cherry	*Prunus serotina*	29.03914811	-81.32596821	1	9	9	75	Fair					9	1/3 DBH	3.0	
2869	Laurel oak	*Quercus laurifolia*	29.03912286	-81.32617467	1	21	21	89	Good								21
2870	Laurel oak	*Quercus laurifolia*	29.03913092	-81.32625293	1	17	17	75	Fair								17
2871	Laurel oak	*Quercus laurifolia*	29.03918334	-81.32618425	1	22	22	86	Good								22
2872	Laurel oak	*Quercus laurifolia*	29.03919415	-81.32626252	1	24	24	89	Good								24
2873	Laurel oak	*Quercus laurifolia*	29.03918862	-81.32627502	1	12	12	96	Very Good								12
2874	Laurel oak	*Quercus laurifolia*	29.03917747	-81.32633445	1	18	18	89	Good								18
2875	Laurel oak	*Quercus laurifolia*	29.03918024	-81.3263282	1	16	16	86	Good								16
2876	Laurel oak	*Quercus laurifolia*	29.03918294	-81.32634698	1	12	12	89	Good								12
2877	Laurel oak	*Quercus laurifolia*	29.03917455	-81.32640329	1	23	23	93	Good								23
2878	Laurel oak	*Quercus laurifolia*	29.03924622	-81.32633466	1	13	13	61	Poor					13	1/3 DBH	4.3	
2880	Laurel oak	*Quercus laurifolia*	29.03899959	-81.32597087	1	17	17	75	Fair					17	1/3 DBH	5.7	
2881	Laurel oak	*Quercus laurifolia*	29.03899409	-81.32597085	1	19	19	82	Good					19	1/3 DBH	6.3	
2882	Black cherry	*Prunus serotina*	29.03899688	-81.32595522	1	10	10	0	Dead					10	0	0	
2883	Laurel oak	*Quercus laurifolia*	29.03898866	-81.32594267	1	10	10	86	Good					10	1/3 DBH	3.3	
2884	Laurel oak	*Quercus laurifolia*	29.03899694	-81.32593018	1	12	12	89	Good					12	1/3 DBH	4.0	
2885	Laurel oak	*Quercus laurifolia*	29.03901889	-81.32595215	1	9	9	89	Good					9	1/3 DBH	3.0	
2886	Cherry laurel	*Prunus laurocerasus*	29.0389115	-81.32600815	1	9	9	93	Good					9	1/3 DBH	3.0	
2887	Laurel oak	*Quercus laurifolia*	29.03890358	-81.32587356	1	15	15	96	Very Good					15	1/3 DBH	5.0	
2888	Laurel oak	*Quercus laurifolia*	29.03899192	-81.32573301	1	9	9	82	Good					9	1/3 DBH	3.0	
2889	Black cherry	*Prunus serotina*	29.03900017	-81.32573303	1	14	14	86	Good					14	1/3 DBH	4.7	
2890	Laurel oak	*Quercus laurifolia*	29.03893434	-81.32566398	1	9	9	89	Good					9	1/3 DBH	3.0	
2891	Laurel oak	*Quercus laurifolia*	29.03893159	-81.32566084	1	19	19	89	Good					19	1/3 DBH	6.3	
2892	Laurel oak	*Quercus laurifolia*	29.03893162	-81.32565145	1	17	17	79	Fair					17	1/3 DBH	5.7	
2893	Laurel oak	*Quercus laurifolia*	29.03893712	-81.32565147	1	11	11	89	Good					11	1/3 DBH	3.7	
2894	Laurel oak	*Quercus laurifolia*	29.03894003	-81.32558576	1	12	12	79	Fair					12	1/3 DBH	4.0	
2895	Laurel oak	*Quercus laurifolia*	29.03894005	-81.32557637	1	15	15	86	Good					15	1/3 DBH	5.0	
2896	Laurel oak	*Quercus laurifolia*	29.03893181	-81.32557322	3	12, 15, 8	35	79	Fair					35	1/3 DBH	11.7	
2897	Laurel oak	*Quercus laurifolia*	29.03894023	-81.32550127	1	17	17	82	Good					17	1/3 DBH	5.7	
2898	Black cherry	*Prunus serotina*	29.03893472	-81.32550751	1	12	12	93	Good					12	1/3 DBH	4.0	
2899	Laurel oak	*Quercus laurifolia*	29.03886875	-81.32549165	1	27	27	82	Good					27	1/3 DBH	9.0	
2900	Laurel oak	*Quercus laurifolia*	29.03887422	-81.32550419	2	12, 14	26	75	Fair					26	1/3 DBH	8.7	
2901	Laurel oak	*Quercus laurifolia*	29.03894883	-81.32535734	1	17	17	82	Good					17	1/3 DBH	5.7	
2902	Laurel oak	*Quercus laurifolia*	29.03900109	-81.32535437	1	19	19	75	Fair					19	1/3 DBH	6.3	
2903	Laurel oak	*Quercus laurifolia*	29.03900657	-81.32536065	1	13	13	75	Fair					13	1/3 DBH	4.3	
2904	Laurel oak	*Quercus laurifolia*	29.03902051	-81.32528246	1	15	15	89	Good					15	1/3 DBH	5.0	
2905	Laurel oak	*Quercus laurifolia*	29.03901229	-81.32527304	2	16, 14	30	79	Fair					30	1/3 DBH	10.0	
2906	Laurel oak	*Quercus laurifolia*	29.03905902	-81.32527945	1	18	18	82	Good					18	1/3 DBH	6.0	
2907	Laurel oak	*Quercus laurifolia*	29.03901521	-81.32520107	1	31	31	68	Poor					31	1, 2" DBH Tree	2.0	
2908	Laurel oak	*Quercus laurifolia*	29.03900696	-81.32520105	1	9	9	93	Good					9	1/3 DBH	3.0	
2909	Laurel oak	*Quercus laurifolia*	29.03899043	-81.32521351	1	11	11	89	Good					11	1/3 DBH	3.7	
2910	Laurel oak	*Quercus laurifolia*	29.03900986	-81.32513847	1	18	18	82	Good					18	1/3 DBH	6.0	
2911	Laurel oak	*Quercus laurifolia*	29.03895489	-81.32512578	1	10	10	68	Poor					10	1/3 DBH	3.3	
2912	Laurel oak	*Quercus laurifolia*	29.0389494	-81.32512263	1	15	15	96	Very Good					15	1/3 DBH	5.0	
2913	Laurel oak	*Quercus laurifolia*	29.03893564	-81.32512572	1	19	19	57	Very Poor					19	1/3 DBH	6.3	
2914	Laurel oak	*Quercus laurifolia*	29.03892737	-81.32513508	1	20	20	57	Very Poor					20	1, 2" DBH Tree	2.0	
2915	Laurel oak	*Quercus laurifolia*	29.03891391	-81.32501299	1	17	17	82	Good					17	1/3 DBH	5.7	
2916	Laurel oak	*Quercus laurifolia*	29.0389058	-81.32495663	1	21	21	79	Fair					21	1/3 DBH	7.0	
2917	Black cherry	*Prunus serotina*	29.0388949	-81.32491279	1	9	9	0	Dead					9	0	0	
2918	Laurel oak	*Quercus laurifolia*	29.03888413	-81.32481887	3	38, 21, 12	71	71	Fair					70	1/3 DBH	23.3	
2937	Laurel oak	*Quercus laurifolia*	29.03901303	-81.32609922	1	12	12	93	Good					12	1/3 DBH	4.0	
2938	Laurel oak	*Quercus laurifolia*	29.03905425	-81.326115	1	23	23	86	Good								23
2939	Black cherry	*Prunus serotina*	29.03905701	-81.32611188	1	14	14	0	Dead					14	0	0	

TREE/TOPOGRAPHIC SURVEY PROVIDED BY:
ELLIS SURVEYS, LLC
P.O. BOX 160952
ALTAMONTE SPRINGS, FL 32716
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CONTACT: ROBERT ELLIS P.L.S.
DATED: 10/10/2022

CESO PROVIDES NO GUARANTEE TO THE ACCURACY OF THE SURVEY PROVIDED BY ELLIS SURVEYING. CONTRACTOR TO VERIFY EXISTING CONDITIONS PRIOR TO BID AND CONSTRUCTION.

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NO. | DATE | REVISION DESCRIPTION

SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

TREE DISPOSITION LIST

ISSUE:
NOT FOR CONSTRUCTION
DATE:
02/15/2023

JOB NO.:	761391
DESIGN:	TH
DRAWN:	TH
CHECKED:	EAB

SHEET NO.
C2.9

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TREE NO.	COMMON NAME	BOTANICAL NAME	LATITUDE	LONGITUDE	STEMS	ACTUAL DBH (inches)	ACTUAL TOTAL DBH (inches)	CONDITION RATING (%)	CONDITION RATING	CANOPY SPREAD North - South (feet)	CANOPY SPREAD East - West (feet)	SPECIMEN TREE	HISTORIC TREE	TO BE REMOVED (DBH)	REPLACEMENT RATIO	REPLACEMENT INCHES (DBH)	PRESERVED
2940	Laurel oak	*Quercus laurifolia*	29.03908451	-81.32610883	1	11	11	79	Fair								11
2941	Laurel oak	*Quercus laurifolia*	29.03904857	-81.32619009	1	17	17	79	Fair								17
2942	Laurel oak	*Quercus laurifolia*	29.03905094	-81.32634344	1	16	16	93	Good								16
2943	Laurel oak	*Quercus laurifolia*	29.03906194	-81.32634347	1	14	14	86	Good								14
2944	Laurel oak	*Quercus laurifolia*	29.03904824	-81.32632465	1	14	14	89	Good								14
2945	Laurel oak	*Quercus laurifolia*	29.03904529	-81.32640601	1	33	33	86	Good								33
2946	Laurel oak	*Quercus laurifolia*	29.03898757	-81.32639331	1	7	7	0	Dead					7	0	0	
2947	Laurel oak	*Quercus laurifolia*	29.03899033	-81.32639019	1	8	8	93	Good								8
2948	Laurel oak	*Quercus laurifolia*	29.03897931	-81.32639641	1	13	13	96	Very Good								13
2955	Black cherry	*Prunus serotina*	29.03891896	-81.32633363	1	17	17	86	Good								17
2956	Laurel oak	*Quercus laurifolia*	29.03892191	-81.32625228	1	20	20	89	Good								20
2957	Black cherry	*Prunus serotina*	29.03891915	-81.3262554	1	18	18	89	Good								18
2958	Black cherry	*Prunus serotina*	29.03886141	-81.32624896	1	12	12	0	Dead					12	0	0	
2959	Laurel oak	*Quercus laurifolia*	29.03886157	-81.32618324	1	12	12	79	Fair								12
2960	Laurel oak	*Quercus laurifolia*	29.03886707	-81.32618326	1	23	23	93	Good								23
2961	Laurel oak	*Quercus laurifolia*	29.03892755	-81.32619284	1	12	12	89	Good								12
2962	Laurel oak	*Quercus laurifolia*	29.03899359	-81.3261774	1	17	17	82	Good								17
2963	Laurel oak	*Quercus laurifolia*	29.0389881	-81.32617425	1	14	14	89	Good								14
2964	Laurel oak	*Quercus laurifolia*	29.03876849	-81.32601083	1	9	9	79	Fair					9	1/3 DBH	3.0	
2965	Laurel oak	*Quercus laurifolia*	29.03877125	-81.32600458	1	19	19	68	Poor					19	1/3 DBH	6.3	
2966	Laurel oak	*Quercus laurifolia*	29.03876571	-81.32602021	1	22	22	79	Fair					22	1/3 DBH	7.3	
2967	Laurel oak	*Quercus laurifolia*	29.03876316	-81.32593883	1	21	21	54	Very Poor					21	1/3 DBH	7.0	
2968	Laurel oak	*Quercus laurifolia*	29.03877969	-81.32592637	1	12	12	79	Fair					12	1/3 DBH	4.0	
2969	Laurel oak	*Quercus laurifolia*	29.03878518	-81.32593264	2	19, 16	35	68	Poor					35	1/3 DBH	11.7	
2970	Black cherry	*Prunus serotina*	29.0387799	-81.32584187	1	17	17	89	Good					17	1/3 DBH	5.7	
2971	Laurel oak	*Quercus laurifolia*	29.03877441	-81.3258356	1	16	16	79	Fair					16	1/3 DBH	5.3	
2972	Black cherry	*Prunus serotina*	29.0387799	-81.32583874	1	10	10	64	Poor					10	1/3 DBH	3.3	
2973	Laurel oak	*Quercus laurifolia*	29.03869461	-81.32585412	1	9	9	79	Fair					9	1/3 DBH	3.0	
2974	Laurel oak	*Quercus laurifolia*	29.03869189	-81.3258416	1	29	29	82	Good					29	1/3 DBH	9.7	
2975	Black cherry	*Prunus serotina*	29.03870336	-81.32565074	1	12	12	89	Good					12	1/3 DBH	4.0	
2976	Live oak	*Quercus virginiana*	29.03870345	-81.32561005	1	8	8	89	Good					8	1/3 DBH	2.7	
2977	Laurel oak	*Quercus laurifolia*	29.03868695	-81.32561	1	9	9	86	Good					9	1/3 DBH	3.0	
2978	Laurel oak	*Quercus laurifolia*	29.03867594	-81.32561623	1	8	8	89	Good					8	1/3 DBH	2.7	
2979	Laurel oak	*Quercus laurifolia*	29.0387036	-81.3255506	1	16	16	86	Good					16	1/3 DBH	5.3	
2980	Laurel oak	*Quercus laurifolia*	29.03877763	-81.32564158	1	24	24	89	Good					24	1/3 DBH	8.0	
2981	Laurel oak	*Quercus laurifolia*	29.03878036	-81.32565098	1	12	12	61	Poor					12	1/3 DBH	4.0	
2982	Laurel oak	*Quercus laurifolia*	29.038938	-81.32528533	1	23	23	68	Poor					23	1/3 DBH	7.7	
2983	Laurel oak	*Quercus laurifolia*	29.03887771	-81.32519751	1	23	23	79	Fair					23	1/3 DBH	7.7	
2984	Black cherry	*Prunus serotina*	29.03887274	-81.32497844	1	12	12	79	Fair					12	1/3 DBH	4.0	
2986	Laurel oak	*Quercus laurifolia*	29.03907533	-81.32536087	1	14	14	89	Good					14	1/3 DBH	4.7	
2987	Laurel oak	*Quercus laurifolia*	29.03906707	-81.32536397	1	14	14	89	Good					14	1/3 DBH	4.7	
2988	Laurel oak	*Quercus laurifolia*	29.03907535	-81.32535148	1	19	19	89	Good					19	1/3 DBH	6.3	
2989	Laurel oak	*Quercus laurifolia*	29.03907531	-81.32536712	1	16	16	89	Good					16	1/3 DBH	5.3	
2990	Laurel oak	*Quercus laurifolia*	29.03913857	-81.32536419	1	15	15	86	Good					15	1/3 DBH	5.0	
2991	Laurel oak	*Quercus laurifolia*	29.03912188	-81.32544238	1	7	7	96	Very Good					7	1/3 DBH	2.3	
2992	Laurel oak	*Quercus laurifolia*	29.03914702	-81.32528285	1	16	16	86	Good					14	1/3 DBH	4.7	
2993	Laurel oak	*Quercus laurifolia*	29.03914426	-81.32528597	1	20	20	86	Good					20	1/3 DBH	6.7	
2994	Laurel oak	*Quercus laurifolia*	29.03920767	-81.32522358	1	17	17	82	Good					17	1/3 DBH	5.7	
2995	Black cherry	*Prunus serotina*	29.0391472	-81.32520775	1	12	12	89	Good					12	1/3 DBH	4.0	
2996	Laurel oak	*Quercus laurifolia*	29.03914466	-81.32512324	1	24	24	79	Fair					24	1/3 DBH	8.0	
2997	Laurel oak	*Quercus laurifolia*	29.03921338	-81.32513598	1	18	18	75	Fair					18	1/3 DBH	6.0	
2998	Laurel oak	*Quercus laurifolia*	29.0392108	-81.32506712	1	13	13	68	Poor					13	1/3 DBH	4.3	
2999	Laurel oak	*Quercus laurifolia*	29.03921631	-81.32506088	1	24	24	82	Good					24	1/3 DBH	8.0	
3000	Laurel oak	*Quercus laurifolia*	29.03920823	-81.32499201	1	18	18	71	Fair					18	1/3 DBH	6.0	
3001	Laurel oak	*Quercus laurifolia*	29.03920822	-81.32499514	1	21	21	71	Fair					21	1/3 DBH	7.0	
3002	Laurel oak	*Quercus laurifolia*	29.03920841	-81.3249169	1	15	15	68	Poor					15	1/3 DBH	5.0	
3003	Laurel oak	*Quercus laurifolia*	29.03915616	-81.32491361	1	22	22	71	Fair					22	1/3 DBH	7.3	
3004	Black cherry	*Prunus serotina*	29.0391505	-81.32498244	1	12	12	82	Good					11	1/3 DBH	3.7	
3005	Laurel oak	*Quercus laurifolia*	29.03922234	-81.32484184	1	20	20	75	Fair					20	1/3 DBH	6.7	
3006	Laurel oak	*Quercus laurifolia*	29.03921709	-81.32473855	1	12	12	79	Fair					12	1/3 DBH	4.0	
3007	Laurel oak	*Quercus laurifolia*	29.03908505	-81.32475378	2	26, 19	45	43	Very Poor					45	1/3 DBH + 1, 2" DBH Tree	8.3	
3008	Laurel oak	*Quercus laurifolia*	29.03909034	-81.32484142	1	13	13	79	Fair					13	1/3 DBH	4.3	
3009	Laurel oak	*Quercus laurifolia*	29.03908209	-81.3248414	1	17	17	68	Poor					17	1/3 DBH	5.7	
3010	Laurel oak	*Quercus laurifolia*	29.0390629	-81.3248163	1	17	17	79	Fair					17	1/3 DBH	5.7	
3012	Laurel oak	*Quercus laurifolia*	29.03902164	-81.32481617	1	12	12	96	Very Good					12	1/3 DBH	4.0	
3013	Black cherry	*Prunus serotina*	29.03897789	-81.32471276	1	13	13	82	Good					13	1/3 DBH	4.3	
3014	Laurel oak	*Quercus laurifolia*	29.03890908	-81.32473445	1	21	21	89	Good					21	1/3 DBH	7.0	
3017	Laurel oak	*Quercus laurifolia*	29.03900051	-81.32559221	1	21	21	82	Good					21	1/3 DBH	7.0	
3018	***No Tree at this Location***		29.03895159	-81.32535109										0	0	0	
3019	Laurel oak	*Quercus laurifolia*	29.03895159	-81.32535109	1	17	17	86	Good					17	1/3 DBH	5.7	
3020	Laurel oak	*Quercus laurifolia*	29.03907348	-81.32498845	1	17	17	75	Fair					17	1/3 DBH	5.7	
3021	Laurel oak	*Quercus laurifolia*	29.03907898	-81.32498847	1	15	15	68	Poor					15	1/3 DBH	5.0	
3022	Laurel oak	*Quercus laurifolia*	29.03879478	-81.32537563	1	24	24	86	Good					24	1/3 DBH	8.0	
3023	Cabbage palmetto	*Sabal palmetto*	29.03867622	-81.32550044	1	16	16	96	Very Good					16	1/3 DBH	5.3	
3024	Cabbage palmetto	*Sabal palmetto*	29.03861039	-81.32542825	1	15	15	96	Very Good					15	1/3 DBH	5.0	
3025	*Ear Tree	*Enterolobium cyclocarpum*	29.03855551	-81.32537801	1	20	20	82	Good					0	0	0	

TREE/TOPOGRAPHIC SURVEY PROVIDED BY:
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DATED: 10/10/2022

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REVISION DESCRIPTION
NO. DATE

SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

TREE DISPOSITION LIST

ISSUE: NOT FOR CONSTRUCTION
DATE: 02/15/2023
JOB NO.: 761391
DESIGN: TH
DRAWN: TH
CHECKED: EAB
SHEET NO. C2.10

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TREE NO.	COMMON NAME	BOTANICAL NAME	LATITUDE	LONGITUDE	STEMS	ACTUAL DBH (inches)	ACTUAL TOTAL DBH (inches)	CONDITION RATING (%)	CONDITION RATING	CANOPY SPREAD North - South (feet)	CANOPY SPREAD East - West (feet)	SPECIMEN TREE	HISTORIC TREE	TO BE REMOVED (DBH)	REPLACEMENT RATIO	REPLACEMENT INCHES (DBH)	PRESERVED
3026	Laurel oak	*Quercus laurifolia*	29.03854161	-81.32543743	1	10	10	82	Good					10	1/3 DBH	3.3	
3027	Laurel oak	*Quercus laurifolia*	29.03853337	-81.32543427	1	19	19	82	Good					19	1/3 DBH	6.3	
3028	Laurel oak	*Quercus laurifolia*	29.03852236	-81.3254405	2	9, 9	18	89	Good					18	1/3 DBH	6.0	
3029	Laurel oak	*Quercus laurifolia*	29.03851957	-81.32545613	1	15	15	82	Good					15	1/3 DBH	5.0	
3030	Black cherry	*Prunus serotina*	29.03851961	-81.32544049	1	10	10	0	Dead					10	0	0	
3031	Laurel oak	*Quercus laurifolia*	29.03852242	-81.32541233	1	10	10	86	Good					10	1/3 DBH	3.3	
3032	Cabbage palmetto	*Sabal palmetto*	29.03853308	-81.32555632	1	17	17	96	Very Good					17	1/3 DBH	5.7	
3033	Laurel oak	*Quercus laurifolia*	29.0384697	-81.32560619	1	8	8	93	Good					8	1/3 DBH	2.7	
3034	Laurel oak	*Quercus laurifolia*	29.03846147	-81.32559678	1	10	10	75	Fair					10	1/3 DBH	3.3	
3035	Laurel oak	*Quercus laurifolia*	29.03844966	-81.32593159	1	18	18	64	Poor					18	1/3 DBH	6.0	
3036	Laurel oak	*Quercus laurifolia*	29.03852393	-81.32592556	1	25	25	82	Good					25	1/3 DBH	8.3	
3037	Laurel oak	*Quercus laurifolia*	29.03854042	-81.32592875	1	23	23	64	Poor					23	1/3 DBH	7.7	
3038	Laurel oak	*Quercus laurifolia*	29.03861193	-81.32592584	1	25	25	61	Poor					25	1/3 DBH	8.3	
3039	Laurel oak	*Quercus laurifolia*	29.03861743	-81.32592586	1	9	9	46	Very Poor					9	1/3 DBH	3.0	
3040	Laurel oak	*Quercus laurifolia*	29.03868868	-81.32603248	1	9	9	93	Good					9	1/3 DBH	3.0	
3041	Laurel oak	*Quercus laurifolia*	29.03861723	-81.32601035	1	31	31	75	Fair					31	1/3 DBH	10.3	
3042	*Camphor	*Camphora officinarum*	29.03861169	-81.32602598	1	17	17	75	Fair					0	0	0	
3043	Laurel oak	*Quercus laurifolia*	29.03860893	-81.32603223	1	15	15	79	Fair					15	1/3 DBH	5.0	
3044	Laurel oak	*Quercus laurifolia*	29.03851822	-81.32601004	1	16	16	89	Good					16	1/3 DBH	5.3	
3045	Laurel oak	*Quercus laurifolia*	29.03852094	-81.3260257	2	19, 14	33	64	Poor					33	1/3 DBH	11.0	
3046	Laurel oak	*Quercus laurifolia*	29.03836145	-81.32601894	2	14, 13	27	82	Good					27	1/3 DBH	9.0	
3047	Laurel oak	*Quercus laurifolia*	29.03827049	-81.32610315	3	20, 10, 10	40	79	Fair								40
3048	Laurel oak	*Quercus laurifolia*	29.03810293	-81.32601812	1	16	16	86	Good					16	1/3 DBH	5.3	
3049	Laurel oak	*Quercus laurifolia*	29.03810574	-81.32599623	1	12	12	89	Good					12	1/3 DBH	4.0	
3050	Black cherry	*Prunus serotina*	29.03802875	-81.32598973	1	13	13	79	Fair					13	1/3 DBH	4.3	
3051	Laurel oak	*Quercus laurifolia*	29.0380286	-81.32605231	3	13, 11, 16	40	46	Very Poor					40	1/3 DBH	13.3	
3052	Laurel oak	*Quercus laurifolia*	29.03800386	-81.32604598	1	16	16	93	Good					16	1/3 DBH	5.3	
3053	Laurel oak	*Quercus laurifolia*	29.03797632	-81.32606154	1	16	16	86	Good					16	1/3 DBH	5.3	
3054	Laurel oak	*Quercus laurifolia*	29.03796569	-81.32591129	1	21	21	79	Fair					21	1/3 DBH	7.0	
3055	Laurel oak	*Quercus laurifolia*	29.0382792	-81.32591228	1	28	28	89	Good					28	1/3 DBH	9.3	
3056	Laurel oak	*Quercus laurifolia*	29.03839193	-81.32592202	1	17	17	61	Poor					17	1/3 DBH	5.7	
3057	Laurel oak	*Quercus laurifolia*	29.03820492	-81.32592143	1	29	29	79	Fair					29	1/3 DBH	9.7	
3058	Black cherry	*Prunus serotina*	29.03811144	-81.32591175	1	14	14	82	Good					14	1/3 DBH	4.7	
3059	Laurel oak	*Quercus laurifolia*	29.03803439	-81.32593028	1	18	18	68	Poor					18	1/3 DBH	6.0	
3060	Laurel oak	*Quercus laurifolia*	29.03804834	-81.32584896	1	13	13	82	Good					13	1/3 DBH	4.3	
3061	Laurel oak	*Quercus laurifolia*	29.03803476	-81.32578007	2	20, 12	32	75	Fair					32	1/3 DBH	10.7	
3062	Laurel oak	*Quercus laurifolia*	29.03803755	-81.32576444	1	11	11	82	Good					11	1/3 DBH	3.7	
3063	Laurel oak	*Quercus laurifolia*	29.03802933	-81.32575189	1	18	18	89	Good					18	1/3 DBH	6.0	
3064	Laurel oak	*Quercus laurifolia*	29.03804046	-81.3256956	1	14	14	82	Good					14	1/3 DBH	4.7	
3065	Laurel oak	*Quercus laurifolia*	29.03804875	-81.32567998	1	16	16	89	Good					16	1/3 DBH	5.3	
3066	Laurel oak	*Quercus laurifolia*	29.03804655	-81.32545465	1	25	25	64	Poor					25	1/3 DBH	8.3	
3067	Black cherry	*Prunus serotina*	29.03812884	-81.32554253	1	12	12	82	Good					12	1/3 DBH	4.0	
3068	Laurel oak	*Quercus laurifolia*	29.03819483	-81.32554587	1	13	13	93	Good					13	1/3 DBH	4.3	
3069	Laurel oak	*Quercus laurifolia*	29.03820308	-81.3255459	1	28	28	79	Fair					28	1/3 DBH	9.3	
3070	Laurel oak	*Quercus laurifolia*	29.0382031	-81.32553964	1	18	18	86	Good					28	1/3 DBH	9.3	
3071	Black cherry	*Prunus serotina*	29.03821709	-81.32544267	1	10	10	89	Good					10	1/3 DBH	3.3	
3072	Cabbage palmetto	*Sabal palmetto*	29.03828855	-81.32545854	1	16	16	96	Very Good					16	1/3 DBH	5.3	
3073	Laurel oak	*Quercus laurifolia*	29.03832992	-81.3254086	1	9	9	96	Very Good					9	1/3 DBH	3.0	
3074	Laurel oak	*Quercus laurifolia*	29.03829177	-81.32526452	2	22, 14	36	82	Good					36	1/3 DBH	12.0	
3075	Laurel oak	*Quercus laurifolia*	29.03829747	-81.32518318	1	16	16	86	Good					16	1/3 DBH	5.3	
3076	Laurel oak	*Quercus laurifolia*	29.03830581	-81.32514565	1	10	10	96	Very Good					10	1/3 DBH	3.3	
3078	Laurel oak	*Quercus laurifolia*	29.03790484	-81.32605193	1	15	15	61	Poor					15	1/3 DBH	5.0	
3079	Laurel oak	*Quercus laurifolia*	29.03789642	-81.32612388	2	12, 16	28	57	Very Poor					28	1/3 DBH	9.3	
3080	Laurel oak	*Quercus laurifolia*	29.03789622	-81.32620524	1	14	14	96	Very Good					14	1/3 DBH	4.7	
3081	Black cherry	*Prunus serotina*	29.03793439	-81.32634305	1	12	12	89	Good								12
3082	Laurel oak	*Quercus laurifolia*	29.0379481	-81.32635874	2	13, 15	28	89	Good								28
3083	Laurel oak	*Quercus laurifolia*	29.03794533	-81.32636812	1	16	16	82	Good								16
3084	Laurel oak	*Quercus laurifolia*	29.03795633	-81.32636816	1	9	9	93	Good								9
3085	Laurel oak	*Quercus laurifolia*	29.03802509	-81.32636212	2	12, 13	25	89	Good								25
3086	Laurel oak	*Quercus laurifolia*	29.03801682	-81.32637148	1	16	16	64	Poor					15	1/3 DBH	5.0	
3087	Laurel oak	*Quercus laurifolia*	29.03802231	-81.32637462	1	20	20	93	Good								20
3088	Laurel oak	*Quercus laurifolia*	29.03800603	-81.32628695	1	23	23	82	Good								23
3089	Laurel oak	*Quercus laurifolia*	29.03802252	-81.32629013	1	16	16	93	Good								16
3090	Laurel oak	*Quercus laurifolia*	29.03795654	-81.32628054	1	12	12	68	Poor					12	1/3 DBH	4.0	
3091	Laurel oak	*Quercus laurifolia*	29.03796218	-81.32622422	1	12	12	93	Good					12	1/3 DBH	4.0	
3092	Laurel oak	*Quercus laurifolia*	29.03801172	-81.32620873	1	15	15	93	Good					15	1/3 DBH	5.0	
3093	Black cherry	*Prunus serotina*	29.03801722	-81.32620562	1	17	17	82	Good					17	1/3 DBH	5.7	
3094	Laurel oak	*Quercus laurifolia*	29.03802272	-81.32620877	1	9	9	89	Good					9	1/3 DBH	3.0	
3095	Laurel oak	*Quercus laurifolia*	29.03802564	-81.3261368	2	17, 17	34	75	Fair					34	1/3 DBH	11.3	
3096	Laurel oak	*Quercus laurifolia*	29.03804069	-81.32560172	1	25	25	68	Poor					25	1, 2"DBH Tree	2.0	
3097	Laurel oak	*Quercus laurifolia*	29.03798057	-81.32544193	1	15	15	86	Good					15	1/3 DBH	5.0	
3098	Laurel oak	*Quercus laurifolia*	29.03797529	-81.32535429	1	15	15	89	Good					15	1/3 DBH	5.0	
3099	Laurel oak	*Quercus laurifolia*	29.0379835	-81.32536996	2	13, 20	33	68	Poor					33	1/3 DBH + 1, 2"DBH Tree	6.3	
3100	Laurel oak	*Quercus laurifolia*	29.03803596	-81.3252825	1	12	12	93	Good					12	1/3 DBH	4.0	
3101	Laurel oak	*Quercus laurifolia*	29.03803871	-81.32528564	1	11	11	86	Good					11	1/3 DBH	3.7	

TREE/TOPOGRAPHIC SURVEY PROVIDED BY:
ELLIS SURVEYS, LLC
P.O. BOX 160952
ALTAMONTE SPRINGS, FL 32716
PHONE: (407) 834-4003
CONTACT: ROBERT ELLIS P.L.S.
DATED: 10/10/2022

CESO PROVIDES NO GUARANTEE TO THE ACCURACY OF THE SURVEY PROVIDED BY ELLIS SURVEYING. CONTRACTOR TO VERIFY EXISTING CONDITIONS PRIOR TO BID AND CONSTRUCTION.

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REVISION DESCRIPTION
DATE
NO.

SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

TREE DISPOSITION LIST

ISSUE:
NOT FOR CONSTRUCTION
DATE:
02/15/2023

JOB NO.:	761391
DESIGN:	TH
DRAWN:	TH
CHECKED:	EAB

SHEET NO.
C2.11

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TREE NO.	COMMON NAME	BOTANICAL NAME	LATITUDE	LONGITUDE	STEMS	ACTUAL DBH (inches)	ACTUAL TOTAL DBH (inches)	CONDITION RATING (%)	CONDITION RATING	CANOPY SPREAD North - South (feet)	CANOPY SPREAD East - West (feet)	SPECIMEN TREE	HISTORIC TREE	TO BE REMOVED (DBH)	REPLACEMENT RATIO	REPLACEMENT INCHES (DBH)	PRESERVED
3102	Laurel oak	*Quercus laurifolia*	29.03804969	-81.32529193	1	21	21	79	Fair					21	1/3 DBH	7.0	
3103	Laurel oak	*Quercus laurifolia*	29.03797016	-81.32520093	2	15, 11	26	82	Good					26	1/3 DBH	8.7	
3104	Laurel oak	*Quercus laurifolia*	29.0379839	-81.3252041	1	22	22	86	Good					22	1/3 DBH	7.3	
3105	Laurel oak	*Quercus laurifolia*	29.03798131	-81.32513837	1	12	12	89	Good					12	1/3 DBH	4.0	
3106	Laurel oak	*Quercus laurifolia*	29.03798425	-81.32506015	2	11, 7	18	89	Good					18	1/3 DBH	6.0	
3107	Laurel oak	*Quercus laurifolia*	29.03798703	-81.32504764	4	12, 14, 12, 15	53	71	Fair					53	1/3 DBH	17.7	
3108	Laurel oak	*Quercus laurifolia*	29.03797605	-81.32503822	1	10	10	89	Good					10	1/3 DBH	3.3	
3109	Laurel oak	*Quercus laurifolia*	29.03799291	-81.32489119	1	50	50	68	Poor					50	1, 2"DBH Tree	2.0	
3110	Black cherry	*Prunus serotina*	29.03798208	-81.32481918	1	12	12	0	Dead					12	0	0	
3112	Laurel oak	*Quercus laurifolia*	29.03805102	-81.32474116	1	28	28	82	Good					28	1/3 DBH	9.3	
3113	Laurel oak	*Quercus laurifolia*	29.03805908	-81.32482255	3	16, 13, 14	43	93	Good					43	1/3 DBH	14.3	
3114	Laurel oak	*Quercus laurifolia*	29.0380644	-81.32489454	2	7, 16	23	75	Fair					23	1/3 DBH	7.7	
3115	Laurel oak	*Quercus laurifolia*	29.0380589	-81.32489452	1	13	13	96	Very Good					13	1/3 DBH	4.3	
3116	Laurel oak	*Quercus laurifolia*	29.03805892	-81.32488826	1	19	19	93	Good					19	1/3 DBH	6.3	
3117	Laurel oak	*Quercus laurifolia*	29.03805343	-81.32488199	1	15	15	93	Good					15	1/3 DBH	5.0	
3118	Laurel oak	*Quercus laurifolia*	29.03805597	-81.32496962	2	16, 12	28	89	Good					28	1/3 DBH	9.3	
3119	Laurel oak	*Quercus laurifolia*	29.03813538	-81.32511382	1	10	10	96	Very Good					10	1/3 DBH	3.3	
3120	Laurel oak	*Quercus laurifolia*	29.03805559	-81.32512922	1	18	18	93	Good					18	1/3 DBH	6.0	
3121	Laurel oak	*Quercus laurifolia*	29.03804165	-81.32520428	1	25	25	89	Good					25	1/3 DBH	8.3	
3122	Laurel oak	*Quercus laurifolia*	29.03812407	-81.32523896	1	17	17	64	Poor					17	1/3 DBH	5.7	
3123	Laurel oak	*Quercus laurifolia*	29.03813785	-81.32522962	1	10	10	75	Fair					10	1/3 DBH	3.3	
3124	Black cherry	*Prunus serotina*	29.03821227	-81.325161	1	7	7	71	Fair					7	1/3 DBH	2.3	
3125	Laurel oak	*Quercus laurifolia*	29.03820951	-81.32516412	1	17	17	89	Good					17	1/3 DBH	5.7	
3126	Laurel oak	*Quercus laurifolia*	29.03822052	-81.32516103	1	15	15	89	Good					15	1/3 DBH	5.0	
3127	Laurel oak	*Quercus laurifolia*	29.03822305	-81.32525179	1	15	15	86	Good					15	1/3 DBH	5.0	
3128	Laurel oak	*Quercus laurifolia*	29.03813138	-81.32563016	1	17	17	86	Good					17	1/3 DBH	5.7	
3129	Laurel oak	*Quercus laurifolia*	29.03819992	-81.32571487	1	22	22	82	Good					22	1/3 DBH	7.3	
3130	Laurel oak	*Quercus laurifolia*	29.03819691	-81.32582439	1	28	28	61	Poor					28	1, 2" DBH Tree	2.0	
3131	Laurel oak	*Quercus laurifolia*	29.03810246	-81.32621215	2	22, 14	36	68	Poor					36	1/3 DBH + 1, 2" DBH Tree	6.7	
3132	Laurel oak	*Quercus laurifolia*	29.03810227	-81.32629038	1	15	15	89	Good								15
3133	Laurel oak	*Quercus laurifolia*	29.03811049	-81.32630293	1	11	11	82	Good								11
3138	Live oak	*Quercus virginiana*	29.03827255	-81.3263848	1	14	14	89	Good			Specimen					14
3139	Laurel oak	*Quercus laurifolia*	29.03825891	-81.32634095	1	25	25	68	Poor					25	1, 2" DBH Tree	2.0	
3140	Laurel oak	*Quercus laurifolia*	29.03825342	-81.32633467	1	10	10	93	Good								10
3141	Laurel oak	*Quercus laurifolia*	29.03825895	-81.3263253	1	12	12	96	Very Good								12
3142	Laurel oak	*Quercus laurifolia*	29.03826727	-81.32629403	1	16	16	89	Good								16
3143	Laurel oak	*Quercus laurifolia*	29.0382647	-81.32622205	1	26	26	82	Good								26
3144	Laurel oak	*Quercus laurifolia*	29.03827299	-81.32620642	1	10	10	93	Good								10
3145	Laurel oak	*Quercus laurifolia*	29.03818496	-81.32621554	1	21	21	75	Fair					21	1/3 DBH	7.0	
3146	Laurel oak	*Quercus laurifolia*	29.03818777	-81.32619051	1	20	20	79	Fair					20	1/3 DBH	6.7	
3147	Laurel oak	*Quercus laurifolia*	29.03819894	-81.32611857	1	19	19	68	Poor					19	1/3 DBH	6.3	
3148	Laurel oak	*Quercus laurifolia*	29.03836118	-81.32612847	1	22	22	93	Good								22
3149	Laurel oak	*Quercus laurifolia*	29.03834748	-81.32610652	1	10	10	82	Good								10
3150	Laurel oak	*Quercus laurifolia*	29.03836078	-81.32629432	2	23, 14	37	82	Good								37
3151	Black cherry	*Prunus serotina*	29.03842949	-81.32631019	1	12	12	0	Dead					12	0	0	
3152	Live oak	*Quercus virginiana*	29.03842654	-81.32639467	1	25	25	89	Good	45.6	24.3		Historic				25
3153	Black cherry	*Prunus serotina*	29.03851728	-81.32639809	4	13, 19, 10, 7	49	89	Good								49
3154	Black cherry	*Prunus serotina*	29.03859706	-81.32638895	1	7	7	93	Good								7
3155	Laurel oak	*Quercus laurifolia*	29.03861373	-81.32632016	2	8, 12	20	89	Good								20
3156	Laurel oak	*Quercus laurifolia*	29.03860004	-81.32629195	1	22	22	82	Good								22
3157	Laurel oak	*Quercus laurifolia*	29.03852029	-81.3262917	1	22	22	68	Poor					22	1/3 DBH	7.3	
3158	Laurel oak	*Quercus laurifolia*	29.0385232	-81.32622599	3	8, 9, 18	35	82	Good								35
3159	Laurel oak	*Quercus laurifolia*	29.03852874	-81.32621036	1	13	13	89	Good								13
3160	Laurel oak	*Quercus laurifolia*	29.03844075	-81.32620382	1	18	18	89	Good								18
3161	Black cherry	*Prunus serotina*	29.03844072	-81.32621634	1	12	12	0	Dead					12	0	0	
3162	Laurel oak	*Quercus laurifolia*	29.0384437	-81.32612247	1	23	23	86	Good								23
5003	Laurel oak	*Quercus laurifolia*	29.03715949	-81.32494491	1	22	22	89	Good					22	1/3 DBH	7.3	
5004	Laurel oak	*Quercus laurifolia*	29.03716773	-81.32494806	1	10	10	68	Poor					10	1/3 DBH	3.3	
5005	Laurel oak	*Quercus laurifolia*	29.03723366	-81.32497643	1	16	16	93	Good					16	1/3 DBH	5.3	
5006	Laurel oak	*Quercus laurifolia*	29.03723923	-81.32494828	1	22	22	93	Good					22	1/3 DBH	7.3	
5007	Laurel oak	*Quercus laurifolia*	29.03723904	-81.32502652	1	10	10	96	Very Good					10	1/3 DBH	3.3	
5008	Laurel oak	*Quercus laurifolia*	29.03722252	-81.32503586	1	14	14	93	Good					14	1/3 DBH	4.7	
5009	Laurel oak	*Quercus laurifolia*	29.0372198	-81.32502333	1	15	15	93	Good					15	1/3 DBH	5.0	
5010	Laurel oak	*Quercus laurifolia*	29.03728871	-81.32495783	1	9	9	82	Good					9	1/3 DBH	3.0	
5011	Laurel oak	*Quercus laurifolia*	29.03728874	-81.32494531	1	17	17	71	Fair					17	1/3 DBH	5.7	
5012	Laurel oak	*Quercus laurifolia*	29.03729131	-81.32502042	1	14	14	89	Good					14	1/3 DBH	4.7	
5013	Laurel oak	*Quercus laurifolia*	29.03730506	-81.32502047	1	14	14	93	Good					12	1/3 DBH	4.0	
5014	Laurel oak	*Quercus laurifolia*	29.03730504	-81.32502986	1	11	11	82	Good					11	1/3 DBH	3.7	
5015	Laurel oak	*Quercus laurifolia*	29.03735454	-81.32503001	1	15	15	57	Very Poor					15	1/3 DBH	5.0	
5016	Laurel oak	*Quercus laurifolia*	29.03736277	-81.32503942	1	10	10	89	Good					10	1/3 DBH	3.3	
5017	Laurel oak	*Quercus laurifolia*	29.03736828	-81.32503318	1	14	14	89	Good					14	1/3 DBH	4.7	
5018	Laurel oak	*Quercus laurifolia*	29.03717065	-81.32487609	1	13	13	93	Good								13
5019	Laurel oak	*Quercus laurifolia*	29.03716792	-81.3248667	1	17	17	89	Good								17
5020	Laurel oak	*Quercus laurifolia*	29.03717342	-81.32486671	1	19	19	82	Good								19
5021	Laurel oak	*Quercus laurifolia*	29.03716795	-81.32485731	1	8	8	68	Poor					8	1/3 DBH	2.7	
5022	Laurel oak	*Quercus laurifolia*	29.03719546	-81.32485114	1	18	18	86	Good								18
5023	Laurel oak	*Quercus laurifolia*	29.03737418	-81.32486734	1	30	30	89	Good								30
5024	Laurel oak	*Quercus laurifolia*	29.03736593	-81.32486732	1	12	12	93	Good								12
5025	Laurel oak	*Quercus laurifolia*	29.03730285	-81.32479514	2	12, 27	39	68	Poor					39	1/3 DBH + 1, 2" DBH Tree	6.0	

TREE/TOPOGRAPHIC SURVEY PROVIDED BY:
ELLIS SURVEYS, LLC
P.O. BOX 160952
ALTAMONTE SPRINGS, FL 32716
PHONE: (407) 834-4003
CONTACT: ROBERT ELLIS P.L.S.
DATED: 10/10/2022

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NO. | DATE | REVISION DESCRIPTION

SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

TREE DISPOSITION LIST

ISSUE:
NOT FOR CONSTRUCTION
DATE:
02/15/2023

JOB NO.:	761391
DESIGN:	TH
DRAWN:	TH
CHECKED:	EAB

SHEET NO.
C2.12

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TREE NO.	COMMON NAME	BOTANICAL NAME	LATITUDE	LONGITUDE	STEMS	ACTUAL DBH (inches)	ACTUAL TOTAL DBH (inches)	CONDITION RATING (%)	CONDITION RATING	CANOPY SPREAD North - South (feet)	CANOPY SPREAD East - West (feet)	SPECIMEN TREE	HISTORIC TREE	TO BE REMOVED (DBH)	REPLACEMENT RATIO	REPLACEMENT INCHES (DBH)	PRESERVED
															2" DBH Tree		
5026	Laurel oak	*Quercus laurifolia*	29.0372533	-81.32481689	1	19	19	93	Good								19
5027	Laurel oak	*Quercus laurifolia*	29.03717377	-81.32472589	1	14	14	93	Good								14
5028	Laurel oak	*Quercus laurifolia*	29.03716002	-81.32472272	1	41	41	68	Poor					41	1, 2"DBH Tree	2.0	
5029	Cherry laurel	*Prunus laurocerasus*	29.03719035	-81.32469152	1	8	8	93	Good								8
5030	Laurel oak	*Quercus laurifolia*	29.0371758	-81.32502006	2	24, 11	35	68	Poor					35	1/3 DBH + 1, 2"DBH Tree	5.7	
5031	Laurel oak	*Quercus laurifolia*	29.03717027	-81.32503256	1	12	12	93	Good					12	1/3 DBH	4.0	
5032	Laurel oak	*Quercus laurifolia*	29.0371648	-81.32502316	1	11	11	68	Poor					11	1/3 DBH	3.7	
5033	Laurel oak	*Quercus laurifolia*	29.03723611	-81.32510162	1	16	16	82	Good					16	1/3 DBH	5.3	
5034	Laurel oak	*Quercus laurifolia*	29.0372856	-81.3251049	1	17	17	89	Good					17	1/3 DBH	5.7	
5035	Laurel oak	*Quercus laurifolia*	29.03729658	-81.32511432	1	7	7	96	Very Good					7	1/3 DBH	2.3	
5036	Laurel oak	*Quercus laurifolia*	29.03736532	-81.3251208	1	18	18	93	Good					18	1/3 DBH	6.0	
5037	Laurel oak	*Quercus laurifolia*	29.0373652	-81.32517087	1	13	13	86	Good					14	1/3 DBH	4.7	
5038	Laurel oak	*Quercus laurifolia*	29.03737345	-81.32517089	1	12	12	79	Fair					12	1/3 DBH	4.0	
5040	Laurel oak	*Quercus laurifolia*	29.03736496	-81.32527101	1	11	11	89	Good					11	1/3 DBH	3.7	
5041	Laurel oak	*Quercus laurifolia*	29.03735673	-81.32526159	1	14	14	93	Good					14	1/3 DBH	4.7	
5042	Laurel oak	*Quercus laurifolia*	29.03734556	-81.3253304	1	9	9	96	Very Good					9	1/3 DBH	3.0	
5043	Laurel oak	*Quercus laurifolia*	29.03728519	-81.32527702	1	7	7	93	Good					7	1/3 DBH	2.3	
5044	Laurel oak	*Quercus laurifolia*	29.03729344	-81.32527704	1	15	15	79	Fair					15	1/3 DBH	5.0	
5045	Laurel oak	*Quercus laurifolia*	29.03729332	-81.32532398	1	23	23	82	Good					23	1/3 DBH	7.7	
5046	Laurel oak	*Quercus laurifolia*	29.03725751	-81.3253489	1	9	9	96	Very Good					9	1/3 DBH	3.0	
5047	Laurel oak	*Quercus laurifolia*	29.03728535	-81.32520817	1	13	13	82	Good					13	1/3 DBH	4.3	
5048	Laurel oak	*Quercus laurifolia*	29.03722767	-81.32517982	1	14	14	64	Poor					14	1/3 DBH	4.7	
5049	Laurel oak	*Quercus laurifolia*	29.03722765	-81.32518608	1	12	12	82	Good					12	1/3 DBH	4.0	
5050	Laurel oak	*Quercus laurifolia*	29.03721665	-81.32518605	1	17	17	61	Poor					17	1/3 DBH	5.7	
5051	Laurel oak	*Quercus laurifolia*	29.03719196	-81.32516094	2	10, 4	14	89	Good					14	1/3 DBH	4.7	
5052	Laurel oak	*Quercus laurifolia*	29.03716991	-81.32518277	1	28	28	89	Good					28	1/3 DBH	9.3	
5053	Laurel oak	*Quercus laurifolia*	29.03718921	-81.32516093	1	12	12	93	Good					12	1/3 DBH	4.0	
5054	Laurel oak	*Quercus laurifolia*	29.03716424	-81.32525473	1	8	8	96	Very Good					8	1/3 DBH	2.7	
5055	Laurel oak	*Quercus laurifolia*	29.0371505	-81.32524843	1	16	16	68	Poor					16	1/3 DBH	5.3	
5056	Live oak	*Quercus virginiana*	29.03711202	-81.32523892	1	17	17	89	Good			Specimen		17	1/2 DBH	9.0	
5057	Laurel oak	*Quercus laurifolia*	29.03716404	-81.32533609	1	12	12	93	Good					12	1/3 DBH	4.0	
5058	Laurel oak	*Quercus laurifolia*	29.0371558	-81.32532981	1	11	11	82	Good					11	1/3 DBH	3.7	
5059	Laurel oak	*Quercus laurifolia*	29.03715303	-81.32533919	1	27	27	75	Fair					27	1/3 DBH	9.0	
5060	Laurel oak	*Quercus laurifolia*	29.03721614	-81.32539885	1	15	15	93	Good					15	1/3 DBH	5.0	
5061	Laurel oak	*Quercus laurifolia*	29.03722437	-81.32540513	1	17	17	57	Very Poor					17	1/3 DBH	5.7	
5062	Laurel oak	*Quercus laurifolia*	29.03727935	-81.32541782	1	12	12	79	Fair					12	1/3 DBH	4.0	
5063	Laurel oak	*Quercus laurifolia*	29.03735638	-81.32540554	1	14	14	64	Poor					14	1/3 DBH	4.7	
5064	Laurel oak	*Quercus laurifolia*	29.0373481	-81.32541804	1	8	8	0	Dead					8	0	0	
5065	Laurel oak	*Quercus laurifolia*	29.03741703	-81.32534315	1	14	14	68	Poor					14	1/3 DBH	4.7	
5066	Laurel oak	*Quercus laurifolia*	29.03742527	-81.32534943	1	17	17	82	Good					17	1/3 DBH	5.7	
5067	Laurel oak	*Quercus laurifolia*	29.03740859	-81.32542136	1	16	16	89	Good					16	1/3 DBH	5.3	
5068	Laurel oak	*Quercus laurifolia*	29.03741413	-81.32540885	1	12	12	68	Poor					12	1/3 DBH	4.0	
5069	Laurel oak	*Quercus laurifolia*	29.03742233	-81.32542766	1	9	9	89	Good					9	1/3 DBH	3.0	
5070	Laurel oak	*Quercus laurifolia*	29.03740843	-81.3254902	2	22, 12	34	75	Fair					34	1/3 DBH	11.3	
5071	Laurel oak	*Quercus laurifolia*	29.03735343	-81.3254869	2	12, 8	20	86	Good					20	1/3 DBH	6.7	
5072	Laurel oak	*Quercus laurifolia*	29.03733691	-81.32549624	1	18	18	89	Good					18	1/3 DBH	6.0	
5073	Laurel oak	*Quercus laurifolia*	29.03741926	-81.32555908	1	12	12	82	Good					12	1/3 DBH	4.0	
5074	Laurel oak	*Quercus laurifolia*	29.03741651	-81.32555907	1	15	15	89	Good					15	1/3 DBH	5.0	
5075	Laurel oak	*Quercus laurifolia*	29.03741372	-81.32557784	1	17	17	89	Good					17	1/3 DBH	5.7	
5076	Laurel oak	*Quercus laurifolia*	29.03741095	-81.32558409	1	12	12	96	Very Good					12	1/3 DBH	4.0	
5077	Laurel oak	*Quercus laurifolia*	29.03740545	-81.32558407	1	16	16	93	Good					16	1/3 DBH	5.3	
5078	Laurel oak	*Quercus laurifolia*	29.03732572	-81.32557444	1	17	17	46	Very Poor					17	1/3 DBH	5.7	
5079	Live oak	*Quercus virginiana*	29.03710894	-81.3253766	1	18	18	89	Good			Specimen		18	1/2 DBH	9.0	
5080	Laurel oak	*Quercus laurifolia*	29.03714165	-81.32549562	1	22	22	86	Good					22	1/3 DBH	7.3	
5081	Laurel oak	*Quercus laurifolia*	29.0371499	-81.32549565	1	17	17	93	Good					17	1/3 DBH	5.7	
5082	Laurel oak	*Quercus laurifolia*	29.03715268	-81.32548314	1	15	15	93	Good					15	1/3 DBH	5.0	
5083	Live oak	*Quercus virginiana*	29.03710306	-81.32553305	1	16	16	93	Good			Specimen					16
5085	Laurel oak	*Quercus laurifolia*	29.03733379	-81.32564957	1	19	19	86	Good					19	1/3 DBH	6.3	
5086	Laurel oak	*Quercus laurifolia*	29.03727054	-81.32564624	1	26	26	86	Good					26	1/3 DBH	8.7	
5087	Laurel oak	*Quercus laurifolia*	29.03722105	-81.32564295	1	15	15	75	Fair					15	1/3 DBH	5.0	
5088	Laurel oak	*Quercus laurifolia*	29.03720453	-81.32564916	1	22	22	93	Good					22	1/3 DBH	7.3	
5089	Laurel oak	*Quercus laurifolia*	29.03713306	-81.32563642	1	21	21	86	Good					21	1/3 DBH	7.0	
5090	Laurel oak	*Quercus laurifolia*	29.03714131	-81.32563644	1	18	18	89	Good					18	1/3 DBH	6.0	
5091	Laurel oak	*Quercus laurifolia*	29.03714678	-81.32564898	1	14	14	89	Good					14	1/3 DBH	4.7	
5092	Laurel oak	*Quercus laurifolia*	29.03716074	-81.3255614	1	12	12	93	Good					12	1/3 DBH	4.0	
5093	Laurel oak	*Quercus laurifolia*	29.03721023	-81.32556781	1	21	21	82	Good					21	1/3 DBH	7.0	
5094	Laurel oak	*Quercus laurifolia*	29.03726519	-81.32558363	1	11	11	64	Poor					11	1/3 DBH	3.7	
5095	Laurel oak	*Quercus laurifolia*	29.03727345	-81.32558053	1	15	15	68	Poor					15	1/3 DBH	5.0	
5096	Laurel oak	*Quercus laurifolia*	29.03714112	-81.32571468	2	24, 19	43	64	Poor					43	1/3 DBH +1, 2"DBH Tree	8.3	
5097	Black cherry	*Prunus serotina*	29.03727862	-81.32571824	1	15	15	82	Good					15	1/3 DBH	5.0	
5098	Laurel oak	*Quercus laurifolia*	29.03712704	-81.32585233	2	19, 30	49	68	Poor					49	1/3 DBH +1, 2"DBH Tree	8.3	
5099	Live oak	*Quercus virginiana*	29.03709953	-81.32585224	1	12	12	89	Good			Specimen		12	1/2 DBH	6.0	
5100	Live oak	*Quercus virginiana*	29.03709088	-81.32601807	1	22	22	86	Good			Specimen					22
5101	Laurel oak	*Quercus laurifolia*	29.03711844	-81.32599625	1	15	15	82	Good					15	1/3 DBH	5.0	
5102	Laurel oak	*Quercus laurifolia*	29.03712942	-81.32600255	1	13	13	75	Fair					13	1/3 DBH	4.3	
5103	Laurel oak	*Quercus laurifolia*	29.03717874	-81.32607781	1	22	22	86	Good					22	1/3 DBH	7.3	

TREE/TOPOGRAPHIC SURVEY PROVIDED BY:
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DATED: 10/10/2022

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NO. | DATE | REVISION DESCRIPTION

SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

TREE DISPOSITION LIST

ISSUE: NOT FOR CONSTRUCTION
DATE: 02/15/2023
JOB NO.: 761391
DESIGN: TH
DRAWN: TH
CHECKED: EAB
SHEET NO. C2.13

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TREE NO.	COMMON NAME	BOTANICAL NAME	LATITUDE	LONGITUDE	STEMS	ACTUAL DBH (inches)	ACTUAL TOTAL DBH (inches)	CONDITION RATING (%)	CONDITION RATING	CANOPY SPREAD North - South (feet)	CANOPY SPREAD East - West (feet)	SPECIMEN TREE	HISTORIC TREE	TO BE REMOVED (DBH)	REPLACEMENT RATIO	REPLACEMENT INCHES (DBH)	PRESERVED
5104	Laurel oak	*Quercus laurifolia*	29.03718702	-81.32606532	1	21	21	82	Good					21	1/3 DBH	7.0	
5105	Laurel oak	*Quercus laurifolia*	29.03712095	-81.32609327	1	21	21	86	Good					21	1/3 DBH	7.0	
5106	Laurel oak	*Quercus laurifolia*	29.03711259	-81.32614019	1	8	8	89	Good					8	1/3 DBH	2.7	
5107	Laurel oak	*Quercus laurifolia*	29.03712631	-81.32614962	1	23	23	96	Very Good					22	1/3 DBH	7.3	
5108	Laurel oak	*Quercus laurifolia*	29.03711253	-81.32616522	1	10	10	93	Good					10	1/3 DBH	3.3	
5109	Laurel oak	*Quercus laurifolia*	29.03712077	-81.32616838	1	9	9	93	Good					9	1/3 DBH	3.0	
5110	Live oak	*Quercus virginiana*	29.03709327	-81.32616516	1	27	27	86	Good	43.8	51.4		Historic				27
5111	Laurel oak	*Quercus laurifolia*	29.03712613	-81.32622472	1	25	25	79	Fair								25
5112	Laurel oak	*Quercus laurifolia*	29.03712609	-81.32624037	1	9	9	43	Very Poor					9	1/3 DBH	3.0	
5113	Laurel oak	*Quercus laurifolia*	29.03717288	-81.326228	1	9	9	93	Good								9
5114	Laurel oak	*Quercus laurifolia*	29.03718112	-81.32623116	1	12	12	93	Good								12
5115	Laurel oak	*Quercus laurifolia*	29.03718388	-81.32622803	1	12	12	93	Good								12
5116	Laurel oak	*Quercus laurifolia*	29.03719485	-81.32624059	1	16	16	82	Good								16
5117	Laurel oak	*Quercus laurifolia*	29.03717851	-81.32617482	1	15	15	93	Good					15	1/3 DBH	5.0	
5118	Laurel oak	*Quercus laurifolia*	29.03718676	-81.32617171	1	10	10	96	Very Good					10	1/3 DBH	3.3	
5119	Laurel oak	*Quercus laurifolia*	29.03719778	-81.32616549	1	14	14	89	Good					14	1/3 DBH	4.7	
5120	Laurel oak	*Quercus laurifolia*	29.03724746	-81.32609054	1	17	17	96	Very Good					17	1/3 DBH	5.7	
5121	Laurel oak	*Quercus laurifolia*	29.03731894	-81.32610015	1	8	8	25	Very Poor					8	1/3 DBH	2.7	
5122	Laurel oak	*Quercus laurifolia*	29.03732172	-81.32608765	1	15	15	89	Good					15	1/3 DBH	5.0	
5123	Laurel oak	*Quercus laurifolia*	29.0373246	-81.32603758	1	21	21	54	Very Poor					21	1/3 DBH	7.0	
5124	Laurel oak	*Quercus laurifolia*	29.03731363	-81.32602503	1	11	11	64	Poor					11	1/3 DBH	3.7	
5125	Laurel oak	*Quercus laurifolia*	29.03731091	-81.32601251	1	9	9	93	Good					9	1/3 DBH	3.0	
5126	Laurel oak	*Quercus laurifolia*	29.03737982	-81.325947	1	17	17	82	Good					17	1/3 DBH	5.7	
5127	Laurel oak	*Quercus laurifolia*	29.03737715	-81.32591257	1	14	14	82	Good					14	1/3 DBH	4.7	
5128	Laurel oak	*Quercus laurifolia*	29.03734699	-81.32587493	2	13, 28	41	82	Good					41	1/3 DBH	13.7	
5129	Laurel oak	*Quercus laurifolia*	29.03731951	-81.32586858	1	12	12	93	Good					12	1/3 DBH	4.0	
5130	Laurel oak	*Quercus laurifolia*	29.03725901	-81.32586526	1	18	18	82	Good					18	1/3 DBH	6.0	
5131	Laurel oak	*Quercus laurifolia*	29.03737736	-81.32582808	1	14	14	54	Very Poor					14	1/3 DBH	4.7	
5132	Laurel oak	*Quercus laurifolia*	29.03741577	-81.32586575	2	10, 6	16	75	Fair					16	1/3 DBH	5.3	
5133	Laurel oak	*Quercus laurifolia*	29.03738517	-81.32600648	1	15	15	96	Very Good					15	1/3 DBH	5.0	
5134	Laurel oak	*Quercus laurifolia*	29.03738511	-81.32603152	1	16	16	89	Good					16	1/3 DBH	5.3	
5135	Laurel oak	*Quercus laurifolia*	29.03740436	-81.32603471	1	16	16	68	Poor					16	1/3 DBH	5.3	
5136	Laurel oak	*Quercus laurifolia*	29.03744285	-81.32603796	1	11	11	64	Poor					11	1/3 DBH	3.7	
5137	Laurel oak	*Quercus laurifolia*	29.03746763	-81.32602552	1	18	18	82	Good					18	1/3 DBH	6.0	
5138	Laurel oak	*Quercus laurifolia*	29.03747056	-81.32595355	1	14	14	82	Good					14	1/3 DBH	4.7	
5139	Laurel oak	*Quercus laurifolia*	29.03746234	-81.32594101	1	15	15	86	Good					15	1/3 DBH	5.0	
5140	Laurel oak	*Quercus laurifolia*	29.03746243	-81.32590345	1	11	11	82	Good					11	1/3 DBH	3.7	
5141	Laurel oak	*Quercus laurifolia*	29.03748445	-81.32589413	1	16	16	75	Fair					16	1/3 DBH	5.3	
5142	Laurel oak	*Quercus laurifolia*	29.03747297	-81.32609125	1	14	14	79	Fair					14	1/3 DBH	4.7	
5143	Laurel oak	*Quercus laurifolia*	29.03747844	-81.32610691	1	15	15	75	Fair					15	1/3 DBH	5.0	
5144	Laurel oak	*Quercus laurifolia*	29.03747003	-81.32616948	1	26	26	64	Poor					26	1, 2"DBH Tree	2	
5145	Laurel oak	*Quercus laurifolia*	29.03739302	-81.32617236	1	20	20	96	Very Good					20	1/3 DBH	6.7	
5146	Laurel oak	*Quercus laurifolia*	29.037382	-81.32618172	1	12	12	96	Very Good					12	1/3 DBH	4.0	
5147	Laurel oak	*Quercus laurifolia*	29.03738204	-81.32616607	1	13	13	93	Good					13	1/3 DBH	4.3	
5148	Laurel oak	*Quercus laurifolia*	29.03737378	-81.32616917	1	18	18	82	Good					18	1/3 DBH	6.0	
5149	Black cherry	*Prunus serotina*	29.03729668	-81.32620648	1	9	9	86	Good					9	1/3 DBH	3.0	
5150	Live oak	*Quercus virginiana*	29.03724162	-81.32623135	1	12	12	82	Good			Specimen					12
5151	Live oak	*Quercus virginiana*	29.03724709	-81.32624388	1	18	18	86	Good			Specimen					18
5152	Laurel oak	*Quercus laurifolia*	29.03712046	-81.32629668	1	23	23	79	Fair								23
5153	Live oak	*Quercus virginiana*	29.03707914	-81.32632159	1	24	24	82	Good			Specimen		24	1/2 DBH	11	
5180	Laurel oak	*Quercus laurifolia*	29.03746136	-81.32634157	1	17	17	86	Good								17
5181	Laurel oak	*Quercus laurifolia*	29.03744762	-81.32633839	1	13	13	82	Good								13
5182	Laurel oak	*Quercus laurifolia*	29.03745039	-81.32632901	1	14	14	93	Good								14
5194	Laurel oak	*Quercus laurifolia*	29.0372056	-81.32634389	1	9	9	96	Very Good								9
5195	Laurel oak	*Quercus laurifolia*	29.0373074	-81.32632543	1	25	25	68	Poor					25	1, 2"DBH Tree	2	
5196	Laurel oak	*Quercus laurifolia*	29.03731014	-81.32632857	1	15	15	89	Good								15
5197	Black cherry	*Prunus serotina*	29.03745884	-81.32625081	1	13	13	86	Good								13
5198	Laurel oak	*Quercus laurifolia*	29.03745882	-81.32625706	1	15	15	89	Good								15
5199	Laurel oak	*Quercus laurifolia*	29.0374588	-81.32626645	1	18	18	93	Good								18
5200	Laurel oak	*Quercus laurifolia*	29.03751366	-81.32632608	1	12	12	93	Good								12
5214	Laurel oak	*Quercus laurifolia*	29.03779961	-81.32634889	1	17	17	64	Poor					17	1/3 DBH	5.7	
5215	Laurel oak	*Quercus laurifolia*	29.0377501	-81.32635186	1	7	7	96	Very Good								7
5216	Laurel oak	*Quercus laurifolia*	29.03774459	-81.3263581	1	15	15	96	Very Good								15
5217	Laurel oak	*Quercus laurifolia*	29.03773636	-81.32634869	1	12	12	93	Good								12
5218	Black cherry	*Prunus serotina*	29.03775026	-81.32628615	1	8	8	96	Very Good								8
5219	Laurel oak	*Quercus laurifolia*	29.03774479	-81.32627674	1	11	11	79	Fair								11
5220	Laurel oak	*Quercus laurifolia*	29.03773929	-81.32627359	1	7	7	82	Good								7
5221	Laurel oak	*Quercus laurifolia*	29.03773105	-81.32627044	1	15	15	86	Good								15
5222	Laurel oak	*Quercus laurifolia*	29.0376788	-81.32627027	1	18	18	71	Fair								18
5223	Laurel oak	*Quercus laurifolia*	29.03766213	-81.32633907	1	17	17	82	Good								17
5224	Laurel oak	*Quercus laurifolia*	29.03765935	-81.32635158	1	14	14	68	Poor					14	1/3 DBH	4.7	
5225	Laurel oak	*Quercus laurifolia*	29.03767035	-81.32635161	1	19	19	75	Fair								19
5227	Laurel oak	*Quercus laurifolia*	29.03761536	-81.32634518	1	9	9	86	Good								9
5228	Laurel oak	*Quercus laurifolia*	29.0376044	-81.3263295	1	17	17	68	Poor					17	1/3 DBH	5.7	
5229	Laurel oak	*Quercus laurifolia*	29.03753858	-81.32625419	1	13	13	93	Good								13
5230	Laurel oak	*Quercus laurifolia*	29.03753309	-81.32625104	1	20	20	82	Good								20
5231	Black cherry	*Prunus serotina*	29.03761843	-81.32621375	1	11	11	86	Good								11
5232	Laurel oak	*Quercus laurifolia*	29.03767346	-81.32620454	1	12	12	96	Very Good					12	1/3 DBH	4.0	
5233	Laurel oak	*Quercus laurifolia*	29.03767072	-81.32619827	1	12	12	82	Good					12	1/3 DBH	4.0	
5234	Laurel oak	*Quercus laurifolia*	29.03767349	-81.32619202	1	12	12	82	Good					12	1/3 DBH	4.0	

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DATED: 10/10/2022

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REVISION DESCRIPTION
DATE
NO.

SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

TREE DISPOSITION LIST

ISSUE:
NOT FOR CONSTRUCTION
DATE:
02/15/2023
JOB NO.: 761391
DESIGN: TH
DRAWN: TH
CHECKED: EAB
SHEET NO.
C2.14

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TREE NO.	COMMON NAME	BOTANICAL NAME	LATITUDE	LONGITUDE	STEMS	ACTUAL DBH (inches)	ACTUAL TOTAL DBH (inches)	CONDITION RATING (%)	CONDITION RATING	CANOPY SPREAD North - South (feet)	CANOPY SPREAD East - West (feet)	SPECIMEN TREE	HISTORIC TREE	TO BE REMOVED (DBH)	REPLACEMENT RATIO	REPLACEMENT INCHES (DBH)	PRESERVED
5235	Laurel oak	*Quercus laurifolia*	29.03768448	-81.32619519	1	12	12	82	Good					12	1/3 DBH	4.0	
5236	Laurel oak	*Quercus laurifolia*	29.03767899	-81.32619204	1	8	8	96	Very Good					8	1/3 DBH	2.7	
5237	Laurel oak	*Quercus laurifolia*	29.03767094	-81.32611065	1	13	13	54	Very Poor					13	1/3 DBH	4.3	
5238	Laurel oak	*Quercus laurifolia*	29.03769019	-81.32611071	1	15	15	86	Good					15	1/3 DBH	5.0	
5239	Laurel oak	*Quercus laurifolia*	29.03769291	-81.32612324	1	14	14	93	Good					14	1/3 DBH	4.7	
5240	Laurel oak	*Quercus laurifolia*	29.03774794	-81.32611089	1	15	15	82	Good					15	1/3 DBH	5.0	
5241	Laurel oak	*Quercus laurifolia*	29.0377534	-81.32612656	1	12	12	89	Good					12	1/3 DBH	4.0	
5242	Laurel oak	*Quercus laurifolia*	29.03776165	-81.32612658	1	10	10	96	Very Good					10	1/3 DBH	3.3	
5243	Laurel oak	*Quercus laurifolia*	29.03775324	-81.32619227	1	15	15	61	Poor					15	1/3 DBH	5.0	
5244	Laurel oak	*Quercus laurifolia*	29.03774221	-81.32620476	1	9	9	93	Good					9	1/3 DBH	3.0	
5245	Laurel oak	*Quercus laurifolia*	29.03780802	-81.3262832	1	12	12	82	Good								12
5246	Black cherry	*Prunus serotina*	29.03781902	-81.32628636	1	12	12	89	Good								12
5247	Laurel oak	*Quercus laurifolia*	29.03787939	-81.32633975	1	14	14	68	Poor					12	1/3 DBH	4.0	14
5248	Laurel oak	*Quercus laurifolia*	29.03787663	-81.326346	1	12	12	93	Good								12
5249	Laurel oak	*Quercus laurifolia*	29.03788482	-81.32637106	1	16	16	93	Good								16
5252	Laurel oak	*Quercus laurifolia*	29.03782748	-81.32619876	1	11	11	93	Good					11	1/3 DBH	3.7	
5253	Laurel oak	*Quercus laurifolia*	29.03781924	-81.32619561	1	19	19	75	Fair					19	1/3 DBH	6.3	
5254	Laurel oak	*Quercus laurifolia*	29.03768208	-81.32605122	1	15	15	79	Fair					15	1/3 DBH	5.0	
5255	Laurel oak	*Quercus laurifolia*	29.03760493	-81.32611044	1	12	12	82	Good					12	1/3 DBH	4.0	
5256	Laurel oak	*Quercus laurifolia*	29.03759668	-81.32611042	1	14	14	82	Good					14	1/3 DBH	4.7	
5257	Laurel oak	*Quercus laurifolia*	29.03760504	-81.32606663	1	13	13	89	Good					13	1/3 DBH	4.3	
5258	Black cherry	*Prunus serotina*	29.03761609	-81.32604789	1	11	11	93	Good					11	1/3 DBH	3.7	
5259	Laurel oak	*Quercus laurifolia*	29.0375307	-81.32610082	1	15	15	96	Very Good					15	1/3 DBH	5.0	
5260	Laurel oak	*Quercus laurifolia*	29.03752516	-81.32611645	1	14	14	86	Good					14	1/3 DBH	4.7	
5261	Laurel oak	*Quercus laurifolia*	29.03753089	-81.32602571	1	12	12	68	Poor					12	1/3 DBH	4.0	
5262	Laurel oak	*Quercus laurifolia*	29.03754191	-81.32601636	1	10	10	86	Good					10	1/3 DBH	3.3	
5263	Laurel oak	*Quercus laurifolia*	29.03755014	-81.32602577	1	25	25	82	Good					25	1/3 DBH	8.3	
5264	Black cherry	*Prunus serotina*	29.03749348	-81.32557496	1	15	15	0	Dead					15	0	0	
5265	Laurel oak	*Quercus laurifolia*	29.03748248	-81.32557493	1	17	17	86	Good					17	1/3 DBH	5.7	
5266	Laurel oak	*Quercus laurifolia*	29.0374797	-81.32558431	1	8	8	54	Very Poor					8	1/3 DBH	2.7	
5267	Laurel oak	*Quercus laurifolia*	29.03740801	-81.32566232	1	10	10	89	Good					10	1/3 DBH	3.3	
5268	Laurel oak	*Quercus laurifolia*	29.03747108	-81.32573762	1	19	19	71	Fair					19	1/3 DBH	6.3	
5269	Laurel oak	*Quercus laurifolia*	29.03747644	-81.32579397	1	13	13	86	Good					13	1/3 DBH	4.3	
5270	Laurel oak	*Quercus laurifolia*	29.03747365	-81.32581273	1	19	19	75	Fair					19	1/3 DBH	6.3	
5271	Laurel oak	*Quercus laurifolia*	29.0375367	-81.3258943	1	16	16	89	Good					16	1/3 DBH	5.3	
5272	Laurel oak	*Quercus laurifolia*	29.03754774	-81.32587869	1	19	19	82	Good					19	1/3 DBH	6.3	
5273	Laurel oak	*Quercus laurifolia*	29.03761372	-81.32589141	1	21	21	75	Fair					21	1/3 DBH	7.0	
5274	Laurel oak	*Quercus laurifolia*	29.03762726	-81.32597595	1	14	14	89	Good					14	1/3 DBH	4.7	
5275	Laurel oak	*Quercus laurifolia*	29.03767127	-81.32597296	1	18	18	71	Fair					18	1/3 DBH	6.0	
5276	Laurel oak	*Quercus laurifolia*	29.03769343	-81.32590731	1	12	12	89	Good					12	1/3 DBH	4.0	
5277	Laurel oak	*Quercus laurifolia*	29.03769919	-81.32580093	1	10	10	79	Fair					10	1/3 DBH	3.3	
5278	Laurel oak	*Quercus laurifolia*	29.0376937	-81.32579778	2	14, 18	32	75	Fair					32	1/3 DBH	10.7	
5279	Laurel oak	*Quercus laurifolia*	29.0377048	-81.325754	1	14	14	79	Fair					14	1/3 DBH	4.7	
5280	Black cherry	*Prunus serotina*	29.03769107	-81.3257477	1	9	9	0	Dead					9	0	0	
5281	Laurel oak	*Quercus laurifolia*	29.03762779	-81.32575689	1	17	17	64	Poor					16	1/3 DBH	5.3	
5282	Laurel oak	*Quercus laurifolia*	29.03762783	-81.32574124	1	14	14	82	Good					14	1/3 DBH	4.7	
5283	Laurel oak	*Quercus laurifolia*	29.0376251	-81.32573498	1	17	17	75	Fair					17	1/3 DBH	5.7	
5284	***No Tree at This Location***		29.0376196	-81.32573496										0	0	0	
5285	Laurel oak	*Quercus laurifolia*	29.03763351	-81.32566928	1	22	22	82	Good					22	1/3 DBH	7.3	
5286	*Camphor	*Camphora officinarum*	29.03754293	-81.32559702	2	7, 5	12	89	Good					0	0	0	
5287	Laurel oak	*Quercus laurifolia*	29.03762821	-81.32558477	1	13	13	93	Good					13	1/3 DBH	4.3	
5288	Laurel oak	*Quercus laurifolia*	29.03763098	-81.32557852	1	16	16	86	Good					16	1/3 DBH	5.3	
5289	Laurel oak	*Quercus laurifolia*	29.03769139	-81.32561314	1	13	13	82	Good					13	1/3 DBH	4.3	
5290	Laurel oak	*Quercus laurifolia*	29.03777375	-81.32567598	1	8	8	89	Good					8	1/3 DBH	2.7	
5291	Laurel oak	*Quercus laurifolia*	29.03772168	-81.32560071	1	11	11	89	Good					11	1/3 DBH	3.7	
5292	Laurel oak	*Quercus laurifolia*	29.03770813	-81.32551618	1	17	17	89	Good					17	1/3 DBH	5.7	
5293	Laurel oak	*Quercus laurifolia*	29.03770541	-81.32550365	1	12	12	68	Poor					12	1/3 DBH	4.0	
5294	Laurel oak	*Quercus laurifolia*	29.03768614	-81.32551298	1	7	7	89	Good					7	1/3 DBH	2.3	
5295	Laurel oak	*Quercus laurifolia*	29.03763945	-81.3254878	1	16	16	68	Poor					16	1/3 DBH	5.3	
5296	Laurel oak	*Quercus laurifolia*	29.03758719	-81.32548763	1	8	8	93	Good					8	1/3 DBH	2.7	
5297	Live oak	*Quercus virginiana*	29.03751834	-81.3255281	2	7, 6	13	86	Good					13	1/3 DBH	4.3	
5298	Black cherry	*Prunus serotina*	29.03755139	-81.32550943	1	11	11	89	Good					11	1/3 DBH	3.7	
5299	Laurel oak	*Quercus laurifolia*	29.03769205	-81.32534401	1	18	18	82	Good					18	1/3 DBH	6.0	
5300	Laurel oak	*Quercus laurifolia*	29.03770578	-81.32535031	1	23	23	75	Fair					23	1/3 DBH	7.7	
5301	Laurel oak	*Quercus laurifolia*	29.03770597	-81.32527208	1	12	12	82	Good					12	1/3 DBH	4.0	
5302	Laurel oak	*Quercus laurifolia*	29.0376977	-81.32528144	1	11	11	89	Good					11	1/3 DBH	3.7	
5303	Laurel oak	*Quercus laurifolia*	29.03769223	-81.3252689	1	13	13	96	Very Good					13	1/3 DBH	4.3	
5312	Laurel oak	*Quercus laurifolia*	29.03764271	-81.32527501	2	12, 15	27	68	Poor					27	1/3 DBH	9	
5313	Laurel oak	*Quercus laurifolia*	29.03756828	-81.32534675	1	25	25	86	Good					25	1/3 DBH	8.3	
5314	Laurel oak	*Quercus laurifolia*	29.03750227	-81.32534967	1	13	13	93	Good					13	1/3 DBH	4.3	
5315	Laurel oak	*Quercus laurifolia*	29.03749402	-81.32534965	1	12	12	96	Very Good					12	1/3 DBH	4.0	
5316	Laurel oak	*Quercus laurifolia*	29.03749399	-81.32536216	1	9	9	96	Very Good					9	1/3 DBH	3.0	
5317	Laurel oak	*Quercus laurifolia*	29.03748854	-81.32534337	2	19, 8	27	82	Good					27	1/3 DBH	9.0	
5323	Laurel oak	*Quercus laurifolia*	29.03777687	-81.32552265	1	25	25	86	Good					25	1/3 DBH	8.3	
5324	Laurel oak	*Quercus laurifolia*	29.03777416	-81.32550387	1	12	12	82	Good					12	1/3 DBH	4.0	
5325	Laurel oak	*Quercus laurifolia*	29.0378262	-81.32559165	1	19	19	93	Good					19	1/3 DBH	6.3	
5326	Laurel oak	*Quercus laurifolia*	29.03782619	-81.32559791	1	16	16	86	Good					16	1/3 DBH	5.3	
5327	Laurel oak	*Quercus laurifolia*	29.0378319	-81.32551031	1	14	14	89	Good					14	1/3 DBH	4.7	

TREE/TOPOGRAPHIC SURVEY PROVIDED BY:
ELLIS SURVEYS, LLC
P.O. BOX 160952
ALTAMONTE SPRINGS, FL 32716
PHONE: (407) 834-4003
CONTACT: ROBERT ELLIS P.L.S.
DATED: 10/10/2022

CESO PROVIDES NO GUARANTEE TO THE ACCURACY OF THE SURVEY PROVIDED BY ELLIS SURVEYING. CONTRACTOR TO VERIFY EXISTING CONDITIONS PRIOR TO BID AND CONSTRUCTION.

CESO
WWW.CESOINC.COM

NO. | DATE | REVISION DESCRIPTION

SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

TREE DISPOSITION LIST

ISSUE: NOT FOR CONSTRUCTION
DATE: 02/15/2023
JOB NO.: 761391
DESIGN: TH
DRAWN: TH
CHECKED: EAB
SHEET NO. C2.15

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TREE NO.	COMMON NAME	BOTANICAL NAME	LATITUDE	LONGITUDE	STEMS	ACTUAL DBH (inches)	ACTUAL TOTAL DBH (inches)	CONDITION RATING (%)	CONDITION RATING	CANOPY SPREAD North - South (feet)	CANOPY SPREAD East - West (feet)	SPECIMEN TREE	HISTORIC TREE	TO BE REMOVED (DBH)	REPLACEMENT RATIO	REPLACEMENT INCHES (DBH)	PRESERVED
S328	Laurel oak	*Quercus laurifolia*	29.0878374 2	-81.325 50407	1	10	10	96	Very Good					10	1/3 DBH	3.3	
S329	Laurel oak	*Quercus laurifolia*	29.0877 6606	-81.325 44125	1	12	12	68	Poor					12	1/3 DBH	4.0	
S330	Laurel oak	*Quercus laurifolia*	29.0877 6335	-81.325 42873	1	9	9	96	Very Good					9	1/3 DBH	3.0	
S331	Laurel oak	*Quercus laurifolia*	29.087 760	-81.325 366 16	1	9	9	93	Good					9	1/3 DBH	3.0	
S332	Laurel oak	*Quercus laurifolia*	29.0877 8554	-81.325 39056	1	16	16	82	Good					16	1/3 DBH	5.3	
S333	Laurel oak	*Quercus laurifolia*	29.0878 3705	-81.325 28501	1	16	16	80	Good					16	1/3 DBH	5.3	
S334	Laurel oak	*Quercus laurifolia*	29.0878 4622	-81.325 27565	1	16	16	93	Good					16	1/3 DBH	5.3	
S335	Laurel oak	*Quercus laurifolia*	29.0878 2607	-81.325 27558	1	7	7	79	Fair					7	1/3 DBH	2.3	
S336	Laurel oak	*Quercus laurifolia*	29.0878 4802	-81.325 29443	1	12	12	68	Poor					12	1/3 DBH	4.0	
S337	Laurel oak	*Quercus laurifolia*	29.0878 5446	-81.3 252 788	1	11	11	82	Good					11	1/3 DBH	3.7	
S338	Laurel oak	*Quercus laurifolia*	29.0879 0916	-81.325 28209	1	10	10	93	Good					10	1/3 DBH	3.3	
S339	Laurel oak	*Quercus laurifolia*	29.0879 1774	-81.325 28961	1	7	7	79	Fair					7	1/3 DBH	2.3	
S340	Laurel oak	*Quercus laurifolia*	29.0879 1772	-81.32 5279	1	11	11	64	Poor					11	1/3 DBH	3.7	
S341	Laurel oak	*Quercus laurifolia*	29.0879 1403	-81.325 29464	1	16	16	82	Good					16	1/3 DBH	5.3	
S342	Laurel oak	*Quercus laurifolia*	29.0879 0802	-81.325 36031	1	14	14	75	Fair					14	1/3 DBH	4.7	
S343	Laurel oak	*Quercus laurifolia*	29.0878 9827	-81.3 253 608	1	11	11	82	Good					11	1/3 DBH	3.7	
S344	Laurel oak	*Quercus laurifolia*	29.0878 4699	-81.325 36053	1	12	12	93	Good					12	1/3 DBH	4.0	
S345	Laurel oak	*Quercus laurifolia*	29.0878 5151	-81.325 36329	1	17	17	68	Poor					17	1/3 DBH	5.7	
S346	Laurel oak	*Quercus laurifolia*	29.0878 4055	-81.3 253 476	1	12	12	80	Good					12	1/3 DBH	4.0	
S347	Laurel oak	*Quercus laurifolia*	29.0878 3482	-81.325 44147	1	15	15	82	Good					15	1/3 DBH	5.0	
S348	Laurel oak	*Quercus laurifolia*	29.0879 0859	-81.325 43543	1	16	16	82	Good					16	1/3 DBH	5.3	
S349	Laurel oak	*Quercus laurifolia*	29.0879 0064	-81.325 51678	1	17	17	82	Good					17	1/3 DBH	5.7	
S350	Laurel oak	*Quercus laurifolia*	29.0879 0903	-81.325 60442	1	7	7	64	Poor					7	1/3 DBH	2.3	
S351	Laurel oak	*Quercus laurifolia*	29.0879 1465	-81.325 61705	1	13	13	79	Fair					13	1/3 DBH	4.3	
S352	Laurel oak	*Quercus laurifolia*	29.0878 4811	-81.3 256 324	1	11	11	75	Fair					10	1/3 DBH	3.3	
S353	Laurel oak	*Quercus laurifolia*	29.0878 8028	-81.325 66383	1	20	20	68	Poor					20	1/3 DBH	6.7	
S354	Laurel oak	*Quercus laurifolia*	29.0879 5541	-81.325 61084	1	22	22	86	Good					22	1/3 DBH	7.3	
S355	Laurel oak	*Quercus laurifolia*	29.0879 7191	-81.325 61089	1	10	10	80	Good					10	1/3 DBH	3.3	
S356	Laurel oak	*Quercus laurifolia*	29.0879 7473	-81.325 58586	1	15	15	68	Poor					15	1/3 DBH	5.0	
S357	Laurel oak	*Quercus laurifolia*	29.0879 7762	-81.325 52641	1	17	17	75	Fair					17	1/3 DBH	5.7	
S358	Laurel oak	*Quercus laurifolia*	29.0879 7179	-81.325 66409	1	11	11	82	Good					11	1/3 DBH	3.7	
S359	Laurel oak	*Quercus laurifolia*	29.0879 359	-81.3 257 208	1	10	10	64	Poor					10	1/3 DBH	3.3	
S360	Laurel oak	*Quercus laurifolia*	29.0879 0958	-81.325 74837	1	15	15	80	Good					15	1/3 DBH	5.0	
S361	Laurel oak	*Quercus laurifolia*	29.0878 9459	-81.325 74208	1	17	17	82	Good					17	1/3 DBH	5.7	
S362	Laurel oak	*Quercus laurifolia*	29.0878 8008	-81.325 74832	1	14	14	96	Very Good					14	1/3 DBH	4.7	
S363	Laurel oak	*Quercus laurifolia*	29.0878 8005	-81.325 75771	1	12	12	93	Good					12	1/3 DBH	4.0	
S364	Laurel oak	*Quercus laurifolia*	29.0 378 972	-81.325 80155	1	12	12	93	Good					12	1/3 DBH	4.0	
S365	Laurel oak	*Quercus laurifolia*	29.0878 8801	-81.325 81717	1	12	12	96	Very Good					12	1/3 DBH	4.0	
S366	Laurel oak	*Quercus laurifolia*	29.0878 9163	-81.325 82160	1	11	11	82	Good					11	1/3 DBH	3.7	
S367	Laurel oak	*Quercus laurifolia*	29.0878 9169	-81.325 80466	1	16	16	80	Good					16	1/3 DBH	5.3	
S368	Laurel oak	*Quercus laurifolia*	29.0 379 081	-81.325 84226	2	13, 11	24	79	Fair					24	1/3 DBH	8.0	
S369	Black cherry	*Prunus serotina*	29.0878 0645	-81.325 79813	1	8	8	93	Good					8	1/3 DBH	2.7	
S370	*Camphor	*Camphora officinarum*	29.0877 8162	-81.325 82935	1	7	7	75	Fair					0	0	0	
S371	Laurel oak	*Quercus laurifolia*	29.0877 7046	-81.325 80816	1	25	25	86	Good					25	1/3 DBH	8.3	
S372	Laurel oak	*Quercus laurifolia*	29.0877 7044	-81.325 90442	1	15	15	93	Good					15	1/3 DBH	5.0	
S373	Laurel oak	*Quercus laurifolia*	29.0878 1902	-81.325 91396	1	20	20	80	Good					20	1/3 DBH	6.7	
S374	Laurel oak	*Quercus laurifolia*	29.0878 3645	-81.3 251 015	2	12, 21	33	75	Fair					33	1/3 DBH	11.0	
S375	Laurel oak	*Quercus laurifolia*	29.0878 3627	-81.3 250 766	1	16	16	80	Good					16	1/3 DBH	5.3	
S376	Laurel oak	*Quercus laurifolia*	29.0877 6751	-81.325 97052	1	13	13	80	Good					13	1/3 DBH	4.3	
S377	Laurel oak	*Quercus laurifolia*	29.0877 6736	-81.3 260 421	3	14, 12, 8	34	64	Poor					34	1/3 DBH	11.3	
S378	Laurel oak	*Quercus laurifolia*	29.0877 3162	-81.326 08573	1	12	12	93	Good					12	1/3 DBH	4.0	
	* Nuisance Tree												TOTALS	12,490		3,841	2,694

- Tree protection area:
  - Site Square Footage: ***641,254 SF***
  - Tree Protection Area Required (15%): ***96,188 SF***
  - Tree Protection Area proposed: **98,479 SF**
  - Tree Protection Area percentage proposed: **15.4%**
- Minimum Tree Coverage:
  - Tree Coverage Factor: ***1 tree per 2,500 SF of lot area (641,254 SF lot area)***
  - Number of trees required (641,254÷2.500): **257 (1,539" DBH total)**
  - Specimen DBH inches after development (preserved): **203**
  - Historic DBH inches after development (preserved): **52**
  - Non-specimen DBH inches after development (preserved): **2,491**
  - Total DBH inches after development (preserved): **2,694**
  - Minimum Total DBH inches Required: **3,841**
  - Minimum Tree Coverage Deficit: **0**

- Specimen Tree Preservation:
  - Number of Specimen Trees before development: **20**
  - Per Acre Minimum Specimen Trees Required: **100%**
  - Specimen Trees after (preserved): **11**
  - Number of Required Specimen Trees: **20**
  - Specimen Trees per acre before: **1.4**
  - Specimen Tree Number Deficiency: **9**
- Tree Replacement:
  - Total DBH inches of Historic Removals: **0**
  - Historic Tree Replacement Inches: **0**
  - Total DBH inches of Specimen Tree Removals: **131**
  - Specimen Tree replacement Inches (50% specimen DBH removed): **64**
  - Number of Deteriorated Laurel Oak Removals greater than 20 inches (Fair-Dead Ratings): **45 (1,320 DBH)**
  - Deteriorated Laurel Oaks replacement DBH inches (1/3 total DBH): **440**
  - Number of DBH inches of all other Protected Tree Removals: **12,319 (not incl historic or specimen trees)**
  - Total DBH inches: of Proposed Trees: **446 DBH Trees + 416 DBH Palms (palms =11% of total replacement DBH required)**
  - Total DBH Protected Tree Replacement inches: **3,841**

TREE/TOPOGRAPHIC SURVEY PROVIDED BY:
ELLIS SURVEYS, LLC
P.O. BOX 160952
ALTAMONTE SPRINGS, FL 32716
PHONE: (407) 834-4003
CONTACT: ROBERT ELLIS P.L.S.
DATED: 10/10/2022

CESO PROVIDES NO GUARANTEE TO THE ACCURACY OF THE SURVEY PROVIDED BY ELLIS SURVEYING. CONTRACTOR TO VERIFY EXISTING CONDITIONS PRIOR TO BID AND CONSTRUCTION.

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NO. DATE REVISION DESCRIPTION

SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

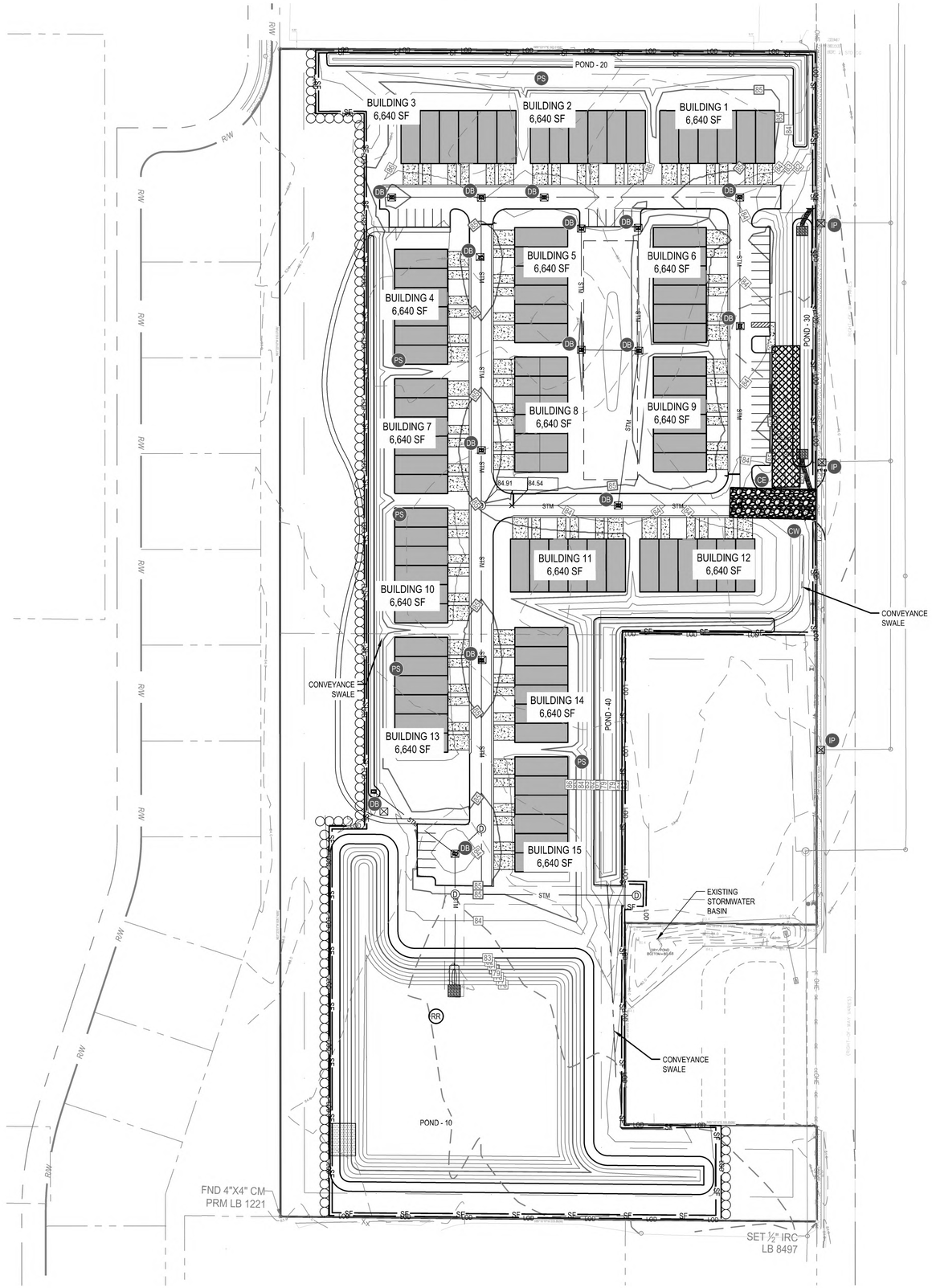
TREE DISPOSITION LIST

ISSUE:
NOT FOR CONSTRUCTION
DATE:
02/15/2023

JOB NO.:	761391
DESIGN:	TH
DRAWN:	TH
CHECKED:	EAB

SHEET NO.
C2.16

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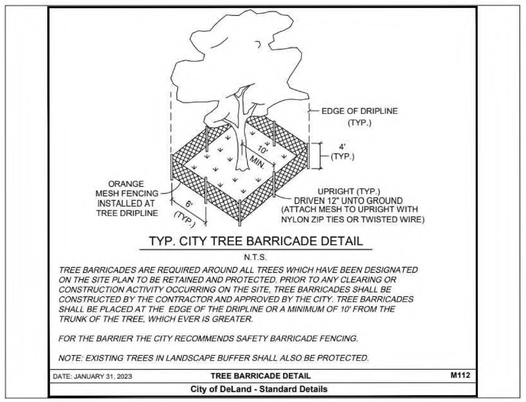
EROSION CONTROL PLAN LEGEND

EXISTING

REFER TO C2.0 FOR EXISTING FEATURES LEGEND

PROPOSED

- 980 — MAJOR CONTOUR
- 982 — MINOR CONTOUR
- PAVEMENT/WALK
- STM — STORM SEWER
- SF — SF — SILT FENCE
- LOD — LIMIT OF DISTURBANCE
- TREE PROTECTION
- STABILIZED CONSTRUCTION ENTRANCE
- EQUIPMENT STORAGE AREA
- CATCH BASIN SEDIMENT FILTER
- (D) STORM MANHOLE
- FDOT TYPE "C" CATCH BASIN
- FDOT TYPE "D" CATCH BASIN
- FDOT TYPE "F" CATCH BASIN
- FDOT TYPE "G" CATCH BASIN
- FDOT MITERED END SECTION: RCP 4 TO 1 SLOPE
- (CE) STABILIZED CONSTRUCTION ENTRANCE
- (CW) CONCRETE WASHOUT AREA
- (IP) INLET PROTECTION
- (RR) RIPRAP
- (PS) PERMANENT GRASS STABILIZATION



TYP. CITY TREE BARRICADE DETAIL

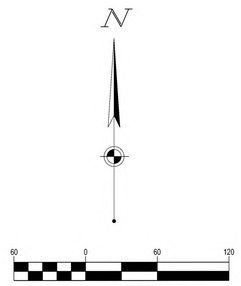
N.T.S.

TREE BARRICADES ARE REQUIRED AROUND ALL TREES WHICH HAVE BEEN DESIGNATED ON THE SITE PLAN TO BE RETAINED AND PROTECTED. PRIOR TO ANY CLEARING OR CONSTRUCTION ACTIVITY OCCURRING ON THE SITE, TREE BARRICADES SHALL BE CONSTRUCTED BY THE CONTRACTOR AND APPROVED BY THE CITY. TREE BARRICADES SHALL BE PLACED AT THE EDGE OF THE DRIPLINE OR A MINIMUM OF 10' FROM THE TRUNK OF THE TREE, WHICH EVER IS GREATER.

FOR THE BARRIER THE CITY RECOMMENDS SAFETY BARRICADE FENCING.

NOTE: EXISTING TREES IN LANDSCAPE BUFFER SHALL ALSO BE PROTECTED.

DATE: JANUARY 31, 2023	TREE BARRICADE DETAIL	M112
	City of DeLand - Standard Details	



GRAPHIC SCALE (IN FEET)
1 in. = 60 ft.

GENERAL NOTES:

1. NO CONSTRUCTION MATERIAL OR EQUIPMENT TO BE STORED IN RETENTION BASINS AT ANY TIME.
2. POND-10 TO BE GRADED TO 2' ABOVE PROPOSED BOTTOM ELEVATION UNTIL INITIAL LIFE OF PAVEMENTS ARE INSTALLED, AT WHICH POINT FINAL EXCAVATION CAN TAKE PLACE. PIPE DISCHARGE LOCATION SHALL BE "SUMPED" AT FINAL GRADE WITH 3:1 MAX. GRADING UNTIL FINAL RETENTION BASIN EXCAVATION. STORM PIPES SHALL BE CLEANED AND SEDIMENT REMOVED FROM SYSTEM BEFORE FINAL APPROVAL CAN BE ISSUED.

REFER TO SHEET C3.1 FOR EROSION CONTROL NOTES

BENCHMARKS

	ELEVATION*	EASTING**	NORTHING**	DESCRIPTION
BM #1	79.66	E 552420.75	N 1710969.94	STORM DRAIN MANHOLE RIM
BM #2	84.51	E 552432.28	N 1709912.72	SANITARY MANHOLE RIM

*VERTICAL DATUM: NAVD88
**HORIZONTAL DATUM: NAD83
REFER TO SITE PLAN FOR BENCHMARK LOCATIONS

Sunshine 811

FORTY-EIGHT (48) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: FLORIDA UTILITIES PROTECTION SERVICE AT 811 OR 800-432-4770 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF FLORIDA UTILITIES PROTECTION SERVICE

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REVISION DESCRIPTION
NO. DATE

REGISTERED LANDSCAPE ARCHITECT
EDWARD ALLEN BROWNER
LA 6666790
STATE OF FLORIDA

SPRING GARDEN TOWNHOMES
DELAND, FL

610 N SPRING GARDEN AVENUE, DELAND, FL

SWPPP PLAN
PHASE 3

ISSUE: NOT FOR CONSTRUCTION
DATE: 02/15/2023
JOB NO.: 761391
DESIGN: RSH
DRAWN: RSH
CHECKED: CSG
SHEET NO.
C3.0

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EROSION AND SEDIMENT CONTROL NARRATIVE

SITE ADDRESS: 610 NORTH SPRING GARDEN AVENUE
DELAND, FLORIDA 32720

EXISTING SITE CONDITIONS: THE EXISTING SITE CONSISTS OF UNDEVELOPED LAND.

THE SUBJECT PARCEL IS LOCATED WITHIN "ZONE X" (AREA DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN) AS INDICATED BY THE FLOOD INSURANCE RATE MAP (FIRM).

PROJECT DESCRIPTION: THE PROJECT CONSISTS OF 90 TOWNHOMES, ROADWAY ASPHALT PAVEMENT, 45 PARKING STALLS, AND OPEN SPACE CONSTRUCTION.

TOTAL SITE AREA: 14.72 ACRES
PRE-CONSTRUCTION IMPERVIOUS ACREAGE = 0.00 ACRES

DISTURBED AREA: 10.97 ACRES
POST-CONSTRUCTION IMPERVIOUS ACREAGE = 5.22 ACRES

SITE DRAINS TO: THE SITE DRAINS TO AN FIVE (5) DRY RETENTION POND AND INFILTRATES INTO THE GROUND.

SITE BMP'S: FINAL LOCATIONS OF ALL SITE BMP'S INCLUDE STORMWATER RETENTION. IF FINAL LOCATION OF BMP'S DIFFER FROM THE LOCATIONS SHOWN, CONTRACTOR SHALL MODIFY SWPPP AND INFORM FLORIDA PUBLIC UTILITIES OF NEW LOCATION OF BMP'S.

ADJACENT AREAS:
NORTH: COMMERCIAL
SOUTH: RESIDENTIAL
EAST: COMMERCIAL
WEST: RESIDENTIAL

SOILS ON SITE:
1 - APOPKA FINE SAND, 0 TO 5 PERCENT SLOPES.
4 - ASTATULA FINE SAND, 0 TO 5 PERCENT SLOPES.
19 - DELAND FINE SAND, 0 TO 5 PERCENT SLOPES.

REFER TO THIS SHEET FOR SOILS MAP BOUNDARIES.

EROSION AND SEDIMENT CONTROL MEASURES: PROVIDE INLET PROTECTION OF ALL NEW AND EXISTING DRAINAGE STRUCTURES INDICATED ON THIS PLAN.

ALL TRENCH OR EXCAVATION GROUNDWATER CONTAINING SEDIMENT MUST BE EFFECTIVELY TREATED PRIOR TO DISCHARGE INTO THE STORM SEWER SYSTEM.

USE ANY MEANS NECESSARY AND ACCEPTABLE TO THE JURISDICTION TO CONTROL DUST ON THE SITE AND PREVENT TRACKING SOIL OFF SITE.

CRITICAL AREAS: N/A

JURISDICTION: ALL EROSION AND SEDIMENT CONTROL PRACTICES ARE SUBJECT TO FIELD MODIFICATION AT THE DISCRETION OF THE CITY OF DELAND AND FDEP.

INSPECTIONS: INSPECTIONS OF OUTFALLS/EPSC MEASURES SHALL BE PERFORMED AT LEAST TWICE WEEKLY AND AT LEAST 72 HOURS APART. COORDINATION OF THESE INSPECTIONS IS THE RESPONSIBILITY OF THE OWNER'S REPRESENTATIVE.

DOCUMENT INSPECTIONS WEEKLY AND SUBMIT INSPECTION REPORT MONTHLY. A COPY OF THIS SWPPP AND INSPECTION REPORT IS TO BE MADE AVAILABLE ON SITE AT ALL TIMES. ON-SITE SWPPP IS TO BE LOCATED IN THE JOB TRAILER.

A RAINFALL GAUGE SHALL BE PROVIDED ONSITE AND A LOG OF DAILY PRECIPITATION AMOUNTS RECORDED AND KEPT IN THE JOB TRAILER.

SITE ESC INSPECTION SHALL OCCUR AFTER ANY STORM EVENT WITH GREATER THAN 1" OF RAINFALL ONSITE IN A 24-HOUR PERIOD.

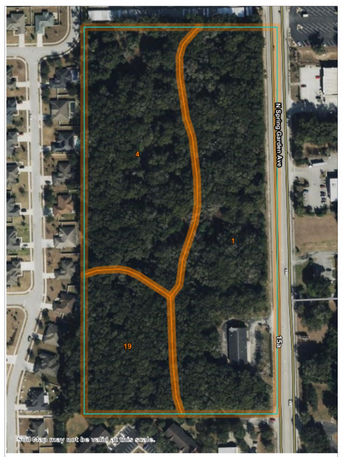
OUTFALLS/EPSC AND OTHER PROTECTIVE MEASURES SHALL BE REPAIRED, REPLACED OR MODIFIED WITHIN 7 DAYS ACCORDING TO THE NEEDS IDENTIFIED IN THE INSPECTION REPORT.

SCHEDULE: CONSTRUCTION ESTIMATED START DATE: 04/01/2023
CONSTRUCTION ESTIMATED COMPLETION DATE: 12/01/2023

STORMWATER POLLUTION PREVENTION PLAN GENERAL NOTES

OWNER/DEVELOPER
DDC MANAGEMENT
1323 BROOKHAVEN DR
ORLANDO, FL 32803
CONTACT: CLAYTON SEARS
EMAIL: CLAYTON.SEARS@DDCMGMT.COM

ENGINEER/PLAN DESIGNER
CESO, INC.
1323 BROOKHAVEN DR
ORLAND, FL 32803
CONTACT: GARRETT GEORGE, P.E.
PHONE: (407)-670-2987
E-MAIL: GARRETT.GEORGE@CESOINC.COM



SOILS MAP
NTS

STORMWATER POLLUTION PREVENTION PLAN NOTES

SITE EROSION PREVENTION AND SEDIMENT CONTROL (EPSC) SHALL BE CHECKED AND IF NECESSARY, REPAIRED WEEKLY AND WITHIN 24 HOURS AFTER EACH RAINFALL GREATER THAN 1". IN THE EVENT OF CONTINUOUS RAINFALL, EROSION CONTROLS SHALL BE CHECKED DAILY.

REMOVE TRAPPED SEDIMENT FROM SEDIMENT CONTROLS AT OR BEFORE 50% OF DESIGN CAPACITY.

ALL AREAS TO REMAIN BARE GREATER THAN 7 DAYS MUST BE TEMPORARILY STABILIZED.

THERE SHALL BE NO DIRT, DEBRIS, OR STORAGE OF MATERIALS IN THE STREET.

GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE STONE LAYER OF THE CONSTRUCTION ENTRANCE.

STRAW BALES SHALL NOT BE USED AS A FORM OF EROSION CONTROL.

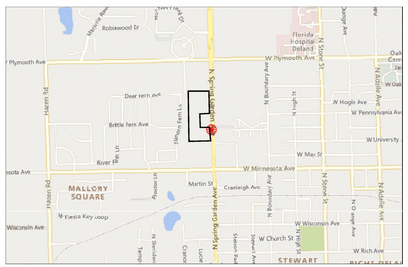
ALL EPSC PROPOSED MUST BE INSTALLED TO CONTROL RAINFALL AND RUNOFF FOR THE 2-YR, 24-HOUR STORM EVENT.

QUALITY ASSURANCE INSPECTION OF EROSION AND SEDIMENT CONTROLS SHALL BE PERFORMED WITHIN ONE MONTH OF CONSTRUCTION COMMENCING PER SECTION 6 OF THE STATE OF OHIO NPDES PERMIT GUIDELINES.

1. ALL EROSION AND SEDIMENTATION CONTROL SHALL BE PERFORMED ACCORDING TO: SWPPP AND DETAIL PLANS, ACCORDING TO THE LATEST EPA AUTHORIZATION FOR CONSTRUCTION ACTIVITY UNDER THE "NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM" (NPDES); ANY AND ALL REQUIRED PERMITS, REPORTS, AND RELATED DOCUMENTS. SEE THIS SHEET FOR SWPPP RULES AND REGULATIONS. ALL CONTRACTORS AND SUBCONTRACTORS MUST BECOME FAMILIAR WITH ALL OF THE ABOVE. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED IN THE FIELD BY THE INSPECTOR.
2. CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES AS REQUIRED BY THE SWPPP. ADDITIONAL BEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED AS DICTATED BY CONDITIONS AND GRADE CHANGES TO THE SITE AT NO ADDITIONAL COST TO OWNER THROUGHOUT ALL PHASES OF CONSTRUCTION.
3. CONTRACTOR SHALL MINIMIZE CLEARING AND DISTURBANCE TO THE ENVIRONMENT TO THE MAXIMUM EXTENT POSSIBLE OR AS REQUIRED BY THE GENERAL PERMIT. DO NOT DISTURB AREA OUTSIDE OF THE LIMITS OF DISTURBANCE (L.O.D).
4. SEDIMENT STRUCTURE AND PERIMETER SEDIMENT BARRIERS SHALL BE IMPLEMENTED AS THE FIRST STEP OF GRADING WITHIN SEVEN (7) DAYS FROM THE START OF CLEARING AND GRUBBING, AND SHALL CONTINUE TO FUNCTION UNTIL THE SLOPE DEVELOPMENT AREA IS RESTABILIZED.
5. SOIL STABILIZATION:

- PERMANENT SOIL STABILIZATION OF DISTURBED AREAS BY MEANS OF VEGETATION, LANDSCAPE TYPE, MULCHING, MATTING, SOD, RIP RAP, AND OTHER APPROVED LANDSCAPING TECHNIQUES TO BE APPLIED AS FOLLOWS:
WITHIN SEVEN (7) DAYS OF ANY AREA THAT WILL BE DORMANT FOR ONE (1) YEAR OR MORE.
WITHIN TWO (2) DAYS OF ANY AREA WITHIN 50 FEET OF A STREAM AT FINAL GRADE.
WITHIN SEVEN (7) DAYS FOR ANY OTHER AREA AT FINAL GRADE.
- TEMPORARY SOIL STABILIZATION OF DISTURBED AREAS BY MEANS OF TEMPORARY VEGETATION, MULCHING, GEOTEXTILES, SOD, PRESERVATION OF EXISTING VEGETATION, AND OTHER APPROVED TECHNIQUES TO BE APPLIED AS FOLLOWS:
WITHIN TWO (2) DAYS OF ANY AREA WITHIN 50 FEET OF A STREAM NOT AT FINAL GRADE. WITHIN SEVEN (7) DAYS OF ANY AREA THAT WILL BE DORMANT FOR MORE THAN FOURTEEN (14) DAYS, BUT LESS THAN ONE (1) YEAR.
- TEMPORARY SEEDING, MULCHING, AND FERTILIZER SPECIFICATIONS:
SEEDING: PERENNIAL BAHIA AT AT 0.69 #/1,000 S.F.
MULCHING: STRAW MATERIAL SHALL BE UNROTTED SMALL GRAIN STRAW APPLIED AT A RATE OF TWO (2) TON/ACRE, OR 80-100 POUNDS PER 1,000 S.F. MULCH MATERIALS SHALL BE RELATIVELY FREE OF ALL KINDS OF WEEDS AND SHALL BE FREE OF PROHIBITIVE NOXIOUS WEEDS. MULCH SHALL BE SPREAD UNIFORMLY BY HAND OR MECHANICAL MEANS.
FERTILIZER: APPLY FERTILIZER AT HALF THE RATE OF PERMANENT APPLICATION AND AS PER STATE DOT SPECIFICATIONS. IF PROJECT CONDITIONS PREVENT FERTILIZING THE SOIL, THEN THIS ITEM MAY BE WAIVED.
- TEMPORARY EROSION CONTROL MATERIALS SHALL BE PER FDOT SPECIFICATIONS 981 AND 982, 983, 985 AND 987, LATEST EDITION. THIS INCLUDES SEED, SOD, MULCH, FERTILIZER, WATERING AND GEOSYNTHETIC MATERIALS.
- SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION. ALL SLOPES 3:1 OR GREATER THAN 3:1 SHALL BE SODDED, AS SPECIFIED IN THE PLANS.

6. NO SOLID (OTHER THAN SEDIMENT) OR LIQUID WASTE, INCLUDING BUILDING MATERIALS, SHALL BE DISCHARGED IN STORM WATER RUNOFF. ALL NON-SEDIMENT POLLUTANTS MUST BE DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL GUIDELINES. WASH OUT OF CEMENT TRUCKS SHOULD OCCUR IN DESIGNATED PIT OR DIKED AREAS, WHERE WASHINGS CAN BE REMOVED AND PROPERLY DISPOSED OF OFF-SITE WHEN THEY HARDEN. STORAGE TANKS SHOULD ALSO BE LOCATED IN PIT OR DIKED AREAS. IN ADDITION, SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS TO CLEAN AND CONTAIN FUEL AND CHEMICAL SPILLS MUST BE KEPT ON SITE.
7. IF THE ACTION OF VEHICLES TRAVELING OVER THE STABILIZED CONSTRUCTION EXIT DOES NOT SUFFICIENTLY REMOVE MOST OF THE DIRT AND MUD, THEN THE TIRES MUST BE WASHED BEFORE VEHICLES ENTER A PUBLIC ROAD. PROVISIONS MUST BE MADE TO INTERCEPT THE WATER AND TRAP THE SEDIMENT BEFORE IT IS CARRIED OFF THE SITE.
8. RUBBISH, TRASH, GARBAGE, LITTER, OR OTHER SUCH MATERIALS SHALL BE DISPOSED INTO SEALED CONTAINERS. MATERIALS SHALL BE PREVENTED FROM LEAVING THE SITE THROUGH THE ACTION OF WIND OR STORM WATER DISCHARGE INTO DRAINAGE DITCHES OR WATERS OF THE STATE.
9. DUST CONTROL USING APPROVED MATERIALS MUST BE PERFORMED AT ALL TIMES. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION IS PROHIBITED.
10. ON-SITE AND OFF-SITE STOCKPILE AND BORROW AREAS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION BY THE USE OF BEST MANAGEMENT PRACTICES. THESE AREAS MUST BE SHOWN IN THE SITE MAP AND PERMITTED IN ACCORDANCE WITH GENERAL PERMIT REQUIREMENTS. AT A MINIMUM, A SILT FENCE IS TO BE PLACED AT PERIMETER OF STOCKPILE AREA TO PREVENT SOIL FROM LEAVING THE STOCKPILE AREA.
11. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED ONTO THE ROADWAYS OR INTO THE STORM SEWERS MUST BE REMOVED IMMEDIATELY.
12. ALL CONSTRUCTION SHALL BE STABILIZED AT THE END OF EACH DAY; THIS INCLUDES BACKFILLING OF TRENCHES FOR UTILITY CONSTRUCTION AND PLACEMENT OF GRAVEL OR ASPHALT FOR ROAD CONSTRUCTION.
13. THE LAST LAYER OF SOIL, INCLUDING TOP SOIL, SHALL BE COMPACTED TO 80% - 85% OF THE MAXIMUM STANDARD PROCTOR DENSITY, IN AREAS OUTSIDE THE PARKING LOT THAT WILL RECEIVE VEGETATION. THIS IS PARTICULARLY IMPORTANT IN CUT SLOPE AND EMBANKMENT AREAS. IN PAVEMENT AND ISLAND AREAS, IT IS RECOMMENDED THAT THE SOIL BE COMPACTED TO 98% AND 95% OF THE MAXIMUM STANDARD PROCTOR DENSITY RESPECTIVELY; THE LAST COMPACTED LAYER MAY BE SCARIFIED TO IMPROVE THE SOIL GROWTH CHARACTERISTICS.
14. IN THE EVENT THAT HIGH GROUND WATER IS ENCOUNTERED, CONTRACTOR IS RESPONSIBLE FOR DESIGNING AND IMPLEMENTING A PLAN TO CONTROL BOTH SURFACE AND GROUND WATER DURING THE COURSE OF CONSTRUCTION.



VICINITY MAP
NTS

ALL DEWATERING ACTIVITIES SHALL PASS THROUGH A BMP SYSTEM PRIOR TO LEAVING THE SITE.

INSPECTION/MAINTENANCE NOTES

FILTER BARRIERS, INCLUDING BUT NOT LIMITED TO SILT FENCE AND INLET PROTECTION, SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.

SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY HALF THE HEIGHT OF THE BARRIER.

IF THE FABRIC DECOMPOSES OR BECOMES INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE, AND THE BARRIER IS STILL REQUIRED, THE FABRIC SHALL BE REPLACED PROMPTLY.

ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED, AND SEEDED.

1. ALL CONTROL MEASURES STATED IN THE SWPPP SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL TEMPORARY OR PERMANENT STABILIZATION OF THE SITE IS ACHIEVED. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED BY A QUALIFIED PERSON IN ACCORDANCE TO THE CONTRACT DOCUMENTS OR THE APPLICABLE PERMIT, WHICHEVER IS MORE STRINGENT, AND REPAIRED ACCORDING TO THE FOLLOWING:
   A. INLET PROTECTION DEVICES AND CONTROLS SHALL BE REPAIRED OR REPLACED WHEN THEY SHOW SIGNS OF UNDERMINING AND OR DETERIORATION.
   B. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO ENSURE THAT A GOOD STANDING OF GRASS IS MAINTAINED. AREAS SHOULD BE FERTILIZED, WATERED, AND RESEEDED AS NEEDED.
   C. SILT FENCES AND CHECK DAMS SHALL BE REPAIRED TO THEIR ORIGINAL CONDITION IF DAMAGED. SEDIMENT ACCUMULATION MUST BE REMOVED WHEN SEDIMENT HEIGHT REACHES ONE-HALF THE HEIGHT OF THE SILT FENCE OR CHECK DAM.
   D. OUTLET STRUCTURES IN SEDIMENTATION BASINS SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES. SEDIMENT MUST BE REMOVED FROM BASINS AND OR TRAPS WHEN THE DESIGN CAPACITY HAS BEEN REDUCED BY 40%.
   E. MINIMIZE OFF-SITE SEDIMENT TRACKING OF VEHICLES BY THE USE OF STONE MATERIAL IN ALL CONSTRUCTION ENTRANCES, ALONG WITH REGULARLY SCHEDULED SWEEPING/GOOD HOUSEKEEPING. STABILIZED CONSTRUCTION ENTRANCES TO BE PROPERLY MAINTAINED BY GENERAL CONTRACTOR AND IN GOOD WORKING ORDER AT ALL TIMES; THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE STONE AS CONDITIONS DEMAND.
   F. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE) BY GENERAL CONTRACTOR. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AS CONDITIONS DEMAND.
2. CONTRACTORS AND SUBCONTRACTORS WILL BE RESPONSIBLE FOR REMOVING ALL SEDIMENT FROM THE SITE, INCLUDING DETENTION BASINS AND STORM SEWER SYSTEMS. SEDIMENT DEPOSITION DURING SITE STABILIZATION MUST ALSO BE REMOVED.
3. ALL RIP RAP MUST BE PLACED OVER GEOTEXTILE FILTER.
4. STONE CONSTRUCTION EXIT TO BE MAINTAINED BY GENERAL CONTRACTOR UNTIL SITE HAS BEEN PAVED OR IS NO LONGER REQUIRED.

SOLID/SANITARY/TOXIC WASTES NOTES

1. CONTAINERS SHALL BE AVAILABLE FOR DISPOSAL OF DEBRIS, TRASH, HAZARDOUS OR PETROLEUM WASTES. ALL CONTAINERS MUST BE COVERED AND LEAK-PROOF. ALL WASTE MATERIAL SHALL BE DISPOSED OF AT FACILITIES APPROVED FOR THE PERTINENT MATERIAL.
2. BRICKS, HARDENING CONCRETE AND SOIL WASTE SHALL BE FREE FROM CONTAMINATION WHICH MAY LEACH CONSTITUENTS TO WATERS OF THE STATE.
3. CLEAN CONSTRUCTION WASTES THAT WILL BE DISPOSED INTO THE PROPERTY SHALL BE SUBJECT TO ANY LOCAL PROHIBITIONS FROM THIS TYPE OF DISPOSAL.
4. ALL CONSTRUCTION AND DEMOLITION DEBRIS (C&DD) WASTE SHALL BE DISPOSED OF IN AN APPROVED C&DD LANDFILL. CONSTRUCTION DEBRIS MAY BE DISPOSED OF ON-SITE, BUT DEMOLITION DEBRIS MUST BE DISPOSED OF IN AN APPROVED LANDFILL. ALSO, MATERIALS WHICH CONTAIN ASBESTOS MUST COMPLY WITH AIR POLLUTION REGULATIONS.
5. AREA SHALL BE DESIGNATED BY CONTRACTOR AND SHOWN ON SWPPP MAP FOR MIXING OR STORAGE OF COMPOUNDS SUCH AS FERTILIZERS, LIME ASPHALT, OR CONCRETE, THESE DESIGNATED AREAS SHALL BE LOCATED AWAY FROM WATERCOURSES, DRAINAGE DITCHES, FIELD DRAINS, OR OTHER STORMWATER DRAINAGE AREA.
6. EQUIPMENT FUELING & MAINTENANCE SHALL BE IN DESIGNATED AREAS ONLY.
7. A SPILL PREVENTION CONTROL AND COUNTERMEASURE (SPCC) PLAN MUST BE DEVELOPED FOR SITES WITH ONE ABOVE-GROUND STORAGE TANK OF 660 GALLONS OR MORE, TOTAL ABOVE-GROUND STORAGE OF 1,330 GALLONS OR BELOW-GROUND STORAGE OF 4,200 GALLONS OF FUEL.
8. ALL DESIGNATED CONCRETE WASHOUT AREAS SHALL BE LOCATED AWAY FROM WATERCOURSES, DRAINAGE DITCHES, FIELD DRAINS OR OTHER STORMWATER DRAINAGE AREAS.
9. ALL CONTAMINATED SOIL MUST BE TREATED AND/OR DISPOSED OF IN AN APPROVED SOLID WASTE MANAGEMENT FACILITY OR HAZARDOUS WASTE TREATMENT, STORAGE OR DISPOSAL FACILITIES.
10. THE CONTRACTOR SHALL CONTACT FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP, THE LOCAL FIRE DEPARTMENT AND THE LOCAL EMERGENCY PLANNING COMMITTEE IN THE EVENT OF A PETROLEUM SPILL (>25 GALLONS) OR THE PRESENCE OF SHEEN.
11. OPEN BURNING IS NOT PERMITTED ON THE SITE.

SEQUENCE OF CONSTRUCTION

UNLESS NOTED OTHERWISE, THE GENERAL CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL EROSION AND SEDIMENT CONTROL MEASURES IN STRICT ACCORDANCE WITH THE SWPPP THROUGHOUT THE DURATION OF THE PROJECT.

1) INSTALL ALL TEMPORARY EROSION CONTROL MEASURES AS SHOWN.
2) INSTALL SEDIMENT BASIN AND TEMPORARY STAND PIPE.
3) ENSURE POSITIVE DRAINAGE FROM SITE TO BASIN DURING ALL PHASES OF CONSTRUCTION. STORM DITCHES OR BERMS MAY BE NECESSARY PRIOR TO STORM STRUCTURE CONSTRUCTION.
4) CONSTRUCT TEMPORARY PARKING AND STORAGE AREA.
5) PERFORM CLEARING AND GRUBBING AS NECESSARY.
6) BEGIN GRADING THE SITE. MAKING SURE THAT EROSION CONTROL MEASURES ARE IN PLACE AND WORKING PROPERLY THROUGHOUT GRADING OPERATIONS.
7) APPLY TEMPORARY SOIL STABILIZATION WITHIN (7) SEVEN DAYS OF EXCAVATION.
8) BEGIN TEMPORARY CONSTRUCTION OF ALL STORM SEWER AND UNDERGROUND UTILITIES. INSTALL INLET PROTECTION CONCURRENT WITH CONSTRUCTION AND PROPOSED STORM STRUCTURES.
9) FINE GRADING AND ENTRY DRIVE SUB GRADE PREPARATION.
10) BEGIN CONSTRUCTION OF PARKING LOT, DRIVES, AND SIDEWALKS.
11) PERMANENTLY SEED REMAINDER OF PREVIOUS AREAS. PERMANENT SEEDING SHALL BE INSTALLED WITHIN (7) SEVEN DAYS OF COMPLETION OF FINAL GRADING IN UNPAVED AREAS.
12) REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER SITE ACHIEVES "FINAL STABILIZATION."
13) REFER TO LANDSCAPE PLAN FOR LIMITS OF SEEDING.

GENERAL NOTES

1. ADDITIONAL EROSION AND SEDIMENT CONTROLS MAY BE REQUIRED AS IDENTIFIED WITH FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) AND LOCAL JURISDICTION INSPECTOR.
2. CONTRACTOR SHALL REVIEW THE COMPLETE DRAWING SET AND NOTIFY THE DESIGN PROFESSIONAL IN WRITING PRIOR TO CONSTRUCTION IF ANY DISCREPANCIES ARE FOUND WITHIN THE DRAWINGS OR WITH ACTUAL FIELD CONDITIONS.
3. ALL STORMWATER POLLUTION PREVENTION PLANS, NOTES AND DETAILS SHALL COMPLY WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT).
4. CONTRACTOR IS RESPONSIBLE TO MAINTAIN EROSION CONTROL MEASURES UNTIL ADEQUATE RE-VEGETATION AND STABILIZATION ARE ACHIEVED.
5. CONTRACTOR SHALL PROVIDE AND POST NOTICE OF INTENT (NOI) WITH PROJECT DESCRIPTION AND CONTACT NUMBERS.
6. CONTRACTOR SHALL MODIFY THE SEQUENCE OF CONSTRUCTION BASED ON MEANS AND METHODS. ALL EROSION AND SEDIMENT CONTROL MEASURES FROM THE BEGINNING OF EARTH DISTURBING ACTIVITIES TO THE FINAL COMPLETION OF THE PROJECT ARE THE RESPONSIBILITY OF THE SITE WORK CONTRACTOR.

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NO.	DATE	REVISION DESCRIPTION

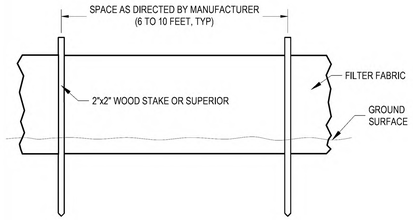
GARRETT MICHAEL GEORGE
LICENSE
No. 85505
STATE OF FLORIDA
PROFESSIONAL ENGINEER
7/31/23

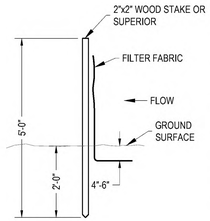
SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

SWPPP NOTES

ISSUE: NOT FOR CONSTRUCTION
DATE: 07/31/2023
JOB NO.: 761391
DESIGN: RSH
DRAWN: RSH
CHECKED: CSG
SHEET NO.
C3.2

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SILT FENCE NOTES:

FILTER FABRIC SHALL BE A MINIMUM OF 32" IN WIDTH AND SHALL HAVE A MINIMUM OF 6 LINE WIRES WITH 12" STAY SPACING.

FILTER FABRIC SHALL BE MIRAFI 140 FABRIC OR EQUIVALENT. BURLAP CANNOT BE USED WHERE SILT FENCE IS TO REMAIN FOR A PERIOD OF MORE THAN 30 DAYS.

STEEL POST SHALL BE 5'-0" IN HEIGHT AND BE OF THE SELF-FASTENER ANGLE STEEL TYPE.

WOOD POSTS SHALL BE 6'-0" TO 7'-0" IN HEIGHT AND 2" IN DIAMETER. WIRE FABRIC SHALL BE FASTENED TO WOODEN POST WITH NOT LESS THAN #9 WIRE STAPLES 1-1/2" LONG.

MAINTENANCE NOTES:

FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.

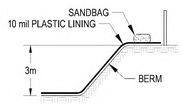
IF THE FABRIC DECOMPOSES OR BECOMES INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE, AND THE BARRIER IS STILL REQUIRED, THE FABRIC SHALL BE REPLACED PROMPTLY.

SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY HALF THE HEIGHT OF THE BARRIER.

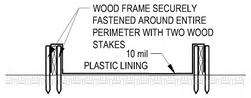
ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED, AND SEEDED.

TEMPORARY SILT FENCE DETAILS

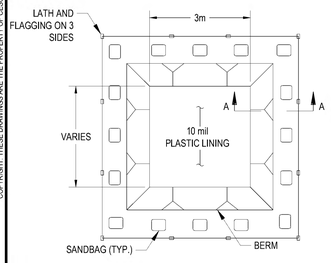
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SECTION "A-A"



SECTION "A-A"

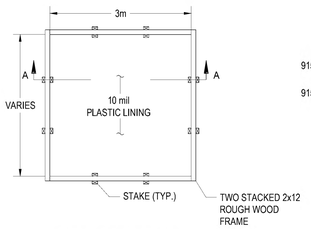


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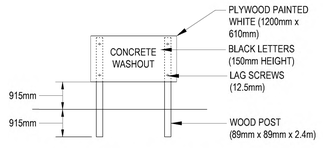
1. ACTUAL LAYOUT DETERMINED IN THE FIELD.

2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 10m OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

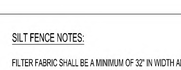
"BELOW GRADE"



"ABOVE GRADE" w / WOOD PLANKS AND/OR SANDBAGS



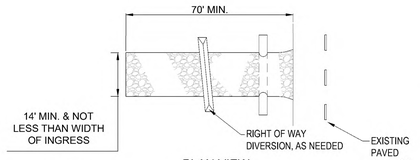
CONCRETE WASHOUT SIGN DETAIL



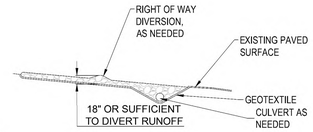
STAPLE DETAIL

CONCRETE WASHOUT

NTS



PLAN VIEW



PROFILE

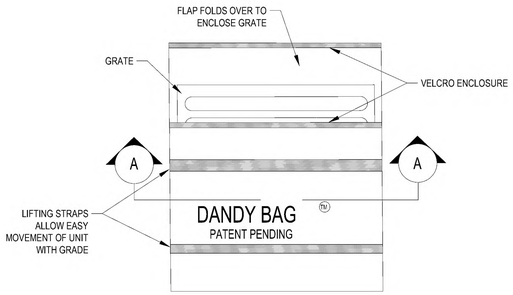
NOTES:

1. STONE SIZE - (1.5-2.5 INCH) STONE SHALL BE USED, OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - THE CONSTRUCTION ENTRANCE SHALL BE AS LONG AS REQUIRED TO STABILIZE HIGH TRAFFIC AREAS BUT NOT LESS THAN 70 FT. (EXCEPTION: APPLY 30 FT. MINIMUM TO SINGLE RESIDENCE LOTS.
3. THICKNESS - THE STONE LAYER SHALL BE AT LEAST 6 INCHES THICK FOR LIGHT DUTY ENTRANCES OR AT LEAST 10 INCHES FOR HEAVY DUTY USE.
4. WIDTH - THE ENTRANCE SHALL E AT LEAST 14 FEET WIDE, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
5. GEOTEXTILE - A GEOTEXTILE SHALL BE LAID OVER THE ENTIRE AREA PRIOR TO PLACING STONE, IT SHALL BE COMPOSED OF 10. STRONG ROT-PROOF POLYMERIC FIBERS AND MEET THE FOLLOWING SPECIFICATIONS:
6. TIMING - THE CONSTRUCTION ENTRANCE SHALL BE INSTALLED AS SOON AS IS PRACTICAL BEFORE MAJOR GRADING ACTIVITIES.
7. CULVERT - A PIPE OR CULVERT SHALL BE CONSTRUCTED UNDER THE ENTRANCE IF NEEDED TO PREVENT SURFACE WATER FROM FLOWING ACROSS THE ENTRANCE OR TO PREVENT RUNOFF FROM BEING DIRECTED OUT ONTO PAVED SURFACES.
8. WATER BAR - A WATER BAR SHALL BE CONSTRUCTED AS PART OF THE CONSTRUCTION ENTRANCE IF NEEDED TO PREVENT SURFACE RUNOFF FROM FLOWING THE LENGTH OF THE CONSTRUCTION ENTRANCE AND OUT ONTO PAVED SURFACES.
9. MAINTENANCE - TOP DRESSING OF ADDITIONAL STONE SHALL BE APPLIED AS CONDITIONS DEMAND. MUD SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADS, ORA ANY SURFACE WHERE RUNOFF IS NOT CHECKED BY SEDIMENT CONTROLS, SHALL BE REMOVED IMMEDIATELY, REMOVAL SHALL BE ACCOMPLISHED BY SCRAPING OR SWEEPING. CONSTRUCTION ENTRANCES SHALL NOT BE RELIED UPON TO REMOVE MUD FROM VEHICLES AND PREVENT OFF-SITE TRACKING. VEHICLES THAT ENTER AND LEAVE THE CONSTRUCTION-SITE SHALL BE RESTRICTED FROM MUDDY AREAS.
10. REMOVAL - THE ENTRANCE SHALL REMAIN IN PLACE UNTIL THE DISTURBED AREA IS STABILIZED OR REPLACED WITH A PERMANENT ROADWAY OR ENTRANCE.

GEOTEXTILE SPECIFICATION FOR CONSTRUCTION ENTRANCE	
MINIMUM TENSILE STRENGTH	200 lbs.
MINIMUM PUNCTURE STRENGTH	80 psi.
MINIMUM TEAR STRENGTH	50 lbs.
MINIMUM BURST STRENGTH	320 psi.
MINIMUM ELONGATION	20%
EQUIVALENT OPENING SIZE	EOS < 0.6 mm.
PERMITTIVITY	1x10-3 cm/sec.

STABILIZED CONSTRUCTION ENTRANCE

NTS



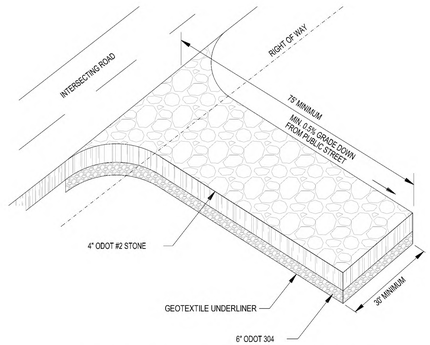
SECTION A-A

INSTALLATION: STAND GRATE ON END PLACE DANDY BAG OVER GRATE. ROLL GRATE OVER SO THAT OPEN END IS UP. PULL UP SLACK.
TUCK FLAP IN. PRESS VELCRO STRIPS TOGETHER. BE SURE END OF GRATE IS COMPLETELY COVERED BY FLAP OR DANDY BAG WILL NOT WORK PROPERLY.
HOLDING HANDLES, CAREFULLY PLACE DANDY BAG WITH GRATE INSERTED INTO CATCH BASIN FRAME.

MAINTENANCE: WITH A STIFF BRISTLE BROOM OR SQUARE POINT SHOVEL REMOVE SILT & OTHER DEBRIS OFF SURFACE AFTER EACH EVENT. REMOVE FINE MATERIAL FROM INSIDE ENVELOPE AS NEEDED.

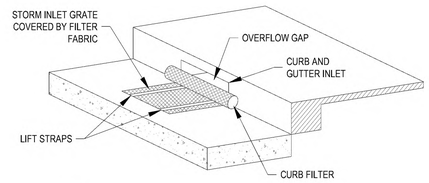
DANDY BAG

NTS



STABILIZED CONSTRUCTION ENTRANCE

N.T.S.



NOTE:

INLET PROTECTION SHALL BE DANDY CURB BAG OR APPROVED OTHER.

CURB INLET PROTECTION

NTS

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GARRETT MICHAEL GEORGE
LICENSE
No. 85805
7/31/23
STATE OF FLORIDA
PROFESSIONAL ENGINEER

SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

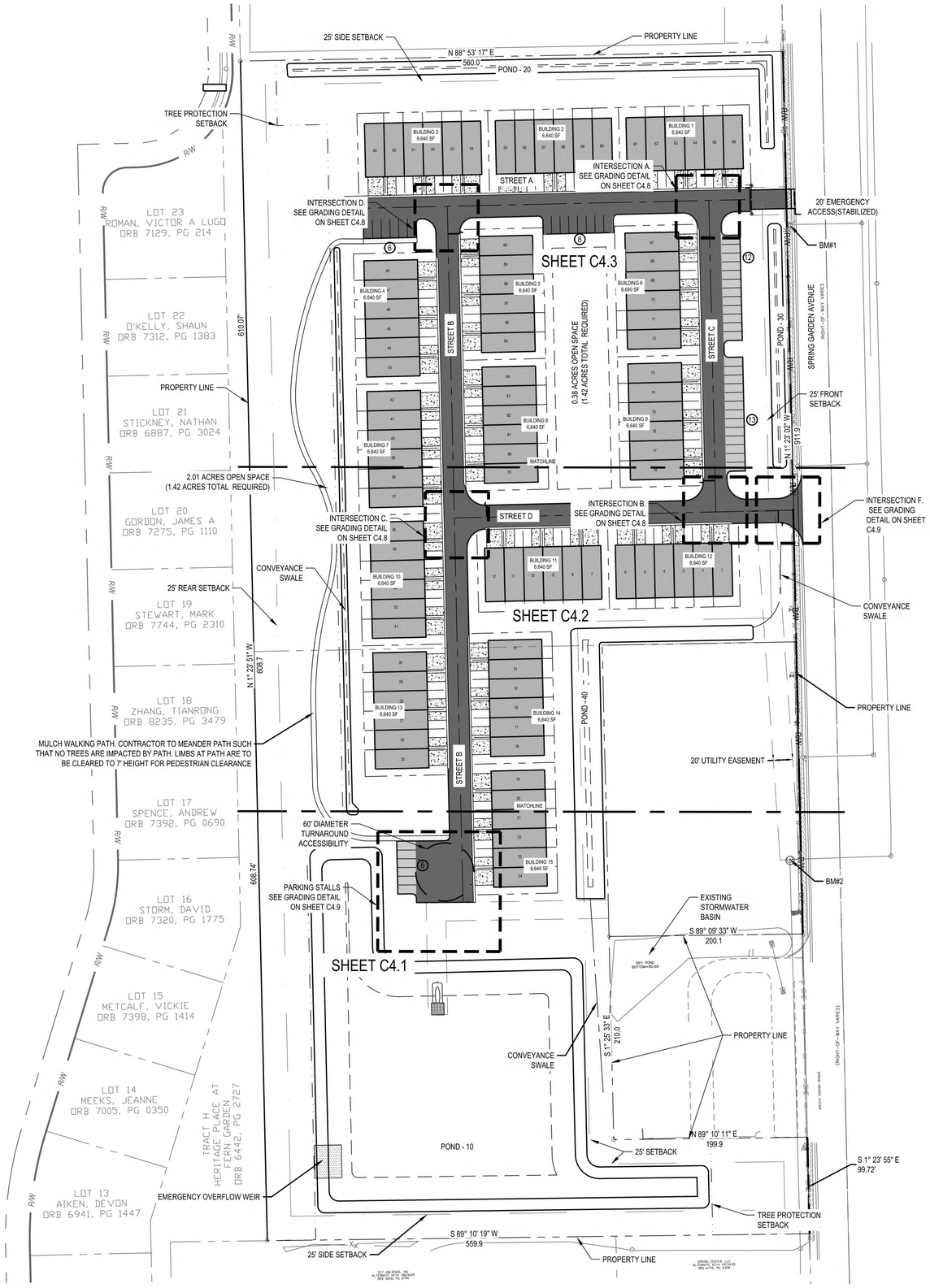
SWPPP DETAILS

ISSUE: NOT FOR CONSTRUCTION
DATE: 07/31/2023

JOB NO.:	761391
DESIGN:	RSH
DRAWN:	RSH
CHECKED:	CSG

SHEET NO.
C3.3

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N

60 0 60 120

GRAPHIC SCALE (IN FEET)
1 in. = 60 ft.

SITE PLAN LEGEND

EXISTING

REFER TO C2.0 FOR EXISTING FEATURES LEGEND

PROPOSED

- PROPOSED HEAVY DUTY ASPHALT PAVEMENT. REFER TO CONSTRUCTION DETAIL #6, C9.0.
- PROPOSED STANDARD DUTY ASPHALT PAVEMENT. REFER TO CONSTRUCTION DETAIL #6, C9.0.
- PROPOSED BUILDING
- PROPOSED HEAVY DUTY CONCRETE PAVEMENT. REFER TO CONSTRUCTION DETAIL #6, C9.0.
- PROPOSED CONCRETE PAVEMENT. REFER TO CONSTRUCTION DETAIL #6, C9.0.
- PROPOSED CONCRETE SIDEWALK
- PROPERTY LINE
- R/W — RIGHT-OF-WAY
- CENTERLINE
- FDOT TYPE "D" CONCRETE POST CURB
- PAVEMENT/WALK
- TREE PROTECTION SETBACK
- SIGN
- (12) PARKING SPACE COUNT
- FDOT TYPE "D" CATCH BASIN
- FDOT TYPE "F" CATCH BASIN
- FDOT TYPE "G" CATCH BASIN
- FDOT MITERED END SECTION: 4 TO 1 SLOPE
- (D) STORM MANHOLE
- (S) SANITARY MANHOLE
- CO CLEANOUT
- DS DOWN SPOUT
- FIRE HYDRANT
- LIGHT POLE

REFER TO SHEET C1.1 FOR GENERAL UTILITY NOTES

REFER TO SHEET C7.0-C7.2 FOR UTILITY DETAILS

BENCHMARKS

	ELEVATION*	EASTING**	NORTHING**	DESCRIPTION
BM #1	79.66	E 552420.75	N 1710969.94	STORM DRAIN MANHOLE RIM
BM #2	84.51	E 552432.28	N 1709912.72	SANITARY MANHOLE RIM

*VERTICAL DATUM: NAVD88
**HORIZONTAL DATUM: NAD83
REFER TO SITE PLAN FOR BENCHMARK LOCATIONS

Sunshine 811

FORTY-EIGHT (48) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: FLORIDA UTILITY PROTECTION SERVICE AT 811 OR (800)-432-4770 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF FLORIDA 811.

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NO.	DATE	REVISION DESCRIPTION

GARRETT MICHAEL GEORGE
LICENSE
No. 85305
STATE OF FLORIDA
PROFESSIONAL ENGINEER
3/14/23

SPRING GARDEN TOWNHOMES
DELAND, FL

1022 S. TAMIAMI TRAIL, OSPREY, FL

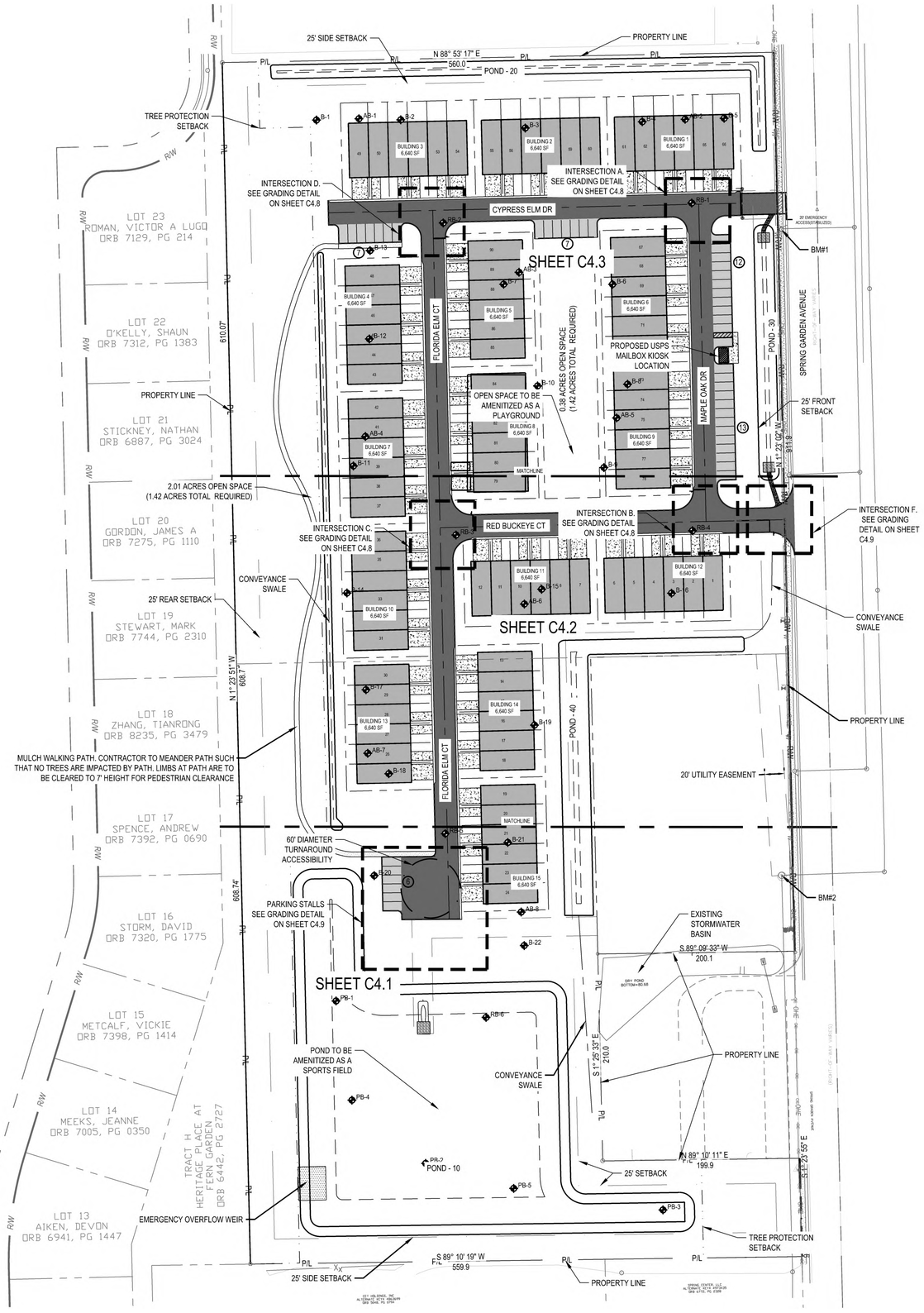
OVERALL SITE PLAN

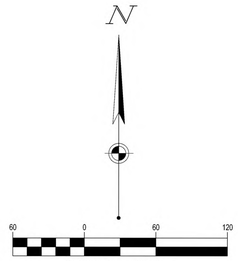
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02/15/2023

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DRAWN:	###
CHECKED:	###

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C4.0

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SITE PLAN LEGEND

EXISTING

REFER TO C2.0 FOR EXISTING FEATURES LEGEND

PROPOSED

- PROPOSED HEAVY DUTY ASPHALT PAVEMENT, REFER TO CONSTRUCTION DETAIL #6, C7.3.
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REFER TO SHEET C4.1 FOR GENERAL UTILITY NOTES

REFER TO SHEET C7.0-C7.2 FOR UTILITY DETAILS

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REVISION DESCRIPTION
NO. DATE

GARRETT MICHAEL GEORGE
LICENSE
No. 85905
7/31/23
STATE OF FLORIDA
PROFESSIONAL ENGINEER

SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

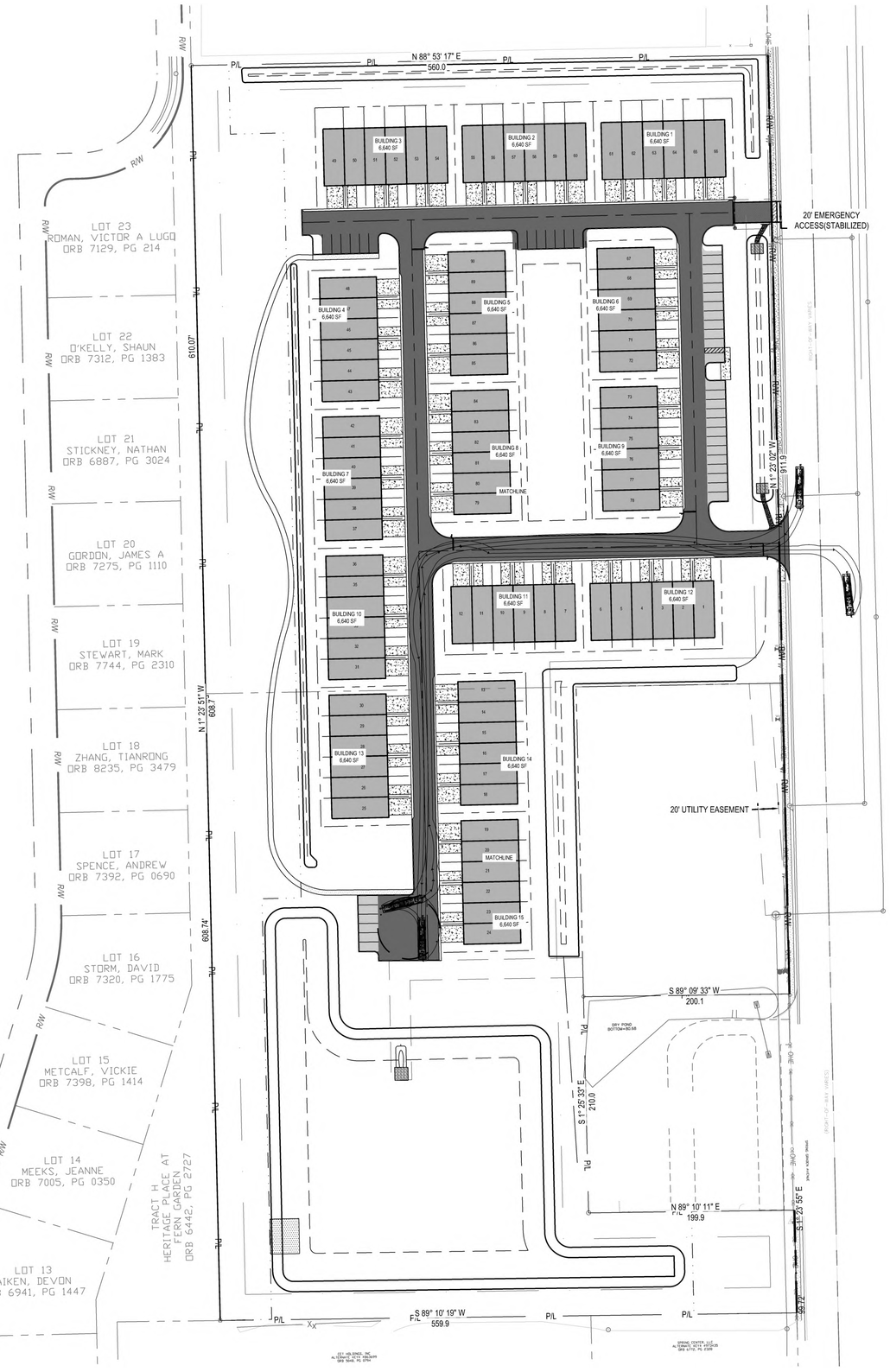
OVERALL SITE PLAN

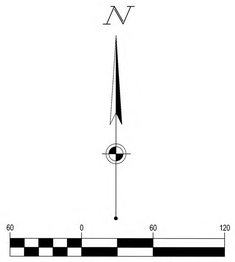
ISSUE:
NOT FOR CONSTRUCTION
DATE:
07/31/2023

JOB NO.:	761391
DESIGN:	RSH
DRAWN:	RSH
CHECKED:	CSG

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C4.00

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SITE PLAN LEGEND

EXISTING

REFER TO C2.0 FOR EXISTING FEATURES LEGEND

PROPOSED

- PROPOSED HEAVY DUTY ASPHALT PAVEMENT. REFER TO CONSTRUCTION DETAIL #6, C7.4.
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REFER TO SHEET C7.0-C7.2 FOR UTILITY DETAILS

BENCHMARKS

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NO.	DATE	REVISION DESCRIPTION

GARRETT, MICHAEL, GEORGE
LICENSE
No. 85905
7/31/23
STATE OF FLORIDA
PROFESSIONAL ENGINEER

SPRING GARDEN TOWNHOMES DELAND, FL

610 N SPRING GARDEN AVENUE, DELAND, FL

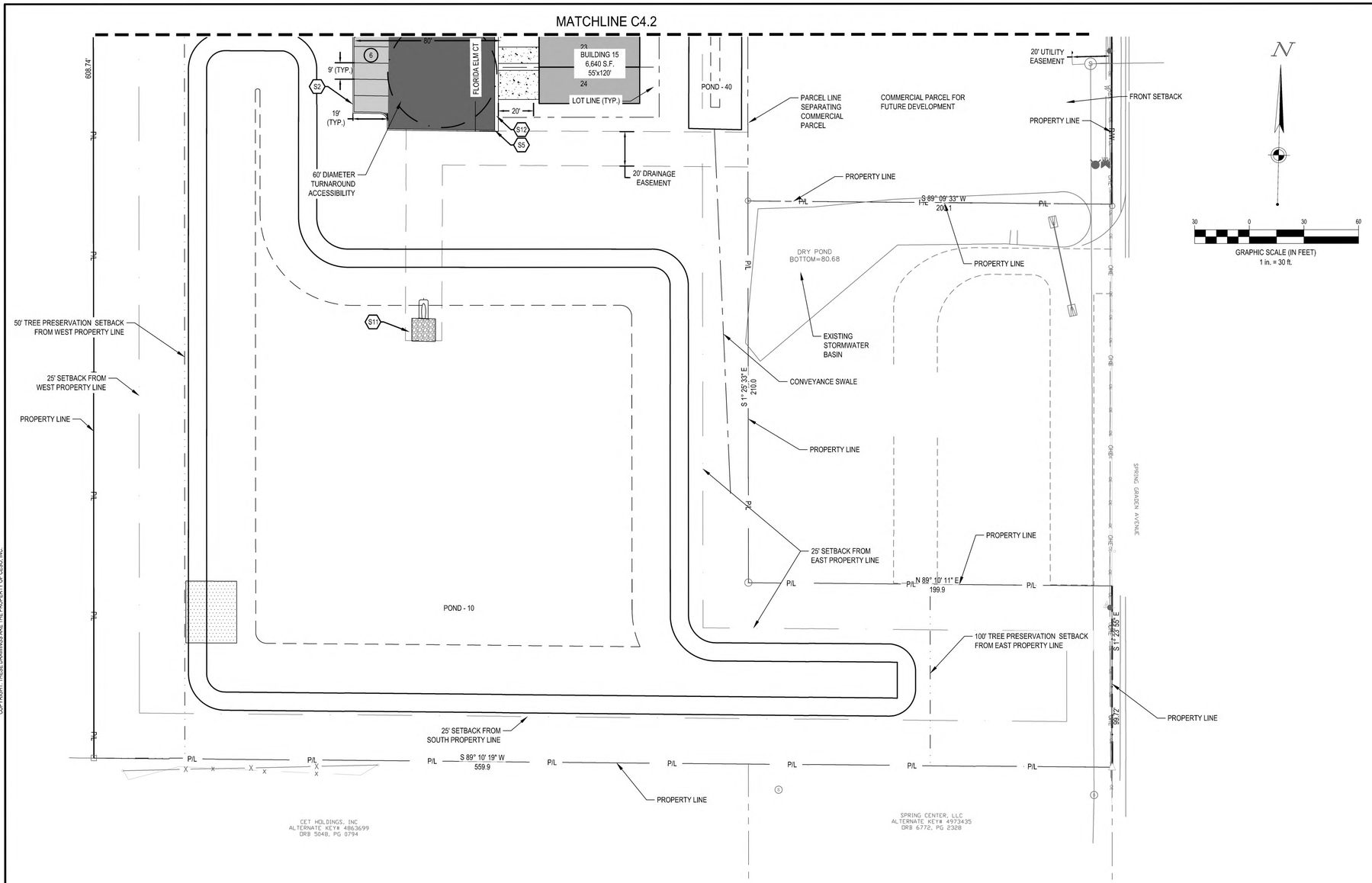
AUTOTURN PLAN

ISSUE:
NOT FOR CONSTRUCTION
DATE:
07/31/2023

JOB NO.:	761391
DESIGN:	RSH
DRAWN:	RSH
CHECKED:	CSG

SHEET NO.
C4.01

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SITE PLAN LEGEND

EXISTING

REFER TO C2.0 FOR EXISTING FEATURES LEGEND

PROPOSED

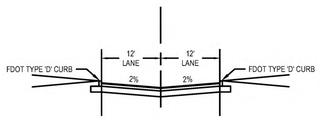
- PROPOSED HEAVY DUTY ASPHALT PAVEMENT. REFER TO CONSTRUCTION DETAIL #6, C7.3.
- PROPOSED STANDARD DUTY ASPHALT PAVEMENT. REFER TO CONSTRUCTION DETAIL #6, C7.3.
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REFER TO SHEET C1.1 FOR GENERAL UTILITY NOTES

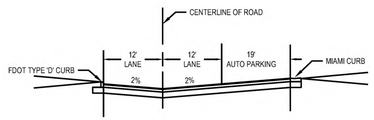
REFER TO SHEET C7.0-C7.2 FOR UTILITY DETAILS

SITE PLAN KEY NOTES

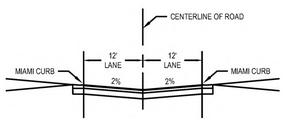
CODE	DESCRIPTION	DTL # - SHT #
S1	INTEGRAL SIDEWALK	#1, C7.3
S2	TYPE "D" CONCRETE POST CURB	FDOT INDEX 520-001
S3	CURB RAMP FDOT TYPE "CR-P"	FDOT INDEX 522-002
S4	BARRIER PIPE GATES FOR APPROXIMATELY 20-FT WIDE OPENING. DOUBLE GATE STYLE OF TWO 10-FT GATES. INCLUDES 4" GATE POSTS AND 2" PIPE FRAME. ALL PIPE TO BE SCH 40 GALVANIZED.	#7, C7.3
S5	3' CURB TRANSITION	
S6	MULCHED WALKING PATH (8" MULCH NON-FLOATABLE)	
S7	TIE-INTO EXISTING SIDEWALK	
S8	NDS TUFFTRACK GRASS PAVERS	#7, C7.3
S9	STOP SIGN (MUTCD R1-1) W/ 12" STOP BAR	#6, C7.3
S10	ROADWAY STRIPING (6" WHITE LINE)	FDOT INDEX 711-001
S11	RIPRAP	#11, C7.3
S12	MIAMI CURB	FDOT INDEX 520-001
S13	RIBBON CURB	#7, C7.3
S14	SAW CUT CONCRETE & REPLACE WITH 6" THICK CONCRETE	#7, C7.3
S15	CURB CUT	#2, C7.3
S16	ROADWAY STRIPING (4" DOUBLE YELLOW LINE)	FDOT INDEX 711-001
S17	24" THERMOPLASTIC STOP BAR	FDOT INDEX 711-001



TYPICAL ROADWAY SECTION



TYPICAL ROADWAY SECTION WITH PARKING



TYPICAL ROADWAY SECTION IN FRONT OF DRIVEWAY

BENCHMARKS

	ELEVATION*	EASTING**	NORTHING**	DESCRIPTION
BM #1	79.66	E 552420.75	N 1710969.94	STORM DRAIN MANHOLE RIM
BM #2	84.51	E 552432.28	N 1709912.72	SANITARY MANHOLE RIM

*VERTICAL DATUM: NAVD88
**HORIZONTAL DATUM: NAD83
REFER TO SITE PLAN FOR BENCHMARK LOCATIONS

Sunshine 811

FORTY-EIGHT (48) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: FLORIDA UTILITY PROTECTION SERVICE AT 811 OR (800)-432-4770 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF FLORIDA 811.

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REVISION DESCRIPTION
NO. DATE

GARRETT MICHAEL GEORGE
LICENSE
No. 85805
7/31/23
STATE OF FLORIDA
PROFESSIONAL ENGINEER

SPRING GARDEN TOWNHOMES DELAND, FL

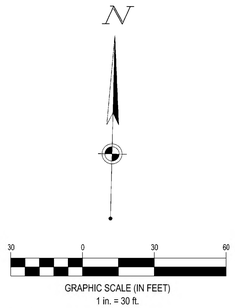
610 N SPRING GARDEN AVENUE, DELAND, FL

SITE PLAN

ISSUE: NOT FOR CONSTRUCTION
DATE: 07/31/2023
JOB NO.: 761391
DESIGN: RSH
DRAWN: RSH
CHECKED: CSG
SHEET NO. C4.1

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SITE PLAN LEGEND

EXISTING

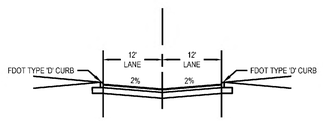
REFER TO C2.0 FOR EXISTING FEATURES LEGEND

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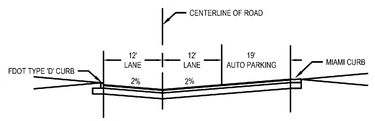
- PROPOSED HEAVY DUTY ASPHALT PAVEMENT. REFER TO CONSTRUCTION DETAIL #6, C7.3.
- PROPOSED STANDARD DUTY ASPHALT PAVEMENT. REFER TO CONSTRUCTION DETAIL #6, C7.3.
- PROPOSED BUILDING
- PROPOSED CONCRETE SIDEWALK
- P/L — PROPERTY LINE
- R/W — RIGHT-OF-WAY
- CENTERLINE
- FDOT TYPE "D" CONCRETE POST CURB
- PAVEMENT/WALK
- TREE PROTECTION SETBACK
- SIGN
- (12) PARKING SPACE COUNT
- FDOT TYPE "D" CATCH BASIN
- FDOT TYPE "F" CATCH BASIN
- FDOT TYPE "G" CATCH BASIN
- FDOT MITERED END SECTION: 4 TO 1 SLOPE
- (D) STORM MANHOLE
- (S) SANITARY MANHOLE
- CO CLEANOUT
- DS DOWN SPOUT
- FIRE HYDRANT
- LIGHT POLE

REFER TO SHEET C1.1 FOR GENERAL UTILITY NOTES

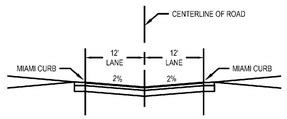
REFER TO SHEET C7.0-C7.2 FOR UTILITY DETAILS



TYPICAL ROADWAY SECTION



TYPICAL ROADWAY SECTION WITH PARKING



TYPICAL ROADWAY SECTION IN FRONT OF DRIVEWAY

SITE PLAN KEY NOTES

CODE	DESCRIPTION	DTL # - SHT #
S1	INTEGRAL SIDEWALK	#1, C7.3
S2	TYPE "D" CONCRETE POST CURB	FDOT INDEX 520-001
S3	CURB RAMP FDOT TYPE "CR-I"	FDOT INDEX 522-002
S4	BARRIER PIPE GATES FOR APPROXIMATELY 20-FT WIDE OPENING. DOUBLE GATE STYLE OF TWO 10-FT GATES. INCLUDES 4" GATE POSTS AND 2" PIPE FRAME. ALL PIPE TO BE SCH 40 GALVANIZED.	#7, C7.3
S5	3' CURB TRANSITION	
S6	MULCHED WALKING PATH (8" MULCH NON-FLOATABLE)	
S7	TIE-INTO EXISTING SIDEWALK	
S8	NDS TUFFTRACK GRASS PAVERS	#7, C7.3
S9	STOP SIGN (MUTCD R1-1) W/ 12" STOP BAR	#6, C7.3
S10	ROADWAY STRIPING (8" WHITE LINE)	FDOT INDEX 711-001
S11	RIPRAP	#11, C7.3
S12	MIAMI CURB	FDOT INDEX 520-001
S13	RIBBON CURB	#7, C7.3
S14	SAW CUT CONCRETE & REPLACE WITH 6" THICK CONCRETE	#7, C7.3
S15	CURB CUT	#2, C7.3
S16	ROADWAY STRIPING (4" DOUBLE YELLOW LINE)	FDOT INDEX 711-001
S17	24" THERMOPLASTIC STOP BAR	FDOT INDEX 711-001

BENCHMARKS

	ELEVATION*	EASTING**	NORTHING**	DESCRIPTION
BM #1	79.66	E 552420.75	N 1710969.94	STORM DRAIN MANHOLE RIM
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*VERTICAL DATUM: NAVD88
**HORIZONTAL DATUM: NAD83
REFER TO SITE PLAN FOR BENCHMARK LOCATIONS

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REVISION DESCRIPTION
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GARRETT MICHAEL GEORGE
LICENSE
No. 85505
7/31/23
STATE OF FLORIDA
PROFESSIONAL ENGINEER

SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

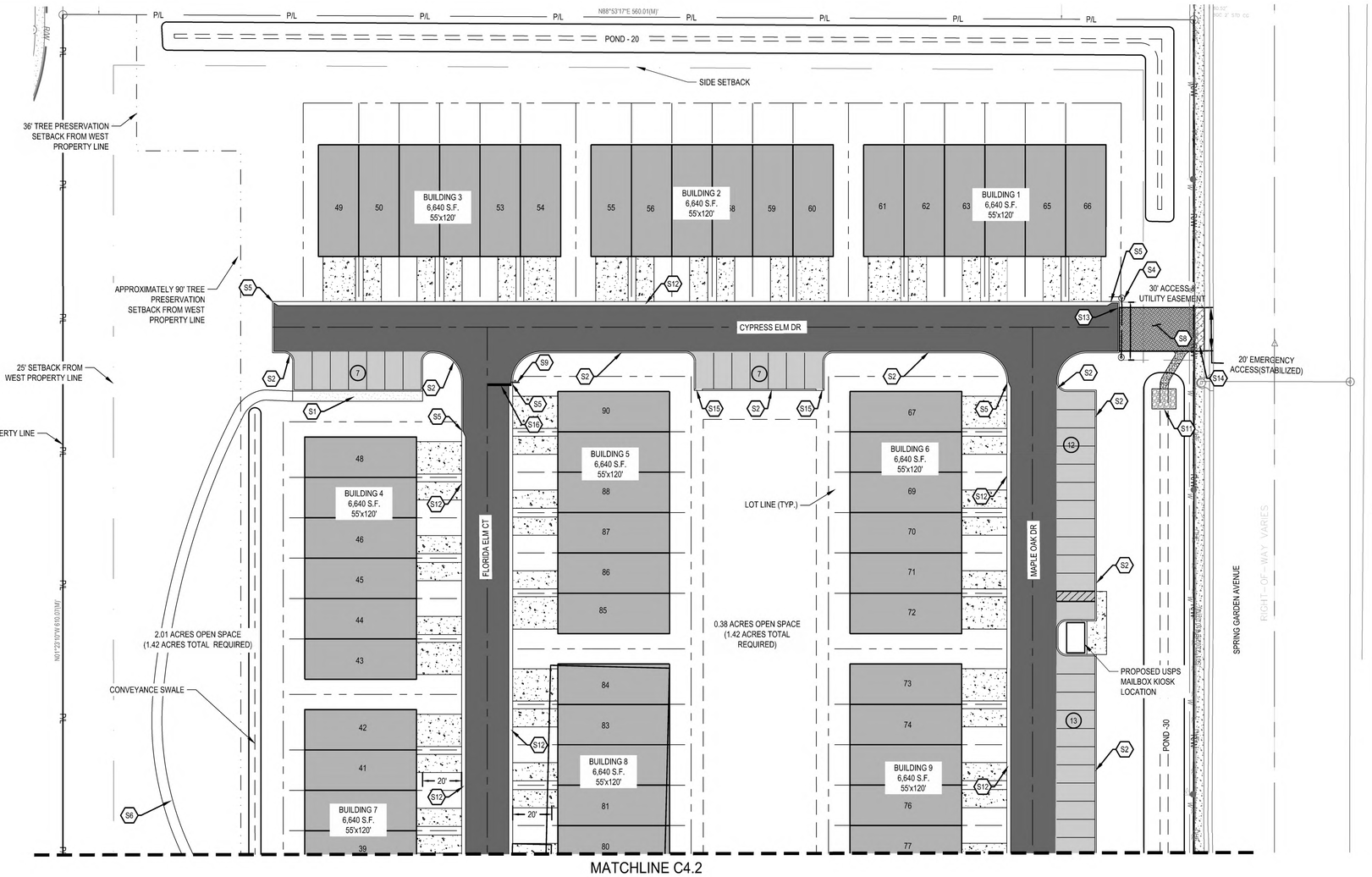
SITE PLAN

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07/31/2023

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CHECKED:	CSG

SHEET NO.
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SITE PLAN LEGEND

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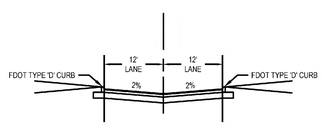
REFER TO C2.0 FOR EXISTING FEATURES LEGEND

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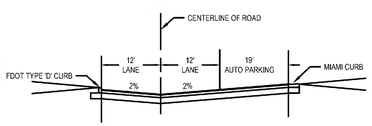
- PROPOSED HEAVY DUTY ASPHALT PAVEMENT. REFER TO CONSTRUCTION DETAIL #6, C7.3.
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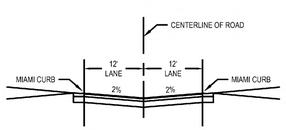
REFER TO SHEET C7.0-C7.2 FOR UTILITY DETAILS



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TYPICAL ROADWAY SECTION WITH PARKING



TYPICAL ROADWAY SECTION IN FRONT OF DRIVEWAY

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S2	TYPE "D" CONCRETE POST CURB	FDOT INDEX 520-001
S3	CURB RAMP FDOT TYPE "CR-1"	FDOT INDEX 522-002
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S5	2' CURB TRANSITION	
S6	MULCHED WALKING PATH (6" MULCH NON-FLOATABLE)	
S7	TIE-INTO EXISTING SIDEWALK	
S8	NDS TUFFTRACK GRASS PAVERS	#7, C7.3
S9	STOP SIGN (MUTCD R1-1) W/ 12" STOP BAR	#6, C7.3
S10	ROADWAY STRIPING (6" WHITE LINE)	FDOT INDEX 711-001
S11	RIPRAP	#11, C7.3
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S16	ROADWAY STRIPING (4" DOUBLE YELLOW LINE)	FDOT INDEX 711-001
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BENCHMARKS

	ELEVATION*	EASTING**	NORTHING**	DESCRIPTION
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N

30 0 30 60

GRAPHIC SCALE (IN FEET)
1 in. = 30 ft.

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GARRETT MICHAEL GEORGE
LICENSE
No. 85805
7/31/23
STATE OF FLORIDA
PROFESSIONAL ENGINEER

SPRING GARDEN TOWNHOMES DELAND, FL

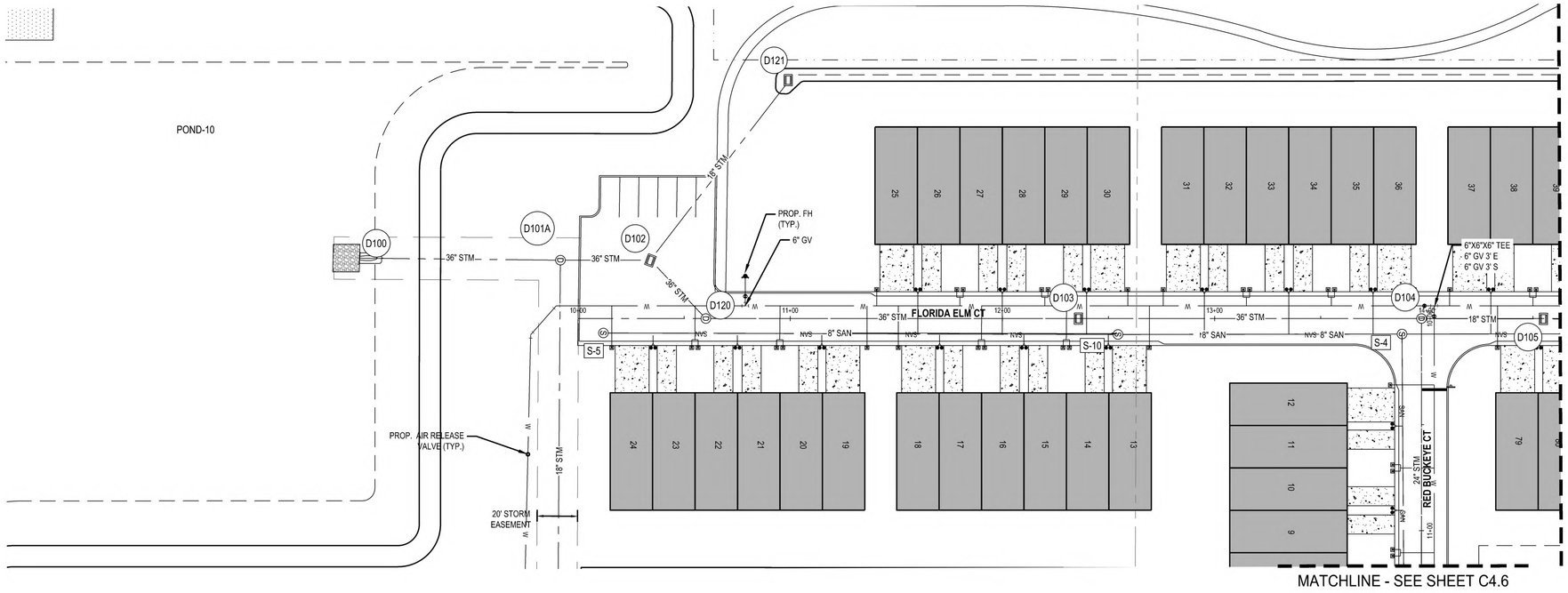
610 N SPRING GARDEN AVENUE, DELAND, FL

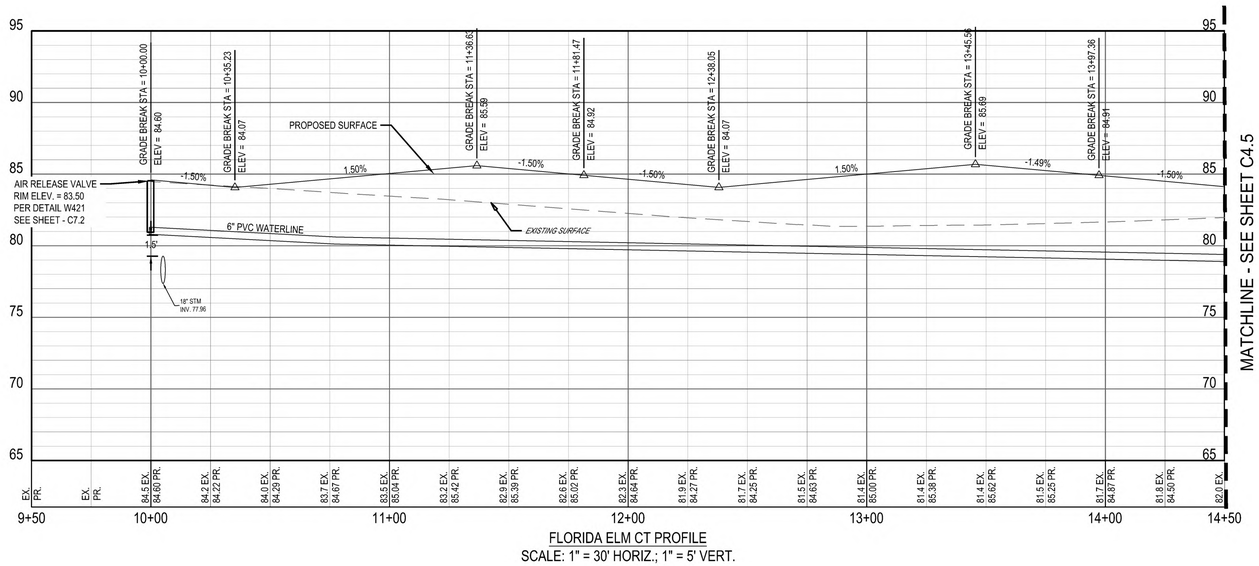
SITE PLAN

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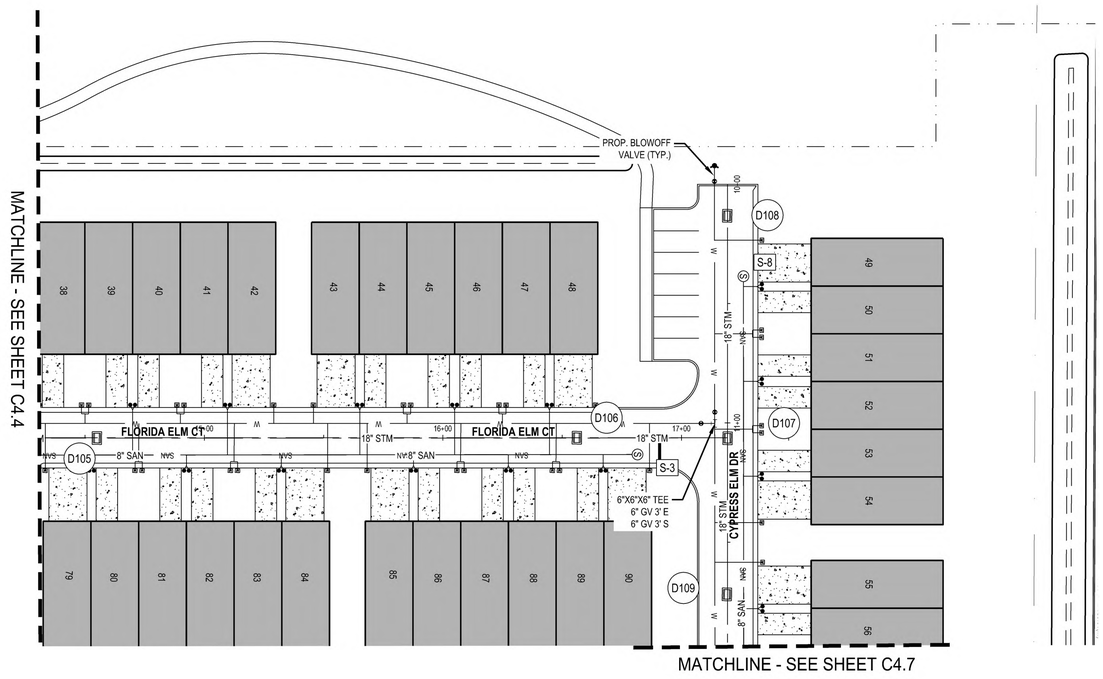
ROAD PLAN & PROFILE

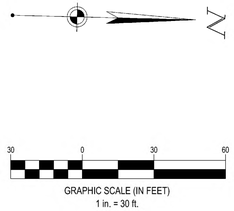
Sunshine 811

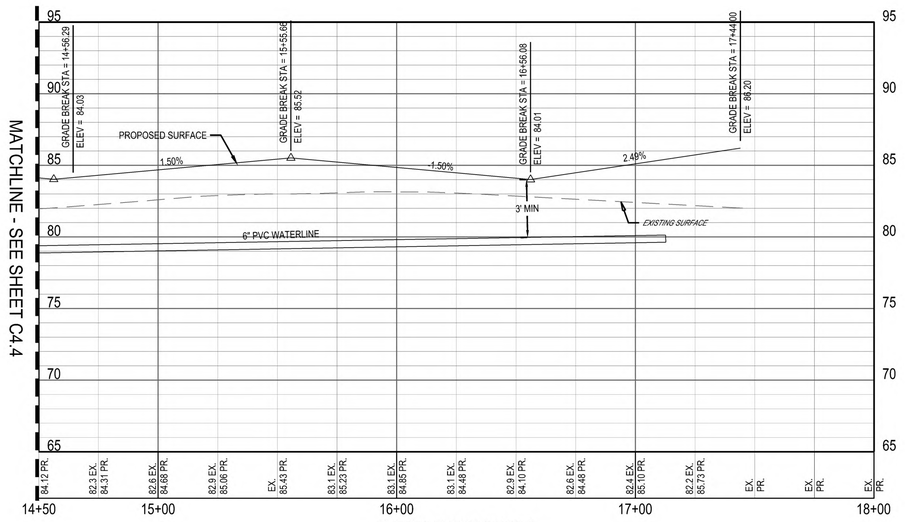
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FLORIDA ELM CT PROFILE
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PROFESSIONAL ENGINEER

SPRING GARDEN TOWNHOMES DELAND, FL

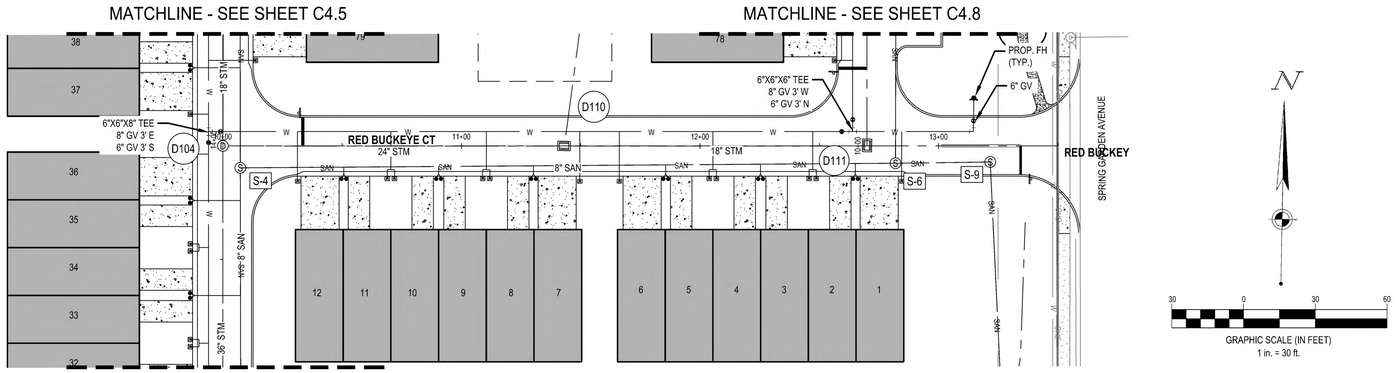
610 N SPRING GARDEN AVENUE, DELAND, FL

ROAD PLAN & PROFILE

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SHEET NO.
C4.5

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RED BUCKEYE CT PROFILE
SCALE: 1" = 30' HORIZ.; 1" = 5' VERT.

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7/31/23
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PROFESSIONAL ENGINEER

SPRING GARDEN TOWNHOMES DELAND, FL

610 N SPRING GARDEN AVENUE, DELAND, FL

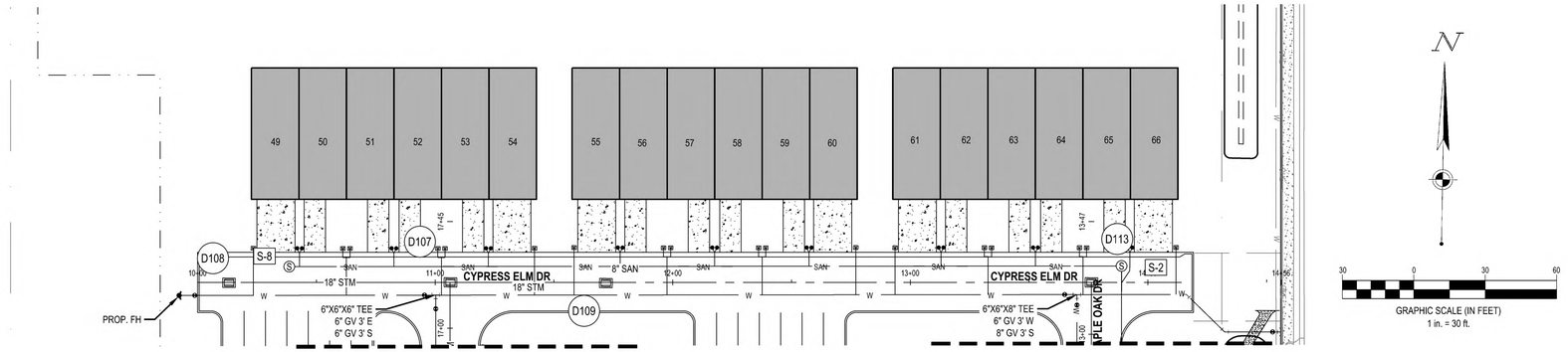
ROAD PLAN & PROFILE

Sunshine 811

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SHEET NO.
C4.6



CYPRESS ELM DR PROFILE
SCALE: 1" = 30' HORIZ.; 1" = 5' VERT.

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SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

ROAD PLAN & PROFILE

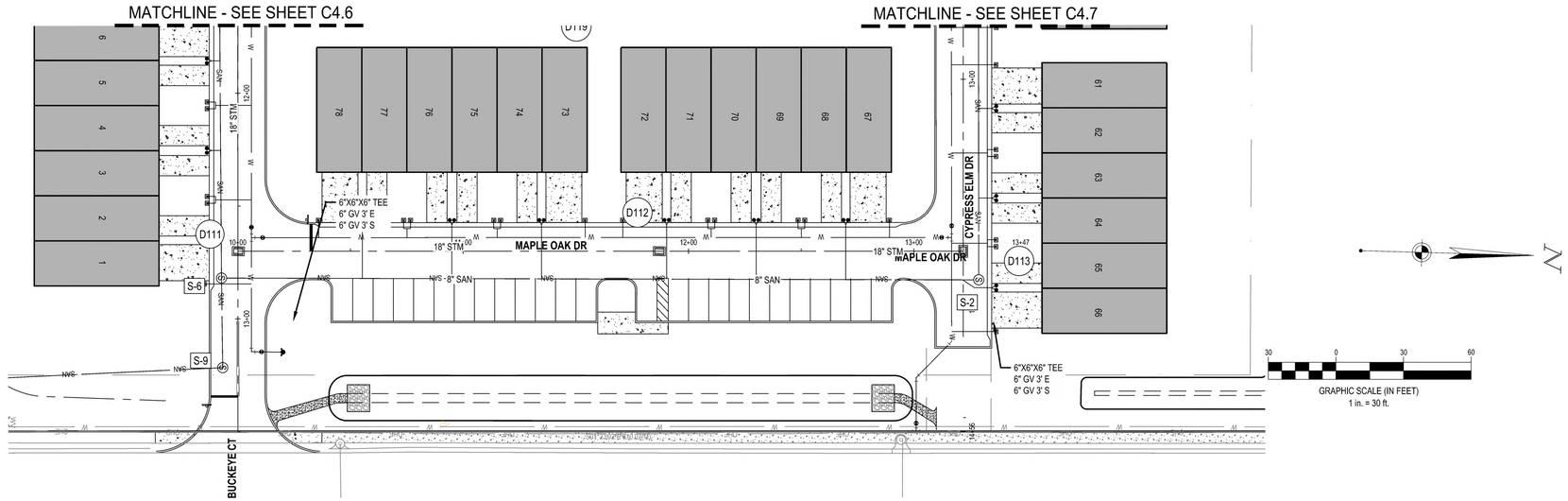
Sunshine 811

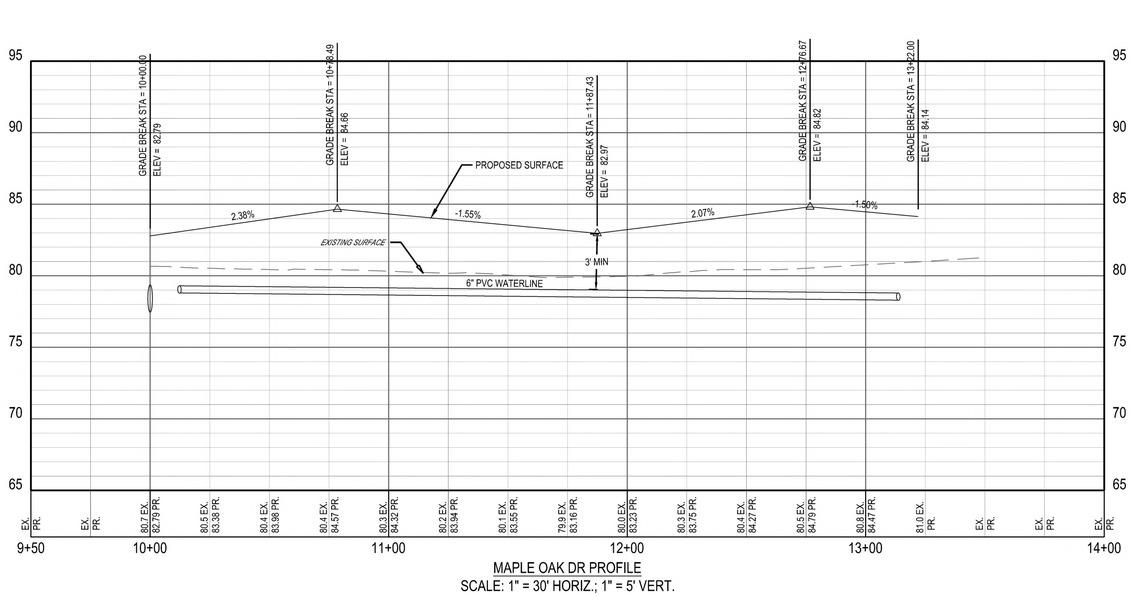
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SHEET NO.
C4.7

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MAPLE OAK DR PROFILE
SCALE: 1" = 30' HORIZ.; 1" = 5' VERT.

Sunshine 811

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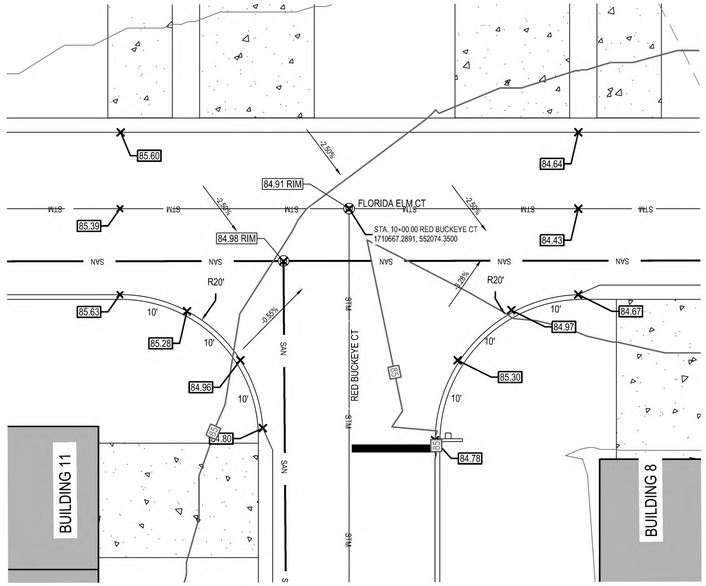
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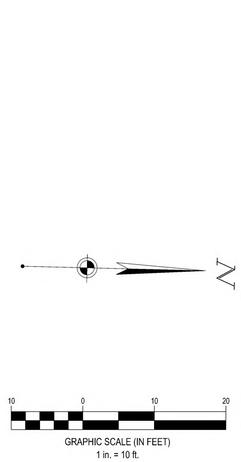
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STATE OF FLORIDA
PROFESSIONAL ENGINEER

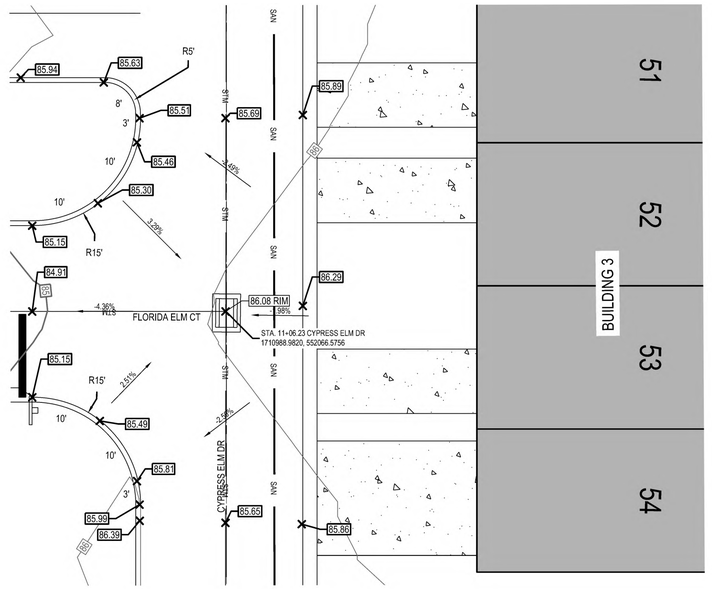
SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

ROAD PLAN & PROFILE

ISSUE: NOT FOR CONSTRUCTION
DATE: 07/31/2023
JOB NO.: 761391
DESIGN: RSH
DRAWN: RSH
CHECKED: CSG
SHEET NO. C4.8







TOTAL SITE AREA: 14.72 AC.

TOTAL IMPERVIOUS AREA: 5.22 AC +/-
PERCENTAGE IMPERVIOUS: 35.5%

TOTAL RETENTION AREA: 2.02 AC +/-

GRADING PLAN LEGEND

EXISTING

REFER TO C2.0 FOR EXISTING FEATURES LEGEND

PROPOSED

- EXFILTRATION TRENCH
- RIGHT-OF-WAY
- SETBACK
- EASEMENT
- 960 — MAJOR CONTOUR
- 962 — MINOR CONTOUR
- GRADE BREAK
- FLOW LINE
- (1) STRUCTURE NUMBER
- FDOT TYPE "C" CATCH BASIN
- FDOT TYPE "D" CATCH BASIN
- FDOT TYPE "F" CATCH BASIN
- FDOT TYPE "G" CATCH BASIN
- FDOT MITERED END SECTION: RCP 4 TO 1 SLOPE
- Ⓓ STORM MANHOLE
- CO CLEANOUT
- YD YARD DRAIN
- DS DOWNSPOUT
- XXX.XX FINISHED GRADE ELEVATION
- RIM=XXX.XX RIM ELEVATION
- EOP = XXX.XX EDGE OF PAVEMENT ELEVATION
- TC=XXX.XX / FG=XXX.XX TOP OF CURB ELEVATION / FINISHED GRADE ELEVATION
- X.XX% SLOPE ARROW

NOTES:

1. NO CONSTRUCTION MATERIAL OR EQUIPMENT TO BE STORED IN DETENTION BASINS AT ANY TIME.
2. RETENTION BASINS TO BE GRADED TO 2' ABOVE PROPOSED BOTTOM ELEVATION UNTIL INITIAL LIFT OF PAVEMENTS ARE INSTALLED. AT WHICH POINT FINAL EXCAVATION CAN TAKE PLACE. PIPE DISCHARGE LOCATIONS SHALL BE "SUMPED" AT FINAL GRADE WITH 3:1 MAX. GRADING UNTIL FINAL RETENTION BASIN EXCAVATION. STORM PIPES SHALL BE CLEANED AND SEDIMENT REMOVED FROM SYSTEM BEFORE FINAL APPROVAL CAN BE ISSUED.
3. UTILITY CROSSINGS ARE TO BE PER FDEP STANDARDS.

Sunshine811

FORTY-EIGHT (48) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: FLORIDA UTILITIES PROTECTION SERVICE AT 811 OR 800-432-4770 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF FLORIDA UTILITIES PROTECTION SERVICE

CESO
WWW.CESOINC.COM

NO.	DATE	REVISION DESCRIPTION

GARRETT MICHAEL GEORGE
LICENSE
No. 85805
STATE OF FLORIDA
PROFESSIONAL ENGINEER
7/31/23

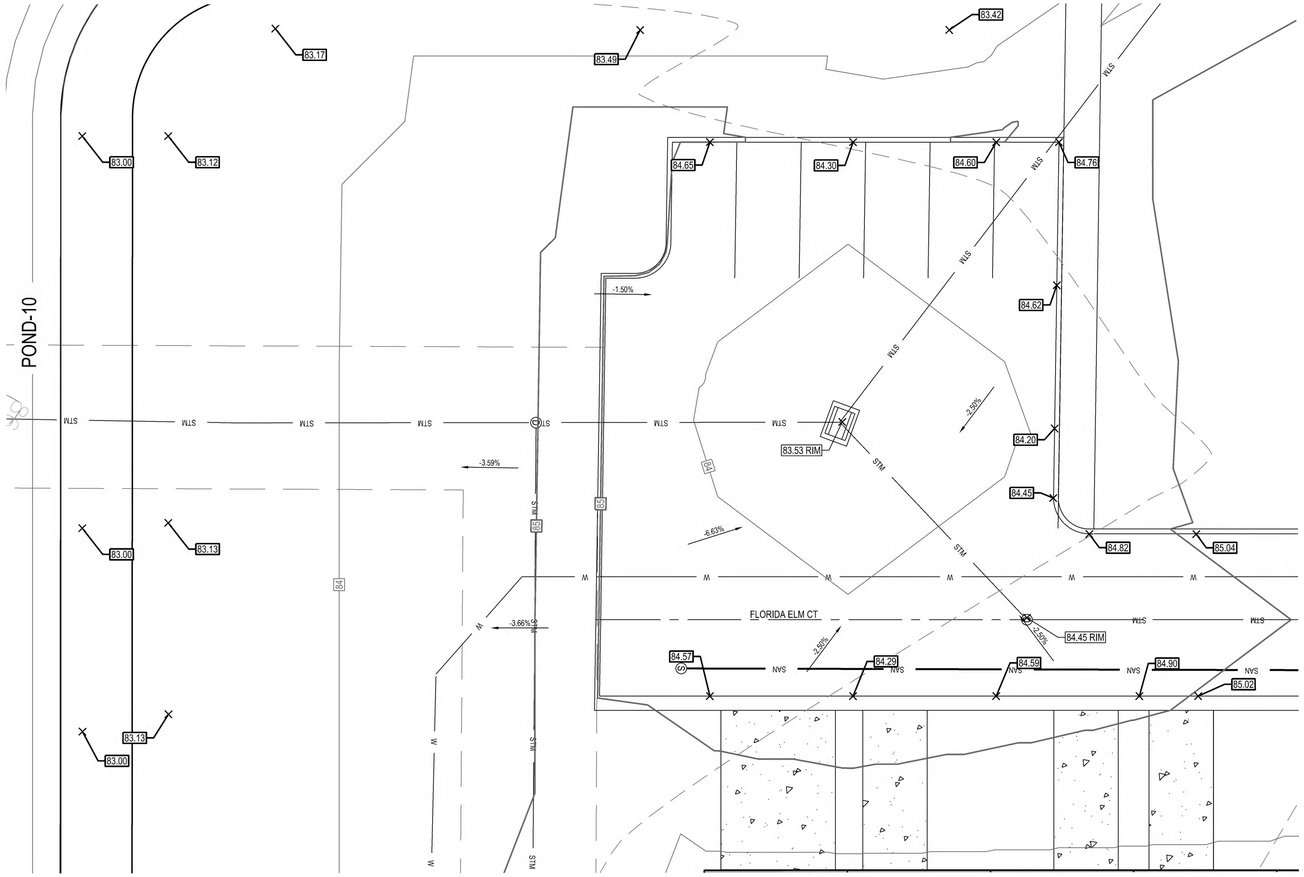
SPRING GARDEN TOWNHOMES
DELAND, FL

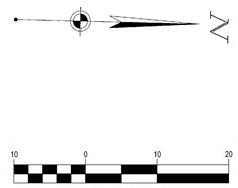
610 N SPRING GARDEN AVENUE, DELAND, FL

INTERSECTION DETAILS

ISSUE:	NOT FOR CONSTRUCTION
DATE:	07/31/2023
JOB NO.:	761391
DESIGN:	RSH
DRAWN:	RSH
CHECKED:	CSG
SHEET NO.	C4.9

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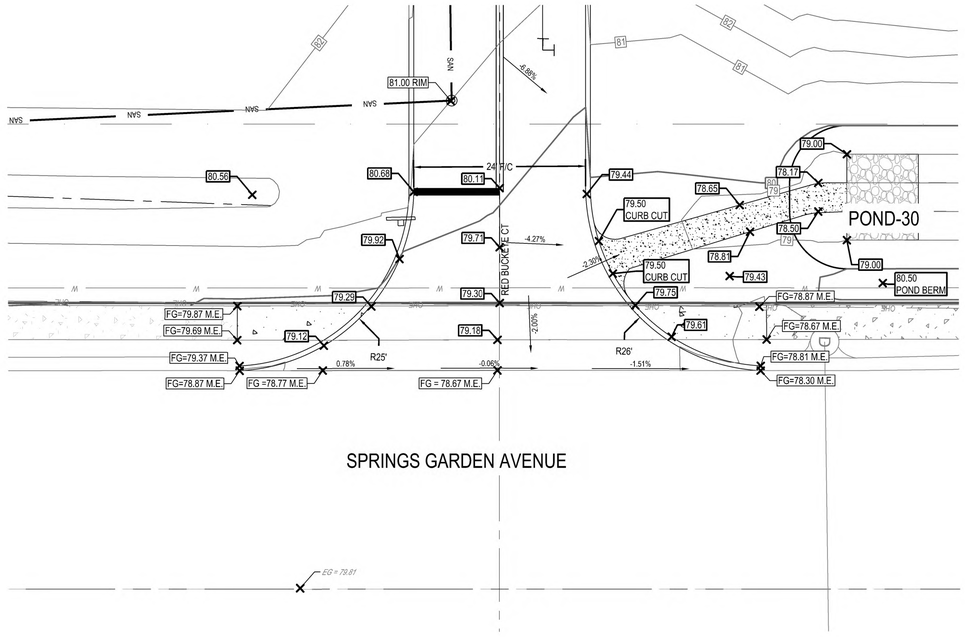
GRADING PLAN LEGEND

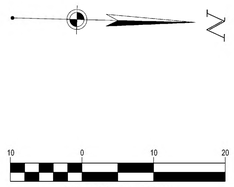
EXISTING

REFER TO C2.0 FOR EXISTING FEATURES LEGEND

PROPOSED

- EXFILTRATION TRENCH
- RIGHT-OF-WAY
- SETBACK
- EASEMENT
- 980 — MAJOR CONTOUR
- 982 — MINOR CONTOUR
- GRADE BREAK
- FLOW LINE
- 1 — STRUCTURE NUMBER
- FDOT TYPE "C" CATCH BASIN
- FDOT TYPE "D" CATCH BASIN
- FDOT TYPE "F" CATCH BASIN
- FDOT TYPE "G" CATCH BASIN
- FDOT MITERED END SECTION: RCP 4 TO 1 SLOPE
- D — STORM MANHOLE
- CO — CLEANOUT
- YD — YARD DRAIN
- DS — DOWNSPOUT
- XXX.XX — FINISHED GRADE ELEVATION
- RIM=XXX.XX — RIM ELEVATION
- EOP = XXX.XX — EDGE OF PAVEMENT ELEVATION
- TC=XXX.XX / FG=XXX.XX — TOP OF CURB ELEVATION / FINISHED GRADE ELEVATION
- X.XX% — SLOPE ARROW





Sunshine 811

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SPRING GARDEN TOWNHOMES DELAND, FL

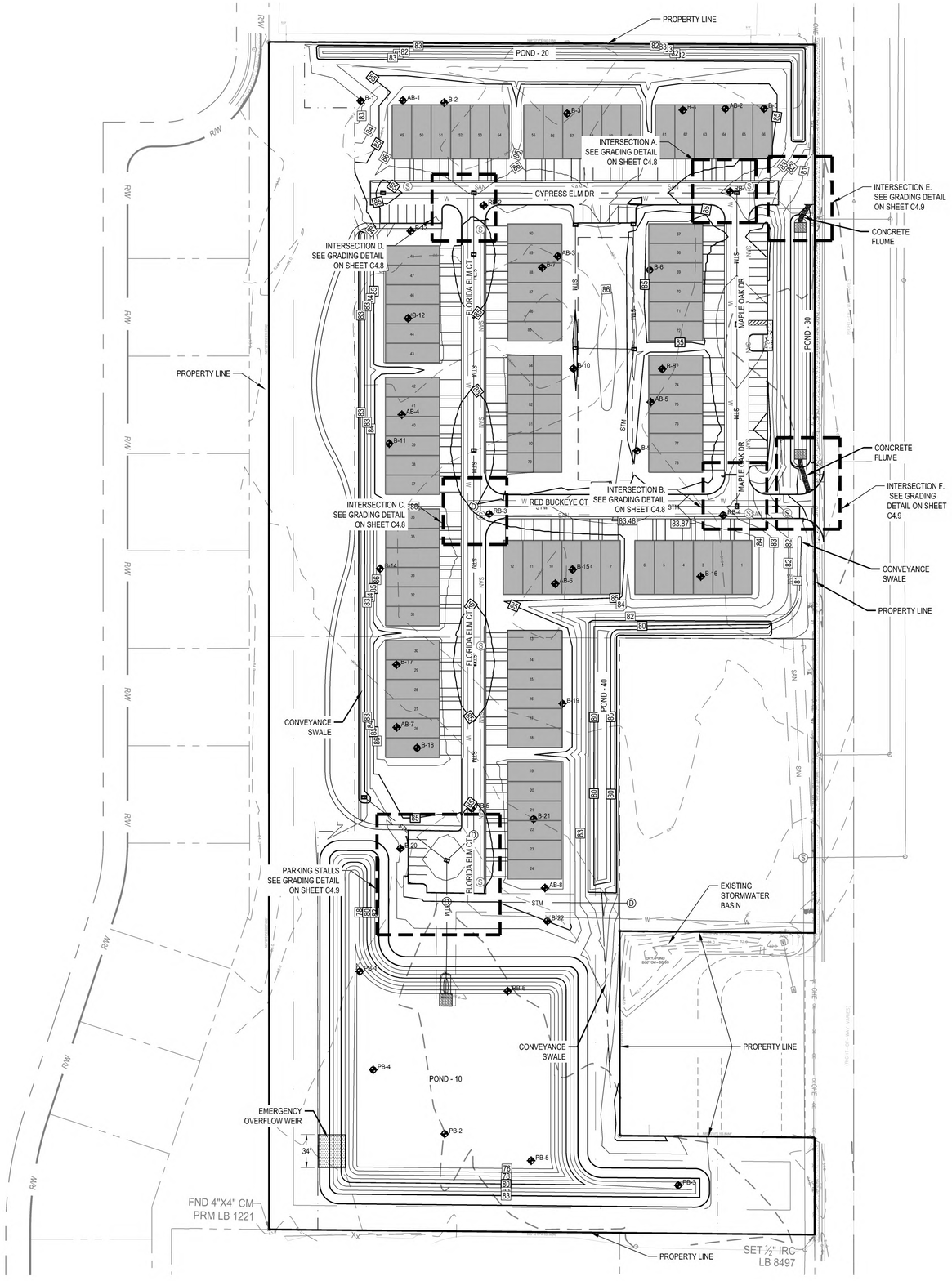
610 N SPRING GARDEN AVENUE, DELAND, FL

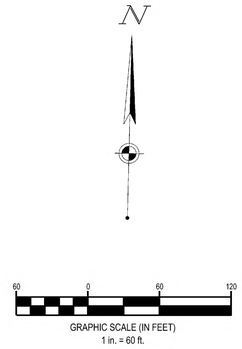
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SHEET NO.
C4.10

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TOTAL SITE AREA: 14.72 AC.

TOTAL IMPERVIOUS AREA: 5.22 AC +/-
PERCENTAGE IMPERVIOUS: 35.5%

TOTAL RETENTION AREA: 2.02 AC +/-

GRADING PLAN LEGEND

EXISTING

REFER TO C2.0 FOR EXISTING FEATURES LEGEND

PROPOSED

- PROPERTY LINE
- R/W — RIGHT-OF-WAY
- SETBACK
- EASEMENT
- 960 — MAJOR CONTOUR
- 962 — MINOR CONTOUR
- GRADE BREAK
- FLOW LINE
- 1 — STRUCTURE NUMBER
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- FDOT TYPE "D" CATCH BASIN
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- FDOT TYPE "G" CATCH BASIN
- FDOT MITERED END SECTION: RCP 4 TO 1 SLOPE
- STORM MANHOLE
- CO — CLEANOUT
- YD — YARD DRAIN
- XXX.XX — FINISHED GRADE ELEVATION
- RIM=XXX.XX — RIM ELEVATION
- HP=XXX.XX — HIGH POINT ELEVATION
- TC=XXX.XX / FG=XXX.XX — TOP OF CURB ELEVATION / FINISHED GRADE ELEVATION
- X.XX% — SLOPE ARROW

NOTES:

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Sunshine811

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REVISION DESCRIPTION
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GARRETT MICHAEL GEORGE
LICENSE
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SPRING GARDEN TOWNHOMES DELAND, FL

610 N SPRING GARDEN AVENUE, DELAND, FL

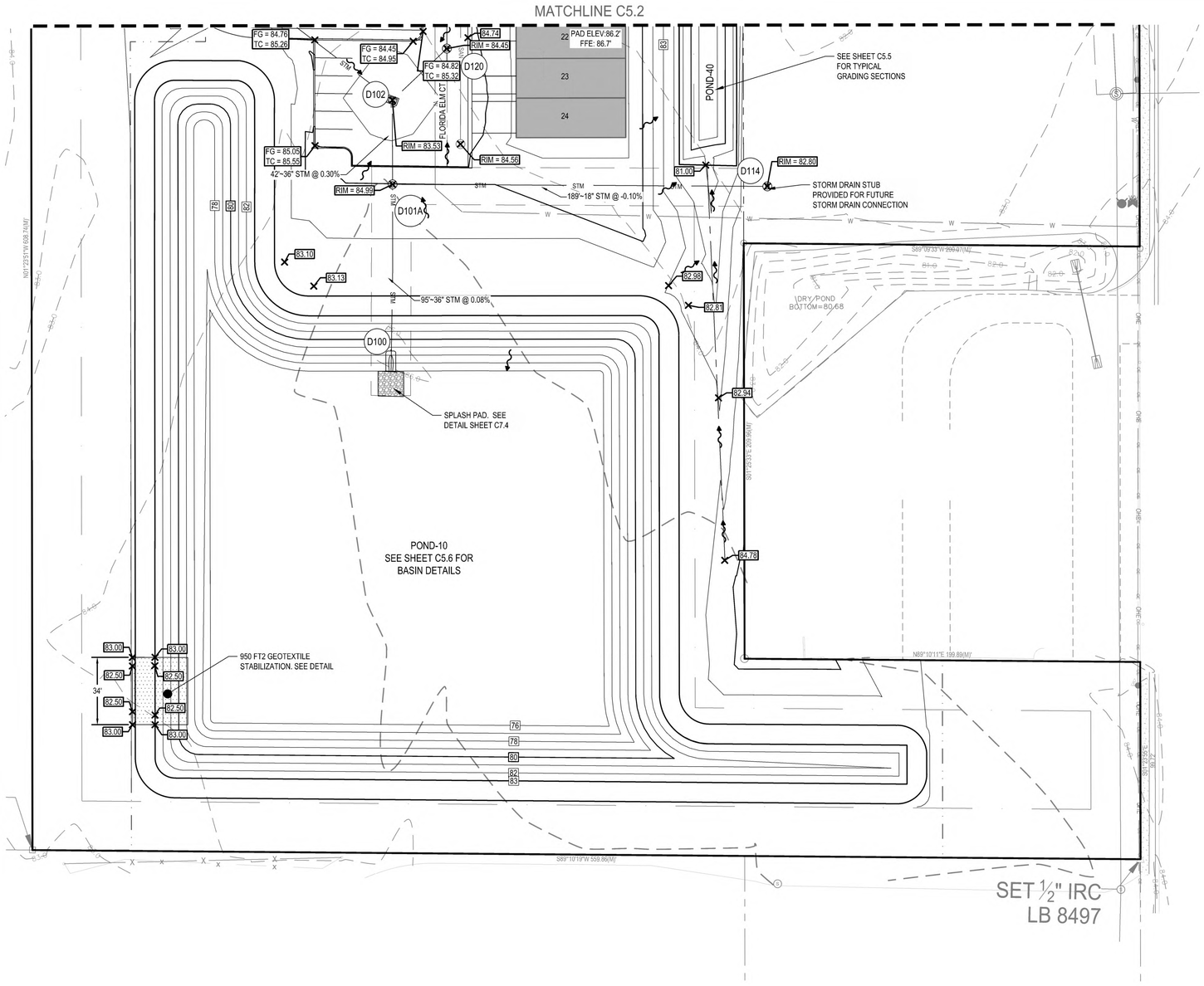
GRADING PLAN

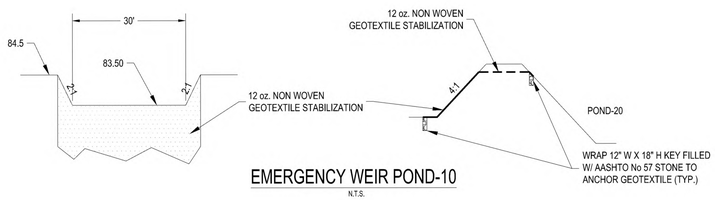
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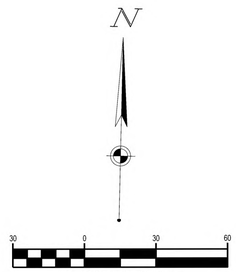
SHEET NO.
C5.0

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EMERGENCY WEIR POND-10
N.T.S.



GRAPHIC SCALE (IN FEET)
1 in. = 30 ft.

GRADING PLAN LEGEND

EXISTING

REFER TO C2.0 FOR EXISTING FEATURES LEGEND

PROPOSED

- PROPERTY LINE
- R/W — RIGHT-OF-WAY
- SETBACK
- EASEMENT
- 960 — MAJOR CONTOUR
- 962 — MINOR CONTOUR
- GRADE BREAK
- FLOW LINE
- (1) — STRUCTURE NUMBER
- FDOT TYPE "C" CATCH BASIN
- FDOT TYPE "D" CATCH BASIN
- FDOT TYPE "F" CATCH BASIN
- FDOT TYPE "G" CATCH BASIN
- FDOT MITERED END SECTION: RCP 4 TO 1 SLOPE
- (D) — STORM MANHOLE
- CO — CLEANOUT
- YD — YARD DRAIN
- XXX.XX — FINISHED GRADE ELEVATION
- RIM=XXX.XX — RIM ELEVATION
- HP=XXX.XX — HIGH POINT ELEVATION
- TC=XXX.XX / FG=XXX.XX — TOP OF CURB ELEVATION / FINISHED GRADE ELEVATION
- X.XX% — SLOPE ARROW

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STORM STRUCTURE SCHEDULE

NO.	STRUCTURE	GRATE	INVERT
D107	TYPE F DBI	86.09	79.58 (18") W 79.57 (18") E 79.47 (18") S
D116	TYPE D DBI	85.96	77.90 (18") S
D118	TYPE D DBI	85.56	78.01 (18") S
D109	TYPE F DBI	85.10	79.67 (18") W
D101A	60" MH	84.99	76.10 (36") N 76.08 (36") S 76.08 (18") E
D104	60" MH	84.91	76.78 (24") E 78.38 (18") N 76.78 (36") S
D117	TYPE D DBI	84.80	77.74 (18") N 77.74 (18") E
D108	TYPE G DBI	84.71	79.71 (18") E
D120	60" MH	84.45	76.36 (36") N 76.36 (36") SW
D103	TYPE F DBI	84.10	76.53 (36") N 76.53 (36") S
D105	TYPE F DBI	84.05	78.94 (18") N 78.84 (18") S
D106	TYPE F DBI	84.02	79.34 (18") N 79.24 (18") S
D119	TYPE D DBI	83.71	77.63 (18") N 77.63 (18") W 77.63 (18") S
D113	TYPE F DBI	83.57	78.18 (18") S
D102	TYPE F DBI	83.54	76.23 (36") NE 76.23 (18") NW 76.23 (36") S
D110	TYPE F DBI	83.27	77.47 (18") E 77.47 (18") N 77.47 (24") W
D112	TYPE F DBI	83.05	77.94 (18") N 77.94 (18") S
D114	48" MH	82.80	76.27 (18") W
D111	48" MH	82.79	77.66 (18") N 77.66 (18") W
D121	TYPE D DBI	82.19	76.45 (18") SE
D100	FLARED END SECTION	79.83	76.00 (36") N

STORM PIPE TABLE

Pipe Start Structure	Pipe End Structure	Size	Length	Slope
D113	D112	18.000	134.728	0.18%
D111	D110	18.000	126.846	0.15%
D104	D103	36.000	161.338	0.15%
D101A	D100	36.000	94.619	0.08%
D107	D106	18.000	63.151	0.21%
D102	D101A	36.000	42.436	0.30%
D103	D120	36.000	175.921	0.10%
D106	D105	18.000	201.204	0.15%
D108	D107	18.000	92.625	0.15%
D109	D107	18.000	66.091	0.15%
D111	D112	18.000	187.125	-0.15%
D110	D104	24.000	143.154	0.48%
D105	D104	18.000	57.498	0.81%
D101A	D114	18.000	189.359	-0.10%
D116	D117	18.000	126.594	0.12%
D119	D110	18.000	162.852	0.10%
D118	D119	18.000	128.335	0.30%
D121	D102	18.000	107.874	0.20%
D120	D102	36.000	38.000	0.34%
D119	D117	18.000	60.158	-0.19%

Sunshine811

FORTY-EIGHT (48) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: FLORIDA UTILITY PROTECTION SERVICE AT 811 OR (800)-432-4770 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF FLORIDA 811.

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REVISION DESCRIPTION | DATE | NO.

GARRETT MICHAEL GEORGE
LICENSE
No. 85805
7/31/23
STATE OF FLORIDA
PROFESSIONAL ENGINEER

SPRING GARDEN
TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

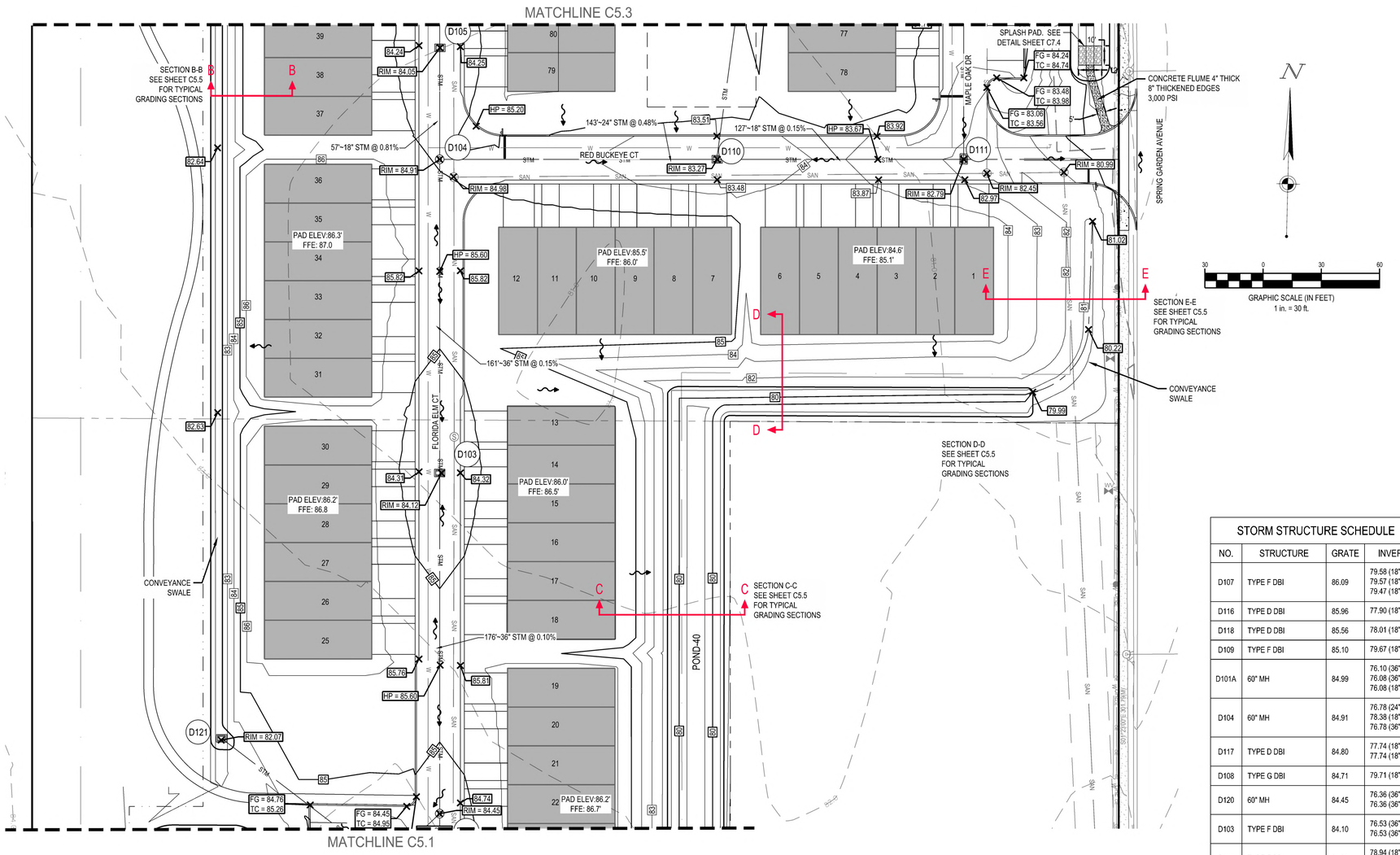
GRADING PLAN

ISSUE:
NOT FOR CONSTRUCTION
DATE:
07/31/2023

JOB NO.:	761391
DESIGN:	RSH
DRAWN:	RSH
CHECKED:	CSG

SHEET NO.
C5.1

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GRADING PLAN LEGEND

EXISTING

REFER TO C2.0 FOR EXISTING FEATURES LEGEND

PROPOSED

- PROPERTY LINE
- R/W — RIGHT-OF-WAY
- SETBACK
- EASEMENT
- 960 — MAJOR CONTOUR
- 962 — MINOR CONTOUR
- GRADE BREAK
- FLOW LINE
- 1 — STRUCTURE NUMBER
- FDOT TYPE "C" CATCH BASIN
- FDOT TYPE "D" CATCH BASIN
- FDOT TYPE "F" CATCH BASIN
- FDOT TYPE "G" CATCH BASIN
- FDOT MITERED END SECTION: RCP 4 TO 1 SLOPE
- STORM MANHOLE
- CO — CLEANOUT
- YD — YARD DRAIN
- XXX.XX — FINISHED GRADE ELEVATION
- RIM=XXX.XX — RIM ELEVATION
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- TC=XXX.XX / FG=XXX.XX — TOP OF CURB ELEVATION / FINISHED GRADE ELEVATION
- X.XX% — SLOPE ARROW

NOTES:

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STORM PIPE TABLE

Pipe Start Structure	Pipe End Structure	Size	Length	Slope
D113	D112	18.000	134.728	0.18%
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D104	D103	36.000	161.338	0.15%
D101A	D100	36.000	94.619	0.08%
D107	D106	18.000	63.151	0.21%
D102	D101A	36.000	42.436	0.30%
D103	D120	36.000	175.921	0.10%
D106	D105	18.000	201.204	0.15%
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D111	D112	18.000	187.125	-0.15%
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CESO
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REVISION DESCRIPTION
NO. DATE

GARRETT MICHAEL GEORGE
LICENSE
No. 85905
STATE OF FLORIDA
PROFESSIONAL ENGINEER
7/31/23

SPRING GARDEN
TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

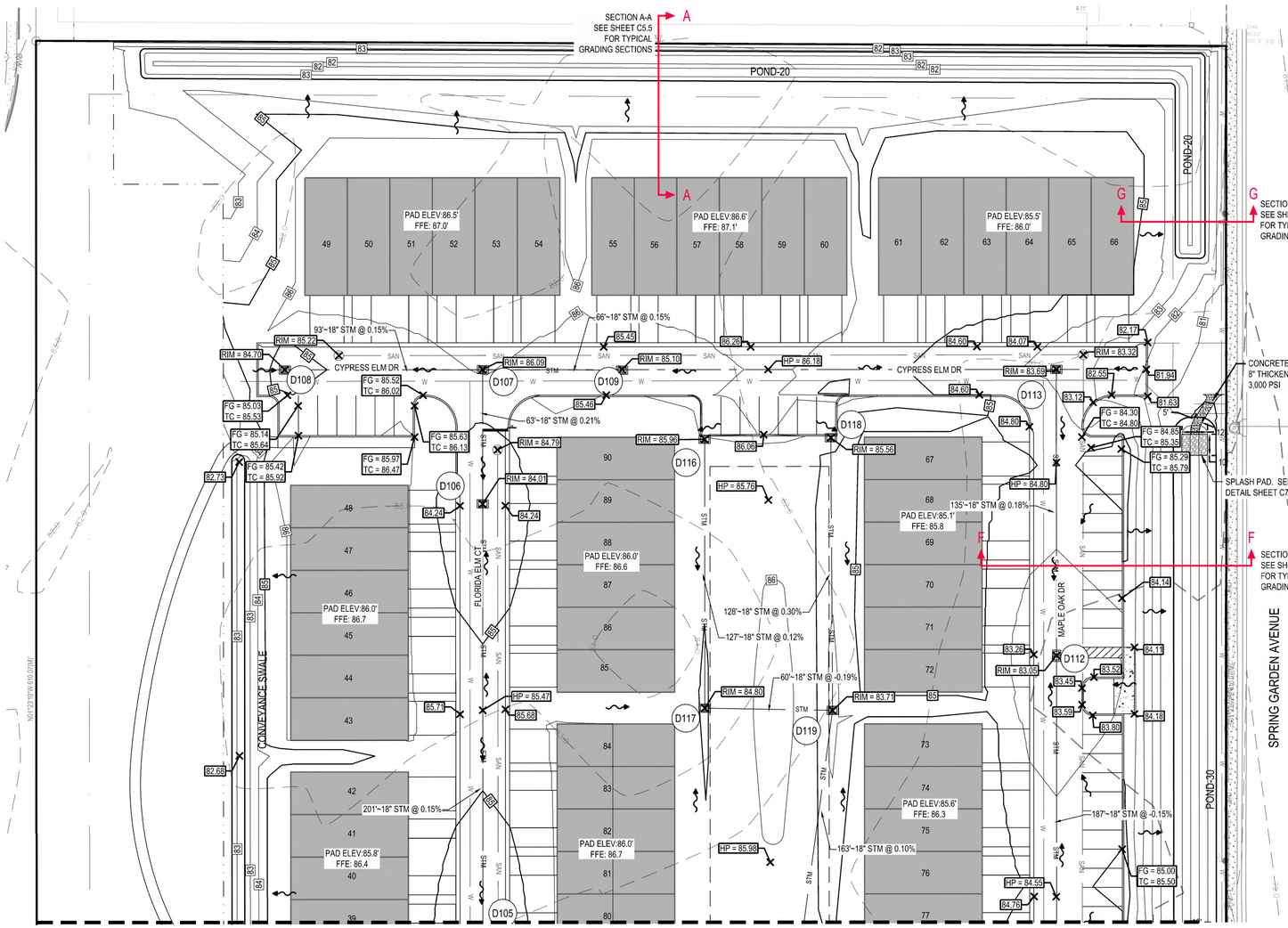
GRADING PLAN

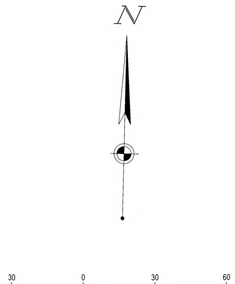
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DESIGN:	RSH
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CHECKED:	CSG

SHEET NO.
C5.2

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GRADING PLAN LEGEND

EXISTING

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- PROPERTY LINE
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- EASEMENT
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- FDOT MITERED END SECTION: RCP 4 TO 1 SLOPE
- STORM MANHOLE
- CO — CLEANOUT
- YD — YARD DRAIN
- XXX.XX — FINISHED GRADE ELEVATION
- RIM=XXX.XX — RIM ELEVATION
- HP=XXX.XX — HIGH POINT ELEVATION
- TC=XXX.XX / FG=XXX.XX — TOP OF CURB ELEVATION / FINISHED GRADE ELEVATION
- X.XX% — SLOPE ARROW

NOTES:

1. NO CONSTRUCTION MATERIAL OR EQUIPMENT TO BE STORED IN DETENTION BASINS AT ANY TIME.
2. RETENTION BASINS TO BE GRADED TO 2' ABOVE PROPOSED BOTTOM ELEVATION UNTIL INITIAL LIFT OF PAVEMENTS ARE INSTALLED, AT WHICH POINT FINAL EXCAVATION CAN TAKE PLACE. PIPE DISCHARGE LOCATIONS SHALL BE "SUMPED" AT FINAL GRADE WITH 3:1 MAX. GRADING UNTIL FINAL RETENTION BASIN EXCAVATION. STORM PIPES SHALL BE CLEANED AND SEDIMENT REMOVED FROM SYSTEM BEFORE FINAL APPROVAL CAN BE ISSUED.
3. UTILITY CROSSINGS ARE TO BE PER FDEP STANDARDS.

STORM STRUCTURE SCHEDULE

NO.	STRUCTURE	GRATE	INVERT
D107	TYPE F DBI	86.09	79.58 (18") W 79.57 (18") E 79.47 (18") S
D116	TYPE D DBI	85.96	77.90 (18") S
D118	TYPE D DBI	85.56	78.01 (18") S
D109	TYPE F DBI	85.10	79.67 (18") W
D101A	60" MH	84.99	76.10 (36") N 76.08 (36") S 76.08 (18") E
D104	60" MH	84.91	76.78 (24") E 78.38 (18") N 76.78 (36") S
D117	TYPE D DBI	84.80	77.74 (18") N 77.74 (18") E
D108	TYPE G DBI	84.71	79.71 (18") E
D120	60" MH	84.45	76.36 (36") N 76.36 (36") SW
D103	TYPE F DBI	84.10	76.53 (36") N 76.53 (36") S
D105	TYPE F DBI	84.05	78.94 (18") N 78.84 (18") S
D106	TYPE F DBI	84.02	79.34 (18") N 79.24 (18") S
D119	TYPE D DBI	83.71	77.63 (18") N 77.63 (18") W 77.63 (18") S
D113	TYPE F DBI	83.57	78.18 (18") S
D102	TYPE F DBI	83.54	76.23 (36") NE 76.23 (18") NW 76.23 (36") S
D110	TYPE F DBI	83.27	77.47 (18") E 77.47 (18") N 77.47 (24") W
D112	TYPE F DBI	83.05	77.94 (18") N 77.94 (18") S
D114	48" MH	82.80	76.27 (18") W
D111	48" MH	82.79	77.66 (18") N 77.66 (18") W
D121	TYPE D DBI	82.19	76.45 (18") SE
D100	FLARED END SECTION	79.83	76.00 (36") N

STORM PIPE TABLE

Pipe Start Structure	Pipe End Structure	Size	Length	Slope
D113	D112	18.000	134.728	0.18%
D111	D110	18.000	126.846	0.15%
D104	D103	36.000	161.338	0.15%
D101A	D100	36.000	94.619	0.08%
D107	D106	18.000	63.151	0.21%
D102	D101A	36.000	42.436	0.30%
D103	D120	36.000	175.921	0.10%
D106	D105	18.000	201.204	0.15%
D108	D107	18.000	92.625	0.15%
D109	D107	18.000	66.091	0.15%
D111	D112	18.000	187.125	-0.15%
D110	D104	24.000	143.154	0.48%
D105	D104	18.000	57.498	0.81%
D101A	D114	18.000	189.359	-0.10%
D116	D117	18.000	126.594	0.12%
D119	D110	18.000	162.852	0.10%
D118	D119	18.000	128.335	0.30%
D121	D102	18.000	107.874	0.20%
D120	D102	36.000	38.000	0.34%
D119	D117	18.000	60.158	-0.19%

FORTY-EIGHT (48) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: FLORIDA UTILITIES PROTECTION SERVICE AT 811 OR 800-432-4770 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF FLORIDA UTILITIES PROTECTION SERVICE

FORTY-EIGHT (48) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: FLORIDA UTILITY PROTECTION SERVICE AT 811 OR (800)-432-4770 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF FLORIDA 811.

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PROFESSIONAL ENGINEER

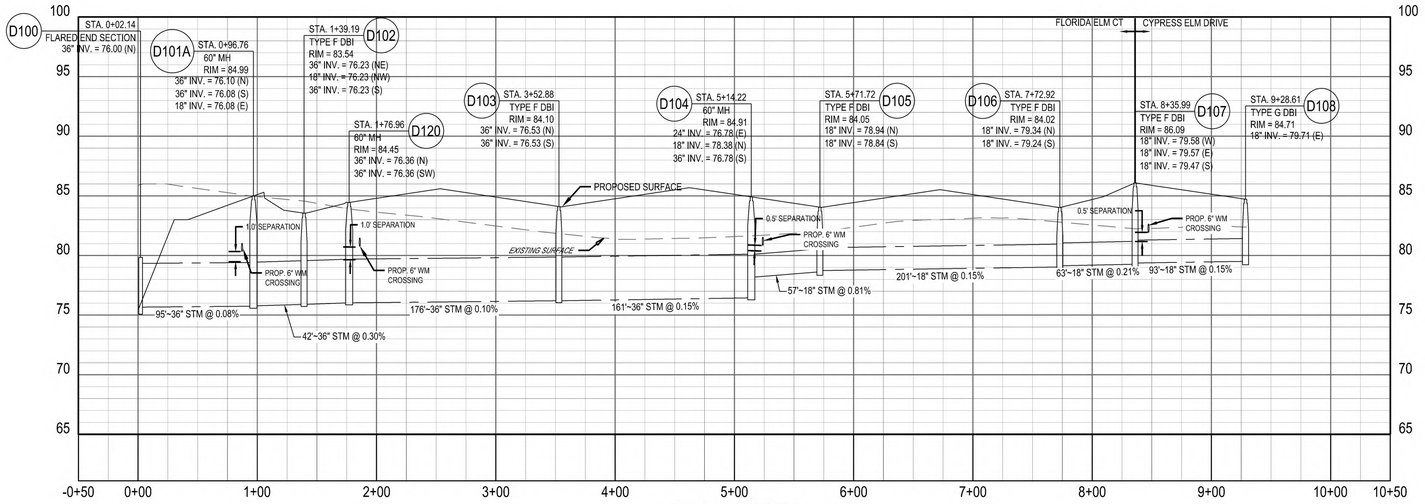
SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

GRADING PLAN

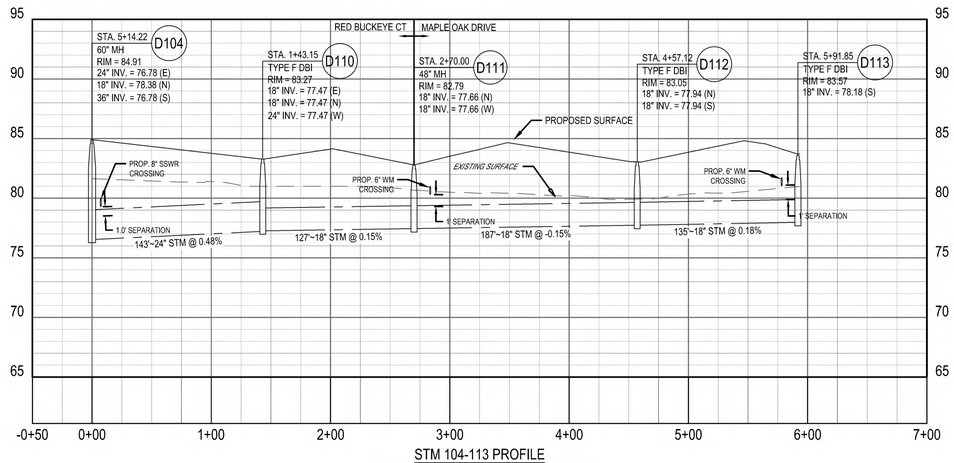
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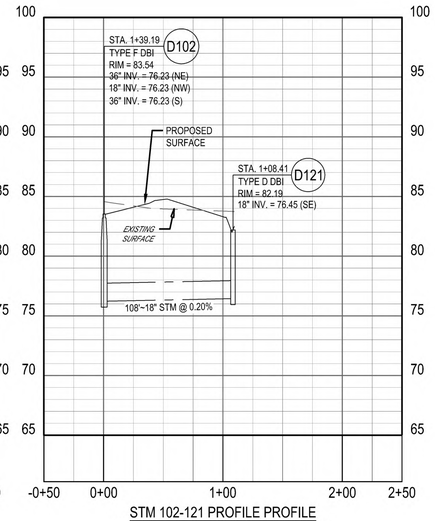
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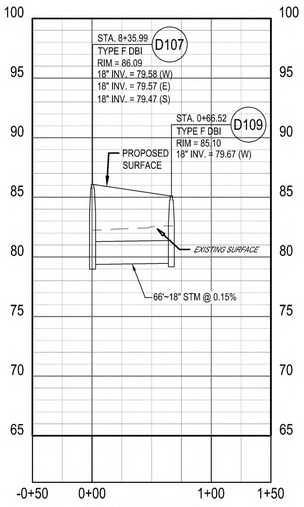
STM 100-108 PROFILE
SCALE: 1" = 50' HORIZ.; 1" = 5' VERT.



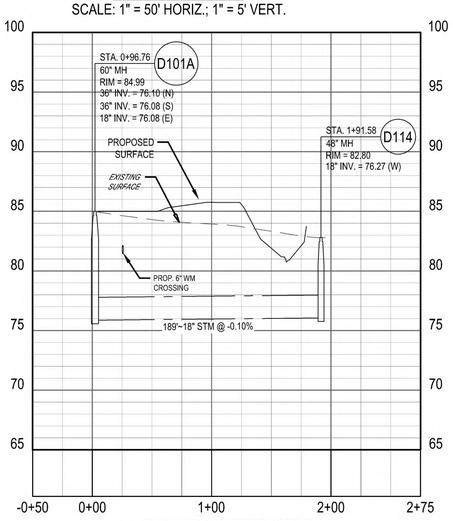
STM 104-113 PROFILE
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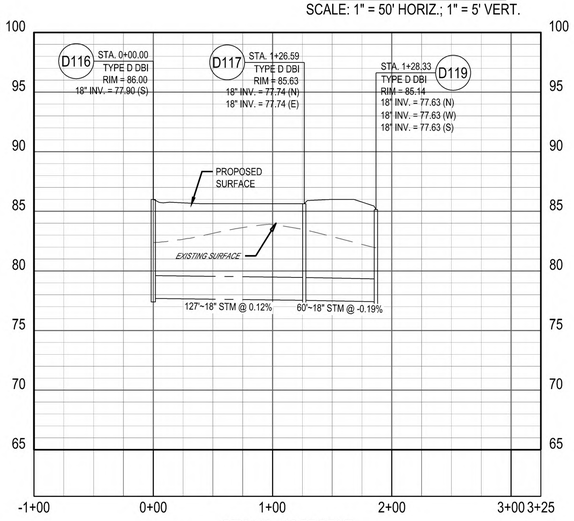
STM 102-121 PROFILE PROFILE
SCALE: 1" = 50' HORIZ.; 1" = 5' VERT.



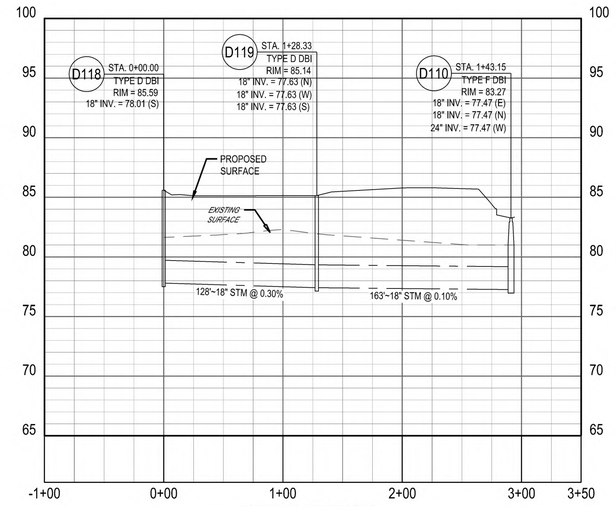
STM 107-109 PROFILE
SCALE: 1" = 50' HORIZ.; 1" = 5' VERT.



COMMERCIAL STM PROFILE
SCALE: 1" = 50' HORIZ.; 1" = 5' VERT.



STM 119-116 PROFILE
SCALE: 1" = 50' HORIZ.; 1" = 5' VERT.



STM 110-118 PROFILE
SCALE: 1" = 50' HORIZ.; 1" = 5' VERT.

Sunshine811

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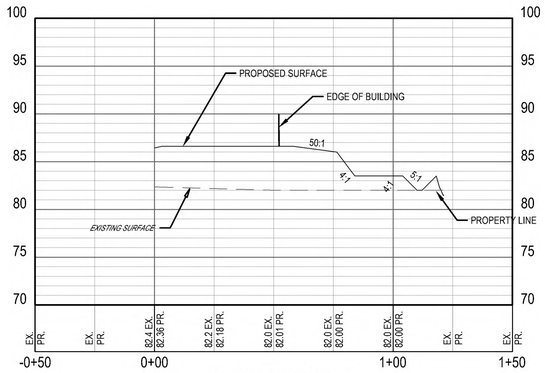
GARRETT MICHAEL GEORGE
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PROFESSIONAL ENGINEER
7/31/23

SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

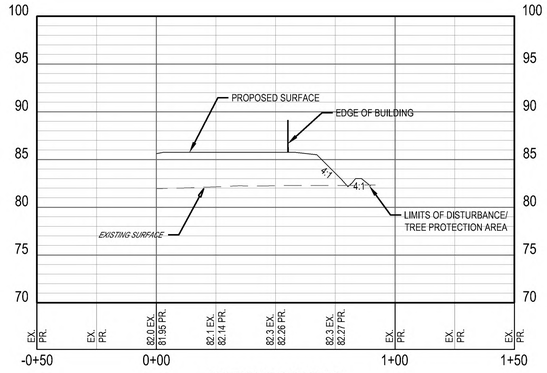
STORM PROFILES

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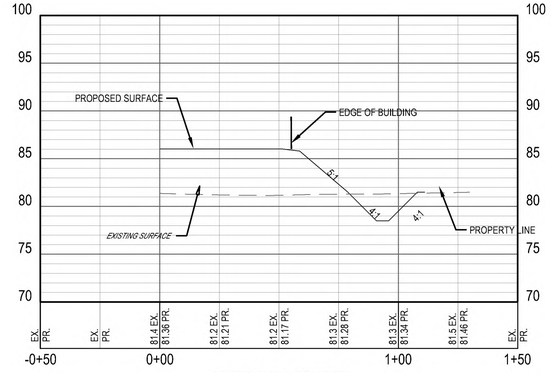
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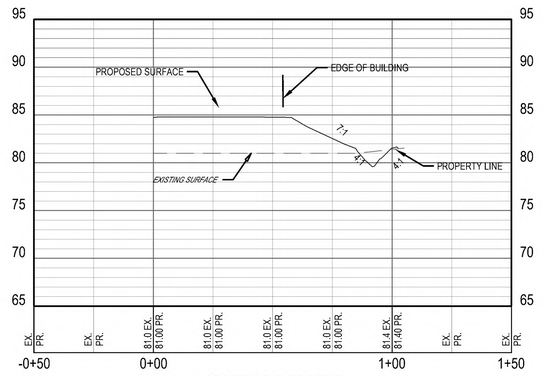
SECTION A-A PROFILE
SCALE: 1" = 20' HORIZ.; 1" = 5' VERT.



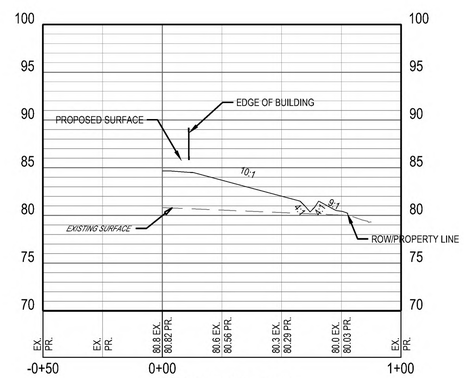
SECTION B-B PROFILE
SCALE: 1" = 20' HORIZ.; 1" = 5' VERT.



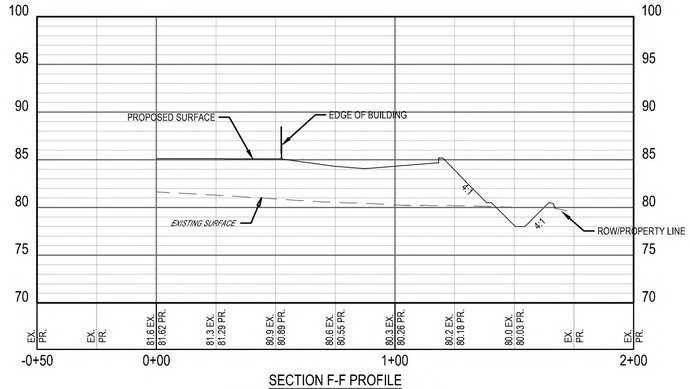
SECTION C-C PROFILE
SCALE: 1" = 20' HORIZ.; 1" = 5' VERT.



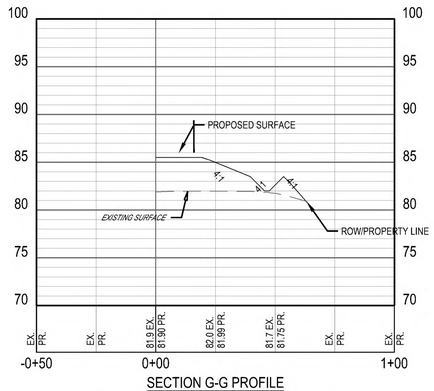
SECTION D-D PROFILE
SCALE: 1" = 20' HORIZ.; 1" = 5' VERT.



SECTION E-E PROFILE
SCALE: 1" = 20' HORIZ.; 1" = 5' VERT.



SECTION F-F PROFILE
SCALE: 1" = 20' HORIZ.; 1" = 5' VERT.



SECTION G-G PROFILE
SCALE: 1" = 20' HORIZ.; 1" = 5' VERT.

FORTY-EIGHT (48) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: FLORIDA UTILITIES PROTECTION SERVICE AT 811 OR 800-432-4770 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF FLORIDA UTILITIES PROTECTION SERVICE

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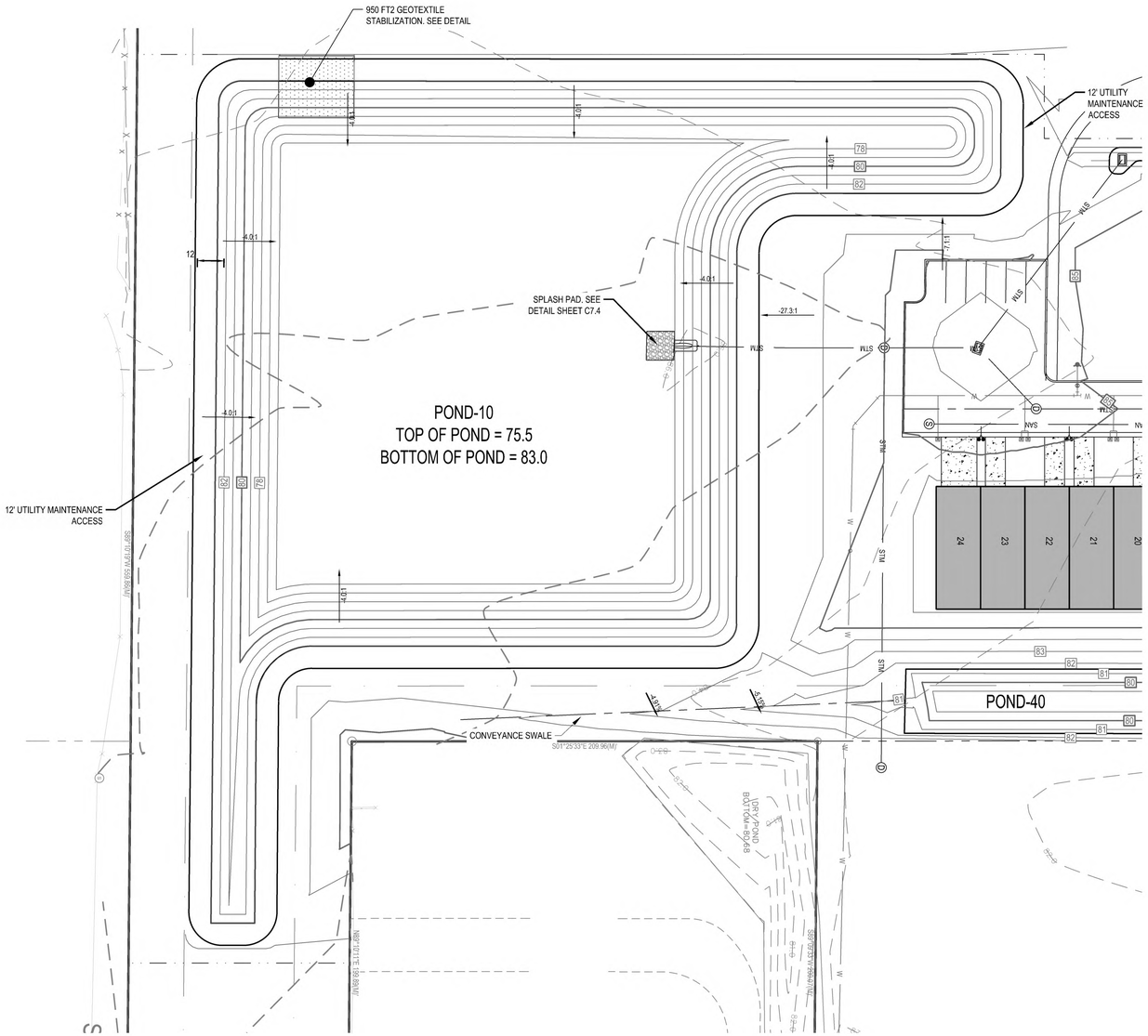
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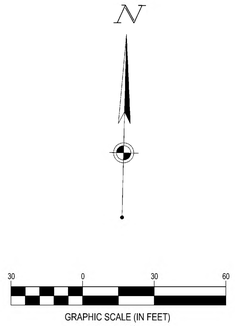
SWALE TYPICAL SECTIONS

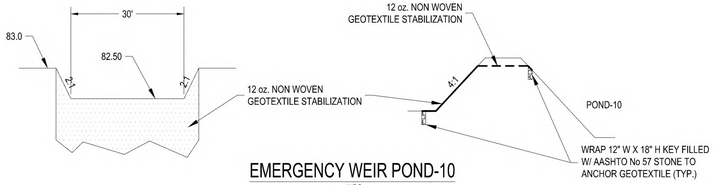
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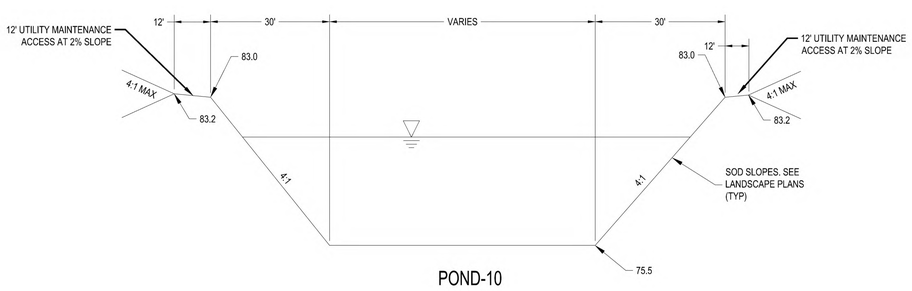




EMERGENCY WEIR POND-10
N.T.S.

MAX STAGE (FT.)									
BASIN	MEAN	2 YR-24 HR	5 YR-24 HR	10 YR-24	25 YR-24	50 YR-24	100 YR-24	25 YR-96 HR	TOP OF
POND-10	76.35	76.87	77.65	78.43	78.94	79.43	79.14	79.51	82.50
POND-20	82.00	82.10	82.36	82.62	82.81	82.99	83.17	82.99	83.50
POND-30	78.09	78.30	78.62	78.91	79.09	79.28	79.47	78.92	80.50
POND-40	78.52	78.82	79.33	79.89	80.23	80.55	80.85	79.90	81.50

MAX STAGE (FT.) FDOT 100-YEAR STORM EVENTS									
BASIN	1-HOUR	2-HOUR	4-HOUR	8-HOUR	24-HOUR	3-DAY	7-DAY	10-DAY	TOP OF BANK
POND-10	76.93	77.40	78.51	73.50	80.58	82.19	82.56	82.55	82.50
POND-20	82.31	82.41	82.85	82.97	82.42	82.15	82.00	82.00	83.50
POND-30	78.59	78.71	79.17	79.27	78.57	78.17	78.00	78.00	80.50
POND-40	79.16	79.50	80.34	80.63	79.58	78.81	78.50	78.50	81.50



POND-10
NTS

Sunshine 811

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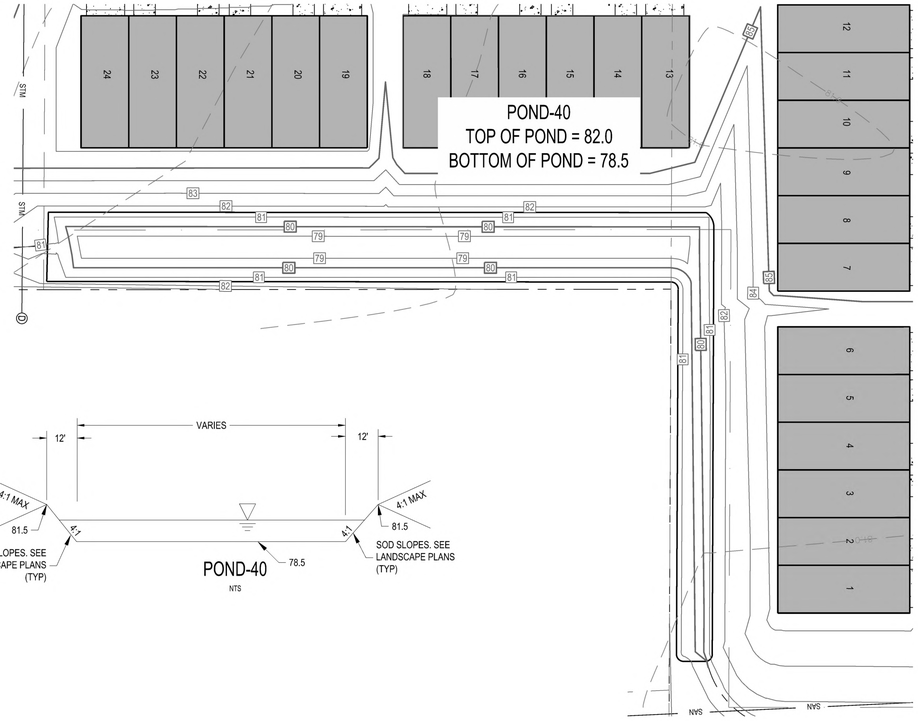
610 N SPRING GARDEN AVENUE, DELAND, FL

BASIN DETAILS

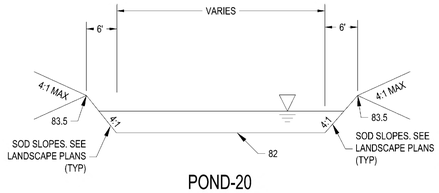
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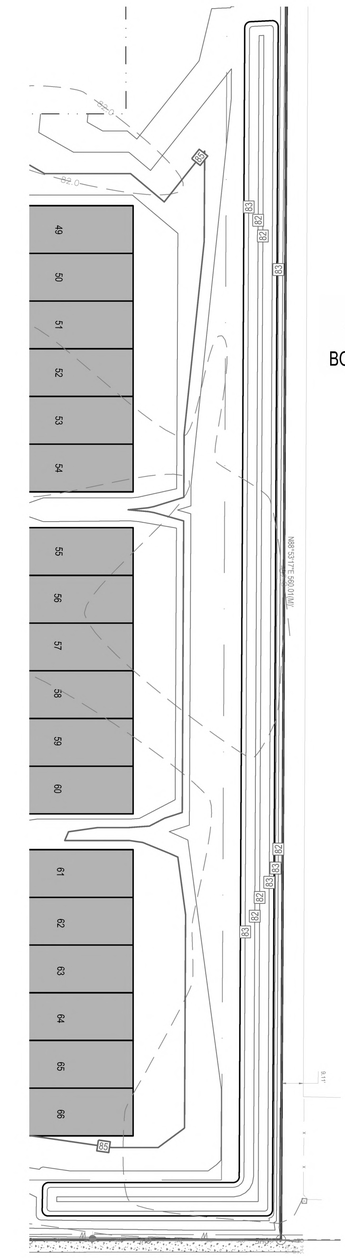
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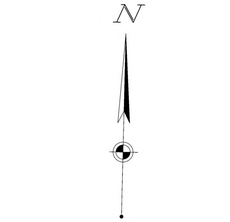
POND-40
NTS



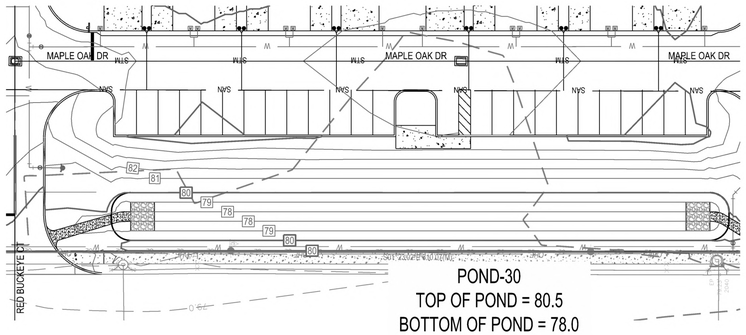
POND-20
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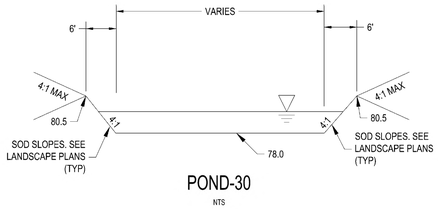
POND-20
TOP OF POND = 83.5
BOTTOM OF POND = 82.0



GRAPHIC SCALE (IN FEET)
1 in. = 30 ft.



POND-30
TOP OF POND = 80.5
BOTTOM OF POND = 78.0



POND-30
NTS

MAX STAGE (FT.)									
BASIN	MEAN	2 YR-24 HR	5 YR-24 HR	10 YR-24	25 YR-24	50 YR-24	100 YR-24	25 YR-96 HR	TOP OF
POND-10	76.35	76.87	77.65	78.43	78.94	79.43	79.14	79.51	82.50
POND-20	82.00	82.10	82.36	82.62	82.81	82.99	83.17	82.99	83.50
POND-30	78.09	78.30	78.62	78.91	79.09	79.28	79.47	78.92	80.50
POND-40	78.52	78.82	79.33	79.89	80.23	80.55	80.85	79.90	81.50

MAX STAGE (FT.) FDOT 100-YEAR STORM EVENTS									
BASIN	1-HOUR	2-HOUR	4-HOUR	8-HOUR	24-HOUR	3-DAY	7-DAY	10-DAY	TOP OF BANK
POND-10	76.93	77.40	78.51	73.50	80.58	82.19	82.56	82.55	82.50
POND-20	82.31	82.41	82.85	82.97	82.42	82.15	82.00	82.00	83.50
POND-30	78.59	78.71	79.17	79.27	78.57	78.17	78.00	78.00	80.50
POND-40	79.16	79.50	80.34	80.63	79.58	78.81	78.50	78.50	81.50

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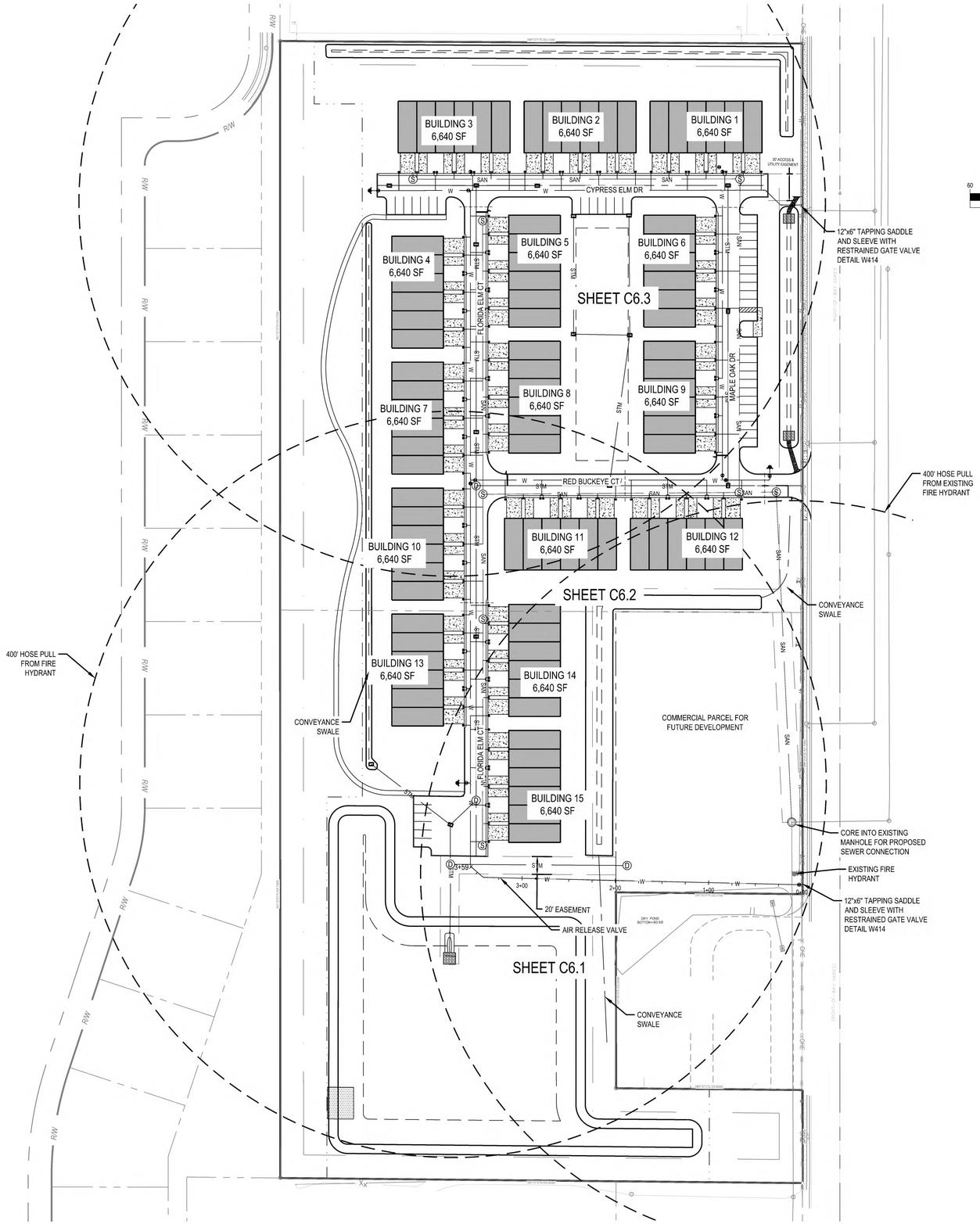
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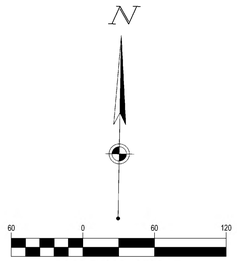
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UTILITY PLAN LEGEND

EXISTING

REFER TO C2.0 FOR EXISTING FEATURES LEGEND

PROPOSED

- CONCRETE CURB
- CONCRETE CURB & GUTTER
- STM — STORM SEWER LINE
- SAN — SANITARY SEWER LINE
- W — DOMESTIC WATER SERVICE LINE
- OHT — OVERHEAD TELEPHONE LINE
- FDOT TYPE "C" CATCH BASIN
- FDOT TYPE "D" CATCH BASIN
- FDOT TYPE "F" CATCH BASIN
- FDOT TYPE "G" CATCH BASIN
- FDOT MITERED END SECTION: 4 TO 1 SLOPE
- STORM SEWER MANHOLE
- SANITARY SEWER MANHOLE
- CO — CLEANOUT
- YD — YARD DRAIN
- FIRE HYDRANT
- WATER VALVE
- WATER METER REDUCER

REFER TO SHEET C1.1 FOR GENERAL UTILITY NOTES

REFER TO SHEET C7.0-C7.2 FOR UTILITY DETAILS

BENCHMARKS

	ELEVATION*	EASTING**	NORTHING**	DESCRIPTION
BM #1	79.66	E 552420.75	N 1710969.94	STORM DRAIN MANHOLE RIM
BM #2	84.51	E 552432.28	N 1709912.72	SANITARY MANHOLE RIM

*VERTICAL DATUM: NAVD88
**HORIZONTAL DATUM: NAD83
REFER TO SITE PLAN FOR BENCHMARK LOCATIONS

Sunshine 811

FORTY-EIGHT (48) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: FLORIDA UTILITY PROTECTION SERVICE AT 811 OR (800)-432-4770 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF FLORIDA 811.

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GARRETT MICHAEL GEORGE
LICENSE
No. 85505
7/31/23
STATE OF FLORIDA
PROFESSIONAL ENGINEER

SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

UTILITY PLAN

ISSUE:
NOT FOR CONSTRUCTION
DATE:
07/31/2023

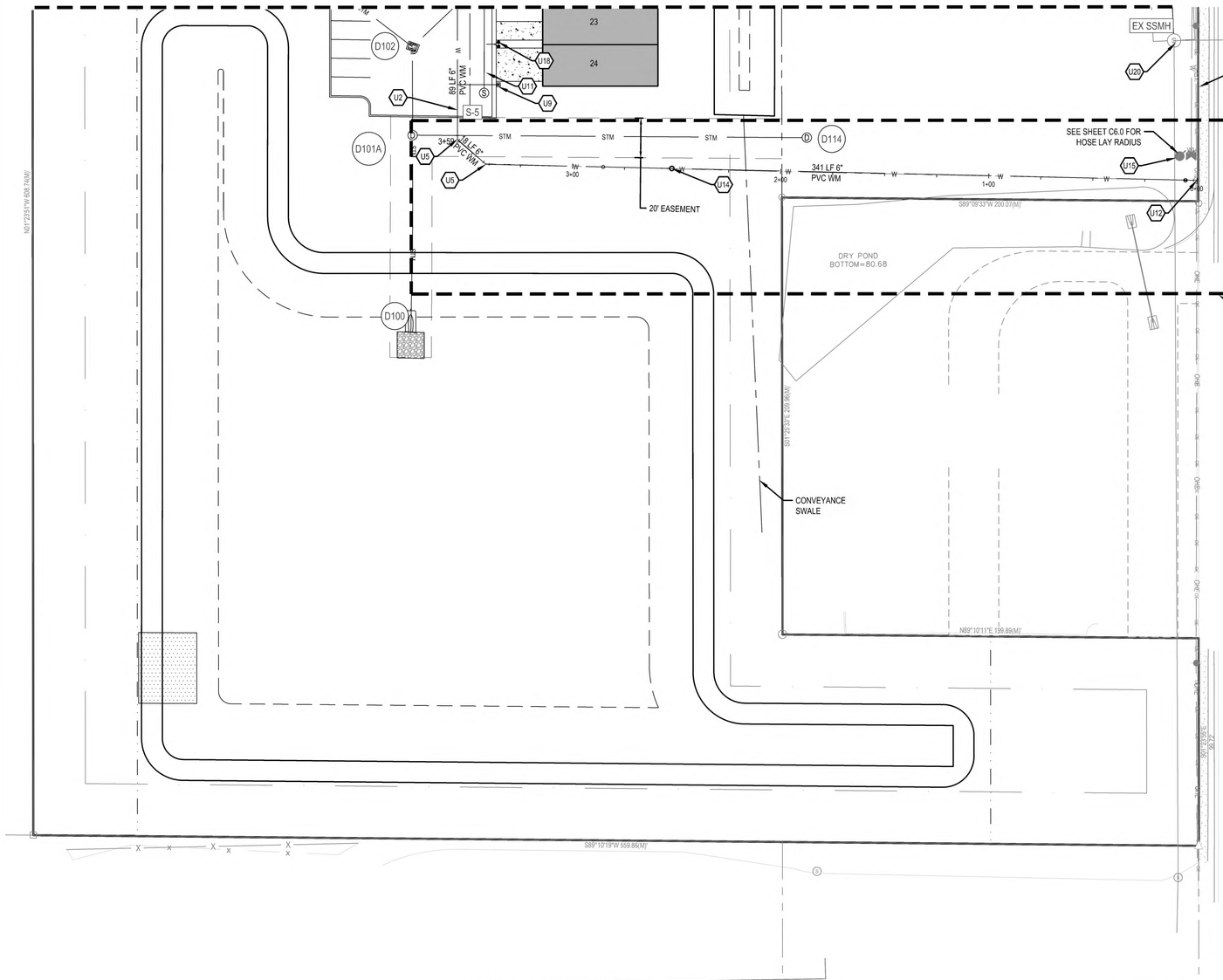
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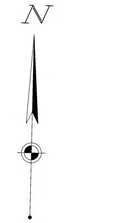
SHEET NO.
C6.0

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MATCHLINE C6.2







UTILITY LEGEND

EXISTING

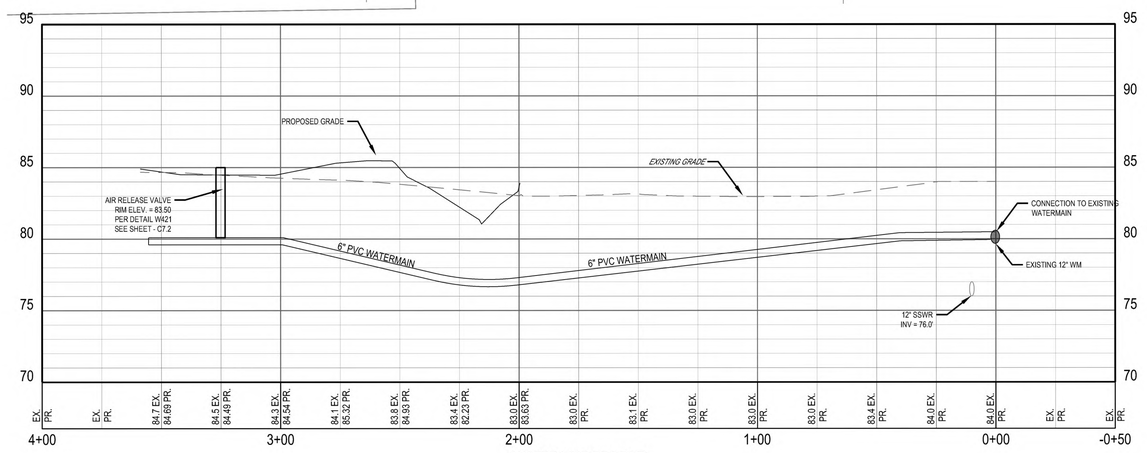
REFER TO XXX FOR EXISTING FEATURES LEGEND

PROPOSED

- BUILDING
- CONCRETE CURB
- PAVEMENT/WALK
- STM — STORM SEWER LINE
- SAN — SANITARY SEWER LINE
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- OHE — OVERHEAD ELECTRIC LINE
- UGE — UNDERGROUND ELECTRIC LINE
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- CATCH BASIN
- STORM SEWER
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- CO — CLEANOUT
- YD — YARD DRAIN
- DS — DOWNSPOUT
- ELECTRICAL TRANSFORMER PAD
- FIRE HYDRANT
- WATER VALVE
- HEADWALL WITH RIP-RAP

UTILITY PLAN KEY NOTES

CODE	DESCRIPTION	DTL# -SHT #
U1	FIRE HYDRANT ASSEMBLY WITH 6" GATE VALVE	W405 - C7.1
U2	6" PVC WATER MAIN	C7.1
U3	6"X6" TEE (RESTRAINED)	C7.2
U4	1" POTABLE WATER SERVICE LATERAL	W403 - C7.1
U5	45° BEND (RESTRAINED)	C7.1
U6	22.5° BEND (RESTRAINED)	C7.1
U7	11.25° BEND (RESTRAINED)	C7.1
U8	GATE VALVE (RESTRAINED)	FIG2308 - C7.1
U9	1" WATER METER ASSEMBLY	FIG2308 - C7.1
U10	SANITARY SERVICE LATERAL	C7.0
U11	8" PVC SANITARY SEWER MAIN	S305 - C7.0
U12	12" x 6" TAPPING SADDLE & SLEEVE W/ VALVE	W414 - C7.2
U13	WATER MAIN BLOWOFF	FIG2310 - C7.3
U14	AIR RELEASE VALVE (DOMESTIC)	C7.1
U15	EXISTING FIRE HYDRANT	
U16	EXISTING WATER MAIN	
U17	WATER METER AND BACKFLOW ASSEMBLY FOR IRRIGATION STUB	W411 - C7.2
U18	SEWER DOUBLE CLEANOUT	S308, C7.0
U19	1" DOUBLE WATER METER ASSEMBLY	
U20	CORE DRILL CONNECT TO EXISTING SSMH	
U21	6"X8" TEE (RESTRAINED)	W413, C7.2
U22	IRRIGATION SLEEVES 6"	



WATER LINE PROFILE
SCALE: 1" = 30' HORIZ.; 1" = 5' VERT.

Sunshine 811

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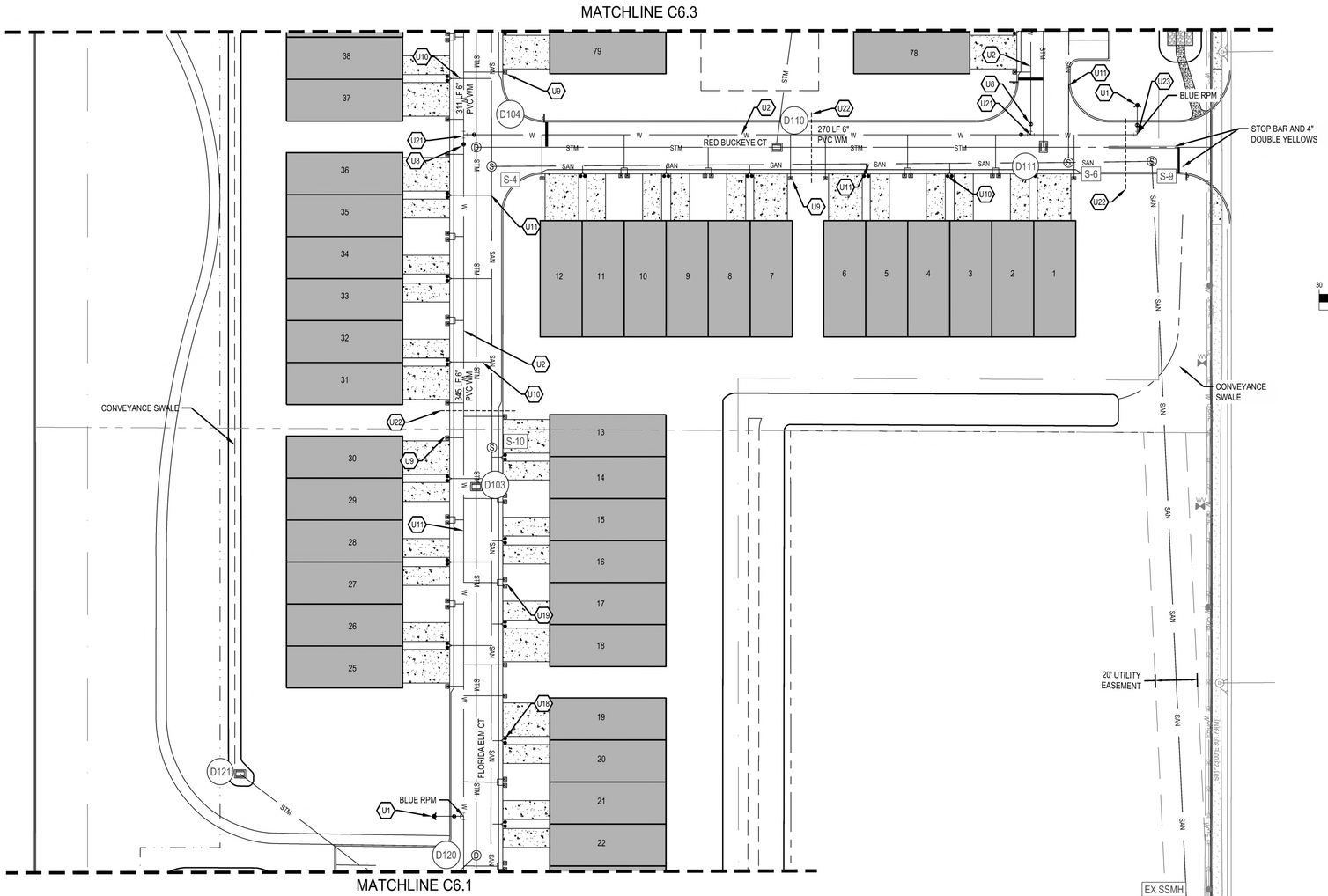
SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

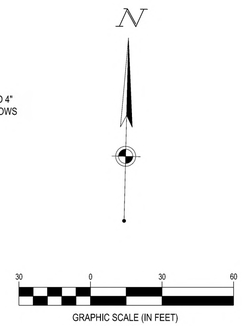
UTILITY PLAN

ISSUE:
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07/31/2023

JOB NO.:	761391
DESIGN:	RSH
DRAWN:	RSH
CHECKED:	CSG

SHEET NO.
C6.1





UTILITY LEGEND

EXISTING

REFER TO XXX FOR EXISTING FEATURES LEGEND

PROPOSED

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- PAVEMENT/WALK
- STM — STORM SEWER LINE
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U8	GATE VALVE (RESTRAINED)	FIG2308 - C7.1
U9	1" WATER METER ASSEMBLY	FIG2308 - C7.1
U10	SANITARY SERVICE LATERAL	C7.0
U11	8" PVC SANITARY SEWER MAIN	S305 - C7.0
U12	12" x 6" TAPPING SADDLE & SLEEVE W/ VALVE	W414 - C7.2
U13	WATER MAIN BLOWOFF	FIG2310 - C7.3
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U16	EXISTING WATER MAIN	
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U22	IRRIGATION SLEEVES 6"	

Sunshine 811

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REVISION DESCRIPTION
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GARRETT MICHAEL GEORGE
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7/31/23
STATE OF FLORIDA
PROFESSIONAL ENGINEER

SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

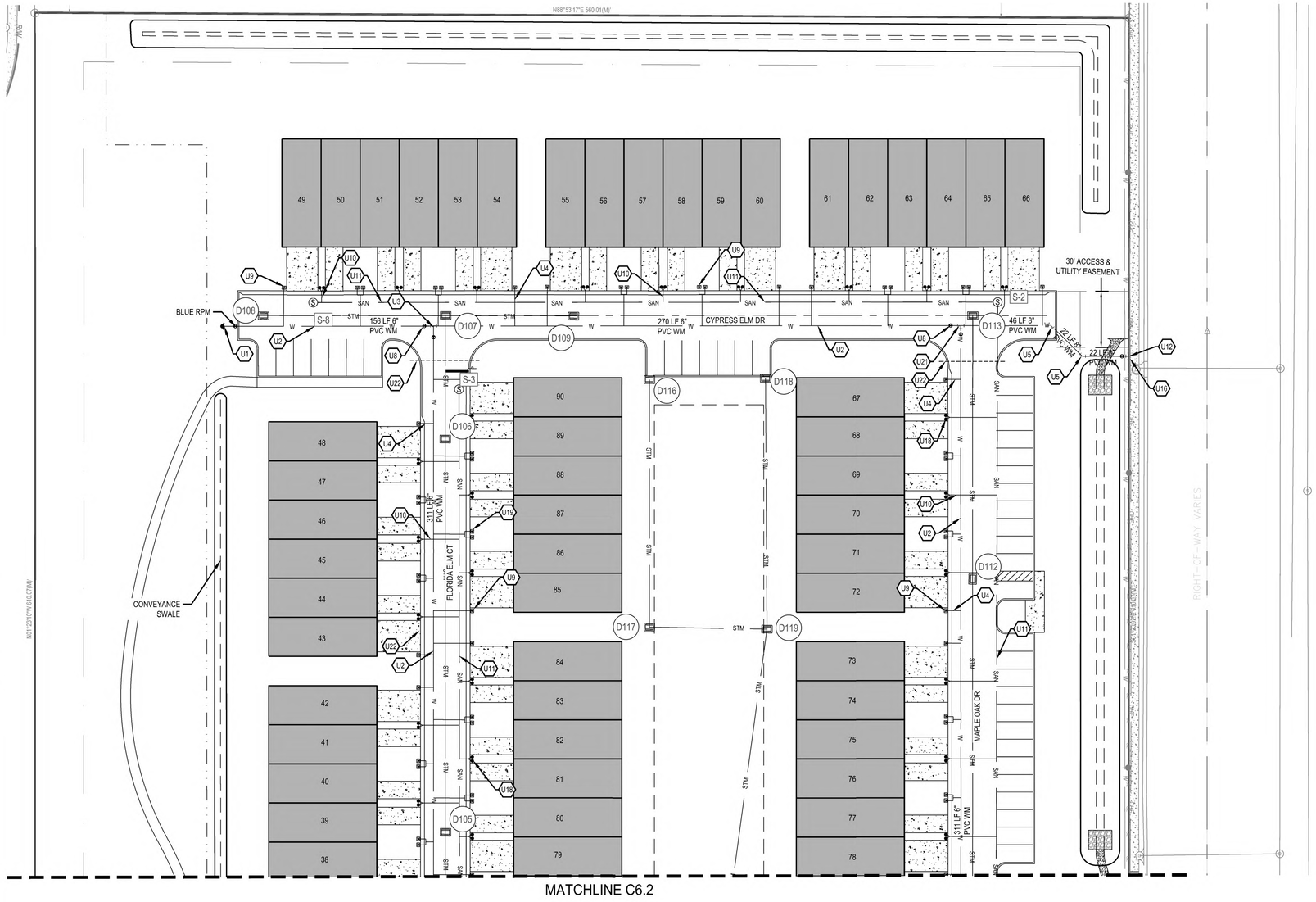
UTILITY PLAN

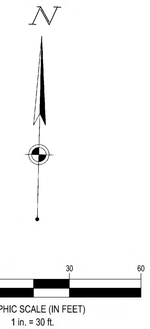
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C6.2

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UTILITY LEGEND

EXISTING

REFER TO XXX FOR EXISTING FEATURES LEGEND

PROPOSED

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- PAVEMENT/WALK
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Sunshine 811

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7/31/23
STATE OF FLORIDA
PROFESSIONAL ENGINEER

SPRING GARDEN TOWNHOMES DELAND, FL

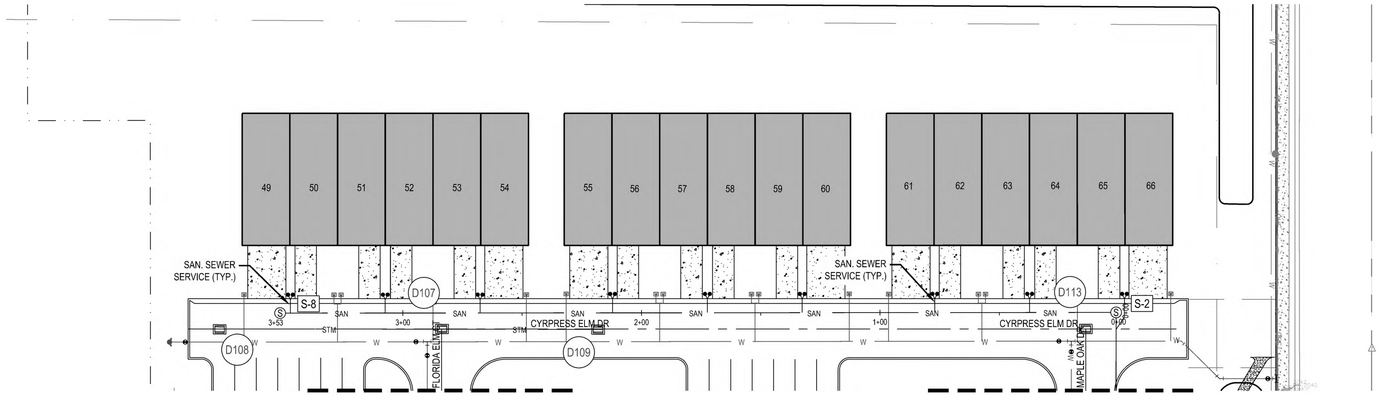
610 N SPRING GARDEN AVENUE, DELAND, FL

UTILITY PLAN

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C6.3



MATCHLINE - SEE SHEET C6.5

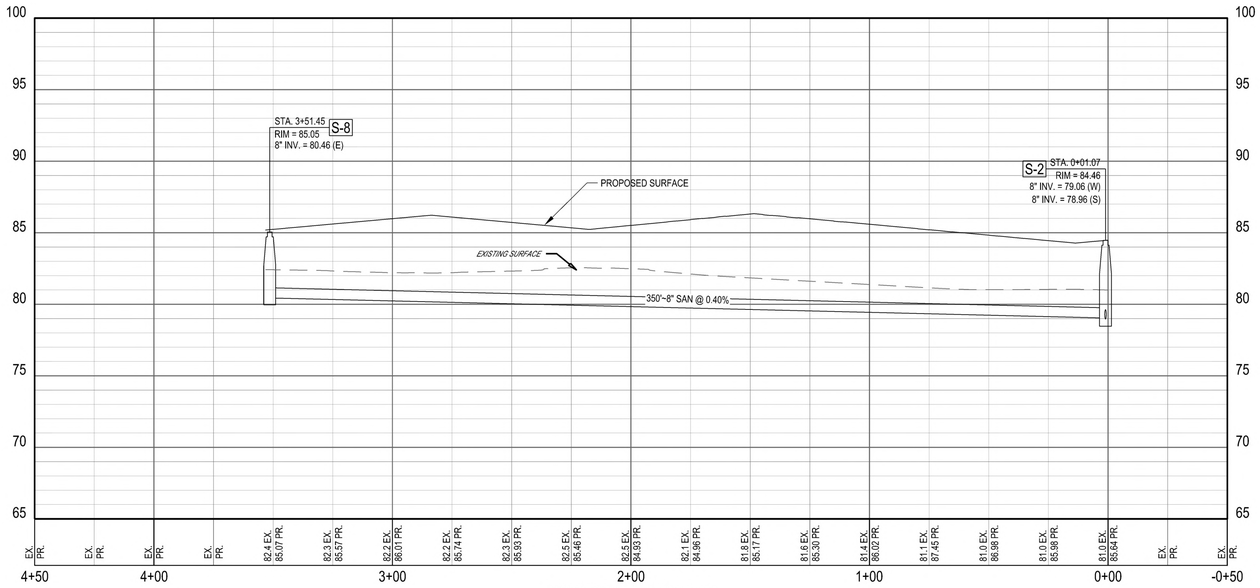
MATCHLINE - SEE SHEET C6.6

EXISTING SEWER MAIN.
MATERIAL AND SIZE UNAVAILABLE

N

30 0 30 60

GRAPHIC SCALE (IN FEET)
1 in. = 30 ft.



CYPRESS ELM DR PROFILE
SCALE: 1" = 30' HORIZ.; 1" = 5' VERT.

Sunshine811

FORTY-EIGHT (48) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: FLORIDA UTILITIES PROTECTION SERVICE AT 811 OR 800-432-4770 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF FLORIDA UTILITIES PROTECTION SERVICE

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STATE OF FLORIDA
PROFESSIONAL ENGINEER

SPRING GARDEN TOWNHOMES DELAND, FL

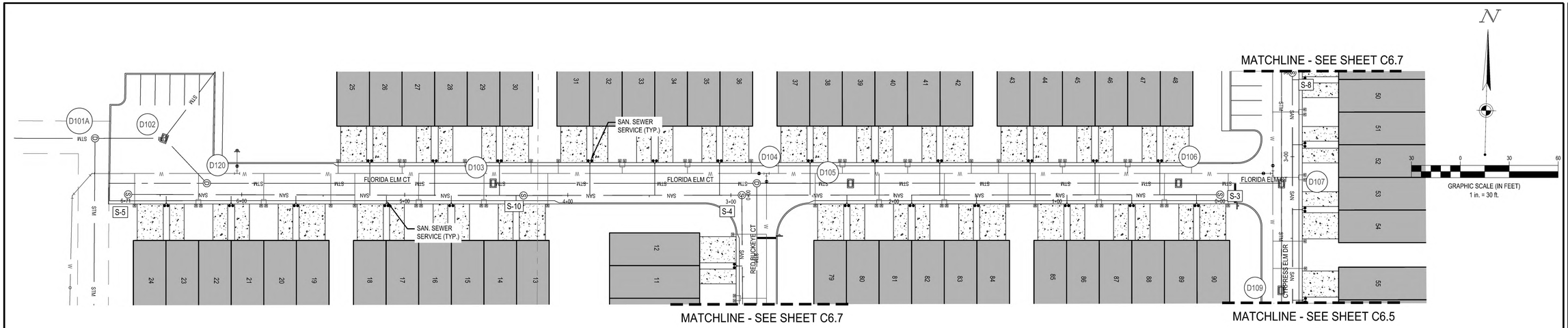
610 N SPRING GARDEN AVENUE, DELAND, FL

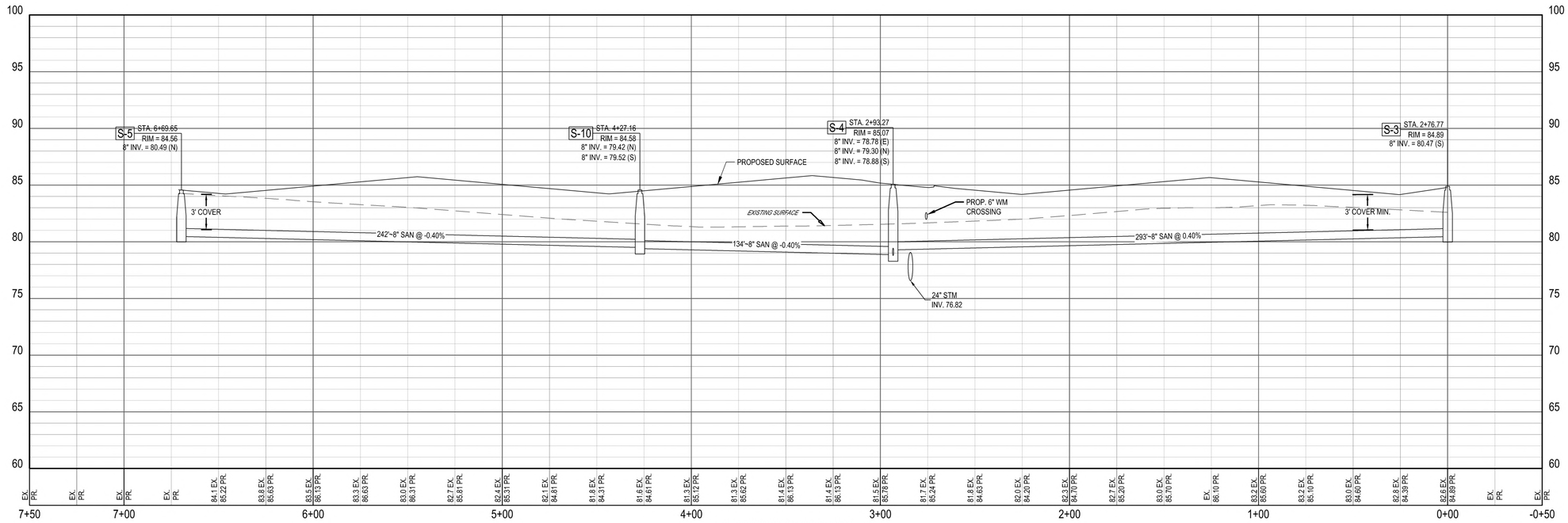
SAN. SEWER PLAN & PROFILE

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CHECKED:	CSG

SHEET NO.
C6.4

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FLORIDA ELM CT PROFILE
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FORTY-EIGHT (48) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: FLORIDA UTILITIES PROTECTION SERVICE AT 811 OR 800-432-4770 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF FLORIDA UTILITIES PROTECTION SERVICE

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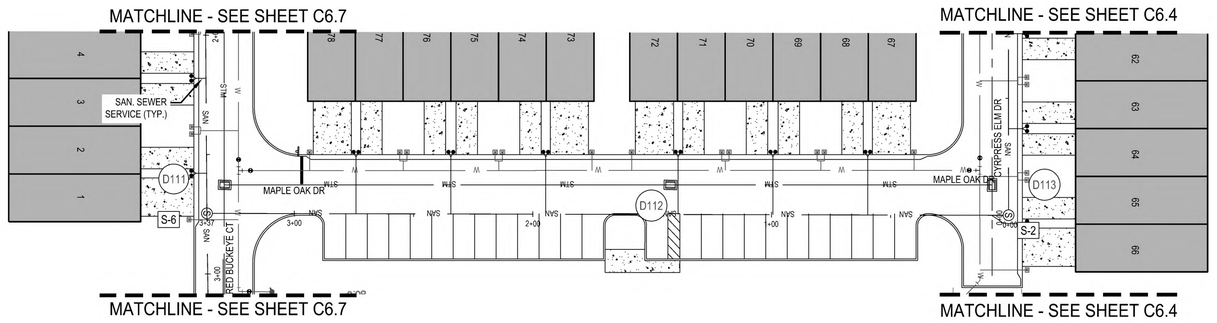
SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

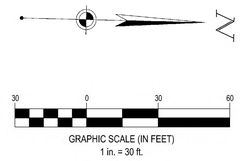
SAN. SEWER PLAN & PROFILE

ISSUE: NOT FOR CONSTRUCTION
DATE: 07/31/2023
JOB NO.: 761391
DESIGN: RSH
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W:\PROJECTS\DOCM\761391 - DELAND FL N SPRING GARDEN AVE - FORD TH\03-CIVIL\PLAN\PD PLAN\PLOT SHEETS\761391 - C6.4 - SAN SEWER PLAN AND PROFILE.DWG - 7/31/2023 8:59 AM





MAPLE OAK DR PROFILE
SCALE: 1" = 30' HORIZ.; 1" = 5' VERT.

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DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

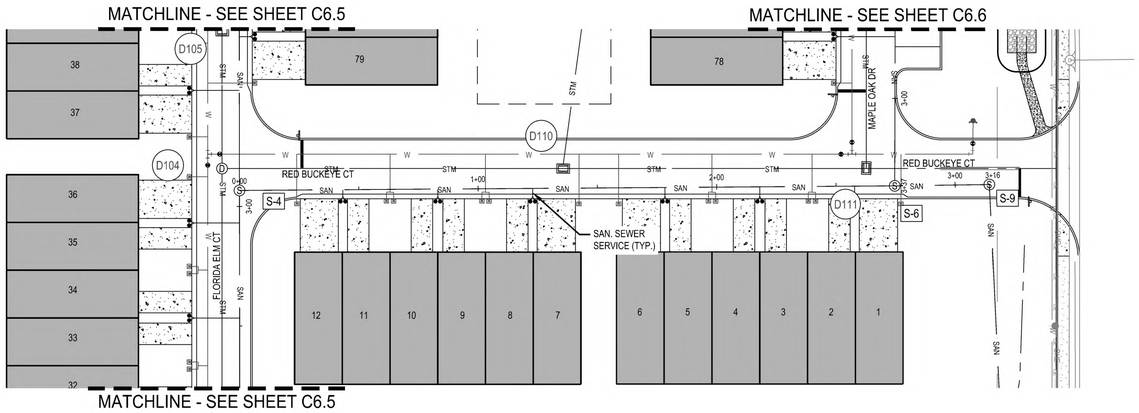
SAN. SEWER PLAN & PROFILE

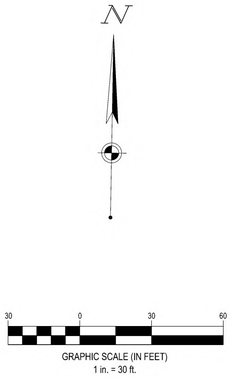
Sunshine811

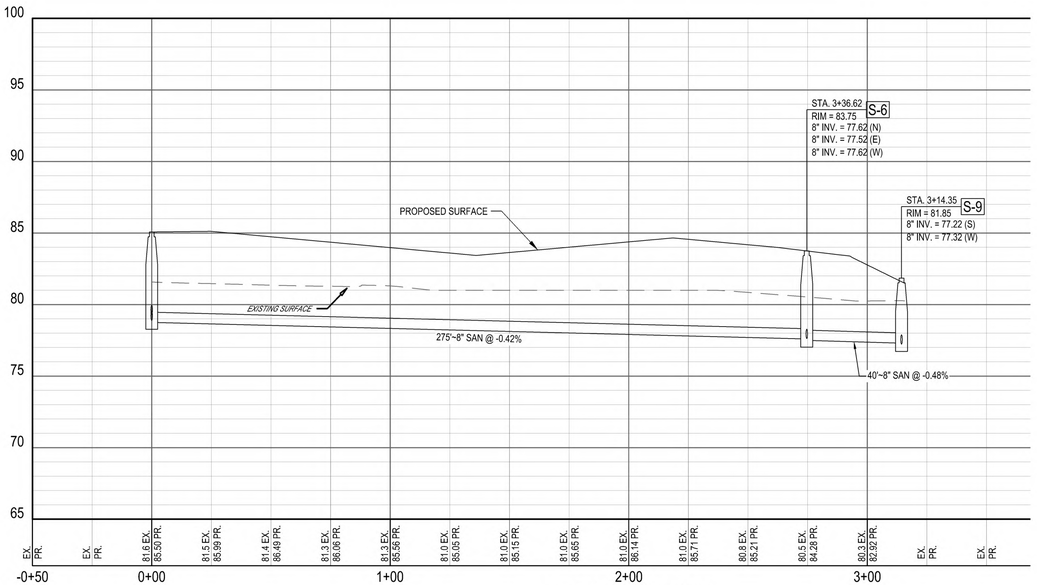
FORTY-EIGHT (48) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: FLORIDA UTILITIES PROTECTION SERVICE AT 811 OR 800-432-4770 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF FLORIDA UTILITIES PROTECTION SERVICE

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SHEET NO.
C6.6







RED BUCKEYE CT PROFILE
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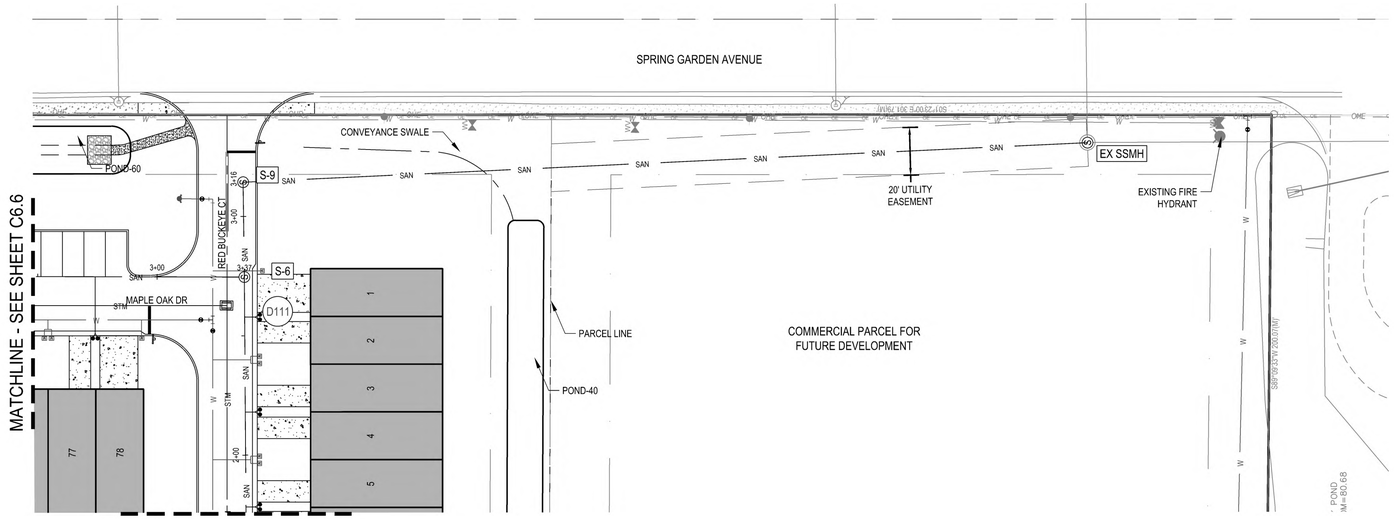
610 N SPRING GARDEN AVENUE, DELAND, FL

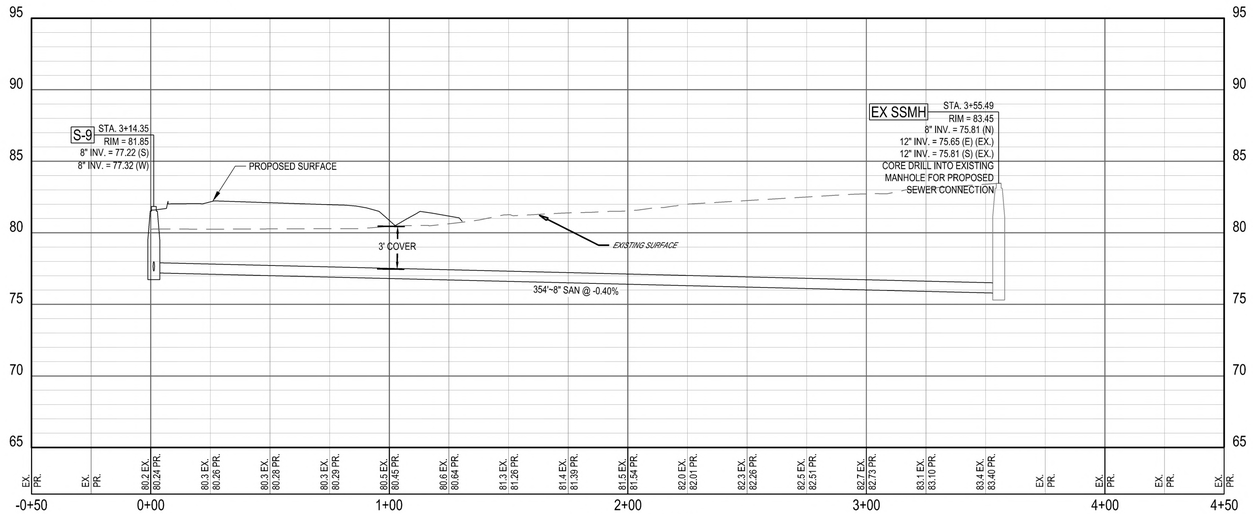
SAN. SEWER PLAN & PROFILE

Sunshine 811

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SHEET NO.	C6.7





SSWR OFFSITE PROFILE
SCALE: 1" = 30' HORIZ.; 1" = 5' VERT.

GRAPHIC SCALE (IN FEET)
1 in. = 30 ft.

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DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

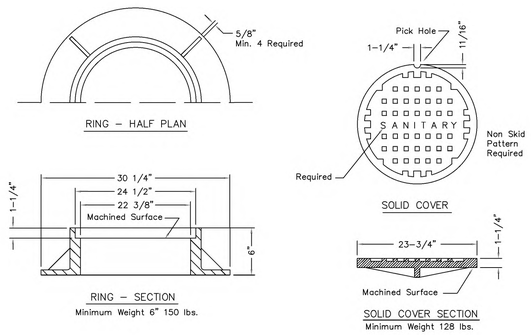
SAN.SEWER PLAN & PROFILE

ISSUE: NOT FOR CONSTRUCTION
DATE: 07/31/2023
JOB NO.: 761391
DESIGN: RSH
DRAWN: RSH
CHECKED: CSG
SHEET NO. C6.8

Sunshine811

FORTY-EIGHT (48) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: FLORIDA UTILITIES PROTECTION SERVICE AT 811 OR 800-432-4770 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF FLORIDA UTILITIES PROTECTION SERVICE

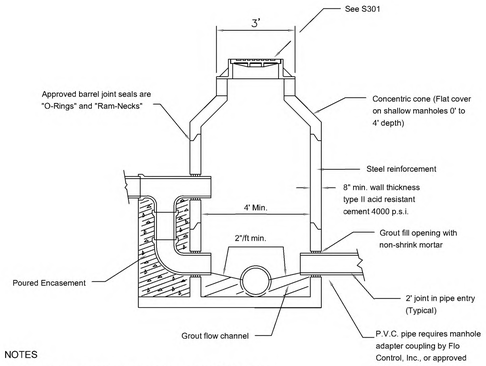
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NOTE:
Manufacturers model of storm ring and cover to be approved by City Engineer.

DATE: 11/07/2022 **SANITARY MANHOLE COVER - USF 170-E** S301

City of DeLand - Standard Details



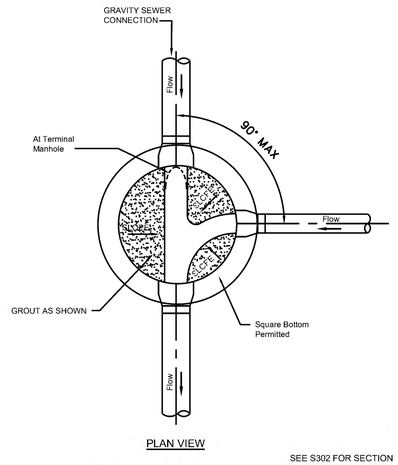
NOTES

1. Precast manhole drop may be approved by City Engineer. Shop drawing submittal required.
2. Drop required when 2' or over.
3. Manholes shall have an interior and exterior coating of at least 15 mils dry thickness PROLO EP214-351 Epoxi-Mastic
4. Polymer concrete manholes are accepted upon review and approval by the City of DeLand Engineering Dept.

SEE S303 FOR PLAN VIEW

DATE: 11/07/2022 **SANITARY MANHOLE** S302

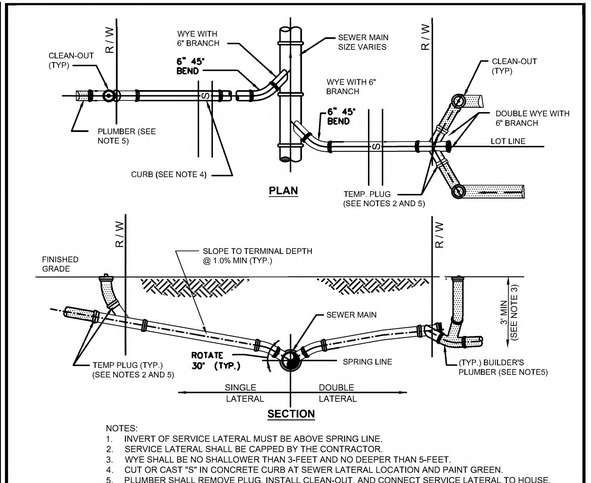
City of DeLand - Standard Details



SEE S302 FOR SECTION

DATE: 11/07/2022 **SANITARY MANHOLE** S303

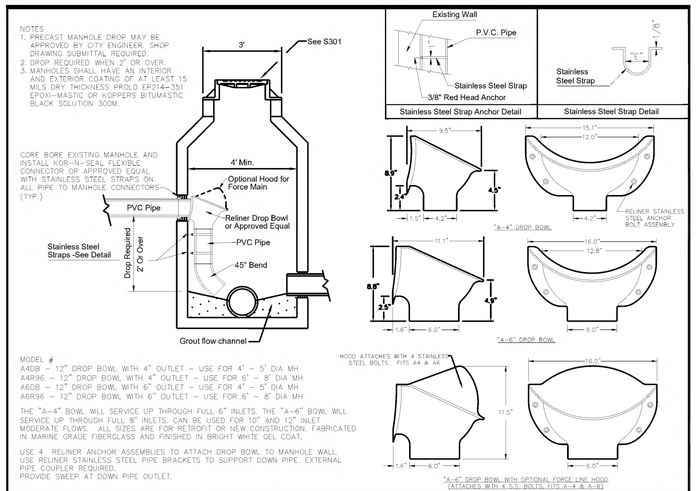
City of DeLand - Standard Details



NOTES:
1. INVERT OF SERVICE LATERAL MUST BE ABOVE SPRING LINE.
2. SERVICE LATERAL SHALL BE CAPPED BY THE CONTRACTOR.
3. WYE SHALL BE NO SHALLOWER THAN 3-FEET AND NO DEEPER THAN 5-FEET.
4. CUT OR CAST "S" IN CONCRETE CURB AT SEWER LATERAL LOCATION AND PAINT GREEN.
5. PLUMBER SHALL REMOVE PLUG, INSTALL CLEAN-OUT, AND CONNECT SERVICE LATERAL TO HOUSE.

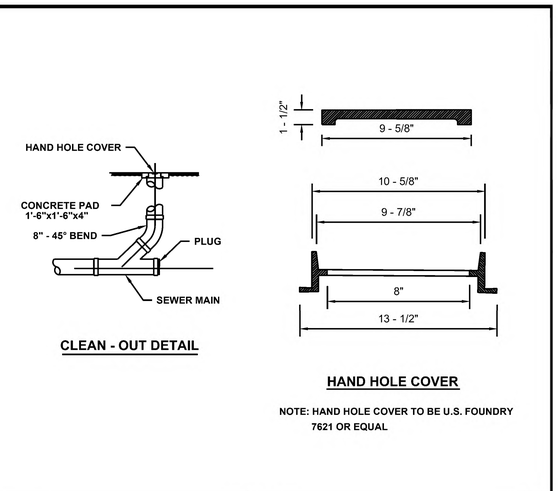
DATE: 11/07/2022 **SANITARY SERVICE LATERIALS** S305

City of DeLand - Standard Details



DATE: 11/07/2022 **SANITARY MANHOLE - INSIDE DROP FOR GRAVITY & FORCEMAIN** S304

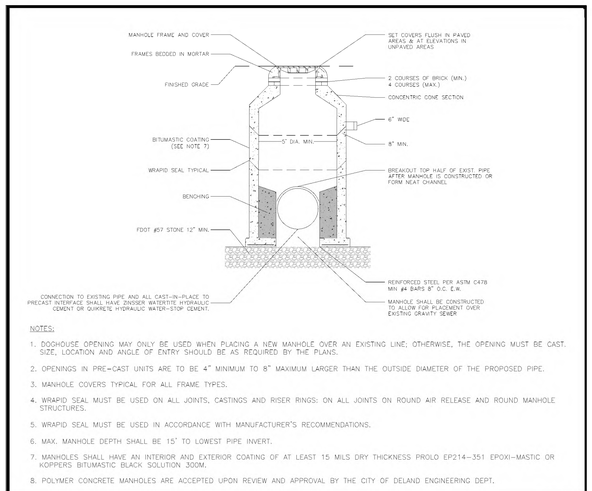
City of DeLand - Standard Details



NOTE: HAND HOLE COVER TO BE U.S. FOUNDRY 7621 OR EQUAL

DATE: 11/07/2022 **CLEAN - OUT** S308

City of DeLand - Standard Details



NOTES:
1. DOGHOUSE OPENING MAY ONLY BE USED WHEN PLACING A NEW MANHOLE OVER AN EXISTING LINE; OTHERWISE, THE OPENING MUST BE CAST. SIZE, LOCATION AND ANGLE OF ENTRY SHOULD BE AS REQUIRED BY THE PLANS.
2. OPENINGS IN PRE-CAST UNITS ARE TO BE 4" MINIMUM TO 8" MAXIMUM LARGER THAN THE OUTSIDE DIAMETER OF THE PROPOSED PIPE.
3. MANHOLE COVERS TYPICAL FOR ALL FRAME TYPES.
4. WRAPID SEAL MUST BE USED ON ALL JOINTS, CASTINGS AND RISER RINGS: ON ALL JOINTS ON ROUND AIR RELEASE AND ROUND MANHOLE STRUCTURES.
5. WRAPID SEAL MUST BE USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
6. MAX. MANHOLE DEPTH SHALL BE 15' TO LOWEST PIPE INVERT.
7. MANHOLES SHALL HAVE AN INTERIOR AND EXTERIOR COATING OF AT LEAST 15 MILS DRY THICKNESS PROLO EP214-351 EPOXI-MASTIC OR KOPPERS BITUMASTIC BLACK SOLUTION 300M.
8. POLYMER CONCRETE MANHOLES ARE ACCEPTED UPON REVIEW AND APPROVAL BY THE CITY OF DELAND ENGINEERING DEPT.

DATE: 11/07/2022 **DOGHOUSE MANHOLE** S309

City of DeLand - Standard Details

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NO.	DATE	REVISION DESCRIPTION

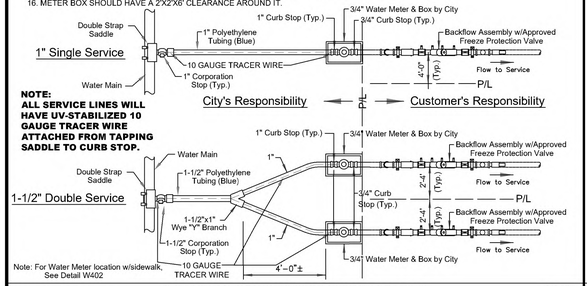
GARRETT MICHAEL GEORGE
LICENSE
No. 85905
STATE OF FLORIDA
PROFESSIONAL ENGINEER
7/31/23

SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

UTILITY DETAILS

ISSUE: NOT FOR CONSTRUCTION
DATE: 07/31/2023
JOB NO.: 761391
DESIGN: RSH
DRAWN: RSH
CHECKED: CSG
SHEET NO. C7.0

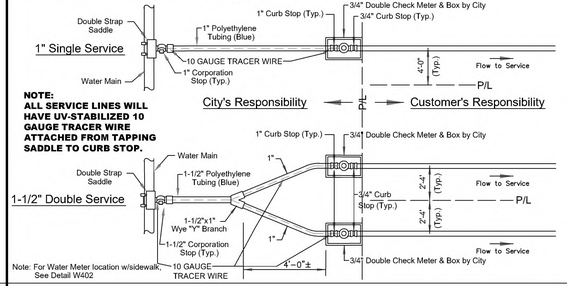
NOTES:
1. WATER MAINS TO BE ON NORTH or EAST SIDE OF R.O.W., APPROX. 4 FT. BACK OF CURB UNLESS OTHERWISE AUTHORIZED BY CITY ENGINEER.
2. SERVICE CONNECTIONS TO BE 4 FT. FROM SIDE LOT LINE ON EITHER SIDE OF LOT. THESE SERVICES TO BE CONSISTENT WITHIN THE SUBDIVISION. DRIVEWAYS SHALL NOT BE BUILT OVER METERS.
3. ALL LINES SHALL BE CHLORINATED and PRESSURE TESTED (TEST FOR TWO HOURS @ 150 P.S.I.) UNDER THE DIRECTION OF THE UTILITIES DEPARTMENT. AFTER SUCCESSFUL COMPLETION OF THE TESTING and CHLORINATION, THE PRESSURE SHALL REMAIN ON THE SYSTEM AT ALL TIMES.
4. TEN FT. SEPARATION REQUIRED BETWEEN PARALLEL WATER & SANITARY SEWER LINES.
5. SADDLE IS REQUIRED FOR ALL SERVICE CONNECTIONS TO 4" PVC MAINS. SADDLE IS REQUIRED FOR 2" SERVICE CONNECTIONS TO 6" and LARGER PVC MAINS. LARGEST SERVICE CONNECTION TO A 4" MAIN IS MIN. 1-1/2" and LARGEST TO ANY MAIN IS 2".
6. MINIMUM DISTANCE BETWEEN SERVICE TAPS TO BE NOT LESS THAN 36".
7. SINGLE SERVICE TAP SHALL BE 1".
8. DOUBLE SERVICE TAP SHALL BE 1-1/ 2".
9. ALL FITTINGS SHALL BE BRASS ONLY.
10. ALL CORPORATION STOPS, SHALL BE "FORD" OR "MUELLER" ONLY.
11. FREEZE PROTECTION VALVE, SHALL BE "CONBRACO" 40LF000FPV2F.
12. ALL 3/4", 1", 1-1/2", & 2" W.M., SHALL BE SDR 9, 200 psi, ASTMD 2737, (BLUE) POLYETHYLENE TUBING.
13. ALL BRASS FITTINGS SHALL BE LEAD FREE.
14. NO GALVANIZED FITTINGS CONNECTED TO BRASS FITTINGS.
15. PLANTINGS AND OBSTRUCTIONS SHOULD BE AVOIDED WITHIN 3 FT. RADIUS FOR SERVICE ACTIVITY.
16. METER BOX SHOULD HAVE A 2'X2'X6' CLEARANCE AROUND IT.



DATE: 11/07/2022 **WATER MAIN SERVICE CONNECTION (BACKFLOW)** **W401**

City of DeLand - Standard Details

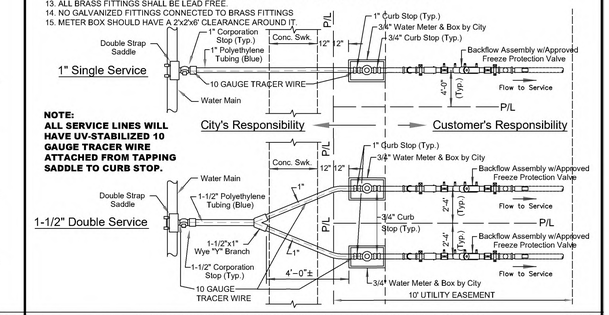
NOTES:
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2. SERVICE CONNECTIONS TO BE 4 FT. FROM SIDE LOT LINE ON EITHER SIDE OF LOT. THESE SERVICES TO BE CONSISTENT WITHIN THE SUBDIVISION. DRIVEWAYS SHALL NOT BE BUILT OVER METERS.
3. ALL LINES SHALL BE CHLORINATED and PRESSURE TESTED (TEST FOR TWO HOURS @ 150 P.S.I.) UNDER THE DIRECTION OF THE UTILITIES DEPARTMENT. AFTER SUCCESSFUL COMPLETION OF THE TESTING and CHLORINATION, THE PRESSURE SHALL REMAIN ON THE SYSTEM AT ALL TIMES.
4. TEN FT. SEPARATION REQUIRED BETWEEN PARALLEL WATER & SANITARY SEWER LINES.
5. SADDLE IS REQUIRED FOR ALL SERVICE CONNECTIONS TO 4" PVC MAINS. SADDLE IS REQUIRED FOR 2" SERVICE CONNECTIONS TO 6" and LARGER PVC MAINS. LARGEST SERVICE CONNECTION TO A 4" MAIN IS MIN. 1-1/2" and LARGEST TO ANY MAIN IS 2".
6. MINIMUM DISTANCE BETWEEN SERVICE TAPS TO BE NOT LESS THAN 36".
7. SINGLE SERVICE TAP SHALL BE 1".
8. DOUBLE SERVICE TAP SHALL BE 1-1/ 2".
9. ALL FITTINGS SHALL BE BRASS ONLY.
10. ALL CORPORATION STOPS, SHALL BE "FORD" OR "MUELLER" ONLY.
11. ALL 3/4", 1", 1-1/2", & 2" W.M., SHALL BE SDR 9, 200 psi, ASTMD 2737, (BLUE) POLYETHYLENE TUBING.
12. ALL BRASS FITTINGS SHALL BE LEAD FREE.
13. NO GALVANIZED FITTINGS CONNECTED TO BRASS FITTINGS.
14. PLANTINGS AND OBSTRUCTIONS SHOULD BE AVOIDED WITHIN 3 FT. RADIUS FOR SERVICE ACTIVITY.
15. METER BOX SHOULD HAVE A 2'X2'X6' CLEARANCE AROUND IT.



DATE: 11/07/2022 **WATER MAIN SERVICE CONNECTION (DOUBLE CHECK METER)** **W401A**

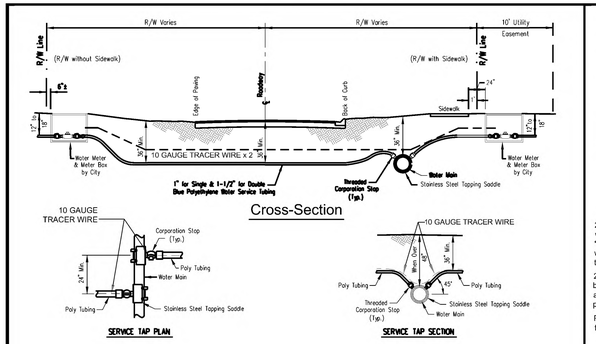
City of DeLand - Standard Details

NOTES:
1. WATER MAINS TO BE ON NORTH or EAST SIDE OF R.O.W., APPROX. 4 FT. BACK OF CURB UNLESS OTHERWISE AUTHORIZED BY CITY ENGINEER.
2. SERVICE CONNECTIONS TO BE 4 FT. FROM SIDE LOT LINE ON EITHER SIDE OF LOT. THESE SERVICES TO BE CONSISTENT WITHIN THE SUBDIVISION. DRIVEWAYS SHALL NOT BE BUILT OVER METERS.
3. ALL LINES SHALL BE CHLORINATED and PRESSURE TESTED (TEST FOR TWO HOURS @ 150 P.S.I.) UNDER THE DIRECTION OF THE UTILITIES DEPARTMENT. AFTER SUCCESSFUL COMPLETION OF THE TESTING and CHLORINATION, THE PRESSURE SHALL REMAIN ON THE SYSTEM AT ALL TIMES.
4. TEN FT. SEPARATION REQUIRED BETWEEN PARALLEL WATER & SANITARY SEWER LINES.
5. SADDLE IS REQUIRED FOR ALL SERVICE CONNECTIONS TO 4" PVC MAINS. SADDLE IS REQUIRED FOR 2" SERVICE CONNECTIONS TO 6" and LARGER PVC MAINS. LARGEST SERVICE CONNECTION TO A 4" MAIN IS MIN. 1-1/2" and LARGEST TO ANY MAIN IS 2".
6. MINIMUM DISTANCE BETWEEN SERVICE TAPS TO BE NOT LESS THAN 36".
7. SINGLE SERVICE TAP SHALL BE 1".
8. DOUBLE SERVICE TAP SHALL BE 1-1/ 2".
9. ALL FITTINGS SHALL BE BRASS ONLY.
10. ALL CORPORATION STOPS, SHALL BE "FORD" OR "MUELLER" ONLY.
11. ALL 3/4", 1", 1-1/2", & 2" W.M., SHALL BE SDR 9, 200 psi, ASTMD 2737, (BLUE) POLYETHYLENE TUBING.
12. ALL BRASS FITTINGS SHALL BE LEAD FREE.
13. NO GALVANIZED FITTINGS CONNECTED TO BRASS FITTINGS
14. PLANTINGS AND OBSTRUCTIONS SHOULD BE AVOIDED WITHIN 3 FT. RADIUS FOR SERVICE ACTIVITY.
15. METER BOX SHOULD HAVE A 2'x2'x6' CLEARANCE AROUND IT.



DATE: 11/07/2022 **WATER MAIN SERVICE CONNECTION WITH SIDEWALK (BACKFLOW)** **W402**

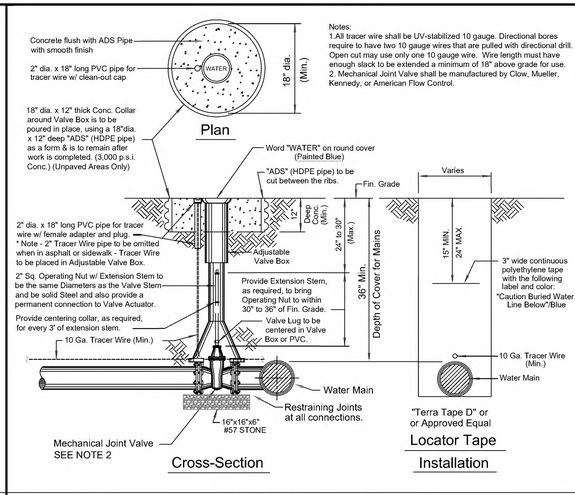
City of DeLand - Standard Details



NOTES:
1. **SINGLE WATER SERVICE SHALL BE, 1" POLYETHYLENE TUBING (BLUE).**
2. **DOUBLE WATER SERVICE SHALL BE, 1-1/2" POLYETHYLENE TUBING (BLUE).**
3. **WATER MAINS TO BE MIN. 36" BELOW GRADE and APPROX. 4' BACK OF CURB.**
4. **CURB STOP TO BE LOCATED APPROX. 2 FOOT BACK OF RIGHT-OF-WAY AND MUST HAVE LOCK WING.**
5. **SERVICE LINE TO BE MIN. 36" BELOW GRADE IN RIGHT-OF-WAY.**
6. **ALL 3/4", 1", 1-1/2" & 2" W.M., SHALL BE SDR 9, 200 psi, ASTMD 2737, (BLUE) POLYETHYLENE TUBING.**
7. **ALL TRACER WIRE SHALL BE (BLUE) UV-STABILIZED 10 GAUGE. DIRECTIONAL BORES REQUIRED TO HAVE TWO 10 GAUGE WIRES THAT ARE PULLED WITH DIRECTIONAL DRILL. OPEN CUT MAY USE ONLY ONE 10 GAUGE WIRE.**
8. **ALL SERVICE TAPS TO MEET AWWA STANDARD 45° FROM HORIZONTAL UNLESS PRIOR AUTHORIZATION RECEIVED FROM CITY.**
9. **ALL SERVICE LINES WILL HAVE TRACER WIRE ATTACHED FROM TAPPING SADDLE TO CURB STOP.**

DATE: 11/07/2022 **WATER MAIN SERVICE LINES** **W403**

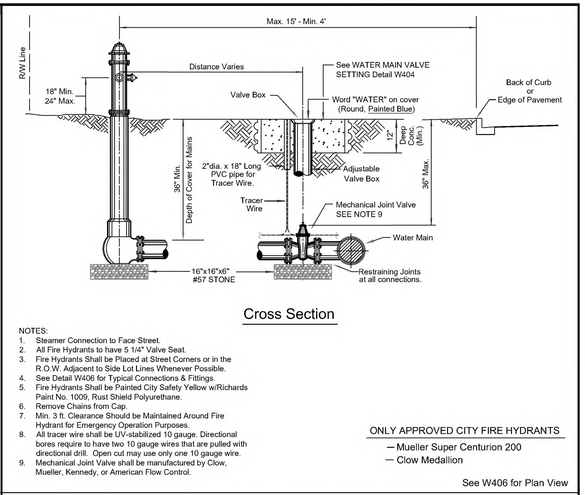
City of DeLand - Standard Details



Notes:
1.All tracer wire shall be UV-stabilized 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use.
2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.

DATE: 11/07/2022 **WATER MAIN VALVE SETTING** **W404**

City of Deland - Standard Details



NOTES:
1. Steamer Connection to Face Street.
2. All Fire Hydrants to have 5 1/4" Valve Seat.
3. Fire Hydrants Shall be Placed at Street Corners or in the R.O.W. Adjacent to Side Lot Lines Whenever Possible.
4. See Detail W406 for Typical Connections & Fittings.
5. Fire Hydrants Shall be Painted City Safety Yellow w/Richards Paint No. 1009, Rust Shield Polyurethane.
6. Remove Chains from Cap.
7. Min. 3 ft. Clearance Should be Maintained Around Fire Hydrant for Emergency Operation Purposes.
8. All tracer wire shall be UV-stabilized 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire.
9. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.

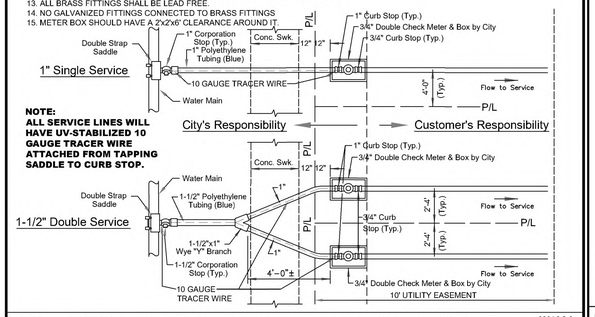
ONLY APPROVED CITY FIRE HYDRANTS
— Mueller Super Centurion 200
— Clow Medallion

See W406 for Plan View

DATE: 11/07/2022 **FIRE HYDRANT SETTING SECTION** **W405**

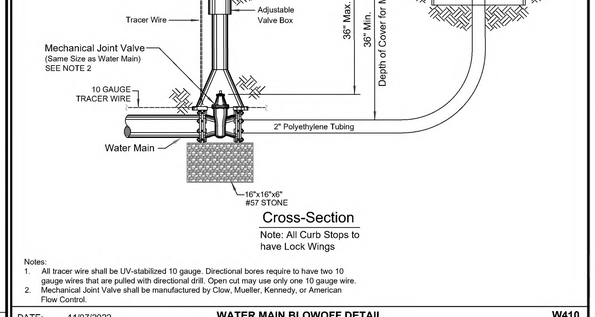
City of DeLand -Standard Details

NOTES:
1. WATER MAINS TO BE ON NORTH or EAST SIDE OF R.O.W., APPROX. 4 FT. BACK OF CURB UNLESS OTHERWISE AUTHORIZED BY CITY ENGINEER.
2. SERVICE CONNECTIONS TO BE 4 FT. FROM SIDE LOT LINE ON EITHER SIDE OF LOT. THESE SERVICES TO BE CONSISTENT WITHIN THE SUBDIVISION. DRIVEWAYS SHALL NOT BE BUILT OVER METERS.
3. ALL LINES SHALL BE CHLORINATED and PRESSURE TESTED (TEST FOR TWO HOURS @ 150 P.S.I.) UNDER THE DIRECTION OF THE UTILITIES DEPARTMENT. AFTER SUCCESSFUL COMPLETION OF THE TESTING and CHLORINATION, THE PRESSURE SHALL REMAIN ON THE SYSTEM AT ALL TIMES.
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6. MINIMUM DISTANCE BETWEEN SERVICE TAPS TO BE NOT LESS THAN 36".
7. SINGLE SERVICE TAP SHALL BE 1".
8. DOUBLE SERVICE TAP SHALL BE 1-1/ 2".
9. ALL FITTINGS SHALL BE BRASS ONLY.
10. ALL CORPORATION STOPS, SHALL BE "FORD" OR "MUELLER" ONLY.
11. FREEZE PROTECTION VALVE, SHALL BE "CONBRACO" 40LF000FPV2F.
12. ALL 3/4", 1", 1-1/2", & 2" W.M., SHALL BE SDR 9, 200 psi, ASTMD 2737, (BLUE) POLYETHYLENE TUBING.
13. ALL BRASS FITTINGS SHALL BE LEAD FREE.
14. NO GALVANIZED FITTINGS CONNECTED TO BRASS FITTINGS
15. METER BOX SHOULD HAVE A 2'x2'x6' CLEARANCE AROUND IT.



DATE: 11/07/2022 **WATER MAIN SERVICE CONN. WITH SIDEWALK (DBL. CHECK METER)** **W402A**

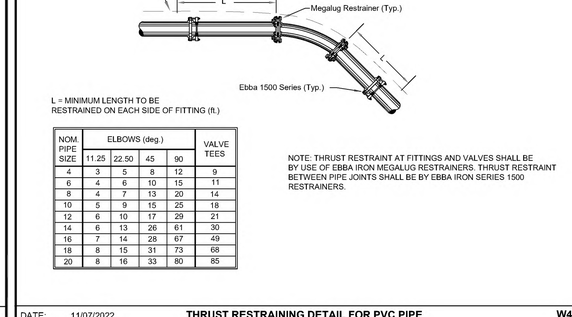
City of DeLand - Standard Details



Notes:
1. All tracer wire shall be UV-stabilized 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire.
2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.

DATE: 11/07/2022 **WATER MAIN BLOWOFF DETAIL** **W410**

City of DeLand - Standard Details



L = MINIMUM LENGTH TO BE RESTRAINED ON EACH SIDE OF FITTING (ft.)

NOM. PIPE SIZE	ELBOWS (deg.)				VALVE TEES
	11.25	22.50	45	90	
4	3	5	8	12	9
6	4	6	10	15	11
8	4	7	13	20	14
10	5	9	15	25	18
12	6	10	17	29	21
14	6	13	26	61	30
16	7	14	28	67	49
18	8	15	31	73	68
20	8	16	33	80	85

NOTE: THRUST RESTRAINT AT FITTINGS AND VALVES SHALL BE BY USE OF EBBA IRON MEGALUG RESTRAINERS. THRUST RESTRAINT BETWEEN PIPE JOINTS SHALL BE BY EBBA IRON SERIES 1500 RESTRAINERS.

DATE: 11/07/2022 **THRUST RESTRAINING DETAIL FOR PVC PIPE** **W408**

City of DeLand - Standard Details

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NO.	DATE	REVISION DESCRIPTION

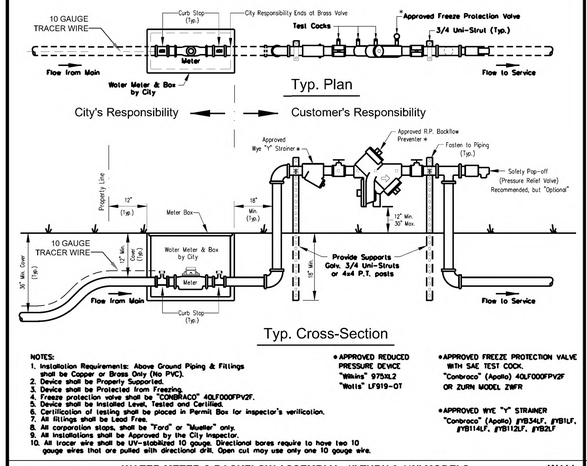
GARRETT MICHAEL GEORGE
LICENSE
No. 85505
STATE OF FLORIDA
PROFESSIONAL ENGINEER
7/31/23

SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

UTILITY DETAILS

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DRAWN: RSH
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SHEET NO. C7.1

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NOTES:
1. Installation Requirements: Above Ground Piping & Fittings shall be Copper or Brass Only (No PVC).
2. Device shall be Properly Supported.
3. Device shall be Protected from Freezing.
4. Freeze protection valve shall be "CONBRACO" 40LF000FPV2F.
5. Device shall be Installed Level, Tested and Certified.
6. Certification of testing shall be placed in Permit Box for inspector's verification.
7. All fittings shall be Lead Free.
8. All corporation stops, shall be "Ford" or "Mueller" only.
9. All installations shall be Approved by the City Inspector.
10. All tracer wire shall be UV-stabilized 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire.

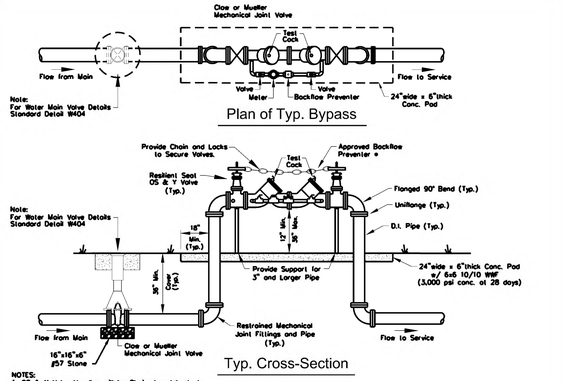
*APPROVED REDUCED PRESSURE DEVICE
"Watts" 975XL2
"Watts" LF919-0T

*APPROVED FREEZE PROTECTION VALVE WITH SAE TEST COCK.
"Conbraco" (Apollo) 40LF000FPV2F
OR ZURN MODEL Z1FR

*APPROVED WYE "Y" STRAINER
"Conbraco" (Apollo) #YB34LF, #YB1LF, #YB114LF, #YB12LF, #YB2LF

DATE: 11/07/2022 **WATER METER & BACKFLOW ASSEMBLY - 1" THRU 2-1/2" MODELS** W411

City of DeLand - Standard Details



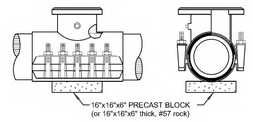
NOTES:
1. OS & Y Valve Handles will be Chained and Locked.
2. Meter Sets will be Pointed after installation.
3. Bypass Pipe & Fittings shall be Threaded Brass, Copper or Ductile Iron. (No PVC).
4. Installation Requirements: No P.V.C. Piping above Ground.
5. Device shall be Properly Supported.
6. Device shall be Protected from Freezing.
7. All installations shall be Approved by City Engineer.
8. Device shall be Installed Level, Tested and Certified.
9. Certification of testing shall be placed in Permit Box for inspector's verification.
9. Consult local Fire Authority for location site & requirements for Fire Dept. connections.
10. All fittings shall be Lead Free.
11. All concrete shall have a minimum strength of 3,000 psi at 28 days.

*APPROVED R.P. DEVICES
Watts Model LF909 or LF009
Conbraco 40LF-200-03

*APPROVED DOUBLE-CHECK VALVES
Watts 350A
Watts Model LF709 or LF007
Conbraco 40LF-100-03

DATE: 11/07/2022 **DOUBLE DETECTOR CHECK VALVE ASSEMBLY - 4" THRU 12"** W413

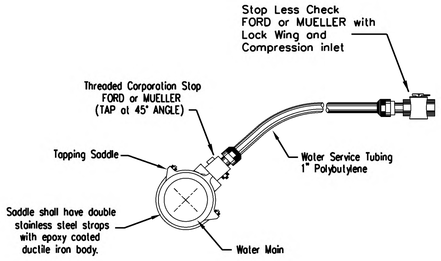
City of DeLand - Standard Details



NOTES:
1. ALL TAPPING SLEEVES ABOVE 2" IN DIA. SHALL BE STAINLESS STEEL ONLY.
2. INSTALL REQUIRED RESTRAINED JOINTS. IN NO INSTANCE SHALL THRUST BLOCKS BE PERMITTED.
3. ONLY ROMAC INDUSTRIES, FORD STAINLESS STEEL OR JCM STAINLESS STEEL TAPPING SLEEVES ARE TO BE USED.
4. IN NEW CONSTRUCTION, ALL SADDLES, SLEEVES, VALVES, CORPORATION & CURB STOPS, TUBING WILL BE FURNISHED BY THE CONTRACTOR.

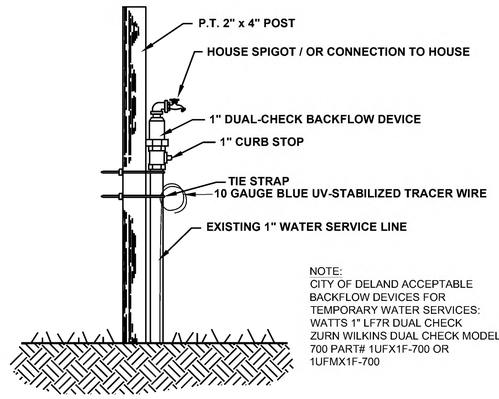
DATE: 11/07/2022 **STAINLESS STEEL TAPPING SLEEVE** W414

City of DeLand - Standard Details



DATE: 11/07/2022 **CHLORINATION TAP** W416

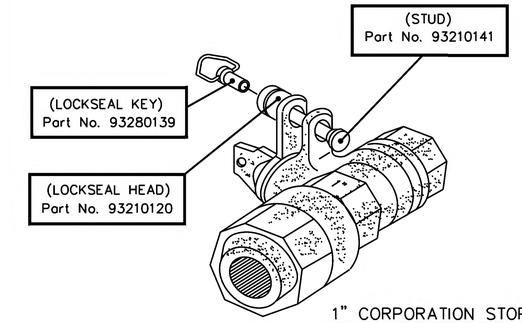
City of DeLand - Standard Details



NOTE:
CITY OF DELAND ACCEPTABLE BACKFLOW DEVICES FOR TEMPORARY WATER SERVICES:
WATTS 1" LF7R DUAL CHECK
ZURN WILKINS DUAL CHECK MODEL 700 PART# 1UFX1F-700 OR 1UFMX1F-700

DATE: 11/07/2022 **TEMPORARY RESIDENTIAL CONSTRUCTION POTABLE WATER SERVICE** W417

City of DeLand - Standard Details



NOTE:
ALL SERVICE LINE WHIPS SHALL BE BULLET LOCKED ***OFF*** BY THE CONTRACTOR AFTER INSTALLATION AND SAMPLING HAVE BEEN COMPLETED

Manufacturer:
"FIROMATIC LOCKSEAL"

DATE: 11/07/2022 **WATER METER LOCKSEAL ASSEMBLY** W418

City of DeLand - Standard Details

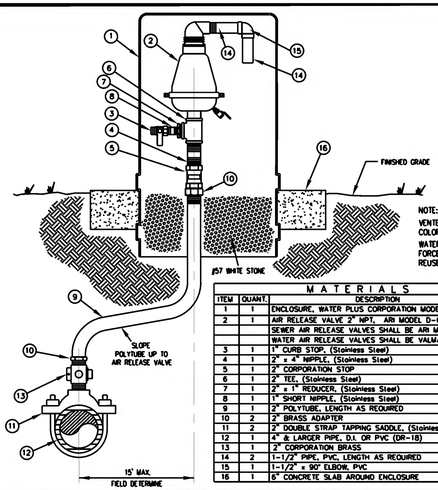
LOCATION OF PUBLIC WATER SYSTEM MAINS IN ACCORDANCE WITH F.A.C. RULE 62-555.314

Other pipe	Horizontal Separation	Crossings (1)	Joint Spacing @ Crossing (Full Joint Centered)
Storm Sewer Stormwater Force Main, Reclaimed Water (2)	WATER MAIN 3 ft. minimum	WATER MAIN 12 inches is the minimum except for storm sewer,then 6 inches is the minimum and 12 inches is preferred	Alternate 3' ft. minimum WATER MAIN
Vacuum Sanitary Sewer	WATER MAIN 10 ft. preferred 3 ft. minimum	WATER MAIN 12 inches preferred 6 inches minimum	Alternate 3' ft. minimum WATER MAIN
Gravity Sewer Sanitary Sewer, Sanitary Sewer Force Main, Reclaimed Water (4)	WATER MAIN 10 ft. preferred 6 ft. minimum (3)	WATER MAIN 12 inches is the minimum except for gravity sewer,then 6 inches is the minimum and 12 inches is preferred	Alternate 6' ft. minimum WATER MAIN
On-Site Sewage Treatment & Disposal System(4)	10 ft minimum	---	---

(1) Water Main Should Cross Above other pipe. When Water Main Must Be Below Other Pipe,the Minimum Separation is 12" inches.
(2) Reclaimed Water Regulated Under Part III of chapter 62-610, F.A.C.
(3) 3 ft. for Gravity Sanitary sewer where the Bottom of the Water Main is laid at least 6 inches above the top of gravity sanitary sewer.
(4) Reclaimed water not regulated under Part III of Chapter 62-160, F.A.C.

DATE: 11/07/2022 **WATER PIPE SEPERATION REQUIREMENTS** W420

City of DeLand - Standard Details



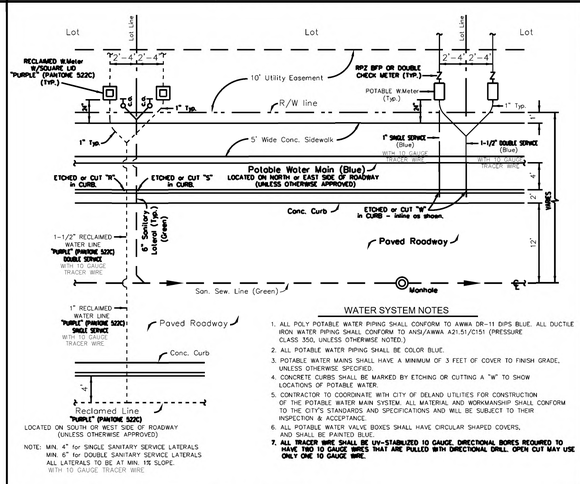
NOTE: (1) VENTED ENCLOSURE TO BE COLOR CODED AS FOLLOWS:
WATER MAIN - BLUE
FORCE MAIN - GREEN
REUSE MAIN - PURPLE (PANTONE 522C)

MATERIALS

ITEM	QUANT.	DESCRIPTION
1	1	ENCLOSURE, WATER PLUS CORPORATION MODEL #1316J2
2	1	AIR RELEASE VALVE 2" NPT, ARI MODEL D-025 P
		SEWER AIR RELEASE VALVES SHALL BE ARI MODEL D-025 P
		WATER AIR RELEASE VALVES SHALL BE VALMATIC OR EQUAL
3	1	1" CURB STOP, (Stainless Steel)
4	1	2" x 4" NIPPLE, (Stainless Steel)
5	1	2" CORPORATION STOP
6	1	2" TEE, (Stainless Steel)
7	1	2" x 1" REDUCER, (Stainless Steel)
8	1	1" SHORT NIPPLE, (Stainless Steel)
9	1	2" POLYTUBE, LENGTH AS REQUIRED
10	2	2" BRASS ADAPTER
11	2	2" DOUBLE STRAP TAPPING SADDLE, (Stainless Steel)
12	1	4" & LARGER PIPE, D.I. OR PVC (DR-18)
13	1	2" CORPORATION BRASS
14	2	1-1/2" PIPE, PVC, LENGTH AS REQUIRED
15	1	1-1/2" x 90° ELBOW, PVC
16	1	6" CONCRETE SLAB AROUND ENCLOSURE

DATE: 11/07/2022 **OFFSET AIR RELEASE VALVE** W421

City of DeLand - Standard Details



WATER SYSTEM NOTES
1. ALL POLY POTABLE WATER PIPING SHALL CONFORM TO AWWA DR-11 DIPS BLUE. ALL DUCTILE IRON WATER PIPING SHALL CONFORM TO ANSI/AWWA A21.51/C151 (PRESSURE CLASS 350, UNLESS OTHERWISE NOTED.)
2. ALL POTABLE WATER PIPING SHALL BE COLOR BLUE.
3. POTABLE WATER MAINS SHALL HAVE A MINIMUM OF 3 FEET OF COVER TO FINISH GRADE, UNLESS OTHERWISE SPECIFIED.
4. CONCRETE CURBS SHALL BE MARKED BY ETCHING OR CUTTING A "W" TO SHOW LOCATIONS OF POTABLE WATER.
5. CONTRACTOR TO COORDINATE WITH CITY OF DELAND UTILITIES FOR CONSTRUCTION OF THE POTABLE WATER MAIN SYSTEM. ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO THE CITY'S STANDARDS AND SPECIFICATIONS AND WILL BE SUBJECT TO THEIR INSPECTION & ACCEPTANCE.
6. ALL POTABLE WATER VALVE BOXES SHALL HAVE CIRCULAR SHAPED COVERS, AND SHALL BE PAINTED BLUE.
7. **ALL TRACER WIRE SHALL BE UV-STABILIZED 10 GAUGE. DIRECTIONAL BORES REQUIRED TO HAVE TWO 10 GAUGE WIRES THAT ARE PULLED WITH DIRECTIONAL DRILL OPEN CUT MAY USE ONLY ONE 10 GAUGE WIRE.**

DATE: 11/07/2022 **RESIDENTIAL UTILITY LAYOUT** W422

City of DeLand - Standard Details

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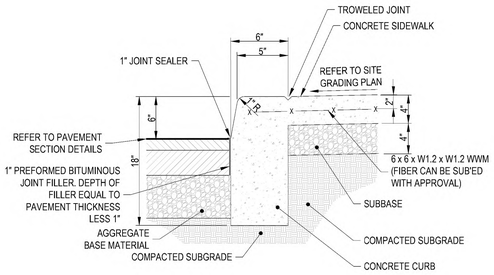
NO.	DATE	REVISION DESCRIPTION

GARRETT MICHAEL GEORGE LICENSE No. 85805 STATE OF FLORIDA PROFESSIONAL ENGINEER 7/31/23

SPRING GARDEN TOWNHOMES DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

UTILITY DETAILS

ISSUE: NOT FOR CONSTRUCTION
DATE: 07/31/2023
JOB NO.: 761391
DESIGN: RSH
DRAWN: RSH
CHECKED: CSG
SHEET NO. C7.2



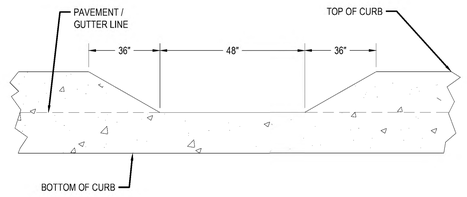
NOTES:

1. ALL CONCRETE CURBS AND SIDEWALK TO BE 4,000 P.S.I. CONCRETE AT 28 DAYS.
2. TRANSVERSE EXPANSION JOINTS, 1/2" WIDE, SHALL BE INSTALLED IN THE CURB 20'-0" APART MAXIMUM. SPACING SHALL MATCH SIDEWALK.
3. EXPANSION JOINTS SHALL BE FILLED WITH 1/2" PREFORMED JOINT FILLER, RECESSED 1/4" FROM TOP AND FACE OF CURB.
4. MAXIMUM HEIGHT OF CURB TO PAVING IS 6".

INTEGRAL CURB W/ SIDEWALK

NTS

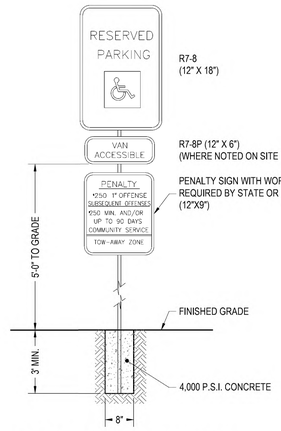
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CURB CUT

NTS

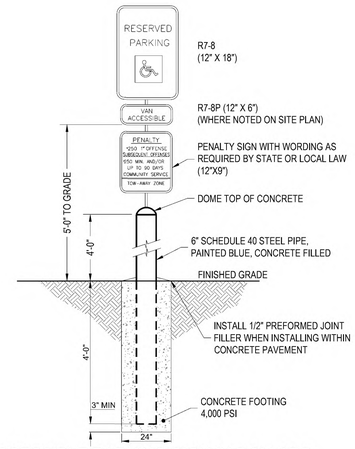
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ACCESSIBLE PARKING SIGN

NTS

3



ACCESSIBLE PARKING SIGN IN BOLLARD

NTS

4

R1-1
36" x 36"

PROPOSED R1-1 SIGN

NTS

5

ASPHALT PAVEMENT

A. TYPE S3 ASPHALT PAVEMENT SURFACE COURSE IN TWO 3/4 LIFTS

B. LIMEROCK, BASE COURSE FBR 40

C. STABILIZED SUBBASE COURSE

PAVEMENT LAYER DEPTHS			
	ASPHALT		
	A	B	C
STANDARD DUTY	1.5	6.0	12.0
HEAVY DUTY	2.5	8.0	12.0

PER GEOTECHNICAL REPORT PROVIDED BY TIERRA # 5511-22-039 DATED 09/16/2022

PAVEMENT SECTIONS

NTS

6

RIBBON CURB DETAIL

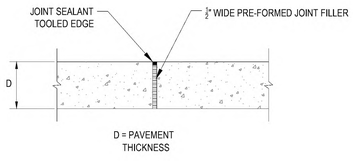
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7

SIGN - BOLLARD

NTS

8



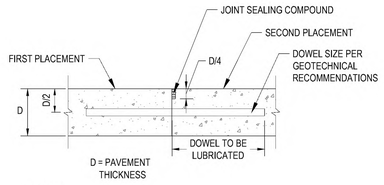
EXPANSION JOINT

NTS

CONCRETE JOINTS

NTS

9



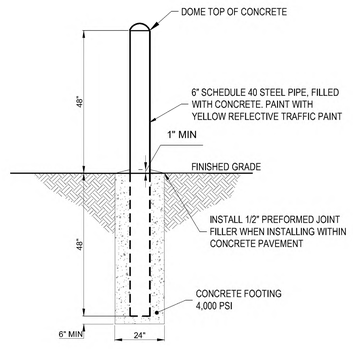
NOTES:

1. DOWELS SHALL BE SUPPORTED BY AN APPROVED DEVICE.
2. ALL DOWELS AND BASKETS SHALL BE EPOXY COATED.
3. DOWELED CONTRACTION JOINTS ARE REQUIRED WHERE PAVEMENT DEPTH IS 7" OR GREATER.
4. DOWELS SHALL BE SMOOTH BARS AND SHALL BE PROVIDED A COATING OF GREASE, AS A BOND-BREAKING MATERIAL, IMMEDIATELY PRIOR TO PLACING THE CONCRETE.

DOWELED CONTRACTION JOINT

NTS

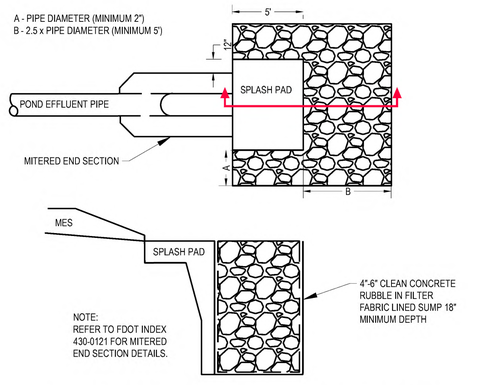
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BOLLARD

NTS

11



DRY POND MITERED END SECTION & SPLASH PAD EROSION PROTECTION

NTS

11

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NO.	DATE	REVISION DESCRIPTION

GARRETT MICHAEL GEORGE
LICENSE
No. 85505
7/31/23
STATE OF FLORIDA
PROFESSIONAL ENGINEER

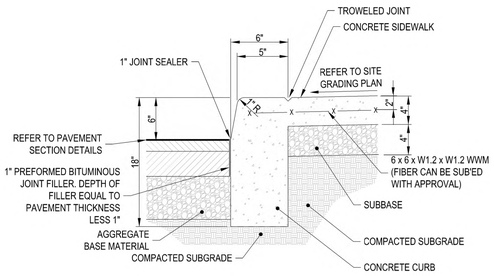
SPRING GARDEN TOWNHOMES
DELAND, FL

610 N SPRING GARDEN AVENUE, DELAND, FL

CONSTRUCTION DETAILS

ISSUE:	NOT FOR CONSTRUCTION
DATE:	07/31/2023
JOB NO.:	761391
DESIGN:	RSH
DRAWN:	RSH
CHECKED:	CSG

SHEET NO.
C7.3



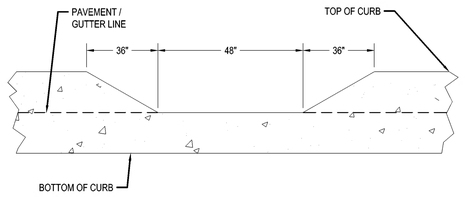
NOTES:

1. ALL CONCRETE CURBS AND SIDEWALK TO BE 4,000 P.S.I. CONCRETE AT 28 DAYS.
2. TRANSVERSE EXPANSION JOINTS, 1/2" WIDE, SHALL BE INSTALLED IN THE CURB 20'-0" APART MAXIMUM. SPACING SHALL MATCH SIDEWALK.
3. EXPANSION JOINTS SHALL BE FILLED WITH 1/2" PREFORMED JOINT FILLER, RECESSED 1/4" FROM TOP AND FACE OF CURB.
4. MAXIMUM HEIGHT OF CURB TO PAVING IS 6".

INTEGRAL CURB W/ SIDEWALK

NTS

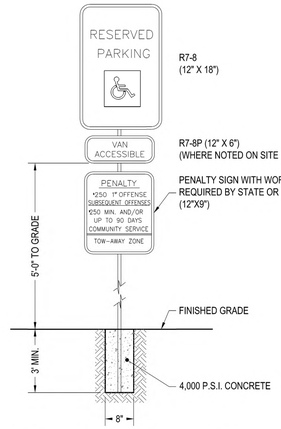
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CURB CUT

NTS

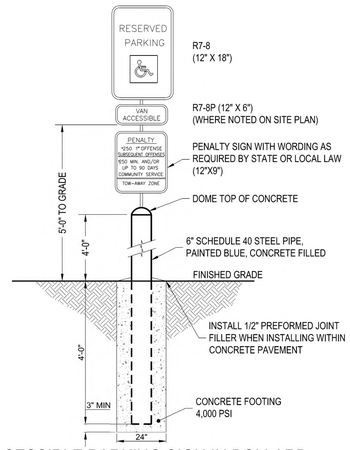
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ACCESSIBLE PARKING SIGN

NTS

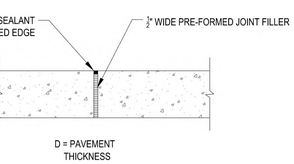
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ACCESSIBLE PARKING SIGN IN BOLLARD

NTS

4

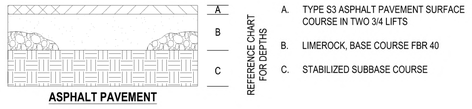


R1-1
36" x 36"

PROPOSED R1-1 SIGN

NTS

5



A. TYPE S3 ASPHALT PAVEMENT SURFACE COURSE IN TWO 3/4 LIFTS

B. LIMEROCK, BASE COURSE FBR 40

C. STABILIZED SUBBASE COURSE

ASPHALT PAVEMENT

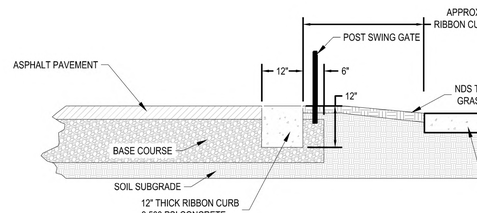
PAVEMENT LAYER DEPTHS			
	ASPHALT		
	A	B	C
STANDARD DUTY	1.5	6.0	12.0
HEAVY DUTY	2.5	8.0	12.0

PER GEOTECHNICAL REPORT PROVIDED BY TIERRA # 5511-22-039 DATED 09/16/2022

PAVEMENT SECTIONS

NTS

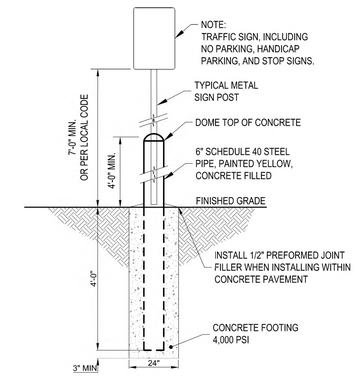
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RIBBON CURB DETAIL

NTS

7



SIGN - BOLLARD

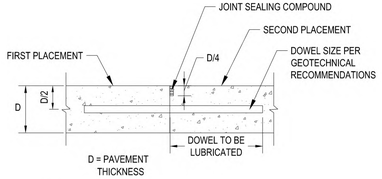
NTS

8

EXPANSION JOINT

NTS

9



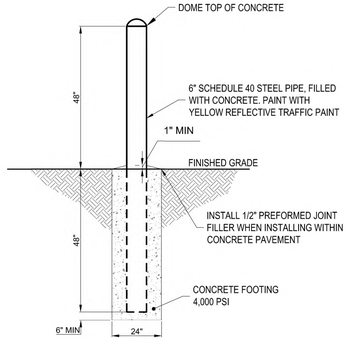
NOTES:

1. DOWELS SHALL BE SUPPORTED BY AN APPROVED DEVICE.
2. ALL DOWELS AND BASKETS SHALL BE EPOXY COATED.
3. DOWELED CONTRACTION JOINTS ARE REQUIRED WHERE PAVEMENT DEPTH IS 7" OR GREATER.
4. DOWELS SHALL BE SMOOTH BARS AND SHALL BE PROVIDED A COATING OF GREASE, AS A BOND-BREAKING MATERIAL, IMMEDIATELY PRIOR TO PLACING THE CONCRETE.

DOWELED CONTRACTION JOINT

NTS

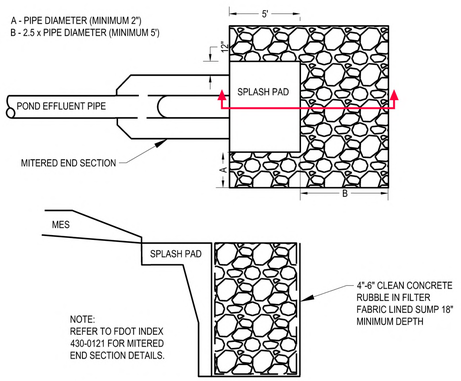
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BOLLARD

NTS

11



DRY POND MITERED END SECTION & SPLASH PAD EROSION PROTECTION

NTS

11

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NO.	DATE	REVISION DESCRIPTION

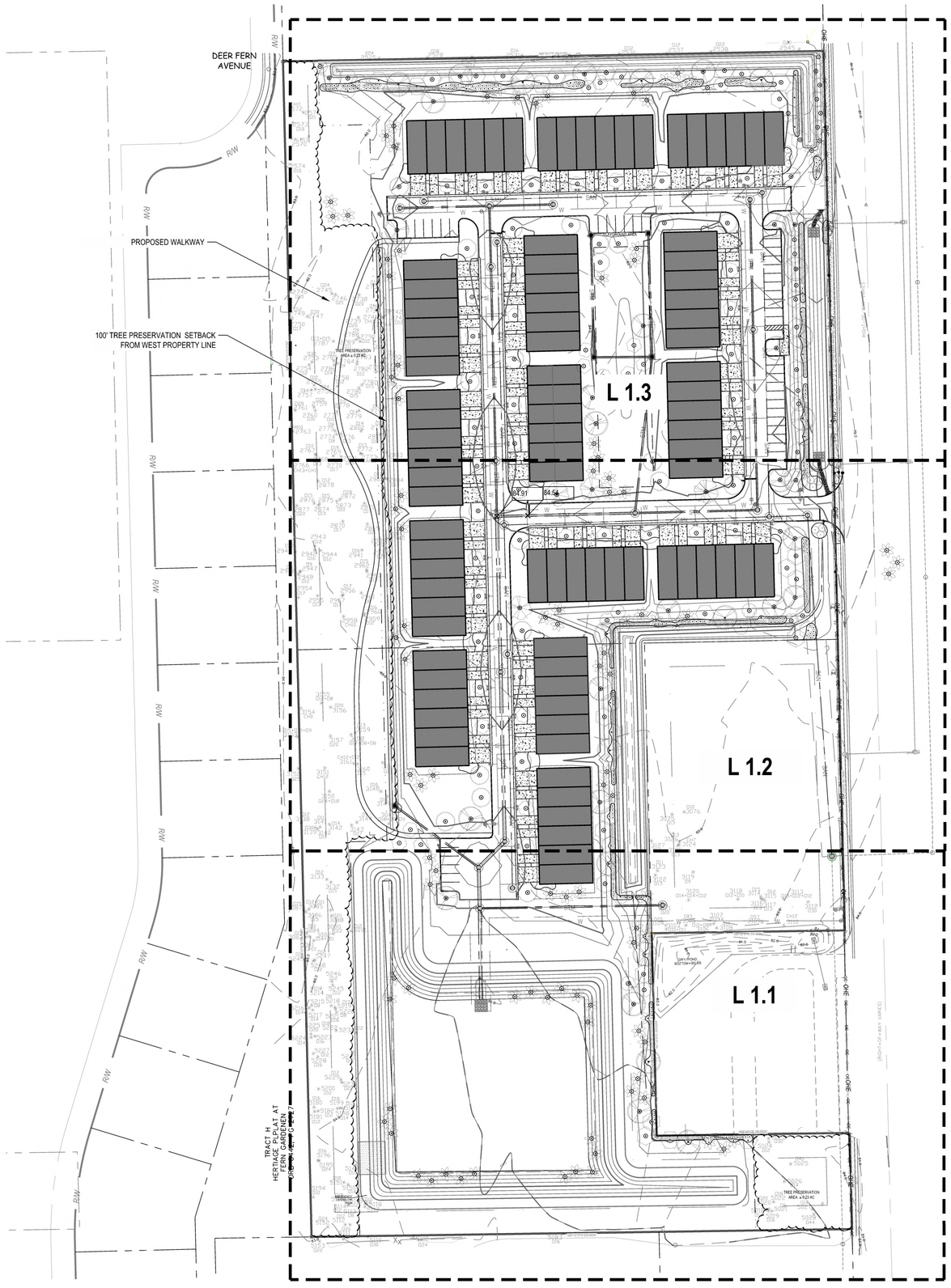
GARRETT MICHAEL GEORGE
LICENSE
No. 85305
3/14/23
STATE OF FLORIDA
PROFESSIONAL ENGINEER

SPRING GARDEN TOWNHOMES
DELAND, FL
1022 S. TAMIAMI TRAIL, OSPREY, FL

CONSTRUCTION DETAILS

ISSUE:	NOT FOR CONSTRUCTION
DATE:	02/15/2023
JOB NO.:	761391
DESIGN:	RSH
DRAWN:	RSH
CHECKED:	CSG

SHEET NO.
C7.4



LANDSCAPE REQUIREMENTS

PARKING (LANDSCAPING EVERY 12 SPACES):

PARKING SPACES: 45
REQUIRED CANOPY TREES: 4
PROPOSED CANOPY TREES: 7

PARKING (1 CANOPY TREE EVERY 75 SF OF REQ. LANDSCAPE AREA):

PARKING SPACES: 45 (7 SF LANDSCAPE AREA REQUIRED PER SPACE)
REQUIRED LANDSCAPE AREA: 315 SF
PROVIDED LANDSCAPE AREA: 2,643 SF
REQUIRED CANOPY TREES: 4
PROPOSED CANOPY TREES: 7

BUFFERS

(EAST) NORTH SPRING GARDEN AVENUE (575 LF)(BUFFER STANDARD "C"):
REQUIRED WIDTH: 25 FT
PROPOSED WIDTH: 25 FT
REQUIRED CANOPY TREES: 30 (5.2 CANOPY TREES PER 100 LF)
PROPOSED CANOPY TREES: 30
REQUIRED UNDERSTORY TREES: 13 (2.2 UNDERSTORY TREES PER 100 LF)
PROPOSED UNDERSTORY TREES: 13 (11 TREES +2 PALMS)
REQUIRED SHRUBS: 127 (22 SHRUBS PER 100 LF)
PROPOSED SHRUBS:127

(EAST) PUD ADJACENT TO COMMERCIAL (511 LF)(BUFFER STANDARD "C"):
REQUIRED WIDTH: 25 FT
PROPOSED WIDTH: 25 FT
REQUIRED CANOPY TREES: 27
PROPOSED CANOPY TREES: 27 (19 TREE + 8 PALMS)
REQUIRED UNDERSTORY TREES: 12
PROPOSED UNDERSTORY TREES: 12 (4 TREE + 8 PALMS
REQUIRED SHRUBS: 113
PROPOSED SHRUBS: 113

(WEST) PUD ADJACENT TO RESIDENTIAL MULTI-FAMILY(1,219 LF)(BUFFER STANDARD "C"):
REQUIRED WIDTH: 25 FT
PROPOSED WIDTH: 35-96 FT
REQUIRED CANOPY TREES: *64*
PROPOSED CANOPY TREES: EXISTING TREES TO REMAIN
REQUIRED UNDERSTORY TREES: 27
PROPOSED UNDERSTORY TREES: EXISTING TREES TO REMAIN
REQUIRED SHRUBS: 269
PROPOSED SHRUBS:EXISTING SHRUBS TO REMAIN

(NORTH) PUD ADJACENT TO COMMERCIAL (560 LF)(BUFFER STANDARD "C"):
REQUIRED WIDTH: 25 FT
PROPOSED WIDTH: 25 FT
REQUIRED CANOPY TREES: 30
PROPOSED CANOPY TREES: 30 (24 NEW TREES + 3 PALMS + EXISTING TREES)
REQUIRED UNDERSTORY TREES: 13
PROPOSED UNDERSTORY TREES: 13 (10 NEW TREES + 4 PALMS + EXISTING TREES)
REQUIRED SHRUBS: 124
PROPOSED SHRUBS: 124

(SOUTH) PUD NORTH OF COMMERCIAL (200 LF)(BUFFER STANDARD "C"):
REQUIRED WIDTH: 25 FT
PROPOSED WIDTH: 25 FT
REQUIRED CANOPY TREES: 11
PROPOSED CANOPY TREES: 11 (6 TREES + 5 PALMS)
REQUIRED UNDERSTORY TREES: 5
PROPOSED UNDERSTORY TREES: 5
REQUIRED SHRUBS: 44
PROPOSED SHRUBS: 44

(SOUTH) PUD SOUTH OF COMMERCIAL (200 LF)(BUFFER STANDARD "C"):
REQUIRED WIDTH: 25 FT
PROPOSED WIDTH: 25 FT
REQUIRED CANOPY TREES: 11
PROPOSED CANOPY TREES: 11 (3 NEW TREES + EXISTING TREES)
REQUIRED UNDERSTORY TREES: 5
PROPOSED UNDERSTORY TREES: 5 (3 NEW PALMS + EXISTING TREES)
REQUIRED SHRUBS: 44
PROPOSED SHRUBS: 44 (25 NEW + EXISTING SHRUBS)

FRONT YARDS (TOWN HOMES UNDER INDIVIDUAL OWNERSHIP)
1 TREE FOR EACH LOT PLUS 1 TREE FOR EVERY 2,500 SF OF LOT AREA
90 LOTS
REQUIRED: 90 TREES
PROPOSED: 90 TREES (IN FRONT OF UNITS AND COMMON AREAS)
168,000 SF LOT AREA
REQUIRED: 68
PROPOSED: 68

TOTAL FRONT YARD REQUIRED: 158
TOTAL FRONT YARD PROPOSED: 158

PALMS (MAXIMUM 25% OF REQUIRED TREES)
414 REQUIRED TREES
MAXIMUM ALLOWED: 104 PALMS (25%)
PROPOSED: 104 PALMS (25%)

LEGEND

- R/W — RIGHT OF WAY LINE
- PARCEL LINE
- PROPERTY BOUNDARY LINE
- EASEMENT LINE
- PROPOSED CONCRETE SIDEWALK OR DECK
- EXISTING TREE CANOPY
- OHP — OVERHEAD POWER LINE
- E — POWER LINE
- STM — STORM DRAIN
- SAN — SANITARY SEWER
- W — WATER LINE
- G — GAS LINE
- UGT — UNDERGROUND TELEPHONE LINE
- UGE — UNDERGROUND ELECTRIC LINE
- 100 — MAJOR EXISTING CONTOUR
- 102 — MINOR EXISTING CONTOUR
- 960 — MAJOR PROPOSED CONTOUR
- 962 — MINOR PROPOSED CONTOUR

N

60 0 60 120

GRAPHIC SCALE (IN FEET)
1 in. = 60 ft.

Sunshine 811

FORTY-EIGHT (48) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: FLORIDA UTILITY PROTECTION SERVICE AT 811 OR (800)-432-4770 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF FLORIDA 811.

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REVISION DESCRIPTION
NO. DATE

REGISTERED LANDSCAPE ARCHITECT
EDWARD ALLEN BROWDER
LA 6666706
STATE OF FLORIDA

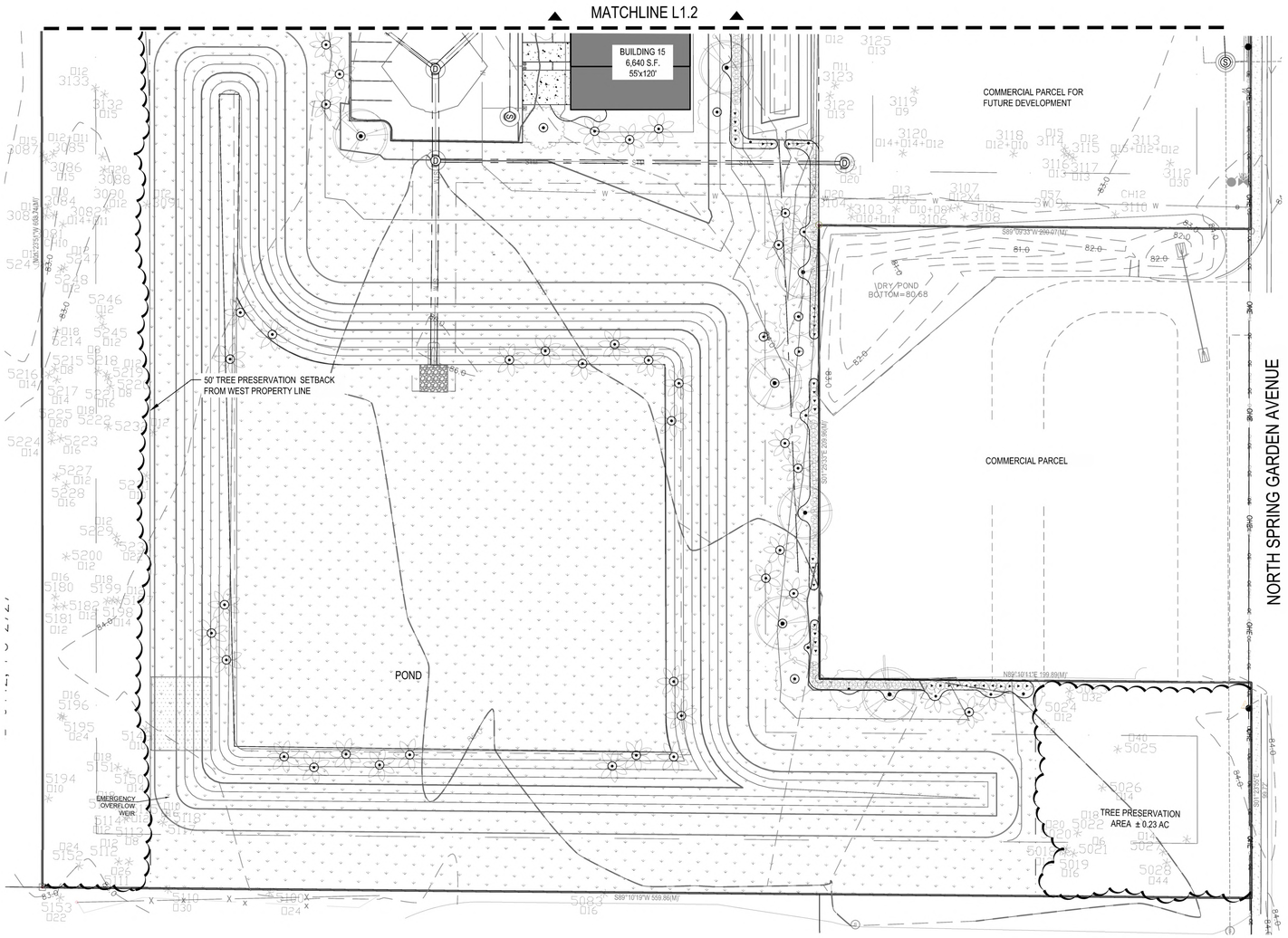
DocuSigned by:
Edward Browder
1CD90F8FA22C4E4...

SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

OVERALL LANDSCAPE PLAN

ISSUE:	NOT FOR CONSTRUCTION
DATE:	07/28/2023
JOB NO.:	761391
DESIGN:	EAB
DRAWN:	HI
CHECKED:	ADH
SHEET NO.	L1.0

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LEGEND

- R/W — RIGHT OF WAY LINE
- PARCEL LINE
- PROPERTY BOUNDARY LINE
- EASEMENT LINE
- PROPOSED CONCRETE SIDEWALK OR DECK
- EXISTING TREE CANOPY
- P-OH — P-OH — OVERHEAD POWER LINE
- E — POWER LINE
- STM — STORM DRAIN
- SAN — SANITARY SEWER
- W — WATER LINE
- G — GAS LINE
- UGT — UNDERGROUND TELEPHONE LINE
- UGE — UNDERGROUND ELECTRIC LINE
- 100 — MAJOR EXISTING CONTOUR
- 102 — MINOR EXISTING CONTOUR
- 980 — MAJOR PROPOSED CONTOUR
- 982 — MINOR PROPOSED CONTOUR

N

30 0 30 60

GRAPHIC SCALE (IN FEET)
1 in. = 30 ft.

Sunshine811

FORTY-EIGHT (48) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: FLORIDA UTILITY PROTECTION SERVICE AT 811 OR (800)-432-4770 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF FLORIDA 811.

(SOUTH) PUD NORTH OF COMMERCIAL (200 LF)(BUFFER STANDARD "C"):
REQUIRED WIDTH: 25 FT
PROPOSED WIDTH: 25 FT
REQUIRED CANOPY TREES: 11
PROPOSED CANOPY TREES: 11 (6 TREES + 5 PALMS)
REQUIRED UNDERSTORY TREES: 5
PROPOSED UNDERSTORY TREES: 5
REQUIRED SHRUBS: 44
PROPOSED SHRUBS: 44

(SOUTH) PUD SOUTH OF COMMERCIAL (200 LF)(BUFFER STANDARD "C"):
REQUIRED WIDTH: 25 FT
PROPOSED WIDTH: 25 FT
REQUIRED CANOPY TREES: 11
PROPOSED CANOPY TREES: 11 (3 NEW TREES + EXISTING TREES)
REQUIRED UNDERSTORY TREES: 5
PROPOSED UNDERSTORY TREES: 5 (3 NEW PALMS + EXISTING TREES)
REQUIRED SHRUBS: 44
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FRONT YARDS (TOWN HOMES UNDER INDIVIDUAL OWNERSHIP)
1 TREE FOR EACH LOT PLUS 1 TREE FOR EVERY 2,500 SF OF LOT AREA
90 LOTS
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168,000 SF LOT AREA
REQUIRED: 68
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TOTAL FRONT YARD REQUIRED: 158
TOTAL FRONT YARD PROPOSED: 158

PALMS (MAXIMUM 25% OF REQUIRED TREES)
414 REQUIRED TREES
MAXIMUM ALLOWED: 104 PALMS (25%)
PROPOSED: 104 PALMS (25%)

PLANT SCHEDULE

CANOPY TREE	QTY	BOTANICAL / COMMON NAME	SIZE	MIN HT / SPR	SPACING
	4	ACER RUBRUM 'FLORIDA FLAME' FLORIDA FLAME RED MAPLE	65 GAL/ 3.5" CAL/ 2.5" DBH	9` HT / 5` SPR	AS SHOWN
	39	QUERCUS VIRGINIANA SOUTHERN LIVE OAK	100 GAL/ 4" CAL/ 3" DBH	10` HT / 6` SPR	AS SHOWN
	51	TAXODIUM DISTICHUM BALD CYPRESS	100 GAL/ 3" CAL/ 2" DBH	10` HT / 3` SPR	AS SHOWN
	30	ULMUS PARVIFOLIA 'ALLEE' TM ALLEE LACEBARK ELM	65 GAL/ 4" CAL/ 3" DBH	9` HT / 5` SPR	AS SHOWN
UNDERSTORY TREES	**QTY**	**BOTANICAL / COMMON NAME**	**SIZE**	**MIN HT / SPR**	**SPACING**
	9	ILEX X 'NELLIE R. STEVENS' NELLIE R. STEVENS HOLLY	45 GAL/ 3" CAL/ 2" DBH	8` HT / 3.5` SPR	8`-0" OC
	39	LAGERSTROEMIA INDICA X FAURIEI 'MUSKOGEE' MUSKOGEE CRAPE MYRTLE	65 GAL/ 3.5" CAL/ 2.5" DBH	8` HT / 4` SPR	AS SHOWN
	27	MAGNOLIA VIRGINIANA SWEETBAY MAGNOLIA	65 GAL/ 3.5" CAL/ 2.5" DBH	9` HT / 5` SPR	AS SHOWN
	104	SABAL PALMETTO CABBAGE PALMETTO	12" CAL MIN/ 4" DBH	14` CT	AS SHOWN
SHRUBS	**QTY**	**BOTANICAL / COMMON NAME**	**SIZE**	**MIN HT / SPR**	**SPACING**
	183	HAMELIA PATENS FIREBUSH	---	24" HT	4`-0" OC
	250	MYRICA CERIFERA WAX MYRTLE	---	24" HT	4`-0" OC
GROUND COVERS	**QTY**	**BOTANICAL / COMMON NAME**	**SIZE**	**MIN HT / SPR**	**SPACING**
	123,336 SF	PASPALUM NOTATUM BAHIAGRASS	SOD		
	171,373 SF	STENOTAPHRUM DIMIDIATUM ST. AUGUSTINE GRASS	SOD		

MULCH

- ALL PLANT BEDS SHALL CONTAIN A 3" LAYER OF GROUND MELALEUCA MULCH
- CONTRACTOR TO PLACE 4` DIAMETER MULCH RING AROUND ALL TREES IN LAWN
- ALL ANNUAL BEDS SHALL CONTAIN A 2" MIN. LAYER OF SOIL CONDITIONER (FINELY SHREDDED HARDWOODS WITH ORGANICS)
- MULCH SHOULD NOT BE PLACED ON TOP OF ROOT BALL OF NEWLY PLANTED TREES OR WITHIN 6" OF EXISTING TREES

IRRIGATION

- THE CONTRACTOR SHALL DESIGN, SUPPLY, AND INSTALL IRRIGATION SYSTEM FOR ALL SODDED AND PLANTING AREAS AS SHOWN ON THIS SHEET. DESIGN SHALL MEET ALL APPLICABLE CODES AND BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION

LANDSCAPE REQUIREMENTS

PARKING (LANDSCAPING EVERY 12 SPACES):

PARKING SPACES: 45
REQUIRED CANOPY TREES: 4
PROPOSED CANOPY TREES: 7

PARKING (1 CANOPY TREE EVERY 75 SF OF REQ. LANDSCAPE AREA):

PARKING SPACES: 45 (7 SF LANDSCAPE AREA REQUIRED PER SPACE)
REQUIRED LANDSCAPE AREA: 315 SF
PROVIDED LANDSCAPE AREA: 2,643 SF
REQUIRED CANOPY TREES: 4
PROPOSED CANOPY TREES: 7

BUFFERS

(EAST) NORTH SPRING GARDEN AVENUE (575 LF)(BUFFER STANDARD "C"):
REQUIRED WIDTH: 25 FT
PROPOSED WIDTH: 25 FT
REQUIRED CANOPY TREES: 30 (5.2 CANOPY TREES PER 100 LF)
PROPOSED CANOPY TREES: 30
REQUIRED UNDERSTORY TREES: 13 (2.2 UNDERSTORY TREES PER 100 LF)
PROPOSED UNDERSTORY TREES: 13 (11 TREES +2 PALMS)
REQUIRED SHRUBS: 127 (22 SHRUBS PER 100 LF)
PROPOSED SHRUBS:127

(EAST) PUD ADJACENT TO COMMERCIAL (511 LF)(BUFFER STANDARD "C"):
REQUIRED WIDTH: 25 FT
PROPOSED WIDTH: 25 FT
REQUIRED CANOPY TREES: 27
PROPOSED CANOPY TREES: 27 (19 TREE + 8 PALMS)
REQUIRED UNDERSTORY TREES: 12
PROPOSED UNDERSTORY TREES: 12 (4 TREE + 8 PALMS
REQUIRED SHRUBS: 113
PROPOSED SHRUBS: 113

(WEST) PUD ADJACENT TO RESIDENTIAL MULTI-FAMILY(1,219 LF)(BUFFER STANDARD "C"):
REQUIRED WIDTH: 25 FT
PROPOSED WIDTH: 35-96 FT
REQUIRED CANOPY TREES: 64
PROPOSED CANOPY TREES: EXISTING TREES TO REMAIN
REQUIRED UNDERSTORY TREES: 27
PROPOSED UNDERSTORY TREES: EXISTING TREES TO REMAIN
REQUIRED SHRUBS: 269
PROPOSED SHRUBS:EXISTING SHRUBS TO REMAIN

(NORTH) PUD ADJACENT TO COMMERCIAL (560 LF)(BUFFER STANDARD "C"):
REQUIRED WIDTH: 25 FT
PROPOSED WIDTH: 25 FT
REQUIRED CANOPY TREES: 30
PROPOSED CANOPY TREES: 30 (24 NEW TREES + 3 PALMS + EXISTING TREES)
REQUIRED UNDERSTORY TREES: 13
PROPOSED UNDERSTORY TREES: 13 (10 NEW TREES + 4 PALMS + EXISTING TREES)
REQUIRED SHRUBS: 124
PROPOSED SHRUBS: 124

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NO.	DATE	REVISION DESCRIPTION

REGISTERED LANDSCAPE ARCHITECT
EDWARD ALLEN BROWDER
LA 6666790
STATE OF FLORIDA

DocuSigned by:
Edward Browder
1CD90FBFA22C4E4...

SPRING GARDEN TOWNHOMES DELAND, FL

610 N SPRING GARDEN AVENUE, DELAND, FL

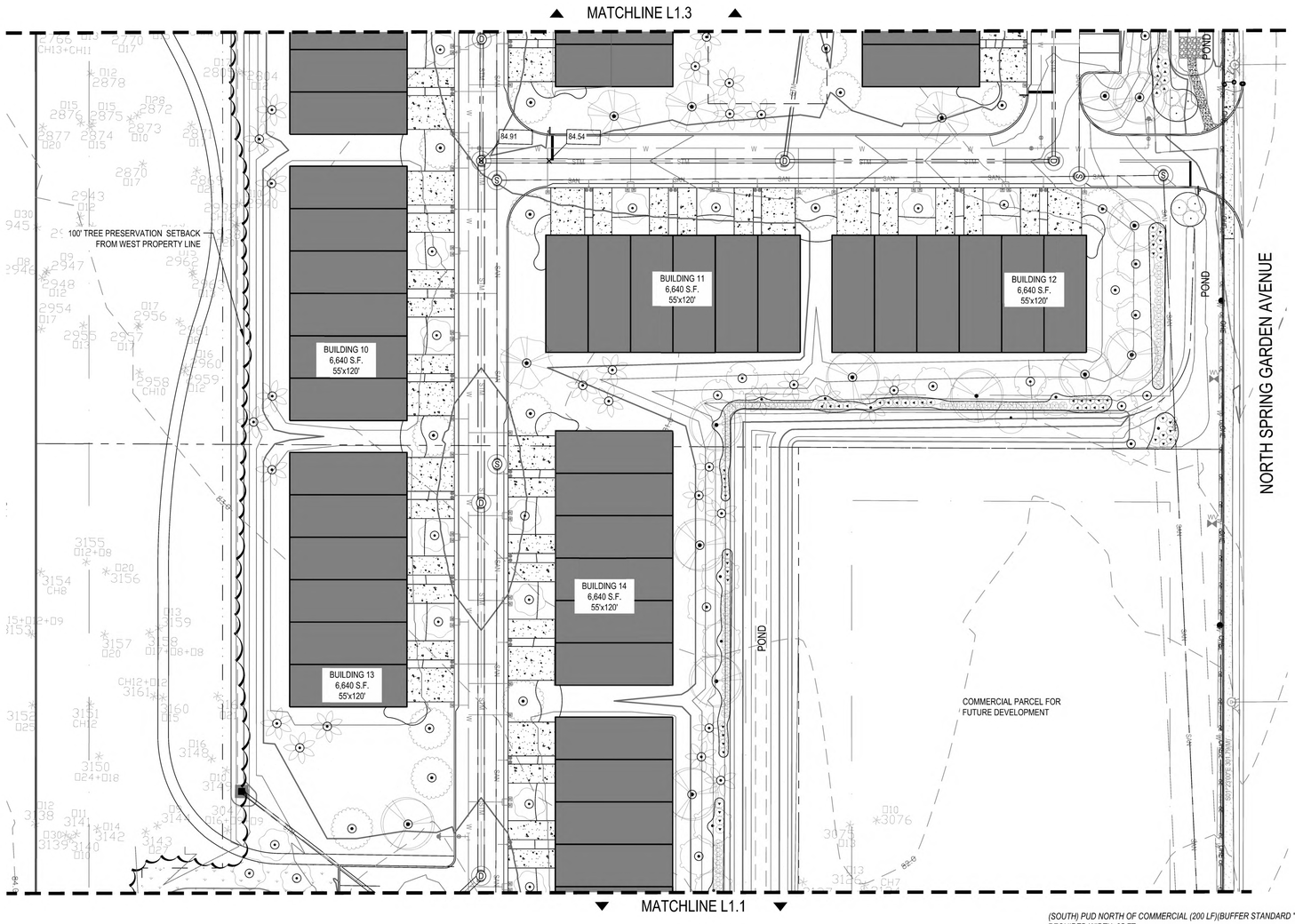
LANDSCAPE PLAN

ISSUE:
NOT FOR CONSTRUCTION
DATE:
07/28/2023

JOB NO.:	761391
DESIGN:	EAB
DRAWN:	HI / JR
CHECKED:	ADH

SHEET NO.
L1.1

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LEGEND

- R/W — RIGHT OF WAY LINE
- PARCEL LINE
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- 100 — MAJOR EXISTING CONTOUR
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- 962 — MINOR PROPOSED CONTOUR

N

30 0 30 60

GRAPHIC SCALE (IN FEET)
1 in. = 30 ft.

Sunshine811

FORTY-EIGHT (48) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: FLORIDA UTILITY PROTECTION SERVICE AT 811 OR (800)-432-4770 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF FLORIDA 811.

(SOUTH) PUD NORTH OF COMMERCIAL (200 LF)(BUFFER STANDARD "C"):
REQUIRED WIDTH: 25 FT
PROPOSED WIDTH: 25 FT
REQUIRED CANOPY TREES: 11
PROPOSED CANOPY TREES: 11 (6 TREES + 5 PALMS)
REQUIRED UNDERSTORY TREES: 5
PROPOSED UNDERSTORY TREES: 5
REQUIRED SHRUBS: 44
PROPOSED SHRUBS: 44

(SOUTH) PUD SOUTH OF COMMERCIAL (200 LF)(BUFFER STANDARD "C"):
REQUIRED WIDTH: 25 FT
PROPOSED WIDTH: 25 FT
REQUIRED CANOPY TREES: 11
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REQUIRED UNDERSTORY TREES: 5
PROPOSED UNDERSTORY TREES: 5 (3 NEW PALMS + EXISTING TREES)
REQUIRED SHRUBS: 44
PROPOSED SHRUBS: 44 (25 NEW + EXISTING SHRUBS)

FRONT YARDS (TOWN HOMES UNDER INDIVIDUAL OWNERSHIP)
1 TREE FOR EACH LOT PLUS 1 TREE FOR EVERY 2,500 SF OF LOT AREA
90 LOTS
REQUIRED: 90 TREES
PROPOSED: 90 TREES (IN FRONT OF UNITS AND COMMON AREAS)
168,000 SF LOT AREA
REQUIRED: 68
PROPOSED: 68

TOTAL FRONT YARD REQUIRED: 158
TOTAL FRONT YARD PROPOSED: 158

PALMS (MAXIMUM 25% OF REQUIRED TREES)
414 REQUIRED TREES
MAXIMUM ALLOWED: 104 PALMS (25%)
PROPOSED: 104 PALMS (25%)

PLANT SCHEDULE

CANOPY TREE	QTY	BOTANICAL / COMMON NAME	SIZE	MIN HT / SPR	SPACING
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	51	TAXODIUM DISTICHUM BALD CYPRESS	100 GAL/ 3" CAL/ 2" DBH	10` HT / 3` SPR	AS SHOWN
	30	ULMUS PARVIFOLIA 'ALLEE' TM ALLEE LACEBARK ELM	65 GAL/ 4" CAL/ 3" DBH	9` HT / 5` SPR	AS SHOWN

UNDERSTORY TREES	QTY	BOTANICAL / COMMON NAME	SIZE	MIN HT / SPR	SPACING
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SHRUBS	QTY	BOTANICAL / COMMON NAME	SIZE	MIN HT / SPR	SPACING
	183	HAMELIA PATENS FIREBUSH	---	24" HT	4`-0" OC
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GROUND COVERS	QTY	BOTANICAL / COMMON NAME	SIZE	MIN HT / SPR	SPACING
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	171,373 SF	STENOTAPHRUM DIMIDIATUM ST. AUGUSTINE GRASS	SOD		

MULCH

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LANDSCAPE REQUIREMENTS

PARKING (LANDSCAPING EVERY 12 SPACES):

PARKING SPACES: 45
REQUIRED CANOPY TREES: 4
PROPOSED CANOPY TREES: 7

PARKING (1 CANOPY TREE EVERY 75 SF OF REQ. LANDSCAPE AREA):

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REQUIRED LANDSCAPE AREA: 315 SF
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BUFFERS

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REQUIRED UNDERSTORY TREES: 13 (2.2 UNDERSTORY TREES PER 100 LF)
PROPOSED UNDERSTORY TREES: 13 (11 TREES +2 PALMS)
REQUIRED SHRUBS: 127 (22 SHRUBS PER 100 LF)
PROPOSED SHRUBS:127

(EAST) PUD ADJACENT TO COMMERCIAL (511 LF)(BUFFER STANDARD "C"):
REQUIRED WIDTH: 25 FT
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REQUIRED CANOPY TREES: 27
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REQUIRED UNDERSTORY TREES: 12
PROPOSED UNDERSTORY TREES: 12 (4 TREE + 8 PALMS
REQUIRED SHRUBS: 113
PROPOSED SHRUBS: 113

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REQUIRED SHRUBS: 124
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CESO
WWW.CESOINC.COM

NO.	DATE	REVISION DESCRIPTION

REGISTERED LANDSCAPE ARCHITECT
EDWARD ALLEN BROWDER
LA 6666790
STATE OF FLORIDA

DocuSigned by:
Edward Browder
1CD90F8FA22C4E4...

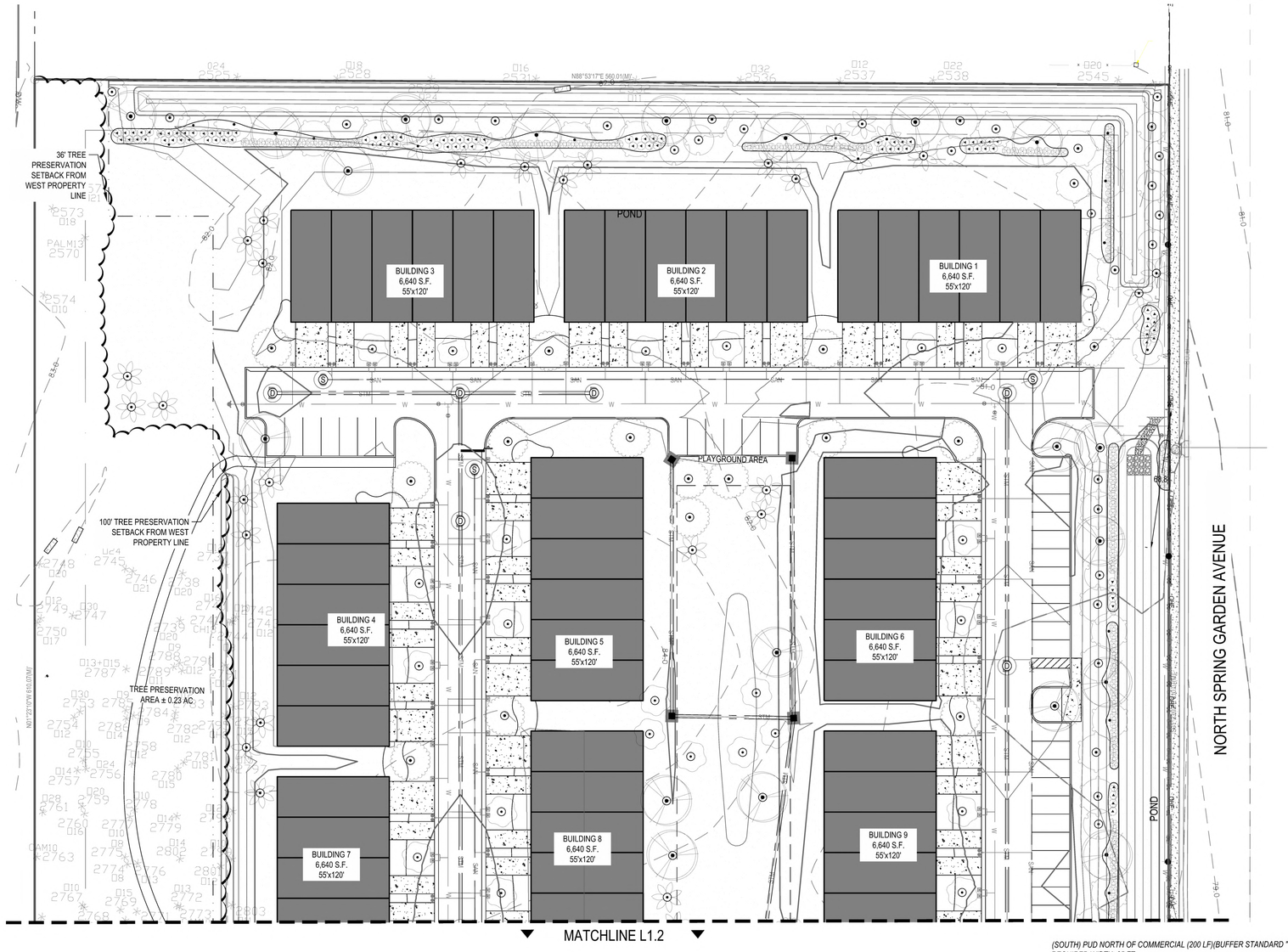
SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

LANDSCAPE PLAN

ISSUE: NOT FOR CONSTRUCTION	
DATE:	06/16/2023
JOB NO.:	761391
DESIGN:	EAB
DRAWN:	HI / JR
CHECKED:	ADH

SHEET NO.
L1.2

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LEGEND

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N

30 0 30 60

GRAPHIC SCALE (IN FEET)
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Sunshine811

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PROPOSED: 90 TREES (IN FRONT OF UNITS AND COMMON AREAS)
168,000 SF LOT AREA
REQUIRED: 68
PROPOSED: 68

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TOTAL FRONT YARD PROPOSED: 158

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414 REQUIRED TREES
MAXIMUM ALLOWED: 104 PALMS (25%)
PROPOSED: 104 PALMS (25%)

PLANT SCHEDULE

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	39	QUERCUS VIRGINIANA SOUTHERN LIVE OAK	100 GAL/ 4" CAL/ 3" DBH	10` HT / 6` SPR	AS SHOWN
	51	TAXODIUM DISTICHUM BALD CYPRESS	100 GAL/ 3" CAL/ 2" DBH	10` HT / 3` SPR	AS SHOWN
	30	ULMUS PARVIFOLIA 'ALLEE' TM ALLEE LACEBARK ELM	65 GAL/ 4" CAL/ 3" DBH	9` HT / 5` SPR	AS SHOWN
UNDERSTORY TREES	**QTY**	**BOTANICAL / COMMON NAME**	**SIZE**	**MIN HT / SPR**	**SPACING**
	9	ILEX X 'NELLIE R. STEVENS' NELLIE R. STEVENS HOLLY	45 GAL/ 3" CAL/ 2" DBH	8` HT / 3.5` SPR	8`-0" OC
	39	LAGERSTROEMIA INDICA X FAURIEI 'MUSKOGEE' MUSKOGEE CRAPE MYRTLE	65 GAL/ 3.5" CAL/ 2.5" DBH	8` HT / 4` SPR	AS SHOWN
	27	MAGNOLIA VIRGINIANA SWEETBAY MAGNOLIA	65 GAL/ 3.5" CAL/ 2.5" DBH	9` HT / 5` SPR	AS SHOWN
	104	SABAL PALMETTO CABBAGE PALMETTO	12" CAL MIN/ 4" DBH	14` CT	AS SHOWN
SHRUBS	**QTY**	**BOTANICAL / COMMON NAME**	**SIZE**	**MIN HT / SPR**	**SPACING**
	183	HAMELIA PATENS FIREBUSH	---	24" HT	4`-0" OC
	250	MYRICA CERIFERA WAX MYRTLE	---	24" HT	4`-0" OC
GROUND COVERS	**QTY**	**BOTANICAL / COMMON NAME**	**SIZE**	**MIN HT / SPR**	**SPACING**
	123,336 SF	PASPALUM NOTATUM BAHIAGRASS	SOD		
	171,373 SF	STENOTAPHRUM DIMIDIATUM ST. AUGUSTINE GRASS	SOD		

MULCH

- ALL PLANT BEDS SHALL CONTAIN A 3" LAYER OF GROUND MELALEUCA MULCH
- CONTRACTOR TO PLACE 4` DIAMETER MULCH RING AROUND ALL TREES IN LAWN
- ALL ANNUAL BEDS SHALL CONTAIN A 2" MIN. LAYER OF SOIL CONDITIONER (FINELY SHREDDED HARDWOODS WITH ORGANICS)
- MULCH SHOULD NOT BE PLACED ON TOP OF ROOT BALL OF NEWLY PLANTED TREES OR WITHIN 6" OF EXISTING TREES

IRRIGATION

- THE CONTRACTOR SHALL DESIGN, SUPPLY, AND INSTALL IRRIGATION SYSTEM FOR ALL SODDED AND PLANTING AREAS AS SHOWN ON THIS SHEET. DESIGN SHALL MEET ALL APPLICABLE CODES AND BE APPROVED BY OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION

LANDSCAPE REQUIREMENTS

PARKING (LANDSCAPING EVERY 12 SPACES):

PARKING SPACES: 45
REQUIRED CANOPY TREES: 4
PROPOSED CANOPY TREES: 7

PARKING (1 CANOPY TREE EVERY 75 SF OF REQ. LANDSCAPE AREA):

PARKING SPACES: 45 (7 SF LANDSCAPE AREA REQUIRED PER SPACE)
REQUIRED LANDSCAPE AREA: 315 SF
PROVIDED LANDSCAPE AREA: 2,643 SF
REQUIRED CANOPY TREES: 4
PROPOSED CANOPY TREES: 7

BUFFERS

(EAST) NORTH SPRING GARDEN AVENUE (575 LF)(BUFFER STANDARD "C"):
REQUIRED WIDTH: 25 FT
PROPOSED WIDTH: 25 FT
REQUIRED CANOPY TREES: 30 (5.2 CANOPY TREES PER 100 LF)
PROPOSED CANOPY TREES: 30
REQUIRED UNDERSTORY TREES: 13 (2.2 UNDERSTORY TREES PER 100 LF)
PROPOSED UNDERSTORY TREES: 13 (11 TREES +2 PALMS)
REQUIRED SHRUBS: 127 (22 SHRUBS PER 100 LF)
PROPOSED SHRUBS:127

(EAST) PUD ADJACENT TO COMMERCIAL (511 LF)(BUFFER STANDARD "C"):
REQUIRED WIDTH: 25 FT
PROPOSED WIDTH: 25 FT
REQUIRED CANOPY TREES: 27
PROPOSED CANOPY TREES: 27 (19 TREE + 8 PALMS)
REQUIRED UNDERSTORY TREES: 12
PROPOSED UNDERSTORY TREES: 12 (4 TREE + 8 PALMS
REQUIRED SHRUBS: 113
PROPOSED SHRUBS: 113

(WEST) PUD ADJACENT TO RESIDENTIAL MULTI-FAMILY(1,219 LF)(BUFFER STANDARD "C"):
REQUIRED WIDTH: 25 FT
PROPOSED WIDTH: 35-96 FT
REQUIRED CANOPY TREES: *64*
PROPOSED CANOPY TREES: EXISTING TREES TO REMAIN
REQUIRED UNDERSTORY TREES: 27
PROPOSED UNDERSTORY TREES: EXISTING TREES TO REMAIN
REQUIRED SHRUBS: 269
PROPOSED SHRUBS:EXISTING SHRUBS TO REMAIN

(NORTH) PUD ADJACENT TO COMMERCIAL (560 LF)(BUFFER STANDARD "C"):
REQUIRED WIDTH: 25 FT
PROPOSED WIDTH: 25 FT
REQUIRED CANOPY TREES: 30
PROPOSED CANOPY TREES: 30 (24 NEW TREES + 3 PALMS + EXISTING TREES)
REQUIRED UNDERSTORY TREES: 13
PROPOSED UNDERSTORY TREES: 13 (10 NEW TREES + 4 PALMS + EXISTING TREES)
REQUIRED SHRUBS: 124
PROPOSED SHRUBS: 124

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REVISION DESCRIPTION
NO. DATE

REGISTERED LANDSCAPE ARCHITECT
EDWARD ALLEN BROWDER
LA 6666790
STATE OF FLORIDA

DocuSigned by:
Edward Browder
1CD90F8FA22C4E4...

SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

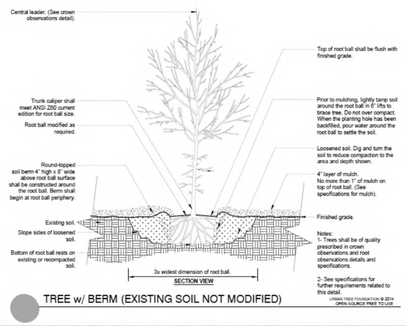
LANDSCAPE PLAN

ISSUE:
NOT FOR CONSTRUCTION
DATE:
06/16/2023

JOB NO.:	761391
DESIGN:	EAB
DRAWN:	HI / JR
CHECKED:	ADH

SHEET NO.
L1.3

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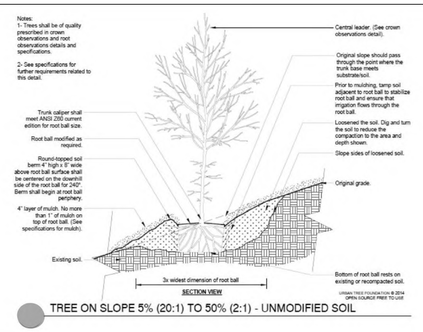


Date: December 11, 2015 TREE PLANTING WITH BERM -- EXISTING SOIL NOT MODIFIED

City of DeLand Standard Details

1 TREE PLANTING WITH BERM

N.T.S.

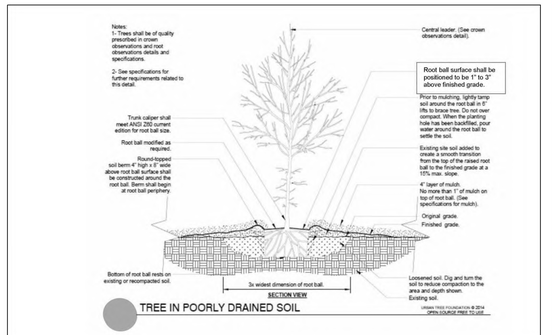


Date: December 11, 2015 TREE ON SLOPE – UNMODIFIED SOIL

City of DeLand Standard Details

2 TREE ON SLOPE

N.T.S.

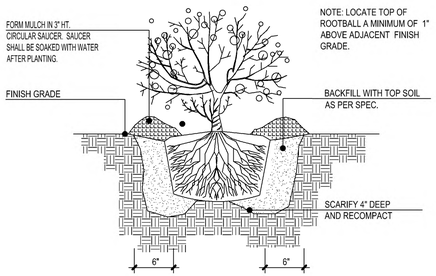


Date: December 11, 2015 TREE IN POORLY DRAINED SOIL

City of DeLand Standard Details

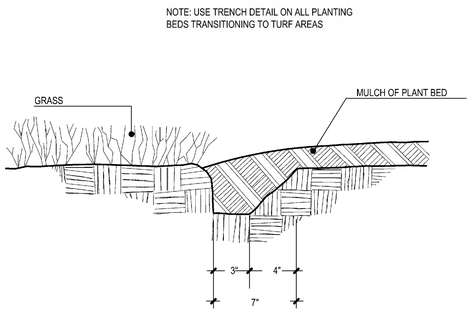
3 TREE IN PROPERLY DRAINED SOIL

N.T.S.



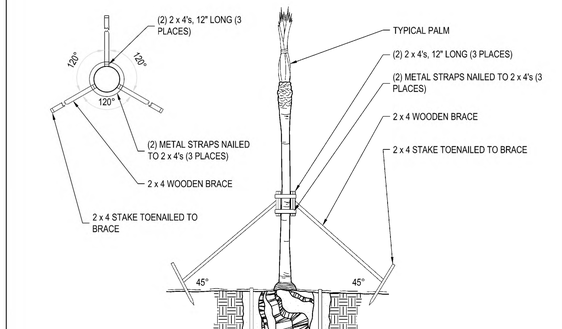
4 EVERGREEN / DECIDUOUS SHRUB

N.T.S.



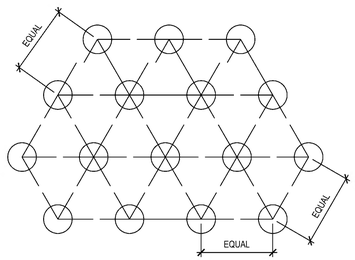
5 TRENCH EDGING

N.T.S.



6 TYPICAL PALM STAKING

N.T.S.

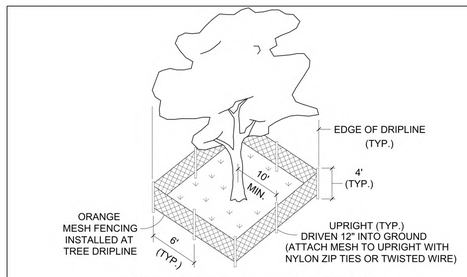


ALL GROUND COVER SHALL BE PLANTED AT EQUAL TRIANGULAR SPACING PER ON CENTER SPACING AS SPECIFIED ON PLANTING PLAN.

LOCATE GROUND COVER ONE HALF OF SPECIFIED SPACING DISTANCE FROM ANY CURB, SIDEWALK, OR OTHER HARD SURFACE, UNLESS OTHERWISE NOTED.

7 GROUND COVER SPACING

N.T.S.



TYP. CITY TREE BARRICADE DETAIL

N.T.S.

TREE BARRICADES ARE REQUIRED AROUND ALL TREES WHICH HAVE BEEN DESIGNATED ON THE SITE PLAN TO BE RETAINED AND PROTECTED. PRIOR TO ANY CLEARING OR CONSTRUCTION ACTIVITY OCCURRING ON THE SITE, TREE BARRICADES SHALL BE CONSTRUCTED BY THE CONTRACTOR AND APPROVED BY THE CITY. TREE BARRICADES SHALL BE PLACED AT THE EDGE OF THE DRIPLINE OR A MINIMUM OF 10' FROM THE TRUNK OF THE TREE, WHICH EVER IS GREATER.

FOR THE BARRIER THE CITY RECOMMENDS SAFETY BARRICADE FENCING.

NOTE: EXISTING TREES IN LANDSCAPE BUFFER SHALL ALSO BE PROTECTED.

DATE: JANUARY 31, 2023 **TREE BARRICADE DETAIL** **M112**

City of DeLand - Standard Details

8 TYP. TREE PROTECTION

N.T.S.

TREE PROTECTION NOTES

1. DURING LAND ALTERATION AND CONSTRUCTION ACTIVITIES, DO NOT PLACE SOIL DEPOSITS, DEBRIS SOLVENTS, MACHINERY CONSTRUCTION MATERIAL OF ANY KIND WITHIN THE DRIP LINE OF A TREE TO REMAIN.

2. BEFORE CONSTRUCTION STARTS ALL PROTECTED TREES SHALL BE PRUNED AS FOLLOWS UNLESS OTHERWISE DIRECTED BY THE OWNER OR HIS REPRESENTATIVE: REMOVE ANY DEAD OR DISEASED TRUNKS OR BRANCHES, AND REMOVE WEAK OR CROSSED BRANCHES. ALL CUTS SHALL BE MADE SUFFICIENTLY CLOSE TO THE TRUNK OR PARENT LIMB, WITHOUT CUTTING INTO THE BRANCH COLLAR OR LEAVING A PROTRUDING STUB, SO THAT CLOSURE CAN READILY START. ALL TRIMMING SHALL BE DONE BY QUALIFIED ISA CERTIFIED ARBORISTS. PRUNING SHALL BE IN ACCORDANCE WITH ANSI A-300 PRUNING STANDARDS.

3. ALL ROOTS TO BE REMOVED DURING THE SITE CLEARING SHALL BE SEVERED CLEAN AT THE PERIMETER OF THE DESIGNATED PROTECTED RADIUS. A 3" LAYER OF MULCH SHALL BE IMMEDIATELY APPLIED OVER THE SURFACE OF EXPOSED ROOTS OF PROTECTED TREES. A SOIL AUGER WILL BE USED TO BORE UNDER ROOT SYSTEMS IF UTILITIES ARE TO BE INSTALLED WITHIN 10' OF A PROTECTED TREE.

ROOT PRUNING NOTE:

WHEN THE CRITICAL ROOT ZONE WILL BE DISTURBED, AFFECTED ROOTS MUST BE SEVERED BY CLEAN PRUNING CUTS AT THE POINT WHERE CONSTRUCTION IMPACTS THE ROOTS. ROOTS CAN BE PRUNED BY UTILIZING TRENCHING EQUIPMENT DESIGNED FOR THIS PURPOSE OR BY HAND DIGGING A TRENCH AND PRUNING ROOTS WITH A PRUNING SAW, CHAIN SAW OR OTHER EQUIPMENT DESIGNED FOR TREE PRUNING. ROOTS LOCATED WITHIN A CRITICAL ROOT ZONE THAT WILL BE IMPACTED BY CONSTRUCTION MUST BE PRUNED TO A DEPTH OF 18 INCHES BELOW THE EXISTING GRADE OR TO THE DEPTH OF DISTURBANCE IF LESS THAN 18 INCHES FROM THE EXISTING GRADE. WHEN UNDERGROUND UTILITY LINES ARE TO BE INSTALLED WITHIN THE CRITICAL ROOT ZONE, THE ROOT PRUNING REQUIREMENTS MAY BE WAIVED IF THE LINES ARE INSTALLED VIA TUNNELING OR DIRECTIONAL BORING AS OPPOSED TO OPEN TRENCHING. A LICENSED CERTIFIED ARBORIST SHALL PROVIDE PRUNING.

NOTES:

1. NO TRUCKS OR HEAVY EQUIPMENT ALLOWED WITHIN BARRIERS, ONLY HAND LABOR ALLOWED.
2. NO CONSTRUCTION MATERIALS, SOILS DEPOSITS, OR SOLVENTS SHALL BE ALLOWED WITHIN BARRIERS.
3. BARRIERS ARE TO IN PLACE PRIOR TO ANY CONSTRUCTION ACTIVITIES WITH-IN TREE AREA.
4. BARRIERS ARE TO STAY IN PLACE UNTIL ALL PAVING, CONSTRUCTION, AND HEAVY EQUIPMENT IS REMOVED FROM THE AREA.
5. CRITICAL ROOT ZONE: 1 INCH OF TREE AT DIAMETER BREAST HEIGHT (DBH) IS EQUAL TO 1 FOOT OF CRITICAL ROOT ZONE (CRZ). IE. 30 INCH DBH = 30 FOOT CRZ

GENERAL NOTES: LANDSCAPE PLAN

1. CONTRACTOR TO VERIFY WITH OWNER AND UTILITY COMPANIES THE LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION, TO DETERMINE IN THE FIELD THE ACTUAL LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL CALL UTILITY LOCATE SERVICE 72 HOURS PRIOR TO CONSTRUCTION.
2. SITE CONDITIONS BASED UPON SURVEY PROVIDED BY OWNER. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS BY DETAILED INSPECTION PRIOR TO SUBMITTING BID AND BEGINNING CONSTRUCTION.
3. REFER TO SITE CIVIL DRAWINGS FOR ADDITIONAL REQUIREMENTS AND COORDINATE WORK WITH OTHER SITE RELATED DEVELOPMENT DRAWING AS NEEDED.
4. REESTABLISH EXISTING TURF IN AREAS DISTURBED BY GRADING OR UTILITY TRENCHING, INCLUDING AREAS IN RIGHT-OF-WAY, TO MATCH EXISTING SPECIES.
5. CONTRACTOR SHALL EXAMINE FINISH SURFACE, GRADES, TOPSOIL QUALITY AND DEPTH. DO NOT START ANY WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED. VERIFY LIMITS OF WORK BEFORE STARTING.
6. CONTRACTOR TO REPORT ALL DAMAGES TO EXISTING CONDITIONS AND INCONSISTENCIES WITH PLANS TO LANDSCAPE ARCHITECT.
7. CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE IN ALL LANDSCAPE BEDS AND ALL LAWN AREAS.
8. CONTRACTOR TO FINE GRADE AND ROCK-HOUND ALL TURF AREAS PRIOR TO SEEDING, TO PROVIDE A SMOOTH AND CONTINUAL SURFACE, FREE OF IRREGULARITIES (BUMPS OR DEPRESSIONS) & EXTRANEOUS MATERIAL OR DEBRIS.
9. REMOVE EXISTING WEEDS FROM PROJECT SITE PRIOR TO THE ADDITION OF ORGANIC AMENDMENTS AND FERTILIZER. APPLY AMENDMENTS AND FERTILIZER AS NEEDED.
10. QUANTITIES SHOWN ARE INTENDED TO ASSIST CONTRACTOR IN EVALUATING THEIR OWN TAKE OFFS AND ARE NOT GUARANTEED AS ACCURATE REPRESENTATIONS OF REQUIRED MATERIALS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS BID QUANTITIES AS REQUIRED BY THE PLANS AND SPECIFICATIONS. IF THERE IS A DISCREPANCY BETWEEN THE NUMBER LABELED ON THE PLANT LEGEND AND THE QUANTITY OF GRAPHIC SYMBOLS SHOWN, THE GREATER QUANTITY SHALL GOVERN.
11. COORDINATE LANDSCAPE INSTALLATION WITH INSTALLATION OF UNDERGROUND SPRINKLER AND DRAINAGE SYSTEMS.
12. ALL PLANTS SHALL BE FLORIDA #1 OR BETTER. ALL PLANTS SHALL BE TYPICAL OF THEIR SPECIES OR VARIETY AND SHALL HAVE A NORMAL HABIT OF GROWTH. THEY SHALL BE SOUND, HEALTHY AND VIGOROUS, WELL-BRANCHED AND DENSELY FOLIATED WHEN IN LEAF. THEY SHALL BE FREE OF DISEASE AND INSECT PESTS, EGGS OR LARVAE. THEY SHALL HAVE HEALTHY, WELL-DEVELOPED ROOT SYSTEMS.
13. ALL PLANTS, UNLESS OTHERWISE SPECIFIED, SHALL BE NURSERY GROWN STOCK, AND SHALL COMPLY WITH ALL REQUIRED INSPECTIONS, GRADING STANDARDS, PLANT REGULATIONS AND REQUIREMENTS FOR MEASUREMENT, BRANCHING AND CULTURAL PRACTICES; AS SET FORTH IN THE FLORIDA DEPARTMENT OF AGRICULTURE "GRADES AND STANDARDS FOR NURSERY PLANTS", (LATEST EDITION), INCLUDING REVISIONS AS DETERMINED BY THE STATE PLANT BOARD OF FLORIDA.
14. ONCE PROJECT IS AWARDED, THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE TO SECURE ALL PLANT MATERIAL IN THE SIZE SPECIFIED ON PLAN PRIOR TO INSTALLATION. IN THE EVENT THE PLANT MATERIAL IS NOT AVAILABLE IN THE SIZE SPECIFIED, THE CONTRACTOR SHALL INSTALL LARGER AT NO COST TO OWNER.
15. THE LANDSCAPE CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FOR ALL PLANT MATERIAL SUBSTITUTIONS FROM THE LANDSCAPE ARCHITECT AND CITY FORESTER PRIOR TO INSTALLATION. PLANT SUBSTITUTIONS WITHOUT PRIOR WRITTEN APPROVAL THAT DO NOT COMPLY WITH THE DRAWINGS AND SPECIFICATIONS MAY BE REJECTED BY THE LANDSCAPE ARCHITECT AND REPLACED BY CONTRACTOR AT NO COST TO THE OWNER.
16. PRIOR TO MOBILIZATION THE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT, IN WRITING, IF HE/SHE BELIEVES ANY OF THE PLANT MATERIAL IDENTIFIED ON THE PLAN MAY NOT BE SUITABLE FOR THE SITE OR MAY DIE. SUBSTITUTION REQUESTS WILL BE GRANTED BY THE LANDSCAPE ARCHITECT PRIOR TO THE START OF CONSTRUCTION ACTIVITIES. IF NOTIFICATION IS NOT GIVEN TO THE LANDSCAPE ARCHITECT ALL PLANTING WHICH FAILS TO GROW (EXCEPT FOR DEFECTS RESULTING FROM LACK OF ADEQUATE MAINTENANCE AS DETERMINED BY THE OWNER, NEGLECT, OR VANDALISM) SHALL BE REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
17. WHERE PROPOSED TREE LOCATIONS OCCUR UNDER EXISTING OVERHEAD UTILITIES OR CROWD EXISTING TREES, NOTIFY LANDSCAPE ARCHITECT TO ADJUST TREE LOCATIONS.
18. ALL PLANT MASSES TO BE TOP DRESSED WITH MULCH AS SPECIFIED IN PLANT SCHEDULE, SPREAD UNIFORMLY IN DEPTH OVER THE PLANTING BEDS AS DELINEATED ON THE PLANS UNLESS OTHERWISE NOTED.
19. BED EDGE TO BE NO LESS THAN 12" AND NO MORE THAN 18" FROM OUTER EDGE OF PLANT MATERIAL BRANCHING. WHERE GROUND-COVER OCCURS, PLANT TO LIMITS OF AREA AS SHOWN.
20. ALL PLANTS SHALL BE GUARANTEED FOR 1 YEAR AFTER SUBSTANTIAL COMPLETION OCCURS AND FINAL ACCEPTANCE BY OWNER.
21. LANDSCAPE MAINTENANCE PERIOD BEGINS IMMEDIATELY AFTER THE COMPLETION OF ALL PLANTING OPERATIONS AND WRITTEN ACCEPTANCE FROM THE OWNER AND LANDSCAPE ARCHITECT. MAINTAIN TREES, SHRUBS, LAWNS, AND OTHER PLANTS AS PER THE PROJECT MANUAL AND/OR WRITTEN SPECIFICATIONS, IF APPLICABLE. LANDSCAPE MAINTENANCE IS THE LANDSCAPING CONTRACTORS RESPONSIBILITY UNTIL FINAL ACCEPTANCE BY THE OWNER.
22. ALL LANDSCAPE MAINTENANCE SHALL BE IN ACCORDANCE WITH LOCAL GOVERNING STANDARDS.
23. REFER TO PROJECT MANUAL OR WRITTEN SPECIFICATIONS, IF AVAILABLE, FOR ADDITIONAL REQUIREMENTS.

SOIL PLANTING MIXTURE (MIX ONSITE)

1. THE LANDSCAPE CONTRACTOR SHALL FURNISH FROM THEIR SOURCE A GOOD CLEAN, NATIVE SOIL WHICH SHALL MEET THE APPROVAL OF THE OWNER'S REPRESENTATIVE. THIS SOIL SHALL BE USED FOR THE PLANTING MIXTURE AS FOLLOWS:
   A. ONE PART COMPOST/MANURE PLANTING MIX, TOPSOIL OR APPROVED EQUAL
   B. ONE PART NATIVE SOIL
2. SOILS WITHIN PLANTING AREAS MUST BE SUITABLE FOR PROPOSED PLANTED MATERIAL & SOD WITH REGARD TO: pH, SOIL TEXTURE, SOIL STRUCTURE, AND SEASONAL HIGH WATER TABLE. THE CONTRACTOR SHALL ANALYZE EXISTING SOILS LOCATED IN PROXIMITY TO PROPOSED PLANT MATERIAL AND BE RESPONSIBLE TO AMEND THE SOIL TO OBTAIN ESSENTIAL REQUIREMENTS NECESSARY FOR THE ESTABLISHMENT AND GROWTH OF PLANT LIFE. LANDSCAPE CONTRACTOR TO PROVIDE SOILS REPORT AND APPROPRIATE RECOMMENDATIONS PRIOR TO INSTALLATION TO OWNER'S REPRESENTATIVE FOR REVIEW. FAILURE TO PROVIDE REPORT MAY RESULT IN PLANT MATERIAL BEING REJECTED BY OWNER'S REPRESENTATIVE AND REPLACED AT NO COST TO OWNER.
3. THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE IN WRITING PRIOR TO PLANTING, WHEN CONDITIONS DETRIMENTAL TO PLANT GROWTH ARE ENCOUNTERED, SUCH AS RUBBLE FILL, POOR PLANTING SOIL, ADVERSE DRAINAGE CONDITIONS, OR OBSTRUCTIONS.

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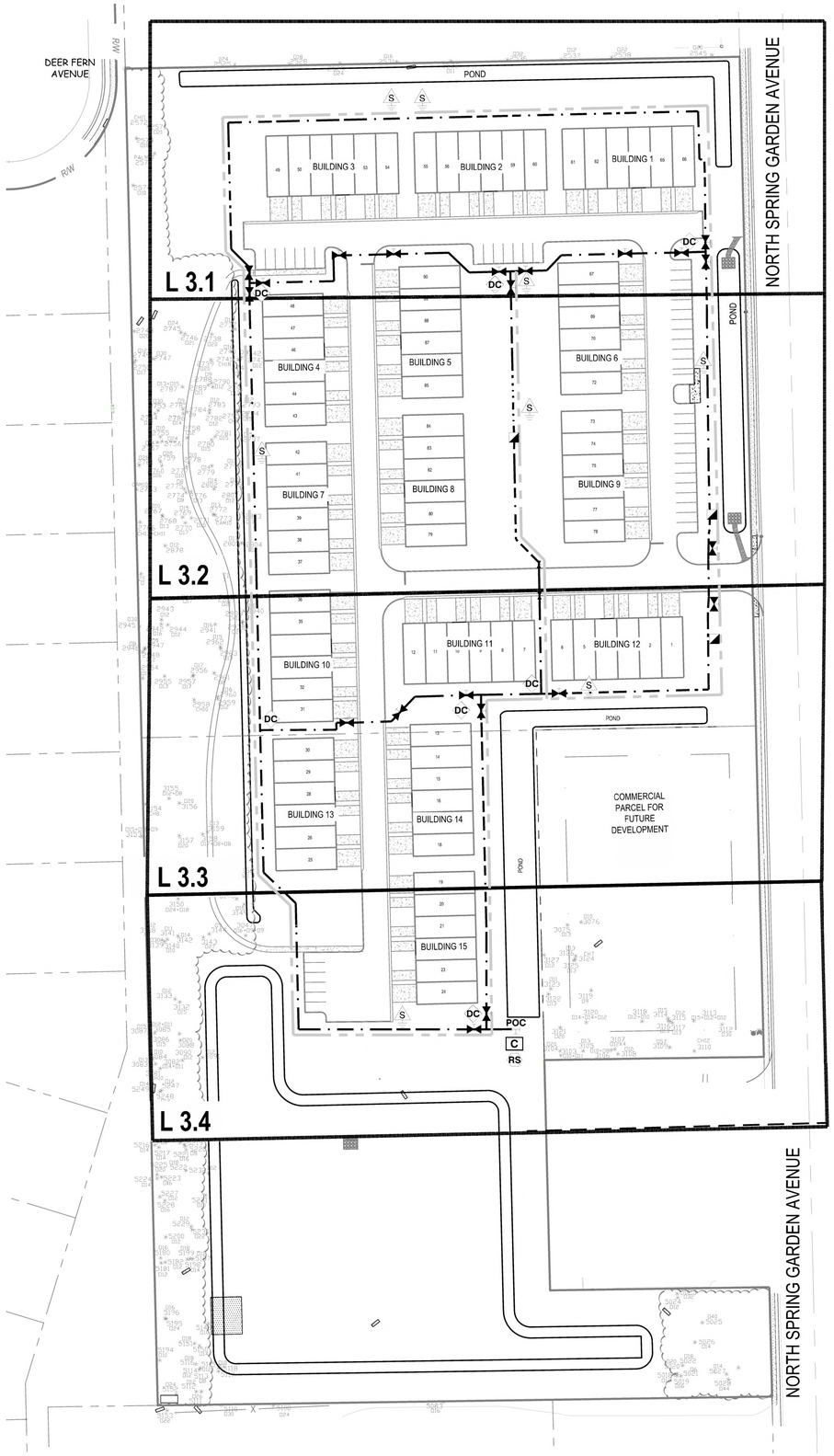
NO.	DATE	REVISION DESCRIPTION

SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

PLANTING DETAILS

ISSUE: NOT FOR CONSTRUCTION
DATE: 07/26/2023
JOB NO.: 761391
DESIGN: EAB
DRAWN: HI
CHECKED: ADH
SHEET NO. L2.0

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IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL
◢	QUICK COUPLER VALVE RAIN BIRD 5-NP - 1IN. BRASS VALVE WITH CORROSION-RESISTANT STAINLESS STEEL SPRING, LOCKING NON-POTABLE PURPLE RUBBER COVER, AND 1-PIECE BODY.
⋈	STAINLESS STEEL BALL VALVE LEEMCO LBT-XX-SS
C	2-WIRE DECODER BASED CONTROLLER RAIN BIRD ESP-LXD- 100 STATION, INDOOR/OUTDOOR, PLASTIC WALL-MOUNT ENCLOSURE. TO BE INSTALLED ON 6" WOODEN POST. SYSTEM REQUIREMENTS: RAIN BIRD FD-50-TURF FIELD DECODERS, GROUND SYSTEM W/ LSP-1TURF LINE SURGE PROTECTORS IN VALVE BOXES. INSTALL PER MANUFACTURERS RECOMMENDATIONS.
DC	DECODER CABLE FUSE DEVICES (DCFD) MFG: PAIGE - MODEL: DCFD CONTRACTOR TO INSTALL AT ALL DIRECTIONAL SPLICES IN A VALVE BOX. CONTRACTOR TO PROVIDE ANY NECESSARY DCFD NOT SHOWN IN PLANS
S	SURGE PROTECTOR/GROUNDING PLATE RAINBIRD SENSOR DECODER (MODEL: LSP-1) INSTALL EVERY 500` OF CONTROL WIRE OR 10 DECODERS, WHICHEVER IS LESSER. REFER TO SHEET L3.0 FOR TWO WIRE ROUTING. EARTH GROUND RESISTANCE READINGS TO BE 10 OHMS OR LESS. RESISTANCE READINGS WILL BE REQUIRED TO BE TESTED BY CONTRACTOR AND A REPORT VERIFYING READINGS HAVE MET SPECIFICATIONS SUBMITTED TO OWNER PRIOR TO FINAL PAYMENT BEING RELEASED.
RS	WIRELESS RAIN/FREEZE SENSOR RAIN BIRD WR2-RFS - TO BE INSTALLED ON TOP OF WOODEN POST WITH CONTROLLER. CONTRACTOR TO ENSURE RAIN SENSOR IS OUT OF CURRENT AND FUTURE DRIPLINE OF TREES IN IMMEDIATE AREA.
POC	POINT OF CONNECTION-WELL WELL AND PUMP INFORMATION TO BE PROVIDED BY OWNER.
— · — · —	IRRIGATION MAINLINE: 3" PVC CLASS 200 SDR 21-NP
- - - - - - -	PIPE SLEEVE: 6" PVC SCHEDULE 40
— — —	TWO-WIRE CONTROL WIRE. 14 AWG CONTRACTOR TO EXTEND CONTROL WIRE TO ALL VALVES AND STUB OUTS AS SHOWN. CONTRACTOR TO USE CONTINUOUS RUNS FOR ALL PROPOSED CONTROL WIRES. IF NECESSARY, LOCATE ALL WIRE SPLICES IN VALVE BOX. BUNDLE WIRES IN VALVE BOX WITH MINIMUM 24" OF EXCESS CABLE PER BUNDLE. ALL SPLICES MUST BE WATERPROOF WITH 3M DBY/DBR-6 CONNECTORS.

GENERAL NOTES:

1. IRRIGATION SYSTEM DESIGN BASED ON 60 GPM AND 65 PSI.
2. CONTRACTOR IS RESPONSIBLE TO ENSURE THAT ALL IRRIGATION EQUIPMENT IS MARKED APPROPRIATELY TO DESIGNATE NON-POTABLE WATER AND WITH PURPLE INDICATORS. ALL VALVE BOXES SHALL HAVE PURPLE LIDS WITH TEXT THAT READS "DO NOT DRINK". ALL PIPES TO BE PURPLE PIPE. ALL IRRIGATION HEADS WILL HAVE PURPLE CAPS. THIS SYSTEM WILL BE REQUIRED TO TRANSITION TO CITY RECLAIMED WATER ONCE AVAILABLE TO THE SITE.
3. IRRIGATION DESIGN IS FROM THE POINT OF CONNECTION (POC) ONLY. THE DESIGN IS BASED ON GALLONS PER MINUTE (GPM) AND POUNDS PER SQUARE INCH (PSI) AS FURNISHED BY OTHERS.
4. IRRIGATION CONTRACTOR TO VERIFY POINT OF CONNECTION IN THE FIELD AND CONFIRM MINIMUM DISCHARGE REQUIRED AT POINT OF CONNECTION AS REQUIRED BY PROPOSED IRRIGATION EQUIPMENT PRIOR TO INSTALLATION. CONTACT OWNER'S REPRESENTATIVE WITH ANY DISCREPANCIES IMMEDIATELY BEFORE INSTALLATION.
5. THE PRESSURE REQUIREMENT AT THE POINT OF CONNECTION IS BASED ON NO MORE THAN 5 FEET OF ELEVATION CHANGE IN THE AREAS OF IRRIGATION.
6. DETAILED AS-BUILTS WILL BE REQUIRED UPON COMPLETION OF PROJECT. AS-BUILTS TO INCLUDE ALL DECODER ADDRESSES AS WELL AS GPS LOCATIONS OF EACH VALVE BOX. SEE DETAIL SHEET FOR FURTHER INFORMATION
7. CONTRACTOR TO USE CONTINUOUS RUNS FOR ALL PROPOSED CONTROL WIRES. IF NECESSARY, LOCATE ALL WIRE SPLICES IN VALVE BOX. BUNDLE WIRES IN VALVE BOX WITH MINIMUM 24" OF EXCESS CABLE PER BUNDLE. ALL SPLICES MUST BE WATERPROOF WITH 3M DBY/DBR-6 CONNECTORS.
8. ALL MATERIAL USED SHALL BE INSTALLED AS PER PLAN AND AS PER MANUFACTURER'S SPECIFICATIONS. ALL DEVIATIONS FROM DRAWINGS OR MATERIALS SHALL BE APPROVED BY THE OWNER OR LANDSCAPE ARCHITECT.
9. PIPE LAYOUT AND VALVE LOCATION IS DIAGRAMMATIC. VALVES AND PIPES SHOWN IN BUILDING, PAVED AREAS OR UNDERNEATH EXISTING TREE DRIP LINES ARE FOR GRAPHIC CLARITY ONLY. ALL VALVES AND MAINLINE SHALL BE INSTALLED WITHIN LANDSCAPE AREAS BETWEEN RIGHT-OF-WAY AND PROPERTY LINE. LOCATION OF IRRIGATION COMPONENTS SHOWN ON DRAWING IS APPROXIMATE. ACTUAL PLACEMENT MAY VARY SLIGHTLY AS REQUIRED TO ACHIEVE FULL, EVEN COVERAGE AND/OR TO AVOID CONFLICTS WITH UTILITIES AND/OR EXISTING TREE ROOTS. CONTRACTOR TO REFERENCE PLANTING PLANS FOR EXISTING TREE INFORMATION AS APPLICABLE.
10. CONTRACTOR TO PROVIDE ANY STAKING NECESSARY FOR PROPERTY LINES, EASEMENT LINES, ETC. TO INSTALL PLANTING AND IRRIGATION AS PER PLANS
11. LOCATE VALVES AND VALVE BOXES IN SHRUB BED WHENEVER POSSIBLE. IF NECESSARY TO LOCATE IN LAWN, LOCATE A MINIMUM OF 36" AWAY FROM PLANTER BED EDGE.
12. SEE DETAIL SHEET L3.5 & L3.6 FOR FURTHER IRRIGATION NOTES & DETAILS

N

60 0 60 120

GRAPHIC SCALE (IN FEET)
1 in. = 60 ft.

Sunshine811

FORTY-EIGHT (48) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: FLORIDA UTILITY PROTECTION SERVICE AT 811 OR (800)-432-4770 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF FLORIDA 811.

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NO.	DATE	REVISION DESCRIPTION

REGISTERED LANDSCAPE ARCHITECT
EDWARD ALLEN BROWDER
LA 6628790
STATE OF FLORIDA

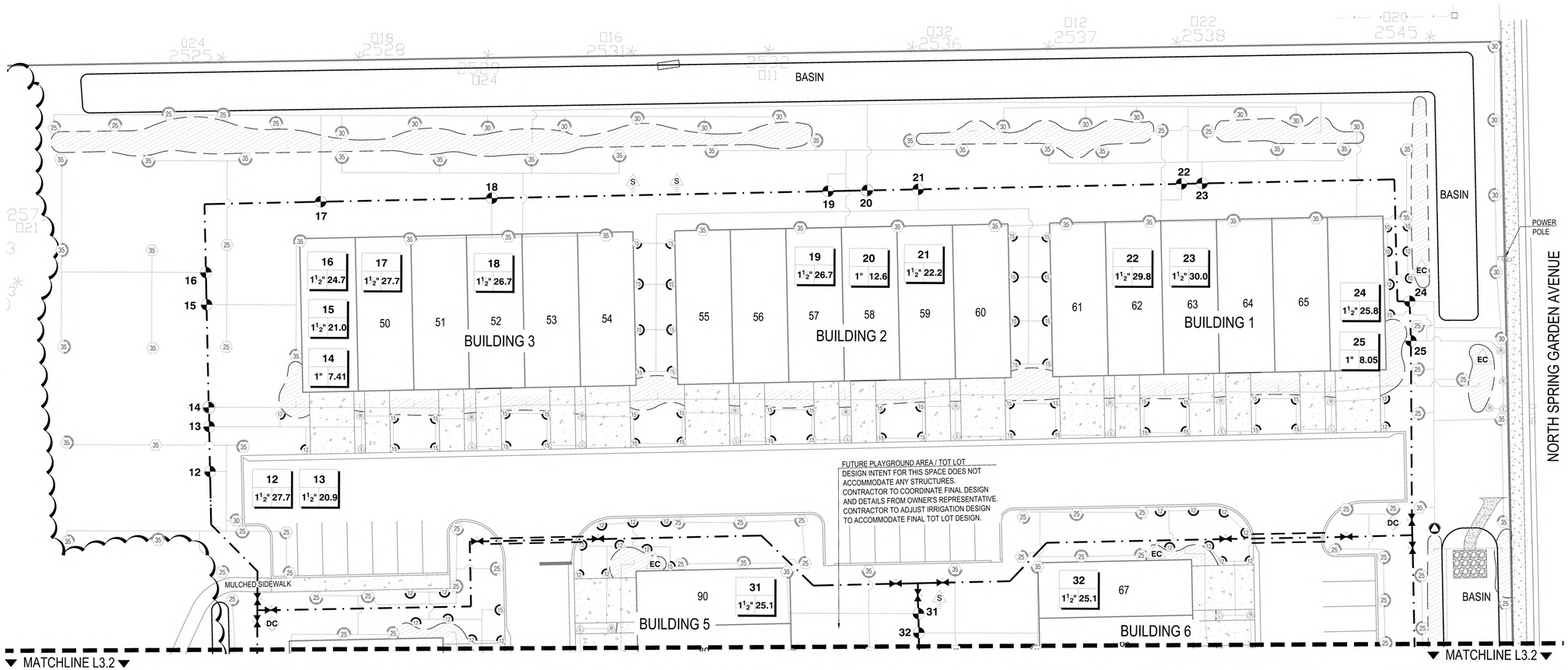
DocuSigned by:
Edward Browder
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SPRING GARDEN TOWNHOMES
DELAND, FL
610 N. SPRING GARDEN AVENUE, DELAND, FL

OVERALL MAINLINE AND TWO WIRE ROUTING PLAN

ISSUE:	NOT FOR CONSTRUCTION
DATE:	06/16/2023
JOB NO.:	761391
DESIGN:	EAB
DRAWN:	PS / JR
CHECKED:	CJC
SHEET NO.	L3.0

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IRRIGATION SCHEDULE

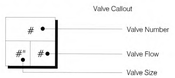
SYMBOL	MANUFACTURER/MODEL
EST LCS RCS CST SST	RAIN BIRD RD-04-S-P30-NP 15 STRIP SERIES
Q H F	RAIN BIRD RD-04-S-P30-NP 5 SERIES MPR
Q H F	RAIN BIRD RD-04-S-P30-NP 8 SERIES MPR
Q T H F	RAIN BIRD RD-04-S-P30-NP 10 SERIES MPR
Q T H TQ F	RAIN BIRD RD-04-S-P30-NP 12 SERIES MPR
Q T H TQ F	RAIN BIRD RD-04-S-P30-NP 15 SERIES MPR
18 ADJ 18 F	RAIN BIRD R-VAN18 RD-04-SAM-P45

SYMBOL	MANUFACTURER/MODEL
25	RAIN BIRD 5004-PL-PC-SAM-R-NP-MPR 25
30	RAIN BIRD 5004-PL-PC-SAM-R-NP-MPR 30
35	RAIN BIRD 5004-PL-PC-SAM-R-NP-MPR 35

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	XERIGATION COMMERCIAL CONTROL ZONE KIT GPM 0.2-15 MFG.: 1" RAINBIRD VALVE (MODEL: XCZ-100-PRB-FLOW) GPM 15-40 MFG.: 1 1/2" RAINBIRD VALVE (MODEL: XCZ-150-PRB-FLOW) USE PSI-M30X REGULATOR FOR FLOWS EXCEEDING 5 GPM
EC	END FLUSH CAP MODEL: MDCFCAP INSTALL IN VALVE BOX. TYPICAL AT ALL ENDS OF XERI-TUBE RUNS
	AREA TO RECEIVE DRIPLINE SHRUB ZONE RAIN BIRD XFS-06-18-NP NON POTABLE SUB-SURFACE PRESSURE COMPENSATING DRIPLINE W/COPPER SHIELD TECHNOLOGY. 0.6 GPH EMITTERS AT 18" O.C. LATERALS SPACED AT 18" APART, WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN. UV RESISTANT. SPECIFY XF INSERT FITTINGS.

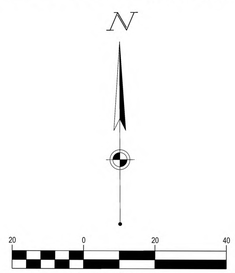
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	RAIN BIRD PESBR-PRS-D
	QUICK COUPLER VALVE RAIN BIRD 5-NP - 1IN. BRASS VALVE WITH CORROSION-RESISTANT STAINLESS STEEL SPRING, LOCKING NON-POTABLE PURPLE RUBBER COVER, AND 1-PIECE BODY.
	STAINLESS STEEL BALL VALVE LEEMCO LBT-XX-SS
C	2-WIRE DECODER BASED CONTROLLER RAIN BIRD ESP-LXD- 100 STATION, INDOOR/OUTDOOR, PLASTIC WALL-MOUNT ENCLOSURE. TO BE INSTALLED ON 6" WOODEN POST. SYSTEM REQUIREMENTS: RAIN BIRD FD-50-TURF FIELD DECODERS, GROUND SYSTEM W/ LSP-1TURF LINE SURGE PROTECTORS IN VALVE BOXES. INSTALL PER MANUFACTURERS RECOMMENDATIONS.
DC	DECODER CABLE FUSE DEVICES (DCFD) MFG: PAIGE - MODEL: DCFD CONTRACTOR TO INSTALL AT ALL DIRECTIONAL SPLICES IN A VALVE BOX. CONTRACTOR TO PROVIDE ANY NECESSARY DCFD NOT SHOWN IN PLANS
S	SURGE PROTECTOR/GROUNDING PLATE RAINBIRD SENSOR DECODER (MODEL: LSP-1) INSTALL EVERY 500' OF CONTROL WIRE OR 10 DECODERS, WHICHEVER IS LESSER. REFER TO SHEET L3.0 FOR TWO WIRE ROUTING. EARTH GROUND RESISTANCE READINGS TO BE 10 OHMS OR LESS. RESISTANCE READINGS WILL BE REQUIRED TO BE TESTED BY CONTRACTOR AND A REPORT VERIFYING READINGS HAVE MET SPECIFICATIONS SUBMITTED TO OWNER PRIOR TO FINAL PAYMENT BEING RELEASED.
RS	WIRELESS RAIN/FREEZE SENSOR RAIN BIRD WR2-RFS - TO BE INSTALLED ON TOP OF WOODEN POST WITH CONTROLLER. CONTRACTOR TO ENSURE RAIN SENSOR IS OUT OF CURRENT AND FUTURE DRIPLINE OF TREES IN IMMEDIATE AREA.
POC	POINT OF CONNECTION-WELL WELL AND PUMP INFORMATION TO BE PROVIDED BY OWNER.
	IRRIGATION LATERAL LINE: PVC CLASS 200 SDR 21-NP
	IRRIGATION MAINLINE: 3" PVC CLASS 200 SDR 21-NP
	PIPE SLEEVE: 6" PVC SCHEDULE 40

Valve Callout



LEGEND

- R/W — RIGHT OF WAY LINE
- LOT LINE
- PROPERTY BOUNDARY LINE
- PROPOSED FENCE
- PROPOSED CONCRETE SIDEWALK
- OVERHEAD POWER LINE
- EXISTING TREE CANOPY
- IRRIGATION COVERAGE LIMIT



GRAPHIC SCALE (IN FEET)
1 in. = 20 ft.

Sunshine811

FORTY-EIGHT (48) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: FLORIDA UTILITY PROTECTION SERVICE AT 811 OR (800)-432-4770 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF FLORIDA 811.

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NO.	DATE	REVISION DESCRIPTION

REGISTERED LANDSCAPE ARCHITECT
EDWARD ALLEN BROWDER
LA 6666790
STATE OF FLORIDA

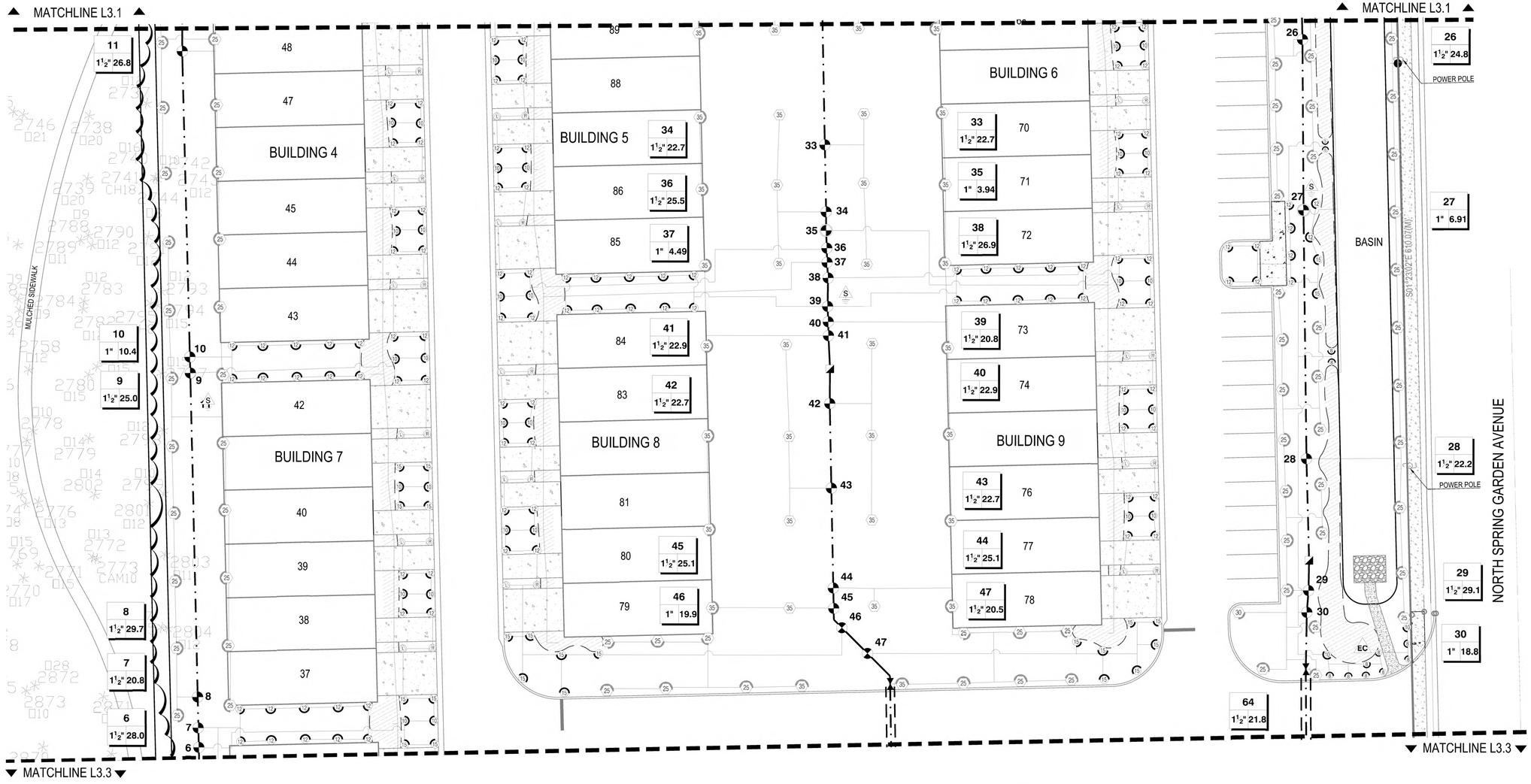
DocuSigned by:
Edward Browder
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SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

IRRIGATION PLAN

ISSUE: NOT FOR CONSTRUCTION	
DATE:	06/14/2023
JOB NO.:	761391
DESIGN:	EAB
DRAWN:	PS / JR
CHECKED:	CJC
SHEET NO.	L3.1

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IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL
EST LCS RCS CST SST	RAIN BIRD RD-04-S-P30-NP 15 STRIP SERIES
Q H F	RAIN BIRD RD-04-S-P30-NP 5 SERIES MPR
Q T H F	RAIN BIRD RD-04-S-P30-NP 8 SERIES MPR
Q T H F	RAIN BIRD RD-04-S-P30-NP 10 SERIES MPR
Q T H TQ F	RAIN BIRD RD-04-S-P30-NP 12 SERIES MPR
Q T H TQ F	RAIN BIRD RD-04-S-P30-NP 15 SERIES MPR
18 ADJ 18 F	RAIN BIRD R-VAN18 RD-04-SAM-P45

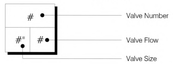
SYMBOL	MANUFACTURER/MODEL
25	RAIN BIRD 5004-PL-PC-SAM-R-NP-MPR 25
30	RAIN BIRD 5004-PL-PC-SAM-R-NP-MPR 30
35	RAIN BIRD 5004-PL-PC-SAM-R-NP-MPR 35

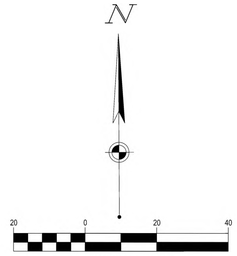
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	XERIGATION COMMERCIAL CONTROL ZONE KIT GPM 0.2-15 MFG.: 1" RAINBIRD VALVE (MODEL: XCZ-100-PRB-FLOW) GPM 15-40 MFG.: 1 1/2" RAINBIRD VALVE (MODEL: XCZ-150-PRB-FLOW) USE PSI-M30X REGULATOR FOR FLOWS EXCEEDING 5 GPM
EC	END FLUSH CAP MODEL: MDCFCAP INSTALL IN VALVE BOX. TYPICAL AT ALL ENDS OF XERI-TUBE RUNS
	AREA TO RECEIVE DRIPLINE SHRUB ZONE RAIN BIRD XFS-06-18-NP NON POTABLE SUB-SURFACE PRESSURE COMPENSATING DRIPLINE W/COPPER SHIELD TECHNOLOGY. 0.6 GPH EMITTERS AT 18" O.C. LATERALS SPACED AT 18" APART. WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN. UV RESISTANT. SPECIFY XF INSERT FITTINGS.

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	RAIN BIRD PESBR-PRS-D
	QUICK COUPLER VALVE RAIN BIRD 5-NP - 1IN. BRASS VALVE WITH CORROSION-RESISTANT STAINLESS STEEL SPRING, LOCKING NON-POTABLE PURPLE RUBBER COVER, AND 1-PIECE BODY.
	STAINLESS STEEL BALL VALVE LEEMCO LBT-XX-SS
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DC	DECODER CABLE FUSE DEVICES (DCFD) MFG: PAIGE - MODEL: DCFD CONTRACTOR TO INSTALL AT ALL DIRECTIONAL SPLICES IN A VALVE BOX. CONTRACTOR TO PROVIDE ANY NECESSARY DCFD NOT SHOWN IN PLANS

SYMBOL	MANUFACTURER/MODEL
S	SURGE PROTECTOR/GROUNDING PLATE RAINBIRD SENSOR DECODER (MODEL: LSP-1) INSTALL EVERY 500' OF CONTROL WIRE OR 10 DECODERS, WHICHEVER IS LESSER. REFER TO SHEET L3.0 FOR TWO WIRE ROUTING. EARTH GROUND RESISTANCE READINGS TO BE 10 OHMS OR LESS. RESISTANCE READINGS WILL BE REQUIRED TO BE TESTED BY CONTRACTOR AND A REPORT VERIFYING READINGS HAVE MET SPECIFICATIONS SUBMITTED TO OWNER PRIOR TO FINAL PAYMENT BEING RELEASED.
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POC	POINT OF CONNECTION-WELL WELL AND PUMP INFORMATION TO BE PROVIDED BY OWNER.
	IRRIGATION LATERAL LINE: PVC CLASS 200 SDR 21-NP
	IRRIGATION MAINLINE: 3" PVC CLASS 200 SDR 21-NP
	PIPE SLEEVE: 6" PVC SCHEDULE 40

Valve Callout





GRAPHIC SCALE (IN FEET)
1 in. = 20 ft.

LEGEND

- R/W — RIGHT OF WAY LINE
- LOT LINE
- PROPERTY BOUNDARY LINE
- PROPOSED FENCE
- PROPOSED CONCRETE SIDEWALK
- P P — OVERHEAD POWER LINE
- EXISTING TREE CANOPY
- IRRIGATION COVERAGE LIMIT

Sunshine 811

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EDWARD ALLEN BROWDER
LA 6666790
STATE OF FLORIDA

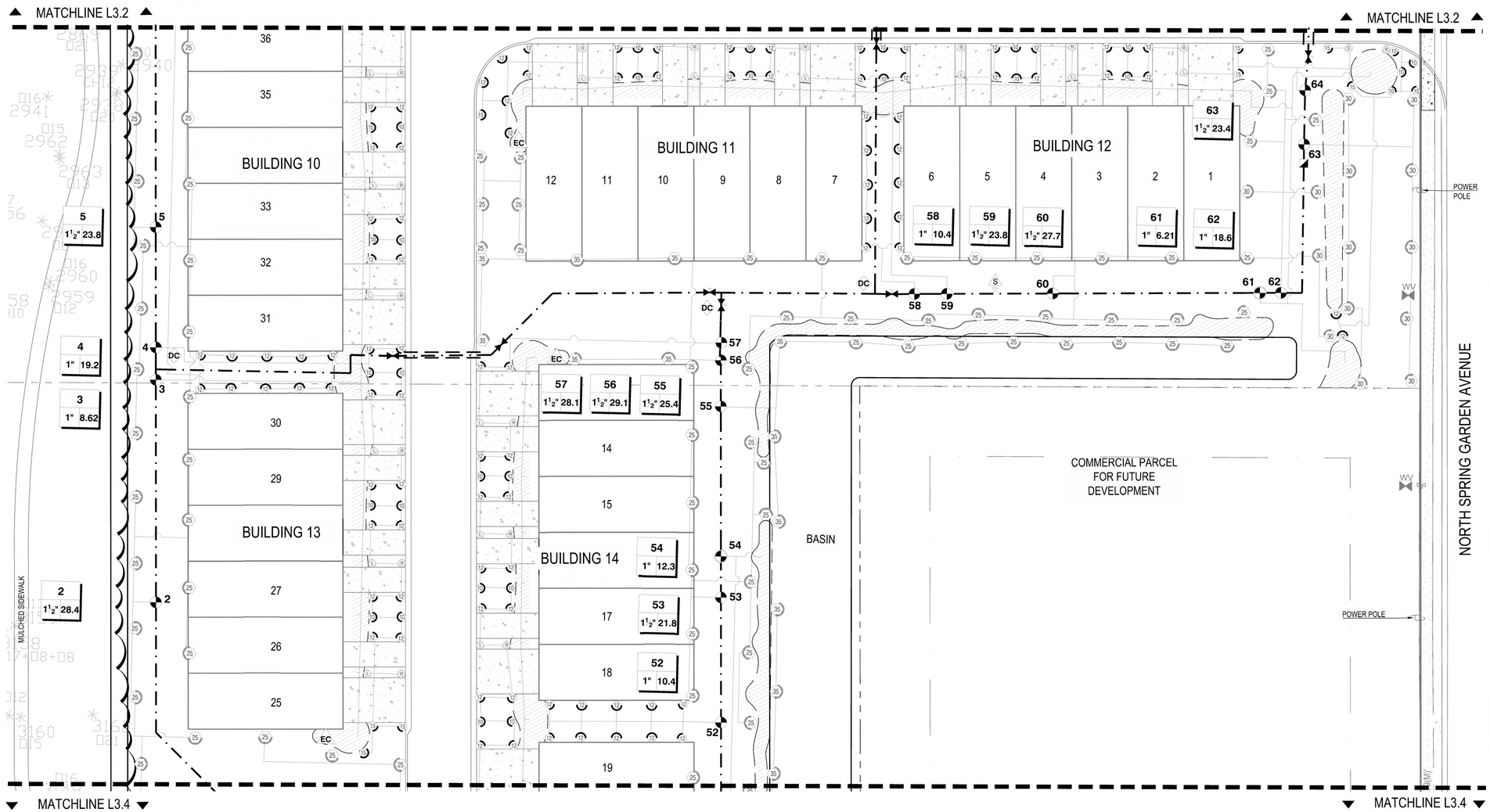
DocuSigned by:
Edward Browder
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SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

IRRIGATION PLAN

ISSUE: NOT FOR CONSTRUCTION	
DATE:	06/16/2023
JOB NO.:	761391
DESIGN:	EAB
DRAWN:	PS / JR
CHECKED:	CJC
SHEET NO.	L3.2

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IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL
EST LCS RCS CST SST	RAIN BIRD RD-04-S-P30-NP 15 STRIP SERIES
Q H F	RAIN BIRD RD-04-S-P30-NP 5 SERIES MPR
Q T H F	RAIN BIRD RD-04-S-P30-NP 8 SERIES MPR
Q T H F	RAIN BIRD RD-04-S-P30-NP 10 SERIES MPR
Q T H TQ F	RAIN BIRD RD-04-S-P30-NP 12 SERIES MPR
Q T H TQ F	RAIN BIRD RD-04-S-P30-NP 15 SERIES MPR
10 MCJ 1BF	RAIN BIRD R-VAN18 RD-04-SAM-P45

SYMBOL	MANUFACTURER/MODEL
25	RAIN BIRD 5004-PL-PC-SAM-R-NP-MPR 25
30	RAIN BIRD 5004-PL-PC-SAM-R-NP-MPR 30
35	RAIN BIRD 5004-PL-PC-SAM-R-NP-MPR 35

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
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EC	END FLUSH CAP MODEL: MDCFCAP INSTALL IN VALVE BOX. TYPICAL AT ALL ENDS OF XERI-TUBE RUNS
	AREA TO RECEIVE DRIPLINE SHRUB ZONE RAIN BIRD XFS-06-18-NP NON POTABLE SUB-SURFACE PRESSURE COMPENSATING DRIPLINE W/COPPER SHIELD TECHNOLOGY. 0.6 GPH EMITTERS AT 18" O.C. LATERALS SPACED AT 18" APART, WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN. UV RESISTANT. SPECIFY XF INSERT FITTINGS.

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	RAIN BIRD PESBR-PRS-D
	QUICK COUPLER VALVE RAIN BIRD 5-NP - 1IN. BRASS VALVE WITH CORROSION-RESISTANT STAINLESS STEEL SPRING, LOCKING NON-POTABLE PURPLE RUBBER COVER, AND 1-PIECE BODY.
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SYMBOL	MANUFACTURER/MODEL
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	IRRIGATION LATERAL LINE: PVC CLASS 200 SDR 21-NP
	IRRIGATION MAINLINE: 3" PVC CLASS 200 SDR 21-NP
	PIPE SLEEVE: 6" PVC SCHEDULE 40

Valve Callout
• — Valve Number
#" • # — Valve Flow / Valve Size

N

20 0 20 40
GRAPHIC SCALE (IN FEET)
1 in. = 20 ft.

LEGEND
- R/W — RIGHT OF WAY LINE
- LOT LINE
- PROPERTY BOUNDARY LINE
- PROPOSED FENCE
- PROPOSED CONCRETE SIDEWALK
- P-OH P-OH — OVERHEAD POWER LINE
- EXISTING TREE CANOPY
- IRRIGATION COVERAGE LIMIT

Sunshine811

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WWW.CESOINC.COM

NO.	DATE	REVISION DESCRIPTION

REGISTERED LANDSCAPE ARCHITECT
EDWARD ALLEN BROWNER
LA 6666790
STATE OF FLORIDA

DocuSigned by:
Edward Browner
1CD90FBFA22C4E4...

SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

IRRIGATION PLAN

ISSUE:	NOT FOR CONSTRUCTION
DATE:	06/16/2023
JOB NO.:	761391
DESIGN:	EAB
DRAWN:	PS / JR
CHECKED:	CJC

SHEET NO.
L3.3

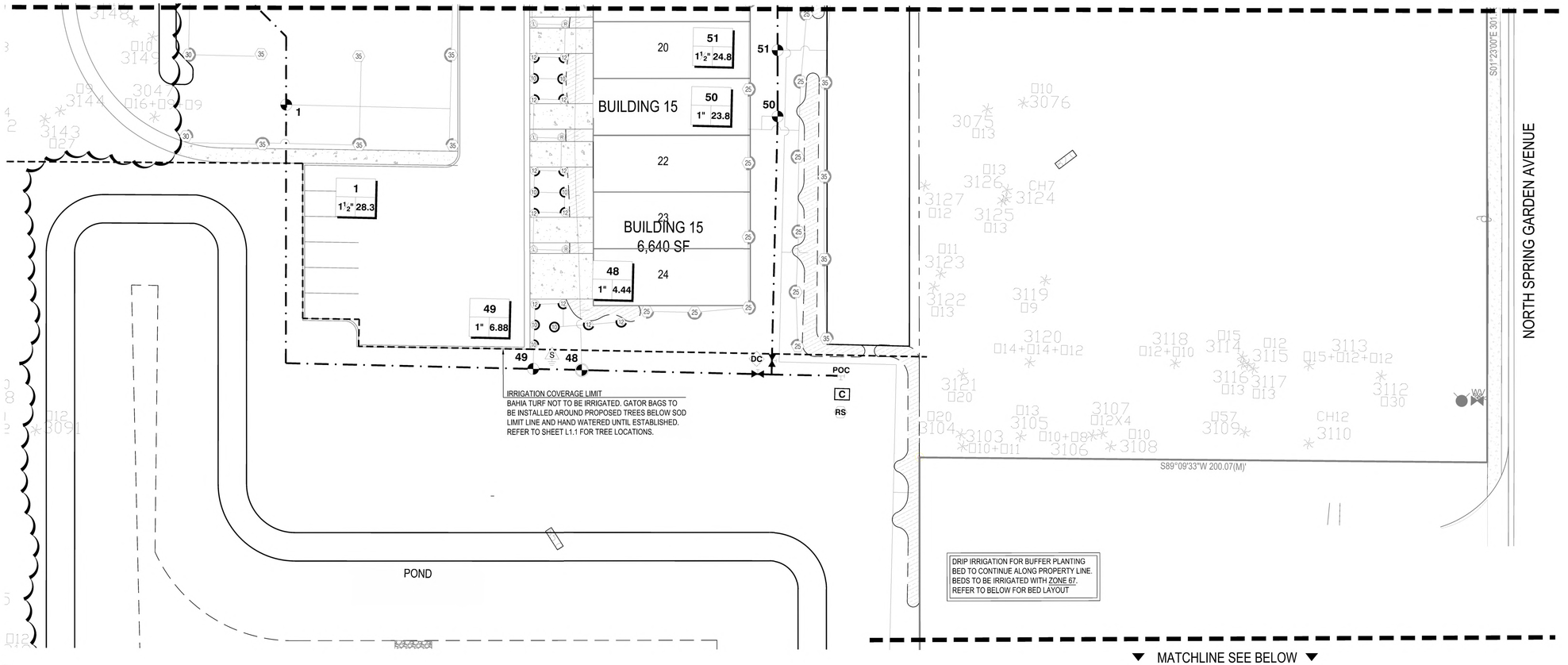
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W:\PROJECTS\DDCM\761391 - DELAND FL N SPRING GARDEN AVE - FORD TH\06-LA_PLAN_CD\DDCM-DELAND-IRRIGATION PLAN.DWG - 7/28/2023 4:58 PM

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MATCHLINE L3.3

MATCHLINE L3.3

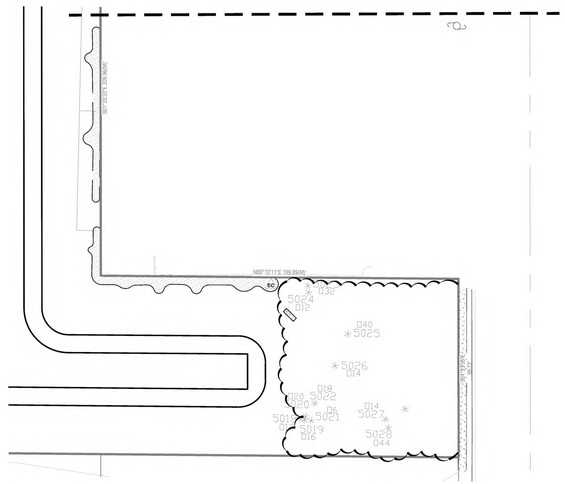


MATCHLINE SEE BELOW

A

SCALE: 1" = 20'

MATCHLINE SEE ABOVE



B

SCALE: 1" = 40'

IRRIGATION SCHEDULE

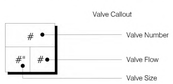
SYMBOL	MANUFACTURER/MODEL
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Q H F	RAIN BIRD RD-04-S-P30-NP 5 SERIES MPR
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Q T H F	RAIN BIRD RD-04-S-P30-NP 10 SERIES MPR
Q T H TQ F	RAIN BIRD RD-04-S-P30-NP 12 SERIES MPR
Q T H TQ F	RAIN BIRD RD-04-S-P30-NP 15 SERIES MPR
10 ADJ 18 F	RAIN BIRD R-VAN18 RD-04-SAM-P45

SYMBOL	MANUFACTURER/MODEL
25	RAIN BIRD 5004-PL-PC-SAM-R-NP-MPR 25
30	RAIN BIRD 5004-PL-PC-SAM-R-NP-MPR 30
35	RAIN BIRD 5004-PL-PC-SAM-R-NP-MPR 35

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
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SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	RAIN BIRD PESBR-PRS-D
	QUICK COUPLER VALVE RAIN BIRD 5-NP - 1IN. BRASS VALVE WITH CORROSION-RESISTANT STAINLESS STEEL SPRING, LOCKING NON-POTABLE PURPLE RUBBER COVER, AND 1-PIECE BODY.
	STAINLESS STEEL BALL VALVE LEEMCO LBT-XX-SS
C	2-WIRE DECODER BASED CONTROLLER RAIN BIRD ESP-LXD- 100 STATION, INDOOR/OUTDOOR, PLASTIC WALL-MOUNT ENCLOSURE. TO BE INSTALLED ON 6" WOODEN POST. SYSTEM REQUIREMENTS: RAIN BIRD FD-50-TURF FIELD DECODERS, GROUND SYSTEM W/ LSP-1TURF LINE SURGE PROTECTORS IN VALVE BOXES. INSTALL PER MANUFACTURERS RECOMMENDATIONS.
DC	DECODER CABLE FUSE DEVICES (DCFD) MFG: PAIGE - MODEL: DCFD CONTRACTOR TO INSTALL AT ALL DIRECTIONAL SPLICES IN A VALVE BOX. CONTRACTOR TO PROVIDE ANY NECESSARY DCFD NOT SHOWN IN PLANS
S	SURGE PROTECTOR/GROUNDING PLATE RAINBIRD SENSOR DECODER (MODEL: LSP-1) INSTALL EVERY 500' OF CONTROL WIRE OR 10 DECODERS, WHICHEVER IS LESSER. REFER TO SHEET L3.0 FOR TWO WIRE ROUTING. EARTH GROUND RESISTANCE READINGS TO BE 10 OHMS OR LESS. RESISTANCE READINGS WILL BE REQUIRED TO BE TESTED BY CONTRACTOR AND A REPORT VERIFYING READINGS HAVE MET SPECIFICATIONS SUBMITTED TO OWNER PRIOR TO FINAL PAYMENT BEING RELEASED.
RS	WIRELESS RAIN/FREEZE SENSOR RAIN BIRD WR2-RFS - TO BE INSTALLED ON TOP OF WOODEN POST WITH CONTROLLER. CONTRACTOR TO ENSURE RAIN SENSOR IS OUT OF CURRENT AND FUTURE DRIPLINE OF TREES IN IMMEDIATE AREA.
POC	POINT OF CONNECTION-WELL WELL AND PUMP INFORMATION TO BE PROVIDED BY OWNER.
	IRRIGATION LATERAL LINE: PVC CLASS 200 SDR 21-NP
	IRRIGATION MAINLINE: 3" PVC CLASS 200 SDR 21-NP
	PIPE SLEEVE: 6" PVC SCHEDULE 40

Valve Callout



LEGEND

- R/W — RIGHT OF WAY LINE
- LOT LINE
- PROPERTY BOUNDARY LINE
- PROPOSED FENCE
- PROPOSED CONCRETE SIDEWALK
- P-OH P-OH — OVERHEAD POWER LINE
- EXISTING TREE CANOPY
- IRRIGATION COVERAGE LIMIT

N

20 0 20 40

GRAPHIC SCALE (IN FEET)
1 in. = 20 ft.

Sunshine 811

FORTY-EIGHT (48) HOURS BEFORE DIGGING IS TO COMMENCE, THE CONTRACTORS SHALL NOTIFY THE FOLLOWING AGENCIES: FLORIDA UTILITY PROTECTION SERVICE AT 811 OR (800)-432-4770 AND ALL OTHER AGENCIES WHICH MIGHT HAVE UNDERGROUND UTILITIES INVOLVING THIS PROJECT AND ARE NONMEMBERS OF FLORIDA 811.

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NO.	DATE	REVISION DESCRIPTION

REGISTERED LANDSCAPE ARCHITECT
EDWARD ALLEN BROWDER
LA 6666790
STATE OF FLORIDA

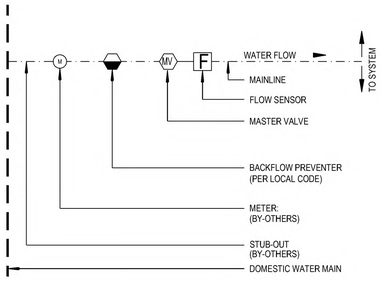
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Edward Browder
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SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

IRRIGATION PLAN

ISSUE:	NOT FOR CONSTRUCTION
DATE:	06/16/2023
JOB NO.:	761391
DESIGN:	EAB
DRAWN:	PS / JR
CHECKED:	CJC

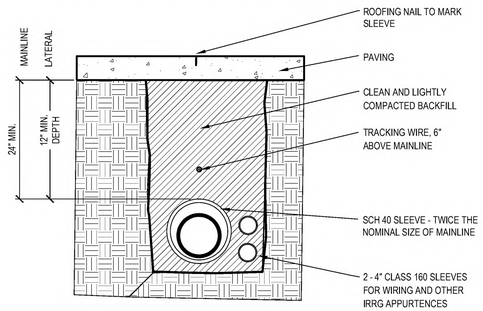
SHEET NO.
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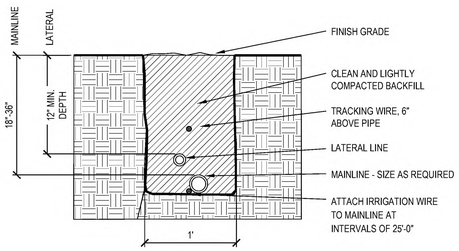
1 POINT OF CONNECTION N.T.S.

SLEEVING NOTES

1. CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING ALL SLEEVING FOR THE PROJECT UNLESS OTHERWISE NOTED. UNLESS OTHERWISE INDICATED, ALL SLEEVES ARE TO BE PVC SCH 40 AND TWO (2) NOMINAL SIZES LARGER THAN THE PIPE TO BE SLEEVED. FOR EXAMPLE: THE SLEEVE FOR A 2" PIPE SHALL BE 3". NO IRRIGATION SLEEVE SHALL BE SMALLER THAN 2".
2. ALL SLEEVES ARE TO BE INSTALLED WITH A MINIMUM OF 24" DEPTH OF COVER.
3. ALL SLEEVES TO EXTEND A MINIMUM OF 24" BEYOND THE EDGE OF PAVEMENT (WHEN POSSIBLE).
4. IDENTIFY ALL SLEEVES LOCATIONS BY STAKING THE SLEEVE ENDS WITH COLOR CODED BLUE REBAR AND/OR MARKING THE BACK OF CURB (OR PAVEMENT). COORDINATE WITH OWNER'S REPRESENTATIVE FOR PREFERRED METHOD.



2 MAINLINE SUPPLY LINE SLEEVE AT PAVING N.T.S.

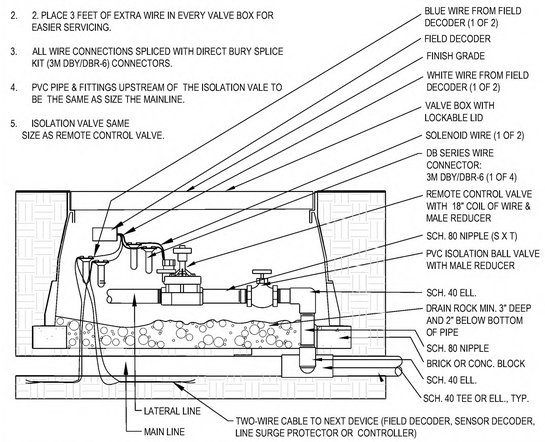


NOTE: IRRIGATION CONTRACTOR IS REQUIRED TO INSTALL TRACING WIRE OVER ALL MAINLINE PIPE AND CONTROLLER WIRE (INCLUDING) WIRE WHICH IS NOT INSTALLED IN TRENCH WITH PIPE.

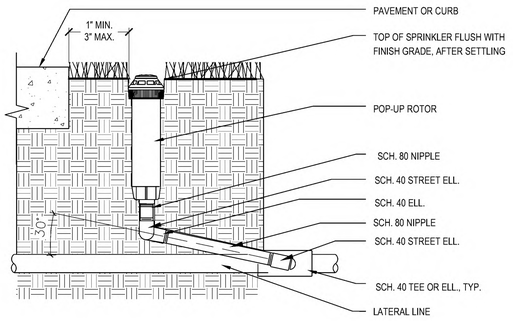
3 IRRIGATION TRENCH N.T.S.

NOTES:

1. 1. MAXIMUM LENGTH OF SECONDARY WIRE PATH (14 AWG) FROM FIELD DECODER TO SOLENOID IS 450 FEET.
2. 2. PLACE 3 FEET OF EXTRA WIRE IN EVERY VALVE BOX FOR EASIER SERVICING.
3. ALL WIRE CONNECTIONS SPLICED WITH DIRECT BURY SPLICE KIT (3M DBY/DBR-6) CONNECTORS.
4. PVC PIPE & FITTINGS UPSTREAM OF THE ISOLATION VALE TO BE THE SAME AS SIZE THE MAINLINE.
5. ISOLATION VALVE SAME SIZE AS REMOTE CONTROL VALVE.



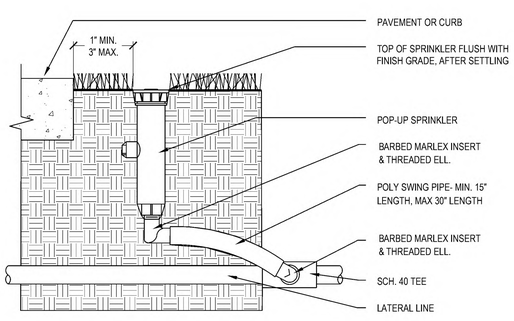
4 REMOTE CONTROL VALVE AND DECODER INSTALLATION N.T.S.



NOTES:
SWING JOINTS AS SHOWN ABOVE SHALL BE PROVIDED FOR ALL ROTARY HEADS THAT ARE DESIGNED TO PROVIDE 5 GPM OR GREATER. ALL OTHER IRRIGATION HEADS THAT HAVE VOLUMES BELOW 5 GPM SHALL UTILIZE FUNNY PIPE AS SHOWN WITHIN DETAIL #7 THIS SHEET

LOCATION OF ALL SPRINKLER HEADS SHALL BE SITE ADJUSTED TO MINIMIZE WATER OVERTHROW ONTO BUILDING SURFACES AND WALKWAYS. THROTTLE VALVES ON SPRAY ZONES AS REQUIRED TO PREVENT FOGGING. USE LOW TRAJECTORY NOZZLES WHENEVER POSSIBLE.

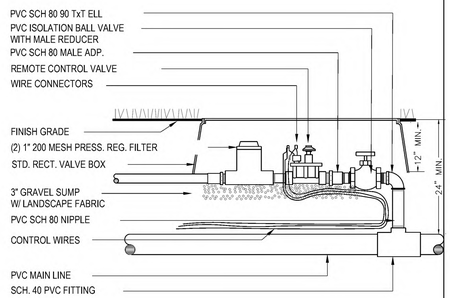
5 ROTARY POP-UP SPRINKLER N.T.S.



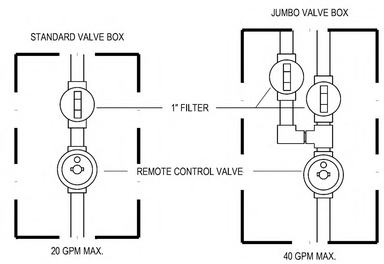
NOTE:

LOCATION OF ALL SPRINKLER HEADS SHALL BE SITE ADJUSTED TO MINIMIZE WATER OVERTHROW ONTO BUILDING SURFACES AND WALKWAYS. THROTTLE VALVES ON SPRAY ZONES AS REQUIRED TO PREVENT FOGGING. USE LOW TRAJECTORY NOZZLES WHENEVER POSSIBLE.

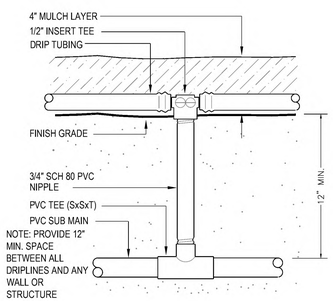
6 6" AND 12" POP-UP SPRINKLER HEAD N.T.S.



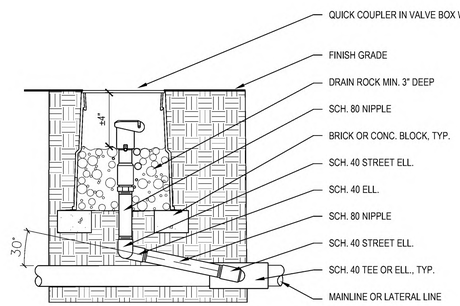
7 DRIP ZONE CONTROL VALVE N.T.S.



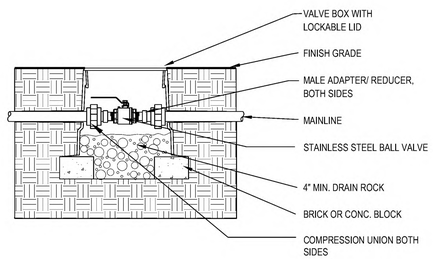
8 DRIP ZONE VALVE - PLAN VIEW N.T.S.



9 PVC-DRIP CONNECTION N.T.S.



10 QUICK COUPLER VALVE N.T.S.



11 BALL VALVE N.T.S.

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NO.	DATE	REVISION DESCRIPTION

SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

IRRIGATION DETAILS AND NOTES

ISSUE: NOT FOR CONSTRUCTION
DATE: 06/16/2023

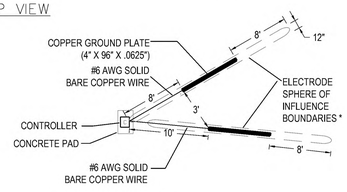
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CHECKED:	CJC

SHEET NO. L3.5

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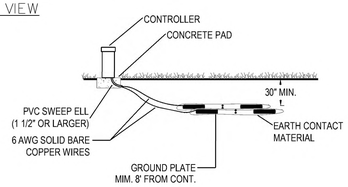
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TOP VIEW



* DO NOT INSTALL ANY OTHER WIRES OR CABLE WITHIN THE SPHERE OF INFLUENCE

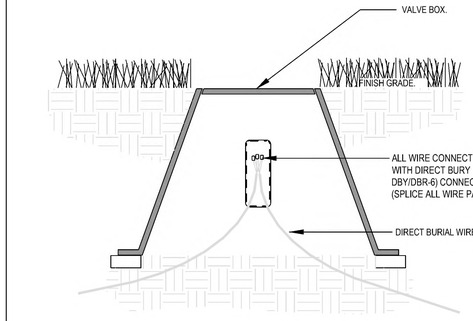
SIDE VIEW



MINIMUM ACCEPTABLE RESISTANCE TO GROUND IS 25 OHMS.
USE ADDITIONAL GROUND PLATES OR GROUND RODS AS NEEDED.

12 CONTROLLER GROUNDING

N.T.S.

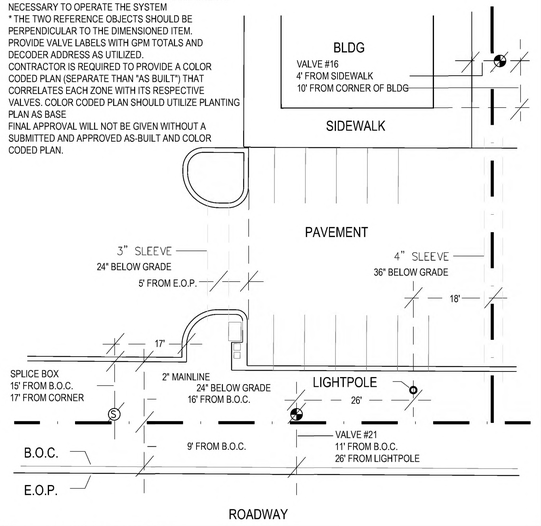


13 WIRE SPLICE

N.T.S.

NOTES:

- PROVIDE DIMENSIONS FROM TWO PERMANENT FIXED OBJECTS* AND "DEPTH OF COVER" ON ALL MAINLINE AND SLEEVES.
- PROVIDE GPS COORDINATES AND DIMENSIONS FROM TWO PERMANENT FIXED OBJECTS* FOR ALL VALVES, SPLICE BOXES, STUB-OUTS, QUICK CONNECTS, EARTH GROUNDS AND ANY OTHER IMPORTANT COMPONENTS NECESSARY TO OPERATE THE SYSTEM
  * THE TWO REFERENCE OBJECTS SHOULD BE PERPENDICULAR TO THE DIMENSIONED ITEM.
- PROVIDE VALVE LABELS WITH GPM TOTALS AND DECODER ADDRESS AS UTILIZED.
- CONTRACTOR IS REQUIRED TO PROVIDE A COLOR CODED PLAN (SEPARATE THAN "AS BUILT") THAT CORRELATES EACH ZONE WITH ITS RESPECTIVE VALVES. COLOR CODED PLAN SHOULD UTILIZE PLANTING PLAN AS BASE
- FINAL APPROVAL WILL NOT BE GIVEN WITHOUT A SUBMITTED AND APPROVED AS-BUILT AND COLOR CODED PLAN.

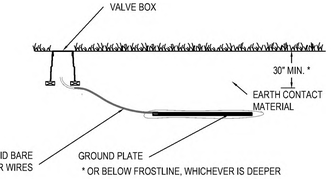


14 TYPICAL "AS BUILT"

N.T.S.

TOP VIEW

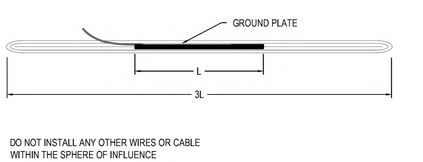
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NOTE: DO NOT INSTALL ANY OTHER WIRES OR CABLE WITHIN THE SPHERE OF INFLUENCE

SIDE VIEW

TOP VIEW



SIDE VIEW

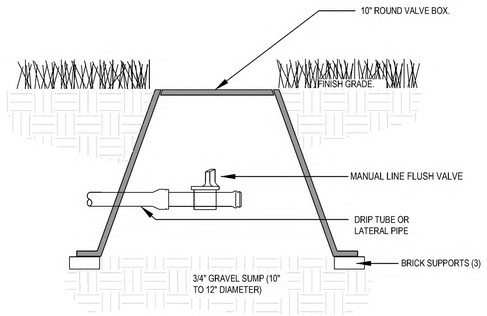
DO NOT INSTALL ANY OTHER WIRES OR CABLE
WITHIN THE SPHERE OF INFLUENCE

NOTE:

- ALL CONTROL WIRING DOWNSTREAM OF THE CONTROLLER IS TO BE 2-WIRE, UL APPROVED DIRECT BURY UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL PROVIDE GROUNDING RODS/PLATES AS DETAILED. GROUNDS ARE REQUIRED AT CONTROLLER, SURGE PROTECTION DECODERS, EVERY 500' OF CONTROL WIRE AND ANY OTHER AREAS NEEDED TO FULLY PROTECT SYSTEM.
- EARTH GROUND RESISTANCE READINGS TO BE 10 OHMS OR LESS. RESISTANCE READINGS WILL BE REQUIRED TO BE TESTED BY CONTRACTOR AND A REPORT SUBMITTED TO CARDNO AND OWNER'S REPRESENTATIVE PRIOR TO FINAL PAYMENT BEING RELEASE.

16 TYPICAL GROUNDING PLATE AND SPHERES OF INFLUENCE

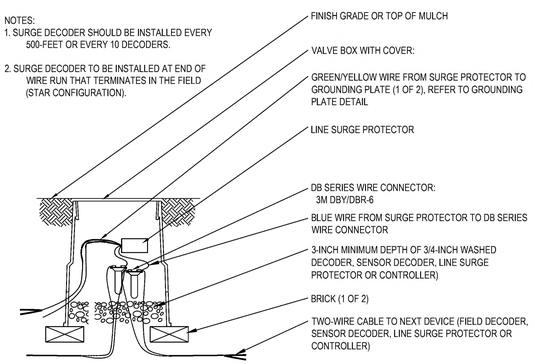
N.T.S.



15 MANUAL LINE FLUSHING VALVE

N.T.S.

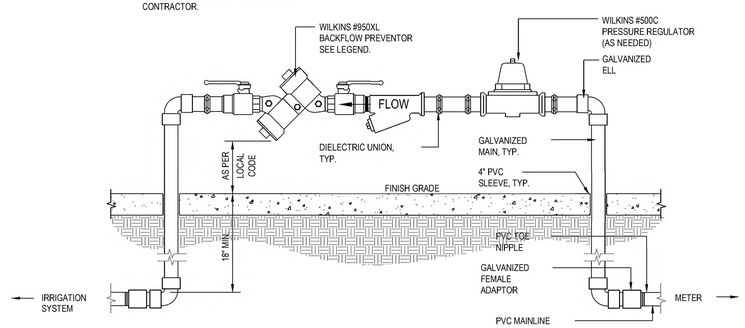
NOTES:
1. SURGE DECODER SHOULD BE INSTALLED EVERY 500-FEET OR EVERY 10 DECODERS.
2. SURGE DECODER TO BE INSTALLED AT END OF WIRE RUN THAT TERMINATES IN THE FIELD (STAR CONFIGURATION).



17 SURGE PROTECTOR DECODER

N.T.S.

NOTE: COORDINATE SLEEVE LOCATION IN SHED WITH PLUMBER AND GENERAL CONTRACTOR.



18 PRESSURE REGULATED BACKFLOW PREVENTER

N.T.S.

GENERAL NOTES: IRRIGATION PLAN

1. THE IRRIGATION DISTRIBUTION MAINLINE SHALL BE INSTALLED PER LOCAL AND STATE WATER STANDARDS. ALL IRRIGATION SYSTEMS SHALL BE OPERATED AND MAINTAINED IN ACCORDANCE TO LOCAL, REGIONAL, AND/OR STATE STANDARDS, WHICHEVER PRECEDES. CONTACT OWNER'S REPRESENTATIVE WITH ANY DISCREPANCIES.
2. IF REQUIRED, THE IRRIGATION CONTRACTOR SHALL PROVIDE THE NECESSARY RIGHT-OF-WAY USE ENCROACHMENT PERMIT(S)
3. IRRIGATION CONTRACTOR TO VERIFY WITH OWNER AND UTILITY COMPANIES THE LOCATIONS OF ALL UTILITIES PRIOR TO CONSTRUCTION AND TO DETERMINE IN THE FIELD THE ACTUAL LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES WHETHER SHOWN ON THE PLAN OR NOT. THE IRRIGATION CONTRACTOR SHALL CALL UTILITY PROTECTION SERVICE 72 HOURS PRIOR TO CONSTRUCTION.
4. IRRIGATION CONTRACTOR WILL ARRANGE INSPECTIONS REQUIRED BY LOCAL AGENCIES & ORDINANCES DURING CONSTRUCTION AS REQUIRED. ALL PRODUCTS, WIRING AND BACKFLOW PREVENTER TO BE INSTALLED IN ACCORDANCE WITH LOCAL AND STATE PLUMBING CODES
5. IRRIGATION CONTRACTOR TO REPORT ALL DAMAGES TO EXISTING CONDITIONS OR INCONSISTENCIES WITH PLANS TO LANDSCAPE ARCHITECT.
6. IRRIGATION CONTRACTOR SHALL EXAMINE FINISH SURFACE, GRADES, TOPSOIL QUALITY AND DEPTH. DO NOT START ANY WORK UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED. VERIFY LIMITS OF WORK BEFORE STARTING.
7. IRRIGATION CONTRACTOR SHALL COORDINATE IRRIGATION INSTALLATION WITH INSTALLATION OF LANDSCAPING, WALL CONSTRUCTION AND DRAINAGE SYSTEMS. IRRIGATION CONTRACTOR WILL BE RESPONSIBLE FOR COORDINATION WITH OTHER SUBCONTRACTORS FOR INSTALLATION OF UNDERGROUND SLEEVING.
8. ALL PRODUCTS OR ANY OTHER EQUIPMENT REQUIRED THAT IS NOT OTHERWISE DETAILED OR SPECIFIED SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS AND ACCORDING TO LOCAL BUILDING, ELECTRICAL, AND PLUMBING CODES.
9. PRIOR TO BACKFILLING TRENCHES CONTACT OWNER'S REPRESENTATIVE TO VERIFY WIRE PATH ROUTING, CONTROLLER WIRE AND SPLICING CONNECTIONS.
10. LAYOUT OF THE SYSTEM AS SHOWN ON DRAWINGS IS DIAGRAMMATIC. IRRIGATION LINES SHOWN WITHIN PAVED AREAS ARE FOR GRAPHIC CLARITY ONLY. IRRIGATION HEADS AND PIPES ARE TO BE PLACED WITHIN LANDSCAPED AREAS WITH THEIR LOCATIONS MODIFIED AS REQUIRED TO AVOID PLANT MATERIALS, UTILITIES AND OTHER OBSTRUCTIONS.
11. IRRIGATION CONTRACTOR SHALL COMPLY WITH PIPE SIZES AS INDICATED.
12. CONTRACTOR TO PROVIDE OWNER WITH KEYS AND HOSE SWIVELS FOR EACH QUICK COUPLER VALVE.
13. CONTRACTOR SHALL PROVIDE A REPRODUCIBLE DIGITAL AS-BUILT IRRIGATION PLAN. PLAN SHALL BE PREPARED, PRIOR TO FINAL ACCEPTANCE OF IRRIGATION INSTALLATION, ON A REPRODUCIBLE SITE PLAN (PROVIDED TO CONTRACTOR BY LANDSCAPE ARCHITECT). AS-BUILT PLAN SHALL BE SUBMITTED TO LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL PRIOR TO SUBSTANTIAL COMPLETION INSPECTION. AS-BUILTS SHALL INCLUDE A MASTER VALVE/ZONE SCHEDULE INCLUDING SPECIFICATIONS FOR INSTALLED VALVES, ZONE TYPE AND GALLONS PER MINUTE. SEE SPECS FOR FURTHER INFORMATION.
14. IRRIGATION CONTRACTOR SHALL PROVIDE A COLOR-CODED MAP OF THE AREA SERVED BY EACH CONTROLLER, SEALED IN PLASTIC OR LAMINATED, AND PLACE IT IN EACH CONTROLLER BOX UPON FINAL ACCEPTANCE.
15. CONTRACTOR SHALL OBTAIN WRITTEN APPROVAL FOR ALL PRODUCT SUBSTITUTIONS BY THE LANDSCAPE ARCHITECT PRIOR TO INSTECLATION. PRODUCTS, MANUFACTURERS, AND MODELS NOT IN COMPLIANCE WITH DRAWINGS AND SPECIFICATIONS MAY BE REJECTED BY THE LANDSCAPE ARCHITECT WITHOUT PRIOR WRITTEN APPROVAL. AT NO COST TO THE OWNER THESE ITEMS MAY BE REQUIRED TO BE REPLACED WITH PRODUCTS THAT ARE IN COMPLIANCE WITH THE MANUFACTURERS AND MODELS ON THE IRRIGATION PLAN.
16. CONTRACTOR TO INSTALL IRRIGATION CONTROL EQUIPMENT UNIT (CONTROL CABINET(S)) AT LOCATION SHOWN ON DRAWINGS. STAKE OUT EXACT LOCATION FOR OWNER'S REPRESENTATIVE'S REVIEW PRIOR TO EXCAVATING FOR THE FOOTING. INSTALL LEVEL AND PLUMB ON COMPACTED SUBSOIL AND BASE ROCK AS SHOWN ON DRAWINGS.
17. IRRIGATION CONTRACTOR SHALL PROVIDE POWER AND WATER FOR ALL LANDSCAPE ELEMENTS TO PROVIDE A COMPLETE OPERATING IRRIGATION SYSTEM. THE GENERAL CONTRACTOR AND/OR OWNER SHALL PROVIDE 120-VOLT POWER TO THE CONTROLLER LOCATION(S), COORDINATE AS NEEDED. THE IRRIGATION CONTRACTOR SHALL PROVIDE AND INSTALL ELECTRICAL CONDUITS AND WIRING TO PROVIDE POWER FROM ELECTRICAL BRANCH PANEL TO THE IRRIGATION CONTROL EQUIPMENT UNIT. IRRIGATION CONTRACTOR WILL BE RESPONSIBLE TO COORDINATE WITH AN ELECTRICIAN AS NEEDED.
18. AT EACH IRRIGATION CONTROLLER, INSTALL A "SECONDARY SURGE ARRESTER" TO THE INCOMING (120-VOLT) POWER SUPPLY (INTERMATIC #AG2401 OR EQUAL).
19. PROVIDE AND INSTALL CONDUIT SWEEPS AND STRAIGHT SECTIONS FROM IRRIGATION TRENCHES TO THE CONTROLLER. ROUTE CONTROL WIRE THROUGH CONDUITS INTO CONTROLLER CABINET. NEATLY CONNECT WIRES TO TERMINAL STRIPS PROVIDED IN THE CONTROLLER CABINET.
20. THE WIRELESS RAIN SHUTOFF DEVICE SHALL BE INSTALLED TO MEET LOCAL CODES AND/OR MINIMUM MANUFACTURER'S RECOMMENDATIONS. OBSTRUCTIONS, VANDALISM, AND EASE OF SERVICE SHALL BE CONSIDERED IN LOCATING THE DEVICE. DO NOT LOCATE IN AN AREA SHELTERED FROM RAIN.
21. ALL WIRE SPLICES OR CONNECTIONS SHALL BE MADE WITH APPROVED WATERPROOF WIRE CONNECTIONS AND BE IN A VALVE OR SPLICE BOX.
22. PROTECT IRRIGATION CONTROL EQUIPMENT UNIT FROM DAMAGE AFTER INSTALLATION AND UNTIL FINAL ACCEPTANCE. THE UNIT SHALL BE IN BRAND NEW CONDITION WHEN FULL OPERATION OF THE SYSTEM IS TURNED OVER TO THE OWNER AFTER FINAL ACCEPTANCE. THE CONTRACTOR SHALL, AT THEIR OWN EXPENSE, REPLACE ALL OR PART OF THE UNIT THAT IS DAMAGED AND UNACCEPTABLE TO THE OWNER.
23. WHEREVER PRACTICAL, INSTALL VALVES IN MULCHED BEDS AND/OR OUT OF HIGH TRAFFIC AREAS. IF INSTALLED IN LAWN, INSTALL 36" AWAY FROM BED EDGE. ONE VALVE PER VALVE BOX UNLESS OTHERWISE NOTED. ALL VALVES, FLUSH VALVES AND WIRE SPLICES SHALL BE INSTALLED IN RAIN BIRD WIDE FLANGED, STRUCTURAL FOAM "PLASTIC" VALVES BOXES WITH LIDS (OR APPROVED EQUAL) AS FOLLOWS:

REMOTE CONTROL VALVES	#VB-STD, 12" STD. RECT. BOX
ISOLATION GATE VALVES	#VB-10RND, 10" ROUND BOX
WIRE SPLICES	#VB-10RND, 10" ROUND BOX
DRIP ZONE VALVE / FILTER ASSY	#VB-SPR, SUPER JUMBO RECT. BOX

24. LOCATE VALVE MANIFOLDS IN CLOSE PROXIMITY FOR EASE OF MAINTENANCE, BUT NOT CLOSER THAN 4'-0" BETWEEN VALVE BOXES.
25. INSTALL DRIP TUBING AT GRADE AND COVER WITH MULCH. TYPICAL SPACING FOR DRIP TUBING IS 18" TO 24" ON CENTER. SPACING TO BE DETERMINED BY SOIL TYPE. ANCHOR TUBING EVERY 7' WITH 8" LONG WIRE TUBING STAKES. INSTALL FLUSH VALVE ASSEMBLIES AT ALL TUBING "DEAD ENDS".
28. SET AND UTILIZE CONTROLLER TO WATER NEW PLANTINGS FOR THE DURATION OF THE PROJECT UNTIL FINAL ACCEPTANCE.
29. IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE RUN TIMES SO THAT TURF AND PLANTS ARE NOT OVER-WATERED AND SHALL BE RESPONSIBLE FOR KEEPING THE SITE FREE OF STANDING WATER.
30. IRRIGATION CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE IN ALL LANDSCAPE BEDS AND ALL LAWN AREAS.
31. THE INSTALLING CONTRACTOR MUST HOLD A CURRENT, VALID FLORIDA IRRIGATION CONTRACTOR'S LICENSE.
32. THE DESIGN IS BASED ON SITE INFORMATION AND /OR DRAWING SUPPLIED WITH THE DESIGN CRITERIA BEING SET (AREA TO BE IRRIGATED, EQUIPMENT MANUFACTURER AND MODEL TO BE USED, WATER SOURCE INFORMATION. ELECTRICAL POWER AVAILABILITY, ETC...) CESO BEARS NO RESPONSIBILITY OR LIABILITY FOR ANY ERRORS IN DESIGN OR INSTALLATION THAT ARISE DUE TO INACCURACIES IN THE ABOVE REFERENCED INFORMATION SUPPLIED TO CESO IN RELATION TO THIS PROJECT, UNLESS OTHERWISE NOTED.

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AMERICAN SOCIETY OF IRRIGATION CONSULTANTS COPYRIGHT 2001

CESO
WWW.CESOINC.COM

NO.	DATE	REVISION DESCRIPTION

SPRING GARDEN TOWNHOMES
DELAND, FL
610 N SPRING GARDEN AVENUE, DELAND, FL

IRRIGATION DETAILS AND NOTES

ISSUE:	NOT FOR CONSTRUCTION
DATE:	06/16/2023
JOB NO.:	761391
DESIGN:	EAB
DRAWN:	PS / JR
CHECKED:	CJC

SHEET NO.
L3.6

PLAT BOOK:_____ PAGE:_____

DELANEY RESERVE

LANDS SITUATED IN
SECTION 7, TOWNSHIP 17 SOUTH, RANGE 30 EAST
CITY OF DELAND

LEGAL DESCRIPTION:

THE EAST 600.00 FEET OF THE NORTHEAST 1/4 OF SECTION 7, TOWNSHIP 17 SOUTH, RANGE 30 EAST, VOLUSIA COUNTY, FLORIDA, EXCEPT THE NORTH 1354.07 FEET THEREOF, EXCEPT THE SOUTH 690.00 FEET THEREOF, EXCEPT THE EAST 40.0 FEET THEREOF FOR RIGHT OF WAY FOR STATE ROAD 15-A AND EXCEPT THE NORTH 210.00 FEET OF THE SOUTH 1000.00 FEET OF THE WEST 200.00 FEET OF THE EAST 240.00 FEET OF THE NORTHEAST 1/4 OF SAID SECTION 7.

TOGETHER WITH RIGHTS OF INGRESS, EGRESS AND UTILITIES OVER AND ACROSS THAT PORTION OF THE NORTH 185 .00 FEET OF THE SOUTH 975.00 FEET OF THE WEST 200.00 FEET OF THE EAST 240.00 FEET OF THE NORTHEAST 1/4 OF SECTION 7, TOWNSHIP 17 SOUTH, RANGE 30 EAST, VOLUSIA COUNTY, FLORIDA, DESCRIBED AS FOLLOWS:

BEGINNING AT THE POINT OF INTERSECTION OF THE NORTH LINE OF THE SOUTH 975.00 FEET OF THE NORTHEAST 1/4 OF SAID SECTION 7 WITH THE WESTERLY RIGHT OF WAY LINE OF STATE ROAD 15-A, RUN THENCE SOUTH 01°31'08" EAST ALONG SAID RIGHT OF WAY LINE A DISTANCE OF 24.50 FEET; THENCE SOUTH 89°04'47" WEST A DISTANCE OF 50.00 FEET; THENCE SOUTH 01°31'08" EAST A DISTANCE OF 160.50 FEET; THENCE SOUTH 89°04'47" WEST A DISTANCE OF 24.00 FEET; THENCE NORTH 01°31'08" WEST A DISTANCE OF 160.60 FEET TO THE POINT OF CURVATURE OF A CURVE CONCAVE TO THE SOUTHWEST, HAVING A CENTRAL ANGLE OF 89°24'05" AND A RADIUS OF 10.00 FEET; THENCE RUN NORTHWESTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 15.60 FEET TO THE POINT OF TANGENCY THEREOF; THENCE SOUTH 89°04'47" WEST A DISTANCE OF 21.79 FEET TO THE POINT OF CURVATURE OF A CURVE CONCAVE TO THE SOUTHEAST, HAVING A CENTRAL ANGLE OF 90°35'55" AND A RADIUS OF 30.00 FEET; THENCE RUN SOUTHWESTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 47.44 FEET TO THE POINT OF TANGENCY THEREOF; THENCE SOUTH 01°31'08" EAST A DISTANCE OF 140.18 FEET; THENCE SOUTH 89°04'47" WEST A DISTANCE OF 24.00 FEET; THENCE NORTH 01°31'08" WEST A DISTANCE OF 152.15 FEET TO THE POINT OF CURVATURE OF A CURVE CONCAVE TO THE SOUTHEAST, HAVING A CENTRAL ANGLE OF 43°37'12" AND A RADIUS OF 24.50 FEET; THENCE RUN NORTHEASTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 18.65 FEET TO THE POINT OF COMPOUND CURVATURE OF A CURVE CONCAVE TO THE SOUTHEAST, HAVING A CENTRAL ANGLE OF 46°58'43" AND A RADIUS OF 50.00 FEET; THENCE RUN NORTHEASTERLY ALONG THE ARC OF SAID CURVE A DISTANCE OF 41.00 FEET TO THE POINT OF TANGENCY THEREOF; THENCE NORTH 89°04'47" EAST A DISTANCE OF 116.52 FEET TO THE POINT OF BEGINNING.

AND

THE SOUTH 610.07 FEET OF THE NORTH 1354.07 FEET OF THE EAST 600.00 FEET OF THE NORTHEAST 1/4 OF SECTION 7, TOWNSHIP 17 SOUTH, RANGE 30 EAST, VOLUSIA COUNTY, FLORIDA; EXCEPTING THEREFROM THE EAST 40.00 FEET FOR RIGHT OF WAY OF STATE ROAD NO. 15-A.

TOGETHER WITH AN EASEMENT FOR INGRESS, EGRESS AND UTILITIES DESCRIBED IN OFFICIAL RECORDS BOOK 4852, PAGE 4488, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.

SURVEYOR'S NOTES TO PLAT

1. THIS PLAT, AS RECORDED IN ITS GRAPHIC FORM, IS THE OFFICIAL DEPICTION OF THE SUBDIVED LANDS DESCRIBED HEREIN AND WILL IN NO CIRCUMSTANCES BE SUPPLANTED IN AUTHORITY BY ANY OTHER GRAPHIC OR DIGITAL FORM OF THE PLAT.

2. ALL BEARINGS SHOWN HEREON ARE RELATIVE TO THE STATE PLANE COORDINATE SYSTEM, NORTH AMERICAN DATUM OF 1983 (NAD 83-2011 ADJUSTMENT) FOR THE EAST ZONE OF FLORIDA.

3. IN ACCORDANCE WITH CHAPTER 177.091, BOARD OF PROFESSIONAL LAND SURVEYORS LAWS AND RULES, ALL PLATTED UTILITY EASEMENTS SHALL PROVIDE THAT SUCH EASEMENTS SHALL ALSO BE EASEMENTS FOR THE CONSTRUCTION, INSTALLATION, MAINTENANCE AND OPERATION OF CABLE TELEVISION SERVICES; PROVIDED, HOWEVER, NO SUCH CONSTRUCTION, INSTALLATION, MAINTENANCE AND OPERATION OF CABLE TELEVISION SERVICES SHALL INTERFERE WITH FACILITIES AND SERVICES OF AN ELECTRIC, TELEPHONE, GAS OR OTHER PUBLIC UTILITY. IN THE EVENT A CABLE TELEVISION COMPANY DAMAGES THE FACILITIES OF A PUBLIC UTILITY, IT SHALL BE SOLELY RESPONSIBLE FOR THE DAMAGES. THIS SECTION SHALL NOT APPLY TO THOSE PRIVATE EASEMENTS GRANTED TO OR OBTAINED BY A PARTICULAR ELECTRIC, TELEPHONE, GAS, OR OTHER PUBLIC UTILITY. SUCH CONSTRUCTION, INSTALLATION, MAINTENANCE AND OPERATION SHALL COMPLY WITH THE NATIONAL ELECTRICAL SAFETY CODE AS ADOPTED BY THE FLORIDA PUBLIC SERVICE COMMISSION.

4. ALL LINES INTERSECTING CURVES ARE RADIAL UNLESS OTHERWISE NOTED AS (NR).

5. ALL DEVELOPMENT SHALL BE IN ACCORD WITH AND SUBJECT TO THE CITY OF DELAND LAND DEVELOPMENT CODE, AS AMEMDED FROM TIME TO TIME AND ALL FEDERAL, STATE, COUNTY AND CITY RULES, REGULATIONS, ORDINANCES AND APPROVALS.

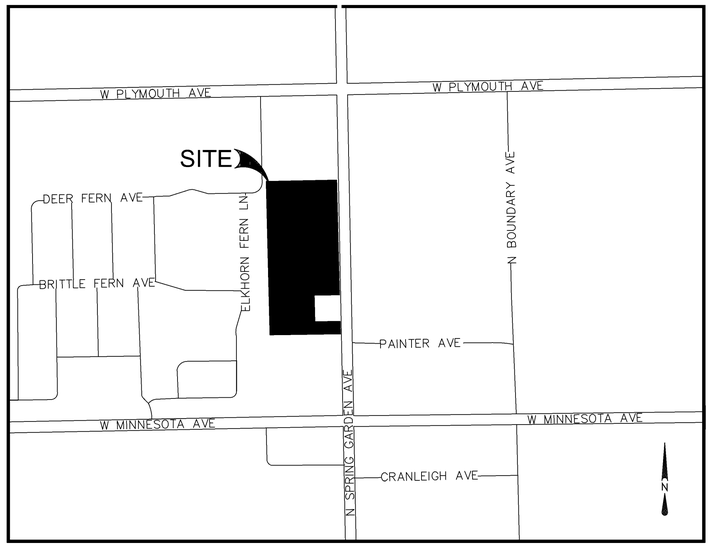
6. IN ACCORDANCE WITH CHAPTER 177.091.9, BOARD OF PROFESSIONAL LAND SURVEYORS LAWS AND RULES, ALL MONUMENTS HAVE BEEN PLACED AT ALL LOT CORNERS, POINTS OF INTERSECTIONS AND CHANGES OF DIRECTION OF LINES WITHIN THE SUBDIVISION WHICH DO NOT REQUIRE A PRM OR PCP.

SHEET INDEX

SHEET 1 OF 2 - Legal Description, Dedications Surveyor's Notes
SHEET 2 OF 2 - Boundary information, Legend and Geometry

VICINITY MAP

NOT TO SCALE



DELANEY RESERVE

DEDICATION

KNOW ALL BY THESE PRESENTS, That CAP 5 DEVELOPMENT, LLC, an OHIO limited liability company, being the owner in fee simple of the lands described in the foregoing caption to this plat, hereby dedicates said lands and plat for the uses and purposes therein expressed. The Ingress/Egress and Utility easement as shown hereon is dedicated to the perpetual use of the public.

A perpetual, non-exclusive easement for access over all internal roadways is hereby granted to the City of Deland and other applicable authorities for law enforcement, fire and other emergency services.

IN WITNESS THEREOF, CAP 5 DEVELOPMENT, LLC, AN OHIO LIMITED LIABILITY COMPANY has caused these presents to be signed by the officers named below on

Date: _____

CAP 5 DEVELOPMENT, an
OHIO Limited Liability Company

By: _____
Signed

Printed Name: _____ *Title:* _____

Signed in the presence of: _____

By: _____

_____
Printed Name

By: _____

_____
Printed Name

STATE OF _____ COUNTY OF _____

THIS IS TO CERTIFY, That on _____ before me, an officer duly authorized to take acknowledgements in the State and County aforesaid, personally appeared CAP 5 DEVELOPMENT, LLC, a FLORIDA Limited Liability Company and acknowledge the foregoing dedication and the execution thereof to be his free act and deed for the uses and purposes therein expressed. He is personally known to me or has produced the following identification _____.

IN WITNESS WHEREOF, I have hereto set my hand and seal on the above date.

NOTARY PUBLIC _____

Printed Name _____

My Commission Expires _____

Commission Number _____

CERTIFICATE OF APPROVAL BY THE CITY ENGINEER

I HERBY CERTIFY THAT ALL STREETS, UTILITIES AND OTHER REQUIRED IMPROVEMENTS HAVE BEEN INSTALLED IN AN ACCEPTABLE MANNER AND ACCORDING TO THE CITY SPECIFICATIONS AND STANDARDS AND ALL APPLICABLE REGULATIONS IN THE SPRING GARDEN TOWNHOMES SUBDIVISION OR THAT GUARANTEE OF THE INSTALLATION OF THE REQUIRED IMPROVEMENTS IN A MANNER ACCORDING TO SECTION 33-148 HAS BEEN RECEIVED.

_____ _____
CITY ENGINEER DATE

CERTIFICATE OF APPROVAL BY THE CITY COMMISSION

THE DELAND CITY COMMISSION HEREBY APPROVES THE FINAL PLAT FOR THE SPRING GARDEN TOWNHOMES SUBDIVISION.

DATE: _____ _____(SEAL)

PRINTED NAME _____MAYOR, CITY OF DELAND

CERTIFICATE OF CLERK

I HERBY CERTIFY, THAT I HAVE EXAMENED THE FOREGOING PLAT AND FOUND THAT IT COMPLIES IN FORM WITH ALL THE REQUIREMENTS IN CHAPTER 177 FLORIDA STATUTES, AND THAT IT WAS FILED FOR RECORD ON THE _____ DAY OF _____, 2023 AT _____ AM/PM.
FILE NO.: _____

_____
CLERK OF THE CIRCUT COURT IN AND FOR VOLUSIA COUNTY, FL.

CERTIFICATE OF REVIEW BY SURVEYOR FOR CITY

I HERBY CERTIFY THAT THIS PLAT HAS BEEN REVIEWED FOR THE CONFORMITY TO THE REQUIREMENTS OF CHAPTER 177, PART 1 OF THE FLORIDA STATUTES. NO CONFIRMATION OF MATHEMATICAL CLOSURE OR THE PLACEMENT OF PRMS AND PCPS IN THE FIELD WAS MADE IN THIS REVIEW.

_____
RANDALL L. ROBERTS, RLS Date
FLORIDA REGISTRATION NUMBER 3144

QUALIFICATION STATEMENT OF SURVEYOR AND MAPPER

THAT THE UNDERSIGNED, being a licensed land surveyor, registered in the State Of Florida, DOES HEREBY CERTIFY THAT ON _____, he completed the survey of the lands as shown in the foregoing plat, this plat was prepared under my direct supervision and is a correct representation of the lands therein described and platted ORB subdivided; this plat complies with all requirements of Chapter 177, Florida Statutes; that permanent control points have been/ will be placed as shown as required by Chapter 177, Florida Statutes; and that said land is located in Section 06, Township 22 South, Range 28 East, Orange County, Florida.

Dated: _____ Signed: _____
Florida Registration Number LS 3880 ROBERT A. ELLIS, PLS
ELLIS SURVEYS LLC LB #7970
PO BOX 160952
Altamonte Springs, FL 32716

ELLIS SURVEYS LLC
Land Surveying & Planning
P.O. Box 160952
Altamonte Springs, FL 32716
Florida Licensed Business LB-7970
P. 407-834-4003 F. 407-869-5454
www.ellissurveys.com

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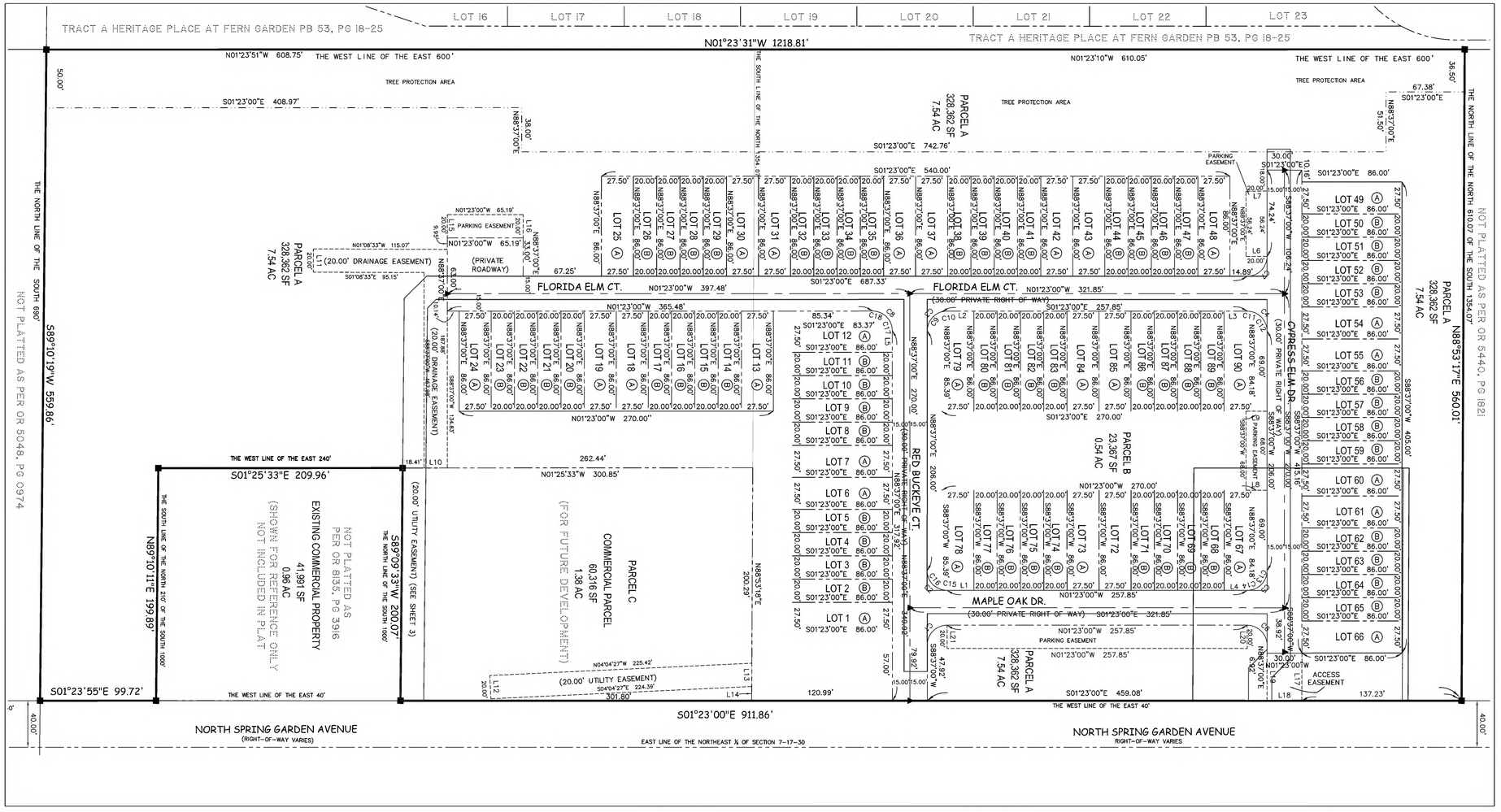
22-1187

TRIM LINE FOR COUNTY PLAT

DELANEY RESERVE

LANDS SITUATED IN
SECTION 7, TOWNSHIP 17 SOUTH, RANGE 30 EAST
CITY OF DELAND

SHEET 1 OF 3 | PLAT BOOK: | PAGE:



LINE TABLE:

LINE	BEARING	DISTANCE
L1	S01°23'00"E	23.00'
L2	N01°23'00"W	23.00'
L3	N01°23'00"W	19.85'
L4	S01°23'00"E	19.85'
L5	S88°37'00"W	18.42'
L6	S01°23'00"E	18.00'
L7	N01°23'00"W	18.00'
L8	S01°23'00"E	18.00'
L9	N01°23'00"W	18.00'
L10	S01°25'33"E	20.00'
L11	S88°51'27"W	20.00'
L12	S85°55'33"W	20.00'
L13	N88°53'18"E	20.03'
L14	N88°53'18"E	12.20'
L15	N88°36'58"E	20.00'
L16	S88°36'58"W	20.00'
L17	N88°37'00"E	41.00'
L18	S01°23'02"E	30.00'
L19	S88°37'00"W	41.00'
L20	N88°36'58"E	20.00'
L21	S88°37'00"W	20.00'

LINE	BEARING	DISTANCE
L22	N46°06'44"W	27.11'
L23	N01°23'00"W	20.00'
L24	S46°23'02"E	22.63'
L25	N88°36'58"E	19.99'
L26	S01°23'02"E	20.00'
L27	S88°36'58"W	28.28'
L28	N46°23'02"W	22.63'
L29	S88°37'00"W	30.64'
L30	S01°23'02"E	20.00'
L31	S46°06'44"E	10.66'
L32	S01°23'02"E	20.00'

CURVE TABLE:

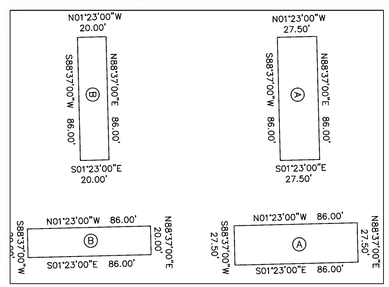
CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	17.00'	26.70'	24.04'	N46°23'00"W	90°00'00"
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C7	17.00'	26.70'	24.04'	S46°23'00"E	90°00'00"
C8	17.00'	26.70'	24.04'	N43°37'00"E	90°00'00"
C9	17.00'	22.15'	20.62'	N5°40'29"W	74°39'02"
C10	17.00'	4.55'	4.54'	N09°03'29"W	15°20'58"
C11	17.00'	7.94'	7.86'	N11°59'18"E	26°44'37"
C12	17.00'	18.77'	17.83'	N56°59'18"E	63°15'23"
C13	17.00'	18.77'	17.83'	S59°45'19"E	63°15'23"
C14	17.00'	7.94'	7.86'	S14°45'19"E	26°44'37"
C15	17.00'	4.55'	4.54'	S06°17'29"W	15°20'58"
C16	17.00'	22.15'	20.62'	S51°17'29"W	74°39'02"
C17	17.00'	9.58'	9.45'	S72°28'28"W	32°17'03"
C18	17.00'	17.12'	16.41'	S27°28'28"W	57°42'57"

LEGEND:

- ■ = SET 4"X4" CONCRETE MONUMENT (PRM-LB7970)
- ▲ = SET NAIL & DISK (PCP LB7970)
- ⊡ = FOUND 4" CONCRETE MONUMENT (FCM)
- ⊙ = FOUND 5/8" IRON ROD UNLESS OTHERWISE INDICATED (FIRC)
- A = ARC LENGTH (CURVE DATA)
- BRG = CHORD BEARING (CURVE DATA)
- DIST = CHORD LENGTH (CURVE DATA)
- CH = CHORD BEARING AND DISTANCE (CURVE DATA)
- D = DELTA ANGLE (CENTRAL ANGLE) (CURVE DATA)
- R = RADIUS (CURVE DATA)
- D.E. = DRAINAGE EASEMENT
- DOC# = ORANGE COUNTY OFFICIAL RECORDS DOCUMENT NUMBER
- D.U.E = DRAINAGE AND UTUILITY EASEMENT
- ID = IDENTIFICATION NUMBER
- (R) = RECORD
- ℄ = CENTERLINE
- CCR# = CERTIFIED CORNER RECORD NUMBER
- ID# = IDENTIFICATION NUMBER
- LB = LICENSED BUSINESS

- NT = NON TANGENT
- (NR) = NON RADIAL
- N.T.S. = NOT TO SCALE
- ORB = OFFICIAL RECORD BOOK
- OS = OPEN SPACE
- P.A.D.E. = PRIVATE ACCESS & DRAINAGE EASEMENT
- P.B. = PLAT BOOK
- PG. = PAGE
- PC = POINT OF CURVATURE
- PI = POINT OF INTERSECTION
- PT = POINT OF TANGENCY
- POB = POINT OF BEGINNING
- POC = POINT OF COMMENCEMENT
- PCP = PERMANENT CONTROL POINT
- PRM = PERMANENT REFERENCE MONUMENT
- R/W = RIGHT OF WAY
- U.E. = UTILITY EASEMENT
- SEC = TYPICAL
- TYP. = TYPICAL
- P.A.E. = PRIVATE ACCESS EASEMENT
- P.D.E. = PRIVATE DRAINAGE EASEMENT

DETAIL
TYPICAL LOT DIMENSIONS



ELLIS SURVEYS LLC
Land Surveying & Planning
P.O. Box 160952
Altamonte Springs, FL 32716
Florida Licensed Business LB-7970
P. 407-834-4003 F. 407-869-5454
www.ellissurveys.com

ROBERT A. ELLIS, PLS
ELLIS SURVEYS LLC LB #7970
P.O. BOX 160952
Altamonte Springs, FL 32716

22-1187

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SHEET INDEX

SHEET 1 OF 3 - LEGAL DESCRIPTION, SURVEYORS NOTES, & DEDICATION
SHEET 2 OF 3 - BOUNDARY INFORMATION, LEGEND & GEOMETRY
SHEET 3 OF 3 - GEOMETRY & EASEMENT DETAILS

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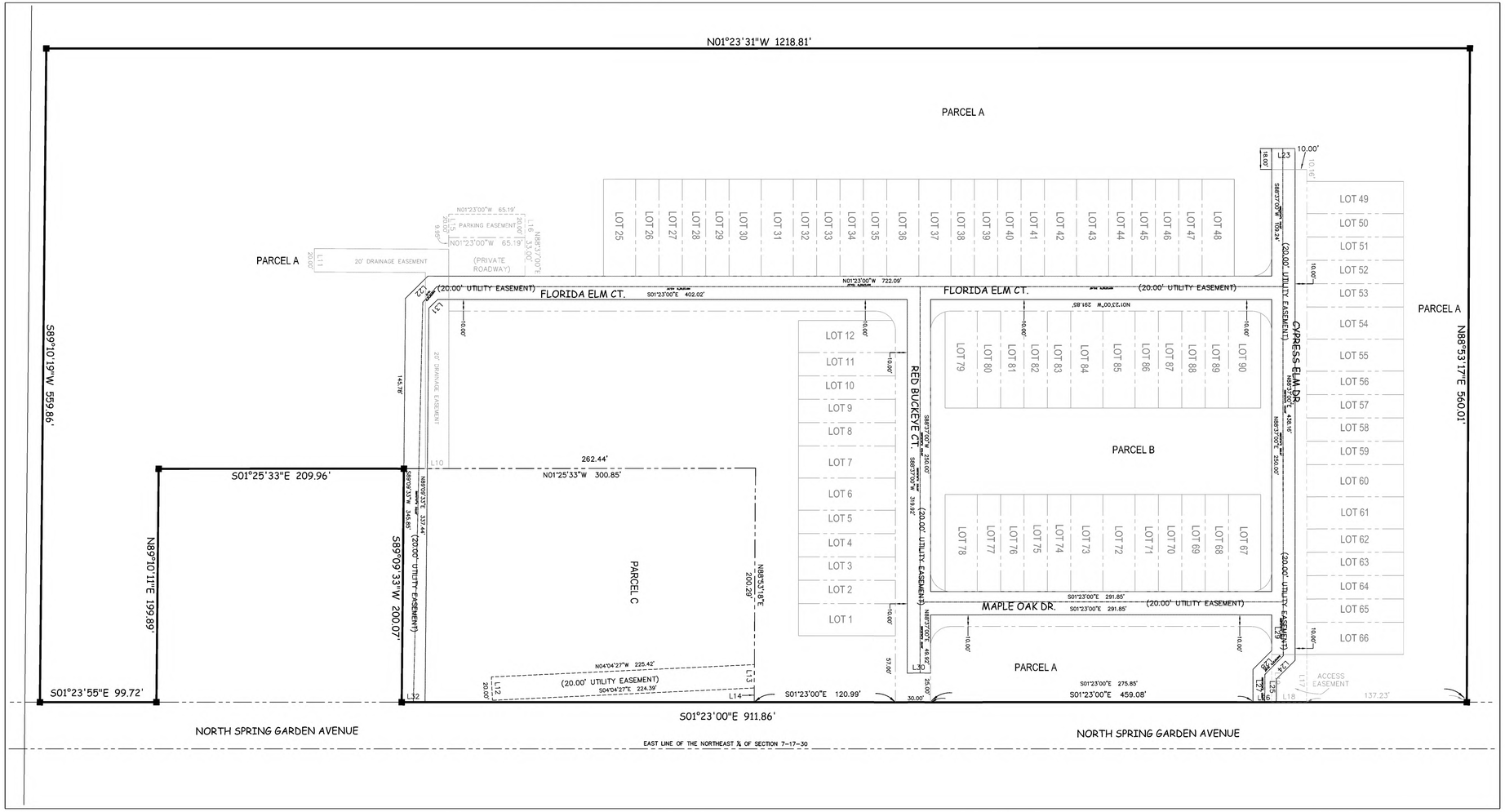
50' 0 50'

SCALE: 1"= 50'

DELANEY RESERVE

LANDS SITUATED IN
SECTION 7, TOWNSHIP 17 SOUTH, RANGE 30 EAST
CITY OF DELAND

SHEET 3 OF 3 | PLAT BOOK: | PAGE:



TRIM LINE FOR COUNTY PLAT

LINE TABLE:

LINE	BEARING	DISTANCE
L1	S01°23'00"E	23.00'
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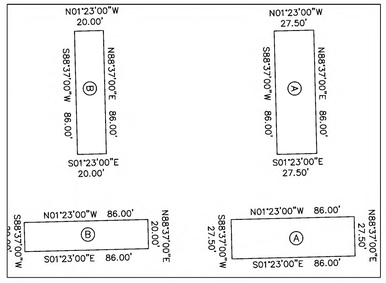
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- ⊙ = FOUND 5/8" IRON ROD UNLESS OTHERWISE INDICATED (FIRC)
- A = ARC LENGTH (CURVE DATA)
- BRG = CHORD BEARING (CURVE DATA)
- DIST = CHORD LENGTH (CURVE DATA)
- CH = CHORD BEARING AND DISTANCE (CURVE DATA)
- D = DELTA ANGLE (CENTRAL ANGLE) (CURVE DATA)
- R = RADIUS (CURVE DATA)
- D.E. = DRAINAGE EASEMENT
- DOC# = ORANGE COUNTY OFFICIAL RECORDS DOCUMENT NUMBER
- D.U.E = DRAINAGE AND UTUILITY EASEMENT
- ID = IDENTIFICATION NUMBER
- (R) = RECORD
- ℄ = CENTERLINE
- CCR# = CERTIFIED CORNER RECORD NUMBER
- ID# = IDENTIFICATION NUMBER
- LB = LICENSED BUSINESS
- NT = NON TANGENT
- (NR) = NON RADIAL
- N.T.S. = NOT TO SCALE
- ORB = OFFICIAL RECORD BOOK
- OS = OPEN SPACE
- P.A.D.E. = PRIVATE ACCESS & DRAINAGE EASEMENT
- P.B. = PLAT BOOK
- PG. = PAGE
- PC = POINT OF CURVATURE
- PI = POINT OF INTERSECTION
- PT = POINT OF TANGENCY
- POB = POINT OF BEGINNING
- POC = POINT OF COMMENCEMENT
- PCP = PERMANENT CONTROL POINT
- PRM = PERMANENT REFERENCE MONUMENT
- R/W = RIGHT OF WAY
- U.E. = UTILITY EASEMENT
- SEC = TYPICAL
- TYP. = TYPICAL
- P.A.E. = PRIVATE ACCESS EASEMENT
- P.D.E. = PRIVATE DRAINAGE EASEMENT

DETAIL
TYPICAL LOT DIMENSIONS



ELLIS SURVEYS LLC
Land Surveying & Planning
P.O. Box 160952
Altamonte Springs, FL 32716
Florida Licensed Business LB-7970
P. 407-834-4003 F. 407-869-5454
www.ellissurveys.com

ROBERT A. ELLIS, PLS
ELLIS SURVEYS LLC LB #7970
P.O. BOX 160952
Altamonte Springs, FL 32716

NOTICE: THIS PLAT, AS RECORDED IN ITS GRAPHIC FORM, IS THE OFFICIAL DEPICTION OF THE SUBDIVIDED LANDS DESCRIBED HEREIN AND WILL IN NO CIRCUMSTANCES BY SUPPLANTED IN AUTHORITY BY ANY OTHER GRAPHIC OR DIGITAL FORM OF THE PLAT. THERE MAY BE ADDITIONAL RESTRICTIONS THAT ARE NOT RECORDED ON THIS PLAT THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.

SHEET INDEX

SHEET 1 0F 3 - LEGAL DESCRIPTION, SURVEYORS NOTES, & DEDICATION
SHEET 2 OF 3 - BOUNDARY INFORMATION, LEGEND & GEOMETRY
SHEET 3 OF 3 - GEOMETRY & EASEMENT DETAILS

50' 0 50'
SCALE: 1"= 50'

22-1187

Hartizen
HOMES



END UNIT INTERIOR UNIT INTERIOR UNIT END UNIT



END UNIT INTERIOR UNIT INTERIOR UNIT END UNIT

4 UNIT DELAND TOWNHOMES

ARCHITECTS
Design Group LLC.

Hartizen HOMES



END UNIT | INTERIOR UNIT | INTERIOR UNIT | INTERIOR UNIT | INTERIOR UNIT | END UNIT

FRONT ELEVATION
SCALE: 3/16" = 1'-0"



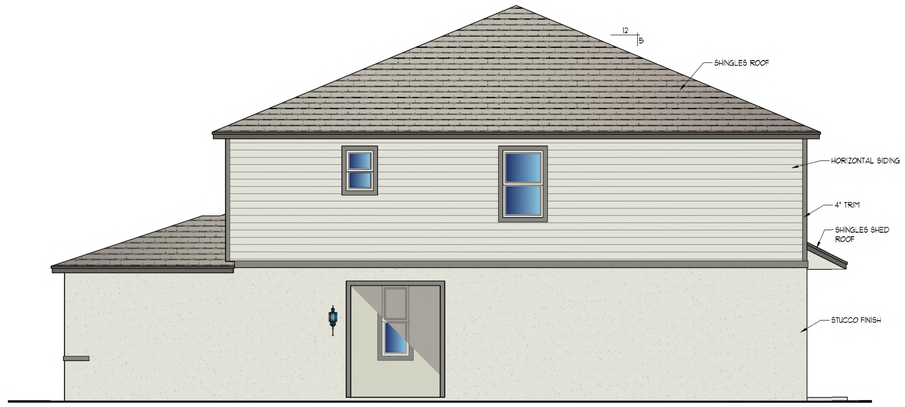
END UNIT | INTERIOR UNIT | INTERIOR UNIT | INTERIOR UNIT | INTERIOR UNIT | END UNIT

REAR ELEVATION
SCALE: 3/16" = 1'-0"

ARCHITECTS
AB Design Group LLC.

6 UNIT DELAND TOWNHOMES

Hartizen
HOMES



SIDE ELEVATION

SCALE: 3/16" = 1'-0"

END UNIT

ARCHITECTS
Design Group LLC.

6 UNIT DELAND TOWNHOMES ELEVATIONS

PLANNING STAFF REPORT
To
PLANNING BOARD

September 13, 2023

APPLICATION: PSB23-086

SUBJECT: Preliminary Plat for Cresswind DeLand PD Phases 2 &3

1. **Location**: East of Lake Winnemissett and north of Service Road (a.k.a. the old alignment of E. SR 44)

2. **Applicant**: KW CW DELAND, LLC

3. **Size:** ± 89.08 acres, Parcel IDs Associated with Project:
   701305000010
   701305000160
   701305000170
   711800000070
   711800000090
   711800000110

4. **Existing Zoning & Land Use:**
   Land Use: Urban Low Intensity (ULI)
   Zoning: Cresswind DeLand Planned Development (PD)

5. **Surrounding Conditions:**

	SURROUNDING USE:	SURROUNDING ZONING:
North:	VC: Urban Low Intensity; VC: Forestry Resource	VC: R-3; VC: FR
South:	Gateway; Highway Commercial	Gateway East PD; VC: A-3
East:	VC: Forestry Resource; VC: Commercial	VC: FR; VC: B-6; VC: B-6C
West:	Medium Density Residential	VC: R-3

6. **Applicable Regulations:**
   Sec. 33-146.05. *Subdivision of Land.*
   Cresswind DeLand Planned Development Agreement
   (Ord. #2020-19)

7. **Physical Characteristics:**
   The subject property is located within two proposed phases of the Cresswind PD, which is east of Lake Winnemissett and on the north side of Service Road (the old alignment of E. State Route (SR) 44

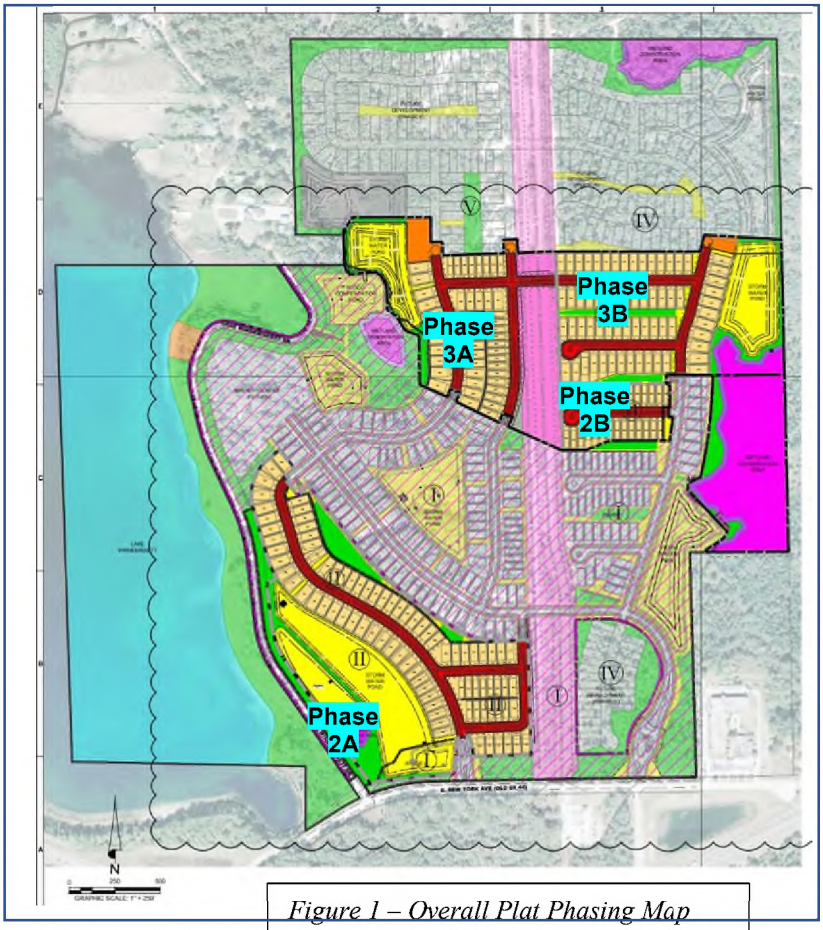


Figure 1 – Overall Plat Phasing Map

west of Lake Winnemissett Drive). As shown in Figure 1, Phase 2A is proposed in the southwest area of the PD, south and west of Phase 1, which is scheduled for City Commission approval on September 18, 2023. Phases 2B, 3A, and 3B are proposed north of Phase 1 and include a portion of a 180+ ft wide utility service easement dedicated to FPL, Duke Energy, and Florida Gas Company.

With the exception of portions of Phase 1 that are under construction, the properties within the PD are vacant and mostly wooded. East of the utility easement is mainly compreised of pine-scrub forested uplands and bay swamps with dense canopy trees and understory plants as well as mature trees wihin the wetlands. West of the utility easement resides large, is dominated by mature upland, hardwood forests, with mature live and laurel oaks and scattered pine, that have regenerated on the site of a historic citrus operation. Approximately 61 acres acres of the site is open water associated with Lake Winnemissett and associated shoreline wetlands. Directly adjacent to the northeast and east of the project are environmentally-sensitive lands (some already under conservation easement) designated as Natural Resource Management Area (NRMA) by Volusia County. Some portions of the proposed development, particularly those lands directly adjacent to Lake Winnemissett and a small portion in the northwestern quadrant, lie within a 100-year floodplain – many of which are the above-noted wetlands.

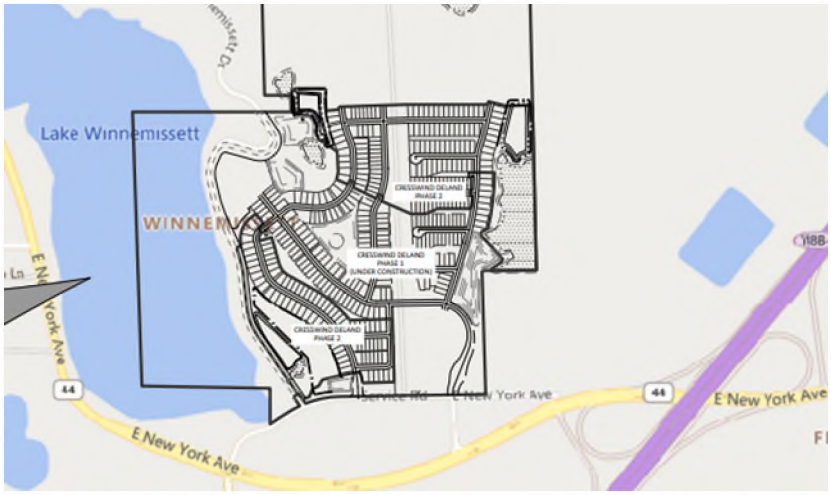
If approved, the Phase 2A plat would abut Lake Winnemissett Drive and the tract containing a section of Lake Winnemissett, associated wetlands, and undeveloped Lakefront Park. To the north, it would abut the undeveloperd Amenity Center site. On the east and south, it would be adjacent to Phase 1's platted lots and utility easement. Likewise, if the plat is approved for Phases 2B, 3A, and 3B, it would abut the remaining future phase(s) of of Cresswind PD. Additionally, it would abut vacant wooded land to the east and Phase 1 to the south and west.

8. Public Utilities and Service:

Water: The proposed development would be served by City potable water facilities.
Sewer: The proposed development would be served by City sanitary sewer facilities.

Irrigation: Per the PD Agreement, the eastern-half of the proposed development would be served by City reclaimed water facilities. The western-half wouldl be irrigated via a combination of wet stormwater ponds and irrigation wells drawing from the Florida Aquifer.

9. Type of Development:



The applicant seeks to develop Phase 2A, 2B, 3A, and 3B of Cresswind DeLand PD, which was approved in 2020 and allows the development of 600-lot single-family, active adult community homes (age restricted 55 & over) on 88.86 acres. The PD is also approved to include common areas such as an amenity center with pool, a lakefront park with picnic areas and boat dock, and a multi-modal trail. The adopted PD agreement allows lot sizes ranging between 40 and 60 ft. in width and specifies requirements for open space, landscaping, trees, perimeter buffers, among other areas. All lots in the proposed subdivision shall meet the minimum dimensions and lot area standards specified within the PD. To address open-water retention ponds' impacts to adjacent environmentally-sensitive lands, littoral zones are required. In these zones, wetland-friendly aquatic species are required to be replanted to create a more 'natural' appearance and provide new foraging habitat for wading birds.

The proposed plat totals 226 units comprised of the following phases:

Phase	Number of Units
2A	83
2B	29
3A	49
3B	65

Phase 2A, proposed to be 83 lots, would be the first to develop. Phase 2A also proposes a temporary Operations Center within a residential home-sized structure. Before all Cresswind Phases are complete, the developer would redevelop the structure as a single-family home consistent with PD requirements.

Remaining 3 phases are proposed to include 143 units. Prior to development of Phases 2A and 3A, a portion of each is proposed to be used as a stockpile for which the developer would store and retrieve excavated soil, consistent with building and structure construction activities. Once the stockpile is no longer needed, it would be removed and its platted lots would be developed.

10. Analysis:

The proposed plat phases are located within Cresswind DeLand PD, located east of Lake Winnemissett and on the north side of Service Road (old SR 44 alignment), between the Lake Winnemissett Drive and the Interstate 4/SR 44 interchange. Access would be provided via two Florida Department of Transportation (FDOT) approved gated driveway connections on Service Road. During the PD application process, the applicant's transportation impact analysis (TIA) and proportionate fair-share mitigation calculation, for impacts to transportation system deficient road and intersections, were approved. In 2022, during the Phase 1 Final Plat application, the applicant, city, and Volusia County entered into a tri-party proportionate fair share agreement, obligating the applicant/developer to pay Volusia County $263,584.54 for Phase 1 impacts and issue a bond in the amount of $476,571.53 for the remaining phases' impacts. Volusia County will apply the cash and bond funds toward capacity improvements on county thoroughfares near the site.

An environmental report dated July 2021 was submitted as part of the application to identify or review the potential of listed species of flora or fauna. Although no tortoises were observed, numerous burrows were observed. The report describes both areas east and west of the utility easement as not providing ideal tortoise habitat; therefore, any tortoises found during required gopher tortoise surveying prior to construction activities would be relocated to state-approved receiver sites.

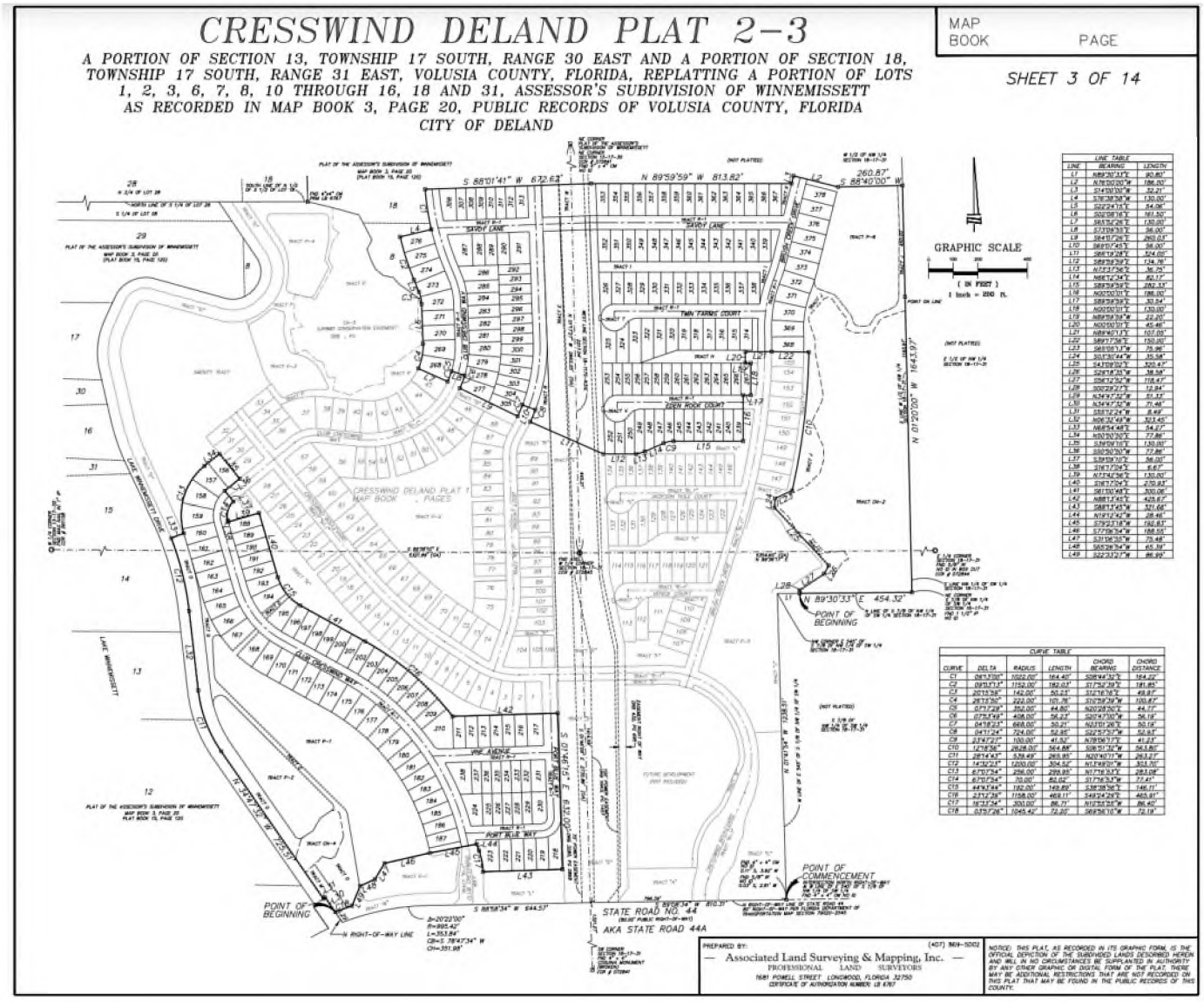
Due to the property's wetlands and upland habitats, it has potential to provide habitat for a variety of state and federally listed wildlife species. However, surveys conducted in 2018, 2019 and 2021 did not locate most species/species habitats. For example, sandhill cranes were regularly audible on or near the site, but not seen. No bald eagle nests were recorded on the site, although one was foraging on roadkill nearby in 2021 and two were observed flying over the site in 2018 and 2019 respectively. Florida scrub-jays were not encountered, seen, or heard on site, and the report outlines the reasons despite area being well-known for portntial scrub-jay habitat. The report included the results of state wildlife database searches that show the location of recognized wading bird colonies near the project site. Of those, the listed wood stork would be attracted to Lake Winnemissett's littoral zone.

City Commission approved the request for rezoning of the subject property to Cresswind DeLand PD on September 23, 2020.

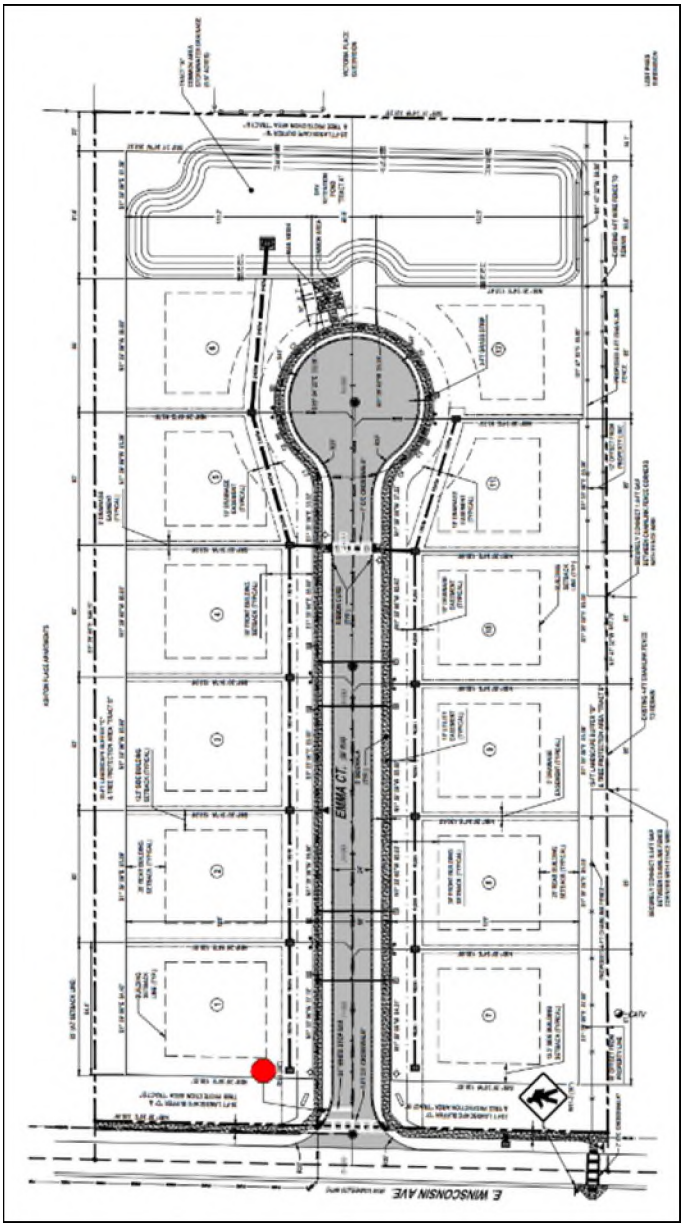
The proposed preliminary plat includes the approved civil contruction plans and is consistent with the adopted PD agreement, concept plan, and applicable land development regulations. As outlined in the PD, after preliminary plat and final construction plans are approved, separate site plans are required for the approval of any model homes or temporary offices, trailers, parking areas, etc. The applicant submitted site plan applications for both the operations center and stockpile, which are currently under review.

At the July 20, 2023 Technical Review Committee meeting, members recommended the Preliminary Plat be forwarded on to the Planning Board. The applicant provided updated plans to address the TRC review comments and these plans have been included with the staff report.

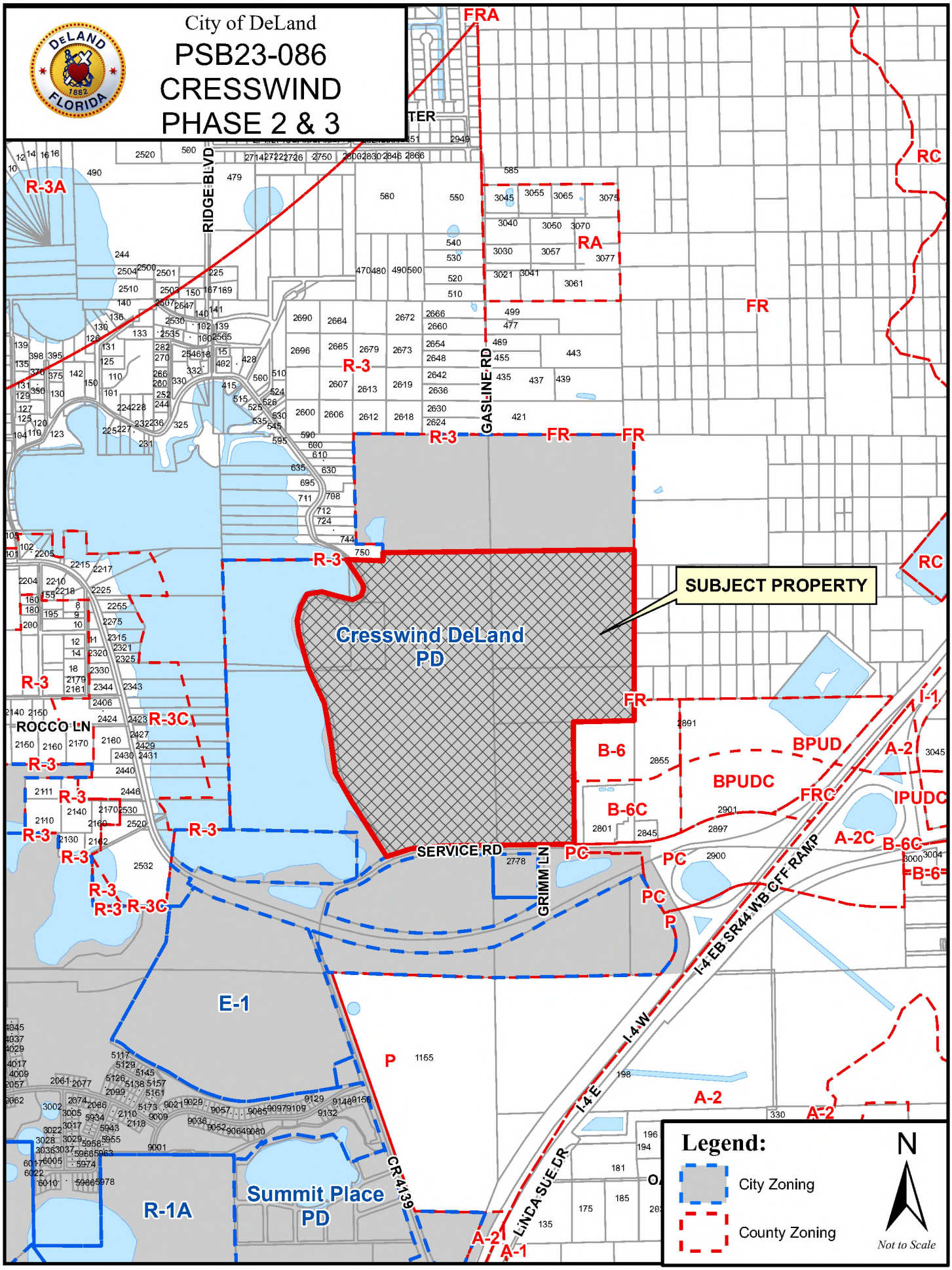
11. Recommendation:
Staff recommends approval of the preliminary plat by the Planning Board, subject to all comments being met and addressed prior to the plans being forwarded to City Commission for their approval.

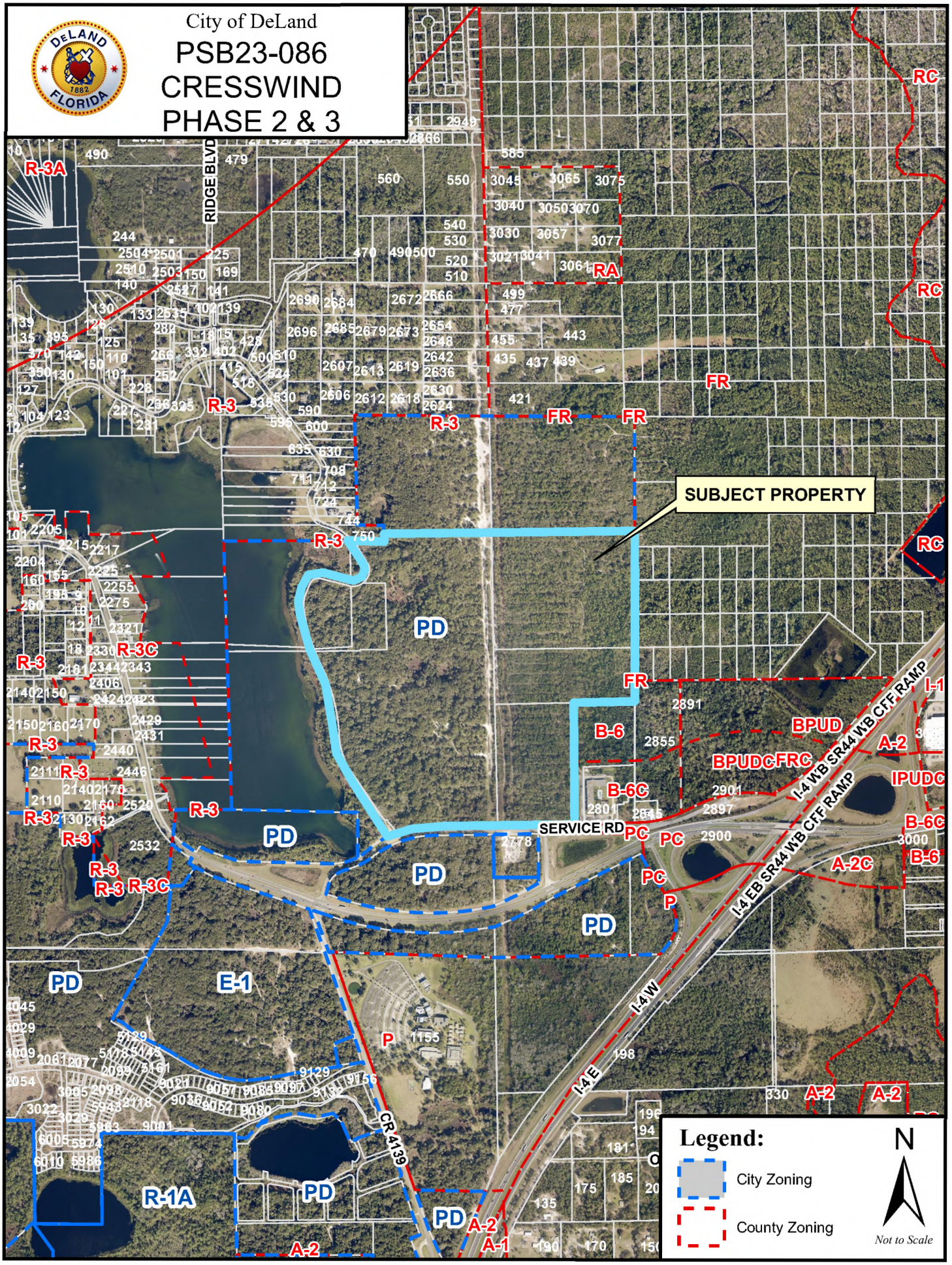



PHASE V
(FUTURE)
PHASE IV
(FUTURE)
PHASE IIIB
PHASE IIIA
AMENITY CENTER
(UNDER CONSTRUCTION)
PHASE IIIB
PHASE I
(UNDER
CONSTRUCTION)
PHASE I
(UNDER
CONSTRUCTION)
PHASE IIA
PHASE IV
(FUTURE)



L:\COMMDEV\PLANNING\SR\2023/SR-PSB23-086 Cresswind DeLand Phases 2 & 3 – Old Alignment f E. SR 44


City of DeLand
PSB23-086
CRESSWIND
PHASE 2 & 3
SUBJECT PROPERTY
Cresswind DeLand
PD
Summit Place
PD
R-3A
R-3
R-3C
R-1A
E-1
P
RA
FR
RC
FRA
B-6
B-6C
BPUD
BPUDC
FRC
IPUDC
A-2
A-2C
I-1
PC
RIDGE BLVD
GASLINE RD
ROCCO LN
SERVICE RD
GRIMM LN
CR 4139
LINDA SUE CR
I-4 EB SR44 WB OFF RAMP
I-4 W
I-4 E
Legend:
City Zoning
County Zoning
N
Not to Scale


City of DeLand
PSB23-086
CRESSWIND
PHASE 2 & 3
SUBJECT PROPERTY
RIDGE BLVD
SERVICE RD
CR 4139
I-4 WB SR44 WB CFF RAMP
I-4 EB SR44 WB CFF RAMP
I-4 W
I-4 E
R-3A
R-3
R-3C
R-1A
E-1
PD
RA
RC
FR
B-6
B-6C
BPUD
BPUDC FRC
IPUDC
A-2
A-2C
I-1
PC
P
Legend:
City Zoning
County Zoning
N
Not to Scale

CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B
(A KOLTER AGE RESTRICTED COMMUNITY)

Prepared For:
KH CW DELAND LLC

4807 PGA Boulevard
Palm Beach Gardens, FL 33418
Phone: (561) 515-4450

5904-A Hampton Oaks Parkway
Tampa, Florida 33610
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Fax: 813-464-7629

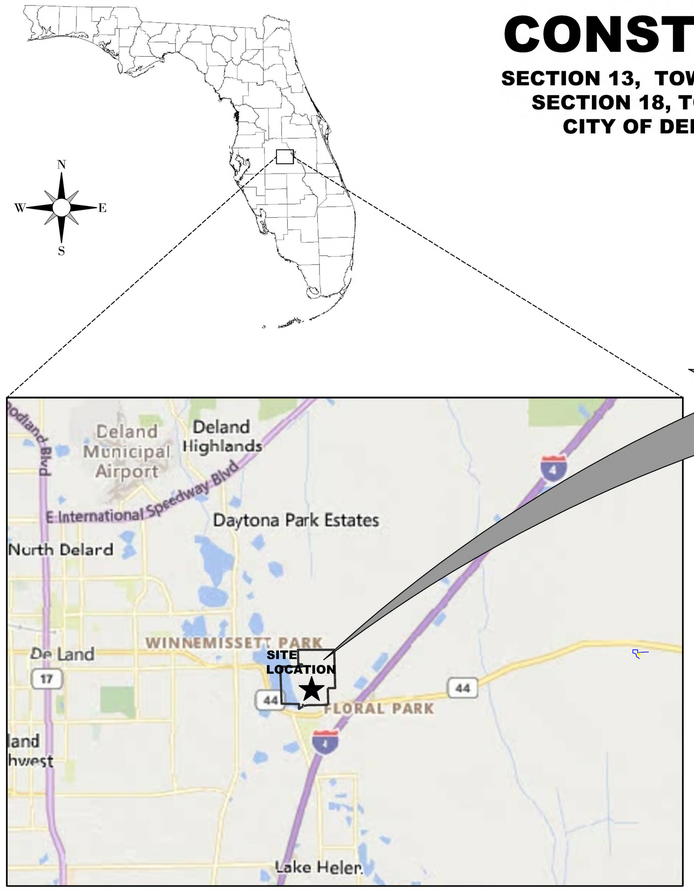
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Civil Engineering • Planning & GIS
Transportation Engineering
Ecological Services • Landscape Architecture

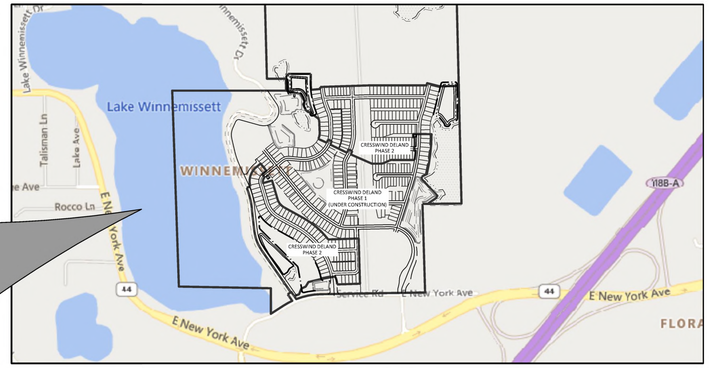
Engineering Business Certificate of Authorization No. 28782
Landscape Architecture Certificate of Authorization No. LC26000405

CONSTRUCTION PLAN

SECTION 13, TOWNSHIP 17 SOUTH, RANGE 30 EAST AND
SECTION 18, TOWNSHIP 17 SOUTH, RANGE 31 EAST
CITY OF DELAND, VOLUSIA COUNTY, FLORIDA



LOCATION MAP
(NOT TO SCALE)



SITE MAP
(NOT TO SCALE)

CALL 48 HOURS BEFORE YOU DIG
Sunshine State One Call 811 OF FLORIDA, INC.
1-800-432-4770

CONSTRUCTION PLANS	
Sheet Number	**Sheet Title**
100 - GENERAL	
C-100	COVER SHEET
C-101 - C-102	GENERAL NOTES
C-103	AERIAL SITE PLAN
C-104	EXISTING SITE CONDITIONS
C-105	SITE PLAN
C-106	SITE PLAN DETAILS
200 - ROADWAY DETAILS	
C-201	ROADWAY DETAILS
300 - DRAINAGE	
C-300 - C-301	MASTER GRADING & DRAINAGE PLAN
C-302 - C-309	GRADING & DRAINAGE PLAN
C-310 - C-311	STORM STRUCTURE & PIPE DATA
C-312	CONTROL STRUCTURE DATA
C-313 - C-314	GRADING & DRAINAGE SECTIONS
C-315 - C-319	DRAINAGE DETAILS
400 - UTILITIES	
C-400 - C-401	MASTER WATER & SEWER PLAN
C-402 - C-408	WATER & SEWER PLAN
500 - PLAN & PROFILE	
C-501 - C-511	ROADWAY PLAN & PROFILE
600 - UTILITY DETAILS	
C-601 - C-606	WATER & SEWER DETAILS
700 - PAVEMENT MARKING & SIDEWALKS	
C-701 - C-707	SIGNING, PAVEMENT MARKING & SIDEWALK PLAN
C-708	SIGNING, PAVEMENT MARKING & SIDEWALK NOTES
900 - ENGINEERING ADDENDA	
C-900	CONSTRUCTION SURFACE WATER MANAGEMENT PLAN
C-901	PRE-DEVELOPMENT DRAINAGE AREA MAP
C-902	POST-DEVELOPMENT DRAINAGE AREA MAP
C-903 - C-904	SUB-BASIN DRAINAGE AREA MAP

THE FOLLOWING SUPPLEMENTAL PLAN SHEETS WERE NOT PREPARED UNDER THE RESPONSIBLE CHARGE OF THE ENGINEER OF RECORD:

LANDSCAPE PLANS	
Sheet Number	**Sheet Title**
LANDSCAPE PLANS	
L-200	OVERALL SPECIMEN & HISTORIC TREE REMOVAL PLAN COVER
L-200A	TREE REMOVAL & SAVE EXHIBIT
L-201 - L-210	TREE REMOVAL & SAVE PLAN
L-400	OVERALL PERMIT LANDSCAPE PLAN
L-400A	SITE DATA & OPEN SPACE CALCULATIONS
L-400B	LOT TREE REQUIREMENTS
L-400C	FRONT YARD & BUFFER TREE REQUIREMENTS
L-401 - L-410	PERMIT LANDSCAPE PLAN
L-470	PERMIT LANDSCAPE DETAILS
L-480	PERMIT LANDSCAPE SCHEDULE
L-481	PERMIT LANDSCAPE NOTES

UTILITY CONTACTS:

CITY OF DELAND
UTILITIES DIRECTOR
JIM AILES
386-626-7253

DUKE ENERGY
AMY FINNEY
4306 E CR 462, BLDG.. F
WILDWOOD, FLORIDA 34785
352-689-5446

OWNER/DEVELOPER:

KH CW DELAND LLC
4807 PGA BOULEVARD
PALM BEACH GARDENS, FLORIDA 33418
(561) 515-4450

CIVIL ENGINEER:

HEIDT DESIGN, LLC
STRICKLAND T. SMITH, P.E.
5904-A HAMPTON OAKS PARKWAY
TAMPA, FLORIDA 33610
(813) 253-5311

LANDSCAPE ARCHITECT

KEVEN J STEELE, R.L.A., A.S.L.A.
5904-A HAMPTON OAKS PARKWAY
TAMPA, FLORIDA 33610
(813) 253-5311

GEOTECHNICAL ENGINEER:

UNIVERSAL ENGINEERING SCIENCES
MICHAEL MOHNEY
911 BEVILLE ROAD
SOUTH DAYTONA, FLORIDA 32119
(386) 756-1105 EXT. 10413

SURVEYOR:

ASSOCIATED LAND SURVEYING & MAPPING, INC.
JACK D. REED, JR. P.S.M.
1681 POWELL STREET
LONGWOOD, FLORIDA 32750
(407) 869-5002

FIRE NOTE:

NO VERTICAL CONSTRUCTION OR COMBUSTIBLES STORED ONSITE UNTIL INFRASTRUCTURE APPROVED BY ENGINEERING/UTILITIES/FIRE PREVENTION.

KH CW DELAND LLC

CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

2	07/31/2023	C-106,312; L-101,L-200A,L-400A
1	06/09/2023	C-102-104-107,301-309,313,315-319,401,406,503,900
	02/20/2023	REVIEW SUBMITTAL
	DATE	SHEET NO.

PLAN REVISIONS

	DATE	SHEET NO.

PLAN REVISIONS

N:\LAKE WINNEMISSETT\PHASE 2\ENGINEERING\COVER-ORL.DWG-C-100 2023/07/31 4:24 PM MICHAEL DMYTRYK

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Transportation Engineering
Ecological Services • Landscape Architecture

ELEVATIONS BASED ON:
NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION: NAVD 88 TO NGVD 29 = +1.07

ADDRESS CONTROL NUMBER	
WATER COMMITMENT	
SEWER COMMITMENT	
SWFWMD	
WATER DEP	
SEWER DEP	
FOLIO	

PERMIT / FILE NUMBERS

STATE OF FLORIDA PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

This item has been digitally signed and sealed by Strickland T. Smith, P.E. on the date indicated here.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Strickland T. Smith

Digitally signed by Strickland T Smith
DN: CN=C, O=Florida, E=Heidtdesign.com, OU=Heidt Design, CN=Strickland T Smith
Reason: I am the author of this document
Location: your signing location here
Date: 2023.07.31 16:24:07 -04'00'
Foxit PDF Editor Version: 11.2.0

STRICKLAND T. SMITH
DATE:_____
LICENSE NO. **50652**

FILE:	COVER-ORL
PROJECT NO:	KGA-CD-1031
GRADING & DRAINAGE	
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES
UTILITIES	
DESIGN BY:	JONES
DRAWN BY:	BLACK

COVER SHEET

C-100

SSM: ----

GENERAL EROSION AND TURBIDITY CONTROL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF ALL EROSION AND TURBIDITY CONTROLS AND THE QUALITY AND QUANTITY OF DISCHARGES TO OFFSITE OR WETLANDS.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR HAVING A DEWATERING PLAN AND TURBIDITY CONTROL PLAN APPROVED BY THE APPLICABLE REVIEWING AGENCIES. REFER TO THE PROJECT'S PERMIT APPROVALS AND PERMIT CONDITIONS FOR AGENCIES REQUIRING SUCH REVIEW AND APPROVAL. QUESTIONS CONCERNING APPROPRIATE TECHNIQUES SHOULD BE ADDRESSED TO THOSE AGENCIES AND/OR DISCUSSED WITH THE PROJECT ENGINEER AND OWNER.
3. THE APPROPRIATE TURBIDITY AND EROSION CONTROL METHODOLOGIES SELECTED BY THE CONTRACTOR FOR THIS PROJECT SHOULD BE MADE FOLLOWING ASSESSMENT OF THE PLANS AND PROJECT SITE SPECIFIC FACTORS AND AFTER CONSULTATIONS, AS NEEDED, WITH THE PROJECT ENGINEER AND APPROPRIATE AGENCIES. THE CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING ANY AND ALL NECESSARY PERMITS FOR SUCH ACTIVITY; SEVERAL FACTORS TO CONSIDER ARE LISTED BELOW:
   - A. CLAY CONTENT IN EXCAVATED MATERIALS AND/OR PERMEABILITY RATES
   - B. DEPTH OF CUT IN PONDS, TRENCHES, OR UTILITY LINES
   - C. AMBIENT GROUND WATER LEVELS
   - D. ACTUAL RAINFALL AMOUNTS AND TIME OF YEAR RELATIVE TO NORMAL RAINY SEASON
   - E. PROXIMITY TO WETLANDS, WATER BODIES OR OFFSITE PROPERTIES
   - F. 'CLASS' DESIGNATION OF RECEIVING WATER BODIES (I.E., OUTSTANDING FLORIDA WATERS, SHELLFISH HARVESTING AREAS, ETC.)
   - G. DENSITY, TYPE, AND PROXIMITY OF UPLAND VEGETATION TO BE RETAINED DURING CONSTRUCTION (FOR USE AS POSSIBLE FILTRATION AREAS)
   - H. FILL HEIGHT RELATIVE TO NATURAL GRADE AND LENGTH AND STEEPNESS OF THE PROPOSED SLOPES
   - I. EXISTING TOPOGRAPHY AND DIRECTIONS OF SURFACE FLOW
   - J. TYPE OF EQUIPMENT USED
   - K. PROJECT TYPE
   - L. DURATION OF CONSTRUCTION ACTIVITIES
   - M. SEPARATION DISTANCE OF ONSITE PONDS
   - N. AMBIENT QUALITY OF SURFACE AND GROUNDWATER
   - O. TEMPORARY STOCKPILE LOCATIONS AND HEIGHTS
4. AT THE ONSET OF CONSTRUCTION, THE CONTRACTOR, AS THE PARTY RESPONSIBLE FOR IMPLEMENTATION OF THE EROSION AND SEDIMENT CONTROL PLAN, SHALL ASSESS THE ABOVE DESCRIBED CONDITIONS AND FACTORS WITH RESPECT TO RELATIVE COST EFFECTIVENESS AND SELECT THE APPROPRIATE METHODS OF PROTECTION. A FAIRLY EXTENSIVE LIST OF TECHNIQUES ARE PRESENTED BELOW BUT IT MUST BE STRESSED THAT ANY OR ALL OF THE FOLLOWING MAY BE NECESSARY TO MAINTAIN WATER QUALITY AND QUANTITY STANDARDS. THE CONSTRUCTION SEQUENCING SHOULD BE THOUGHT OUT IN ADVANCE OF INITIATION TO PROVIDE ADEQUATE PROTECTION OF WATER QUALITY.
5. DISCHARGES WHICH EXCEED 29 N.T.U.'S OVER THE BACKGROUND LEVELS ARE IN VIOLATION OF STATE WATER QUALITY STANDARDS. DISCHARGES OF WATER QUANTITIES WHICH AFFECT OFFSITE PROPERTIES OR MAY DAMAGE WETLANDS ARE ALSO PROHIBITED BY REGULATING AGENCIES.
6. THE EROSION AND TURBIDITY CONTROL MEASURES SHOWN HEREON ARE THE MINIMUM REQUIRED FOR AGENCY APPROVAL. ADDITIONAL CONTROL AND MEASURES MAY BE REQUIRED DUE TO THE CONTRACTOR'S CONSTRUCTION SEQUENCE & UNFORESEEN WEATHER CONDITIONS. ANY ADDITIONAL MEASURES DEEMED NECESSARY BY THE SITE SUBCONTRACTOR SHALL BE INCLUDED IN THE LUMP SUM BID WITH NO EXTRAS FOR MATERIALS AND LABOR ALLOWED.
7. EROSION CONTROL SHALL BE INSTALLED PRIOR TO LAND CLEARING TO PROTECT WATER QUALITY AND TO IDENTIFY AREAS TO BE PROTECTED FROM CLEARING ACTIVITIES AND MAINTAINED FOR THE DURATION OF THE PROJECT UNTIL ALL SOIL IS STABILIZED.
8. FLOATING TURBIDITY BARRIERS SHALL BE IN PLACE IN FLOWING SYSTEMS OR IN OPEN WATER POND OR LAKE EDGES PRIOR TO INITIATION OF EARTHWORK AND MAINTAINED FOR THE DURATION OF THE PROJECT UNTIL ALL SOIL IS STABILIZED.
9. NO CLAY MATERIAL SHALL BE LEFT EXPOSED IN ANY STORMWATER STORAGE FACILITY. IF CLAY OR SANDY-CLAYS ARE ENCOUNTERED DURING STORMWATER STORAGE EXCAVATION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND GEOTECHNICAL ENGINEER IMMEDIATELY BEFORE PROCEEDING WITH FURTHER EXCAVATION. IF THE ENGINEER OF RECORD HAS DETERMINED THAT SUCH SOILS ARE NON-CONFINING AND MUST BE EXCAVATED TO MEET PERMIT AND DESIGN CONDITIONS, EXCAVATION MAY PROCEED AFTER OBTAINING WRITTEN AUTHORIZATION FROM THE APPROPRIATE GOVERNING AGENCY. IF SAID SOILS ARE LEFT EXPOSED AT THE PERMITTED AND DESIGNED DEPTH, THE SITE SUBCONTRACTOR SHALL OVER-EXCAVATE THE POND'S BOTTOM AND SIDE SLOPES BY A MINIMUM OF TWELVE (12") INCHES AND BACKFILL WITH CLEAN SANDS TO HELP PREVENT SUSPENSION OF FINE PARTICLES IN THE WATER COLUMN.
10. THE INSTALLATION OF TEMPORARY EROSION CONTROL BARRIERS SHALL BE COORDINATED WITH THE CONSTRUCTION OF THE PERMANENT EROSION CONTROL FEATURES TO THE EXTENT NECESSARY TO ASSURE EFFECTIVE AND CONTINUOUS CONTROL OF EROSION AND WATER POLLUTION THROUGHOUT THE LIFE OF THE CONSTRUCTION PHASE.
11. THE TYPE OF EROSION CONTROL BARRIERS USED SHALL BE GOVERNED BY THE NATURE OF THE CONSTRUCTION OPERATION AND SOIL TYPE THAT WILL BE EXPOSED. SILTY AND CLAYEY MATERIAL MAY REQUIRE SOLID SEDIMENT BARRIERS TO PREVENT TURBID WATER DISCHARGE, WHILE SANDY MATERIAL MAY NEED ONLY SILT SCREENS OR BALES TO PREVENT EROSION. FLOATING TURBIDITY CURTAINS SHOULD GENERALLY BE USED IN OPEN WATER SITUATIONS. DIVERSION DITCHES OR SWALES MAY BE REQUIRED TO PREVENT TURBID STORMWATER RUNOFF FROM BEING DISCHARGED TO WETLANDS OR OTHER WATER BODIES. IT MAY BE NECESSARY TO EMPLOY A COMBINATION OF BARRIERS, DITCHES, AND OTHER EROSION/TURBIDITY CONTROL MEASURES IF CONDITIONS WARRANT.
12. WHERE PUMPS ARE TO BE USED TO REMOVE TURBID WATERS FROM CONSTRUCTION AREAS, THE WATER SHALL BE TREATED PRIOR TO DISCHARGE TO THE WETLANDS. TREATMENT METHODS INCLUDE, FOR EXAMPLE, TURBID WATER BEING PUMPED INTO GRASSED SWALES OR APPROPRIATE UPLAND VEGETATED AREAS (OTHER THAN UPLAND PRESERVATION AREAS AND WETLAND BUFFERS), SEDIMENT BASINS, SEDIMENT FILTER BAGS, OR CONFINED BY AN APPROPRIATE ENCLOSURE SUCH AS TURBIDITY BARRIERS OR LOW BERMS, AND KEPT CONFINED UNTIL TURBIDITY LEVELS MEET STATE WATER QUALITY STANDARDS.
13. THE PERMITTEE SHALL SCHEDULE HIS OPERATIONS SUCH THAT THE AREA OF UNPROTECTED, ERODIBLE EARTH EXPOSED AT ANY ONE TIME IS NOT LARGER THAN THE MINIMUM AREA NECESSARY FOR EFFICIENT CONSTRUCTION OPERATION, AND THE DURATION OF EXPOSED, UNCOMPLETED CONSTRUCTION TO THE ELEMENTS SHALL BE AS SHORT AS PRACTICABLE. CLEARING AND GRUBBING SHALL BE SO SCHEDULED AND PERFORMED SUCH THAT GRADING OPERATIONS CAN FOLLOW IMMEDIATELY THEREAFTER. GRADING OPERATIONS SHALL BE SO SCHEDULED AND PERFORMED THAT PERMANENT EROSION CONTROL FEATURES CAN FOLLOW IMMEDIATELY THEREAFTER IF CONDITIONS ON THE PROJECT PERMIT.
14. WATER DERIVED FROM VARIOUS DEWATERING METHODS USED WITH APPROVED PERMITTING SHOULD BE PASSED THROUGH SUFFICIENTLY WIDE AREAS OF EXISTING UPLAND VEGETATION, OR THROUGH THE USE OF SEDIMENT FILTER BAGS, TO FILTER OUT EXCESS TURBIDITY. IF THIS IS NOT SUFFICIENT, THE WATER SHALL BE RETAINED IN PREVIOUSLY CONSTRUCTED PERMANENT STORMWATER PONDS OR ELSE RETAINED IN TEMPORARY SEDIMENTATION BASINS UNTIL THE CLARITY IS SUITABLE TO ALLOW FOR ITS DISCHARGE. PLUGGING THE OUTFALLS FROM COMPLETED STORMWATER PONDS MAY BE NEEDED TO AVOID DISCHARGE. HOWEVER, SUCH SITUATIONS SHOULD BE MONITORED CLOSELY TO PRECLUDE BERM FAILURE IF WATER LEVELS RISE TOO HIGH.
15. WATER CAN BE TRANSPORTED AROUND THE SITE BY THE USE OF INTERNAL SWALES OR BY PUMPS AND PIPES.
16. SHEET FLOW OF NEWLY FILLED OR SCRAPED AREAS MAY BE CONTROLLED OR CONTAINED BY THE USE OF BRUSH BARRIERS, DIVERSION SWALES, INTERCEPTOR DITCHES OR LOW BERMS. FLOW SHOULD BE DIRECTED TOWARD AREAS WHERE SEDIMENTS CAN SUFFICIENTLY SETTLE OUT.
17. EXPOSED SOILS SHALL BE STABILIZED AS SOON AS POSSIBLE, ESPECIALLY SLOPES LEADING TO WETLANDS. STABILIZATION METHODS INCLUDING, BUT NOT LIMITED TO, SOLID SOD, SEEDING AND MULCHING OR HYDRO-MULCHING TO PROVIDE A TEMPORARY OR PERMANENT GRASS COVER, MULCH BLANKETS, AND FILTER FABRICS CAN BE EMPLOYED TO PROVIDE VEGETATIVE COVER.
18. ENERGY DISSIPATERS (SUCH AS RIP RAP, A GRAVEL BED, BALES, ETC.) SHALL BE INSTALLED AT THE DISCHARGE POINT OF PIPES OR SWALES IF SCOURING IS OBSERVED.
19. INSTALL ROADWAY CURB AND GUTTERS AS SOON AS POSSIBLE TO REDUCE THE SURFACE AREA FOR EROSION TO OCCUR.
20. IMPLEMENT STORM DRAIN INLET PROTECTION (BALES OR GRAVEL) TO LIMIT SEDIMENTATION WITHIN THE STORMWATER SYSTEM. PERFORM INSPECTIONS AND PERIODIC CLEANING OF SEDIMENTS WHICH WASH OUT INTO THE STREETS UNTIL ALL SOIL IS STABILIZED.
21. WATER DISCHARGE VELOCITIES FROM IMPOUNDED AREAS AND TEMPORARY SEDIMENTATION BASINS SHALL BE RESTRICTED TO AVOID SCOURING IN RECEIVING AREAS.
22. IF WATER CLARITY DOES NOT REDUCE TO STATE STANDARDS RAPIDLY ENOUGH IN HOLDING PONDS, IT MAY BE POSSIBLE TO USE CHEMICAL AGENTS SUCH AS ALUM TO FLOCCULATE OR COAGULATE THE SEDIMENT PARTICLES, SUBJECT TO APPROVED PERMITTING.
23. BALES, SILT SCREENS, OR GRAVEL BEDS CAN BE ADDED AROUND THE PIPE OR SWALE DISCHARGE POINTS TO HELP CLARIFY DISCHARGES. SPREADER SWALES MAY HELP DISSIPATE CLOUDY WATER PRIOR TO CONTACT WITH WETLANDS.
24. ALL FUEL STORAGE AREAS OR OTHER HAZARDOUS STORAGE AREAS SHALL CONFORM TO ACCEPTED STATE OR FEDERAL CRITERIA FOR SUCH CONTAINMENT AREAS.
25. VEHICLE OR EQUIPMENT WASHDOWN AREAS WILL BE SUFFICIENTLY REMOVED FROM WETLANDS OR OFFSITE AREAS.
26. FUGITIVE DUST CONTROLS (PRIMARILY BY USING WATER SPRAY TRUCKS) SHALL BE EMPLOYED AS NEEDED TO CONTROL WINDBORNE EMISSIONS.
27. IF THE ABOVE CONTROLS REMAIN INEFFECTIVE IN PRECLUDING RELEASE OF TURBID WATER, ESPECIALLY DURING POND OR UTILITY LINE DEWATERING, THEN THE CONTRACTOR MAY BE COMPELLED TO USE A VERTICAL DEWATERING SYSTEM SUCH AS WELL POINTS OR SOCK DRAINS TO WITHDRAW GROUNDWATER.
28. ONGOING INSPECTIONS AND PERIODIC MAINTENANCE BY THE SITE SUBCONTRACTOR SHALL OCCUR THROUGHOUT CONSTRUCTION AS NECESSARY TO INSURE THE ABOVE METHODS ARE WORKING SUITABLY. THIS MAY BE NEEDED DAILY, IF CONDITIONS SO WARRANT. CONTRACTORS ARE ENCOURAGED TO OBTAIN AND THOROUGHLY REVIEW THE FLORIDA DEVELOPMENT MANUAL: A GUIDE TO SOUND LAND AND WATER MANAGEMENT, WHICH WAS DEVELOPED BY THE STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION IN 1988. THIS PROVIDES FAIRLY IN-DEPTH DISCUSSIONS OF RECOMMENDED TECHNIQUES AND ALSO PROVIDES SPECIFIC DESIGN AND TECHNICAL STANDARDS. REVIEW AT HEIDT DESIGN, LLC.
29. THE CONTRACTOR WILL PERFORM DAILY INSPECTIONS OF ALL ON-SITE WETLANDS WITHIN THE CONSTRUCTION AREA TO ENSURE THAT WATER LEVELS WITHIN THOSE WETLANDS ARE NOT EXCESSIVELY IMPOUNDED PRIOR TO THE TIME WHEN THE PERMITTED CONTROL STRUCTURE OR OUTFALL IS BUILT. WATER LEVELS SIGNIFICANTLY ABOVE NORMAL SHOULD BE CORRECTED AT A FREQUENCY THAT PREVENTS A CHANGE IN THE VEGETATIVE CHARACTER OR HEALTH OF ANY WETLANDS
30. CONTRACTOR IS RESPONSIBLE FOR EROSION CONTROL REMOVAL AFTER STABILIZATION.
31. AT A MINIMUM, ALL STORMWATER MANAGEMENT FACILITY BERMS AND SLOPES SHALL BE SODDED TO THE SEASONAL HIGH OR CONTROL WATER LINE AS APPLICABLE.
32. THE REQUIREMENT LISTED ABOVE SHALL BE CONSIDERED MINIMUM. THE CONTRACTOR SHALL USE ADDITIONAL METHODS AND BMP'S (BEST MANAGEMENT PRACTICES) TO PREVENT TURBIDITY AND EROSION.
33. PRIOR COMMENCEMENT OF CLEARING & GRUBBING OR ANY SOIL DISTURBANCE, CONTRACTOR SHALL COORDINATE WITH HEIDT DESIGN TO SCHEDULE AN EROSION CONTROL INSPECTION WITH THE MUNICIPALITY.
34. ALL DISTURBED AREAS SHALL BE SEEDED AND MULCHED WITHIN 14 DAYS OF NO CONSTRUCTION ACTIVITY.

SOIL REUSE REQUIREMENTS

AT LEAST THE FOLLOWING SIX (6) TYPES OF MATERIALS ARE PRESENT ON-SITE THAT REQUIRE PROPER HANDLING/TREATMENT BY THE CONTRACTOR, DURING THE COURSE OF SITE DEVELOPMENT/CONSTRUCTION ACTIVITIES, IN ACCORDANCE WITH THE NOTED REUSE REQUIREMENTS FOR EACH TYPE. ALTHOUGH SOME SOIL MATERIAL QUALITY CONTROL TESTING WILL BE RANDOMLY AND PERIODICALLY PERFORMED BY THE PROJECT GEOTECHNICAL CONSULTANT, AS REQUIRED, WORKING FOR THE OWNER, IT IS THE CONTRACTORS SOLE RESPONSIBILITY TO REUSE ONSITE SOIL MATERIALS AS DESCRIBED AND SPECIFIED BELOW. ALL DISCOVERED OR FUTURE FILLING OR MATERIAL REUSE WORK ONSITE NOT IN ACCORDANCE OR COMPLIANCE WITH THESE NOTES, OR ANY FUTURE ADVERSE IMPACTS OR CONSEQUENCES RESULTING FROM THE CONTRACTORS FAILURE TO PROPERLY REUSE SOIL MATERIALS ONSITE AS SPECIFICALLY DESCRIBED BELOW, WILL BE THE CONTRACTORS SOLE RESPONSIBILITY FOR REMEDY AND REPAIR AT HIS COST. IF THE CONTRACTOR HAS ANY QUESTIONS REGARDING ANY OF THE SOIL MATERIALS ONSITE, THE PROJECT GEOTECHNICAL REPORTS (WHICH HE NEEDS TO OBTAIN FROM THE OWNER OR GEOTECHNICAL CONSULTANT/ ENGINEER), OR ANY QUESTIONS ASSOCIATED WITH THE NOTES BELOW, IT IS PRESUMED THAT THE CONTRACTOR WILL SATISFACTORILY RESOLVE SUCH QUESTIONS/CONCERNS PRIOR TO SITE DEMOLITION, CLEARING, GRUBBING, STRIPPING AND EXCAVATION OPERATIONS BEGIN.

PLEASE NOTE, LOCAL, STATE AND FEDERAL RULES, LAWS, AND REGULATIONS PROHIBITING SOIL REUSE AS DESCRIBED BELOW SHALL TAKE PRECEDENCE AND SHALL BE FOLLOWED TO THE FULLEST EXTENT.

1. SITE DEMOLITION DEBRIS (SITE DEMOLITION DEBRIS, NOT GENERALLY CONSIDERED AN ENVIRONMENTAL/CONTAMINATION HAZARD, INCLUDES SUCH ITEMS AS WOOD PIECES, CONCRETE PIECES, PLASTIC PIPE PIECES, CERTAIN METAL/STEEL PIECES, OR SIMILAR. IF ANY SUCH DEBRIS OR OTHER DEMOLITION DEBRIS IS CONSIDERED AN ENVIRONMENTAL/CONTAMINATION HAZARD, OR IF BURIAL ONSITE OF SUCH MATERIALS IS PROHIBITED BY THE GOVERNING ENVIRONMENTAL AGENCY, THEN ALL SUCH MATERIALS SHALL BE HAULED OFF SITE BY THE CONTRACTOR FOR PROPER DISPOSAL, IN ACCORDANCE WITH ALL APPLICABLE GOVERNING ENVIRONMENTAL AGENCY REQUIREMENTS. IN NO CASE, SHALL ANY SUCH DEBRIS MATERIALS REMAIN, OR BE PLACED BY THE CONTRACTOR, BENEATH ANY TYPE OF STRUCTURE, PAVEMENT, ROADWAY, HOUSE, BUILDING,PIPELINE, SLAB, ETC.)

ALL SITE DEMOLITION DEBRIS SHALL BE REMOVED FROM THE SITE DEVELOPMENT AND DISPOSED OF PROPERLY IN ACCORDANCE WITH ALL APPLICABLE GOVERNING ENVIRONMENTAL AGENCY REQUIREMENTS.

2. CLEARING AND GRUBBING DEBRIS (SITE CLEARING AND GRUBBING DEBRIS INCLUDES ALL LARGER ORGANIC MATERIALS, SUCH ITEMS AS TREES, STUMPS, LIMBS, BRUSH, VEGETATION, OR SIMILAR; ALL SUCH MATERIALS MUST BE EITHER "BURNED" OR "MULCHED" BY THE CONTRACTOR PRIOR TO REUSE OR DISPOSAL ONSITE.)

IF ACCEPTABLE TO THE GOVERNING ENVIRONMENTAL AGENCY, THEN ALL SUCH "BURNED" OR "MULCHED" SITE CLEARING/GRUBBING DEBRIS, IF APPROVED IN WRITING FIRST BY THE OWNER/GEOTECHNICAL CONSULTANT/ ENGINEER, COULD BE:

A). PLACED AS "MULCH" MATERIAL SURFACE DRESSING IN FUTURE LANDSCAPE AREAS, STOCKPILING OF SUCH"MULCHED" MATERIALS (AMOUNTS/LOCATIONS), IF ACCEPTABLE, WILL BE DIRECTED BY THE OWNER/GEOTECHNICAL CONSULTANT//LANDSCAPE ARCHITECT/ENGINEER;

B). PLACED IN TEMPORARILY EXCAVATED LITTORAL SHELF AREAS IN SELECTED STORMWATER PONDS, OR IN TEMPORARILY EXCAVATED SELECTED WETLAND MITIGATION PONDS, IN EITHER CASE NOT IN SIDE BANKS AND NOT BELOW THE PERMITTED DESIGN DEPTH OF THE POND, OR SUCH DEBRIS COULD BE BURIED IN TEMPORARILY EXCAVATED PASSIVE RECREATION/PARK AREAS (AT LEAST 30 FEET FROM ANY STRUCTURE) AT APPROVED DEPTHS/LOCATIONS, BUT ALL THESE DISPOSAL AREAS WILL REQUIRE ADEQUATE SOIL MIXING (MIX SOIL WITH THE MULCH) AND THEN REFILLING (WITH COMPACTION) TO REQUIRED DESIGN GRADES;

C). PLACED ALONG THE BOTTOM OF SELECTED FLOODPLAIN MITIGATION PONDS (NOT IN SIDE BANKS), NOT BELOW THE PERMITTED EXCAVATION DEPTH OF THE POND, BUT WILL REQUIRE ADEQUATE SOIL COVER;

D). PLACED ALONG THE BOTTOM OF SELECTED DEEPER STORMWATER PONDS (NOT IN SIDE BANKS), NOT BELOW THE PERMITTED DESIGN DEPTH, BUT WILL REQUIRE ADEQUATE SOIL COVER.

IN ALL INSTANCES, THE MINIMUM POND DEPTH (INCLUDING FLOODPLAIN AND WETLAND MITIGATION AREAS) SHALL BE NO LESS THAN REQUIRED BY THE ENGINEER.

ALL ORGANIC DEBRIS BURIAL AREAS IN STORMWATER POND AREAS AND FLOODPLAIN MITIGATION POND AREAS WILL REQUIRE ADEQUATE SOIL COVER OF 18 - 24 INCHES (WITH COMPACTION) BY THE CONTRACTOR, MEANING AT LEAST AN ADEQUATE WEIGHT/THICKNESS OF SOIL MATERIAL OVERTOP THE BURIED ORGANIC DEBRIS, SUCH THAT THERE WILL BE NO FUTURE FLOATING UP OF DEBRIS; AND FOR ALL ORGANIC DEBRIS BURIAL AREAS IN LITTORAL SHELF AREAS, WETLAND MITIGATION POND AREAS, AND PASSIVE RECREATION/PARK AREAS, ADEQUATE SOIL/MULCH MIXING (WITH COMPACTION) WILL BE NECESSARY BY THE CONTRACTOR, SUCH THAT NO SIGNIFICANT FUTURE UNACCEPTABLE SETTLEMENT OF A LITTORAL SHELF AREA, CREATED WETLAND AREA, OR PARK/GRASSED AREA WILL OCCUR.

IF ANY OF THESE PROCEDURES ARE CONTEMPLATED BY THE CONTRACTOR, THEN THE CONTRACTOR SHALL NOTIFY THE OWNER/GEOTECHNICAL CONSULTANT/ENGINEER IN WRITING, AT THE START OF CONSTRUCTION, WITH SOME SPECIFIC INFORMATION, INCLUDING THE ESTIMATED QUANTITY AND TYPES OF MATERIALS, TO WHICH STORMWATER PONDS, FLOODPLAIN MITIGATION PONDS, WETLAND MITIGATION PONDS, OR PASSIVE RECREATION/PARK AREAS THEY PROPOSE TO USE FOR THIS TYPE OF ORGANIC DEBRIS DISPOSAL, AND WHAT APPROXIMATE ELEVATIONS WILL BE THE TOP AND BOTTOM OF THE ORGANIC DEBRIS.

3. MUCK/PEAT ORGANIC MATERIALS (TYPICALLY GENERATED FROM WETLAND OR LOWLAND AREAS, OR SIMILAR AREAS, PERMITTED FOR IMPACT OR DISPLACEMENT, INCLUDING EXCAVATION OF UNSUITABLE ORGANIC MATERIALS AND REFILLING WITH SUITABLE SANDY SOILS TO ACCOMMODATE DEVELOPMENT; INCLUDES SIGNIFICANT ORGANIC PEAT MATERIALS, ORGANIC SANDY MUCK MATERIALS, AND MUCKY OR ORGANIC SAND MATERIALS, DESIGNATED EITHER PT OR A-8, PER THE UNIFIED AND AASHTO SOIL CLASSIFICATION SYSTEMS, RESPECTIVELY; THOSE ORGANIC MATERIALS WHOSE PRESENCE, OR PLACEMENT BY THE CONTRACTOR, IS UNACCEPTABLE BENEATH ANY TYPE OF STRUCTURE, PAVEMENT, ROADWAY, HOUSE, BUILDING, PIPELINE, SLAB, ETC.)

IF ACCEPTABLE TO THE GOVERNING ENVIRONMENTAL AGENCY, THEN ALL SUCH MUCK/PEAT (SIGNIFICANT) ORGANIC MATERIALS, IF APPROVED IN WRITING FIRST BY THE OWNER/GEOTECHNICAL CONSULTANT/ENGINEER,COULD BE:

A). PLACED AS "PEAT/MUCK/ORGANIC MATTER" SURFACE LAYER IN NEW OR CREATED WETLAND MITIGATION AREAS, STOCKPILING OF SUCH "SIGNIFICANT ORGANIC" MATERIALS (AMOUNTS/LOCATIONS), IF ACCEPTABLE, WILL BE DIRECTED BY THE OWNER/WETLAND CONSULTANT;

B). PLACED IN TEMPORARILY EXCAVATED LITTORAL SHELF AREAS IN SELECTED STORMWATER PONDS, OR IN TEMPORARILY EXCAVATED SELECTED WETLAND MITIGATION PONDS, IN EITHER CASE NOT IN SIDE BANKS AND NOT BELOW THE PERMITTED DESIGN DEPTH OF THE POND, OR SUCH ORGANIC MATERIALS COULD BE BURIED IN TEMPORARILY EXCAVATED PASSIVE RECREATION/PARK AREAS (AT LEAST 30 FEET FROM ANY STRUCTURE) AT APPROVED DEPTHS/LOCATIONS, BUT ALL THESE DISPOSAL AREAS WILL REQUIRE ADEQUATE SOIL MIXING (MIX SOIL WITH THE ORGANIC MATERIALS) AND THEN REFILLING (WITH COMPACTION) TO REQUIRED DESIGN GRADES;

C). PLACED ALONG THE BOTTOM OF SELECTED FLOODPLAIN MITIGATION PONDS (NOT IN SIDE BANKS), NOT BELOW THE PERMITTED EXCAVATION DEPTH OF THE POND, BUT WILL REQUIRE ADEQUATE SOIL COVER;

D.) PLACED ALONG THE BOTTOM OF SELECTED DEEPER STORMWATER PONDS (NOT IN SIDE BANKS), NOT BELOW THE PERMITTED DESIGN DEPTH, BUT WILL REQUIRE ADEQUATE SOIL COVER.

ALL ORGANIC DEBRIS BURIAL AREAS IN STORMWATER POND AREAS AND FLOODPLAIN MITIGATION POND AREAS WILL REQUIRE ADEQUATE SOIL COVER (WITH COMPACTION) BY THE CONTRACTOR, MEANING AT LEAST AN ADEQUATE WEIGHT/THICKNESS OF SOIL MATERIAL OVERTOP THE BURIED ORGANIC DEBRIS, SUCH THAT THERE WILL BE NO FUTURE FLOATING UP OF DEBRIS; AND FOR ALL ORGANIC DEBRIS BURIAL AREAS IN LITTORAL SHELF AREAS, WETLAND MITIGATION POND AREAS, AND PASSIVE RECREATION/PARK AREAS, ADEQUATE SOIL/ORGANICS MIXING (WITH COMPACTION) WILL BE NECESSARY BY THE CONTRACTOR, SUCH THAT NO SIGNIFICANT FUTURE UNACCEPTABLE SETTLEMENT OF A LITTORAL SHELF AREA, CREATED WETLAND AREA, OR PARK/GRASSED AREA WILL OCCUR.

IF ANY OF THESE PROCEDURES ARE CONTEMPLATED BY THE CONTRACTOR, THEN THE CONTRACTOR SHALL NOTIFY THE OWNER/GEOTECHNICAL CONSULTANT/ENGINEER IN WRITING, AT THE START OF CONSTRUCTION, WITH SOME SPECIFIC INFORMATION, INCLUDING THE ESTIMATED QUANTITY AND TYPES OF MATERIALS, TO WHICH STORMWATER PONDS, FLOODPLAIN MITIGATION PONDS, WETLAND MITIGATION PONDS, OR PASSIVE RECREATION/PARK/LANDSCAPE BERM AREAS THEY PROPOSE TO USE FOR THIS TYPE OF ORGANIC MATERIAL DISPOSAL, AND WHAT APPROXIMATE ELEVATIONS WILL BE THE TOP AND BOTTOM OF THE ORGANIC MATERIALS.

4. TOPSOILS/SITE STRIPPINGS (TYPICALLY GENERATED FROM UPLAND AREAS, AFTER DEMOLITION/CLEARING/GRUBBING/DISCING OPERATIONS; STRIPPING OF SURFICIAL ORGANICS/TOPSOILS BEING A REQUIREMENT OVER AT LEAST ALL STRUCTURE, BUILDING, CONCRETE SLAB AND PAVEMENT AREAS PRIOR TO FILLING TO ACCOMMODATE DEVELOPMENT; INCLUDES TOPSOILS AND ORGANIC LADEN SANDS; THOSE TOPSOILS/ORGANIC SAND MATERIALS WHOSE PRESENCE, OR PLACEMENT BY THE CONTRACTOR, IS UNACCEPTABLE BENEATH ANY TYPE OF STRUCTURE, PAVEMENT, ROADWAY, HOUSE, BUILDING, PIPELINE, SLAB, ETC.)

IF ACCEPTABLE TO THE GOVERNING ENVIRONMENTAL AGENCY, ALL SUCH TOPSOILS/ORGANIC LADEN SAND MATERIALS, IF APPROVED IN WRITING FIRST BY THE OWNER/GEOTECHNICAL CONSULTANT/ENGINEER, COULD BE:

A). PLACED AS FILL IN NEW (LARGER) LANDSCAPE/GRASS COMMON AREAS OR LANDSCAPE BERM AREAS (WITH COMPACTION), STOCKPILING OF SUCH "TOPSOILS/ORGANIC LADEN SAND MATERIALS" (AMOUNTS/LOCATIONS), IF ACCEPTABLE, WILL BE DIRECTED BY THE OWNER/LANDSCAPE CONSULTANT;

B). PLACED IN TEMPORARILY EXCAVATED LITTORAL SHELF AREAS IN SELECTED STORMWATER PONDS, OR IN TEMPORARILY EXCAVATED SELECTED WETLAND MITIGATION PONDS, IN EITHER CASE NOT IN SIDE BANKS AND NOT BELOW THE PERMITTED DESIGN DEPTH OF THE POND, OR SUCH TOPSOILS/ORGANIC LADEN SAND MATERIALS COULD BE BURIED IN TEMPORARILY EXCAVATED PASSIVE RECREATION/PARK AREAS (AT LEAST 30 FEET FROM ANY STRUCTURE) AT APPROVED DEPTHS/LOCATIONS, BUT ALL THESE DISPOSAL AREAS WILL REQUIRE REFILLING (WITH COMPACTION) TO REQUIRED DESIGN GRADES;

C). PLACED ALONG THE BOTTOM OF SELECTED FLOODPLAIN MITIGATION PONDS (NOT IN SIDE BANKS), NOT BELOW THE PERMITTED EXCAVATION DEPTH OF THE POND;

D.) PLACED ALONG THE BOTTOM OF SELECTED DEEPER STORMWATER PONDS (NOT IN SIDE BANKS), NOT BELOW THE PERMITTED DESIGN DEPTH.

ALL TOPSOIL/ORGANIC LADEN SAND DISPOSAL AREAS IN LITTORAL SHELF AREAS, WETLAND MITIGATION POND AREAS, PASSIVE RECREATION/PARK AREAS, OR LANDSCAPE/BERM AREAS WILL REQUIRE ADEQUATE COMPACTION BY THE CONTRACTOR, SUCH THAT NO SIGNIFICANT FUTURE UNACCEPTABLE SETTLEMENT OF A LITTORAL SHELF AREA, CREATED WETLAND AREA, PARK/GRASSED AREA, OR LANDSCAPE BERM WILL OCCUR.

IF ANY OF THESE PROCEDURES ARE CONTEMPLATED BY THE CONTRACTOR, THEN THE CONTRACTOR SHALL NOTIFY THE OWNER/GEOTECHNICAL CONSULTANT/ENGINEER IN WRITING, AT THE START OF CONSTRUCTION, WITH SOME SPECIFIC INFORMATION, INCLUDING THE ESTIMATED QUANTITY AND TYPES OF MATERIALS, TO WHICH STORMWATER PONDS, FLOODPLAIN MITIGATION PONDS, WETLAND MITIGATION PONDS, PASSIVE RECREATION/PARK AREAS, OR LANDSCAPE BERM AREAS THEY PROPOSE TO USE FOR THIS TYPE OF ORGANIC DEBRIS DISPOSAL, AND WHAT APPROXIMATE ELEVATIONS WILL BE THE TOP AND BOTTOM OF THE ORGANIC MATERIALS.

IF ANY OF THESE PROCEDURES ARE CONTEMPLATED BY THE CONTRACTOR, THEN THE CONTRACTOR SHALL NOTIFY THE OWNER/GEOTECHNICAL CONSULTANT/ENGINEER IN WRITING, AT THE START OF CONSTRUCTION, WITH SOME SPECIFIC INFORMATION, INCLUDING THE ESTIMATED QUANTITY AND TYPES OF MATERIALS, TO WHICH STORMWATER PONDS, FLOODPLAIN MITIGATION PONDS, WETLAND MITIGATION PONDS, OR PASSIVE RECREATION/PARK AREAS THEY PROPOSE TO USE FOR THIS TYPE OF ORGANIC DEBRIS DISPOSAL, AND WHAT APPROXIMATE ELEVATIONS WILL BE THE TOP AND BOTTOM OF THE ORGANIC DEBRIS.

C). PLACED ALONG THE BOTTOM OF SELECTED FLOODPLAIN MITIGATION PONDS (NOT IN SIDE BANKS), NOT BELOW THE PERMITTED EXCAVATION DEPTH OF THE POND; HOWEVER, A 12-INCH LAYER (MIN.) OF SAND MATERIAL OVERTOP THE CLAYEY MATERIALS WILL BE NECESSARY FOR TURBIDITY CONTROL.

D.) PLACED ALONG THE BOTTOM OF SELECTED DEEPER STORMWATER PONDS (NOT IN SIDE BANKS), NOT BELOW THE PERMITTED DESIGN DEPTH, HOWEVER, A 12-INCH LAYER (MIN.) OF SAND MATERIAL OVERTOP THE CLAYEY MATERIALS WILL BE NECESSARY TO PROVIDE FOR TURBIDITY CONTROL.

ALL CLAYEY SAND/CLAY DISPOSAL AREAS IN LITTORAL SHELF AREAS, WETLAND MITIGATION POND AREAS, PASSIVE RECREATION/PARK AREAS, OR LANDSCAPE/BERM AREAS WILL REQUIRE ADEQUATE COMPACTION BY THE CONTRACTOR, SUCH THAT NO SIGNIFICANT FUTURE UNACCEPTABLE SETTLEMENT OF A L

WATER AND SEWER CONSTRUCTION NOTES:

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN FROM THE ENGINEER OR OWNER A COPY OF ALL PERTINENT PERMITS RELATED TO THIS PROJECT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASSURE THAT ALL CONSTRUCTION ACTIVITIES ARE IN COMPLIANCE WITH THE CONDITIONS OF ALL PERMITS AND APPROVALS.
2. ALL CONSTRUCTION, MATERIALS AND WORKMANSHIP ARE TO BE IN ACCORDANCE WITH CITY OF DELAND WATER AND WASTEWATER TECHNICAL MANUAL AND TECHNICAL SPECIFICATIONS, LATEST EDITION, AT THE TIME OF PLAN APPROVAL.
3. SOD ALL AREAS IN EXISTING RIGHTS-OF-WAY DISTURBED BY CONSTRUCTION.
4. IN ACCORDANCE WITH THE UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY ACT (CHAPTER 556, F.S.) THE CONTRACTOR SHALL CALL THE SUNSHINE STATE ONE CALL OF FLORIDA (SSCOF) AT (811) FORTY-EIGHT (48) HOURS IN ADVANCE OF ANY EXCAVATION.
5. CONTRACTOR SHALL CONTACT THE ENGINEER AND/OR THE OWNER PRIOR TO ANY CONSTRUCTION THAT MAY DAMAGE TREES.
6. CONTRACTOR SHALL VERIFY LOCATIONS AND DEPTHS OF EXISTING WATER AND SEWER LINES PRIOR TO BEGINNING CONSTRUCTION.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY AND ALL ROAD CROSSING AND/OR UTILITY PERMITS NOT PROVIDED BY THE ENGINEER OR OWNER.
8. THE FIELD-SURVEYED OR REPORTED LOCATIONS OF ALL EXISTING UNDERGROUND AND ABOVE-GROUND UTILITIES KNOWN TO EXIST AT THE TIME OF PLANS PRODUCTION HAVE BEEN DEPICTED HEREON; HOWEVER, CONFLICTS BETWEEN EXISTING AND PROPOSED UTILITIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD IMMEDIATELY.
9. ADJUSTING MANHOLE TOPS TO MATCH GRADE AND SLOPE OF THE FINISH PAVING SHALL BE INCLUDED IN THE RESPECTIVE CONTRACT UNIT PRICE FOR MANHOLES; PAYMENT OF WHICH WILL CONSTITUTE FULL COMPENSATION FOR THE CONSTRUCTION AND COMPLETION OF THE MANHOLE, AND NO ADDITIONAL PAYMENT WILL BE ALLOWED OR MADE FOR ADJUSTING MANHOLE TOPS.
10. ALL SANITARY SEWER MANHOLES TO BE CONSTRUCTED IN UNPAVED AREAS SHALL INCLUDE WATER-TIGHT MANHOLE COVER SEALS.
11. ALL SANITARY SEWER MANHOLES 15 FEET OR GREATER DEEP SHALL HAVE A MINIMUM DIAMETER OF 60 INCHES.
12. THE LOCATIONS AND ELEVATION OF ALL SERVICE LINES ARE TO BE DETERMINED IN THE FIELD BY OWNER AND/OR CONTRACTOR PRIOR TO CONSTRUCTION OF SAME.
13. ALL SANITARY SEWER LATERALS SHALL BE MARKED WITH AN "S" CUT INTO THE CURB LINE DIRECTLY IN FRONT OF THE SERVICE LOCATION.
14. ALL SANITARY SEWER GRAVITY MAIN PIPE AND FITTINGS 12 INCHES IN DIAMETER AND SMALLER SHALL BE PVC SDR-26 AND SHALL COMPLY WITH ASTM D 3034. THE LAST RUN OF PVC GRAVITY SEWER ENTERING A LIFT STATION SHALL BE C900 DR 25. ALL SANITARY SEWER GRAVITY MAIN PIPE AND FITTINGS 16 INCHES AND LARGER SHALL BE C900, DR 25. ALL 6" SANITARY SEWER PIPE SHALL BE CONSTRUCTED AT A 1.0% MINIMUM SLOPE.
15. ALL 4" SANITARY SEWER PIPE SHALL BE CONSTRUCTED AT A 1.2% MINIMUM SLOPE.
16. ALL PVC WATER AND RECLAIMED WATER PRESSURE PIPE WITH A DIAMETER UP TO AND INCLUDING 12 INCHES SHALL HAVE A MINIMUM COVER OF 36 INCHES. ALL SANITARY PRESSURE PIPE AND WATER AND RECLAIMED PRESSURE PIPE 14 INCHES AND LARGER SHALL HAVE A MINIMUM COVER OF 48 INCHES.
17. ALL PVC FORCE MAIN PRESSURE PIPE SIZES 4" - 12" SHALL BE AWWA C900 DR-18 OR AWWA C909 CLASS 235, AND SIZES 16" AND GREATER SHALL BE ANSI/AWWA C151/A21.51, CL 50 (MINIMUM) WITH INTERNAL COATING. ALL FITTINGS AND REQUIRED APPURTENANCES SHALL MEET THE REQUIREMENTS OF THE CITY OF DELAND WATER, WASTEWATER, AND RECLAIMED WATER TECHNICAL SPECIFICATIONS , LATEST EDITION AT THE TIME OF PLAN APPROVAL.
18. FORCE MAIN SHALL BE LOCATED 6' OFF RIGHT-OF-WAY LINE UNLESS OTHERWISE NOTED.
19. ALL WASTEWATER PVC PIPE SHALL BE GREEN IN COLOR.
20. ALL RECLAIMED WATER PRESSURE PIPE MAINS SHALL BE "PURPLE" COLOR, ANSI/AWWA C-900, DR-18 PVC.
21. ALL PVC WATER MAIN PRESSURE PIPE SHALL CONFORM TO THE REQUIREMENTS FOUND IN AWWA C-900, CLASS 150, DR-18 LATEST EDITION AT THE TIME OF PLAN APPROVAL. ALL FITTINGS AND REQUIRED APPURTENANCES SHALL MEET THE REQUIREMENTS OF THE CITY OF DELAND WATER, WASTEWATER, AND RECLAIMED WATER TECHNICAL SPECIFICATIONS , LATEST EDITION AT THE TIME OF PLAN APPROVAL.
22. ALL WATER MAIN PIPE AND FITTINGS INSTALLED UNDER THIS PROJECT SHALL BE COLOR CODED OR MARKED IN ACCORDANCE WITH SUBPARAGRAPH 62-555.320(21)(B)3, FLORIDA ADMINISTRATIVE CODES, USING BLUE AS THE PREDOMINANT COLOR.

    SANITARY SEWERS, FORCE AND RECLAIMED MAINS AND STORM SEWERS SHOULD CROSS UNDER WATER MAINS WHENEVER POSSIBLE. MINIMUM CLEARANCE DISTANCES BETWEEN PIPELINES SHOWN IN UTILITY DETAILS.
23. THE WATER MAIN SHALL BE CONSTRUCTED OF DUCTILE IRON PIPE (DIP) WHENEVER THE ABOVE VERTICAL CLEARANCES ARE NOT MET. SUFFICIENT LENGTHS OF DIP MUST BE USED TO PROVIDE A MINIMUM SEPARATION OF 10 FEET BETWEEN ANY TWO JOINTS. ALL JOINTS ON THE WATER MAIN WITHIN 20 FEET OF THE CROSSING MUST BE LEAK FREE AND MECHANICALLY RESTRAINED. A MINIMUM VERTICAL CLEARANCE OF 6 INCHES MUST BE MAINTAINED AT THE CROSSING.
24. ALL CROSSINGS SHALL BE ARRANGED SO THAT THE SEWER AND RECLAIMED PIPES JOINTS AND THE WATER MAIN PIPE JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING (PIPES CENTERED ON THE CROSSING).
25. WHERE A NEW PIPE CONFLICTS WITH AN EXISTING PIPE, THE NEW PIPE SHALL BE CONSTRUCTED OF DIP AND THE CROSSING SHALL BE ARRANGED TO MEET THE REQUIREMENTS ABOVE.
26. IN CASES WHERE IT IS NOT POSSIBLE TO MAINTAIN A 10-FOOT HORIZONTAL SEPARATION BETWEEN ANY TYPE OF PARALLEL SEWER AND WATER MAIN, THE WATER MAIN MUST BE LAID IN A SEPARATE TRENCH OR ON AN UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER OR FORCE MAIN AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST 18 INCHES ABOVE THE TOP OF THE SEWER.
27. WHERE IT IS NOT POSSIBLE TO MAINTAIN A VERTICAL DISTANCE OF 18 INCHES OR A HORIZONTAL DISTANCE OF 10 FEET IN PARALLEL INSTALLATIONS, THE WATER MAIN SHALL BE CONSTRUCTED OF DIP AND THE SEWER OR THE FORCE MAIN SHALL BE CONSTRUCTED OF DIP (IF AVAILABLE IN THE SIZE PROPOSED) WITH A MINIMUM VERTICAL DISTANCE OF 6 INCHES. THE WATER MAIN SHOULD ALWAYS BE ABOVE THE SEWER. JOINTS ON THE WATER MAIN SHALL BE LOCATED AS FAR APART AS POSSIBLE FROM JOINTS ON THE SEWER OR FORCE MAIN (STAGGERED JOINTS).
28. ALL DIP SHALL BE CLASS 50 OR HIGHER. ADEQUATE PROTECTIVE MEASURES AGAINST CORROSION SHALL BE USED.
29. WATER MAIN SHALL BE LOCATED 6' OFF RIGHT-OF-WAY LINE UNLESS OTHERWISE NOTED.BENDS SHALL BE INSTALLED IN FORCE MAIN AND/OR WATER MAIN TO AVOID UNFORESEEN CONFLICTS IN EXISTING OR PROPOSED STRUCTURES.
30. THE JOINT DEFLECTION METHOD SHALL BE USED WHERE PRACTICAL IN LIEU OF INSTALLING BENDS.
31. FIRE HYDRANT, GATE VALVE AND BLOW-OFF VALVE ASSEMBLIES SHALL CONSIST OF ALL PIPE, VALVES, TEES, FITTINGS, AND ANY AND ALL OTHER APPURTENANCES COMPRISING A COMPLETE, WORKING UNIT.
32. THE LOCATION OF NEW FIRE HYDRANTS SHALL BE IDENTIFIED WITH A BLUE REFLECTIVE PAVEMENT MARKER INSTALLED ON THE ROADWAY. THE REFLECTIVE MARKER SHALL BE LOCATED PERPENDICULAR TO THE HYDRANT, IN THE CENTER OF THE LANE CLOSEST TO THE HYDRANT.
33. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FLOW TESTING AND COLOR CODING OF ALL NEWLY INSTALLED FIRE HYDRANTS IN THE EXISTING OR PROPOSED CITY OF DELAND RIGHT-OF-WAY AND UTILITY EASEMENTS THAT ARE TO BE DEDICATED TO CITY OF DELAND PRIOR TO THE FINAL INSPECTION OF THE PROJECT. THE ENGINEER OF RECORD AND/OR CONTRACTOR SHALL REFER TO NFPA STANDARD 291 FOR FLOW TESTING AND COLOR CODING METHODS AND PROCEDURES.
34. FOR WATER, RECLAIMED, AND SEWER TAPS, CONTRACTOR TO PROVIDE AND INSTALL TAPPING SLEEVE AND VALVE AND ALL APPURTENANCES FOR CONTRACTOR TO MAKE TAP.
35. ALL WATER AND SANITARY SEWER SERVICE LOCATIONS ARE SHOWN GRAPHICALLY FOR PLANNING PURPOSES ONLY. FOR ACTUAL SERVICE CONSTRUCTION, SEE CITY OF DELAND WATER SERVICE DETAILS W-3A - W6G. FOR SANITARY SEWER LATERALS SEE SERVICE DETAILS S-2A AND S-2B.
36. ALL VALVE BOX ASSEMBLIES LOCATED WITHIN ROADWAYS OR PARKING AREAS SHALL BE PROTECTED FROM TRUCK TRAFFIC BY USE OF 6" THICK REINFORCED CONCRETE PADS POURED AROUND VALVE BOXES (SEE DETAIL).
37. ALL SUBSURFACE CONSTRUCTION SHALL COMPLY WITH THE "TRENCH SAFETY ACT." THE CONTRACTOR SHALL ENSURE THAT THE METHOD OF TRENCH PROTECTION AND CONSTRUCTION IS IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS.
38. ALL NON-METALLIC PIPE SHALL BE INSTALLED WITH 2 PAIR INSULATED 10 GAGE COPPER TRACER WIRE IN ACCORDANCE W/ THE CITY OF DELAND WATER, WASTEWATER, AND RECLAIMED WATER TECHNICAL SPECIFICATIONS, LATEST EDITION AT THE TIME OF PLAN APPROVAL.
39. THE CONTRACTOR OR ENGINEER OF RECORD SHALL CONTACT THE CITY OF DELAND WATER RESOURCE SERVICES DEPARTMENT'S UTILITY INSPECTION SECTION AND LINE MAINTENANCE UNIT TO SET UP PRE-CONSTRUCTION MEETINGS.
40. PRIOR TO CITY OF DELAND WATER RESOURCE SERVICES DEPARTMENT PROVIDING A FINAL INSPECTION RELEASE, THE FOLLOWING INSPECTIONS WILL BE REQUIRED (PROVIDE MINIMUM 48 HOURS' NOTICE FOR ALL INSPECTIONS AND TESTS):
    a. FINAL INSPECTION OF ALL (DEDICATED) UTILITY INSTALLATIONS MUST BE CONDUCTED BY THE DEPARTMENT TO ENSURE STANDARDS COMPLIANCE.
    b. ALL REQUIRED LEAKAGE TESTS MUST BE OBSERVED AND PASSED BY WATER DEPARTMENT PERSONNEL.
    c. ALL GRAVITY LINE VIDEO INSPECTIONS MUST BE OBSERVED AND PASSED BY WATER DEPARTMENT PERSONNEL.
    d. ALL PUNCH LIST ITEMS MUST BE COMPLETED AND RE-INSPECTED FOR COMPLIANCE.
    e. ALL REQUIRED SITE RESTORATION SHALL BE COMPLETED.
42. ALL FITTINGS, APPURTENANCES, DEPTH OF PIPE SHALL BE MARKED IN THE FIELD FOR AS-BUILT PLAN PREPARATION.

FLORIDA GAS TRANSMISSION ENCROACHMENT SPECIFICATIONS

ENGINEERING AND CONSTRUCTION SPECIFICATIONS

1. Owner shall provide a minimum of forty-eight (48) hours notice to FGT, prior to any installation, construction, excavation or demolition work on the Easement Area, and to ensure further safety Owner shall also call SUNSHINE ONE CALL or its successor at 800-432-4770. A FGT representative must be present when any work is done on the Easement Area. The onsite FGT representative will have the authority to shutdown work by the contractor if the contractor's activities are judged to by unsafe by the FGT representative. The FGT representative will be invited to participate in contractor's safety meetings. This provision applies each time FGT's Pipeline Facilities are crossed.

2. Normal ground cover (a minimum of three feet [3'] of pipeline cover) is to be maintained over the subsurface Pipeline Facilities within the Easement Area. Three feet (3') of cover will also be required over the Pipeline Facilities at all equipment crossings for standard FDOT maximum axle load vehicles (20,000 lbs. per axle).

3. Where consent for roadway crossings has been granted, a minimum of forty-eight inches (48") of cover, including thirty-six (36") of undisturbed or compacted soil, shall be maintained within the Easement Area.

4. Where the Encroachment includes for utilities, all such utilities crossing the Easement Area must have a minimum separation of eighteen inches (18") between the utility and FGT's pipeline(s) at the point of crossing and must cross at a 90° angle. No utilities shall be constructed above the Easement Area or between the surface of the Easement Area and the top of the subsurface Pipeline Facilities. No parallel utilities are permitted within the Easement Area.

5. Where consent for utility lines has been granted, electric lines must be encased in steel throughout the Easement Area; fiber optic, telephone and cable television lines must be encased in PVC throughout the Easement Area. Cables energized to 600 volts or more should cross a minimum of three feet (3') below the subsurface Pipeline Facilities if practical, be encased in concrete, color coded red, across the entire right-of-way width, and have external, spiral wound, neutrals grounded on each side of the right-of-way. The cable crossing should be clearly and permanently marked on each side of the right-of-way if practical.

6. Where consent for fencing has been granted, the Owners must install and maintain a vehicle access gate at least twelve feet (12') in width at each point in the fence line(s) crossing the Easement Area. Posthole excavations for fencing placed on the Easement Area shall not be greater than eighteen inches (18") below the ground surface elevation. No fence posts shall be placed over the Pipeline Facilities or closer than five feet (5') on either side of the Pipeline Facilities. Any such fence shall be constructed and maintained by Owner in such a manner that does not prevent FGT personnel from viewing the Easement Area from the ground level through the fence(s) (i.e. no solid fences allowed). No fencing parallel to the FGT Pipeline Facilities will be allowed within the Easement Area. FGT's access to its Pipeline Facilities shall be maintained by Owner. If the gate is locked with Owner's lock, Owner shall provide FGT with keys to enable FGT to unlock and open the gate.

7. No above or below ground utility appurtenances, junction boxes or retention ponds shall be allowed within the Easement Area.

8. No roto-mixing or vibrating machinery is allowed within the Easement Area.

9. Ditches shall be sloped or shoring will be used to allow entry into the excavation. Time will be allowed for FGT to inspect and make coating repairs as the subsurface Pipeline Facilities are exposed.

10. Twelve inches (12") of backfill around the subsurface Pipeline Facilities shall be sand; free of rocks and debris. Rock Shield will be installed around Pipeline Facilities.

11. No more than twenty feet (20') of pipe shall be exposed at any given time; if more than twenty feet (20') of pipe is to be exposed, engineering stress calculations must be performed by FGT engineering and approved by FGT operations prior to allowing any more than the twenty feet (20') of exposed pipe.

12. Excavators shall be equipped with toothless buckets when digging or excavating within 3 feet of the Pipeline Facilities. All mechanical excavation performed within 3 feet of the pipeline will be performed parallel to the pipeline (i.e. track-hoe can not reach over the pipeline to dig on the opposite side of the pipeline)

13. All excavation within 18" from the top or 36" from the side or bottom of the pipeline shall be by manual means. After top exposure, excavation up to 12" from the side or bottom of the exposed pipeline may proceed by mechanical means if FGT is satisfied it may be done safely with the equipment and operator available. (FGT Operating Procedures Manual number 80.102).

14. All metallic foreign line crossings shall have Micarta board placed between the FGT Pipeline Facilities and the foreign crossing to prevent any interference with the FGT cathodic protection system and equipment from the foreign crossing.

15. Barriers adequate to prevent vehicular damage to any exposed Pipeline Facilities shall be installed and maintained at all times.

16. Cathodic protection test lead wires shall be protected from damage by construction activity.

17. No installation, construction, excavation, or demolition work shall be performed within the Easement Area on weekends or holidays unless Owner agrees to reimburse FGT for its cost, including overtime costs, associated with inspection during those periods.

18. Where consent for landscaping has been granted, Owner shall not plant any trees and shrubs on the Easement Area which are classified as "deep rooted" or are projected to exceed an eventual growth height of six (6) feet. Trees and shrubs shall be planted so that no part, at its ultimate growth, shall be closer than ten feet (10') to the Pipeline Facilities.

19. These Engineering and Construction Specifications address activities on the Easement Area for which FGT has not granted consent to Owner to include as part of the Encroachment. Notwithstanding anything to the contrary contained in these Engineering and Construction Specifications, the FGT consent is and shall be limited to the Encroachment as described and limited by the Encroachment Agreement to which this Exhibit "A" is attached.

LEGAL DESCRIPTION *(PER TITLE COMMITMENT)*

A PORTION OF SECTION 13, TOWNSHIP 17 SOUTH, RANGE 30 EAST, A PORTION OF SECTION 18, TOWNSHIP 17 SOUTH, RANGE 31 EAST, VOLUSIA COUNTY, FLORIDA, AND A PARTIAL REPLAT OF LOTS 6, 7, 8, AND 18, ASSESSOR'S SUBDIVISION OF WINNEMISSETT, AS RECORDED IN MAP BOOK 3, PAGE 20, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE INTERSECTION OF THE WEST LINE OF THE EAST 545 FEET OF THE SOUTH 7/8 OF THE NORTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 18, TOWNSHIP 17 SOUTH, RANGE 31 EAST, VOLUSIA COUNTY, FLORIDA AND THE NORTH RIGHT-OF-WAY LINE OF STATE ROAD No. 44 ACCORDING TO FLORIDA DEPARTMENT OF TRANSPORTION MAP SECTION 79020-2545; THENCE ALONG THE WEST LINE OF SAID EAST 545 FEET OF THE SOUTH 7/8 OF THE NORTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 18 RUN N 01°41'54" W, A DISTANCE OF 1238.51 FEET TO THE NORTHWEST CORNER THEREOF; THENCE ALONG THE NORTH LINE OF SAID EAST 545 FEET OF THE SOUTH 7/8 OF THE NORTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 18 RUN N 89°30'33"E, A DISTANCE OF 90.80 FEET FOR THE POINT OF BEGINNING; THENCE CONTINUE ALONG SAID NORTH LINE N 89°30'33" E, A DISTANCE OF 454.32 FEET TO THE NORTHEAST CORNER OF THE SOUTH 7/8 OF THE NORTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 18; THENCE ALONG THE EAST LINE OF THE NORTHWEST 1/4 OF THE SOUTHWEST 1/4 AND THE EAST LINE OF THE WEST 1/2 OF THE NORTHWEST 1/4 OF SAID SECTION 18 RUN N 01°20'00 W, A DISTANCE OF 1643.97 FEET; THENCE DEPARTING SAID EAST LINE RUN S 88°40"00" W, A DISTANCE OF 260.87 FEET; THENCE RUN N 76°00'00" W, A DISTANCE OF 186.00 FEET; THENCE RUN S 14°00'00" W, A DISTANCE OF 32.21 FEET; THENCE RUN N 89°59'59" W, A DISTANCE OF 813.82 FEET; THENCE RUN S 88°01'41" W, A DISTANCE OF 672.62 FEET TO A POINT ON CURVE, CONCAVE EASTERLY, HAVING A RADIUS OF 1022.00 FEET, A CENTRAL ANGLE OF 01°30'36", A CHORD BEARING OF S 04°53'20" E AND A CHORD DISTANCE OF 26.93 FEET, RUN 26.93 FEET ALONG THE ARC OF SAID CURVE TO A POINT; THENCE RUN S 84°21'22" W, A DISTANCE OF 130.00 FEET TO A POINT ON A CURVE, CONCAVE EASTERLY, HAVING A RADIUS OF 1152.00 FEET, A CENTRAL ANGLE OF 06°26'40", A CHORD BEARING OF N 02°25'18" W AND A CHORD DISTANCE OF 129.51 FEET, RUN 129.57 FEET ALONG THE ARC OF SAID CURVE TO THE POINT OF TANGENCY THEREOF; THENCE RUN N 00°48'02" E, A DISTANCE OF 94.33 FEET; THENCE RUN N 90°00'00" W, A DISTANCE OF 317.53 FEET; THENCE RUN S 33°30'38" W, A DISTANCE OF 50.04 FEET; THENCE RUN S 41°25'52" W, A DISTANCE OF 6.08 FEET; THENCE RUN S 01°31'18" E, A DISTANCE OF 188.34 FEET; THENCE RUN S 76°39'19" E, A DISTANCE OF 103.70 FEET; THENCE RUN S 74°41'51" E, A DISTANCE OF 109.87 FEET; THENCE RUN S 27°39'46" E, A DISTANCE OF 114.33 FEET; THENCE RUN S 28°32'25" W, A DISTANCE OF 41.97 FEET; THENCE RUN S 19°37'01" E, A DISTANCE OF 46.29 FEET; THENCE RUN S 26°10'40" E, A DISTANCE OF 41.40 FEET; THENCE RUN S 50°43'50" E, A DISTANCE OF 42.26 FEET; THENCE RUN S 79°08'33" E, A DISTANCE OF 40.73 FEET;THENCE RUN S 41°16'10" E, A DISTANCE OF 35.28 FEET; THENCE RUN S 54°06'34" E, A DISTANCE OF 95.89 FEET; THENCE RUN S 28°39'29" E, A DISTANCE OF 28.23 FEET; THENCE RUN S 02°08'16" E, A DISTANCE OF 161.50 FEET TO THE POINT OF CURVATURE OF A CURVE, CONCAVE WESTERLY, HAVING A RADIUS OF 222.00 FEET, A CENTRAL ANGLE OF 26°15'50", A CHORD BEARING OF S 10°59'39" W AND A CHORD DISTANCE OF 100.87 FEET, RUN 101.76 FEET ALONG THE ARC OF SAID CURVE TO A POINT; THENCE RUN S 65°52'26" E, A DISTANCE OF 130.00 FEET A POINT ON A CURVE, CONCAVE WESTERLY, HAVING A RADIUS OF 352.00 FEET, A CENTRAL ANGLE OF 07°17'29", A CHORD BEARING OF N 20°28'50" E AND A CHORD DISTANCE OF 44.77 FEET, RUN 44.80 FEET ALONG THE ARC OF SAID CURVE TO A POINT; THENCE RUN S 73°09'55" E, A DISTANCE OF 56.00 FEET TO A POINT ON A CURVE, CONCAVE WESTERLY, HAVING A RADIUS OF 408.00 FEET, A CENTRAL ANGLE OF 07°53'49", A CHORD BEARING OF S 20°47'00" W AND A CHORD DISTANCE OF 56.19 FEET, RUN 56.23 FEET ALONG THE ARC OF SAID CURVE TO A POINT; THENCE RUN S 64°07'26" E, A DISTANCE OF 260.03 FEET TO A POINT ON A CURVE, CONCAVE WESTERLY, HAVING A RADIUS OF 668.00 FEET, A CENTRAL ANGLE OF 04°18'23", A CHORD BEARING OF N 23°01'26" E AND A CHORD DISTANCE OF 50.19 FEET, RUN 50.21 ALONG THE ARC OF SAID CURVE TO A POINT; THENCE RUN S 69°07'45" E, A DISTANCE OF 56.00 FEET TO A POINT ON A CURVE, CONCAVE WESTERLY, HAVING A RADIUS OF 724.00 FEET, A CENTRAL ANGLE OF 04°11'24", A CHORD BEARING OF S 22°57'57" W AND A CHORD DISTANCE OF 52.93 FEET, RUN 52.95 FEET ALONG THE ARC OF SAID CURVE TO A POINT; THENCE RUN S 66°19'28" E, A DISTANCE OF 324.00 FEET; THENCE RUN S 89°59'59" E, A DISTANCE OF 134.76 FEET; THENCE RUN N 73°37'56" E, A DISTANCE OF 36.75 FEET; THENCE RUN N 66°12'34" E, A DISTANCE OF 82.17 FEET TO THE POINT OF CURVATURE OF A CURVE, CONCAVE SOUTHERLY, HAVING A RADIUS OF 100.00 FEET, A CENTRAL ANGLE OF 23°47'27", A CHORD BEARING OF N 78°06'17" E AND A CHORD DISTANCE OF 41.23 FEET, THENCE RUN 41.52 FEET ALONG THE ARC OF SAID CURVE TO THE POINT OF TANGENCY THEREOF; THENCE RUN S 89°59'59" E, A DISTANCE OF 282.33 FEET; THENCE RUN N 00°00'01" E, A DISTANCE OF 186.00 FEET; THENCE RUN S 89°59'59" E, A DISTANCE OF 30.54 FEET; THENCE RUN N 00°00'01" E, A DISTANCE OF 130.00 FEET; THENCE RUN N 89°59'59" W, A DISTANCE OF 22.20 FEET; THENCE RUN N 00°00'01" E, A DISTANCE OF 45.46 FEET; THENCE RUN N 89°40'13" E, A DISTANCE OF 107.05 FEET; THENCE RUN S 89°17'56" E, A DISTANCE OF 150.00 FEET TO A POINT ON A CURVE, CONCAVE WESTERLY, HAVING A RADIUS OF 2628.00 FEET, A CENTRAL ANGLE OF 12°18'56", A CHORD BEARING OF S 06°51'32" W AND A CHORD DISTANCE OF 563.80 FEET; RUN 564.88 FEET ALONG THE ARC OF SAID CURVE TO A POINT; THENCE RUN S 65°05'13" W, A DISTANCE OF 75.96 FEET; THENCE RUN S 03°30'44" W, A DISTANCE OF 35.58 FEET; THENCE RUN S 43°09'02" E, A DISTANCE OF 320.47 FEET; THENCE RUN S 29°18'35" W, A DISTANCE OF 38.58 FEET; THENCE RUN S 56°12'52" W, A DISTANCE OF 118.47 FEET; THENCE RUN S 00°29'27" E, A DISTANCE OF 12.94 FEET TO THE POINT OF BEGINNING.

TOGETHER WITH

A PORTION OF SECTION 13, TOWNSHIP 17 SOUTH, RANGE 30 EAST, VOLUSIA COUNTY, FLORIDA, AND A PARTIAL REPLAT OF LOTS 1, 2, 3, 10 THROUGH 16 AND 31, ASSESSOR'S SUBDIVISION OF WINNEMISSETT, AS RECORDED IN MAP BOOK 3, PAGE 20, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE INTERSECTION OF THE WEST LINE OF THE EAST 545 FEET OF THE SOUTH 7/8 OF THE NORTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 18, TOWNSHIP 17 SOUTH, RANGE 31 EAST, VOLUSIA COUNTY, FLORIDA AND THE NORTH RIGHT-OF-WAY LINE OF STATE ROAD No. 44 ACCORDING TO FLORIDA DEPARTMENT OF TRANSPORTION MAP SECTION 79020-2545; THENCE RUN THE FOLLOWING FOUR (4) COURSES AND DISTANCES ALONG SAID NORTH RIGHT-OF-WAY LINE: (1) THENCE RUN S 89°08'34" W, A DISTANCE OF 610.31 FEET; (2) THENCE RUN S 88°58'34" W, A DISTANCE OF 644.57 FEET (3) TO THE POINT OF CURVATURE OF A CURVE CONCAVE SOUTHERLY, HAVING A RADIUS OF 995.42 FEET, A CENTRAL ANGLE OF 20°22'00", A CHORD BEARING OF S 78°47'34" W AND A CHORD DISTANCE OF 351.98 FEET, RUN 353.84 FEET ALONG THE ARC OF SAID CURVE TO A POINT; (4) THENCE RUN N 34°47'32" W, A DISTANCE OF 51.33 FEET FOR THE POINT OF BEGINNING; THENCE CONTINUE ALONG SAID NORTH RIGHT-OF-WAY LINE THE FOLLOWING TWO (2) COURSES AND DISTANCES; (1) THENCE RUN N 34°47'32" W, A DISTANCE OF 71.46 FEET; (2) THENCE RUN S 55°12'24" W, A DISTANCE OF 8.49 FEET; THENCE DEPARTING SAID NORTH RIGHT-OF-WAY LINE RUN N 34°47'32" W, A DISTANCE OF 725.51 FEET TO THE POINT OF CURVATURE OF A CURVE, CONCAVE EASTERLY, HAVING A RADIUS OF 539.49 FEET, A CENTRAL ANGLE OF 28°14'43", A CHORD BEARING OF N 20°40'11" W AND A CHORD DISTANCE OF 263.27 FEET, RUN 265.95 FEET ALONG THE ARC OF SAID CURVE TO THE POINT OF TANGENCY THEREOF; THENCE RUN N 06°32'49" W, A DISTANCE OF 323.45 FEET TO THE POINT OF CURVATURE OF A CURVE, CONCAVE WESTERLY, HAVING A RADIUS OF 1200.00 FEET, A CENTRAL ANGLE OF 14°32'23", A CHORD BEARING OF N 13°49'01" W AND A CHORD DISTANCE OF 303.70 FEET; THENCE RUN 304.52 FEET ALONG THE ARC OF SAID CURVE TO A POINT; THENCE RUN N 68°54'48" E, A DISTANCE OF 54.27 FEET TO A POINT ON A CURVE, CONCAVE EASTERLY, HAVING A RADIUS OF 256.00 FEET, A CENTRAL ANGLE OF 67°07'54", A CHORD BEARING OF N 17°16'53" E AND A CHORD DISTANCE OF 283.08 FEET, RUN 299.95 FEET ALONG THE ARC OF SAID CURVE TO THE POINT OF TANGENCY THEREOF; THENCE RUN N 50°50'50" E, A DISTANCE OF 77.86 FEET; THENCE RUN S 39°09'10" E, A DISTANCE OF 130.00 FEET; THENCE RUN S 50°50'50" W, A DISTANCE OF 77.86 FEET; THENCE RUN S 39°09'10" E, A DISTANCE OF 56.00 FEET TO A POINT ON A CURVE, CONCAVE EASTERLY, HAVING A RADIUS OF 70.00 FEET, A CENTRAL ANGLE OF 67°07'54", A CHORD BEARING OF S 17°16'53" W AND A CHORD DISTANCE OF 77.41 FEET; RUN 82.02 FEET ALONG THE ARC OF SAID CURVE TO THE POINT OF TANGENCY THEREOF; THENCE RUN S 16°17'04" E, A DISTANCE OF 6.67 FEET; THENCE RUN N 73°42'56" E, A DISTANCE OF 130.00 FEET; THENCE RUN S 16°17'04" E, A DISTANCE OF 270.93 FEET TO THE POINT OF CURVATURE OF A CURVE, CONCAVE NORTHEASTERLY, HAVING A RADIUS OF 192.00 FEET, A CENTRAL ANGLE OF 44°43'44", A CHORD BEARING OF S 38°38'56" E AND A CHORD DISTANCE OF 146.11 FEET, RUN 149.89 FEET ALONG THE ARC OF SAID CURVE TO THE POINT OF TANGENCY THEREOF; THENCE RUN S 61°00'48" E, A DISTANCE OF 300.06 FEET TO THE POINT OF CURVATURE OF A CURVE, CONCAVE SOUTHWESTERLY, HAVING A RADIUS OF 1158.00 FEET, A CENTRAL ANGLE OF 23°12'39", A CHORD BEARING OF S 49°24'29" E AND A CHORD DISTANCE OF 465.91 FEET, RUN 469.11 FEET ALONG THE ARC OF SAID CURVE TO A POINT; THENCE RUN N 88°13'45" E, A DISTANCE OF 425.67 FEET; THENCE RUN S 01°46'15" E, A DISTANCE OF 632.00 FEET; THENCE RUN S 88°13'45" W, A DISTANCE OF 321.66 FEET TO A POINT ON A CURVE, CONCAVE WESTERLY, HAVING A RADIUS OF 300.00 FEET, A CENTRAL ANGLE OF 16°33'34", A CHORD BEARING OF N 10°55'55" W AND A CHORD DISTANCE OF 86.40 FEET, RUN 86.71 FEET ALONG THE ARC OF SAID CURVE TO THE POINT OF TANGENCY THEREOF; THENCE RUN N 19°12'42" W, A DISTANCE OF 28.46 FEET; THENCE RUN S 79°23'18" W, A DISTANCE OF 192.83 FEET; THENCE RUN S 77°06'54" W, A DISTANCE OF 188.55 FEET; THENCE RUN S 31°06'55" W, A DISTANCE OF 75.48 FEET; THENCE RUN S 65°26'54" W, A DISTANCE OF 65.39 FEET; THENCE RUN S 22°33'27" W, A DISTANCE OF 86.99 FEET TO A POINT ON A CURVE, CONCAVE SOUTHERLY, HAVING A RADIUS OF 1045.42 FEET, A CENTRAL ANGLE OF 03°57'26", A CHORD BEARING OF S 69°56'10" W AND A CHORD DISTANCE OF 72.19 FEET, RUN 72.20 FEET ALONG THE ARC OF SAID CURVE TO THE POINT OF BEGINNING.

CONTAINING 82.79 ACRES, MORE OF LESS.

ELEVATIONS BASED ON:
NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION:
NAVD 88 TO NGVD 29 = +1.07

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www.HeidtDesign.com

CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

GENERAL NOTES

PREPARED FOR: KH CW DELAND LLC

	DATE	DESCRIPTION
1	06/09/2023	REV. NOTE 34; ADDED LEGAL DESC
	02/20/2023	REVIEW SUBMITTAL

PROJECT NO:	KGA-CD-1031
FILE:	GNOTES
DESIGN BY



N

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GRAPHIC SCALE: 1" = 200'

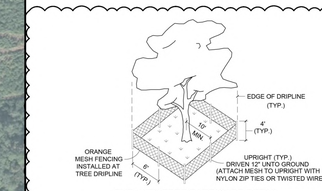
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NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION:
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LEGEND

- WETLAND LIMITS
- WETLAND LINE
- WETLAND CONS. AREA SETBACK / LANDWARD EXTENT OF UPLAND BUFFER (25')
- BOUNDARY LIMITS
- RIGHT-OF-WAY LINE
- PHASE LINE

NOTE:

-TREE BARRICADES ARE REQUIRED AROUND ALL TREES WHICH HAVE BEEN DESIGNATED ON THE SITE PLAN TO BE RETAINED AND PROTECTED. PRIOR TO ANY CLEARING OR CONSTRUCTION ACTIVITY OCCURRING ON THE SITE, TREE BARRICADES SHALL BE CONSTRUCTED BY THE CONTRACTOR AND APPROVED BY THE CITY.



TYP. CITY TREE BARRICADE DETAIL

N.T.S.

TREE BARRICADES ARE REQUIRED AROUND ALL TREES WHICH HAVE BEEN DESIGNATED ON THE SITE PLAN TO BE RETAINED AND PROTECTED. PRIOR TO ANY CLEARING OR CONSTRUCTION ACTIVITY OCCURRING ON THE SITE, TREE BARRICADES SHALL BE CONSTRUCTED BY THE CONTRACTOR AND APPROVED BY THE CITY. TREE BARRICADES SHALL BE PLACED AT THE EDGE OF THE DRIPLINE OR A MINIMUM OF 10' FROM THE TRUNK OF THE TREE, WHICH EVER IS GREATER.

FOR THE BARRIER THE CITY RECOMMENDS SAFETY BARRICADE FENCING.

NOTE: EXISTING TREES IN LANDSCAPE BUFFER SHALL ALSO BE PROTECTED.

DATE: JANUARY 31, 2023 | **TREE BARRICADE DETAIL** | M112

City of DeLand - Standard Details

1

NOTE:
THIS EXHIBIT WAS PREPARED FOR ILLUSTRATIVE PURPOSES ONLY. THE LATEST AVAILABLE DIGITAL AERIAL FILES HAVE BEEN USED HOWEVER THIS MAY NOT ACCURATELY DEPICT CURRENT SITE CONDITIONS. ADDITIONAL ENGINEERING, ENVIRONMENTAL REVIEWS, FIELD SURVEYING AND DATA COLLECTION ARE NECESSARY TO CORRECTLY PORTRAY ACTUAL SITE CONDITIONS. THIS EXHIBIT IS SUBJECT TO CHANGE WITHOUT NOTICE BASED ON THE ABOVE.

DATE OF PHOTO: 2015

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www.HeidtDesign.com

CRESSWIND DELAND PHASE 2A, 2B, 3A & 3B

AERIAL SITE PLAN

PREPARED FOR: KH CW DELAND LLC

NO	DATE	DESCRIPTION
1	06/09/2023	UPDATED TREE BARRICADE DETAIL
	02/20/2023	REVIEW SUBMITTAL

PROJECT NO:	KGA-CD-1031
FILE:	ASP
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

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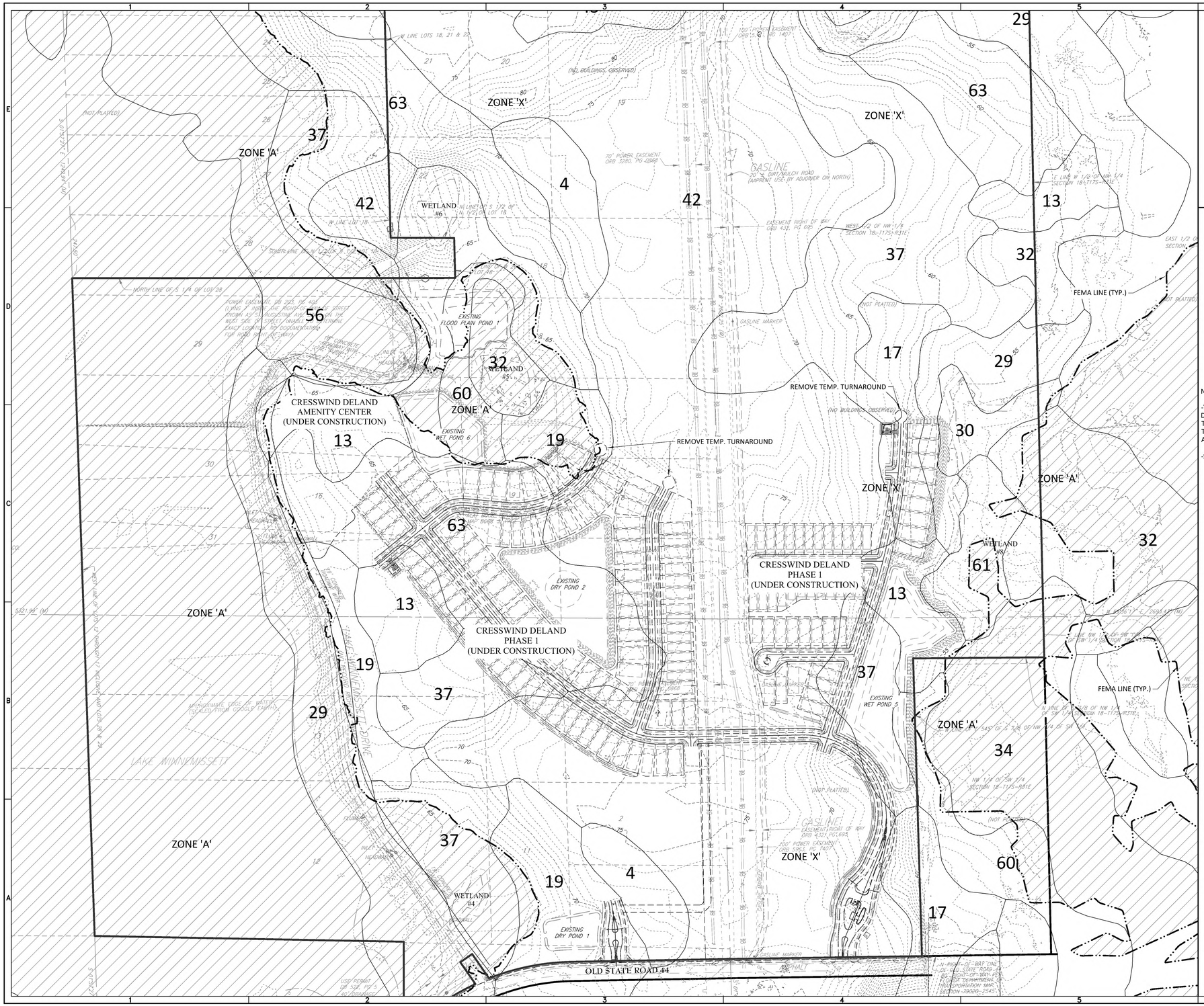
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DATE:
LICENSE NO. 50652

C-103

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GRAPHIC SCALE: 1" = 200'

ELEVATIONS BASED ON:
NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION:
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LEGEND

- WETLAND LIMITS
- WETLAND LINE
- WETLAND CONS. AREA SETBACK / LANDWARD EXTENT OF UPLAND BUFFER (25')
- FEMA LINE
- BOUNDARY LIMITS
- RIGHT-OF-WAY LINE
- PHASE LINE
- SILT FENCE
- TREE BARRICADE
- 100 YR FLOOD PLAIN LIMITS
- 63 HYDROLOGIC SOIL GROUPING

NOTE:

-TREE BARRICADES ARE REQUIRED AROUND ALL TREES WHICH HAVE BEEN DESIGNATED ON THE SITE PLAN TO BE RETAINED AND PROTECTED. PRIOR TO ANY CLEARING OR CONSTRUCTION ACTIVITY OCCURRING ON THE SITE, TREE BARRICADES SHALL BE CONSTRUCTED BY THE CONTRACTOR AND APPROVED BY THE CITY.

-SEE SHEET L-480/C-103 FOR TREE BARRICADE DETAIL.

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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

EXISTING SITE CONDITIONS

PREPARED FOR: KH CW DELAND LLC

NO.	DATE	DESCRIPTION
1	06/09/2023	LEGAL DESC. MOVED TO C-102
	02/20/2023	REVIEW SUBMITTAL

PROJECT NO:	KGA-CD-1031
FILE:	EX-SITE
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

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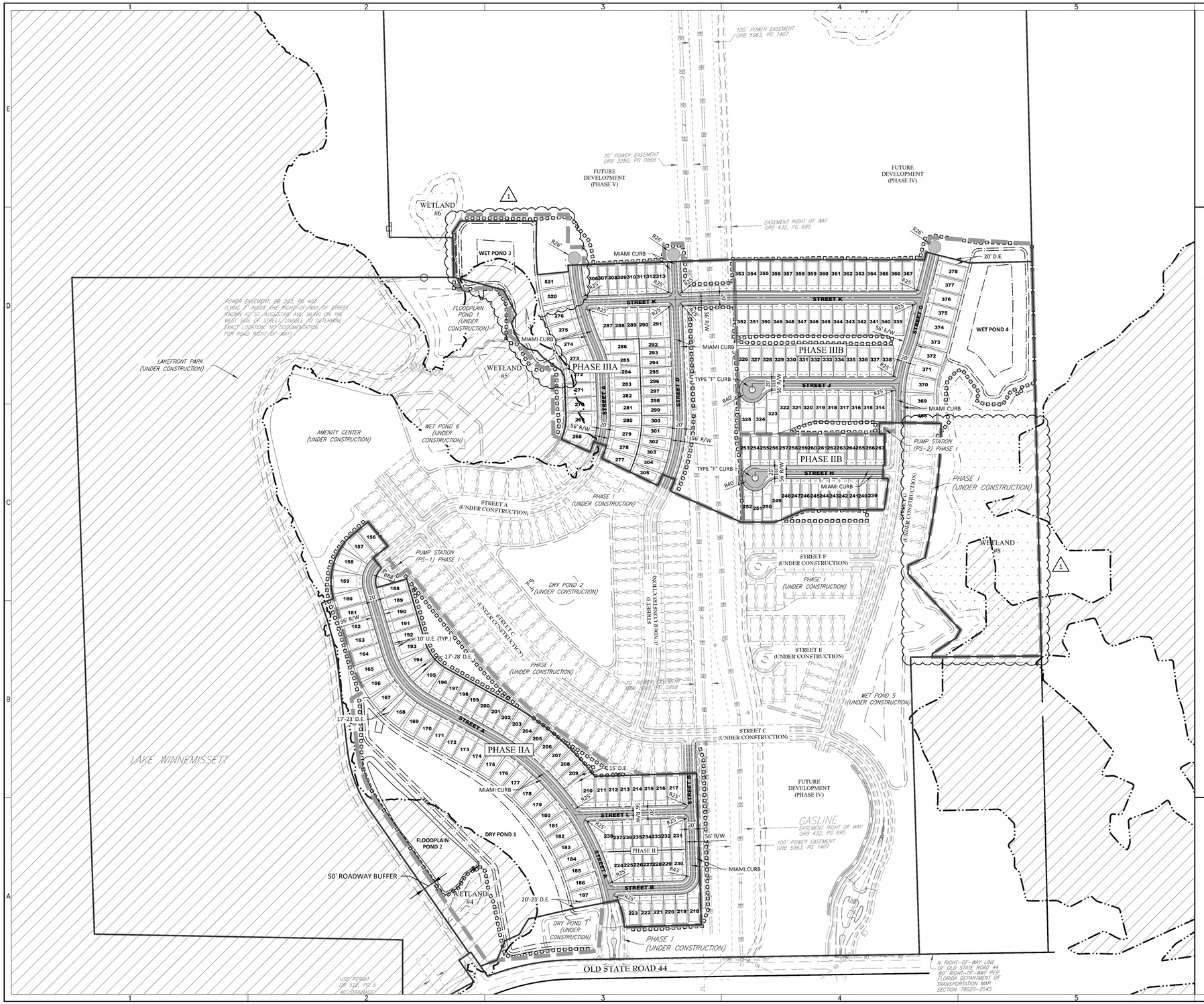
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DATE:
LICENSE NO. 50652

C-104

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CRESSWIND DELAND PHASE 2A, 2B, 3A & 3B

SITE PLAN

PREPARED FOR: KH CW DELAND LLC

NO.	DATE	DESCRIPTION
1	06/09/2023	REV. LOT NO. & BNDY; ADDED LOTS 320 & 321
	02/20/2023	REVIEW SUBMITTAL
	DATE	DESCRIPTION

PROJECT NO: KGA-CD-1031
FILE: SITE
DESIGN BY: DMYTRYK
DRAWN BY: JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

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DATE:
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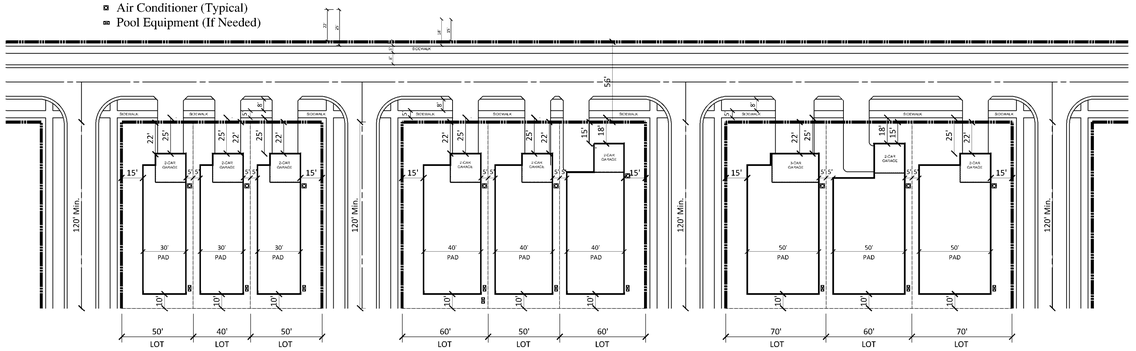
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LOT DEVELOPMENT STANDARDS				
Minimum Lot Area:	**4,800 SF**			
Minimum Lot Width:	**40'**			
Minimum Setbacks:		**40' Lots**	**50' Lots**	**60' Lots**
Building				
a. Front		15'	15'	15'
b. Rear		10'	10'	10'
c. Side		5'	5'	5'
d. Side Corner		15'	15'	15'
Garage				
Front Facing[1]		22'	22'	22'
Side Facing		15'	15'	15'
Pools, Hot Tubs, Cabanas and Similar Structures				
a. Front		Not Permitted	Not Permitted	Not Permitted
b. Rear		5'	5'	5'
c. Side		5'	5'	5'
d. Side Corner		15'	15'	15'
Patios, Screened Enclosures:				
a. Front		Not Permitted	Not Permitted	Not Permitted
b. Rear		3'	3'	3'
c. Side		5'	5'	5'
d. Side Corner		15'	15'	15'
Fences:				
a. Front		Not Permitted	Not Permitted	Not Permitted
b. Rear		0'	0'	0'
c. Side		0'	0'	0'
d. Side Corner		10'	10'	10'
e. Maximum Height		6'	6'	6'
Minimum Living Area (Heated):	**1,200 SF**			
Maximum Lot Impervious Area (40-Ft Product):	**66%**			
Maximum Lot Impervious Area (50-Ft Product):	**67.4%**			
Maximum Lot Impervious Area (60-Ft Product):	**70.7%**			
Maximum Project Impervious Area:	**40.8%**			
Maximum Building Height Residential:	**35'**			
Maximum Building Height Non-Residential:	**50'**			

2

LEGEND

- Air Conditioner (Typical)
- Pool Equipment (If Needed)



40' Lot Product: Corner Lot | Standard Lot | Corner Lot

50' Lot Product: Corner Lot | Standard Lot | Corner Lot With Side-Facing Garage

60' Lot Product: Corner Lot | Standard Lot With Side-Facing Garage | Corner Lot

1 NOTE: SETBACKS TO COMPLY WITH DETAILS AS SHOWN ON SHEET P-3 OF THE APPROVED CRESSWIND DELAND PD PLANS.

LOT SUMMARY					
LOT SIZE (FT)	PHASE IIA	PHASE IIB	PHASE IIIA	PHASE IIIB	TOTAL
40	13	29	22	0	64
50	45	0	13	53	111
60	25	0	14	12	51
SUBTOTAL	83	29	49	65	226

1 1

Parking Standards				
# Of Bedrooms	Parking Required	Guest Parking Req' (@ 0.25 Spaces/DU)	Total Parking Required	Parking Provided
1-3 Bedroom	2	0.5	2.5	4
4 Bedroom	3	0.75	3.75	4

NOTES:

1. THE PROPERTY SHALL BE DEVELOPED AS AN AGE RESTRICTED (55 AND OLDER) ACTIVE ADULT DEVELOPMENT.
2. SIDEWALKS SHALL BE PROVIDED ON BOTH SIDES OF LOCAL ROADS IN THE 56' ROW SECTION. SIDEWALKS SHALL ONLY BE REQUIRED ON ONE SIDE OF LOCAL ROADS IN THE 50' ROW SECTION.
3. THE OPEN SPACE AND COMMON AREA TRACTS WILL BE OWNED AND MAINTAINED BY THE PROPERTY OWNER'S ASSOCIATION.
4. A PASSIVE PARK WITH TRAIL CONNECTIONS TO RESIDENTIAL DEVELOPMENT IS PROPOSED THROUGH THE EXISTING POWER LINE AND GAS LINE EASEMENT. THE TRAIL SHALL AVERAGE 12 FEET IN WIDTH.
5. TREE PRESERVATION, BUFFERS, TREE REMOVAL AND PLANTING SHALL COMPLY WITH THE REQUIREMENTS OF THE CRESSWIND DELAND DEVELOPMENT AGREEMENT AND CITY OF DELAND LAND DEVELOPMENT CODE AS AMENDED.
6. ALL POTABLE WATER, WASTEWATER AND RECLAIM SHALL COMPLY WITH THE CITY OF DELAND LAND DEVELOPMENT CODE AS AMENDED AND THE FLORIDA ADMINISTRATIVE CODE 64E-6.
7. THE PROPOSED STORMWATER SYSTEM SHALL COMPLY WITH THE CITY OF DELAND LAND DEVELOPMENT CODE AS AMENDED, AND THE ST. JOHNS RIVER WATER MANAGEMENT DISTRICT REQUIREMENTS.
8. ALL UTILITY AND DRAINAGE EASEMENTS SHALL BE MAINTAINED BY THE PROPERTY OWNER'S ASSOCIATION.
9. ACCESS TO THE PROPERTY MAY BE GATED AND WILL BE VIA TWO ENTRANCES FROM PHASE 1 ALONG THE OLD E. NEW YORK AVE.
10. NO CONNECTIONS FROM LAKE WINNEMISSETT DRIVE WILL BE ALLOWED EXCEPT FOR EMERGENCY AND COMMUNITY MAINTENANCE VEHICLES.
11. ALL STREETLIGHTS AND PARKING LOT LIGHTING IS TO BE FULL CUT OFF (DARK SKY) LIGHTING AND WILL BE CONSISTENT WITH THE LIGHTING APPROVED FOR PHASE 1.
12. LAND USE - LOW DENSITY RESIDENTIAL.
13. ZONING - CRESSWING DELAND PD (PLANNED DEVELOPMENT).
14. TOTAL NUMBER OF UNITS - 226
15. THE DEVELOPER SHALL CLEAR PORTIONS OF THE PROJECT NEEDED FOR CONSTRUCTION OF THE INFRASTRUCTURE AND HOME SITES FOR ANY GIVEN PHASE. NO UNNECESSARY CLEARING WILL OCCUR. ANY CLEARING ACTIVITY OUTSIDE OF A PHASE WILL BE FOR PLACEMENT OF SURPLUS FILL ELIMINATING STOCKPILES. CLEARED AREAS WILL BE STABILIZED AT THE COMPLETION OF FILLING.

1

2

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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

SITE PLAN DETAILS

PREPARED FOR: KH CW DELAND LLC

	DATE	DESCRIPTION
2	07/31/2023	UPDATED LOT IMPERVIOUS %; NOTE 15
1	06/09/2023	ADDED NOTES 10-14; PH. IIIA LOT #'S
	02/20/2023	REVIEW SUBMITTAL

PROJECT NO:	KGA-CD-1031
FILE:	SITE-DET
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

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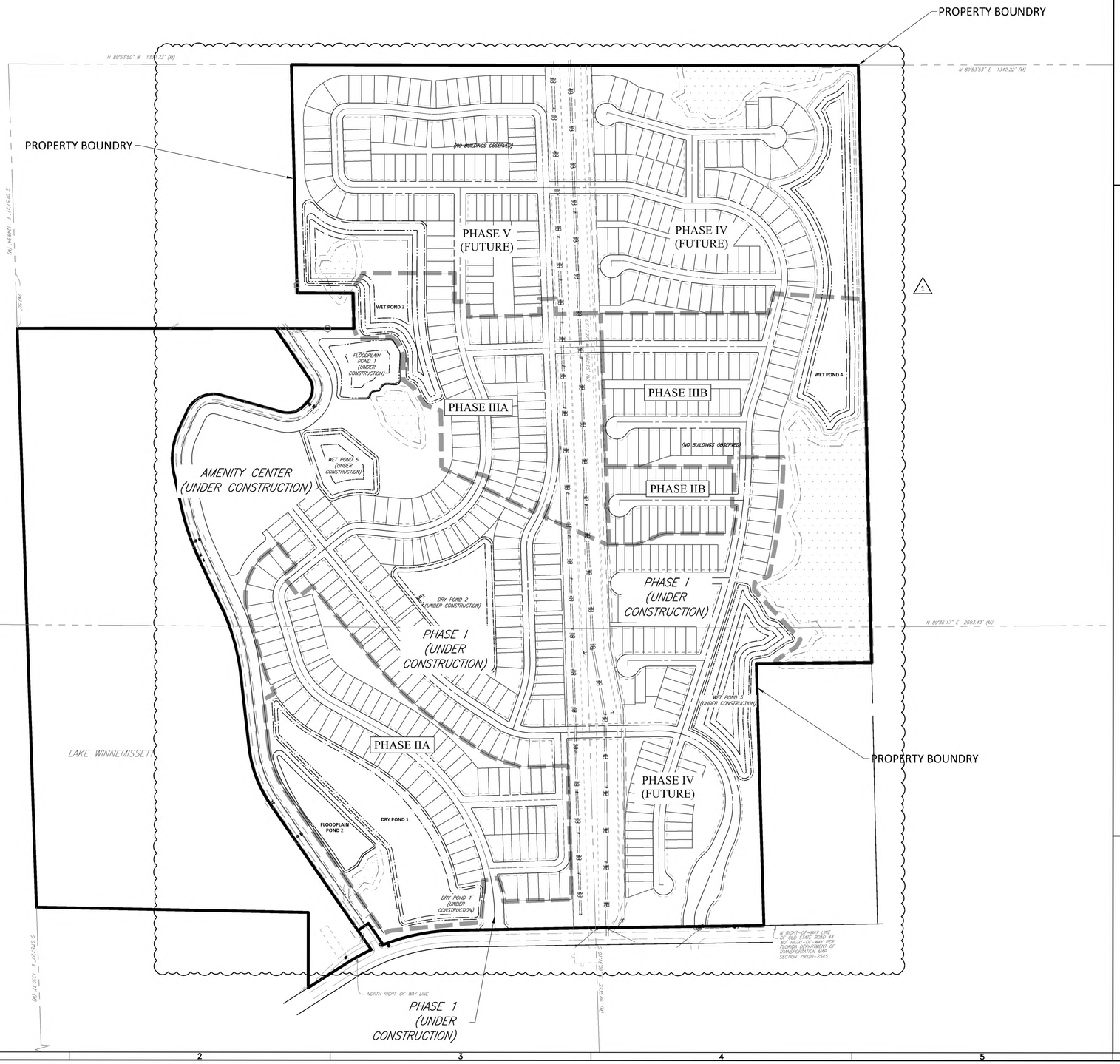
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N:\LAKE WINNEMISSETT\PHASE 2\ENGINEERING\SITE\C-DET.DWG-C-106 2023/07/31 1:20 PM MICHAEL DMYTRYK



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GRAPHIC SCALE: 1" = 250'

ELEVATIONS BASED ON:
NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION:
NAVD 88 TO NGVD 29 = +1.07

LEGEND

- WETLAND LINE
- WETLAND CONS. AREA SETBACK / LANDWARD EXTENT OF UPLAND BUFFER (25')
- BOUNDARY LIMITS
- RIGHT-OF-WAY LINE
- PHASE LINE

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CRESSWIND DELAND PHASE 2A, 2B, 3A & 3B

OVERALL PHASING PLAN

PREPARED FOR: KH CW DELAND LLC

#	DATE	DESCRIPTION
1	06/09/2023	UPDATE PHASE LINES
	02/20/2023	REVIEW SUBMITTAL
	DATE	DESCRIPTION

PROJECT NO:	KGA-CD-1031
FILE:	PHASING
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

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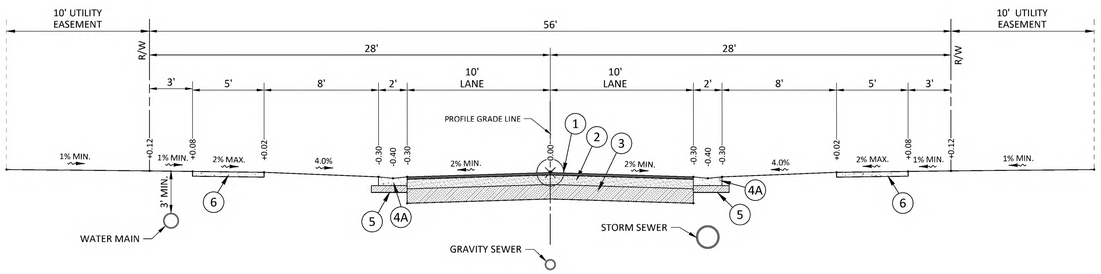
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LICENSE NO. 50652

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N:\LAKE WINNEMISSETT PHASE 2\ENGINEERING\PHASING.DWG-C-107 2023/06/07 3:05 PM MARK JONES



TYPICAL ROADWAY SECTION
56' RIGHT-OF-WAY - 10' LANES
DESIGN SPEED 25 MPH

SCALE: 1" = 5'

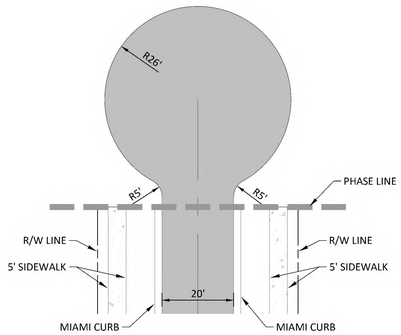
1. 2" TYPE SP-9.5 STRUCTURAL COURSE (2 - 1" LIFTS)
2. 8" LIMEROCK BASE COURSE (LBR 100)
3. 12" STABILIZED SUBGRADE (98% AASHTO T-180, LBR 40)
4A. GUTTER CURB
5. 6" STABILIZATION (UNDER CURB ONLY)
6. 4" CONCRETE SIDEWALK (3000 PSI)

PAVEMENT CONSTRUCTION NOTES:

1. PAVEMENT WEARING SURFACE SHALL BE ASPHALTIC CONCRETE OF TYPE AND THICKNESS SHOWN IN DETAIL AND SHALL MEET CURRENT FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (FDOT SSRBC).
2. PAVEMENT BASE SHALL BE LIMEROCK, AS DESIGNATED IN PLANS, AND SHALL BE COMPACTED TO A MINIMUM THICKNESS AS SHOWN.
3. LIMEROCK BASE MATERIAL SHALL MEET THE REQUIREMENTS OF SECTION 200 OF THE FDOT SSRBC.
4. LIMEROCK BASE MATERIAL SHALL CONFORM TO THE GRADATION CHART FOR GRADED AGGREGATE BASE, FDOT SECTION 204 AND 901 OF THE FDOT SSRBC.
5. LIMEROCK SHALL HAVE A MINIMUM LBR 100 OR GREATER.
6. AFTER ATTAINING THE PROPER MOISTURE CONDITIONS, UNIFORMLY COMPACT THE MATERIAL TO A DENSITY OF NOT LESS THAN 100% OF THE MAXIMUM DENSITY AS DETERMINED BY FM 1-T 180. ENSURE THAT THE MINIMUM DENSITY THAT WILL BE ACCEPTABLE AT ANY LOCATION OUTSIDE THE TRAVELED ROADWAY (SUCH AS INTERSECTIONS, CROSSOVERS, TURNOUTS, ETC.) IS 98% OF THE MAXIMUM DENSITY.
7. BASE SINGLE COURSE LIFTS SHOULD NOT EXCEED 6-INCHES (COMPACTED WITH 8" LOOSE).
8. STABILIZED SUBGRADE SHALL BE PLACED AND CONSTRUCTED FOR TYPE "B" STABILIZATION IN ACCORDANCE WITH FDOT SECTION 160 AND SHALL HAVE A MINIMUM LBR 40 OR GREATER. SUBGRADE SHALL BE COMPACTED TO THE MINIMUM THICKNESS AS SHOWN. SUBGRADE SHALL BE COMPACTED TO A MINIMUM OF 98% MODIFIED PROCTOR PER FM 1-T 180.
9. ALL CURBS AND GUTTERS SHALL BE PLACED ON A FOUNDATION OF TYPE "B" STABILIZED SUBGRADE IN ACCORDANCE WITH FDOT SECTION 160 AND SHALL HAVE A MINIMUM LBR 40. SUBGRADE SHALL BE COMPACTED TO THE MINIMUM THICKNESS AS SHOWN. SUBGRADE SHALL BE COMPACTED TO A MINIMUM OF 98% MODIFIED PROCTOR PER FM 1- T 180.
10. ALL PORTLAND CEMENT CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3000 P.S.I.
11. ALL TESTING REFERENCED ABOVE SHALL, AT A MINIMUM, BE AT THE FREQUENCY REQUIRED BY THE GOVERNING AGENCY HAVING JURISDICTION, OR IN THE ABSENCE THEREOF, BY MINIMUM FDOT STANDARDS.

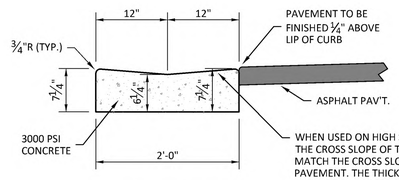
ALTERNATIVE CRUSHED CONCRETE BASE MATERIAL:

1. CRUSHED CONCRETE ROAD BASE MATERIAL SHALL BE OF UNIFORM QUALITY, FREE OF ALL ORGANICS, STEEL REBAR, ASPHALT DEBRIS, AND ANY OTHER DELETERIOUS MATERIALS.
2. CRUSHED CONCRETE ROAD BASE MATERIAL SHALL GENERALLY CONFORM TO THE GRADATION CHART FOR GRADED AGGREGATE BASE, FDOT SECTION 204 AND 901, TESTED AT A FREQUENCY REQUIRED BY THE GOVERNING AGENCY HAVING JURISDICTION. IN ADDITION, CRUSHED CONCRETE SHALL CONFORM TO THE APPLICABLE SPECIFICATION CONTAINED WITHIN PASCO COUNTY DESIGN STANDARDS, "CRUSHED CONCRETE BASE SPECIFICATION - INDEX 104."
3. CRUSHED CONCRETE ROAD BASE MATERIAL SHALL HAVE A MINIMUM COMPACTED DRY DENSITY OF 114.0 PCF (PER AASHTO T-180), AND A MINIMUM LIMEROCK BEARING RATION (LBR) OF 150 (UNDER-TOLERANCE +/-5%), TESTED AT A FREQUENCY REQUIRED BY THE GOVERNING AGENCY HAVING JURISDICTION, OR IN THE ABSENCE THEREOF, BY MINIMUM FDOT STANDARDS.
4. BASE SINGLE-COURSE LIFTS SHALL NOT EXCEED 6 INCHES (COMPACTED, 8 INCHES LOOSE).
5. CRUSHED CONCRETE ROAD BASE SHALL BE COMPACTED TO A MINIMUM OF 100% OF MODIFIED PROCTOR PER AASHTO T-180, TESTED AT A FREQUENCY REQUIRED BY THE GOVERNING AGENCY HAVING JURISDICTION, OR IN THE ABSENCE THEREOF, BY MINIMUM FDOT STANDARDS.
6. SUBGRADE SHALL BE PREPARED AS NOTED ABOVE.
7. CRUSHED CONCRETE BASE SHALL HAVE A 12-INCH THICK STABILIZED SUBGRADE, TYPE "B" STABILIZATION IN ACCORDANCE WITH FDOT SECTION 160 AND SHALL HAVE A MINIMUM LIMEROCK BEARING RATION (LBR) OF 40 OR GREATER. SUBGRADE SHALL BE COMPACTED TO THE MINIMUM THICKNESS AS SHOWN. SUBGRADE SHALL BE COMPACTED TO A MINIMUM OF 98% MODIFIED PROCTOR PER AASHTO T-180.



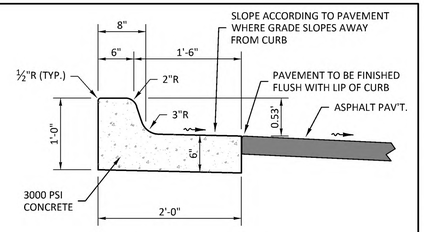
TEMPORARY CUL-DE-SAC

SCALE: 1" = 1'



GUTTER CURB

SCALE: 1" = 1'



TYPE "F" CURB & GUTTER ROTATED

SCALE: 1" = 1'

PROPOSED LOCAL ROADWAY DESIGN

MIN STR. # REQUIRED FOR RESIDENTIAL ROADS = 2.34

LAYER COEFFICIENTS	THICKNESS
0.44 - TYPE SP-9.5 ASPHALT SURFACE COURSE	2"
0.15 - LIMEROCK BASE COURSE (LBR -100)	8"
0.08 - STABILIZED SUBGRADE (LBR-40)	12"

SN = (0.44 x 2) + (0.15 x 8) + (0.04 x 12) = 3.04
SN SN$_R$
3.04 ≥ 2.34

ALTERNATE ROADWAY DESIGN

MIN STR. # REQUIRED FOR RESIDENTIAL ROADS = 2.34

LAYER COEFFICIENTS	THICKNESS
0.44 - TYPE SP-9.5 ASPHALT SURFACE COURSE	2"
0.18 - CRUSHED CONCRETE BASE COURSE (LBR-150)	8"
0.08 - COMPACTED SUBGRADE (LBR-40)	12"

SN = (0.44 x 1.5) + (0.18 x 6) + (0.08 x 12) = 3.28
SN SN$_R$
3.28 ≥ 2.34

Contractor may propose alternate pavement designs. Contractor shall submit any pavement alternatives to Engineer for approval prior to final subgrade preparations.

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Transportation Engineering
Ecological Services • Landscape Architecture
Engineering Business Certificate of Authorization No. 28762
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5904-A Hampton Oaks Pkwy.
Tampa, Florida 33610
Office: 813-253-5311
Fax: 813-464-7629
www.HeidtDesign.com

CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

ROADWAY DETAILS

PREPARED FOR: KH CW DELAND LLC

DESCRIPTION	DATE
REVIEW SUBMITTAL	02/20/2023

PROJECT NO:	KGA-CD-1031
FILE:	RS
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

This item has been digitally signed and sealed by Strickland T. Smith, P.E. on the date indicated here.

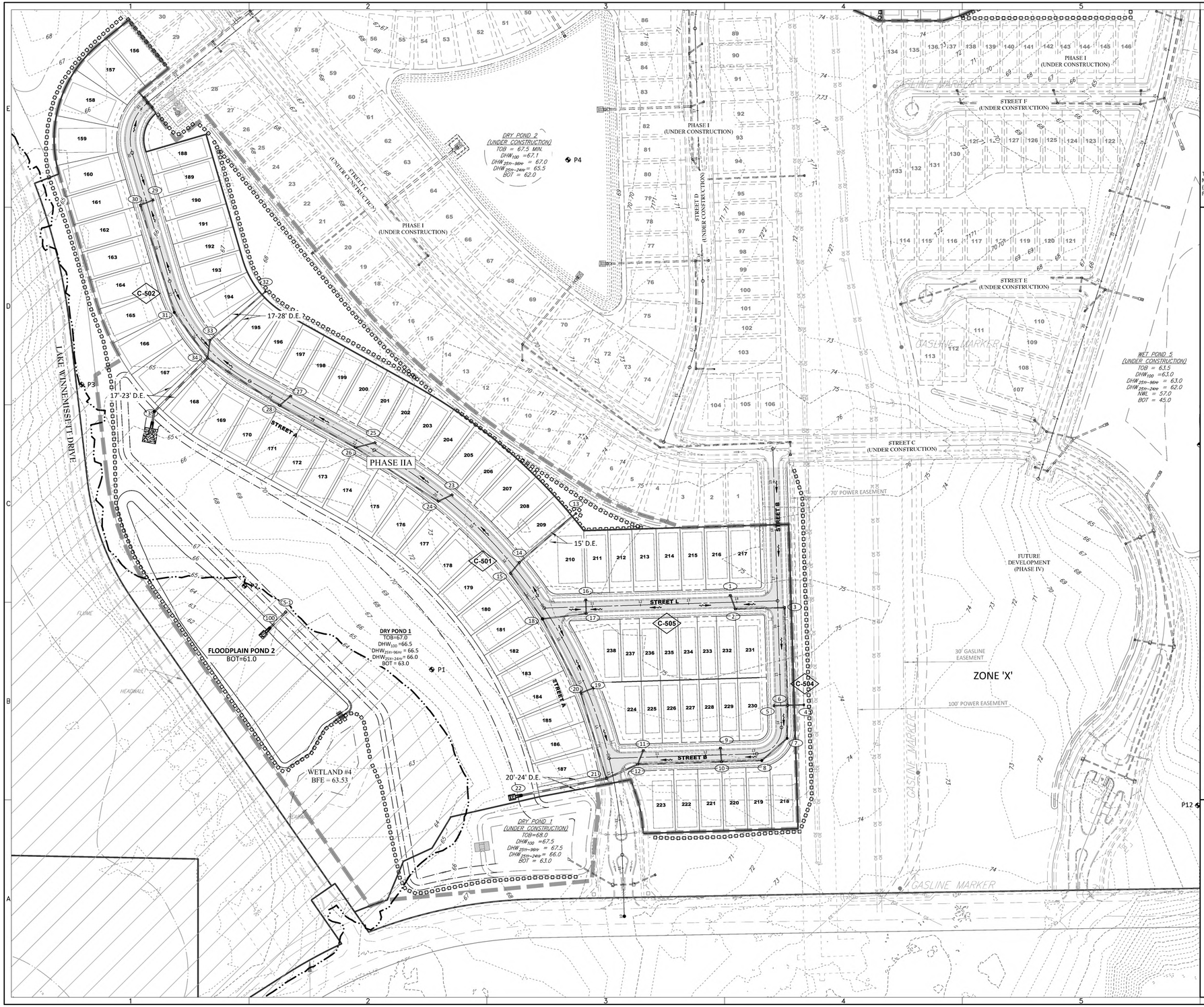
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0 100 200

GRAPHIC SCALE: 1" = 100'

ELEVATIONS BASED ON NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION: NAVD 88 TO NGVD 29 = +1.07

THIS PROJECT LIES WITHIN FLOOD ZONE "AE" & "X" ACCORDING TO FLOOD INSURANCE RATE MAPS FOR VOLUSIA COUNTY, FLORIDA, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) - FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY PANEL NO. 12127C0500H DATED FEBRUARY 19, 2014 AND ISSUED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

LEGEND

- WETLAND LIMITS
- WETLAND LINE
- WETLAND CONS. AREA SETBACK / LANDWARD EXTENT OF UPLAND BUFFER (25')
- FEMA LINE
- PROJECT BOUNDARY
- RIGHT-OF-WAY LINE
- PHASE LINE
- TREE BARRICADE

DRAINAGE LEGEND

EXISTING	PROPOSED
	STORM DRAINAGE STRUCTURE & PIPE
(10)	10 STRUCTURE NO.
	CS-F1 CONTROL STRUCTURE NO.
+15.0	15.00 SPOT ELEVATION GROUND
+15.0	15.00 SPOT ELEVATION PAVEMENT
	60.2 / 58.9 TOP OF WALL / BOTTOM OF WALL
	15.00 ROADWAY PROFILE ELEVATION
15	15.00 CONTOUR
	FF=15.00 FINISH FLOOR ELEVATION
	DIRECTION OF SURFACE FLOW
	STAKED EROSION CONTROL (SWFWMD PROJECT LIMITS AND THE LIMITS OF CLEARING AND FILLING)
	BOTTOM OF POND/TOP OF BANK OF POND
	6' WALL/FENCE (BY OTHERS)
C-505	PLAN & PROFILE SHEET NUMBER
A-A / C-317	SECTION ID LABEL / SECTION SHEET NUMBER
	100 YR FLOOD PLAIN LIMITS

POND EXCAVATION NOTE:

NO EXCAVATION SHALL EXTEND BELOW THE PERMITTED DESIGN DEPTHS/ELEVATIONS SHOWN ON THE DRAWINGS, UNLESS ADDITIONAL TESTING SUPPORTS OTHERWISE AND THE ENGINEER OF RECORD HAS RECEIVED WRITTEN PERMISSION/APPROVAL FROM THE WATER MANAGEMENT DISTRICT AND LOCAL AGENCY HAVING JURISDICTION. NO LOWER SEMI-CONFINING UNIT CLAYEY SOIL MATERIAL AND/OR NO LIMESTONE MATERIALS SHALL BE EXCAVATED, REGARDLESS IF THESE MATERIALS ARE ENCOUNTERED WITHIN THE PERMITTED EXCAVATION DEPTHS/ELEVATIONS. IF ANY LOWER SEMI-CONFINING UNIT CLAYEY SOIL MATERIALS OR LIMESTONE MATERIALS ARE ENCOUNTERED ABOVE THE PERMITTED DEPTHS/ELEVATIONS, THEN EXCAVATION OPERATIONS SHALL CEASE IN THE GENERAL AREA AND THE ENGINEER OF RECORD AND GEOTECHNICAL CONSULTANT SHALL BE NOTIFIED IMMEDIATELY.

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Fax: 813-464-7629
www.HeidtDesign.com

CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B
MASTER GRADING & DRAINAGE PLAN

PREPARED FOR: KH CW DELAND LLC

DATE	DESCRIPTION
02/20/2023	REVIEW SUBMITTAL

PROJECT NO: KGA-CD-1031
FILE: MD-KEY
DESIGN BY: DMYTRYK
DRAWN BY: JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

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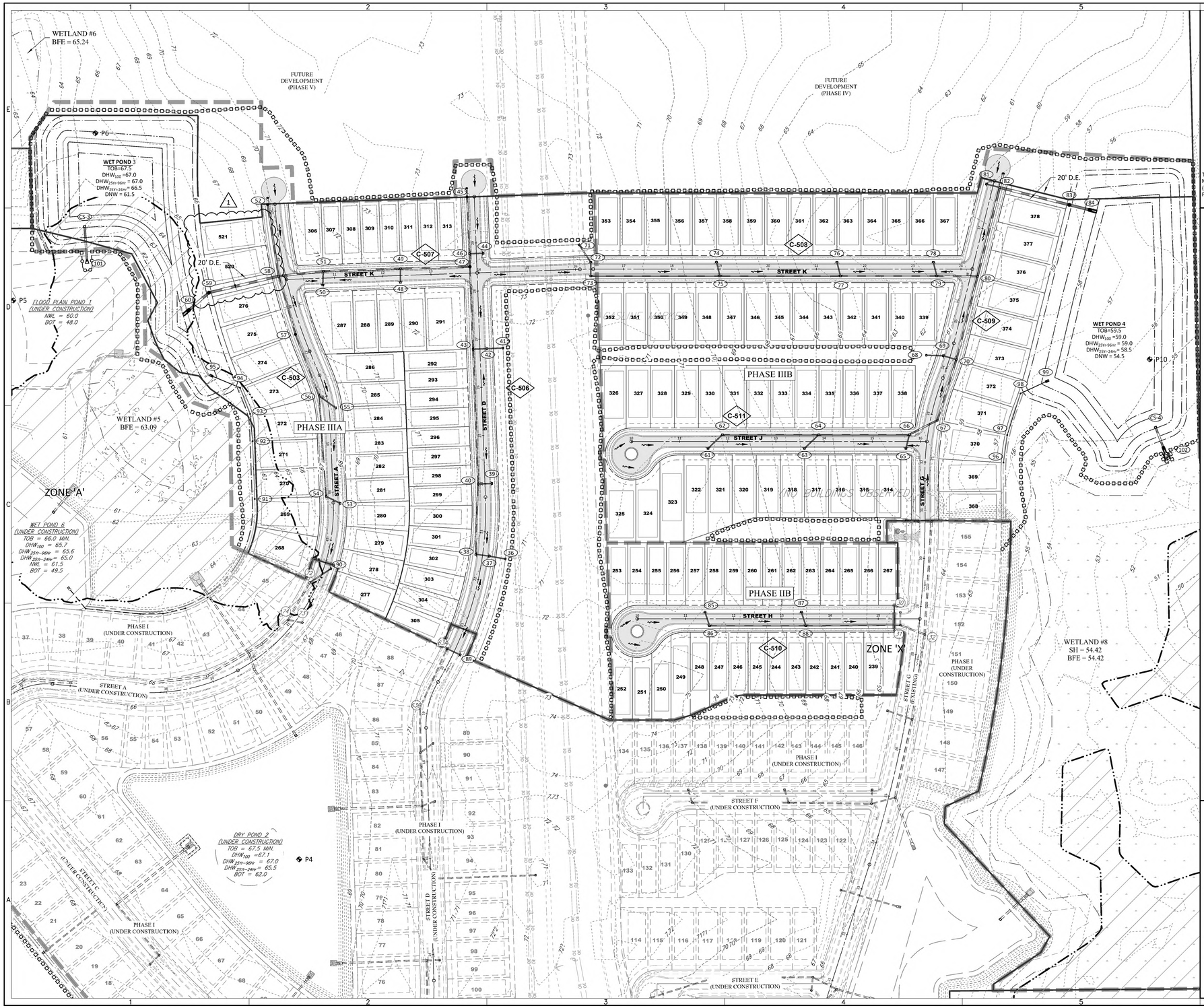
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C-300

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0 100 200

GRAPHIC SCALE: 1" = 100'

ELEVATIONS BASED ON NORTH AMERICAN VERTICAL DATUM 1988 CONVERSION: NAVD 88 TO NGVD 29 = +1.07

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LEGEND

- WETLAND LIMITS
- WETLAND LINE
- WETLAND CONS. AREA SETBACK / LANDWARD EXTENT OF UPLAND BUFFER (25')
- FEMA LINE
- PROJECT BOUNDARY
- RIGHT-OF-WAY LINE
- PHASE LINE
- TREE BARRICADE

DRAINAGE LEGEND

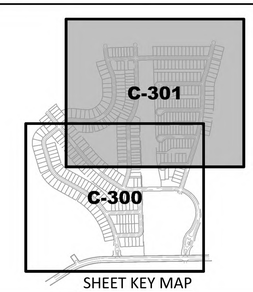
EXISTING	PROPOSED
	STORM DRAINAGE STRUCTURE & PIPE
10	10 STRUCTURE NO.
	CS-F1 CONTROL STRUCTURE NO.
+15.0	15.00 SPOT ELEVATION GROUND
+15.0	15.00 SPOT ELEVATION PAVEMENT
	60.2 / 58.9 TOP OF WALL / BOTTOM OF WALL
	15.00 ROADWAY PROFILE ELEVATION
15	15.00 CONTOUR
	FF=15.00 FINISH FLOOR ELEVATION
	DIRECTION OF SURFACE FLOW
	STAKED EROSION CONTROL (SWFWMD PROJECT LIMITS AND THE LIMITS OF CLEARING AND FILLING)
	BOTTOM OF POND/TOP OF BANK OF POND
	6' WALL/FENCE (BY OTHERS)
	C-505 PLAN & PROFILE SHEET NUMBER
	A-A / C-317 SECTION ID LABEL / SECTION SHEET NUMBER
	100 YR FLOOD PLAIN LIMITS

POND EXCAVATION NOTE:

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SHEET KEY MAP

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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B
MASTER GRADING & DRAINAGE PLAN

PREPARED FOR: KH CW DELAND LLC

NO.	DATE	DESCRIPTION
1	06/09/2023	LOTS 520 & 521 ADDED
	02/20/2023	REVIEW SUBMITTAL

PROJECT NO:	KGA-CD-1031
FILE:	MD-KEY
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

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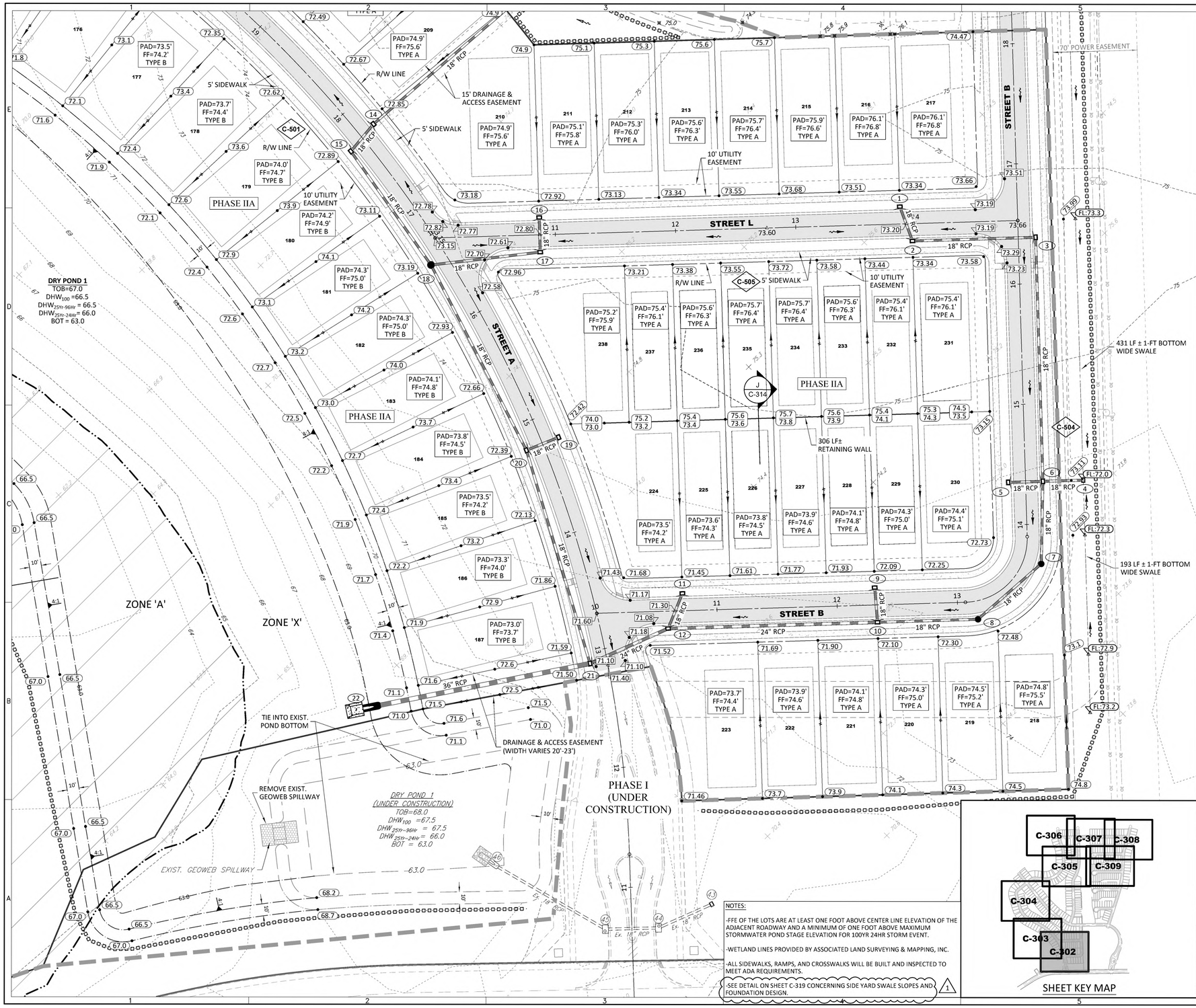
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DATE:
LICENSE NO. 50652

C-301

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NOTES:

-FFE OF THE LOTS ARE AT LEAST ONE FOOT ABOVE CENTER LINE ELEVATION OF THE ADJACENT ROADWAY AND A MINIMUM OF ONE FOOT ABOVE MAXIMUM STORMWATER POND STAGE ELEVATION FOR 100YR 24HR STORM EVENT.

-WETLAND LINES PROVIDED BY ASSOCIATED LAND SURVEYING & MAPPING, INC.

-ALL SIDEWALKS, RAMPS, AND CROSSWALKS WILL BE BUILT AND INSPECTED TO MEET ADA REQUIREMENTS.

-SEE DETAIL ON SHEET C-319 CONCERNING SIDE YARD SWALE SLOPES AND FOUNDATION DESIGN. (1)

N

0 40 80

GRAPHIC SCALE: 1" = 40'

ELEVATIONS BASED ON NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION: NAVD 88 TO NGVD 29 = +1.07

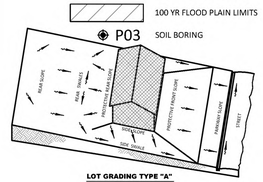
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LEGEND

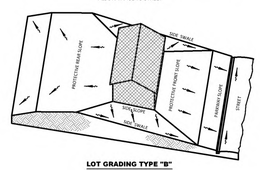
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- PHASE LINE
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DRAINAGE LEGEND

EXISTING	PROPOSED
	STORM DRAINAGE STRUCTURE & PIPE
(10)	10 STRUCTURE NO.
	CS-F1 CONTROL STRUCTURE NO.
+15.0	15.00 SPOT ELEVATION GROUND
+15.0	15.00 SPOT ELEVATION PAVEMENT
	60.2 / 58.9 TOP OF WALL / BOTTOM OF WALL
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15	15.00 CONTOUR
	FF=15.00 FINISH FLOOR ELEVATION
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	STAKED EROSION CONTROL (SWFWMD PROJECT LIMITS AND THE LIMITS OF CLEARING AND FILLING)
	BOTTOM OF POND/TOP OF BANK OF POND
	6' WALL/FENCE (BY OTHERS)
	C-505 PLAN & PROFILE SHEET NUMBER
	A-A / C-317 SECTION ID LABEL / SECTION SHEET NUMBER
	100 YR FLOOD PLAIN LIMITS
	P03 SOIL BORING



LOT GRADING TYPE "A"
ALL DRAINAGE TO STREET



LOT GRADING TYPE "B"
DRAINAGE BOTH TO STREET AND TO REAR LOT LINE

NEIGHBORHOOD GRADING PLAN NOTES:

1. PAD GRADES SHOWN ARE MINIMUM GRADES. ELEVATIONS OF ADJOINING LOTS, EXISTING TREES, AND OTHER FIELD CONDITIONS MAY WARRANT LEAVING LOTS WHICH ARE HIGHER IN THEIR NATURAL STATE. THE CONTRACTOR SHOULD CONSULT WITH THE DEVELOPER/BUILDER AND THE ENGINEER PRIOR TO GRADING ACTIVITIES WHEN THESE CONDITION EXIST.
2. PAD ELEVATIONS DENOTE FINISH GROUND ELEVATION AT PERIMETER OF BUILDING.
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PHASE 2A, 2B, 3A & 3B

GRADING & DRAINAGE PLAN

PREPARED FOR: KH CW DELAND LLC

	DATE	DESCRIPTION
1	06/09/2023	SIDE YARD SWALE NOTE ADDED
	02/20/2023	REVIEW SUBMITTAL

PROJECT NO:	KGA-CD-1031
FILE:	GD
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

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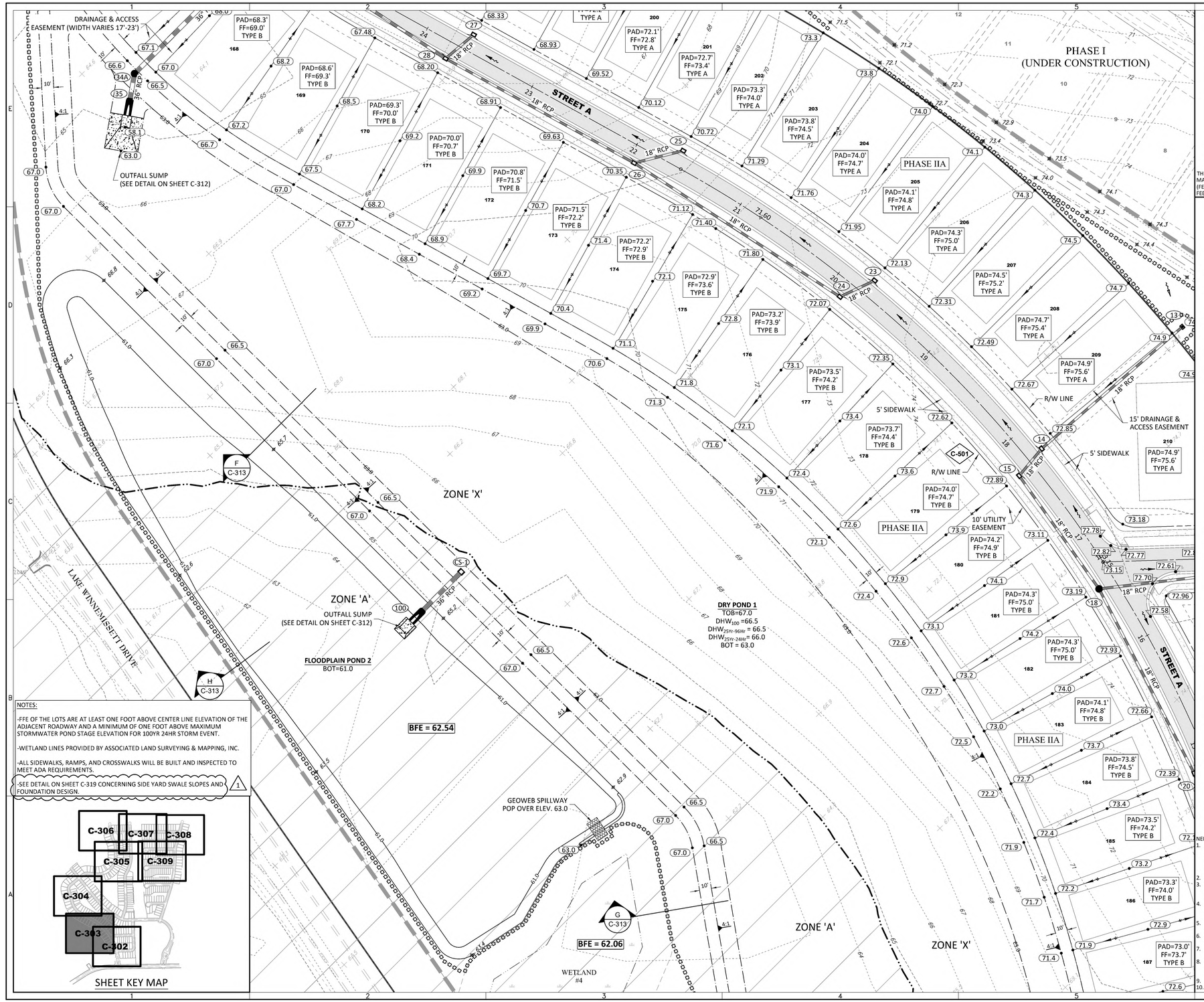
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N

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GRAPHIC SCALE: 1" = 40'

ELEVATIONS BASED ON NORTH AMERICAN VERTICAL DATUM 1988 CONVERSION: NAVD 88 TO NGVD 29 = +1.07

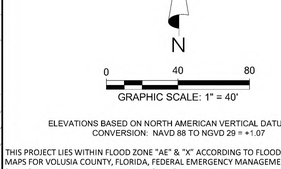
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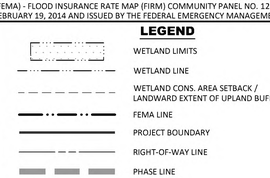
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DRAINAGE LEGEND

EXISTING	PROPOSED
	STORM DRAINAGE STRUCTURE & PIPE
(10)	10 STRUCTURE NO.
	CS-F1 CONTROL STRUCTURE NO.
+15.0	15.00 SPOT ELEVATION GROUND
+15.0	15.00 SPOT ELEVATION PAVEMENT
	60.2 / 58.9 TOP OF WALL / BOTTOM OF WALL
	15.00 ROADWAY PROFILE ELEVATION
15	15.00 CONTOUR
	FF=15.00 FINISH FLOOR ELEVATION
	DIRECTION OF SURFACE FLOW
	STAKED EROSION CONTROL (SWFWMD PROJECT LIMITS AND THE LIMITS OF CLEARING AND FILLING)
	BOTTOM OF POND/TOP OF BANK OF POND
	6' WALL/FENCE (BY OTHERS)
	C-505 PLAN & PROFILE SHEET NUMBER
	A-A / C-317 SECTION ID LABEL / SECTION SHEET NUMBER
	100 YR FLOOD PLAIN LIMITS
	P03 SOIL BORING



LOT GRADING TYPE "A"
ALL DRAINAGE TO STREET



LOT GRADING TYPE "B"
DRAINAGE BOTH TO STREET AND TO REAR LOT LINE

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PREPARED FOR: KH CW DELAND LLC

NO.	DATE	DESCRIPTION
1	06/09/2023	SIDE YARD SWALE NOTE ADDED
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PROJECT NO:	KGA-CD-1031
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STATE OF FLORIDA
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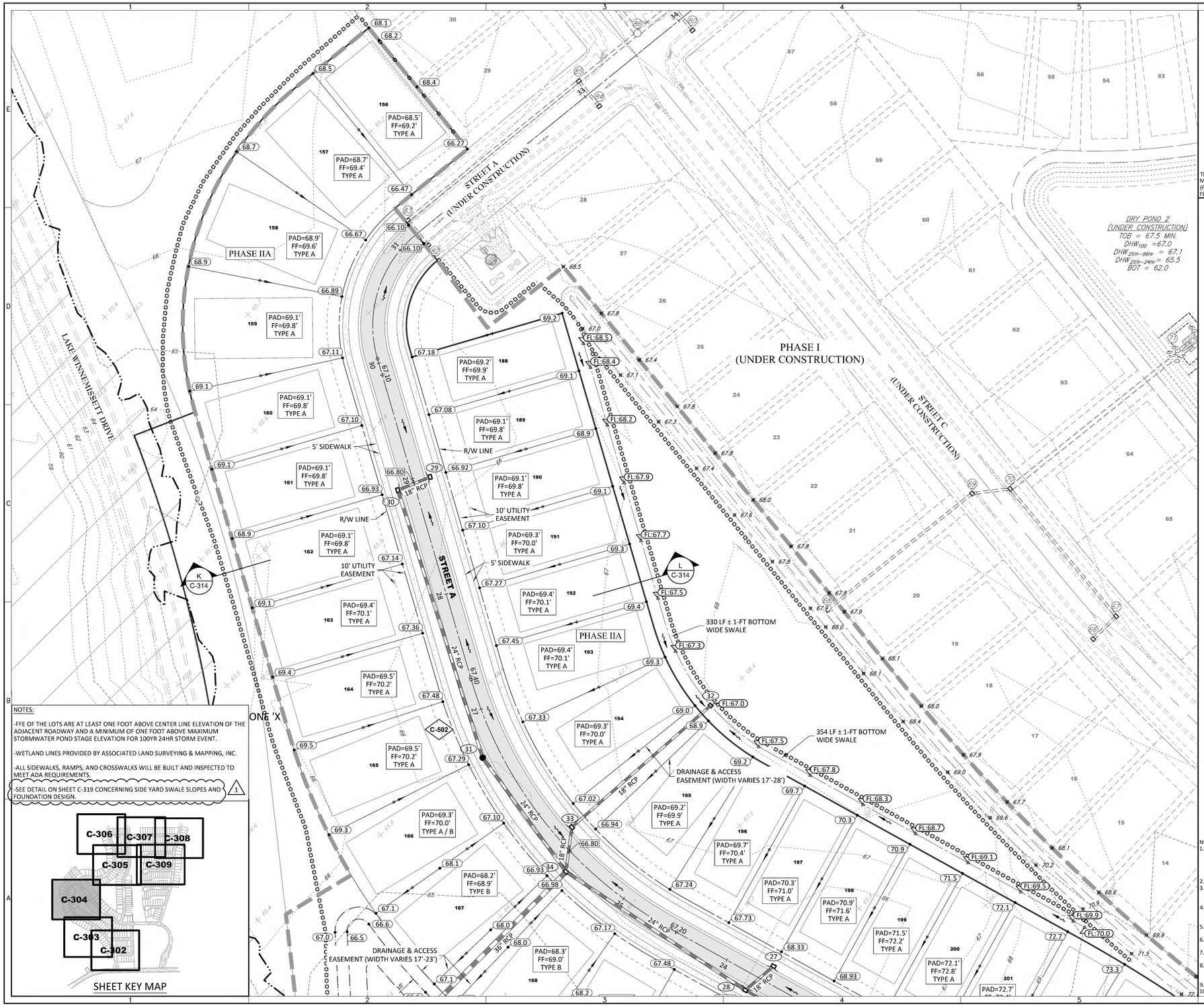
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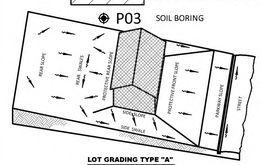
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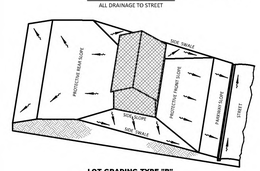
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DRAINAGE LEGEND

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CRESSWIND DELAND PHASE 2A, 2B, 3A & 3B

GRADING & DRAINAGE PLAN

PREPARED FOR: KH CW DELAND LLC

NO.	DATE	DESCRIPTION
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PROJECT NO: KGA-CD-1031
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DESIGN BY: DMYTRYK
DRAWN BY: JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

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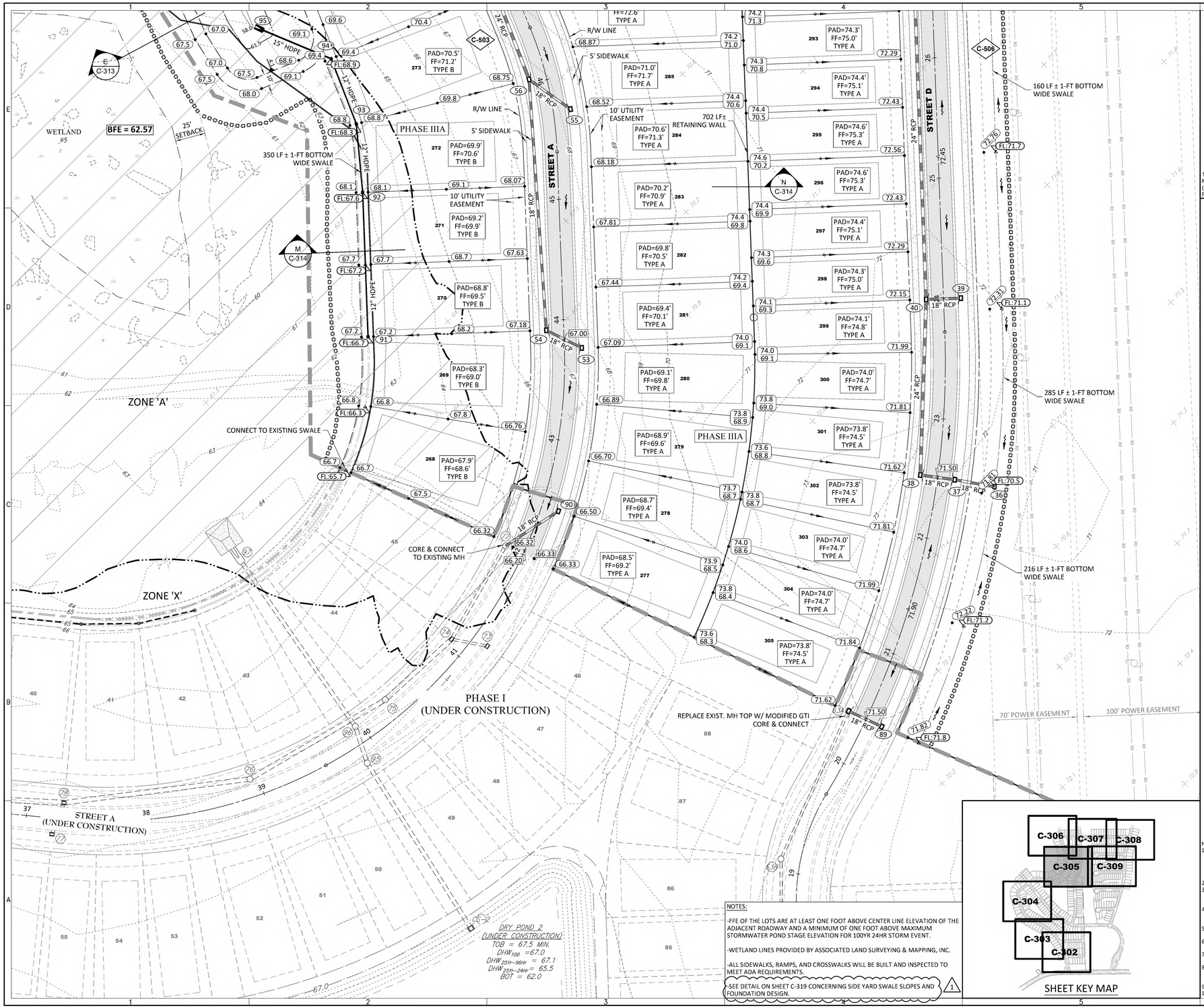
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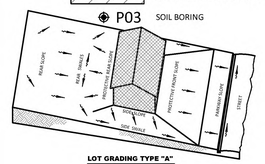
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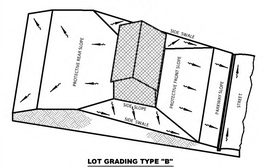
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DRAINAGE LEGEND

EXISTING	PROPOSED
	STORM DRAINAGE STRUCTURE & PIPE
(10)	10 — STRUCTURE NO.
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LOT GRADING TYPE "A"
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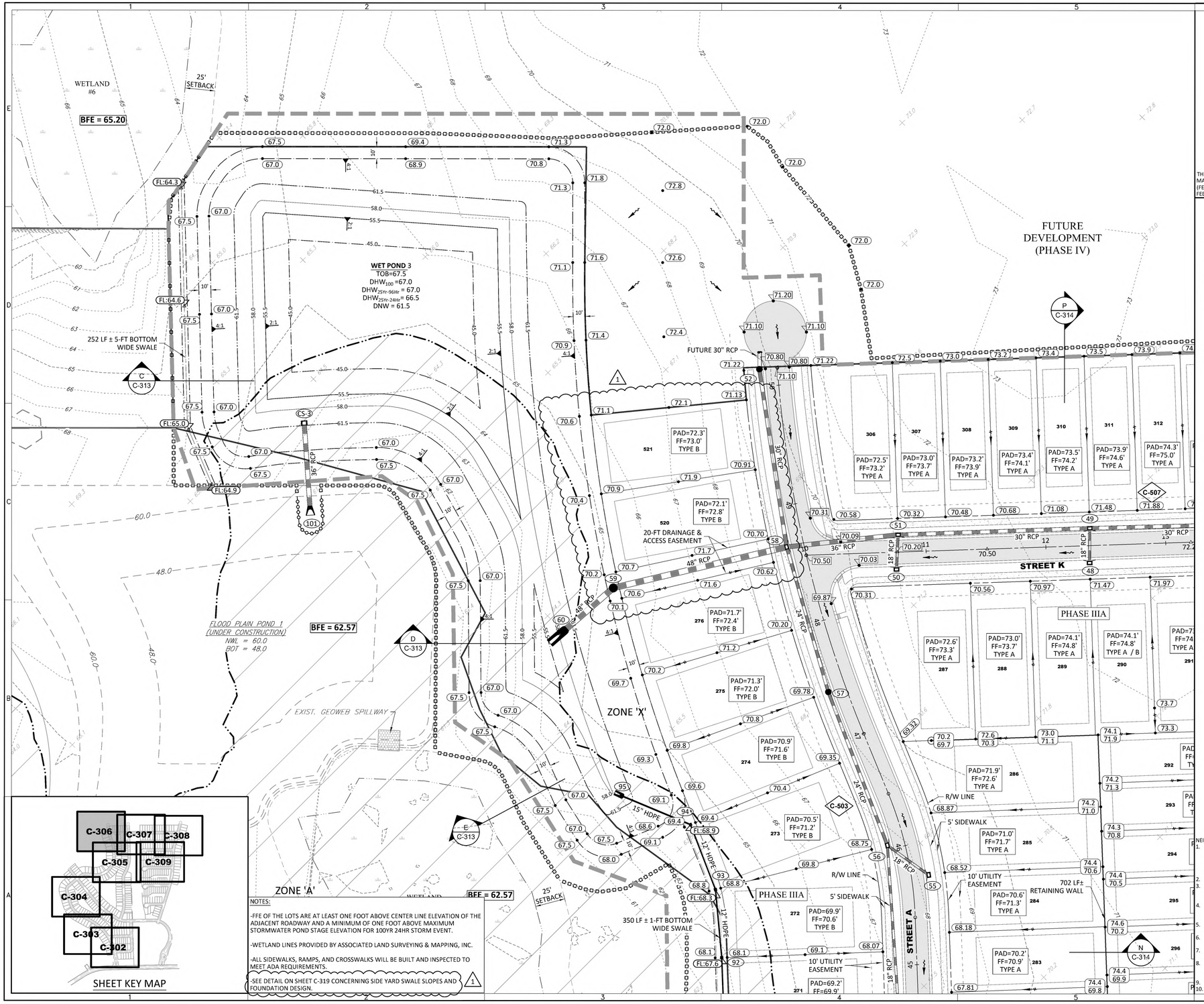
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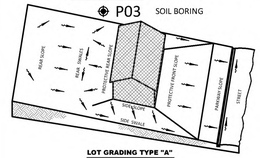
THIS PROJECT LIES WITHIN FLOOD ZONE "AE" & "X" ACCORDING TO FLOOD INSURANCE RATE MAPS FOR VOLUSIA COUNTY, FLORIDA, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) - FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY PANEL NO. 12127C0500H DATED FEBRUARY 19, 2014 AND ISSUED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

LEGEND

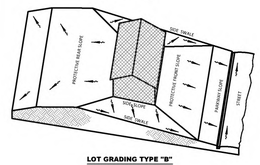
- WETLAND LIMITS
- WETLAND LINE
- WETLAND CONS. AREA SETBACK / LANDWARD EXTENT OF UPLAND BUFFER (25')
- FEMA LINE
- PROJECT BOUNDARY
- RIGHT-OF-WAY LINE
- PHASE LINE
- TREE BARRICADE

DRAINAGE LEGEND

EXISTING	PROPOSED
	STORM DRAINAGE STRUCTURE & PIPE
(10)	10 STRUCTURE NO.
	CS-F1 CONTROL STRUCTURE NO.
+15.0	15.00 SPOT ELEVATION GROUND
+15.0	15.00 SPOT ELEVATION PAVEMENT
	60.2 / 58.9 TOP OF WALL / BOTTOM OF WALL
	15.00 ROADWAY PROFILE ELEVATION
15	15.00 CONTOUR
	FF=15.00 FINISH FLOOR ELEVATION
	DIRECTION OF SURFACE FLOW
	STAKED EROSION CONTROL (SWFWMD PROJECT LIMITS AND THE LIMITS OF CLEARING AND FILLING)
	BOTTOM OF POND/TOP OF BANK OF POND
	6' WALL/FENCE (BY OTHERS)
	C-505 PLAN & PROFILE SHEET NUMBER
	A-A / C-317 SECTION ID LABEL / SECTION SHEET NUMBER
	100 YR FLOOD PLAIN LIMITS
	P03 SOIL BORING



LOT GRADING TYPE "A"
ALL DRAINAGE TO STREET



LOT GRADING TYPE "B"
DRAINAGE BOTH TO STREET AND TO REAR LOT LINE

NEIGHBORHOOD GRADING PLAN NOTES:
1. PAD GRADES SHOWN ARE MINIMUM GRADES. ELEVATIONS OF ADJOINING LOTS, EXISTING TREES, AND OTHER FIELD CONDITIONS MAY WARRANT LEAVING LOTS WHICH ARE HIGHER IN THEIR NATURAL STATE. THE CONTRACTOR SHOULD CONSULT WITH THE DEVELOPER/BUILDER AND THE ENGINEER PRIOR TO GRADING ACTIVITIES WHEN THESE CONDITION EXIST.
2. PAD ELEVATIONS DENOTE FINISH GROUND ELEVATION AT PERIMETER OF BUILDING.
3. LOTS MARKED BY AN ASTERISK (*) REQUIRE PROCESSING PER FHA DATA SHEET NO. 79-G IF FHA FINANCING IS TO BE PROVIDED. SIMILAR TESTING IS RECOMMENDED AS A QUALITY CONTROL PROGRAM IN THE ABSENCE OF FHA REQUIRED TESTING.
4. FOR ALL LOTS ABUTTING WETLANDS NO GRADING SHALL TAKE PLACE BEYOND THE EROSION CONTROL LINE UNLESS SPECIFICALLY SHOWN ON THE APPROVED CONSTRUCTION PLANS.
5. SIDE SWALES SHALL BE CONSTRUCTED SIMULTANEOUSLY WITH HOUSE CONSTRUCTION. SEE DETAIL ON SHEET C-318 FOR SIDE SWALE GRADING.
6. FOR TYPE "A" LOT GRADING RECEIVING RUNOFF FROM ABUTTING TYPE "B" LOTS, ALL RUNOFF SHALL BE DIRECTED TO SIDE YARD SWALES.
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9. MINIMUM SIDE YARD SWALE SLOPES SHALL BE 1.5%.
10. THE MINIMUM HOUSE PAD SIZE = 30' X 98'

HEIDT DESIGN
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Environmental Services • Surveying
Ecological Services • Landscape Architecture
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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

GRADING & DRAINAGE PLAN

PREPARED FOR: KH CW DELAND LLC

NO.	DATE	DESCRIPTION
1	06/09/2023	SIDE YARD SWALE NOTE ADDED; ADDED LOTS 320 & 321
	02/20/2023	REVIEW SUBMITTAL

PROJECT NO:	KGA-CD-1031
FILE:	GD
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

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STRICKLAND T. SMITH
DATE:
LICENSE NO. 50652

C-306

N:\LAKE WINNEMISSETT\PHASE 2\ENGINEERING\GD\GD.DWG-C-306 2023/07/31 1:23 PM MICHAEL DMYTRYK

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NOTES:

-FFE OF THE LOTS ARE AT LEAST ONE FOOT ABOVE CENTER LINE ELEVATION OF THE ADJACENT ROADWAY AND A MINIMUM OF ONE FOOT ABOVE MAXIMUM STORMWATER POND STAGE ELEVATION FOR 100YR 24HR STORM EVENT.

-WETLAND LINES PROVIDED BY ASSOCIATED LAND SURVEYING & MAPPING, INC.

-ALL SIDEWALKS, RAMPS, AND CROSSWALKS WILL BE BUILT AND INSPECTED TO MEET ADA REQUIREMENTS.

-SEE DETAIL ON SHEET C-319 CONCERNING SIDE YARD SWALE SLOPES AND FOUNDATION DESIGN. (1)

FUTURE DEVELOPMENT (PHASE IV)

FUTURE DEVELOPMENT (PHASE V)

SHEET KEY MAP

C-306 C-307 C-308 C-305 C-309 C-304 C-303 C-302

N

0 40 80

GRAPHIC SCALE: 1" = 40'

ELEVATIONS BASED ON NORTH AMERICAN VERTICAL DATUM 1988 CONVERSION: NAVD 88 TO NGVD 29 = +1.07

THIS PROJECT LIES WITHIN FLOOD ZONE "AE" & "X" ACCORDING TO FLOOD INSURANCE RATE MAPS FOR VOLUSIA COUNTY, FLORIDA, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) - FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY PANEL NO. 12127C0500H DATED FEBRUARY 19, 2014 AND ISSUED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

LEGEND

- WETLAND LIMITS
- WETLAND LINE
- WETLAND CONS. AREA SETBACK / LANDWARD EXTENT OF UPLAND BUFFER (25')
- FEMA LINE
- PROJECT BOUNDARY
- RIGHT-OF-WAY LINE
- PHASE LINE
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DRAINAGE LEGEND

EXISTING / PROPOSED

- STORM DRAINAGE STRUCTURE & PIPE
- 10 — STRUCTURE NO.
- CS-F1 — CONTROL STRUCTURE NO.
- 15.00 — SPOT ELEVATION GROUND
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- 15.00 — ROADWAY PROFILE ELEVATION
- 15.00 — CONTOUR
- FF=15.00 — FINISH FLOOR ELEVATION
- DIRECTION OF SURFACE FLOW
- STAKED EROSION CONTROL (SWFWMD PROJECT LIMITS AND THE LIMITS OF CLEARING AND FILLING)
- BOTTOM OF POND/TOP OF BANK OF POND
- 6' WALL/FENCE (BY OTHERS)
- C-505 — PLAN & PROFILE SHEET NUMBER
- A-A / C-317 — SECTION ID LABEL / SECTION SHEET NUMBER
- 100 YR FLOOD PLAIN LIMITS
- P03 — SOIL BORING

LOT GRADING TYPE "A"
ALL DRAINAGE TO STREET

LOT GRADING TYPE "B"
DRAINAGE BOTH TO STREET AND TO REAR LOT LINE

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PHASE 2A, 2B, 3A & 3B

GRADING & DRAINAGE PLAN

PREPARED FOR: KH CW DELAND LLC

NO.	DATE	DESCRIPTION
1	06/09/2023	SIDE YARD SWALE NOTE ADDED
	02/20/2023	REVIEW SUBMITTAL

PROJECT NO:	KGA-CD-1031
FILE:	GD
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

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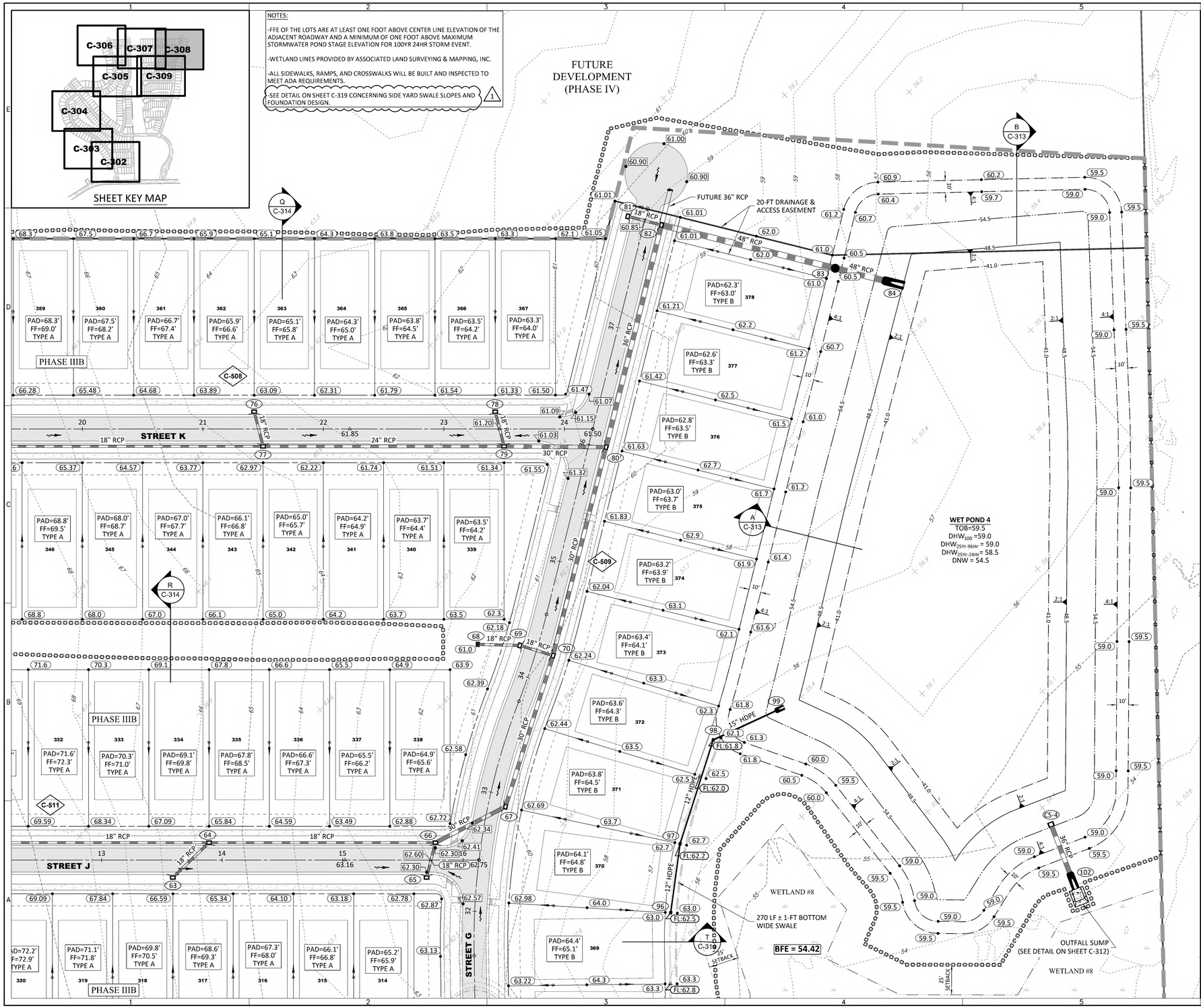
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PROJECT NO: KGA-CD-1031
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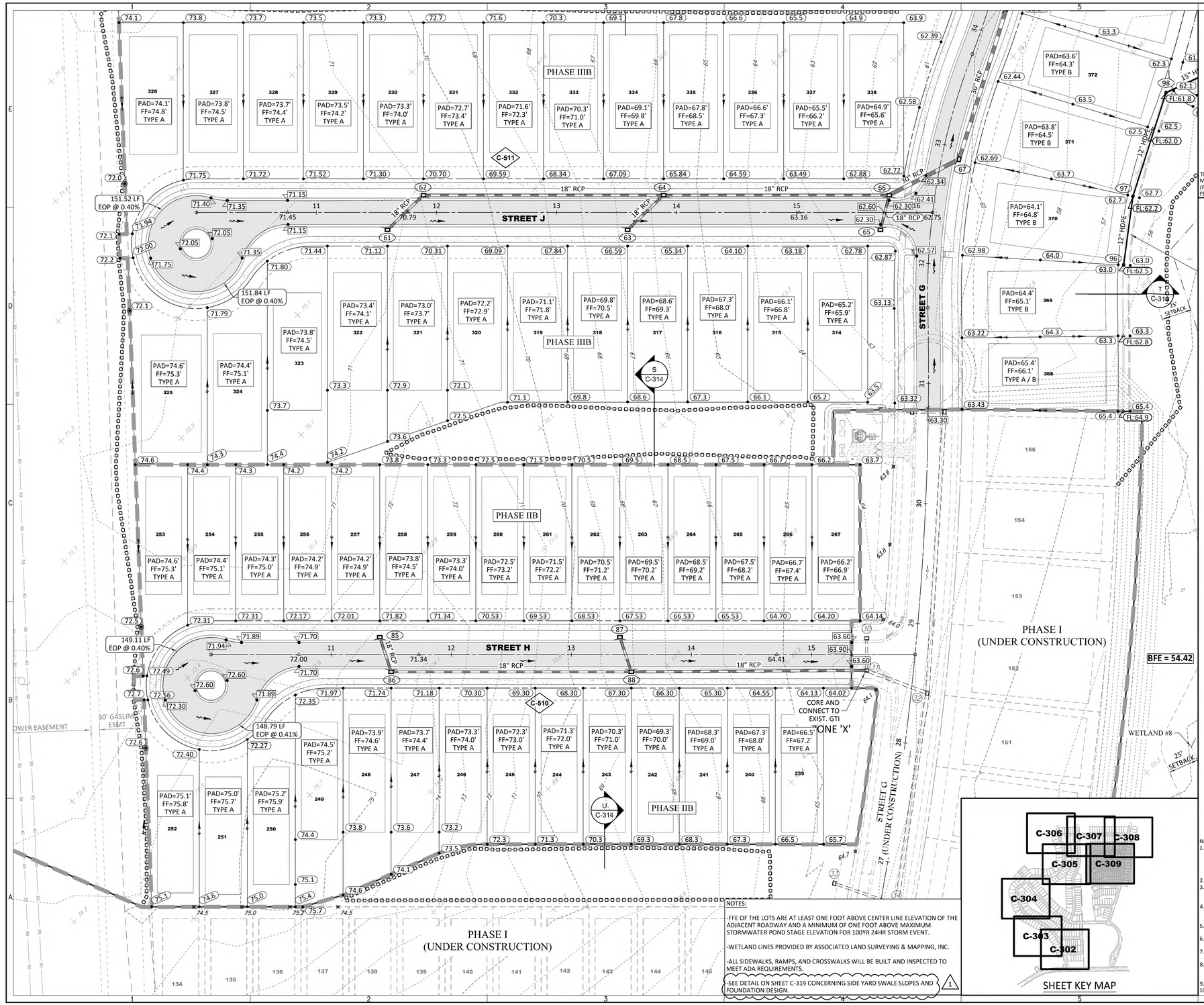
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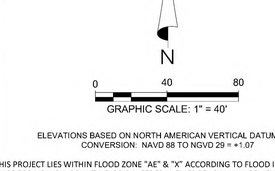
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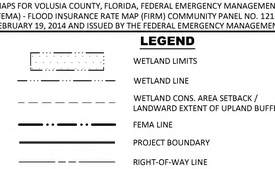
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LOT GRADING TYPE "A"
ALL DRAINAGE TO STREET



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PREPARED FOR: KH CW DELAND LLC

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PROJECT NO:	KGA-CD-1031
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STORM STRUCTURE & PIPE TABLE

STR. NO.	STR. TYPE	TOP ELEV. (FT)	PIPE DIAM. & MATL. (INCHES)	LENGTH (FT)	SLOPE %	INVERT IN (FT)	AS-BUILT INVERT IN (FT)	INVERT OUT (FT)	AS-BUILT INVERT OUT (FT)	COMMENTS
1	MODIFIED TYPE C GRATE INLET	72.62	18" RCP	30	0.33%			68.50 (TO STR 2)		PH 2A
2	MODIFIED TYPE C GRATE INLET	72.62	18" RCP	102	0.20%	68.40 (FROM STR 1)		66.10 (TO STR 3)		PH 2A
3	MODIFIED TYPE C GRATE INLET	73.03	18" RCP	203	0.20%	65.90 (FROM STR 2)		65.90 (TO STR 6)		PH 2A
4	TYPE C GRATE INLET	72.00	18" RCP	34	0.30%			67.40 (TO STR 6)		PH 2A
5	MODIFIED TYPE C GRATE INLET	72.21	18" RCP	29	0.35%			67.40 (TO STR 6)		PH 2A
6	MODIFIED TYPE C GRATE INLET	72.21	18" RCP	69	0.29%	67.30 (FROM STR 5) 67.30 (FROM STR 4) 65.50 (FROM STR 3)		65.50 (TO STR 7)		PH 2A
7	TYPE P MANHOLE 4'-0" DIA.	72.36	18" RCP	70	0.29%	65.30 (FROM STR 6)		65.30 (TO STR 8)		PH 2A
8	TYPE P MANHOLE 4'-0" DIA.	72.13	18" RCP	84	0.24%	65.10 (FROM STR 7)		65.10 (TO STR 10)		PH 2A
9	MODIFIED TYPE C GRATE INLET	71.39	18" RCP	29	0.35%			67.30 (TO STR 10)		PH 2A
10	MODIFIED TYPE C GRATE INLET	71.40	24" RCP	174	0.11%	67.20 (FROM STR 9) 64.90 (FROM STR 8)		64.40 (TO STR 12)		PH 2A
11	MODIFIED TYPE C GRATE INLET	70.72	18" RCP	32	0.32%			66.40 (TO STR 12)		PH 2A
12	MODIFIED TYPE C GRATE INLET	70.72	24" RCP	71	0.14%	66.30 (FROM STR 11) 64.20 (FROM STR 10)		63.40 (TO STR 21)		PH 2A; W/ J BOTTOM
13	TYPE C GRATE INLET	74.00	18" RCP	155	0.19%			65.50 (TO STR 14)		PH 2A
14	MODIFIED TYPE C GRATE INLET	72.17	18" RCP	29	0.34%	65.20 (FROM STR 13)		65.20 (TO STR 15)		PH 2A
15	MODIFIED TYPE C GRATE INLET	72.19	18" RCP	116	0.17%	65.10 (FROM STR 14)		65.10 (TO STR 18)		PH 2A
16	MODIFIED TYPE C GRATE INLET	72.22	18" RCP	29	0.35%			67.60 (TO STR 17)		PH 2A
17	MODIFIED TYPE C GRATE INLET	72.22	18" RCP	91	0.22%	67.50 (FROM STR 16)		65.70 (TO STR 18)		PH 2A
18	TYPE J MANHOLE 5'-0" DIA.	72.89	18" RCP	173	0.12%	65.50 (FROM STR 17) 64.90 (FROM STR 15)		64.90 (TO STR 20)		PH 2A
19	MODIFIED TYPE C GRATE INLET	71.69	18" RCP	29	0.35%			67.20 (TO STR 20)		PH 2A
20	MODIFIED TYPE C GRATE INLET	71.69	18" RCP	185	0.16%	64.70 (FROM STR 18) 67.10 (FROM STR 19)		64.70 (TO STR 21)		PH 2A
21	MODIFIED TYPE C GRATE INLET	70.84	36" RCP	179	0.11%	63.30 (FROM STR 12) 64.40 (FROM STR 20)		62.20 (TO STR 22)		PH 2A; W/ J BOTTOM
22	MES 36" RCP					62.00 (FROM STR 21)				PH 2A; POND 1 W/ CONC. SUMP
23	MODIFIED TYPE C GRATE INLET	71.43	18" RCP	32	0.31%			66.80 (TO STR 24)		PH 2A
24	MODIFIED TYPE C GRATE INLET	71.37	18" RCP	205	0.83%	66.70 (FROM STR 23)		66.70 (TO STR 26)		PH 2A
25	MODIFIED TYPE C GRATE INLET	70.02	18" RCP	42	0.24%			65.10 (TO STR 26)		PH 2A
26	MODIFIED TYPE C GRATE INLET	69.65	18" RCP	180	1.17%	65.00 (FROM STR 25) 65.00 (FROM STR 24)		65.00 (TO STR 28)		PH 2A; W/ J BOTTOM
27	MODIFIED TYPE C GRATE INLET	67.63	18" RCP	31	0.32%			63.00 (TO STR 28)		PH 2A
28	MODIFIED TYPE C GRATE INLET	67.50	24" RCP	179	0.11%	62.90 (FROM STR 26) 62.90 (FROM STR 27)		61.30 (TO STR 34)		PH 2A
29	MODIFIED TYPE C GRATE INLET	66.22	18" RCP	29	0.35%			61.60 (TO STR 30)		PH 2A
30	MODIFIED TYPE C GRATE INLET	66.22	24" RCP	233	0.13%	61.50 (FROM STR 29)		61.00 (TO STR 31)		PH 2A

STORM STRUCTURE & PIPE TABLE

STR. NO.	STR. TYPE	TOP ELEV. (FT)	PIPE DIAM. & MATL. (INCHES)	LENGTH (FT)	SLOPE %	INVERT IN (FT)	AS-BUILT INVERT IN (FT)	INVERT OUT (FT)	AS-BUILT INVERT OUT (FT)	COMMENTS
31	TYPE P MANHOLE 4'-0" DIA.	66.99	24" RCP	117	0.17%	60.70 (FROM STR 30)		60.70 (TO STR 34)		PH 2A
32	TYPE C GRATE INLET	67.00	18" RCP	154	0.20%			60.30 (TO STR 33)		PH 2A
33	MODIFIED TYPE C GRATE INLET	66.22	18" RCP	37	0.27%	60.00 (FROM STR 32)		60.00 (TO STR 34)		PH 2A
34	MODIFIED TYPE C GRATE INLET	66.22	36" RCP	157	0.13%	59.90 (FROM STR 33) 60.50 (FROM STR 31) 61.10 (FROM STR 28)		58.40 (TO STR 34A)		PH 2A; W/ J BOTTOM
34A	TYPE J MANHOLE 5'-0" DIA.		36" RCP	22	0.45%	58.20 (FROM STR 34)		58.20 (TO STR 35)		
35	MES 36" RCP	62.03				58.10 (FROM STR 34A)				PH 2A; POND 1 W/ CONC. SUMP
36	TYPE C GRATE INLET	70.50	18" RCP	34	0.30%			64.50 (TO STR 37)		PH 3A
37	MODIFIED TYPE C GRATE INLET	70.92	18" RCP	29	0.35%	64.40 (FROM STR 36)		64.40 (TO STR 38)		PH 3A
38	MODIFIED TYPE C GRATE INLET	70.92	24" RCP	146	0.21%	64.30 (FROM STR 37)		63.80 (TO STR 40)		PH 3A
39	MODIFIED TYPE C GRATE INLET	71.45	18" RCP	29	0.35%			66.80 (TO STR 40)		PH 3A
40	MODIFIED TYPE C GRATE INLET	71.45	24" RCP	280	0.14%	63.50 (FROM STR 38) 66.70 (FROM STR 39)		63.50 (TO STR 43)		PH 3A
41	TYPE C GRATE INLET	70.50	18" RCP	34	0.30%			64.90 (TO STR 42)		PH 3A
42	MODIFIED TYPE C GRATE INLET	71.32	18" RCP	29	0.35%	64.80 (FROM STR 41)		64.80 (TO STR 43)		PH 3A
43	MODIFIED TYPE C GRATE INLET	71.32	24" RCP	171	0.12%	64.70 (FROM STR 42) 63.10 (FROM STR 40)		60.40 (TO STR 47)		PH 3A
44	MODIFIED TYPE C GRATE INLET	72.07	18" RCP	29	0.35%			67.40 (TO STR 46)		PH 3A
45	TYPE P MANHOLE 4'-0" DIA.	72.92	24" RCP	118	0.17%			65.10 (TO STR 46)		PH 3A; 24" INV. (N) = 65.1 (BRICK & MORTAR)
46	MODIFIED TYPE C GRATE INLET	72.07	24" RCP	27	0.37%	67.30 (FROM STR 44) 64.90 (FROM STR 45)		64.90 (TO STR 47)		PH 3A
47	TYPE J MANHOLE 5'-0" DIA.	72.26	30" RCP	144	0.14%	60.20 (FROM STR 43) 64.80 (FROM STR 46)		59.70 (TO STR 49)		PH 3A
48	MODIFIED TYPE C GRATE INLET	70.77	18" RCP	29	0.35%			66.30 (TO STR 49)		PH 3A
49	MODIFIED TYPE C GRATE INLET	70.78	30" RCP	160	0.12%	66.20 (FROM STR 48) 59.50 (FROM STR 47)		59.50 (TO STR 51)		PH 3A; W/ J BOTTOM
50	MODIFIED TYPE C GRATE INLET	69.62	18" RCP	29	0.35%			65.50 (TO STR 51)		PH 3A
51	MODIFIED TYPE C GRATE INLET	69.62	36" RCP	94	0.11%	65.40 (FROM STR 50) 59.30 (FROM STR 49)		57.70 (TO STR 58)		PH 3A; W/ J BOTTOM
52	TYPE P MANHOLE 4'-0" DIA.	70.92	30" RCP	150	0.13%			61.30 (TO STR 58)		PH 3A; 30" INV. (N) = 61.3 (BRICK & MORTAR)
53	MODIFIED TYPE C GRATE INLET	66.39	18" RCP	33	0.30%			62.50 (TO STR 54)		PH 3A
54	MODIFIED TYPE C GRATE INLET	66.48	18" RCP	209	0.19%	62.40 (FROM STR 53)		61.80 (TO STR 56)		PH 3A
55	MODIFIED TYPE C GRATE INLET	67.82	18" RCP	42	0.24%			63.30 (TO STR 56)		PH 3A
56	MODIFIED TYPE C GRATE INLET	68.05	24" RCP	137	0.15%	61.40 (FROM STR 54) 63.20 (FROM STR 55)		60.90 (TO STR 57)		PH 3A; W/ J BOTTOM
57	TYPE P MANHOLE 4'-0" DIA.	69.48	24" RCP	126	0.16%	60.70 (FROM STR 56)		60.70 (TO STR 58)		PH 3A
58	MODIFIED TYPE C GRATE INLET	69.96	48" RCP	149	0.07%	57.60 (FROM STR 51) 61.10 (FROM STR 52) 60.50 (FROM STR 57)		56.60 (TO STR 59)		PH 3A; W/ J BOTTOM
59	TYPE J MANHOLE 6'-0" DIA.		48" RCP	53	0.19%	56.50 (FROM STR 58)		55.60 (TO STR 60)		PH 3A

NOTE:

- ALL INLET AND MANHOLE STRUCTURE BOTTOMS ARE SPECIFIED TYPE 'P' UNLESS OTHERWISE NOTED. REFER TO FDOT DESIGN STANDARD INDEX 425-010.
- ALL FLARED END SECTIONS (FES) ARE SPECIFIED FDOT STANDARD INDEX 430-020 UNLESS OTHERWISE NOTED.
- ALL MITERED END SECTIONS (MES) ARE SPECIFIED FDOT STANDARD INDEX 430-021 UNLESS OTHERWISE NOTED.

ELEVATIONS BASED ON:
NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION:
NAVD 88 TO NGVD 29 = +1.07

HEIDT DESIGN
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CRESWIND DELAND
PHASE 2A, 2B, 3A & 3B

STORM STRUCTURE & PIPE DATA

PREPARED FOR: KH CW DELAND LLC

NO.	DESCRIPTION	DATE
1	REVIEW SUBMITTAL	02/20/2023

PROJECT NO:	KGA-CD-1031
FILE:	ST
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

This item has been digitally signed and sealed by Strickland T. Smith, P.E. on the date indicated here.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

STRICKLAND T. SMITH
DATE:
LICENSE NO. 50652

C-310

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STORM STRUCTURE & PIPE TABLE

STR. NO.	STR. TYPE	TOP ELEV. (FT)	PIPE DIAM. & MATL. (INCHES)	LENGTH (FT)	SLOPE %	INVERT IN (FT)	AS-BUILT INVERT IN (FT)	INVERT OUT (FT)	AS-BUILT INVERT OUT (FT)	COMMENTS
60	MES 48" RCP	60.42				55.50 (FROM STR 59)				PH 3A; POND 3
61	MODIFIED TYPE C GRATE INLET	70.42	18" RCP	42	0.48%			66.00 (TO STR 62)		PH 3B
62	MODIFIED TYPE C GRATE INLET	70.00	18" RCP	200	0.80%	65.80 (FROM STR 61)		60.50 (TO STR 64)		PH 3B
63	MODIFIED TYPE C GRATE INLET	65.89	18" RCP	42	0.48%			61.30 (TO STR 64)		PH 3B
64	MODIFIED TYPE C GRATE INLET	65.14	18" RCP	188	0.85%	58.90 (FROM STR 62) 61.10 (FROM STR 63)		56.90 (TO STR 66)		PH 3B; W/ J BOTTOM
65	MODIFIED TYPE C GRATE INLET	62.02	18" RCP	30	0.34%			57.90 (TO STR 66)		PH 3B
66	MODIFIED TYPE C GRATE INLET	62.02	30" RCP	65	0.15%	55.30 (FROM STR 64) 57.80 (FROM STR 65)		53.50 (TO STR 67)		PH 3B; W/ J BOTTOM
67	MODIFIED TYPE C GRATE INLET	62.00	30" RCP	131	0.15%	53.40 (FROM STR 66)		53.40 (TO STR 70)		PH 3B; W/ J BOTTOM
68	TYPE C GRATE INLET	61.00	18" RCP	35	0.29%			54.40 (TO STR 69)		PH 3B
69	MODIFIED TYPE C GRATE INLET	61.54	18" RCP	29	0.35%	54.30 (FROM STR 68)		54.30 (TO STR 70)		PH 3B
70	MODIFIED TYPE C GRATE INLET	61.54	30" RCP	179	0.11%	54.20 (FROM STR 69) 53.20 (FROM STR 67)		53.20 (TO STR 80)		PH 3B; W/ J BOTTOM
71	TYPE C GRATE INLET	71.00	18" RCP	44	0.23%			64.10 (TO STR 72)		PH 3B
72	MODIFIED TYPE C GRATE INLET	70.54	18" RCP	29	0.35%	64.00 (FROM STR 71)		64.00 (TO STR 73)		PH 3B
73	MODIFIED TYPE C GRATE INLET	70.54	18" RCP	268	0.82%	63.90 (FROM STR 72)		61.80 (TO STR 75)		PH 3B
74	MODIFIED TYPE C GRATE INLET	66.38	18" RCP	30	0.34%			62.20 (TO STR 75)		PH 3B
75	MODIFIED TYPE C GRATE INLET	66.26	18" RCP	250	0.80%	62.10 (FROM STR 74) 59.60 (FROM STR 73)		57.60 (TO STR 77)		PH 3B
76	MODIFIED TYPE C GRATE INLET	62.39	18" RCP	30	0.34%			58.20 (TO STR 77)		PH 3B
77	MODIFIED TYPE C GRATE INLET	62.27	24" RCP	200	0.50%	58.10 (FROM STR 76) 55.60 (FROM STR 75)		54.40 (TO STR 79)		PH 3B
78	MODIFIED TYPE C GRATE INLET	60.62	18" RCP	30	0.34%			56.50 (TO STR 79)		PH 3B
79	MODIFIED TYPE C GRATE INLET	60.62	30" RCP	85	0.12%	56.40 (FROM STR 78) 53.40 (FROM STR 77)		52.90 (TO STR 80)		PH 3B; W/ J BOTTOM
80	MODIFIED TYPE C GRATE INLET	60.88	36" RCP	190	0.11%	52.80 (FROM STR 79) 53.00 (FROM STR 70)		52.30 (TO STR 82)		PH 3B; W/ J BOTTOM
81	MODIFIED TYPE C GRATE INLET	60.27	18" RCP	29	0.35%			55.60 (TO STR 82)		PH 3B
82	MODIFIED TYPE C GRATE INLET	60.27	48" RCP	149	0.07%	55.50 (FROM STR 81) 52.10 (FROM STR 80)		51.10 (TO STR 83)		PH 3B; W/ J BOTTOM; 36" INV. (N) = 52.1 (BRICK & MORTAR)
83	TYPE J MANHOLE 6'-0" DIA.		48" RCP	42	0.24%	51.00 (FROM STR 82)		48.60 (TO STR 84)		PH 3B
84	MES 48" RCP	56.42				48.50 (FROM STR 83)				PH 3B; POND 4
85	MODIFIED TYPE C GRATE INLET	71.12	18" RCP	30	0.33%			67.00 (TO STR 86)		PH 2B
86	MODIFIED TYPE C GRATE INLET	71.04	18" RCP	200	0.75%	66.90 (FROM STR 85)		60.90 (TO STR 88)		PH 2B
87	MODIFIED TYPE C GRATE INLET	66.83	18" RCP	30	0.33%			62.70 (TO STR 8EX 31)		PH 2B
88	MODIFIED TYPE C GRATE INLET	66.60	18" RCP	196	0.20%	59.40 (FROM STR 86) 62.60 (FROM STR 87)		59.40 (TO STR)		PH 2B; CORE & CONNECT INTO EXIST. PHASE 1 GTI INV. (W) = 59.00
89	MODIFIED TYPE C GRATE INLET	70.92	18" RCP	30	0.33%			66.60 (TO STR Ex iEX 72)		PH 3A; CORE & CONNECT INTO EXIST. PHASE 1 MH INV. (SE) = 66.50

STORM STRUCTURE & PIPE TABLE

STR. NO.	STR. TYPE	TOP ELEV. (FT)	PIPE DIAM. & MATL. (INCHES)	LENGTH (FT)	SLOPE %	INVERT IN (FT)	AS-BUILT INVERT IN (FT)	INVERT OUT (FT)	AS-BUILT INVERT OUT (FT)	COMMENTS
90	MODIFIED TYPE C GRATE INLET	65.80	18" RCP	52	0.19%			61.80 (TO STR)		PH 3A; CORE & CONNECT INTO EXIST. PHASE 1 MH INV. (NE) = 61.70
91	15" NYLOPLAST YARD DRAIN	66.70	12" HDPE	120	0.33%			62.40 (TO STR 92)		PH 3A
92	15" NYLOPLAST YARD DRAIN	67.60	12" HDPE	57	0.35%	62.00 (FROM STR 91)		62.00 (TO STR 93)		PH 3A
93	15" NYLOPLAST YARD DRAIN	68.30	12" HDPE	58	0.34%	61.80 (FROM STR 92)		61.80 (TO STR 94)		PH 3A
94	18" NYLOPLAST YARD DRAIN		15" HDPE	61	0.33%	61.60 (FROM STR 93)		58.40 (TO STR 95)		PH 3A
95	MES 15" RCP	0.00				58.20 (FROM STR 94)				PH 3A; POND 3
96	15" NYLOPLAST YARD DRAIN	62.50	12" HDPE	58	0.35%			58.20 (TO STR 97)		PH 3B
97	15" NYLOPLAST YARD DRAIN	62.20	12" HDPE	91	0.33%	58.00 (FROM STR 96)		58.00 (TO STR 98)		PH 3B
98	18" NYLOPLAST YARD DRAIN		15" HDPE	58	0.35%	57.70 (FROM STR 97)		51.30 (TO STR 99)		PH 3B
99	MES 15" RCP					51.10 (FROM STR 98)				PH 3B; POND 4
100	MES 36" RCP					60.00 (FROM STR CS-1)				PH 2A; POND 1 OUTFALL W/ CONC. SUMP
101	FES 36" RCP					55.00 (FROM STR CS-3)				PH 3A; POND 3 OUTFALL
102	MES 36" RCP	0.00				53.00 (FROM STR CS-4)				PH 3B; POND 4 OUTFALL W/ CONC. SUMP
CS-1	CONTROL STRUCTURE MODIFIED TYPE D GTI	66.50	36" RCP	46	0.22%			60.10 (TO STR 100)		PH 2A; POND 1 (SEE DETAIL SHT C-312)
CS-3	CONTROL STRUCTURE MODIFIED TYPE D GTI	67.00	36" RCP	69	0.14%			55.10 (TO STR 101)		PH 3A; POND 3 (SEE DETAIL SHT C-312)
CS-4	CONTROL STRUCTURE MODIFIED TYPE D GTI	58.70	36" RCP	44	0.23%			53.10 (TO STR 102)		PH 3B; POND 4 (SEE DETAIL SHT C-312)
Ex 63A	MODIFIED TYPE C GRATE INLET	70.92				66.50 (FROM STR 89)				PH 3A; REMOVE EXIST. MH TOP & REPLACE W/ MODIFIED TYPE C GTI

NOTE:

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- ALL FLARED END SECTIONS (FES) ARE SPECIFIED FDOT STANDARD INDEX 430-020 UNLESS OTHERWISE NOTED.
- ALL MITERED END SECTIONS (MES) ARE SPECIFIED FDOT STANDARD INDEX 430-021 UNLESS OTHERWISE NOTED.

ELEVATIONS BASED ON:
NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION:
NAVD 88 TO NGVD 29 = +1.07

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Civil Engineering • Planning & GIS
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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

STORM STRUCTURE & PIPE DATA

PREPARED FOR: KH CW DELAND LLC

NO.	DATE	DESCRIPTION
1	02/20/2023	REVIEW SUBMITTAL

PROJECT NO:	KGA-CD-1031
FILE:	ST
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

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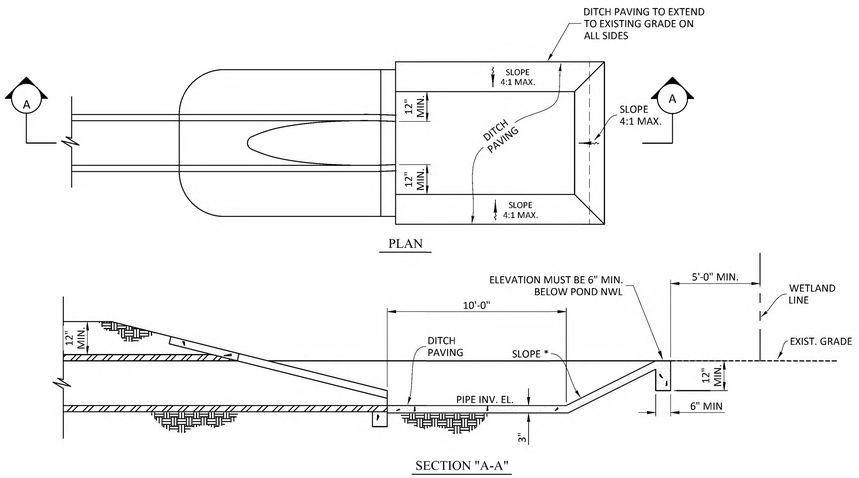
STRICKLAND T. SMITH
DATE:
LICENSE NO. 50652

C-311

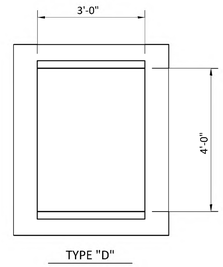
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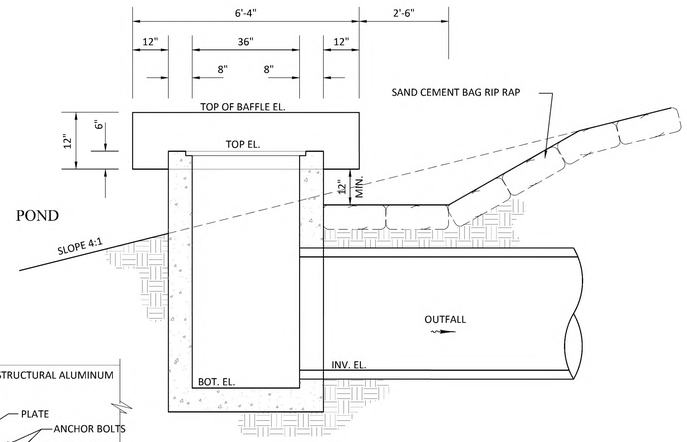
CONTROL STRUCTURE							ATTENUATION AND TREATMENT CONTROLS							
STR. NO.	FDOT BOX TYPE	TOP ELEV.	BOTTOM ELEV.	PIPE MATL.	PIPE SIZE	PIPE INV. ELEV.	STR. TYPE	ATTENUATION OPENING A	ATTENUATION OPENING B	ELEV. (FT.)	TREATMENT OPENING C	TREATMENT OPENING D	TREATMENT OPENING F°	ELEV. (FT.)	REMARKS
CS-1	D	66.50	59.60	RCP	36"	60.10	CS-13	---	---	---	---	---	---	--	POND 1; PROVIDE CS-13 BAFFLE
CS-3	D	67.00	54.60	RCP	36"	55.10	CS-3	---	---	---	0'-3 3/4"	0'-3 3/4"	---	61.50	2 POND 3; PROVIDE CS-3 BAFFLE
CS-4	D	58.70	52.60	RCP	36"	53.10	CS-3	---	---	---	0'-4 1/2"	0'-4 1/2"	---	54.50	POND 4; PROVIDE CS-3 BAFFLE



TYPICAL POND/OUTFALL SUMP DETAIL
SCALE: NTS

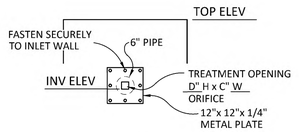


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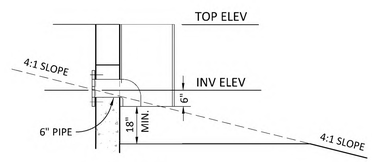


SECTION

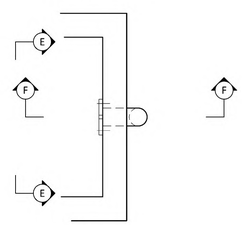
TYPICAL CONTROL STRUCTURE
MODIFIED



SECTION "E-E"

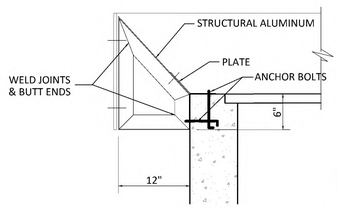


SECTION "F-F"

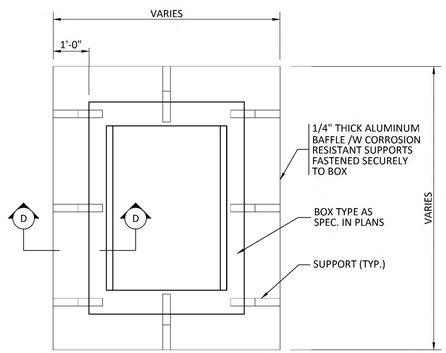


PLAN

TYPE "CS-3"
OPENING



SECTION "D-D"



PLAN

TYPE "CS-13"
OPENING

NOTE:
DRAWING NOT TO SCALE

NOTE:
CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTING CONTROL STRUCTURES

ELEVATIONS BASED ON:
NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION:
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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

CONTROL STRUCTURE DATA

PREPARED FOR: KH CW DELAND LLC

NO.	DATE	DESCRIPTION
2	07/31/2023	REV CS 3 TREATMENT OPENING
1	02/20/2023	REVIEW SUBMITTAL

PROJECT NO:	KGA-CD-1031
FILE:	CSTR
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

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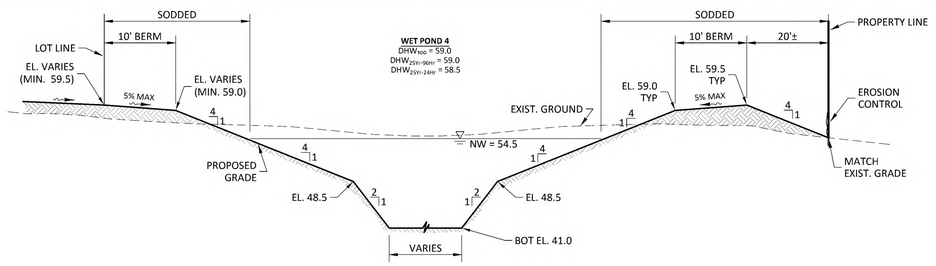
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C-312

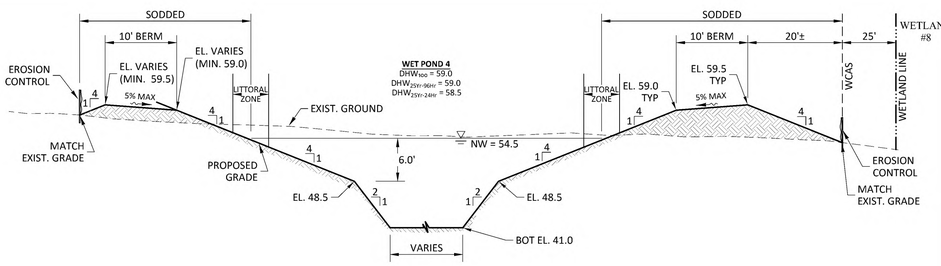
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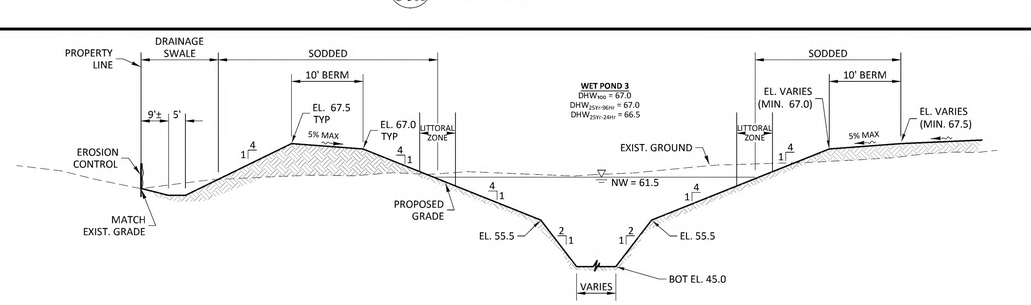
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SCALE: N.T.S.



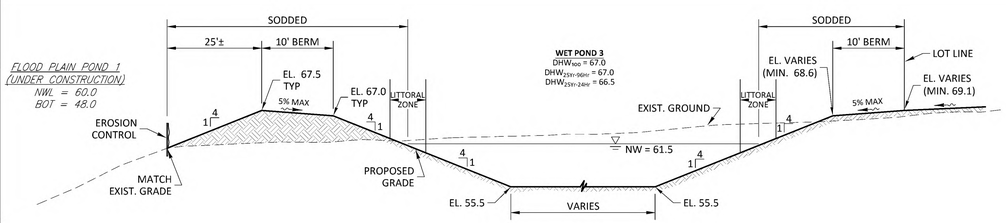
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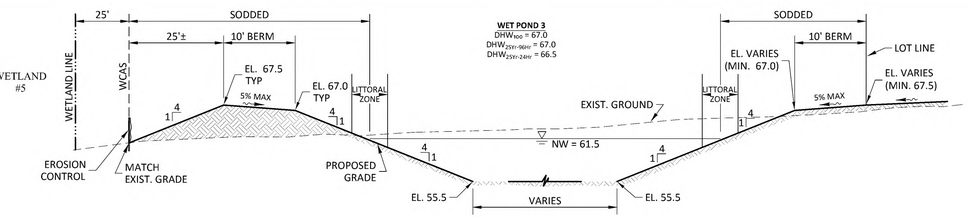
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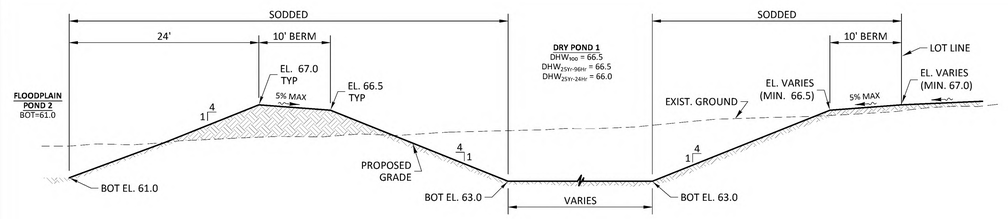
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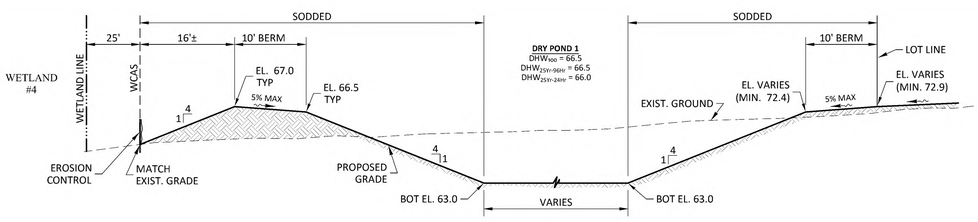
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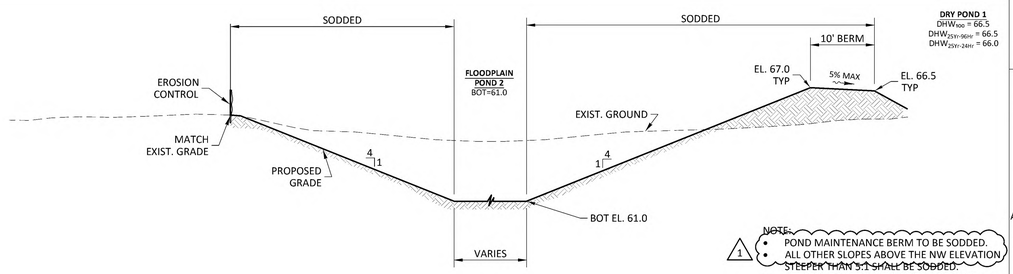
F C-303 TYPICAL POND SECTION

SCALE: N.T.S.



G C-303 TYPICAL POND SECTION

SCALE: N.T.S.



H C-303 TYPICAL POND SECTION

SCALE: N.T.S.

1 NOTE:
- POND MAINTENANCE BERM TO BE SODDED.
- ALL OTHER SLOPES ABOVE THE NW ELEVATION STEEPER THAN 3:1 SHALL BE SODDED.
- LITTORAL ZONE PLANTING REQUIRED. SEE LANDSCAPE PLANS FOR DETAILS.

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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

GRADING & DRAINAGE SECTIONS

PREPARED FOR: KH CW DELAND LLC

DESCRIPTION	DATE
1 REVIEW SUBMITTAL	02/20/2023
UPDATE NOTES	06/09/2023

PROJECT NO:	KGA-CD-1031
FILE:	SEC
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

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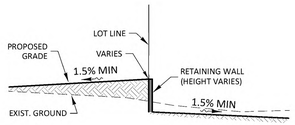
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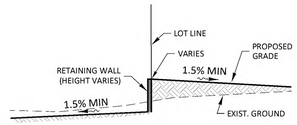
C-313

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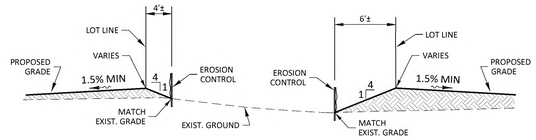
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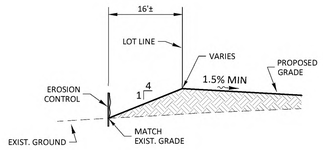
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SCALE: N.T.S.



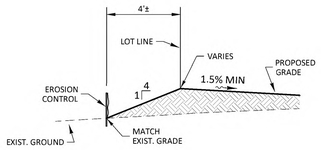
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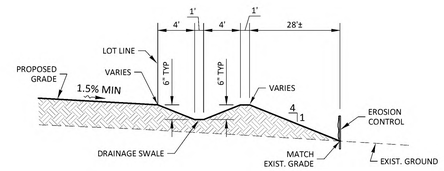
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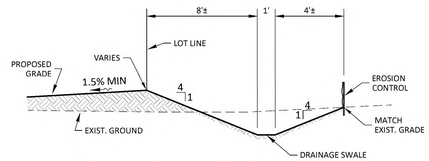
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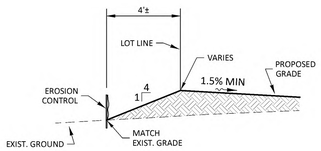
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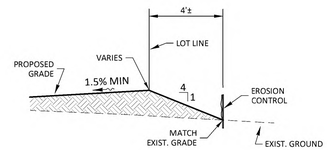
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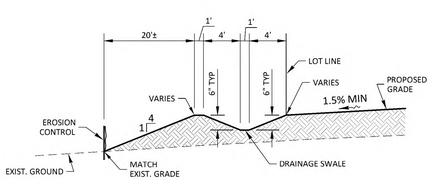
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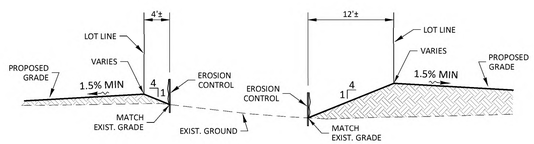
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U C-309 REAR LOT LINE SECTION
SCALE: N.T.S.



M C-305 REAR LOT LINE SECTION
SCALE: N.T.S.



R C-307 REAR LOT LINE SECTION
SCALE: N.T.S.

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CRESWIND DELAND
PHASE 2A, 2B, 3A & 3B

GRADING & DRAINAGE SECTIONS

PREPARED FOR: KH CW DELAND LLC

NO.	DATE	DESCRIPTION
1	02/20/2023	REVIEW SUBMITTAL

PROJECT NO: KGA-CD-1031
FILE: SEC
DESIGN BY: DMYTRYK
DRAWN BY: JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

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GENERAL NOTES:

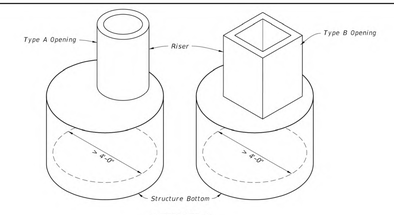
1. Work this Index with Specification 425 and Index 425-001.
2. Type P standard structure bottoms are 4'-0"diameter and smaller (Alt. A) and 3'-6" square (Alt. B) . Larger standard structure bottoms are designated Type J. Risers are permitted for all structures.
3. Walls of circular structures (Alt. A) constructed in place may be of brick or reinforced concrete. Construct precast and rectangular structures (Alt. B) with reinforced concrete only.
4. Wall thickness and reinforcement are for either reinforced cast-in-place or precast concrete units except that precast circular units may be furnished with walls in accordance with ASTM C478 (See Table 1).
5. Top and bottom slab thickness and reinforcement are for precast and cast-in-place construction. Use Class II concrete, except when Class IV concrete is shown in the Plans.
6. Alt. A or Alt. B structure bottoms may be used in conjunction with curb inlet tops Types 1, 2, 3, 4, 5, 6, 9, and 10, and any manhole or junction box. Alt. B structure bottoms may be used in conjunction with curb inlet Types 7 & 8, or any ditch bottom inlet.
7. Rectangular structures may be rotated as directed by the Engineer in order to facilitate connections between the structure walls and pipes.
8. Use straight embedment reinforcement in top and bottom slabs ,except when ACI hooks are specifically required.
9. Construct corner fillets as shown for rectangular structures used with circular risers and inlet throats, and when used on skew with rectangular risers, inlets, and inlet throats. Construct fillets in the top slab of the Alt. A structure bottoms when used with the Type B risers. Reinforce each fillet with two #5 bars.
10. Units larger than specified standards may be substituted at the contractor's option when these units will not cause or increase the severity of utility conflicts. Furnish such larger units at no additional cost to the Department. Larger Alt. A units cannot replace Alt. B units without approval of the Engineer. This Note applies to this Index only.

REINFORCEMENT NOTES:

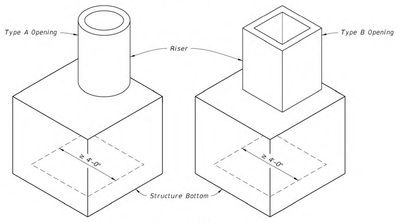
1. Locate wall reinforcement in rectangular structures as shown in the WALL REINFORCEMENT SPLICE DETAILS in Index 425-001.
2. Provide a minimum 2"clear cover for all reinforcement unless otherwise noted and except for 36"diameter ASTM C478 units.
3. Additional bars used to restrain hole formers for precast structures with grouted pipe connections may be left flush with the hole surface.
4. Cut or bend reinforcement at pipe openings to maintain cover.
5. Remove exposed ends of reinforcing at precast pipe openings and grouted joints to 1" below the concrete surface and seal with a Type F Epoxy meeting the requirements of Specification 926.
6. Equivalent area smooth or deformed welded wire reinforcement may be substituted in accordance with Index 425-001.

TABLE OF CONTENTS:

Sheet	Description
1	General Notes and Contents
2	Dimensional and Reinforcing Details
3	Tables 1, 2, 3, and 4
4	Tables 5 and 6

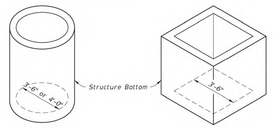


ALTERNATE A



ALTERNATE B

TYPE J



ALTERNATE A ALTERNATE B

TYPE P

LAST REVISION	DESCRIPTION:
11/01/20	

FDOT FY 2022-23 STANDARD PLANS

STRUCTURE BOTTOMS TYPE J AND P

INDEX 425-010 SHEET 1 of 4

TABLE 5 - SLAB DESIGNS - SQUARE AND RECTANGULAR STRUCTURES
(ALL SLABS 8" THICK EXCEPT AS NOTED - REINFORCING PARALLEL TO SHORT WAY AND LONG WAY)

SHORT-WAY SLAB DEPTH	SHORT-WAY SCHEDULE (Bars A)	LONG-WAY SLAB DEPTH	LONG-WAY SCHEDULE (Bars B)
SIZE: 3'-6" x UNLIMITED			
≥0.5' < 8"	B10	≥0.5' < 24"	B10
8" < 13"	B5.5	24"-40"	B5.5
13" < 31"	C6.5		
31"-40"	D7		
SIZE: 4' x UNLIMITED			
≥0.5' < 7"	B5.5	≥0.5' < 15"	B10
7" < 19"	C6.5	15" < 29"	B5.5
19" < 31"	D7	29"-40"	C6.5
31"-40"	E5		
SIZE: 5' x 5'			
≥0.5' < 3"	C6.5	≥0.5' < 3"	C6.5
3" < 7"	B5.5	3" < 13"	C6.5
7" < 22"	C6.5	13" < 22"	D7
22" < 29"	D7	22" < 29"	D4.5
29"-40"	E5	29"-40"	E5
SIZE: 5' x 6'			
≥0.5' < 12"	C6.5	≥0.5' < 3"	C6.5
12" < 26"	D7	3" < 9"	B5.5
26"-40"	E5	9" < 23"	C3.5
		23" < 35"	D4.5
		35"-40"	E5
SIZE: 5' x 7'			
≥0.5' < 10"	C6.5	≥0.5' < 10"	B5.5
10" < 20"	D7	10" < 31"	C3.5
20" < 34"	E5	31"-40"	D4.5
34"-40"	F5		
SIZE: 5' x 8'			
≥0.5' < 7"	C6.5	≥0.5' < 8"	B10
7" < 13"	D7	8" < 17"	B5.5
13" < 24"	E5	17" < 25"	C6.5
24"-40"	F5	25"-40"	C3.5
SIZE: 5' x 9'			
≥0.5' < 8"	C6.5	≥0.5' < 14"	B10
8" < 14"	D7	14" < 24"	B5.5
14" < 25"	E5	24" < 34"	C6.5
25"-40"	F5	34"-40"	C3.5
SIZE: 5' x UNLIMITED			
≥0.5' < 8"	C6.5	≥0.5' < 14"	B10
8" < 14"	D7	14" < 24"	B5.5
14" < 25"	E5	24" < 34"	C6.5
25"-40"	F5	34"-40"	C3.5

SHORT-WAY SLAB DEPTH	SHORT-WAY SCHEDULE (Bars A)	LONG-WAY SLAB DEPTH	LONG-WAY SCHEDULE (Bars B)
SIZE: 6' x 6'			
≥0.5' < 13"	C6.5	≥0.5' < 10"	C3.5
13" < 23"	D7	10" < 18"	D4.5
23"-40"	E5	18" < 27"	E5
		27" < 33"	E3
		33"-40"	F5
SIZE: 6' x 7'			
≥0.5' < 8"	C6.5	≥0.5' < 8"	C6.5
8" < 16"	D7	8" < 12"	C3.5
16" < 28"	E5	12" < 21"	D4.5
28"-40"	F5	21" < 28"	E5
		28" < 35"	E3
		35"-40"	F5
SIZE: 6' x 8'			
≥0.5' < 6"	C6.5	≥0.5' < 6"	B5.5
6" < 13"	D7	6" < 11"	C6.5
13" < 22"	E5	11" < 17"	C3.5
22" < 35"	F5	17" < 22"	D4.5
35"-40"	G5	22" < 32"	E5
		32"-40"	E3
SIZE: 6' x 9'			
≥0.5' < 8"	D7	≥0.5' < 8"	B5.5
8" < 14"	E5	8" < 14"	C6.5
14" < 24"	F5	14" < 21"	C3.5
24"-34"	G5	21" < 25"	D4.5
		25"-34"	E5
SIZE: 6' x UNLIMITED			
≥0.5' < 8"	D7	≥0.5' < 8"	B5.5
8" < 14"	E5	8" < 14"	C6.5
14" < 24"	F5	14" < 21"	C3.5
24"-34"	G5	21" < 25"	D4.5
		25"-34"	E5
SIZE: 7' x 7'			
≥0.5' < 8"	C6.5	≥0.5' < 4"	C6.5
8" < 15"	D7	4" < 7"	C3.5
15" < 26"	E5	7" < 11"	D4.5
26"-40"	F5	11" < 22"	E3
		22" < 32"	F3.5
		32"-40"	G3.5
SIZE: 7' x 8'			
≥0.5' < 5"	C6.5	≥0.5' < 5"	C6.5
5" < 11"	D7	5" < 8"	C3.5
11" < 19"	E5	8" < 13"	D4.5
19" < 30"	F5	13" < 22"	E3
30"-40"	G5	22" < 30"	F3.5
		30"-40"	G3.5
SIZE: 7' x 9'			
≥0.5' < 9"	D7	≥0.5' < 7"	C6.5
9" < 15"	E5	7" < 10"	C3.5
15" < 25"	F5	10" < 14"	D4.5
25" - 34"	G5	14" < 21"	E5
		21" < 29"	F5
		29"-34"	F3.5

TABLE 6 - SLAB DESIGNS ROUND STRUCTURES

SLAB DEPTH	SLAB THICKNESS	REINF. (2-WAY) SCHEDULE
SIZE: 3'-6" DIAMETER		
2'-15"	6" Precast	C6.5
0.5" < 30"	8"	A6
30"-40"	8"	B5.5
SIZE: 4'-0" DIAMETER		
≥0.5" < 19"	8"	A6
19" < 30"	8"	B5.5
30"-40"	8"	C6.5
SIZE: 5'-0" DIAMETER		
≥0.5" < 15"	8"	B5.5
15" < 26"	8"	C6.5
26" < 35"	8"	D7
35"-40"	8"	D4.5
SIZE: 6'-0" DIAMETER		
≥0.5" < 9"	8"	B5.5
9" < 19"	8"	C6.5
19" < 22"	8"	C3.5
22" < 30"	8"	D4.5
30"-40"	8"	E5
SIZE: 7'-0" DIAMETER		
≥0.5" < 8"	8"	C3.5
8" < 16"	8"	D4.5
16" < 23"	8"	E5
23" < 27"	8"	E3
27"-40"	8"	F3.5
SIZE: 8'-0" DIAMETER		
≥0.5" < 10"	8"	D4.5
10" < 16"	8"	E5
16" < 19"	8"	E3
19" < 29"	8"	F3.5
29"-40"	10"	F5
SIZE: 10'-0" DIAMETER		
≥0.5" < 12"	10"	D4.5
12" < 20"	10"	E5
20" < 28"	10"	F5
28"-40"	10"	G3.5
SIZE: 12'-0" DIAMETER		
≥0.5" < 8"	10"	D4.5
8" < 13"	10"	E5
13" < 18"	10"	F5
18" < 26"	10"	G3.5
26"-40"	12"	G3.5

SLAB AND WALL DESIGN TABLE NOTES

1. Size is the inside dimension(s) of a structure.
2. Slab reinforcement is appropriate for top, intermediate, and bottom slabs.
3. Bottom Slabs for precast 3'-6" x 3'-6" rectangular structures at 15' depth or less, may be 6" thick.
4. Slab depth is measured from finished grade to top of slab.
5. Reinforcing schedules with larger areas of steel may be substituted for schedules with smaller bar or wire spacing, except that Schedule B10 may not be substituted for Schedule A6. See Index 425-001 for allowable bar spacing adjustments when larger areas of reinforcing are substituted.

TABLES 5 AND 6

LAST REVISION	DESCRIPTION:
11/01/20	

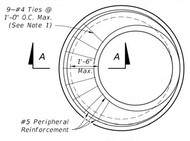
FDOT FY 2022-23 STANDARD PLANS

STRUCTURE BOTTOMS TYPE J AND P

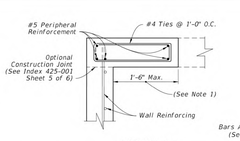
INDEX 425-010 SHEET 4 of 4

ALTERNATE A NOTES:

1. Rotate #4 Bars as required to maintain cover.
2. Construct the top or riser of the structure according the top slab to the "Special Top Slab" details, when the inside diameter of a round structure is not more than 1'-6" larger than the opening in the riser or top slab.
3. Alternate A slab reinforcing not applicable for Type A, B, C, D & E Ditch Bottom Inlets or Type 5 & 9 Gutter Inlets. See Indexes 425-040, 425-041, 425-050, 425-051, and 425-052.

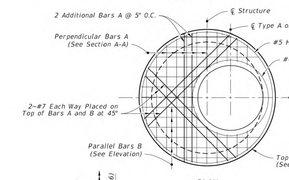


PLAN



SECTION A–A

SPECIAL TOP SLAB

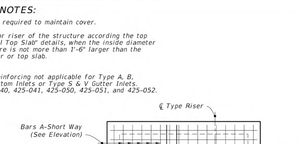


PLAN



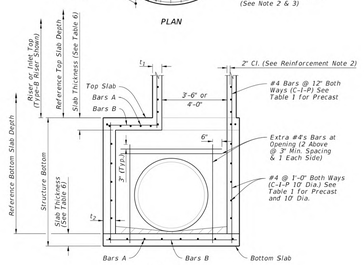
TYPE A - ROUND RISER OPENING

PLAN



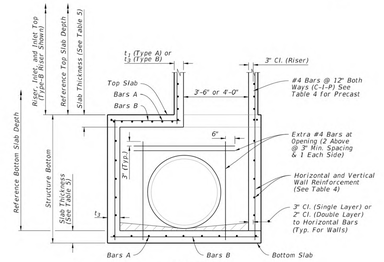
TYPE B - SQUARE RISER OPENING

PLAN



ELEVATION

TYPE J BOTTOM - ALTERNATE A



ELEVATION

TYPE J BOTTOM - ALTERNATE B

DIMENSIONAL AND REINFORCING DETAILS

LAST REVISION	DESCRIPTION:
11/01/20	

FDOT FY 2022-23 STANDARD PLANS

STRUCTURE BOTTOMS TYPE J AND P

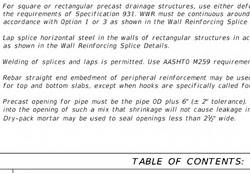
INDEX 425-010 SHEET 2 of 4

GENERAL NOTES:

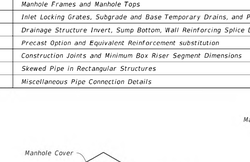
1. Use a 1-piece cover, unless the 2-piece cover is called for in the Plans, except at inlets and manholes with sump bottoms. Use the 2-piece cover when the sump depth exceeds 2', unless otherwise noted.
2. Include "Adjustable" on the cover for Type I manhole adjustable frames.
3. For square or rectangular precast drainage structures, use either deformed or smooth WWR meeting the requirements of Specification 931. WWR must be continuous around the box and lapped in accordance with Option 1 or 3 as shown in the Wall Reinforcing Splice Details.
4. Lap splice horizontal steel in the walls of rectangular structures in accordance with Option 1, 2 or 3 as shown in the Wall Reinforcing Splice Details.
5. Welding of splices and laps is permitted. Use AASHTO M259 requirements and restrictions on welds.
6. Rebar straight end embedment of peripheral reinforcement may be used in lieu of ACI standard hooks for top and bottom slabs, except when hooks are specifically called for in the Plans.
7. Precast opening for pipe must be the pipe OD plus 6" (± 2" tolerance). Use mortar to seal the pipe into the opening of such a mix that shrinkage will not cause leakage into or out of the structure. Dry-pack mortar may be used to seal openings less than 2½" wide.

TABLE OF CONTENTS:

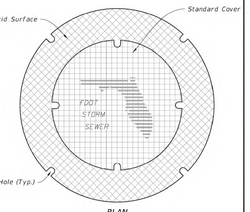
Sheet	Description
1	General Notes, Contents, Manhole Top Overview, and Manhole Covers
2	Manhole Frames and Manhole Tops
3	Inlet Locking Grates, Subgrade and Base Temporary Drains, and Pipe to Structure Filter Fabric Wrap
4	Drainage Structure Invert, Sump Bottom, Wall Reinforcing Splice Details, and Typical Slab to Wall Details
5	Precast Option and Equivalent Reinforcement substitution
6	Construction Joints and Minimum Box Riser Segment Dimensions
7	Skewed Pipe in Rectangular Structures
8	Miscellaneous Pipe Connection Details



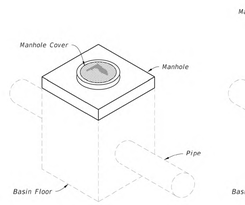
PLAN



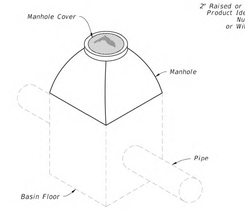
BOTTOM



PLAN

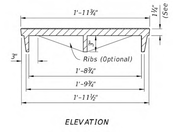


TYPE 7



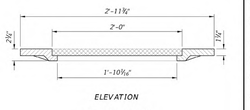
TYPE 8

MANHOLE TOPS



ELEVATION

1-PIECE COVER



ELEVATION

2-PIECE COVER

MANHOLE COVERS

LAST REVISION	DESCRIPTION:
11/01/20	

FDOT FY 2022-23 STANDARD PLANS

SUPPLEMENTARY DETAILS FOR DRAINAGE STRUCTURES

INDEX 425-001 SHEET 1 of 8

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CRESSWIND DELAND PHASE 2A, 2B, 3A & 3B

DRAINAGE DETAILS

PREPARED FOR: KH CW DELAND LLC

NO.	DATE	DESCRIPTION
1	06/09/2023	DETAILS UPDATED
	02/20/2023	REVIEW SUBMITTAL
	DATE	DESCRIPTION

PROJECT NO:	KGA-CD-1031
FILE:	DD
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

This item has been digitally signed and sealed by Strickland T. Smith, P.E. on the date indicated here.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

STRICKLAND T. SMITH
DATE:
LICENSE NO. 50652

C-315

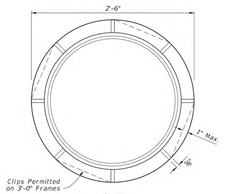
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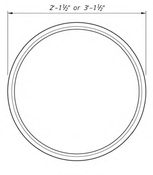
TABLE 1
WEIGHT OF CASTINGS (lb)

Frame Type	2'-0" OPENING		3'-0" OPENING		
	Frame	Cover (Std.)	Frame	2-Piece Cover	
				Inside	Outside	Total
I	155	190	220	190	220	410
II	145	190	255	190	220	410
III	90	190	180	190	220	410

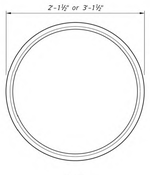
NOTE:
Frame Type I in Table 1, includes Adjustable Frames.
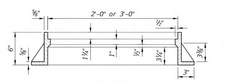


PLAN



PLAN

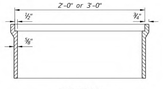


PLAN



ELEVATION


WALL SECTION

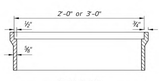


ELEVATION

TYPE I
(For Manholes)

TYPE II
(For Curb Inlets Types 1, 2, 3, & 4)

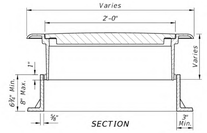

WALL SECTION



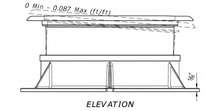
ELEVATION

TYPE III
(For Curb Inlets Types 7 & 8)

MANHOLE FRAMES

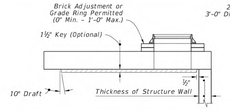


SECTION

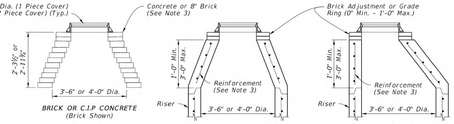


ELEVATION

TYPE I ADJUSTABLE FRAME



TYPE 7



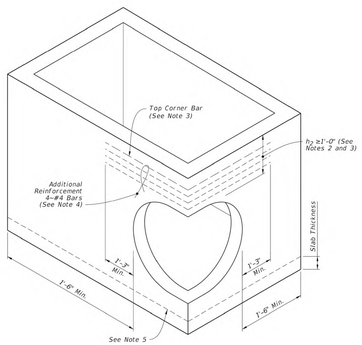
TYPE 8

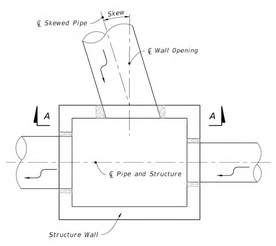
NOTES:
1. Use Class II concrete for Manhole top Type 7 slabs.
2. Manhole top Type 7 slabs may be of cast-in-place or precast construction. The optional key is for precast tops and in lieu of dowels. Omit frame and slab openings when top is used over a junction box.
3. Manhole top Type 8 may be of cast-in-place, precast concrete construction, or brick construction. For concrete construction, use the same concrete and steel reinforcement as the supporting wall unit. An eccentric cone may be used.
4. Use construction joint options, as shown on Sheet 6 to secure manhole tops to structures.
5. Frames may be adjusted to a maximum 12" height with brick or precast ASTM C478 grade rings.
6. Manhole top Type 8 may be substituted for a Type 7, if the minimum dimensions are not reduced.
7. Manhole top Type 7 may be substituted for Type 8, if the minimum thickness (h) above pipe opening cannot be maintained with Type 8.

TYPE I ADJUSTABLE FRAME — MANHOLE TOPS

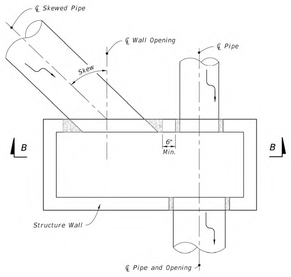
MANHOLE FRAMES AND MANHOLE TOPS

LAST REVISION	DESCRIPTION:	FDOT	FY 2022-23 STANDARD PLANS	SUPPLEMENTARY DETAILS FOR DRAINAGE STRUCTURES	INDEX	SHEET
11/01/20	REVISION				425-001	2 of 8

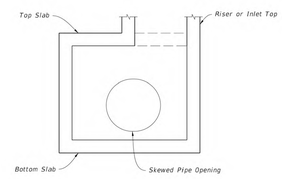




PLAN

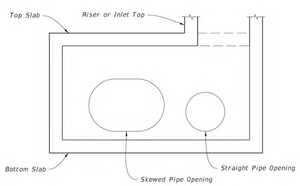


PLAN



SECTION A-A

SKEWS ≤ 45°
(Not Centered)



SECTION B-B

SKEWS > 45°
(Not Centered)

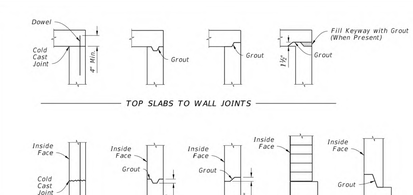
NOTES:
1. Submit Shop Drawings of corner openings for approval by the Engineer.
2. h_2 may be less than 1'-0" when a minimum 1'-0" deep segment, 8" slab or curb inlet is provided above the corner opening.
3. For inlet segments at finish grade elevation, substitute a #8 Bar for the top corner bar when $1'\text{-}0" \le h_2 < 2'\text{-}0"$.
4. Install bars continuously around corner and evenly spaced. Tie additional reinforcement to the outside of vertical wall reinforcement.
5. Dowel construction joint or monolithically cast wall and slabs.

PIPE OPENING AT CORNER

SKEWED PIPE IN RECTANGULAR STRUCTURES
(See Table 4 on Sheet 8)

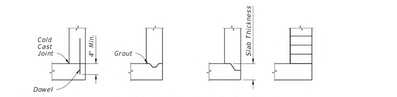
SKEWED PIPE IN RECTANGULAR STRUCTURES

LAST REVISION	DESCRIPTION:	FDOT	FY 2022-23 STANDARD PLANS	SUPPLEMENTARY DETAILS FOR DRAINAGE STRUCTURES	INDEX	SHEET
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TOP SLABS TO WALL JOINTS

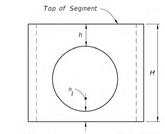
WALL JOINTS

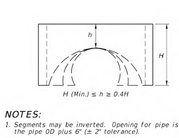


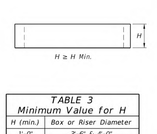
BOTTOM SLAB TO WALL JOINTS

NOTES:
1. One or more types of joints may be used in a single structure, except brick wall structure. Brick wall construction is permitted on circular units only.
2. All grouted joints are to have a maximum thickness of 1".
3. Keyways are to be a minimum of 1½" deep.
4. Joint dowels are to be #4 bars, 12" long with a minimum of 6 bars per joint approximately evenly spaced for circular structures or at maximum 12" spacing for rectangular structures. Bars may be either Adhesive Bonded Dowels in accordance with Specification 416, or placed approximately 6" into fresh concrete leaving the remainder to extend into the secondary cast. Welded wire reinforcement may be substituted for the dowel bar in accordance with the equivalent steel area table on Sheet 5.
5. Minimum cover on dowel reinforcing bars is 2" to outside face of structure.
6. Seal joints between wall segments and between wall segments and top or bottom slabs with preformed plastic gasket material inaccordance with Specification 430 or non-shrink grout in accordance with Specification 934.
7. Insert products approved by the Engineer may be used in lieu of dowel embedment.

CONSTRUCTION JOINT OPTIONS





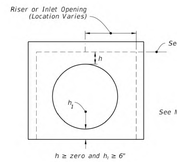


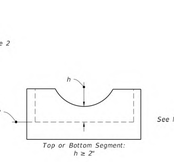
NOTES:
1. Segments may be inverted. Opening for pipe is the pipe OD plus 6" (± 2" tolerance).
2. If h can not be attained, then a top or bottom slab must be attached to the segment as shown below.

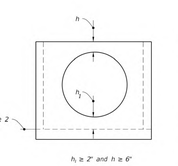
TABLE 3
Minimum Value for H

H (min.)	Box or Riser Diameter
1'-0"	3'-6" & 4'-0"
1'-6"	5'-0" & 6'-0"
2'-0"	>6'-0"

RISER SEGMENTS OTHER THAN DOWEL







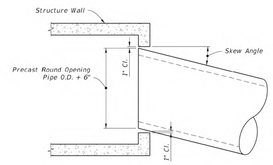
NOTES:
1. h may be less than 6" when approved by the Engineer, but not for inlet segments at finish grade elevation.
2. Dowel construction joint or monolithic cast only.

SEGMENTS FOR SLAB TO WALL DOWEL CONSTRUCTION JOINTS OR MONOLITHIC CAST

CONSTRUCTION JOINT OPTIONS — MINIMUM BOX AND RISER SEGMENT DIMENSIONS

CONSTRUCTION JOINT OPTIONS AND MINIMUM BOX AND RISER SEGMENT DIMENSIONS

LAST REVISION	DESCRIPTION:	FDOT	FY 2022-23 STANDARD PLANS	SUPPLEMENTARY DETAILS FOR DRAINAGE STRUCTURES	INDEX	SHEET
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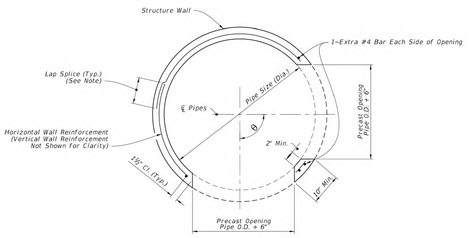
PLAN VIEW

TABLE 4 - MAXIMUM PIPE SKEW FOR PRECAST ROUND OPENINGS

	WALL THICKNESS	PIPE SIZE										
		18"	24"	30"	36"	42"	48"	54"	60"	66"	72"	78"	84"
MAXIMUM SKEW ANGLE	8"	19°	17°	16°	16°	15°	14°	14°	13°	13°	12°	12°	12°
	6"	21°	20°	18°	17°	17°	16°	15°	15°	14°	14°	13°	13°

NOTE:
These values are based on 2" clearance for precast structures. Larger skews are possible for Cast-In-Place Structures or elliptical pipe openings when approved by the Engineer.

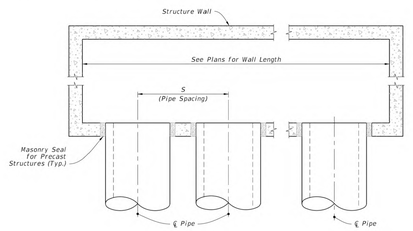
MAXIMUM PIPE SKEW FOR PRECAST ROUND OPENINGS



PLAN VIEW

NOTE:
Lap splice: 20 bar diameter for deformed wire or bar, but not less than vertical wire spacing plus 2" for WWR or 40 bar diameters for smooth wire.

MULTIPLE PIPE CONNECTIONS - PRECAST ROUND STRUCTURES



PLAN VIEW

TABLE 5 - MINIMUM SIZES FOR MULTIPLE PARALLEL PIPE CONNECTIONS

PIPE SIZE	PIPE SPACING (S)
18"	2'-10"
24"	3'-5"
30"	4'-3"
36"	5'-1"
42"	6'-0"
48"	6'-9"
54"	7'-8"
60"	8'-6"
66"	9'-0"
72"	10'-0"
78"	10'-9"
84"	11'-8"

MULTIPLE PARALLEL PIPE CONNECTIONS - RECTANGULAR STRUCTURES

MISCELLANEOUS PIPE CONNECTION DETAILS

LAST REVISION	DESCRIPTION:	FDOT	FY 2022-23 STANDARD PLANS	SUPPLEMENTARY DETAILS FOR DRAINAGE STRUCTURES	INDEX	SHEET
11/01/20	REVISION				425-001	8 of 8

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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

DRAINAGE DETAILS

PREPARED FOR: KH CW DELAND LLC

#	DESCRIPTION	DATE
1	DETAILS UPDATED	06/09/2023
	REVIEW SUBMITTAL	02/20/2023
	DESCRIPTION	DATE

PROJECT NO: KGA-CD-1031
FILE: DD
DESIGN BY: DMYTRYK
DRAWN BY: JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

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STRICKLAND T. SMITH
DATE:
LICENSE NO. 50652

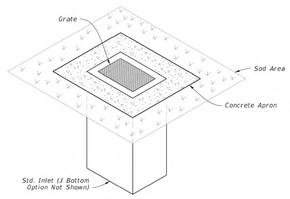
C-316

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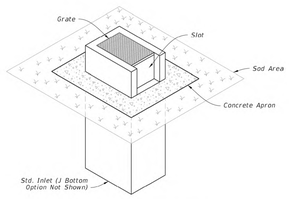
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GENERAL NOTES:

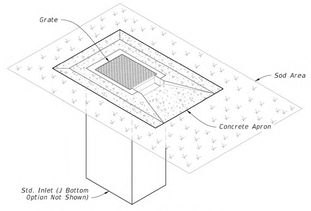
1. Work this Index with Index 425-001 and Index 425-010.
2. Chamfer all exposed edges and corners ¾" chamfer or tooled to ¾" radius.
3. All reinforcing is Grade 60 bars with 2" minimum cover unless otherwise noted. Cut or bend bars for 1½" clearance around pipe opening. Provide one additional #4 bar above and at each side of pipe opening.
4. Use Concrete Apron on inlets without slots and inlets with non-traversable slots only when called for in the Plans.
5. Quantities are for informational and estimating purposes only.



DITCH BOTTOM INLET TYPE C
TRAVERSABLE
(Without Slot - Type D, E, and H Similar, Pipe Connection Not Shown)



DITCH BOTTOM INLET TYPE C
NON-TRAVERSABLE
(Slot > 7" Shown - Type D, E, and H Similar, Pipe Connection Not Shown)

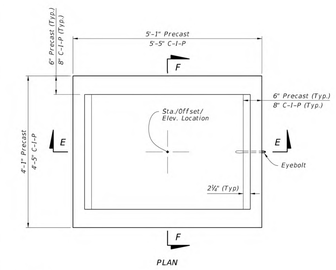


DITCH BOTTOM INLET TYPE C
TRAVERSABLE
(Single Slot < 7" Shown, Double Slot, Type D, and E Similar, Pipe Connection Not Shown)

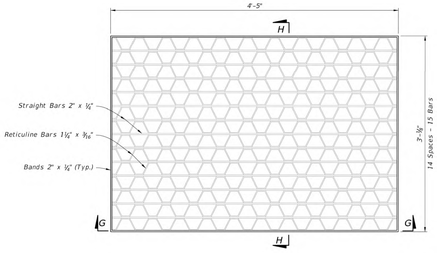
TABLE OF CONTENTS:

Sheet	Description
1	General Notes and Contents
2	Type C - Dimensional, Reinforcing, and Grate Details
3	Type D - Dimensional, Reinforcing, and Grate Details
4	Type E - Dimensional, Reinforcing, and Grate Details
5	Type H (2 & 3 Grate) - Dimensional, Reinforcing, and Steel Grate Details
6	Type H (4 Grate) - Dimensional, Reinforcing, and Steel Grate Details
7	Cast Iron Grate Details
8	Non-Traversable Inlet Details
9	Traversable Inlet Without Slot Details
10	Traversable Inlet With Slot Details
11	Case 1 - Add Traversable Slots to Existing Inlets
12	Case 2 - Add Traversable Slots (Partial) to Existing Inlets
13	Case 3 - Add Traversable Slots (Partial) to Existing Inlets and Ditch Block
14	Alternate A Structure Bottom - Top Slab Details

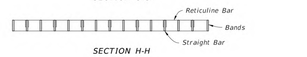
LAST REVISION	DESCRIPTION:	FDOT	FY 2022-23 STANDARD PLANS	DITCH BOTTOM INLET TYPE C, D, E, AND H	INDEX	SHEET
11/01/20	REVISION				425-052	1 of 14



PLAN

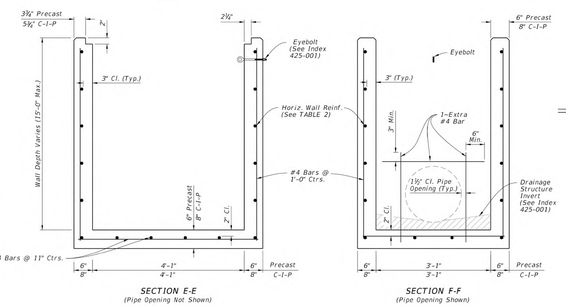


SECTION G-G



SECTION H-H

STEEL GRATE DETAIL
(Approx. 190 lbs. - See Sheet 7 For Cast Iron Grates)



SECTION E-E
(Pipe Opening Not Shown)

SECTION F-F
(Pipe Opening Shown)

TABLE 2
HORIZONTAL WALL REINFORCING SCHEDULE

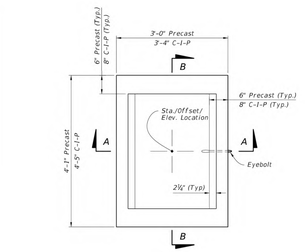
WALL DEPTH	SCHEDULE	AREA (in²/ft.)	MAX. SPACING BARS	MAX. SPACING WWR
0' - 6'	A12	0.20	12"	8"
6' - 10'	A6	0.20	6"	5"
10' - 13'	A4	0.20	4"	3"
10' - 15'	B5.5	0.24	5½"	5"

NOTES:
1. Grate, Concrete Apron, and Sod not shown on structure details.
2. See Sheet 8, 9, and 10 for Concrete Apron and Sodded Area details.
3. Cast Iron Grate is not permitted on inlet Type D.

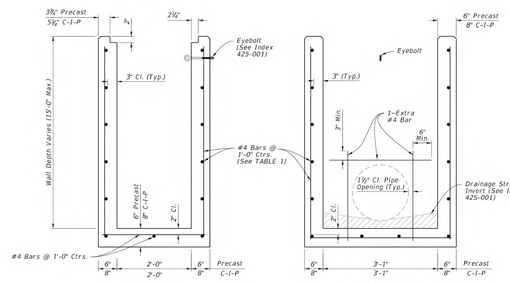
DIMENSIONAL AND REINFORCING DETAILS

TYPE D - DIMENSIONAL, REINFORCING, AND STEEL GRATE DETAILS

LAST REVISION	DESCRIPTION:	FDOT	FY 2022-23 STANDARD PLANS	DITCH BOTTOM INLET TYPE C, D, E, AND H	INDEX	SHEET
11/01/20	REVISION				425-052	3 of 14

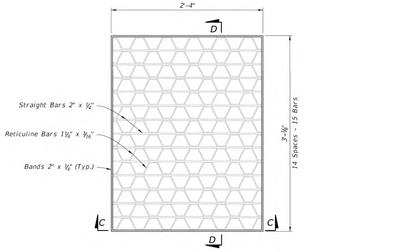


PLAN



SECTION A-A
(Pipe Opening Not Shown)

SECTION B-B
(Pipe Opening Shown)



SECTION C-C



SECTION D-D

STEEL GRATE DETAIL
(Approx. 104 Lbs. - See Sheet 7 For Cast Iron Grates)

TABLE 1
HORIZONTAL WALL REINFORCING SCHEDULE

WALL DEPTH	SCHEDULE	AREA (in²/ft.)	MAX. SPACING BARS	MAX. SPACING WWF
0' - 15'	A12	0.20	12"	8"

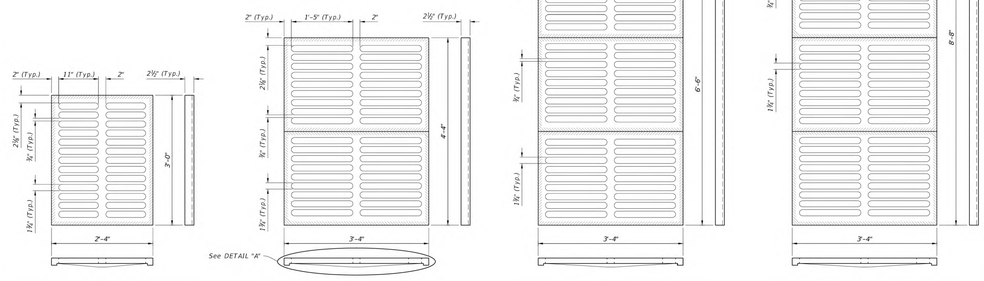
NOTES:
1. Grate, Concrete Apron, and Sod not shown on structure detail.
2. See Sheet 8, 9, and 10 for Concrete Apron and Sodded Area details.

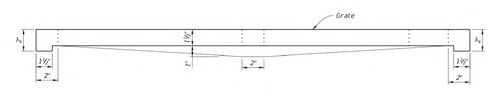
DIMENSIONAL AND REINFORCING DETAILS

TYPE C - DIMENSIONAL, REINFORCING, AND STEEL GRATE DETAILS

LAST REVISION	DESCRIPTION:	FDOT	FY 2022-23 STANDARD PLANS	DITCH BOTTOM INLET TYPE C, D, E, AND H	INDEX	SHEET
11/01/20	REVISION				425-052	2 of 14

NOTES:
1. Steel Grates are required on inlets with traversable slots and on inlets where bicycle traffic is anticipated.
2. Cast Iron Grates are not permitted on Inlet Type D.





DETAIL "A"
(Typical Section)

CAST IRON GRATE DETAILS

LAST REVISION	DESCRIPTION:	FDOT	FY 2022-23 STANDARD PLANS	DITCH BOTTOM INLET TYPE C, D, E, AND H	INDEX	SHEET
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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

DRAINAGE DETAILS

PREPARED FOR: KH CW DELAND LLC

NO.	DATE	DESCRIPTION
1	06/09/2023	DETAILS UPDATED
	02/20/2023	REVIEW SUBMITTAL

PROJECT NO:	KGA-CD-1031
FILE:	DD
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

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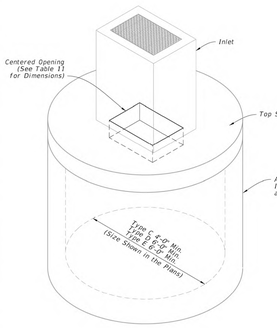
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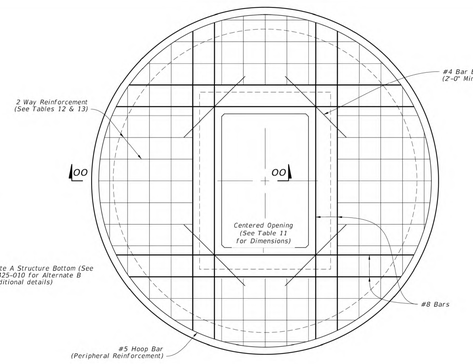
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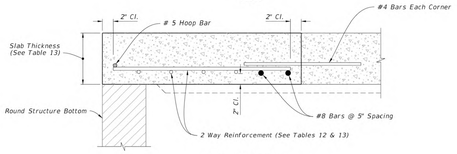
ISOMETRIC VIEW

TABLE 11
TOP SLAB OPENINGS

DIAMETER	OPENING SIZE	
	Min.	Max.
4'-0"	2'-0" x 3'-1"	2'-0" x 3'-1"
5'-0"	2'-0" x 3'-1"	3'-1" x 4'-1"
6'-0"	2'-0" x 3'-1"	3'-0" x 4'-6"
8'-0"	2'-0" x 3'-1"	3'-0" x 4'-6"



PLAN



SECTION OO-OO

TOP SLAB REINFORCEMENT DETAILS

TABLE 12
TOP SLAB REINFORCING SCHEDULE

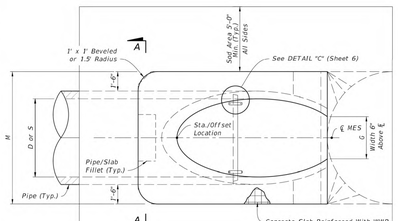
SCHEDULE	GRADE 60 (BAR) OR 65 KSI & 70 KSI (WIRE REINFORCING) $In.^2/ft.$
A	0.20
B	0.24
C	0.37
D	0.53
E	0.73
F	1.06
G	1.45

TABLE 13
TOP SLAB WITH CENTERED OPENING

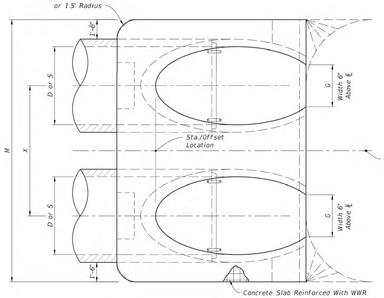
STRUCTURE DEPTH	SLAB THICKNESS	REINFORCING (2 WAY) SCHEDULE
SIZE: 4'-0"		
≥0.5'<40'	9½"	B
SIZE: 5'-0"		
≥0.5'<30'	9½"	C
30'-40'	9½"	D
SIZE: 6'-0"		
≥0.5'<8'	11½"	B
8'<18'	11½"	C
18'<30'	11½"	D
30'<37'	11½"	E
37'-40'	11½"	G
SIZE: 8'-0"		
≥0.5'<9'	11½"	C
9'<15'	11½"	D
15'<23'	11½"	E
23'<33'	11½"	E
33'-40'	11½"	G

ALTERNATE A STRUCTURE BOTTOM - TOP SLAB DETAILS

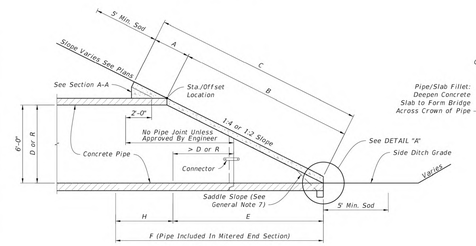
LAST REVISION 11/01/20	REVISION	DESCRIPTION:	FDOT	FY 2022-23 STANDARD PLANS	DITCH BOTTOM INLET TYPE C, D, E, AND H	INDEX 425-052	SHEET 14 of 14



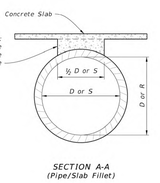
PLAN - SINGLE PIPE



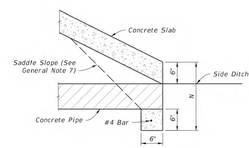
PLAN - MULTIPLE PIPE



ELEVATION



SECTION A-A (Pipe/Slab Fillet)



DETAIL "A"

ROUND CONCRETE PIPE
(Elliptical Pipe Similar)

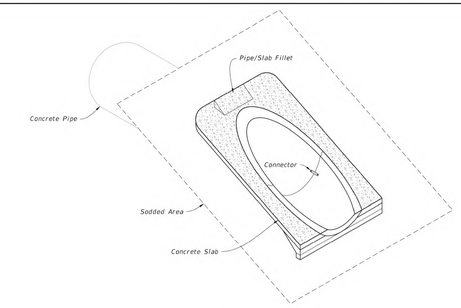
NOTE: See Table 1 on Sheet 3 for Dimensions and Quantities.

SINGLE AND MULTIPLE CONCRETE PIPE

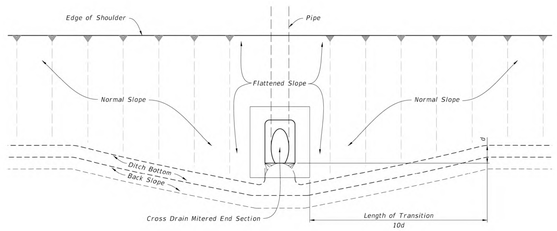
LAST REVISION 11/01/19	REVISION	DESCRIPTION:	FDOT	FY 2022-23 STANDARD PLANS	CROSS DRAIN MITERED END SECTION	INDEX 430-021	SHEET 2 of 6

GENERAL NOTES:

1. Unless otherwise designated in the plans, concrete pipe mitered end sections may be used with any type of cross drain pipe; corrugated steel pipe mitered end sections may be used with any type of cross drain pipe except aluminum pipe; and, corrugated aluminum mitered end sections may be used with any type of cross drain pipe except steel pipe. When bituminous coated metal pipe is specified for cross drain pipe, construct the mitered end sections with like pipe or concrete pipe. When the mitered end section pipe is dissimilar to the cross drain pipe, construct a concrete jacket in accordance with Index 430-001.
2. Use either corrugated metal or concrete mitered end sections for corrugated polyethylene pipe (HDPE), polyvinyl-chloride pipe (PVC), steel reinforced polyethylene pipe (SRPE), and polypropylene pipe (PP). When used in conjunction with corrugated mitered end sections, make connection using either a formed metal band specifically designated to join HDPE, PVC, SRPE, or PP pipe, with metal pipe. When used in conjunction with a concrete mitered end sections, construct concrete jacket in accordance with Index 430-001.
3. Class NS concrete cast-in-place reinforced slabs are required for all sizes of cross drain pipes. Construct slabs at 5½" thick, unless 3" thickness is called for in the Plans.
4. Select lengths of concrete pipe that avoid excessive connections in the assembly of the mitered end section.
5. Repair corrugated metal pipe galvanizing that is damaged during beveling and perforating.
6. When existing multiple cross drain pipes are spaced other than the dimensions shown in this Index, have nonparallel axes, or non-uniform sections, either construct the mitered end sections separately as single pipe or collectively as multiple pipe end sections as directed by the Engineer.
7. Saddle Slope:
   1:4 Miter – Slope to ℄ of pipe for round pipes less than or equal to 18" diameter and 1:1 for round pipes greater than or equal to 24" diameter.
   Slope to the major axis for elliptical pipes 24"x38" or smaller and 1:2 for pipes 29"x45" or larger.
   Slope to the span line for pipe arch 28"x20" or smaller and 1:2 for pipe arch 35"x24" or larger.
   1:2 Miter – Slope to ℄ of pipe for round pipes less than or equal to 18"diameter and 1:2 for round pipes greater than or equal to 24" diameter.
   Slope to the major axis for elliptical pipes 29"x45" or smaller and 1:1 for pipes 34"x53" or larger.
   Slope 1:1 for all pipe arch sizes.
8. Quantities shown are for estimating purposes only.



CROSS DRAIN MITERED END SECTION
(Concrete Pipe Shown, Corrugated Metal Pipe Similar)



SLOPE AND DITCH TRANSITIONS

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2	Single and Multiple Concrete Pipe
3	Concrete Pipe Dimensions and Quantities
4	Single and Multiple Corrugated Metal Pipe
5	Corrugated Metal Pipe Dimensions and Quantities
6	Concrete Pipe Connections and Corrugated Metal Pipe (CMP) Anchor Detail

LAST REVISION 11/01/19	REVISION	DESCRIPTION:	FDOT	FY 2022-23 STANDARD PLANS	CROSS DRAIN MITERED END SECTION	INDEX 430-021	SHEET 1 of 6

TABLE 1
SINGLE AND MULTIPLE CONCRETE PIPE DIMENSIONS AND QUANTITIES

	Dia. D	Rise R	Span S	X	A	B	C	E	F	G	H	M: Single Pipe	M: Double Pipe	M: Triple Pipe	M: Quad. Pipe	N	59" CONC. SLAB (CY) (See General Note 3): Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe	3" CONC. SLAB (CY) (See General Note 3): Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe	SODDING (SY): Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe
Round Concrete Pipe 1:2 Slope	15"	—	—	2'-7"	1.92'	2.18'	4.10'	2.06'	5'	1.22'	2.9'	4.63'	7.21'	9.79'	12.37'	1.19'	0.38	0.58	0.77	0.96	0.27	0.41	0.54	0.67	21	24	27	30
	18"	—	—	2'-10"	1.97'	2.74'	4.71'	2.56'	6'	1.41'	3.4'	4.92'	7.75'	10.58'	13.42'	1.21'	0.44	0.65	0.87	1.09	0.31	0.45	0.60	0.75	22	25	28	31
	24"	—	—	3'-5"	2.06'	3.05'	5.91'	3.56'	7'	1.73'	3.4'	5.50'	8.92'	12.33'	15.75'	1.25'	0.54	0.83	112	1.42	0.39	0.59	0.79	1.00	24	28	32	35
	30"	—	—	4'-3"	2.15'	4.95'	7.10'	4.56'	8'	2.00'	3.4'	6.08'	10.33'	14.58'	18.83'	1.29'	0.66	1.09	1.50	1.91	0.46	0.76	1.04	1.32	26	31	35	40
	36"	—	—	5'-1"	2.25'	6.08'	8.33'	5.56'	9'	2.24'	3.4'	6.67'	11.75'	16.83'	21.92'	1.33'	0.81	1.38	1.95	2.51	0.55	0.94	1.33	1.71	28	34	39	45
	42"	—	—	6'-0"	2.34'	7.21'	9.55'	6.56'	10'	2.45'	3.4'	7.25'	13.25'	19.25'	25.25'	1.36'	0.97	1.70	2.45	3.19	0.66	1.15	1.66	2.15	30	37	43	50
	48"	—	—	6'-9"	2.43'	8.33'	10.76'	7.56'	11'	2.65'	3.4'	7.83'	14.58'	21.33'	28.08'	1.42'	1.13	2.04	2.93	3.84	0.76	1.37	1.96	2.57	32	39	47	54
	54"	—	—	7'-8"	2.52'	9.44'	11.96'	8.56'	12'	2.83'	3.4'	8.42'	16.08'	23.75'	31.42'	1.46'	1.31	2.44	3.58	4.72	0.87	1.62	2.38	3.14	34	42	51	59
	60"	—	—	8'-6"	2.62'	10.56'	13.18'	9.56'	13'	3.00'	4.0'	9.00'	17.50'	26.00'	34.50'	1.50'	1.51	2.89	4.28	5.68	0.99	1.90	2.81	3.73	36	45	55	64
	66"	—	—	9'-2"	2.71'	11.68'	14.39'	10.56'	15'	3.18'	4.0'	9.58'	18.75'	27.92'	37.08'	1.54'	1.68	3.25	4.84	6.43	1.11	2.15	3.21	4.27	38	48	58	68
	72"	—	—	10'-0"	2.80'	12.80'	15.60'	11.56'	16'	3.30'	4.0'	10.16'	20.16'	30.16'	40.16'	1.58'	1.89	3.74	5.59	7.45	1.24	2.46	3.68	4.90	40	51	62	73
Round Concrete Pipe 1:4 Slope	15"	—	—	2'-7"	2.27'	4.09'	6.36'	4.03'	8'	1.22'	4.0'	4.63'	7.21'	9.79'	12.37'	1.19'	0.57	0.87	1.15	1.44	0.40	0.61	0.80	1.00	23	26	29	32
	18"	—	—	2'-10"	2.36'	5.12'	7.48'	5.03'	9'	1.41'	4.0'	4.92'	7.75'	10.58'	13.42'	1.21'	0.66	0.99	1.31	1.65	0.47	0.69	0.91	1.14	25	28	31	35
	24"	—	—	3'-5"	2.53'	7.18' △	9.71'	7.03' △	11'	1.73'	4.0'	5.50'	8.92'	12.33'	15.75'	1.25'	0.85	1.30	1.75	2.20	0.60	0.90	1.21	1.52	28	32	36	40
	30"	—	—	4'-3"	2.70'	9.25'	11.95'	9.03'	13'	2.00'	4.0'	6.08'	10.33'	14.58'	18.83'	1.29'	1.10	1.74	2.39	3.05	0.76	1.19	1.63	2.07	31	36	41	46
	36"	—	—	5'-1"	2.87'	11.31' ◇	14.16'	11.03' ◇	15'	2.24'	4.0'	6.67'	11.75'	16.83'	21.92'	1.33'	1.32	2.21	3.08	3.96	0.89	1.48	2.05	2.63	34	40	46	52
	42"	—	—	6'-0"	3.05'	13.37'	16.42'	13.03'	17'	2.45'	4.0'	7.25'	13.25'	19.25'	25.25'	1.38'	1.58	2.76	3.91	5.09	1.05	1.82	2.57	3.34	38	44	51	58
	48"	—	—	6'-9"	3.22'	15.43'	18.65'	15.03'	19'	2.65'	4.0'	7.83'	14.58'	21.33'	28.08'	1.42'	1.85	3.30	4.73	6.17	1.21	2.15	3.07	4.00	41	48	56	63
	54"	—	—	7'-8"	3.39'	17.49'	20.88'	17.03'	21'	2.83'	4.0'	8.42'	16.08'	23.75'	31.42'	1.46'	2.14	3.95	5.77	7.58	1.39	2.55	3.72	4.88	44	52	61	69
	60"	—	—	8'-6"	3.56'	19.55'	23.11'	19.03'	23'	3.00'	4.0'	9.00'	17.50'	26.00'	34.50'	1.50'	2.45	4.66	6.87	9.07	1.59	3.02	4.44	5.86	47	56	66	75
	66"	—	—	9'-2"	3.73'	21.62'	25.35'	21.03'	25'	3.18'	4.0'	9.58'	18.75'	27.92'	37.08'	1.54'	2.88	5.54	8.18	10.84	1.91	3.66	5.40	7.15	49	59	69	80
	72"	—	—	10'-0"	3.91'	23.68'	27.59'	23.03'	27'	3.30'	4.0'	10.16'	20.16'	30.16'	40.16'	1.58'	3.54	6.61	9.87	13.13	2.12	4.18	6.24	8.30	52	63	74	85
Elliptical Concrete Pipe 1:2 Slope	—	12"	18"	2'-10"	1.97'	1.62'	3.59'	1.56'	4'	1.50'	2.4'	4.92'	7.75'	10.58'	13.42'	1.21'	0.30	0.49	0.67	0.85	0.19	0.33	0.45	0.57	21	24	27	30
	—	14"	23"	3'-4"	2.01'	1.99'	4.00'	1.89'	5'	1.90'	3.1'	5.38'	8.71'	12.04'	15.38'	1.23'	0.37	0.59	0.81	1.02	0.25	0.40	0.55	0.69	22	26	29	33
	—	19"	30"	4'-0"	2.11'	2.92'	5.03'	2.73'	6'	2.37'	3.3'	6.04'	10.04'	14.04'	18.04'	1.27'	0.50	0.80	1.09	1.39	0.34	0.55	0.75	0.95	24	28	33	37
	—	24"	38"	5'-0"	2.20'	3.85'	6.05'	3.56'	7'	2.85'	3.4'	6.79'	11.79'	16.79'	21.79'	1.31'	0.62	1.03	1.45	1.86	0.43	0.71	1.00	1.28	26	31	37	42
	—	29"	45"	5'-11"	2.34'	4.79'	7.13'	4.39'	8'	3.19'	3.6'	7.50'	13.42'	19.33'	25.25'	1.38'	0.75	1.30	1.84	2.39	0.52	0.90	1.27	1.65	28	34	41	47
	—	34"	53"	7'-0"	2.43'	5.72'	8.15'	5.23'	9'	3.57'	3.8'	8.25'	15.25'	22.25'	29.25'	1.42'	0.90	1.61	2.32	3.03	0.62	1.11	1.60	2.09	30	37	45	53
	—	38"	60"	7'-10"	2.52'	6.46'	8.98'	5.89'	9'	3.95'	3.1'	8.92'	16.75'	24.58'	32.42'	1.46'	1.03	1.89	2.74	3.60	0.70	1.29	1.87	2.46	31	40	49	57
	—	43"	68"	8'-11"	2.62'	7.39'	10.01'	6.73'	10'	4.28'	3.3'	9.67'	18.58'	27.50'	36.42'	1.50'	1.19	2.26	3.33	4.40	0.81	1.54	2.26	2.99	33	43	53	63
	—	48"	76"	9'-11"	2.71'	8.33'	11.04'	7.56'	11'	4.59'	3.4'	10.42'	20.33'	30.25'	40.17'	1.54'	1.38	2.65	3.93	5.21	0.93	1.79	2.66	3.53	35	46	57	68
	—	53"	83"	10'-8"	2.80'	9.26'	12.06'	8.39'	12'	4.77'	3.6'	11.08'	21.75'	32.42'	43.08'	1.58'	1.55	3.03	4.50	5.96	1.04	2.04	3.03	4.02	37	49	61	73
	—	58"	91"	11'-5"	2.90'	10.19'	13.09'	9.23'	13'	5.01'	3.8'	11.83'	23.50'	35.17'	46.83'	1.63'	1.75	3.47	5.20	6.93	1.17	2.33	3.49	4.66	39	52	65	78
	—	12"	18"	2'-10"	2.36'	3.06'	5.42'	3.03'	5'	1.50'	2.0'	4.92'	7.75'	10.58'	13.42'	1.21'	0.45	0.68	0.92	1.14	0.30	0.45	0.61	0.76	23	26	29	32
	—	14"	23"	3'-4"	2.44'	3.75'	6.19'	3.70'	6'	1.90'	2.3'	5.38'	8.71'	12.04'	15.38'	1.23'	0.53	0.83	113	1.42	0.36	0.56	0.76	0.95	24	28	32	35
	—	19"	30"	4'-0"	2.62'	5.47'	8.09'	5.36'	8'	2.37'	2.6'	6.04'	10.04'	14.04'	18.04'	1.27'	0.74	115	157	198	0.51	0.79	1.08	1.36	27	32	36	40
	—	24"	38"	5'-0"	2.79'	7.18'	9.97'	7.03'	10'	2.85'	3.0'	6.79'	11.79'	16.79'	21.79'	1.31'	0.97	1.57	2.19	2.81	0.68	110	1.53	1.96	30	36	41	47
	—	29"	45"	5'-11"	3.05'	8.90'	11.95'	8.70'	12'	3.39'	3.3'	7.50'	13.42'	19.33'	25.25'	1.38'	1.22	2.07	2.92	3.77	0.86	1.45	2.04	2.63	33	40	46	53
	—	34"	53"	7'-0"	3.22'	10.62'	13.84'	10.36'	13'	3.57'	2.6'	8.25'	15.25'	22.25'	29.25'	1.42'	1.48	2.62	3.77	4.92	1.02	1.81	2.60	3.39	36	44	52	59
	—	38"	60"	7'-10"	3.39'	11.99'	15.38'	11.70'	15'	3.95'	3.3'	8.92'	16.75'	24.58'	32.42'	1.46'	1.72	3.12	4.53	5.92	1.18	2.14	3.10	4.05	38	47	56	65
	—	43"	68"	8'-11"	3.56'	13.71'	17.27'	13.36'	17'	4.28'	3.6'	9.67'	18.58'	27.50'	36.42'	1.50'	2.02	3.78	5.56	7.32	1.38	2.58	3.79	4.99	41	51	61	71
	—	48"	76"	9'-11"	3.73'	15.43'	19.16'	15.03'	19'	4.59'	4.0'	10.42'	20.33'	30.25'	40.17'	1.54'	2.34	4.49	6.64	8.79	1.59	3.05	4.51	5.97	44	55	66	77
	—	53"	83"	10'-8"	3.91'	17.15'	21.06'	16.70'	20'	4.77'	3.3'	11.08'	21.75'	32.42'	43.08'	1.58'	2.66	5.17	7.66	10.16	1.80	3.50	5.19	6.88	47	59	71	83
	—	58"	91"	11'-8"	4.08'	18.87'	22.95'	18.36'	22'	5.01'	3.6'	11.83'	23.50'	35.17'	46.83'	1.63'	3.02	5.98	8.95	11.90	2.04	4.04	6.05	8.05	50	63	76	89

B

E

△ 6.42' △ 6.25' Dimensions permitted to allow use of 8' standard pipe lengths.

◇ 10.40' ◇ 10.10' Dimensions permitted to allow use of 12' standard pipe lengths.

CONCRETE PIPE DIMENSIONS AND QUANTITIES

LAST REVISION 11/01/19	REVISION	DESCRIPTION:	FDOT	FY 2022-23 STANDARD PLANS	CROSS DRAIN MITERED END SECTION	INDEX 430-021	SHEET 3 of 6

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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

DRAINAGE DETAILS

PREPARED FOR: KH CW DELAND LLC

NO.	DATE	DESCRIPTION
1	06/09/2023	DETAILS UPDATED
	02/20/2023	REVIEW SUBMITTAL

PROJECT NO:	KGA-CD-1031
FILE:	DD
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

This item has been digitally signed and sealed by Strickland T. Smith, P.E. on the date indicated here.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

STRICKLAND T. SMITH
DATE:
LICENSE NO. 50652

C-318

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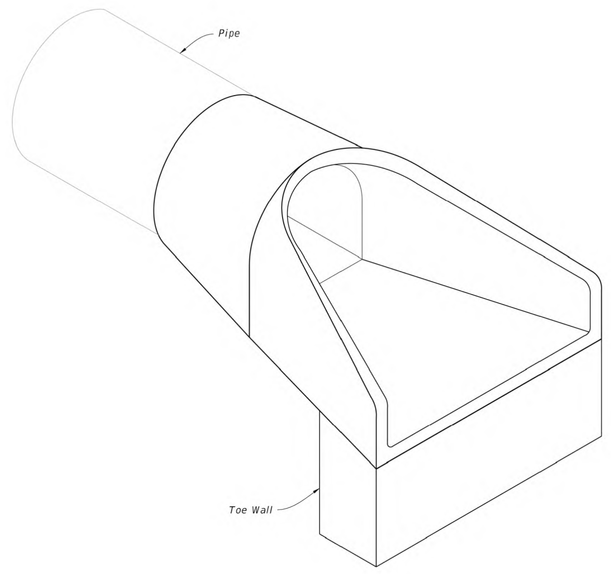
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GENERAL NOTES:

1. Provide flared end sections meeting the requirements of ASTM C76 with the exception that dimensions and reinforcement meet the criteria in the table on sheet 2. Circumferential reinforcement may consist of either one cage or two cages of steel. Use concrete compressive strength of 4000 psi.
2. Connections between the flared end section and the pipe culvert may be any of the following types unless otherwise shown on the plans.
   a. Joints meeting the requirements of Section 449 of the Standard Specifications (O-Ring Gasket). Flared end section joint dimensions and tolerances shall be identical or compatible to those used in the pipe culvert joint. When pipe culvert and flared end section manufacturers are different, the manufacturer of the flared end sections must certify the compatibility of joint designs.
   b. Joints sealed with preformed plastic gaskets. Use gaskets that meet the requirements Specification 942-2 of the Standard Specifications and the minimum sizes for gaskets as specified for equivalent sizes of elliptical pipe.
   c. Reinforced concrete jackets, as detailed on sheet 2. When non-coated corrugated metal pipe is called for in the Plans, use bituminous coated pipe in the jacketed area as specified on Index 430-001. Construct concrete jacket as specified in Index 430-001.
3. Cast Toe Walls in place using Class II Concrete.
4. On skewed pipe culverts place the flared end sections in line with the pipe culvert. Warp the side slopes as required to fit the flared end sections.
5. Quantities shown are for estimating purposes only.

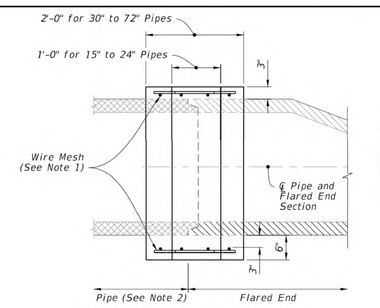
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Sheet	Description
1	General Notes and Contents
2	Straight Flare, Optional Shape Details, and Reinforced Concrete Jacket Detail

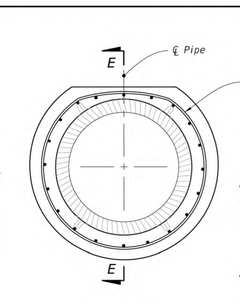


FLARED END SECTION

Pipe Dia	T	Reinf. sq. in. Per Foot	Bell or Spigot	A	B	C	D	E	P	R 1	R 2	FLAT	h	Toe Wall Class II Conc. (C.Y.)
12"	2"	0.07	1½"	4"	2'-0"	4'-0½"	6'-0⅝"	2'-0"	19'-1⅜"	10⅛"	9"	3½"	12"	.06
15"	2½"	0.07	2"	6"	2'-3"	3'-10"	6'-1"	2'-6"	24'-½"	12½"	11"	3½"	12"	.07
18"	2½"	0.07	2½"	9"	2'-3"	3'-10"	6'-1"	3'-0"	29"	15⅝"	12"	4"	15"	.11
21"	2⅝"	0.07	2½"	9"	2'-11"	3'-2"	6'-1"	3'-6"	31⅜"	16⅜"	13"	4"	15"	.12
24"	3"	0.07	2½"	9½"	3'-7½"	2'-6"	6'-1½"	4'-0"	33⅜"	16⅞"	14"	4½"	18"	.17
27"	3½"	0.148	2½"	10½"	4'-0"	2'-1½"	6'-1½"	4'-6"	36"	18⅜"	14½"	4½"	18"	.19
30"	3½"	0.148	3"	1'-0"	4'-6"	1'-7⅞"	6'-1⅞"	5'-0"	37"	18½"	15"	5"	21"	.24
36"	4"	0.148	3½"	1'-3"	5'-3"	2'-10⅜"	8'-1⅜"	6'-0"	47'-⅜"	24⅜"	20"	5½"	21"	.29
42"	4½"	0.148	3½"	1'-9"	5'-3"	2'-1½"	8'-2"	6'-6"	53⅜"	27½"	22"	5½"	24"	.36
48"	5"	0.148	4½"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"	56½"	28½"	22"	5⅝"	24"	.39
54"	5½"	0.174	4½"	2'-3"	5'-5"	2'-11"	8'-4"	7'-6"	65½"	33⅛"	24"	6½"	24"	.42
60"	6"	0.174	5"	2'-6"	5'-0"	3'-3"	8'-3"	8'-0"	72½"	36'-½"	24"	6⅞"	24"	.44
66"	6½"	0.174	5½"	2'-0"	6'-6"	1'-9"	8'-3"	8'-6"	72"	36⅜"	24"	7¼"	24"	.47
72"	7"	0.174	6"	2'-0"	6'-6"	1'-9"	8'-3"	9'-0"	77'-½"	38'-½"	24"	7⅞"	24"	.50



SECTION E-E

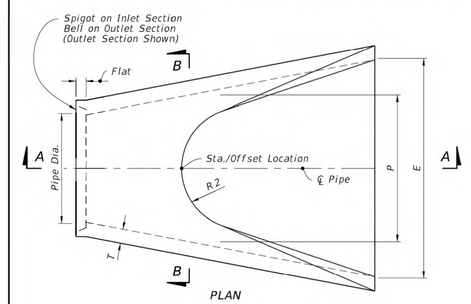


END VIEW

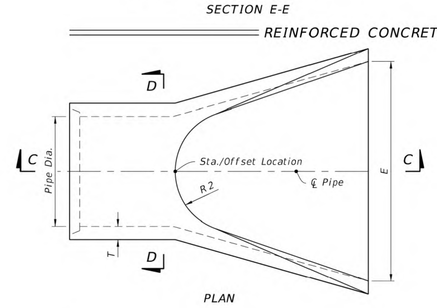
NOTES:

1. Use a wire mesh with 0.126 square inches of steel area per linear foot both directions. Use wire spaced 2" minimum to 6" maximum on centers.
2. Concrete pipe shown, other pipe material similar.

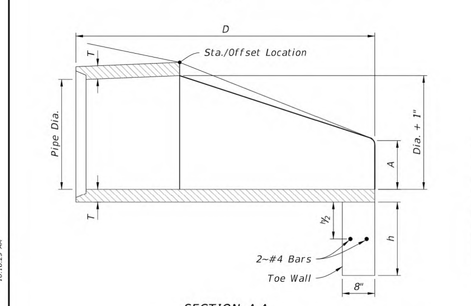
REINFORCED CONCRETE JACKET DETAIL



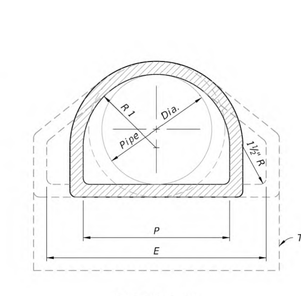
PLAN



PLAN

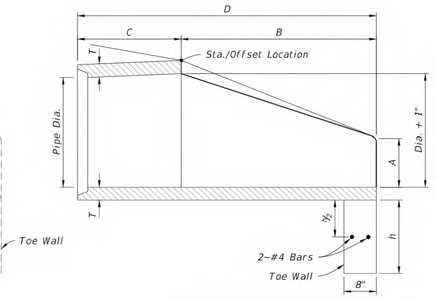


SECTION A-A

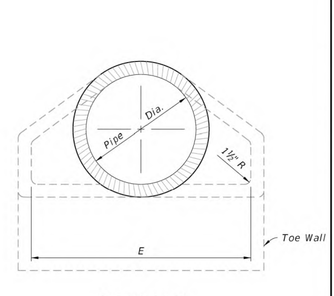


SECTION B-B

STRAIGHT FLARE



SECTION C-C



SECTION D-D

OPTIONAL SHAPE

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2022-23 STANDARD PLANS	FLARED END SECTION	INDEX	SHEET
11/01/21						430-020	1 of 2

LAST REVISION	REVISION	DESCRIPTION:	FDOT	FY 2022-23 STANDARD PLANS	FLARED END SECTION	INDEX	SHEET
11/01/21						430-020	2 of 2

1

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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

DRAINAGE DETAILS

PREPARED FOR: KH CW DELAND LLC

DESCRIPTION	DATE

1	SHEET ADDED - UPDATED DETAILS	06/09/2023	
	REVIEW SUBMITTAL	02/20/2023	
	DESCRIPTION	DATE	

PROJECT NO:	KGA-CD-1031
FILE:	DD
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

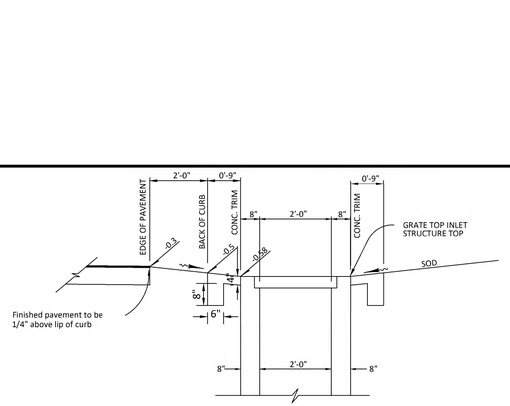
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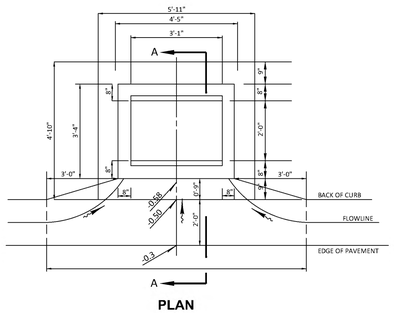
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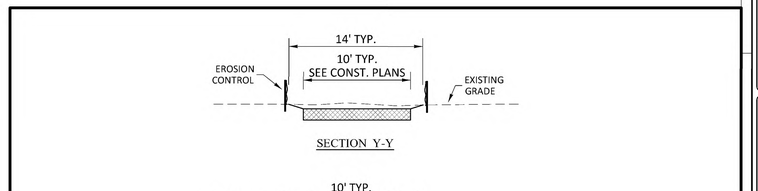


SECTION A-A

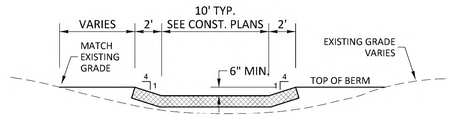


PLAN

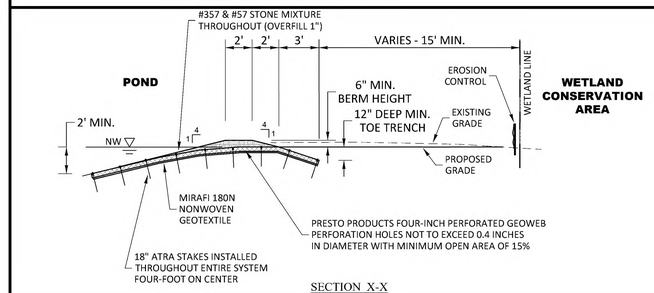
DITCH BOTTOM INLET MODIFICATION DETAIL



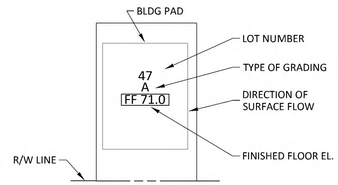
SECTION Y-Y



SECTION Z-Z

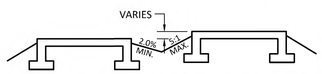


SECTION X-X



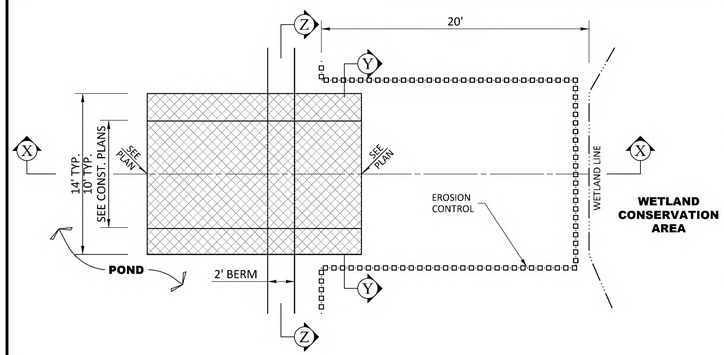
TYPICAL LOT LAYOUT

N.T.S.



TYPICAL SECTION AT LOT LINE

NOTES:
1. THICKENED EDGE SLAB FOUNDATION. STEM WALL FOUNDATION OR SIDE YARD RETAINING WALLS ARE REQUIRED FOR FFE DIFFERENCES GREATER THAN 0.95'.
2. IF LOT SLOPE EXCEEDS 5:1, STEM WALL OR THICKENED EDGE SLAB WILL BE REQUIRED.



GEOWEB SPILLWAY TYPICAL DETAIL

SCALE: N.T.S.

NOTES:
1. GEOWEB PANELS MUST BE FASTENED TOGETHER TO HELP PREVENT UNWANTED SEPARATION DURING IN-FILLING AND FOR LONG TERM SYSTEM INTEGRITY. A PNEUMATIC STAPLE GUN OR HAND HELD PLIERS AND LOC RINGS CAN BE USED FOR THIS PURPOSE. EACH CELL SHALL HAVE ONE FASTENER.
2. CONTRACTOR/SURVEYOR SHALL VERIFY IN-FIELD CONDITIONS PRIOR TO STAKING AND INSTALLING GEOWEB WEIR. WEIR ELEVATION SHALL BE THE LOWER OF THE INVERT DENOTED OR THE LOWEST NATURAL GROUND ELEVATION ABUTTING OPEN WATER EXCAVATION AND ADJACENT WETLAND SYSTEM TO WHICH HYDRAULIC CONNECTION IS DESIRED.

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Fax: 813-464-7629
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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

DRAINAGE DETAILS

PREPARED FOR: KH CW DELAND LLC

NO.	DESCRIPTION	DATE
1	DETAILS UPDATED	06/09/2023
	REVIEW SUBMITTAL	02/20/2023
	DESCRIPTION	DATE

PROJECT NO:	KGA-CD-1031
FILE:	DD
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

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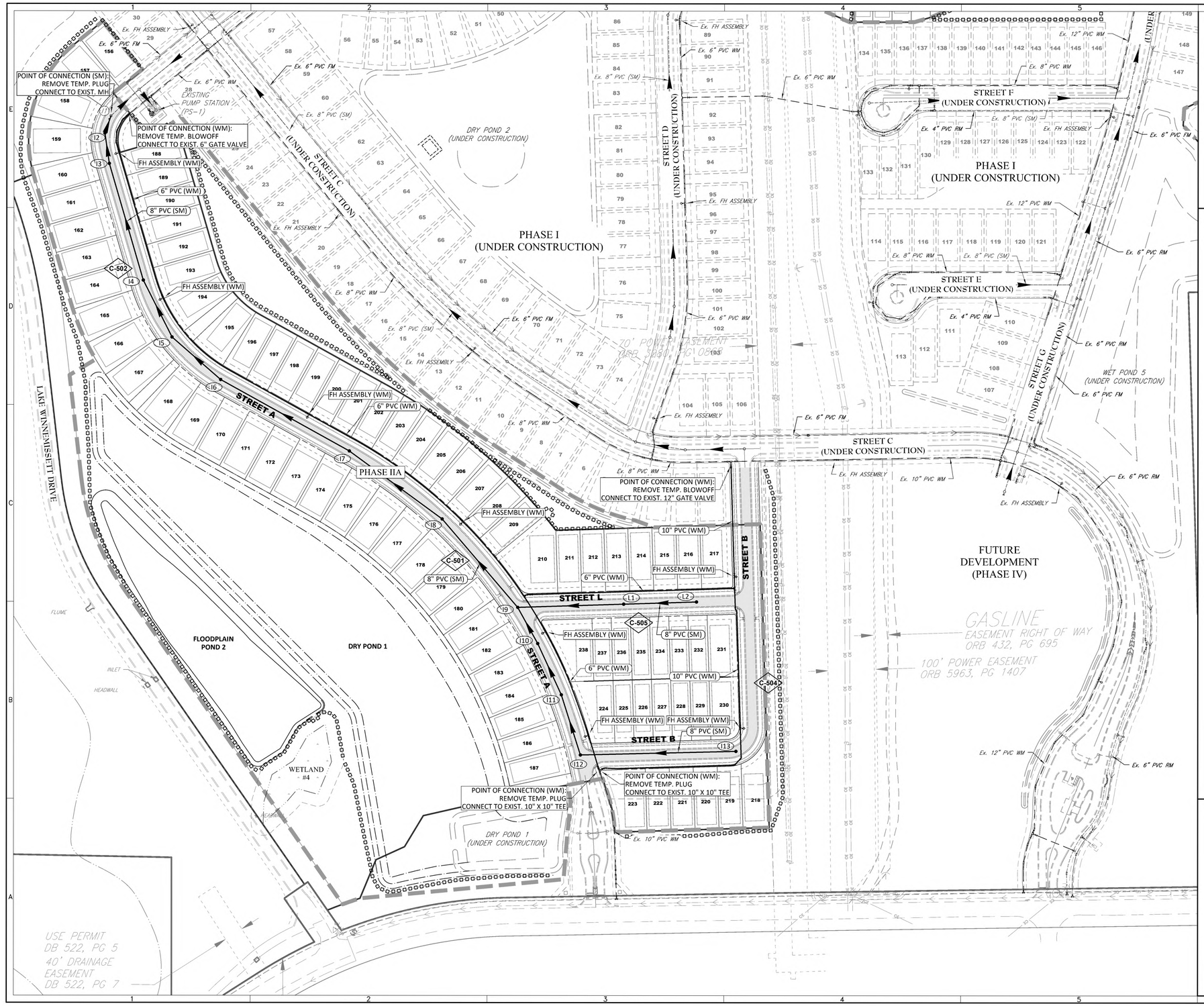
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C-319

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N

0 100 200

GRAPHIC SCALE: 1" = 100'

ELEVATIONS BASED ON:
NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION:
NAVD 88 TO NGVD 29 = +1.07

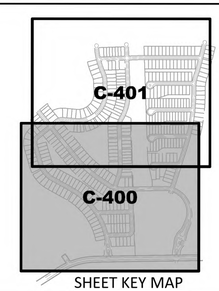
GENERAL LEGEND

- WETLAND LINE
- WETLAND CONS. AREA SETBACK / LANDWARD EXTENT OF UPLAND BUFFER (25')
- STAKED EROSION CONTROL
- PHASE LINE
- OHOVERHEAD POWER LINE
- C-510 — PLAN & PROFILE SHEET NUMBER

WATER & SEWER LEGEND

EXISTING	PROPOSED	
10	10	STORM STRUCTURE NUMBER / STORM DRAINAGE STRUCTURE
		WATER MAIN (WM)
		RECLAIMED WATER MAIN (RM)
		FIRE HYDRANT
		VALVE & BOX
		REDUCER
		PLUG
		BLOW-OFF
		BENDS
		VERTICAL BENDS
	WDSP #	WATER DISTRIBUTION SAMPLING POINT
		WATER SERVICE DOUBLE
		WATER SERVICE SINGLE
		WATER SERVICE CASING
		RECLAIMED WATER SERVICE DOUBLE
		RECLAIMED WATER SERVICE SINGLE
		RECLAIMED WATER SERVICE SLEEVE
A1	A1	SANITARY SEWER (SM)
		SANITARY FORCE MAIN (FM)
		SANITARY SERVICE DOUBLE W/CLEANOUT
		SANITARY SERVICE SINGLE W/CLEANOUT

NOTE:
CONTRACTOR TO VERIFY EXACT LOCATION OF EXISTING UTILITIES



SHEET KEY MAP

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www.HeidtDesign.com

CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

MASTER WATER & SEWER PLAN

PREPARED FOR: KH CW DELAND LLC

DESCRIPTION	DATE
REVIEW SUBMITTAL	02/20/2023

PROJECT NO:	KGA-CD-1031
FILE:	WS-KEY
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

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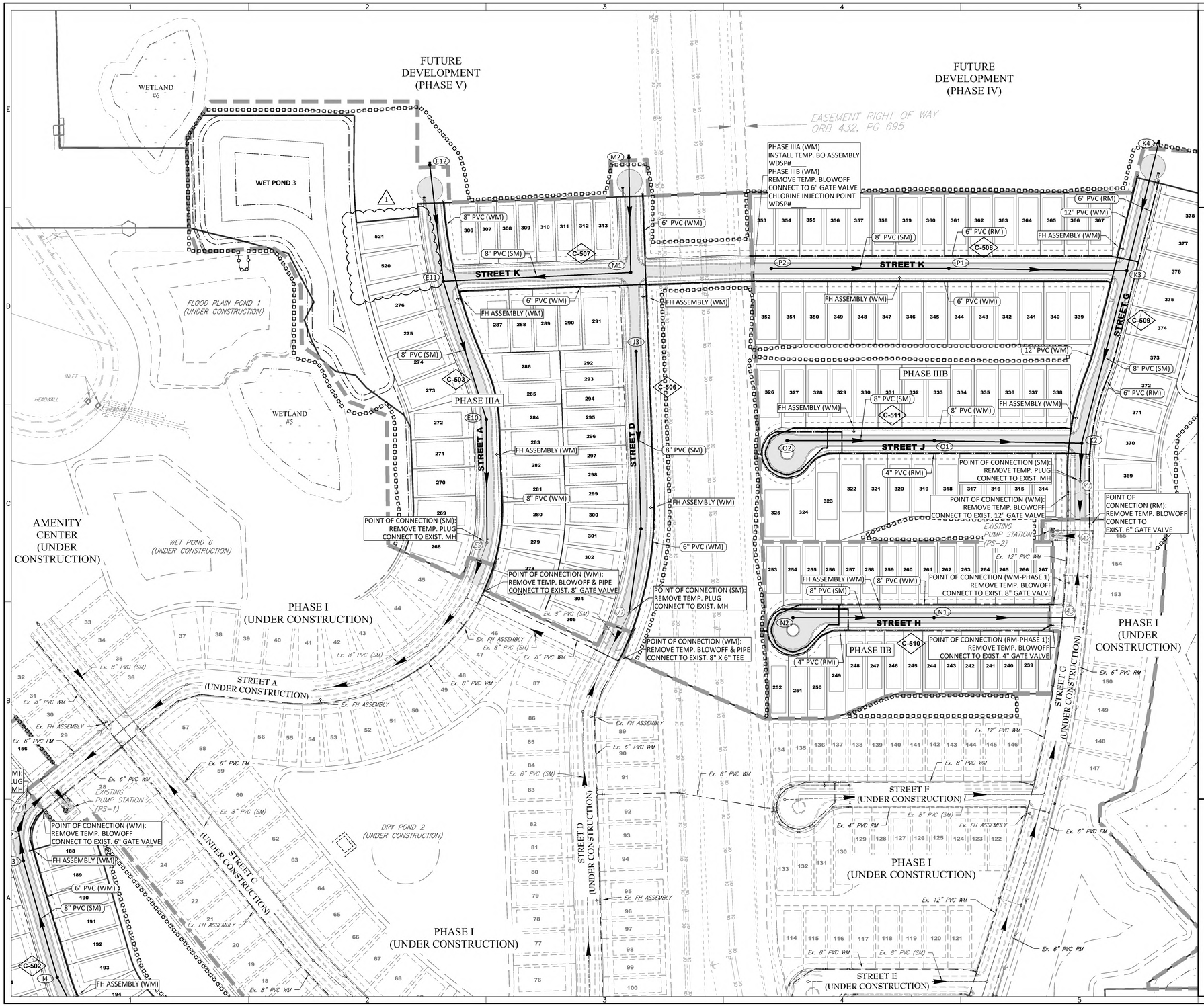
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N

0 100 200

GRAPHIC SCALE: 1" = 100'

ELEVATIONS BASED ON:
NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION:
NAVD 88 TO NGVD 29 = +1.07

GENERAL LEGEND

- WETLAND LINE
- WETLAND CONS. AREA SETBACK / LANDWARD EXTENT OF UPLAND BUFFER (25')
- STAKED EROSION CONTROL
- PHASE LINE
- OE — OVERHEAD POWER LINE
- C-510 — PLAN & PROFILE SHEET NUMBER

WATER & SEWER LEGEND

EXISTING	PROPOSED	
10	10	STORM STRUCTURE NUMBER STORM DRAINAGE STRUCTURE
		WATER MAIN (WM)
		RECLAIMED WATER MAIN (RM)
		FIRE HYDRANT
		VALVE & BOX
		REDUCER
		PLUG
		BLOW-OFF
		BENDS
		VERTICAL BENDS
	WDSP #	WATER DISTRIBUTION SAMPLING POINT
		WATER SERVICE DOUBLE
		WATER SERVICE SINGLE
		WATER SERVICE CASING
		RECLAIMED WATER SERVICE DOUBLE
		RECLAIMED WATER SERVICE SINGLE
		RECLAIMED WATER SERVICE SLEEVE
A1	A1	SANITARY SEWER (SM)
		SANITARY FORCE MAIN (FM)
		SANITARY SERVICE DOUBLE W/CLEANOUT
		SANITARY SERVICE SINGLE W/CLEANOUT

NOTE:
CONTRACTOR TO VERIFY EXACT LOCATION OF EXISTING UTILITIES

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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

MASTER WATER & SEWER PLAN

PREPARED FOR: KH CW DELAND LLC

NO.	DATE	DESCRIPTION
1	06/09/2023	LOTS 520 & 521 ADDED
	02/20/2023	REVIEW SUBMITTAL

PROJECT NO:	KGA-CD-1031
FILE:	WS-KEY
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

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PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

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PHASE IIA

PHASE I
(UNDER CONSTRUCTION)

STREET C
(UNDER CONSTRUCTION)

393 LF± 6" PVC (WM)

6" GATE VALVE (WM)
FH ASSEMBLY (WM)

194 LF± 6" PVC (WM)

DRAINAGE EASEMENT
(WIDTH VARIES 15')

(WM):
1 - 6" X 6" TEE
2 - 6" GATE VALVES
1 - 6" 22.5° BEND
1 - 6" 11.25° BEND

88 LF± 6" PVC (WM)

6" GATE VALVE (WM)
FH ASSEMBLY (WM)

234 LF± 6" PVC (WM)

5' SIDEWALK
R/W LINE

10' UTILITY
EASEMENT

DRY POND 1

POINT OF CONNECTION (WM):
INSTALL TEMP. SERVICE JUMPER
REMOVE TEMP. BLOWOFF
CONNECT TO EXIST. 12" GATE VALVE
CHLORINE INJECTION POINT
WDSP#

12" X 10" REDUCER (WM)

228 LF± 10" PVC (WM)

70' POWER EASEMENT

STREET B

10" GATE VALVE (WM)
FH ASSEMBLY (WM)
31 LF± 10" PVC (WM)
10" X 6" TEE (WM)
6" GATE VALVE (WM)
10" GATE VALVE (WM)

440 LF± 6" PVC (WM)

STREET L

5' SIDEWALK
R/W LINE

100' POWER EASEMENT

10" 22.5° BEND (WM)
10" 22.5° BEND (WM)

10' UTILITY
EASEMENT

286 LF± 10" PVC (WM)

5' SIDEWALK
R/W LINE

10' UTILITY
EASEMENT

STREET A

FH ASSEMBLY (WM)
6" GATE VALVE (WM)
70 LF± 6" PVC (WM)

10" GATE VALVE (WM)
FH ASSEMBLY (WM)

STREET B

10" X 6" REDUCER (WM)

10" 45° BEND (WM)
10" 45° BEND (WM)

10" 22.5° BEND (WM)

POINT OF CONNECTION (WM)
INSTALL TEMP. SERVICE JUMPER
REMOVE TEMP. BLOWOFF
CONNECT TO EXIST. 10" X 10" TEE
CHLORINE INJECTION POINT
WDSP#

DRAINAGE EASEMENT
(WIDTH VARIES 20'-23')

359 LF± 10" PVC (WM)

POINT OF CONNECTION (WM):
INSTALL TEMP. SERVICE JUMPER
REMOVE TEMP. BLOWOFF
CONNECT TO EXIST. 10" X 10" TEE
CHLORINE INJECTION POINT
WDSP#

Ex. 8" PVC (SM)
Ex. 8" PVC WM
Ex. 10" PVC WM

N

0 40 80

GRAPHIC SCALE: 1" = 40'

ELEVATIONS BASED ON:
NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION:
NAVD 88 TO NGVD 29 = +1.07

GENERAL LEGEND

- WETLAND LINE
- WETLAND CONS. AREA SETBACK / LANDWARD EXTENT OF UPLAND BUFFER (25')
- STAKED EROSION CONTROL
- PHASE LINE
- OVERHEAD POWER LINE
- C-510 — PLAN & PROFILE SHEET NUMBER

WATER & SEWER LEGEND

EXISTING	PROPOSED	
10	10	STORM STRUCTURE NUMBER / STORM DRAINAGE STRUCTURE
		WATER MAIN (WM)
		RECLAIMED WATER MAIN (RM)
		FIRE HYDRANT
		VALVE & BOX
		REDUCER
		PLUG
		BLOW-OFF
		BENDS
		VERTICAL BENDS
	WDSP #	WATER DISTRIBUTION SAMPLING POINT
		WATER SERVICE DOUBLE
		WATER SERVICE SINGLE
		WATER SERVICE CASING
		RECLAIMED WATER SERVICE DOUBLE
		RECLAIMED WATER SERVICE SINGLE
		RECLAIMED WATER SERVICE SLEEVE
A1	A1	SANITARY SEWER (SM)
		SANITARY FORCE MAIN (FM)
		SANITARY SERVICE DOUBLE W/CLEANOUT
		SANITARY SERVICE SINGLE W/CLEANOUT

NOTE:
CONTRACTOR TO VERIFY EXACT LOCATION OF EXISTING UTILITIES

C-406 C-407
C-405 C-408
C-404
C-403
C-402

SHEET KEY MAP

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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

WATER & SEWER PLAN

PREPARED FOR: KH CW DELAND LLC

DESCRIPTION	DATE

DESCRIPTION	DATE
REVIEW SUBMITTAL	02/20/2023

PROJECT NO:	KGA-CD-1031
FILE:	WS
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

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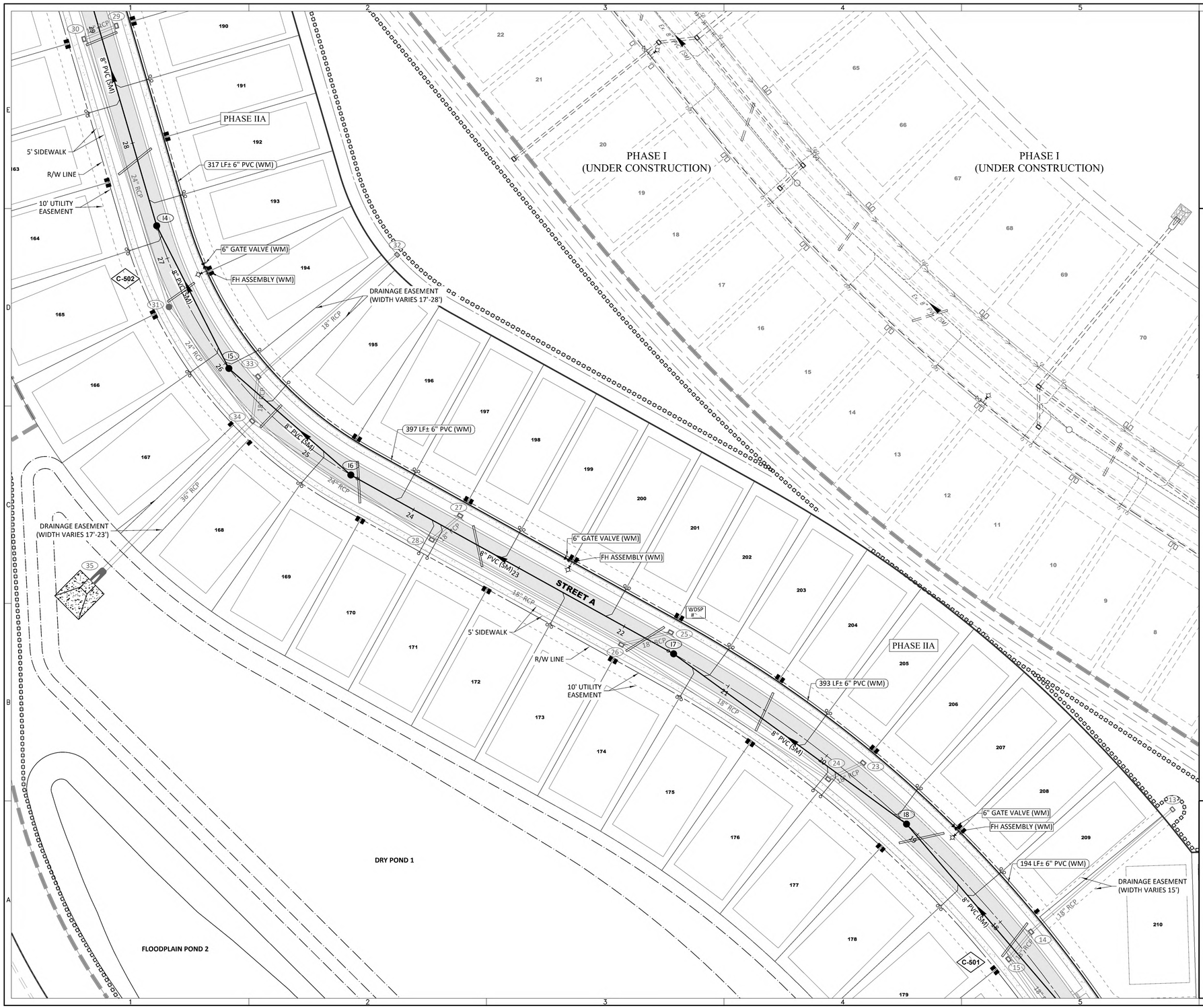
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GRAPHIC SCALE: 1" = 40'

ELEVATIONS BASED ON:
NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION:
NAVD 88 TO NGVD 29 = +1.07

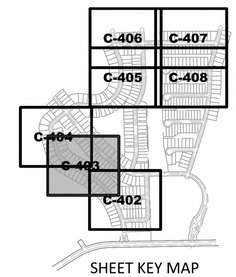
GENERAL LEGEND

- WETLAND LINE
- WETLAND CONS. AREA SETBACK / LANDWARD EXTENT OF UPLAND BUFFER (25')
- STAKED EROSION CONTROL
- PHASE LINE
- OVERHEAD POWER LINE
- C-510 — PLAN & PROFILE SHEET NUMBER

WATER & SEWER LEGEND

EXISTING	PROPOSED	
10	10	STORM STRUCTURE NUMBER STORM DRAINAGE STRUCTURE
		WATER MAIN (WM)
		RECLAIMED WATER MAIN (RM)
		FIRE HYDRANT
		VALVE & BOX
		REDUCER
		PLUG
		BLOW-OFF
		BENDS
		VERTICAL BENDS
	WDSP #	WATER DISTRIBUTION SAMPLING POINT
		WATER SERVICE DOUBLE
		WATER SERVICE SINGLE
		WATER SERVICE CASING
		RECLAIMED WATER SERVICE DOUBLE
		RECLAIMED WATER SERVICE SINGLE
		RECLAIMED WATER SERVICE SLEEVE
A1	A1	SANITARY SEWER (SM)
		SANITARY FORCE MAIN (FM)
		SANITARY SERVICE DOUBLE W/CLEANOUT
		SANITARY SERVICE SINGLE W/CLEANOUT

NOTE:
CONTRACTOR TO VERIFY EXACT LOCATION OF EXISTING UTILITIES



SHEET KEY MAP

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Tampa, Florida 33610
Office: 813-253-5311
Fax: 813-464-7629
www.HeidtDesign.com

CRESSWIND DELAND PHASE 2A, 2B, 3A & 3B

WATER & SEWER PLAN

PREPARED FOR: KH CW DELAND LLC

DATE	DESCRIPTION

DATE	DESCRIPTION
02/20/2023	REVIEW SUBMITTAL

PROJECT NO:	KGA-CD-1031
FILE:	WS
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

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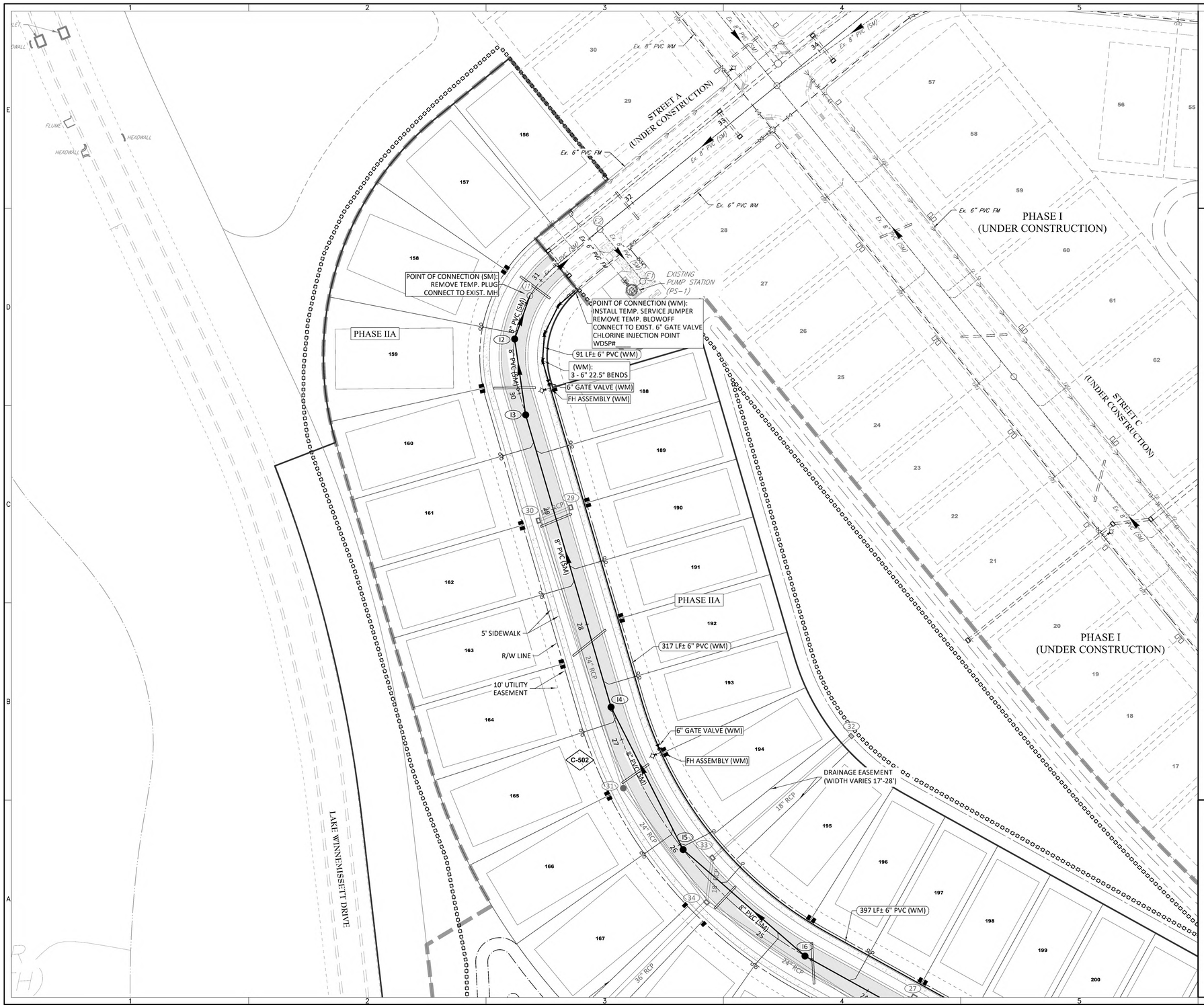
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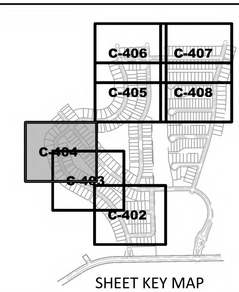
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- STAKED EROSION CONTROL
- PHASE LINE
- OE — OVERHEAD POWER LINE
- C-510 — PLAN & PROFILE SHEET NUMBER

WATER & SEWER LEGEND

EXISTING	PROPOSED	
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		RECLAIMED WATER MAIN (RM)
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		VALVE & BOX
		REDUCER
		PLUG
		BLOW-OFF
		BENDS
		VERTICAL BENDS
	WDSP #	WATER DISTRIBUTION SAMPLING POINT
		WATER SERVICE DOUBLE
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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

WATER & SEWER PLAN

PREPARED FOR: KH CW DELAND LLC

DATE	DESCRIPTION

DATE	DESCRIPTION
02/20/2023	REVIEW SUBMITTAL

PROJECT NO: KGA-CD-1031
FILE: WS
DESIGN BY: DMYTRYK
DRAWN BY: JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

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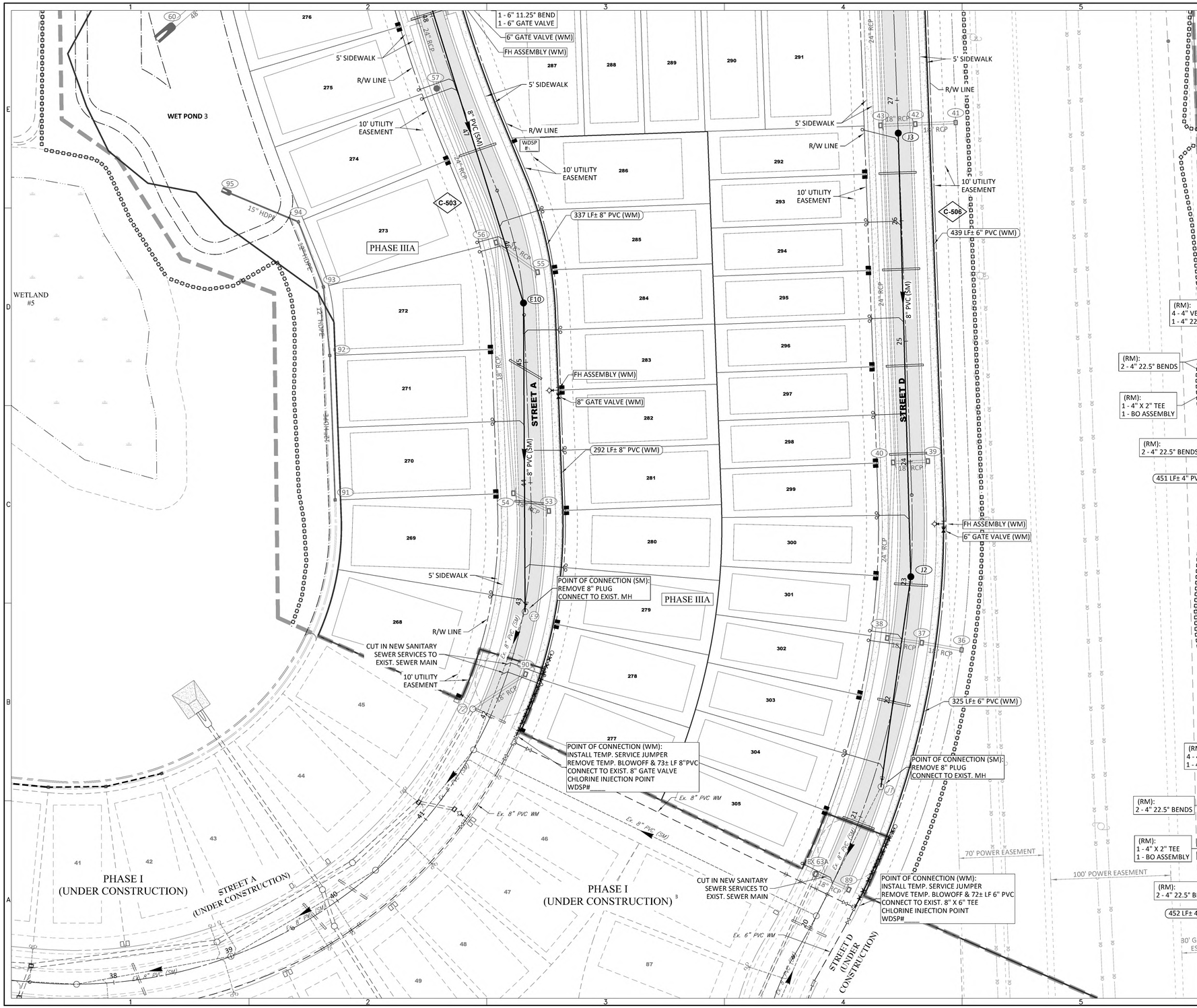
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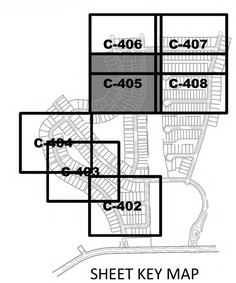
GENERAL LEGEND

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- PHASE LINE
- OVERHEAD POWER LINE
- C-610 — PLAN & PROFILE SHEET NUMBER

WATER & SEWER LEGEND

EXISTING	PROPOSED	
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		WATER MAIN (WM)
		RECLAIMED WATER MAIN (RM)
		FIRE HYDRANT
		VALVE & BOX
		REDUCER
		PLUG
		BLOW-OFF
		BENDS
		VERTICAL BENDS
	WDSP #	WATER DISTRIBUTION SAMPLING POINT
		WATER SERVICE DOUBLE
		WATER SERVICE SINGLE
		WATER SERVICE CASING
		RECLAIMED WATER SERVICE DOUBLE
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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

WATER & SEWER PLAN

PREPARED FOR: KH CW DELAND LLC

DATE	DESCRIPTION

DATE	REVIEW SUBMITTAL
02/20/2023	

PROJECT NO:	KGA-CD-1031
FILE:	WS
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

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FUTURE
DEVELOPMENT
(PHASE V)

8" PLUG (SM)
E12
8" PLUG (SM)
M2
BO ASSEMBLY (WM)
WDSP#
BO ASSEMBLY (WM)
WDSP#
52
45
X
50
8" PVC (SM)
24" RCP
8" PVC (SM)
187 LF± 6" PVC (WM)
70' POWER EASEMENT
100' POWER
EASEMENT
30' GASLINE
ESMT
521
306
307
308
309
310
311
312
313
PHASE IIIA
191 LF± 8" PVC (WM)
8" GATE VALVE (WM)
5' SIDEWALK
R/W LINE
C-507
10' UTILITY
EASEMENT
46
44
30" RCP
18" RCP
49
51
71
72
73
520
DRAINAGE EASEMENT
(WIDTH VARIES 20')
58
36" RCP
17" RCP
30" RCP
18" RCP
12
11
13
8" PVC (SM)
STREET K
47
14
15
16
M1
E11
59
48" RCP
50
48
(WM):
1 - 8" X 6" TEE
1 - 6" 11.25° BEND
1 - 6" GATE VALVE
6" GATE VALVE (WM)
FH ASSEMBLY (WM)
389 LF± 6" PVC (WM)
R/W LINE
10' UTILITY
EASEMENT
(WM):
1 - 6" X 6" CROSS
4 - 6" GATE VALVES
25 LF± 6" PVC (WM)
FH ASSEMBLY (WM)
225 LF± 6" PVC (WM)
28
60
48" RCP
276
24" RCP
5' SIDEWALK
R/W LINE
275
57
287
288
289
290
291
5' SIDEWALK
5' SIDEWALK
R/W LINE
WET POND 3
10' UTILITY
EASEMENT
8" PVC (SM)
47
24" RCP
WDSP
#
R/W LINE
43
42
41
18" RCP
18" RCP
J3
27
274
286
292
10' UTILITY
EASEMENT
10' UTILITY
EASEMENT
95
C-503
293
C-506
337 LF± 8" PVC (WM)
439 LF± 6" PVC (WM)
15" HDPE
94
24" HDPE
24" HDPE
273
PHASE IIIA
285
294
56
45" RCP
55
26
93
E10
284
295
WETLAND
#5
272
8" PVC (SM)
(RM):
4 - 4" VE
1 - 4" 22
1
5

N
0 40 80
GRAPHIC SCALE: 1" = 40'

ELEVATIONS BASED ON:
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- OE OVERHEAD POWER LINE
- C-510 PLAN & PROFILE SHEET NUMBER

WATER & SEWER LEGEND

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		WATER MAIN (WM)
		RECLAIMED WATER MAIN (RM)
		FIRE HYDRANT
		VALVE & BOX
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		PLUG
		BLOW-OFF
		BENDS
		VERTICAL BENDS
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		WATER SERVICE DOUBLE
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NOTE:
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C-406 C-407 C-405 C-408 C-404 C-403 C-402

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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

WATER & SEWER PLAN

PREPARED FOR: KH CW DELAND LLC

NO.	DATE	DESCRIPTION
1	06/09/2023	LOTS 520 & 521 ADDED
	02/20/2023	REVIEW SUBMITTAL

PROJECT NO: KGA-CD-1031
FILE: WS
DESIGN BY: DMYTRYK
DRAWN BY: JONES

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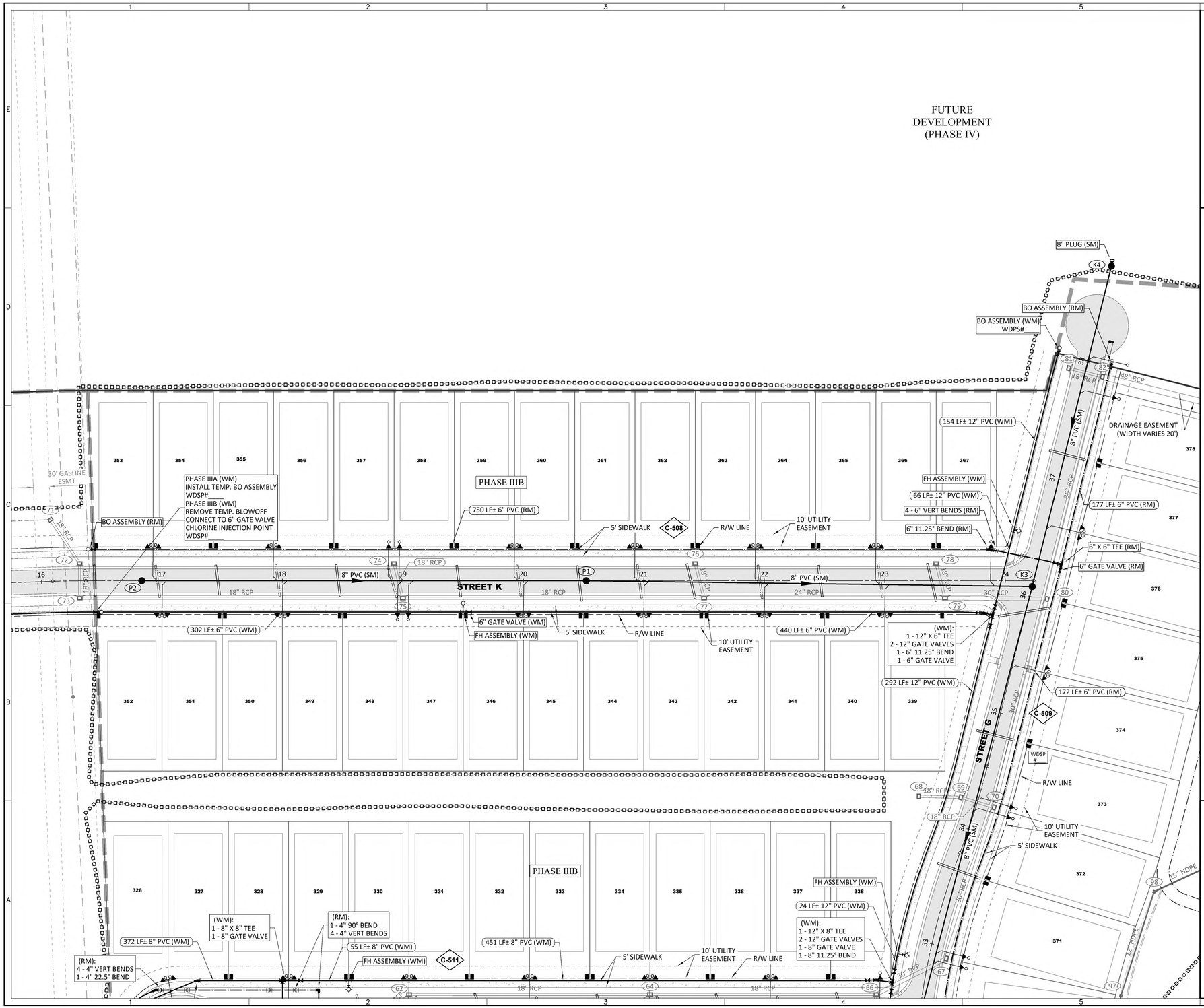
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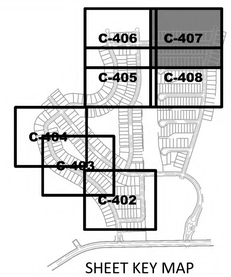
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PREPARED FOR: KH CW DELAND LLC

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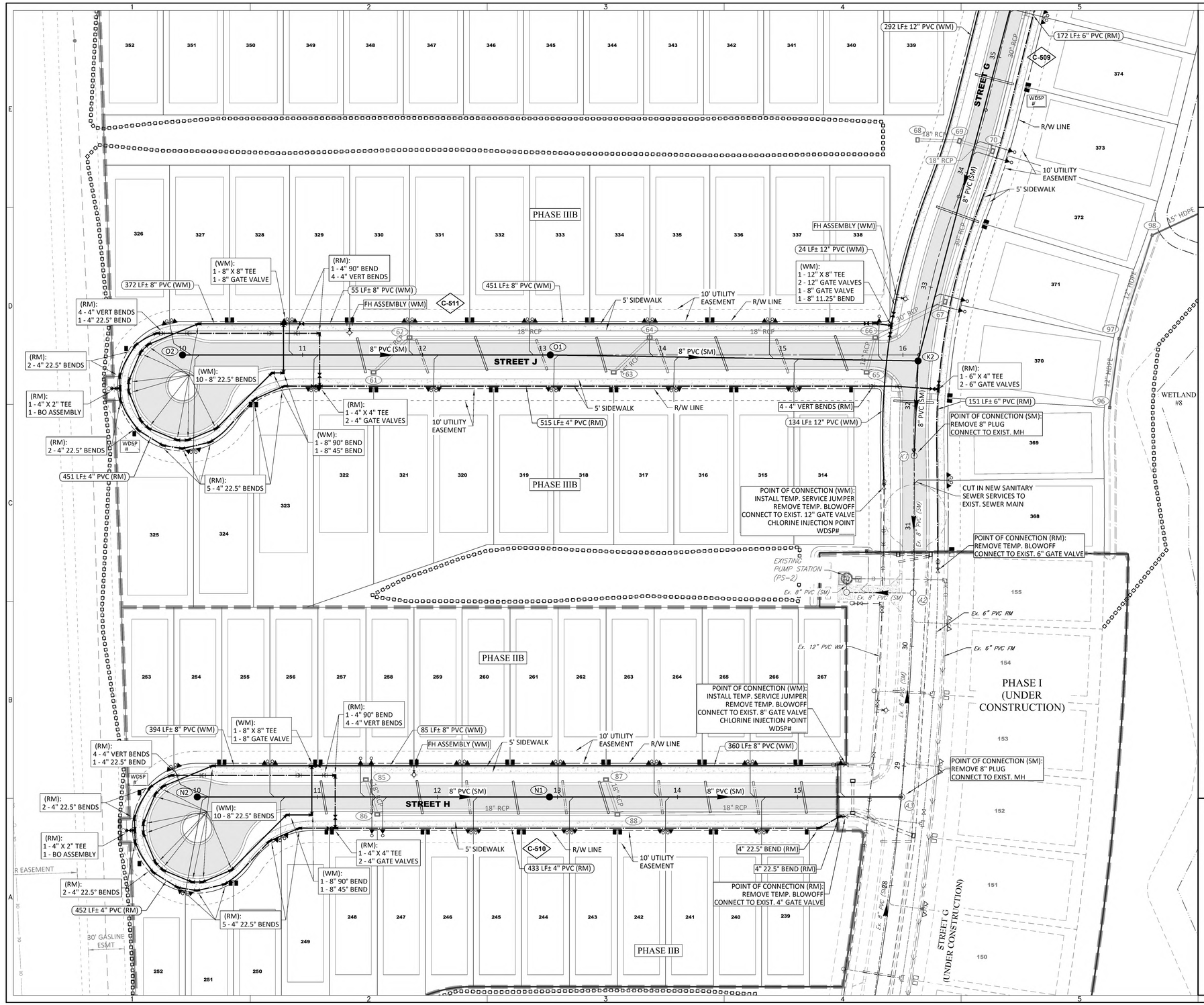
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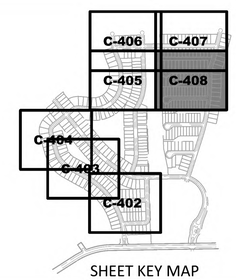
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PREPARED FOR: KH CW DELAND LLC

NO.	DESCRIPTION	DATE
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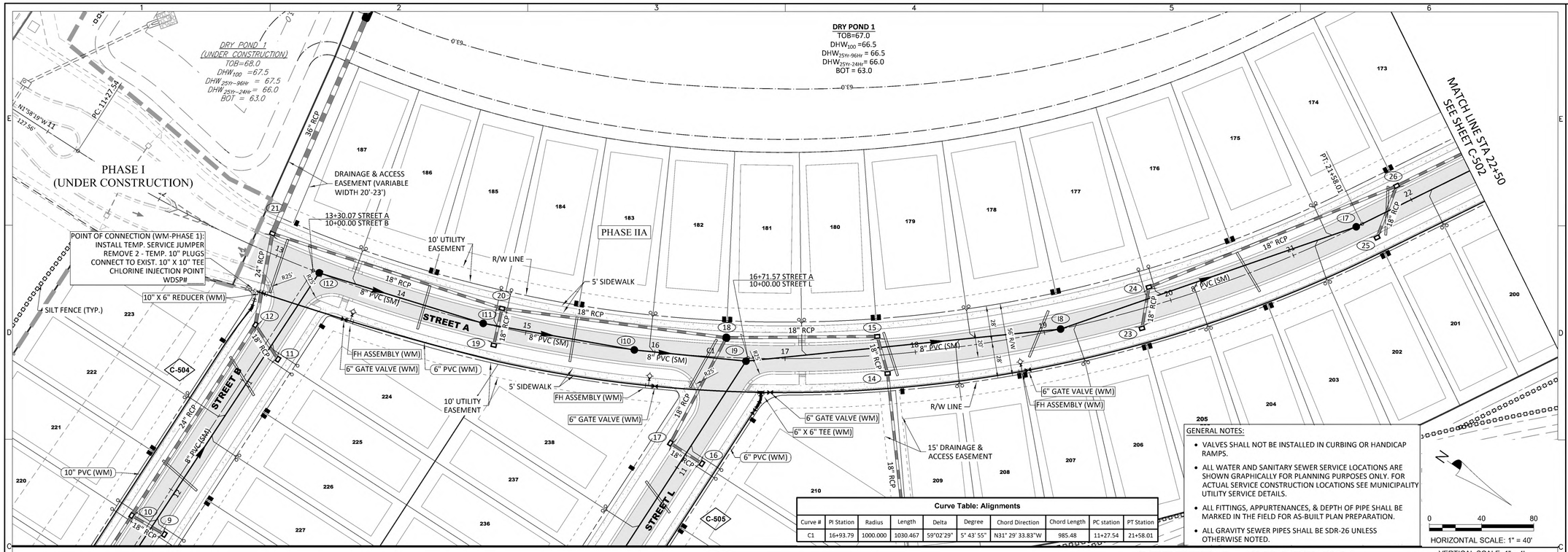
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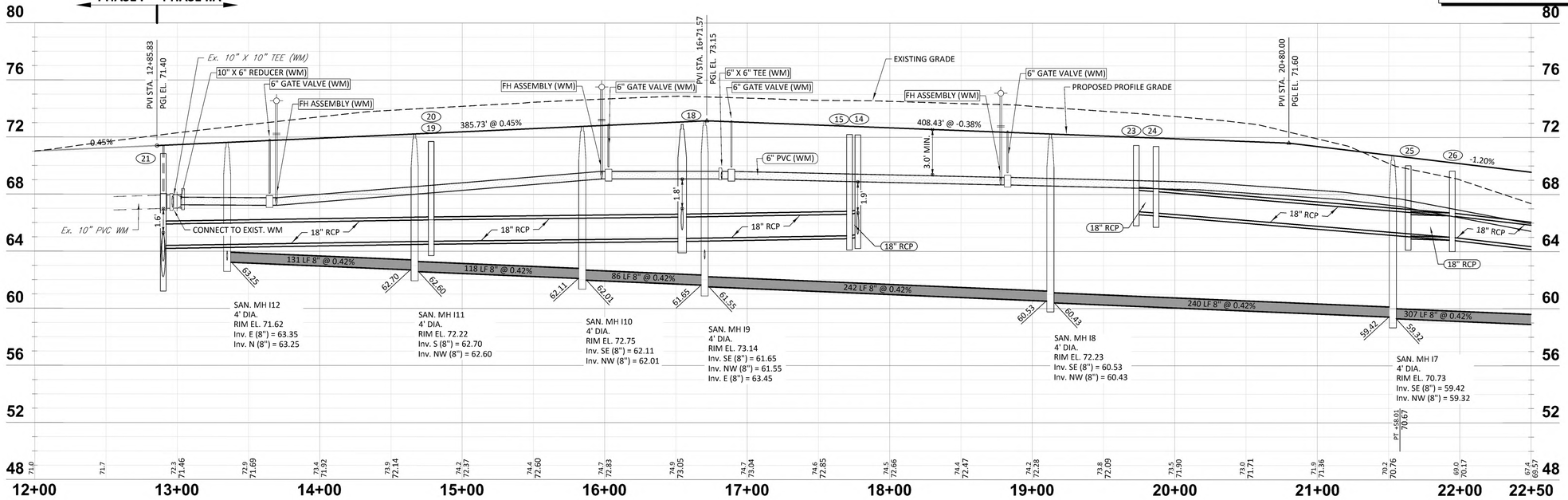
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Curve Table: Alignments

Curve #	PI Station	Radius	Length	Delta	Degree	Chord Direction	Chord Length	PC station	PT Station
C1	16+93.79	1000.000	1030.467	59°02'29"	5° 43' 55"	N31° 29' 33.83"W	985.48	11+27.54	21+58.01

STREET A - PHASE IIA



VERTICAL SCALE: 1" = 4'

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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

ROADWAY PLAN & PROFILE

PREPARED FOR: KH CW DELAND LLC

DESCRIPTION	DATE

DESCRIPTION	DATE
REVIEW SUBMITTAL	02/20/2023

PROJECT NO:	KGA-CD-1031
FILE:	RP-01
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

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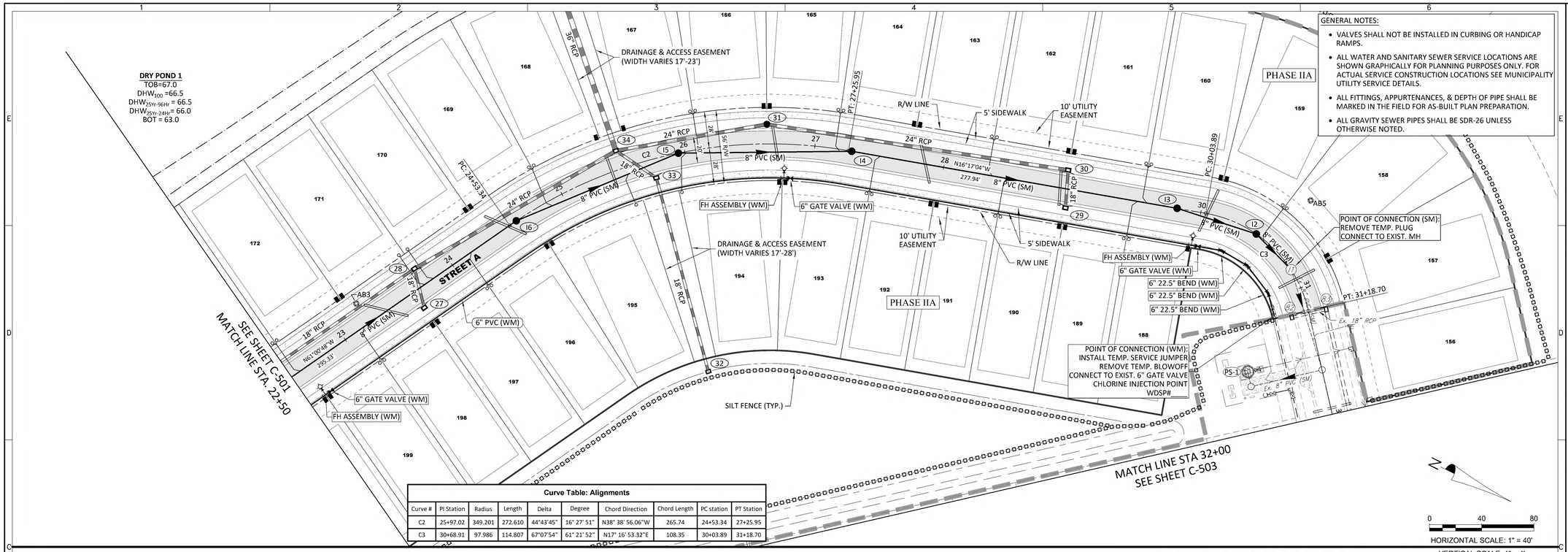
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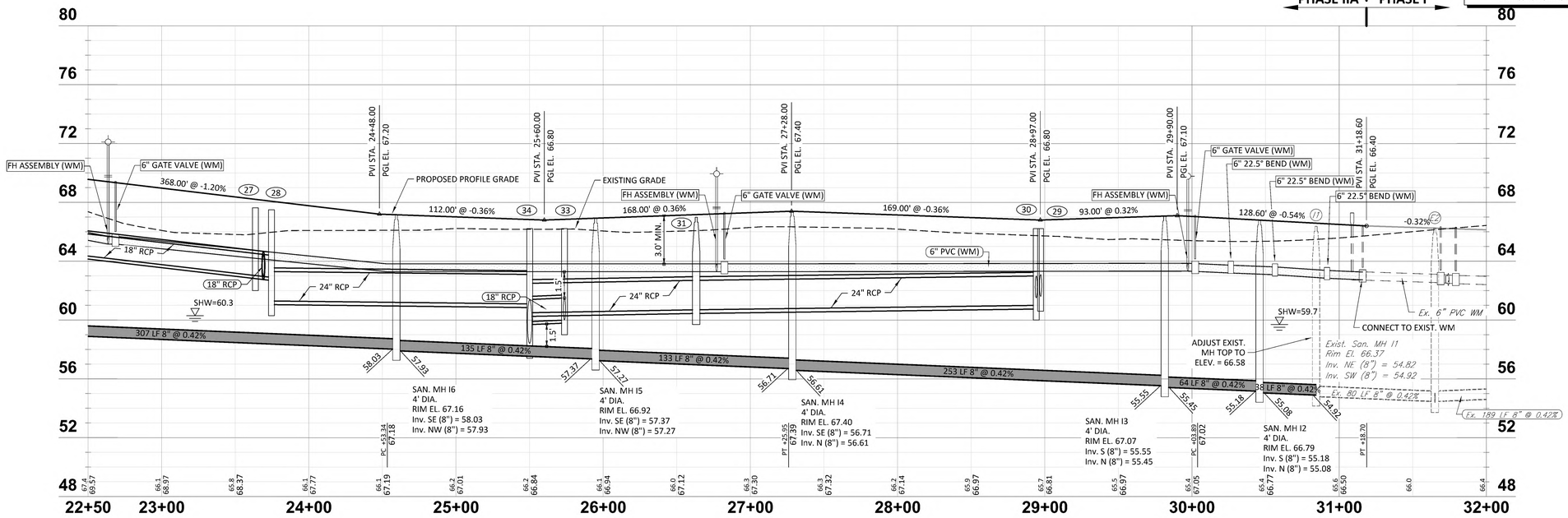


Curve Table: Alignments									
Curve #	PI Station	Radius	Length	Delta	Degree	Chord Direction	Chord Length	PC station	PT Station
C2	25+97.02	349.201	272.610	44°43'45"	16° 27' 51"	N38° 38' 56.06"W	265.74	24+53.34	27+25.95
C3	30+68.91	97.986	114.807	67°07'54"	61° 21' 52"	N17° 16' 53.32"E	108.35	30+03.89	31+18.70

STREET A - PHASE IIA

PHASE IIA | PHASE I

ELEVATIONS BASED ON: NORTH AMERICAN VERTICAL DATUM 1988 CONVERSION: NAVD 88 TO NGVD 29 = +1.07



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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

ROADWAY PLAN & PROFILE

PREPARED FOR: KH CW DELAND LLC

DESCRIPTION	DATE

DESCRIPTION	DATE
REVIEW SUBMITTAL	02/20/2023

PROJECT NO:	KGA-CD-1031
FILE:	RP-01
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

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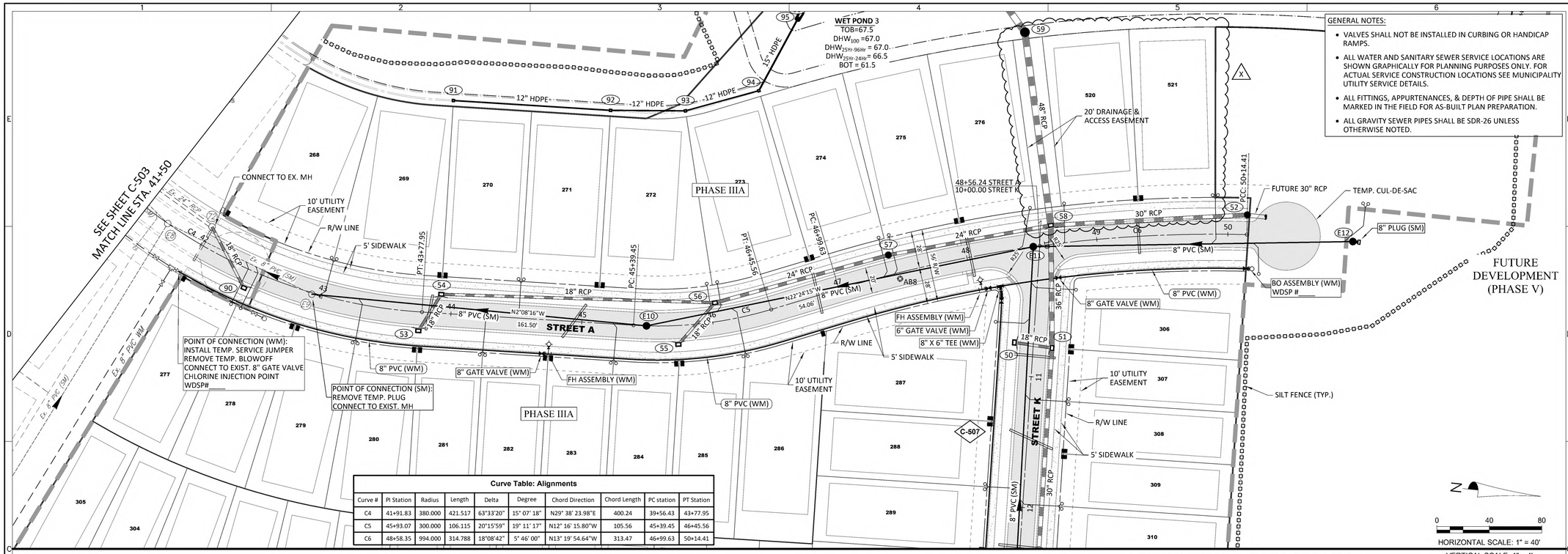
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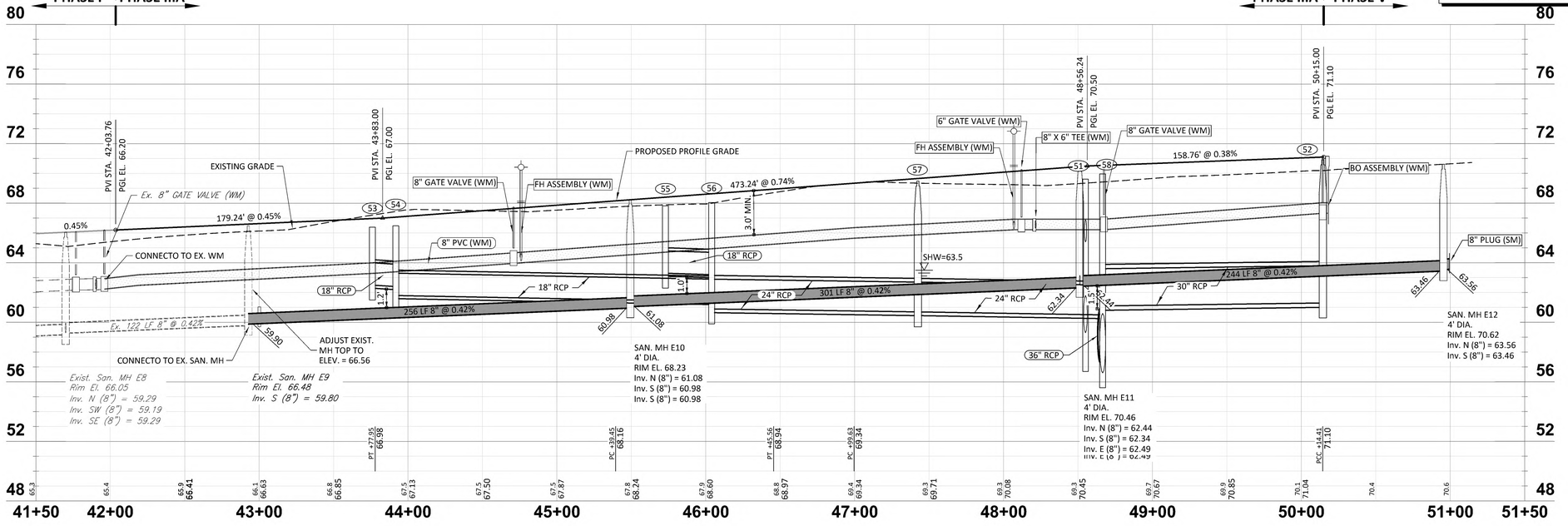
Curve Table: Alignments

Curve #	PI Station	Radius	Length	Delta	Degree	Chord Direction	Chord Length	PC Station	PT Station
C4	41+91.83	380.000	421.517	63°33'20"	15° 07' 18"	N29° 38' 23.98"E	400.24	39+56.43	43+77.95
C5	45+93.07	300.000	106.115	20°15'59"	19° 11' 17"	N12° 16' 15.80"W	105.56	45+39.45	46+45.56
C6	48+58.35	994.000	314.788	18°08'42"	5° 46' 00"	N13° 19' 54.64"W	313.47	46+99.63	50+14.41

STREET A - PHASE IIIA

VERTICAL SCALE: 1" = 4'

ELEVATIONS BASED ON:
NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION:
NAVD 88 TO NGVD 29 = +1.07



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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

ROADWAY PLAN & PROFILE

PREPARED FOR: KH CW DELAND LLC

NO	DATE	DESCRIPTION
1	06/09/2023	LOTS 520 & 521 ADDED
	02/20/2023	REVIEW SUBMITTAL

PROJECT NO:	KGA-CD-1031
FILE:	RP-01
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

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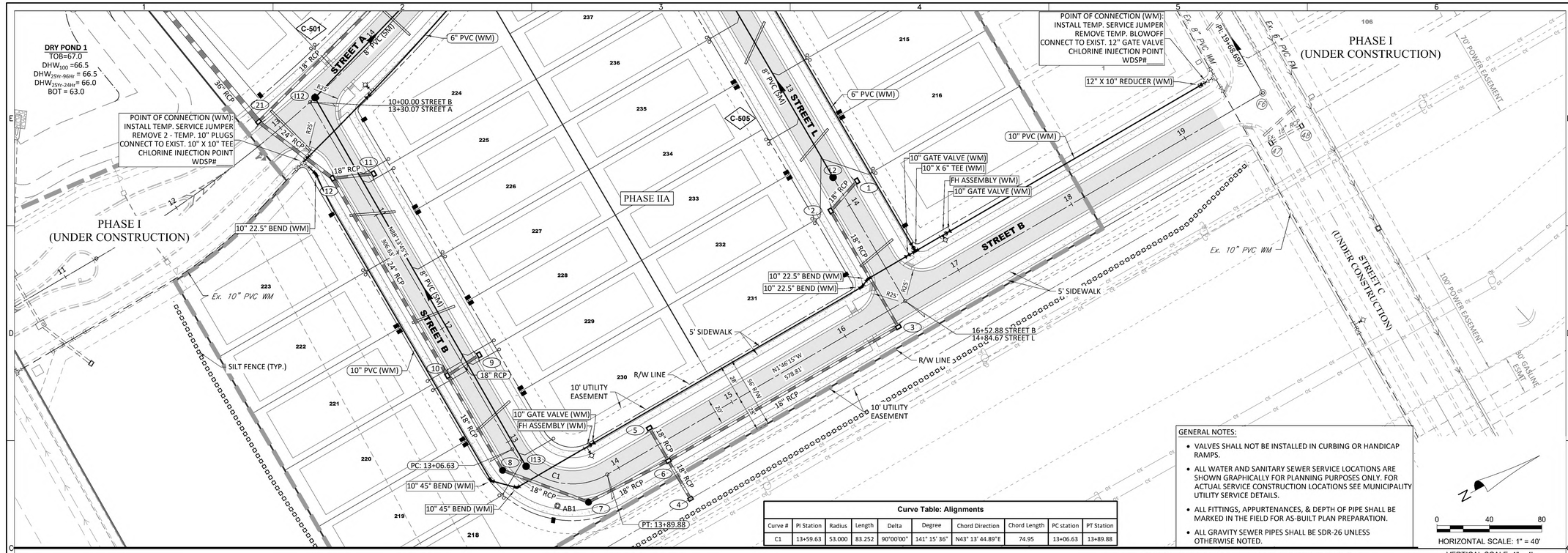
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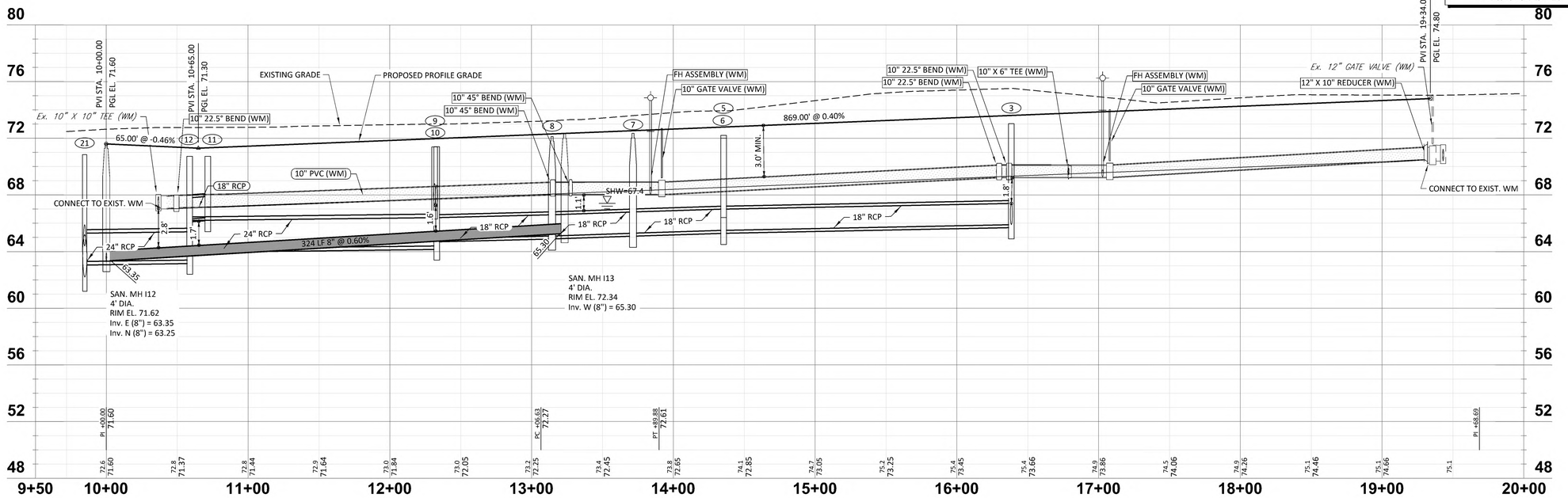
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STREET B - PHASE IIA

VERTICAL SCALE: 1" = 4'

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ROADWAY PLAN & PROFILE

PREPARED FOR: KH CW DELAND LLC

DATE	DESCRIPTION
02/20/2023	REVIEW SUBMITTAL

PROJECT NO:	KGA-CD-1031
FILE:	RP-02
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DRAWN BY:	JONES

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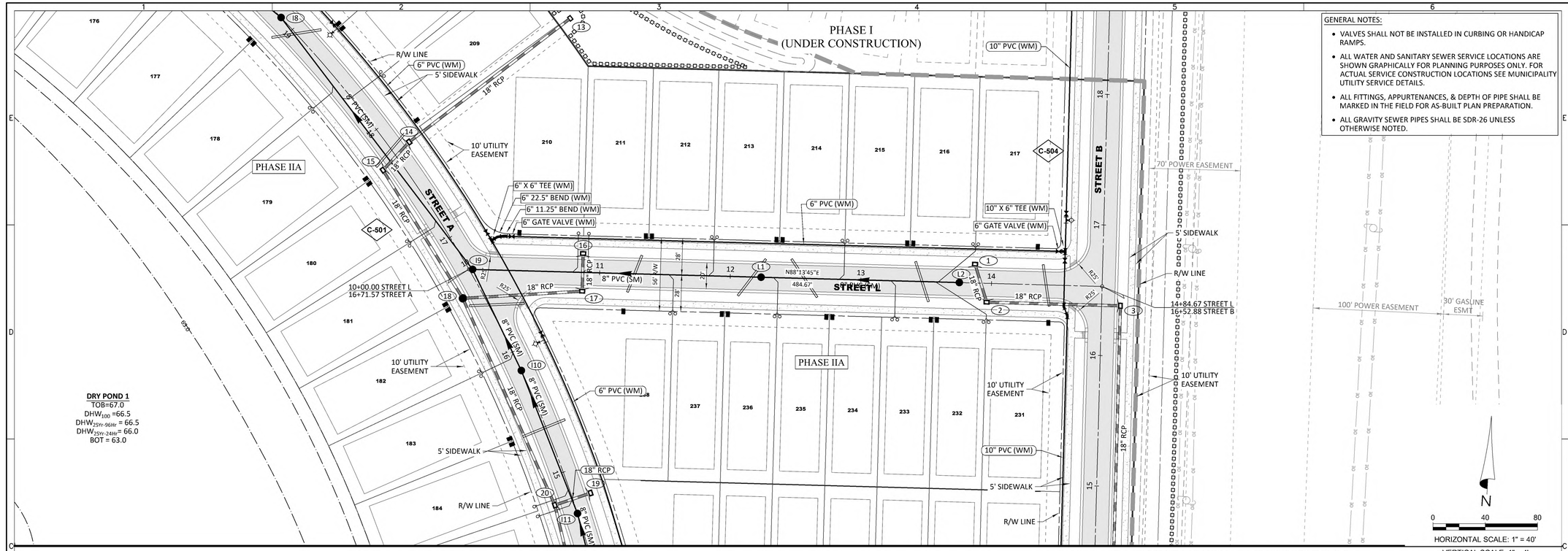
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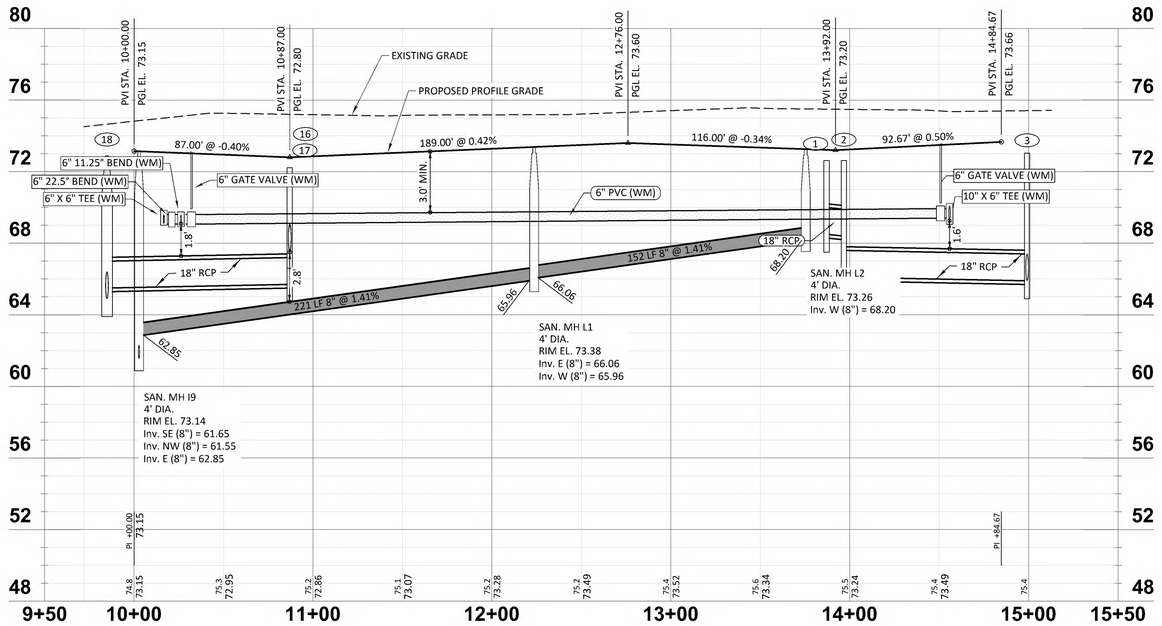
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STREET L - PHASE IIA



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ROADWAY PLAN & PROFILE

PREPARED FOR: KH CW DELAND LLC

DESCRIPTION	DATE
REVIEW SUBMITTAL	02/20/2023

PROJECT NO:	KGA-CD-1031
FILE:	RP-03
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

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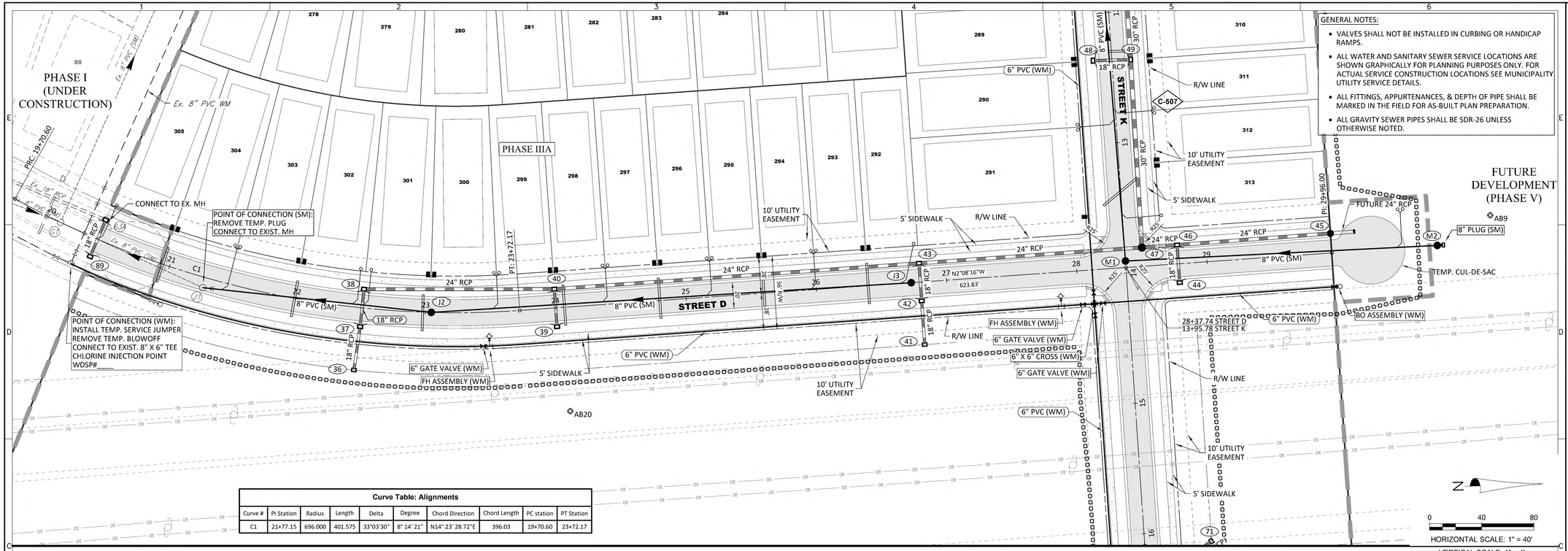
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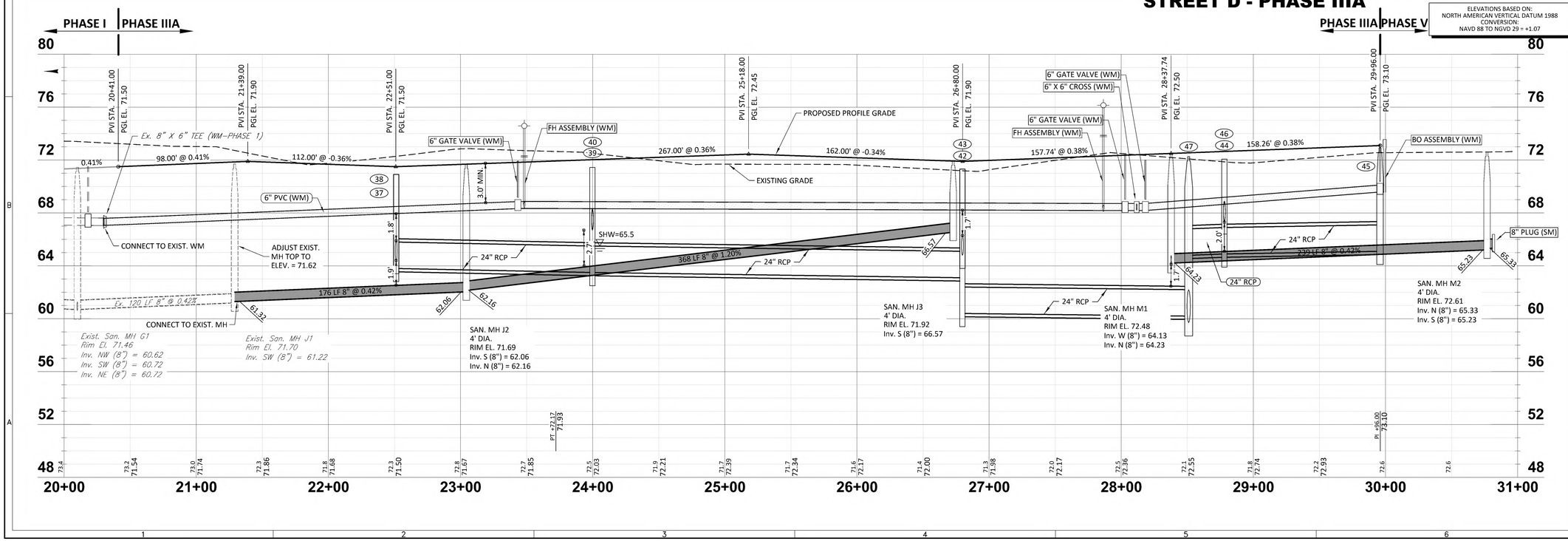
Curve Table: Alignments

Curve #	PI Station	Radius	Length	Delta	Degree	Chord Direction	Chord Length	PC station	PT Station
C1	21+77.15	696.000	401.575	33°03'30"	8° 14' 21"	N14° 23' 28.72"E	396.03	19+70.60	23+72.17

GENERAL NOTES:

- VALVES SHALL NOT BE INSTALLED IN CURBING OR HANDICAP RAMPS.
- ALL WATER AND SANITARY SEWER SERVICE LOCATIONS ARE SHOWN GRAPHICALLY FOR PLANNING PURPOSES ONLY. FOR ACTUAL SERVICE CONSTRUCTION LOCATIONS SEE MUNICIPALITY UTILITY SERVICE DETAILS.
- ALL FITTINGS, APPURTENANCES, & DEPTH OF PIPE SHALL BE MARKED IN THE FIELD FOR AS-BUILT PLAN PREPARATION.
- ALL GRAVITY SEWER PIPES SHALL BE SDR-26 UNLESS OTHERWISE NOTED.

STREET D - PHASE IIIA



ELEVATIONS BASED ON:
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CONVERSION:
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ROADWAY PLAN & PROFILE

PREPARED FOR: KH CW DELAND LLC

DESCRIPTION	DATE
REVIEW SUBMITTAL	02/20/2023

PROJECT NO:	KGA-CD-1031
FILE:	RP-04
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

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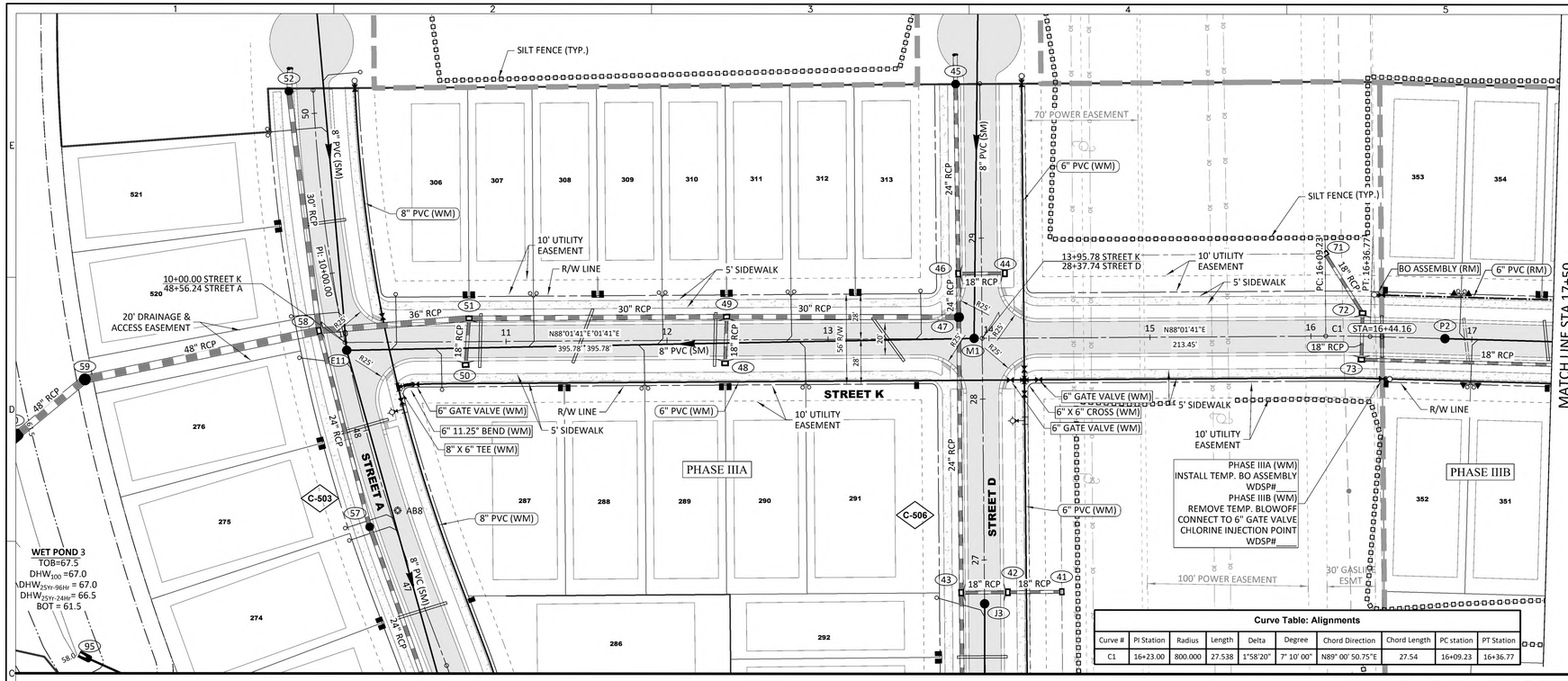
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Curve Table: Alignments									
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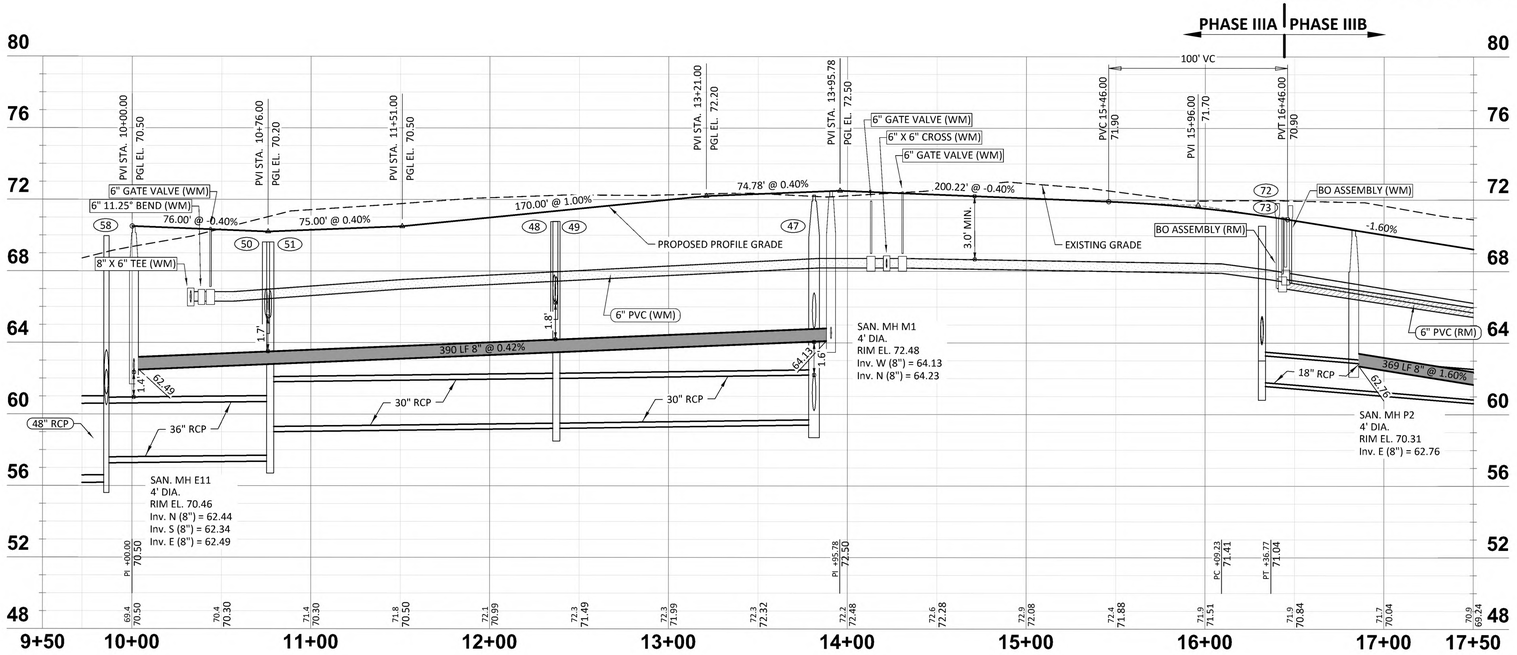
0 40 80

HORIZONTAL SCALE: 1" = 40'

VERTICAL SCALE: 1" = 4'

ELEVATIONS BASED ON:
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CONVERSION:
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STREET K - PHASE IIIA/IIIB



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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

ROADWAY PLAN & PROFILE

PREPARED FOR: KH CW DELAND LLC

DESCRIPTION	DATE

DESCRIPTION	DATE
REVIEW SUBMITTAL	02/20/2023

PROJECT NO:	KGA-CD-1031
FILE:	RP-05
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

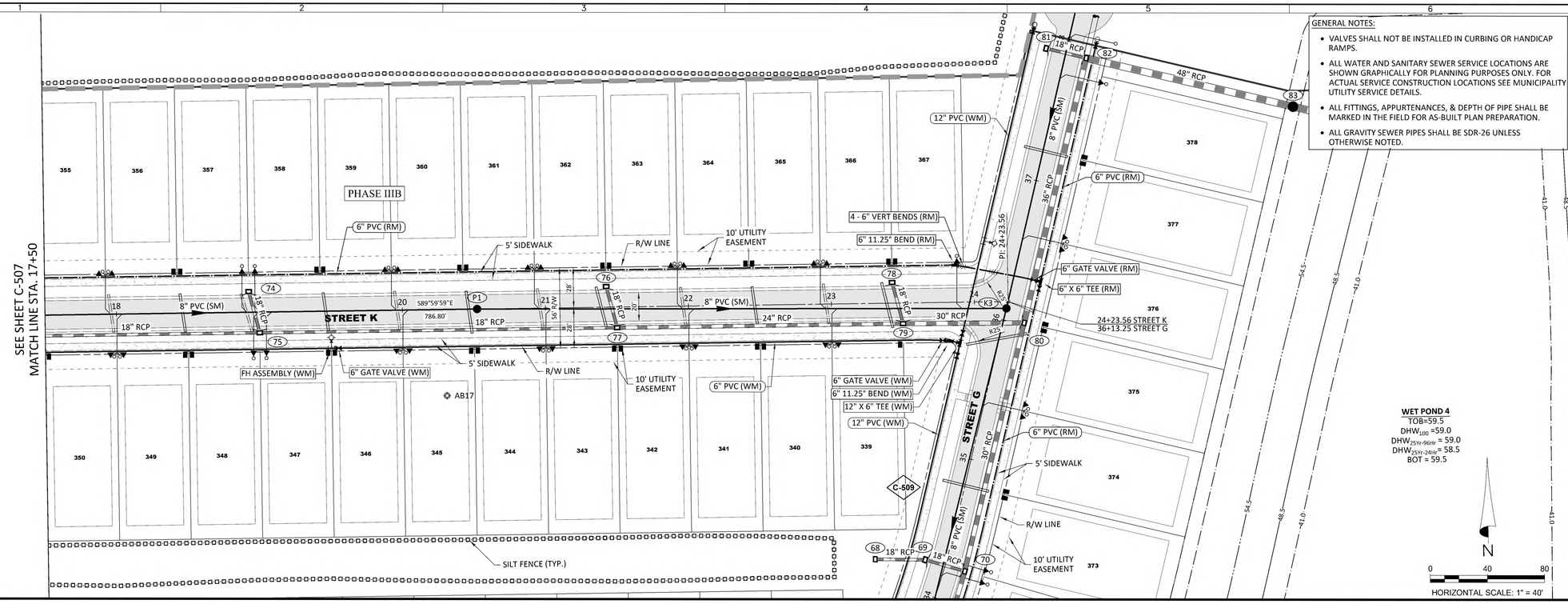
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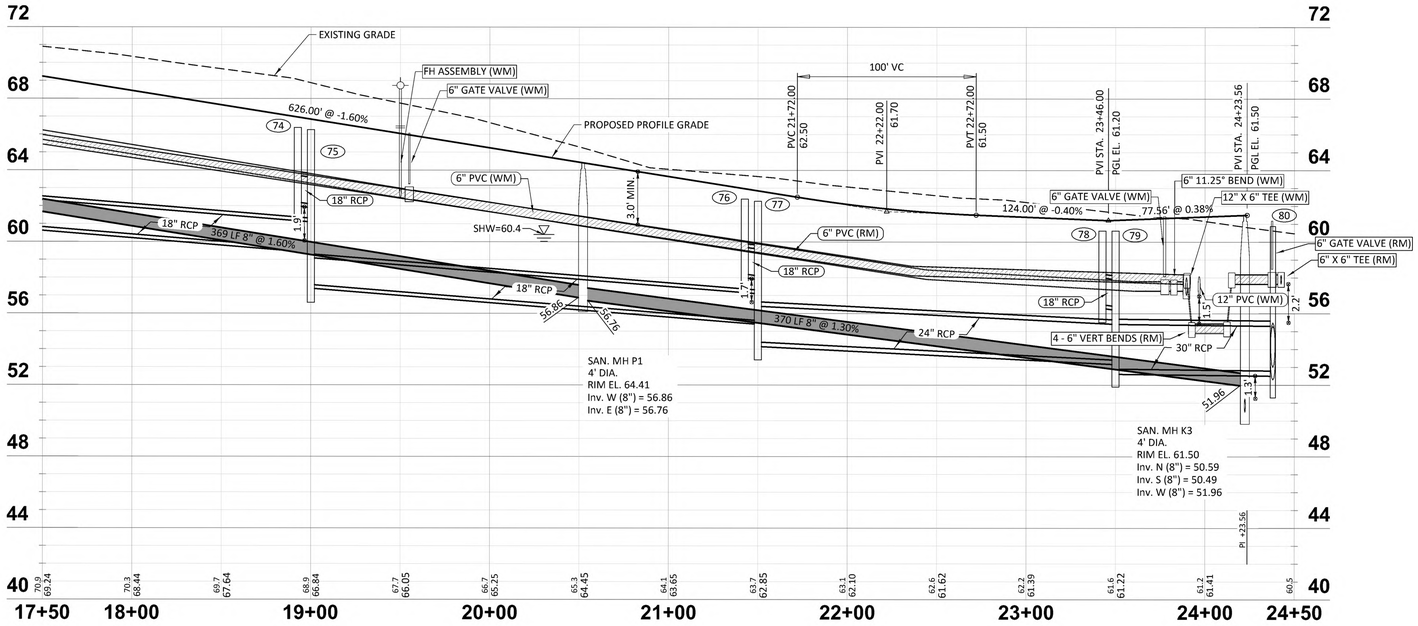
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- ALL FITTINGS, APPURTENANCES, & DEPTH OF PIPE SHALL BE MARKED IN THE FIELD FOR AS-BUILT PLAN PREPARATION.
- ALL GRAVITY SEWER PIPES SHALL BE SDR-26 UNLESS OTHERWISE NOTED.

STREET K - PHASE IIIB



VERTICAL SCALE: 1" = 4'

ELEVATIONS BASED ON:
NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION:
NAVD 88 TO NGVD 29 = +1.07

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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

ROADWAY PLAN & PROFILE

PREPARED FOR: KH CW DELAND LLC

DESCRIPTION	DATE
REVIEW SUBMITTAL	02/20/2023

PROJECT NO:	KGA-CD-1031
FILE:	RP-05
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

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- ALL FITTINGS, APPURTENANCES, & DEPTH OF PIPE SHALL BE MARKED IN THE FIELD FOR AS-BUILT PLAN PREPARATION.
- ALL GRAVITY SEWER PIPES SHALL BE SDR-26 UNLESS OTHERWISE NOTED.

POINT OF CONNECTION (WM): INSTALL TEMP. SERVICE JUMPER REMOVE TEMP. BLOWOFF CONNECT TO EXIST. 12" GATE VALVE CHLORINE INJECTION POINT WDSP#_

POINT OF CONNECTION (SM): REMOVE TEMP. PLUG CONNECT TO EXIST. MH

POINT OF CONNECTION (RM): REMOVE TEMP. BLOWOFF CONNECT TO EXIST. 6" GATE VALVE

PHASE I (UNDER CONSTRUCTION)

PHASE IIIB

STREET G (UNDER CONSTRUCTION)

FUTURE DEVELOPMENT (PHASE IV)

Curve Table: Alignments

Curve #	PI Station	Radius	Length	Delta	Degree	Chord Direction	Chord Length	PC station	PT Station
C1	27+61.70	2450.000	810.398	18°57'07"	2° 20' 20"	N08° 12' 26.95"E	806.71	23+52.76	31+63.16
C2	32+72.49	550.000	215.854	22°29'11"	10° 25' 55"	N09° 58' 28.87"E	214.47	31+63.16	33+79.01
C3	34+16.86	600.000	75.585	7°13'04"	9° 33' 37"	N17° 36' 32.23"E	75.54	33+79.01	34+54.60

0 40 80

HORIZONTAL SCALE: 1" = 40'

VERTICAL SCALE: 1" = 4'

ELEVATIONS BASED ON:
NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION:
NAVD 88 TO NGVD 29 = +1.07

STREET G - PHASE IIIB

PHASE I | PHASE IIIB | PHASE IIIB | PHASE IV

ADJUST EXIST. MH TOP

PVI STA. 30+80.00
PGL EL. 63.30

Ex. 12" GATE VALVE (WM)
-0.34%
Ex. 6" GATE VALVE (RM)
Ex. 6" PVC RM
Ex. 12" PVC WM
SHW=58.9
CONNECT TO EXIST. RM
CONNECT TO EXIST. WM
CONNECT TO EXIST. MH

12" X 8" TEE (WM)
12" GATE VALVE (WM)
6" GATE VALVE (RM)
6" X 4" TEE (RM)
12" GATE VALVE (WM)
FH ASSEMBLY (WM)
PROPOSED PROFILE GRADE
12" PVC (WM)
4" PVC (RM)
30" RCP
1.5'
2.4'
1.9'
3.0' MIN.
712.00' @ -0.34%
12" GATE VALVE (WM)
12" X 6" TEE (WM)
6" GATE VALVE (RM)
6" X 6" TEE (RM)
FH ASSEMBLY (WM)
EXISTING GRADE
6" PVC (RM)
36" RCP
1.3'
1.4'
BO ASSEMBLY (RM)
BO ASSEMBLY (WM)
8" PLUG (SM)

PVI STA. 37+92.00
PGL EL. 60.85

ADJUST EXIST. MH TOP TO ELEV. = 63.03

Exist. San. MH A2
Rim El. 63.41
Inv. S (8") = 49.81
Inv. W (8") = 47.81
Inv. N (8") = 47.92

Exist. San. MH K1
Rim El. 63.39
Inv. S (8") = 48.40
Inv. N (8") = 48.50

79 LF 8" @ 0.42%
Ex. 114 LF 8" @ 0.42%
370 LF 8" @ 0.42%
274 LF 8" @ 0.42%

48.50
48.83
48.93
50.49
50.59
51.74
51.84

SAN. MH K2
4' DIA. DROP
RIM EL. 62.76
Inv. N (8") = 48.93
Inv. S (8") = 48.83
Inv. W (8") = 54.70

SAN. MH K3
4' DIA.
RIM EL. 61.50
Inv. N (8") = 50.59
Inv. S (8") = 50.49
Inv. W (8") = 51.96

SAN. MH K4
4' DIA.
RIM EL. 60.64
Inv. S (8") = 51.74
Inv. N (8") = 51.84

PRC +63.16 63.01
PRC +79.01 62.27
PT +54.60 62.01
PI +92.00

72 68 64 60 56 52 48 44 40

30+00 31+00 32+00 33+00 34+00 35+00 36+00 37+00 38+00 39+00

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www.HeidtDesign.com

CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

ROADWAY PLAN & PROFILE

PREPARED FOR: KH CW DELAND LLC

DESCRIPTION	DATE
REVIEW SUBMITTAL	02/20/2023

PROJECT NO: KGA-CD-1031
FILE: RP-06
DESIGN BY: DMYTRYK
DRAWN BY: JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

This item has been digitally signed and sealed by Strickland T. Smith, P.E. on the date indicated here.

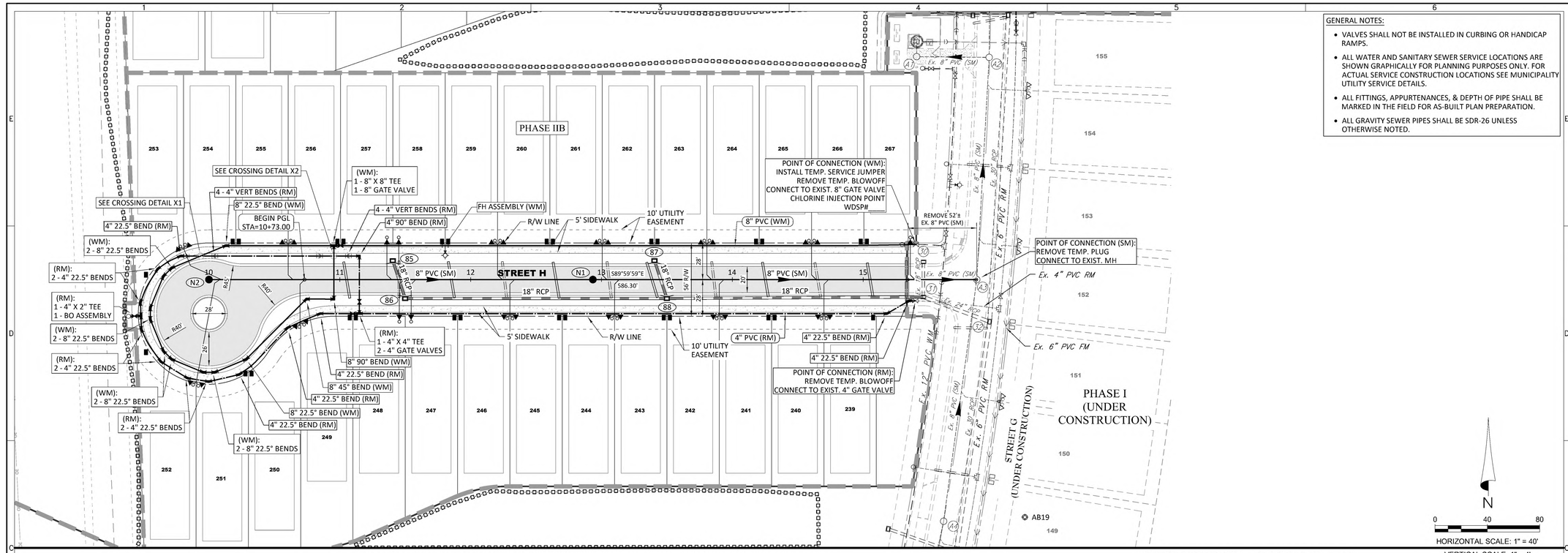
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DATE:_____
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GENERAL NOTES:

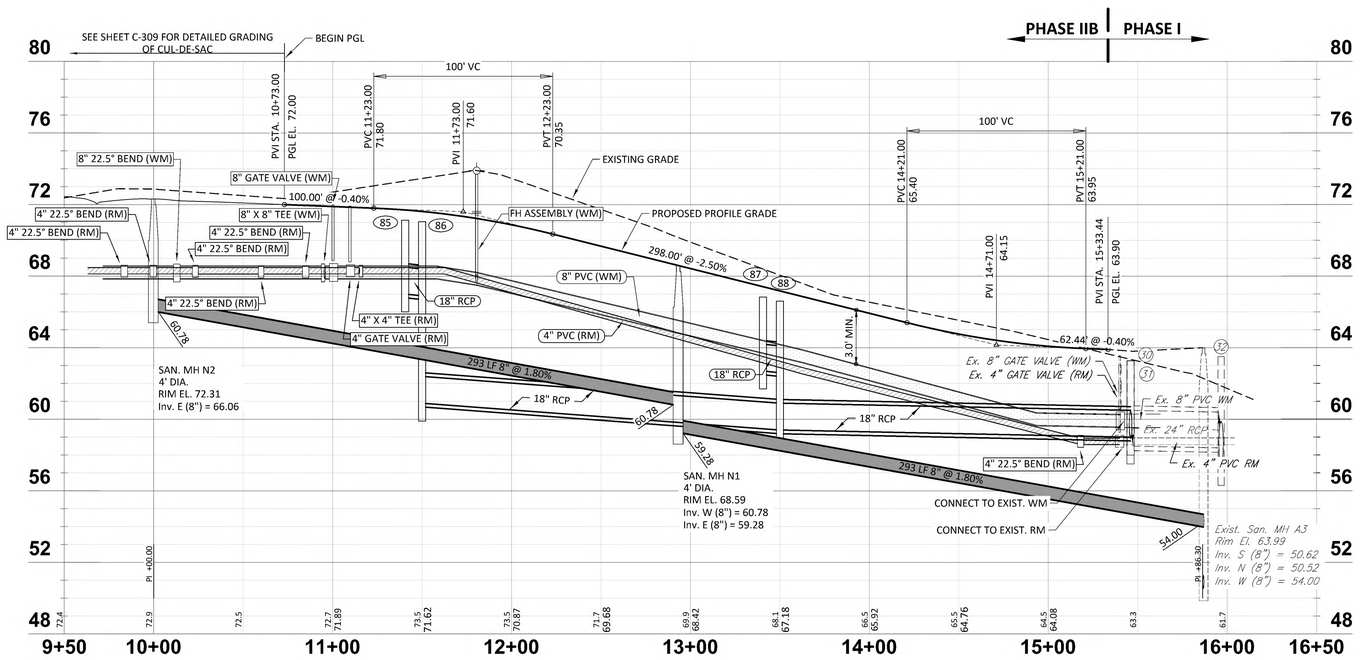
- VALVES SHALL NOT BE INSTALLED IN CURBING OR HANDICAP RAMPS.
- ALL WATER AND SANITARY SEWER SERVICE LOCATIONS ARE SHOWN GRAPHICALLY FOR PLANNING PURPOSES ONLY. FOR ACTUAL SERVICE CONSTRUCTION LOCATIONS SEE MUNICIPALITY UTILITY SERVICE DETAILS.
- ALL FITTINGS, APPURTENANCES, & DEPTH OF PIPE SHALL BE MARKED IN THE FIELD FOR AS-BUILT PLAN PREPARATION.
- ALL GRAVITY SEWER PIPES SHALL BE SDR-26 UNLESS OTHERWISE NOTED.

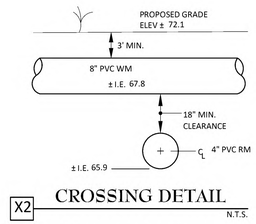
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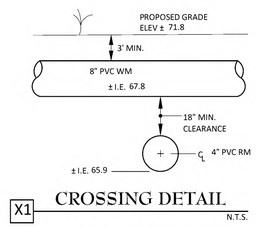
VERTICAL SCALE: 1" = 4'

ELEVATIONS BASED ON:
NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION:
NAVD 88 TO NGVD 29 = +1.07

STREET H - PHASE IIB







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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

ROADWAY PLAN & PROFILE

PREPARED FOR: KH CW DELAND LLC

DESCRIPTION	DATE
REVIEW SUBMITTAL	02/20/2023

PROJECT NO:	KGA-CD-1031
FILE:	RP-07
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

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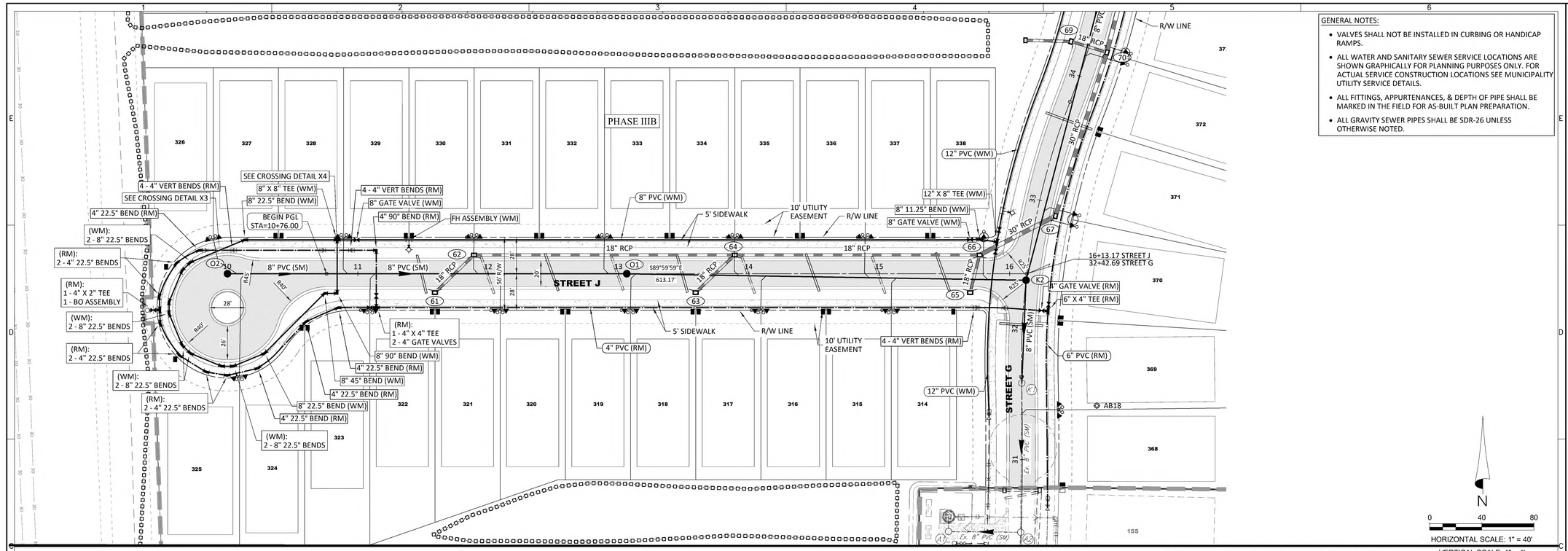
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DATE:
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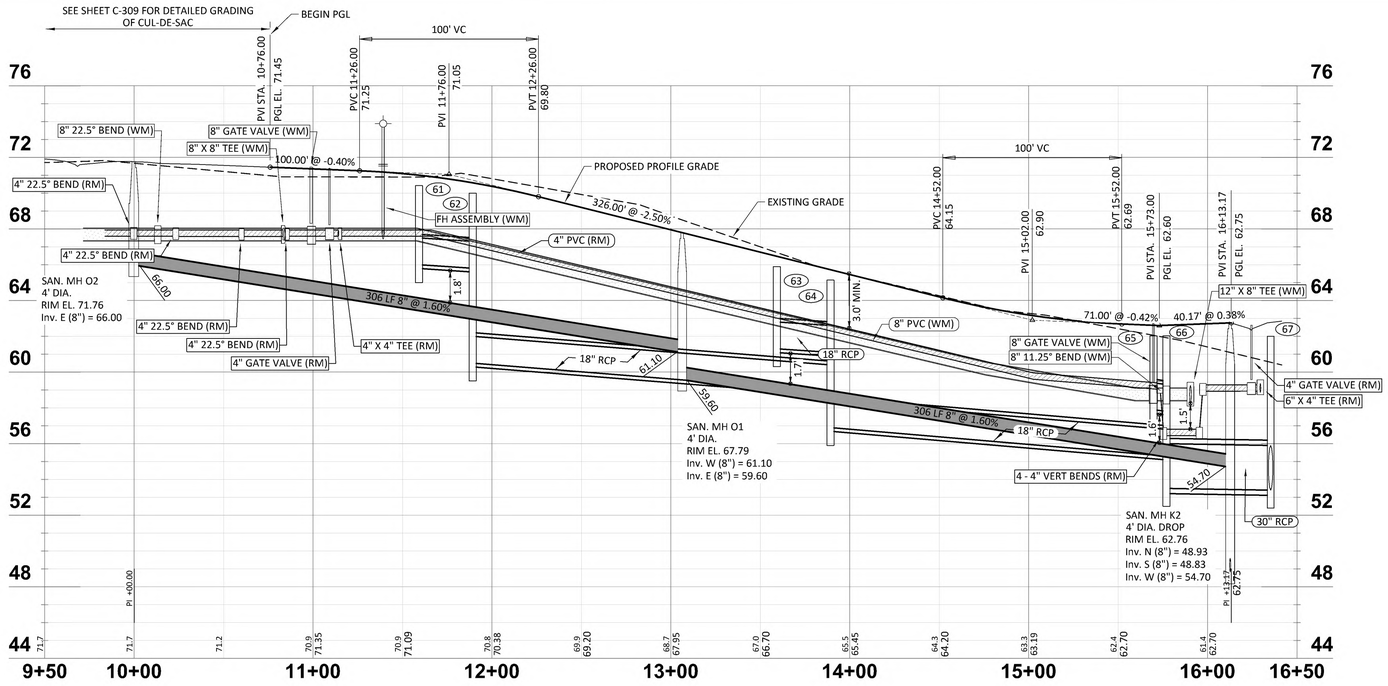
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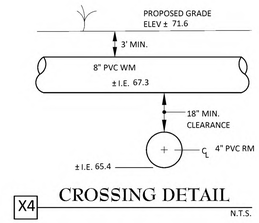
HORIZONTAL SCALE: 1" = 40'

VERTICAL SCALE: 1" = 4'

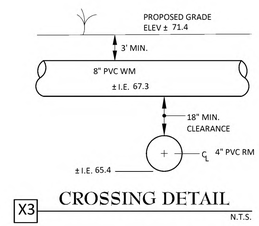
ELEVATIONS BASED ON:
NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION:
NAVD 88 TO NGVD 29 = +1.07

STREET J - PHASE IIIB





X4 CROSSING DETAIL
N.T.S.



X3 CROSSING DETAIL
N.T.S.

GENERAL NOTES:

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www.HeidtDesign.com

CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

ROADWAY PLAN & PROFILE

PREPARED FOR: KH CW DELAND LLC

DESCRIPTION	DATE
REVIEW SUBMITTAL	02/20/2023
DESCRIPTION	DATE

PROJECT NO:	KGA-CD-1031
FILE:	RP-08
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

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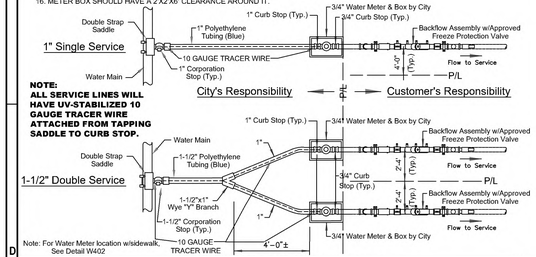
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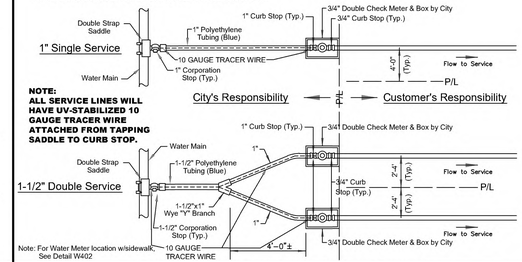
NOTES:
1. WATER MAINS TO BE ON NORTH or EAST SIDE OF R.O.W., APPROX. 4 FT. BACK OF CURB UNLESS OTHERWISE AUTHORIZED BY CITY ENGINEER.
2. SERVICE CONNECTIONS TO BE 4 FT. FROM SIDE LOT LINE ON EITHER SIDE OF LOT. THESE SERVICES TO BE CONSISTENT WITHIN THE SUBDIVISION. DRIVEWAYS SHALL NOT BE BUILT OVER METERS.
3. ALL LINES SHALL BE CHLORINATED and PRESSURE TESTED (TEST FOR TWO HOURS @ 150 P.S.I.) UNDER THE DIRECTION OF THE UTILITIES DEPARTMENT. AFTER SUCCESSFUL COMPLETION OF THE TESTING and CHLORINATION, THE PRESSURE SHALL REMAIN ON THE SYSTEM AT ALL TIMES.
4. TEN FT. SEPARATION REQUIRED BETWEEN PARALLEL WATER & SANITARY SEWER LINES.
5. SADDLE IS REQUIRED FOR ALL SERVICE CONNECTIONS TO 4" PVC MAINS. SADDLE IS REQUIRED FOR 2" SERVICE CONNECTIONS TO 6" and LARGER PVC MAINS. LARGEST SERVICE CONNECTION TO A 4" MAIN IS MIN. 1-1/2" and LARGEST TO ANY MAIN IS 2".
6. MINIMUM DISTANCE BETWEEN SERVICE TAPS TO BE NOT LESS THAN 36".
7. SINGLE SERVICE TAP SHALL BE 1".
8. DOUBLE SERVICE TAP SHALL BE 1-1/ 2".
9. ALL FITTINGS SHALL BE BRASS ONLY.
10. ALL CORPORATION STOPS, SHALL BE "FORD" OR "MUELLER" ONLY.
11. FREEZE PROTECTION VALVE, SHALL BE "CONBRACO" 40LF000FPV2F.
12. ALL 3/4", 1", 1-1/2", & 2" W.M., SHALL BE SDR 9, 200 psi, ASTMD 2737, (BLUE) POLYETHYLENE TUBING.
13. ALL BRASS FITTINGS SHALL BE LEAD FREE.
14. NO GALVANIZED FITTINGS CONNECTED TO BRASS FITTINGS.
15. PLANTINGS AND OBSTRUCTIONS SHOULD BE AVOIDED WITHIN 3 FT. RADIUS FOR SERVICE ACTIVITY.
16. METER BOX SHOULD HAVE A 2'X2'X6' CLEARANCE AROUND IT.



DATE: 11/07/2022 **WATER MAIN SERVICE CONNECTION (BACKFLOW)** W401

City of DeLand - Standard Details

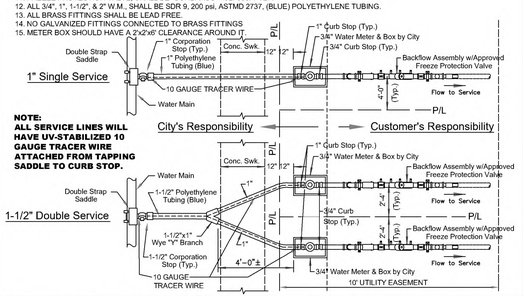
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3. ALL LINES SHALL BE CHLORINATED and PRESSURE TESTED (TEST FOR TWO HOURS @ 150 P.S.I.) UNDER THE DIRECTION OF THE UTILITIES DEPARTMENT. AFTER SUCCESSFUL COMPLETION OF THE TESTING and CHLORINATION, THE PRESSURE SHALL REMAIN ON THE SYSTEM AT ALL TIMES.
4. TEN FT. SEPARATION REQUIRED BETWEEN PARALLEL WATER & SANITARY SEWER LINES.
5. SADDLE IS REQUIRED FOR ALL SERVICE CONNECTIONS TO 4" PVC MAINS. SADDLE IS REQUIRED FOR 2" SERVICE CONNECTIONS TO 6" and LARGER PVC MAINS. LARGEST SERVICE CONNECTION TO A 4" MAIN IS MIN. 1-1/2" and LARGEST TO ANY MAIN IS 2".
6. MINIMUM DISTANCE BETWEEN SERVICE TAPS TO BE NOT LESS THAN 36".
7. SINGLE SERVICE TAP SHALL BE 1".
8. DOUBLE SERVICE TAP SHALL BE 1-1/ 2".
9. ALL FITTINGS SHALL BE BRASS ONLY.
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14. NO GALVANIZED FITTINGS CONNECTED TO BRASS FITTINGS.
15. PLANTINGS AND OBSTRUCTIONS SHOULD BE AVOIDED WITHIN 3 FT. RADIUS FOR SERVICE ACTIVITY.
16. METER BOX SHOULD HAVE A 2'X2'X6' CLEARANCE AROUND IT.



DATE: 11/07/2022 **WATER MAIN SERVICE CONNECTION (DOUBLE CHECK METER)** W401A

City of DeLand - Standard Details

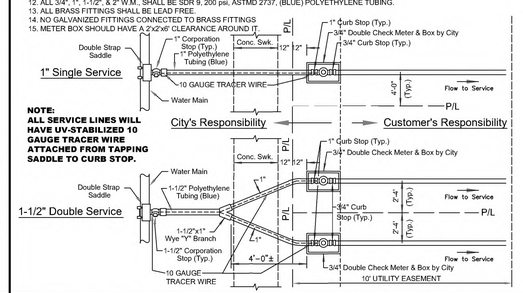
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7. SINGLE SERVICE TAP SHALL BE 1".
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9. ALL FITTINGS SHALL BE BRASS ONLY.
10. ALL CORPORATION STOPS, SHALL BE "FORD" OR "MUELLER" ONLY.
11. FREEZE PROTECTION VALVE, SHALL BE "CONBRACO" 40LF000FPV2F.
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13. ALL BRASS FITTINGS SHALL BE LEAD FREE.
14. NO GALVANIZED FITTINGS CONNECTED TO BRASS FITTINGS
15. METER BOX SHOULD HAVE A 2'x2'x6' CLEARANCE AROUND IT.



DATE: 11/07/2022 **WATER MAIN SERVICE CONNECTION WITH SIDEWALK (BACKFLOW)** W402

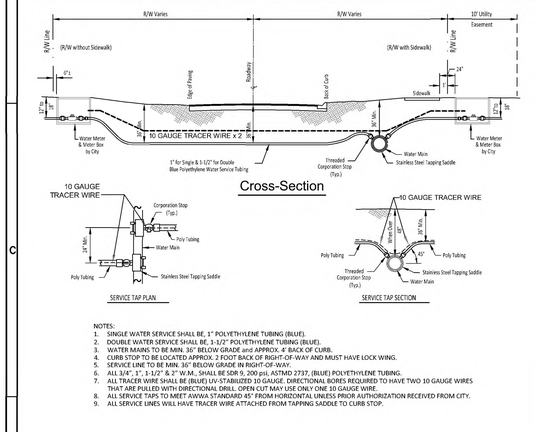
City of DeLand - Standard Details

NOTES:
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8. DOUBLE SERVICE TAP SHALL BE 1-1/ 2".
9. ALL FITTINGS SHALL BE BRASS ONLY.
10. ALL CORPORATION STOPS, SHALL BE "FORD" OR "MUELLER" ONLY.
11. FREEZE PROTECTION VALVE, SHALL BE "CONBRACO" 40LF000FPV2F.
12. ALL 3/4", 1", 1-1/2", & 2" W.M., SHALL BE SDR 9, 200 psi, ASTMD 2737, (BLUE) POLYETHYLENE TUBING.
13. ALL BRASS FITTINGS SHALL BE LEAD FREE.
14. NO GALVANIZED FITTINGS CONNECTED TO BRASS FITTINGS
15. METER BOX SHOULD HAVE A 2'x2'x6' CLEARANCE AROUND IT.



DATE: 11/07/2022 **WATER MAIN SERVICE CONN. WITH SIDEWALK (DBL. CHECK METER)** W402A

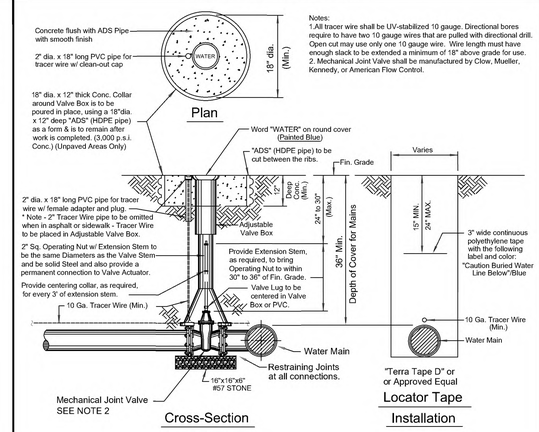
City of DeLand - Standard Details



NOTES:
1. SINGLE WATER SERVICE SHALL BE, 1" POLYETHYLENE TUBING (BLUE).
2. DOUBLE WATER SERVICE SHALL BE, 1-1/2" POLYETHYLENE TUBING (BLUE).
3. WATER MAINS TO BE MIN. 36" BELOW GRADE and APPROX. 4' BACK OF CURB.
4. CURB STOP TO BE LOCATED APPROX. 2 FOOT BACK OF RIGHT-OF-WAY AND MUST HAVE LOCK WING.
5. SERVICE LINE TO BE MIN. 36" BELOW GRADE IN RIGHT-OF-WAY.
6. ALL 3/4", 1", 1-1/2" & 2" W.M., SHALL BE SDR 9, 200 psi, ASTMD 2737, (BLUE) POLYETHYLENE TUBING.
7. ALL TRACER WIRE SHALL BE (BLUE) UV-STABILIZED 10 GAUGE. DIRECTIONAL BORES REQUIRED TO HAVE TWO 10 GAUGE WIRES THAT ARE PULLED WITH DIRECTIONAL DRILL. OPEN CUT MAY USE ONLY ONE 10 GAUGE WIRE.
8. ALL SERVICE TAPS TO MEET AWWA STANDARD 45° FROM HORIZONTAL UNLESS PRIOR AUTHORIZATION RECEIVED FROM CITY.
9. ALL SERVICE LINES WILL HAVE TRACER WIRE ATTACHED FROM TAPPING SADDLE TO CURB STOP.

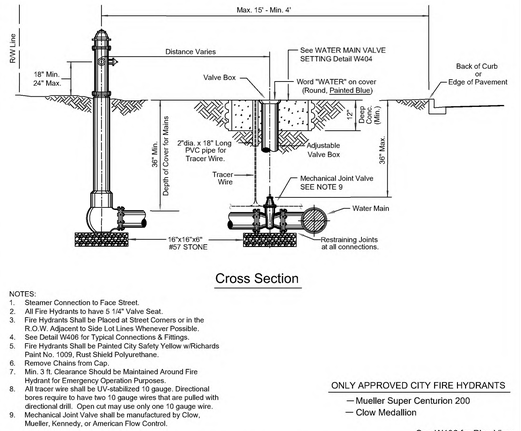
DATE: 11/07/2022 **WATER MAIN SERVICE LINES** W403

City of DeLand - Standard Details



DATE: 11/07/2022 **WATER MAIN VALVE SETTING** W404

City of Deland - Standard Details



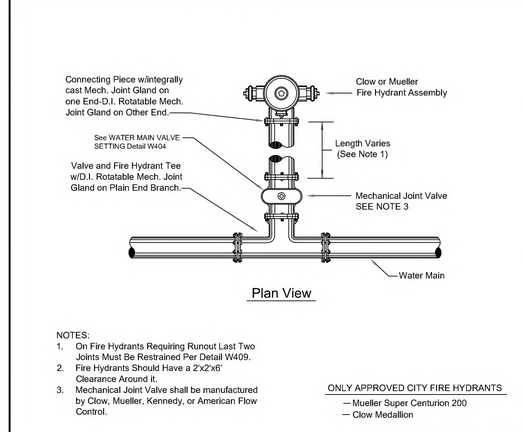
NOTES:
1. Steamer Connection to Face Street.
2. All Fire Hydrants to have 5 1/4" Valve Seat.
3. Fire Hydrants Shall be Placed at Street Corners or in the R.O.W. Adjacent to Side Lot Lines Whenever Possible.
4. See Detail W406 for Typical Connections & Fittings.
5. Fire Hydrants Shall be Painted City Safety Yellow w/Richards Paint No. 1009, Rust Shield Polyurethane.
6. Remove Chains from Cap.
7. Min. 3 ft. Clearance Should be Maintained Around Fire Hydrant for Emergency Operation Purposes.
8. All tracer wire shall be UV-stabilized 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire.
9. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.

ONLY APPROVED CITY FIRE HYDRANTS
— Mueller Super Centurion 200
— Clow Medallion

See W406 for Plan View

DATE: 11/07/2022 **FIRE HYDRANT SETTING SECTION** W405

City of DeLand -Standard Details



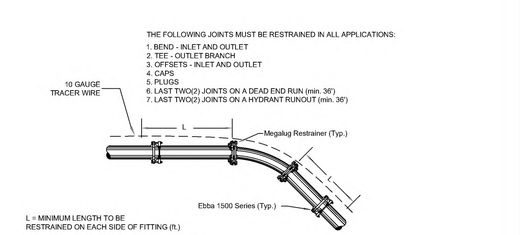
NOTES:
1. On Fire Hydrants Requiring Runout Last Two Joints Must Be Restrained Per Detail W409.
2. Fire Hydrants Should Have a 2'x2'x6' Clearance Around it.
3. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.

ONLY APPROVED CITY FIRE HYDRANTS
— Mueller Super Centurion 200
— Clow Medallion

See W405 for Cross Section

DATE: 11/07/2022 **FIRE HYDRANT SETTING PLAN** W406

City of DeLand - Standard Details



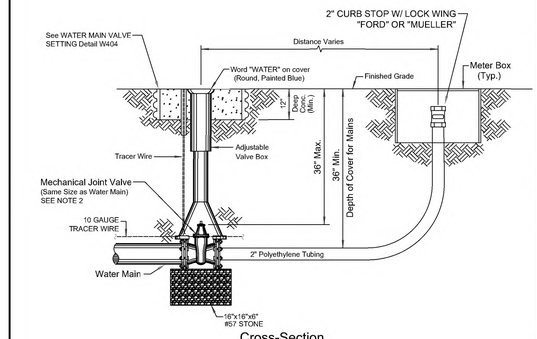
L = MINIMUM LENGTH TO BE RESTRAINED ON EACH SIDE OF FITTING (ft.)

NOM. PIPE SIZE	ELBOWS (deg.)				VALVE TEES
	11.25	22.50	45	90	
4	3	5	8	12	9
6	4	6	10	15	11
8	4	7	13	20	14
10	5	9	15	25	18
12	6	10	17	29	21
14	6	13	26	61	30
16	7	14	28	67	49
18	8	15	31	73	68
20	8	16	33	80	85

NOTE: THRUST RESTRAINT AT FITTINGS AND VALVES SHALL BE BY USE OF EBBA IRON MEGALUG RESTRAINERS. THRUST RESTRAINT BETWEEN PIPE JOINTS SHALL BE BY EBBA IRON SERIES 1500 RESTRAINERS.

DATE: 11/07/2022 **THRUST RESTRAINING DETAIL FOR PVC PIPE** W408

City of DeLand - Standard Details



Notes:
1. All tracer wire shall be UV-stabilized 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire.
2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.

DATE: 11/07/2022 **WATER MAIN BLOWOFF DETAIL** W410

City of DeLand - Standard Details

HEIDT DESIGN
Civil Engineering • Planning & GIS
Environmental Services • Surveying & Mapping
Ecological Services • Landscape Architecture
Engineering Business Certificate of Authorization No. 28762
Landscape Architecture Certificate of Authorization No. LC26000405
5904-A Hampton Oaks Pkwy.
Tampa, Florida 33610
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Fax: 813-464-7629
www.HeidtDesign.com

N:\LAKE WINNIE\MSSET\PHASE 2\ENGINEERING\WSD.DWG-C-601 2023/06/07 3:14 PM MARK JONES

CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

WATER & SEWER DETAILS

PREPARED FOR: KH CW DELAND LLC

DESCRIPTION	DATE
REVIEW SUBMITTAL	02/20/2023

PROJECT NO:	KGA-CD-1031
FILE:	WSD
DESIGN BY:	JONES
DRAWN BY:	BLACK

STATE OF FLORIDA PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

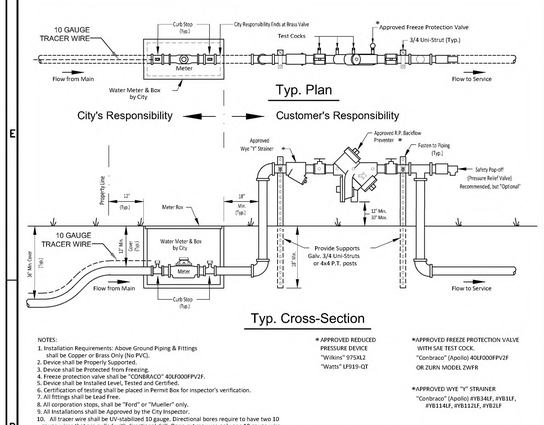
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STRICKLAND T. SMITH
DATE:
LICENSE NO. 50652

C-601

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NOTES:
1. Installation Requirements: Above Ground Piping & Fittings shall be Copper or Brass Only (No PVC).
2. Device shall be Properly Supported.
3. Device shall be Protected from Freezing.
4. Freeze protection valve shall be "CONBRACO" 40LF000FPV2F.
5. Device shall be Installed Level, Tested and Certified.
6. Certification of testing shall be placed in Permit Box for inspector's verification.
7. All fittings shall be Lead Free.
8. All corporation stops, shall be "Ford" or "Mueller" only.
9. All Installations shall be Approved by the City Inspector.
10. All tracer wire shall be UV-stabilized 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire.

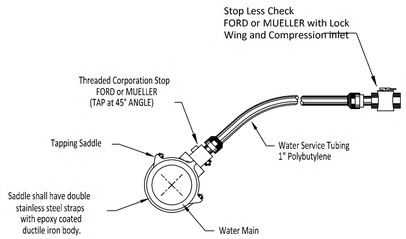
* APPROVED REDUCED PRESSURE DEVICE
"Wilkins" 975XL2
"Watts" LF919-QT

*APPROVED FREEZE PROTECTION VALVE WITH SAE TEST COCK.
"Conbraco" (Apollo) 40LF000FPV2F
OR ZURN MODEL ZWFR

*APPROVED WYE "Y" STRAINER
"Conbraco" (Apollo) #Y834LF, #YB31F, #YB114LF, #YB112LF, #Y82LF

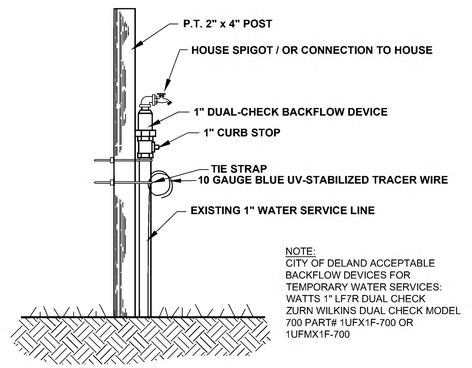
DATE: 11/07/2022 **WATER METER & BACKFLOW ASSEMBLY - 1" THRU 2-1/2" MODELS** **W411**

City of DeLand - Standard Details



DATE: 11/07/2022 **CHLORINATION TAP** **W416**

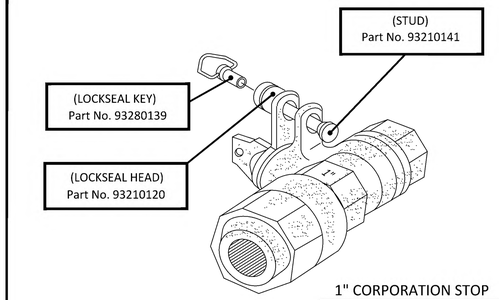
City of DeLand - Standard Details



NOTE:
CITY OF DELAND ACCEPTABLE BACKFLOW DEVICES FOR TEMPORARY WATER SERVICES:
WATTS 1" LF7R DUAL CHECK
ZURN WILKINS DUAL CHECK MODEL 700 PART# 1UFX1F-700 OR 1UFMX1F-700

DATE: 11/07/2022 **TEMPORARY RESIDENTIAL CONSTRUCTION POTABLE WATER SERVICE** **W417**

City of DeLand - Standard Details

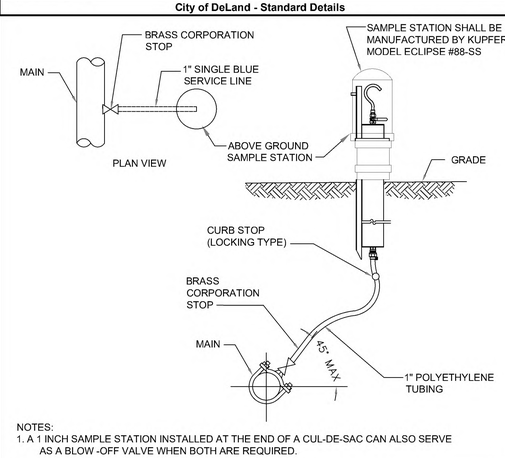


NOTE:
ALL SERVICE LINE WHIPS SHALL BE BULLET LOCKED ***OFF*** BY THE CONTRACTOR AFTER INSTALLATION AND SAMPLING HAVE BEEN COMPLETED

Manufacturer:
"FIROMATIC LOCKSEAL"

DATE: 11/07/2022 **WATER METER LOCKSEAL ASSEMBLY** **W418**

City of DeLand - Standard Details



NOTES:
1. A 1 INCH SAMPLE STATION INSTALLED AT THE END OF A CUL-DE-SAC CAN ALSO SERVE AS A BLOW -OFF VALVE WHEN BOTH ARE REQUIRED.

DATE: 11/07/2022 **WATER SAMPLE STATION** **W419**

City of DeLand - Standard Details

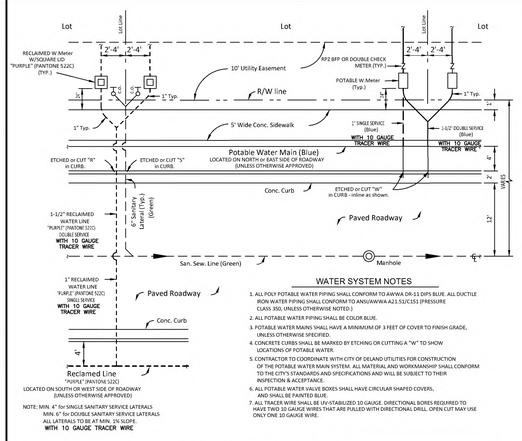
LOCATION OF PUBLIC WATER SYSTEM MAINS IN ACCORDANCE WITH F.A.C. RULE 62-555.314

Other pipe	Horizontal Separation	Crossings (1)	Joint Spacing @ Crossing (Full Joint Centered)
Storm Sewer Stormwater Force Main, Reclaimed Water (2)	WATER MAIN 3 ft. minimum	WATER MAIN 12 inches is the minimum except for storm sewer,then 6 inches is the minimum and 12 inches is preferred	Alternate 3' ft. minimum WATER MAIN
Vacuum Sanitary Sewer	WATER MAIN 10 ft. preferred 3 ft. minimum	WATER MAIN 12 inches preferred 6 inches minimum	Alternate 3' ft. minimum WATER MAIN
Gravity Sewer Sanitary Sewer, Sanitary Sewer Force Main, Reclaimed Water (4)	WATER MAIN 10 ft. preferred 6 ft. minimum (3)	WATER MAIN 12 inches is the minimum except for gravity sewer,then 6 inches is the minimum and 12 inches is preferred	Alternate 6' ft. minimum WATER MAIN
On-Site Sewage Treatment & Disposal System(4)	10 ft minimum	---	---

(1) Water Main Should Cross Above other pipe. When Water Main Must Be Below Other Pipe,the Minimum Separation is 12" inches.
(2) Reclaimed Water Regulated Under Part III of chapter 62-610, F.A.C.
(3) 3 ft. for Gravity Sanitary sewer where the Bottom of the Water Main is laid at least 6 inches above the top of gravity sanitary sewer.
(4) Reclaimed water not regulated under Part III of Chapter 62-160, F.A.C.

DATE: 11/07/2022 **WATER PIPE SEPERATION REQUIREMENTS** **W420**

City of DeLand - Standard Details



WATER SYSTEM NOTES
1. ALL POLY POTABLE WATER PIPING SHALL CONFORM TO AWWA D8-11 DIPS BLUE. ALL DUCTILE IRON WATER PIPING SHALL CONFORM TO ANSI/AWWA A21.51/C151 (PRESSURE CLASS 350, UNLESS OTHERWISE NOTED.)
2. ALL POTABLE WATER PIPING SHALL BE COLOR BLUE.
3. POTABLE WATER MAINS SHALL HAVE A MINIMUM OF 3 FEET OF COVER TO FINISH GRADE, UNLESS OTHERWISE SPECIFIED.
4. CONCRETE CURBS SHALL BE MARKED BY ETCHING OR CUTTING A "W" TO SHOW LOCATIONS OF POTABLE WATER.
5. CONTRACTOR TO COORDINATE WITH CITY OF DELAND UTILITIES FOR CONSTRUCTION OF THE POTABLE WATER MAIN SYSTEM. ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO THE CITY'S STANDARDS AND SPECIFICATIONS AND WILL BE SUBJECT TO THEIR INSPECTION & ACCEPTANCE.
6. ALL POTABLE WATER VALVE BOXES SHALL HAVE CIRCULAR SHAPED COVERS, AND SHALL BE PAINTED BLUE.
7. ALL TRACER WIRE SHALL BE UV-STABILIZED 10 GAUGE. DIRECTIONAL BORES REQUIRED TO HAVE TWO 10 GAUGE WIRES THAT ARE PULLED WITH DIRECTIONAL DRILL. OPEN CUT MAY USE ONLY ONE 10 GAUGE WIRE.

DATE: 11/07/2022 **RESIDENTIAL UTILITY LAYOUT** **W422**

City of DeLand - Standard Details

HEIDT DESIGN
Civil Engineering • Planning & GIS
Land Development • Environmental
Ecological Services • Landscape Architecture
Engineering Business Certificate of Authorization No. 28762
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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

WATER & SEWER DETAILS

PREPARED FOR: KH CW DELAND LLC

DATE	DESCRIPTION
02/20/2023	REVIEW SUBMITTAL

PROJECT NO:	KGA-CD-1031
FILE:	WSD
DESIGN BY:	JONES
DRAWN BY:	BLACK

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

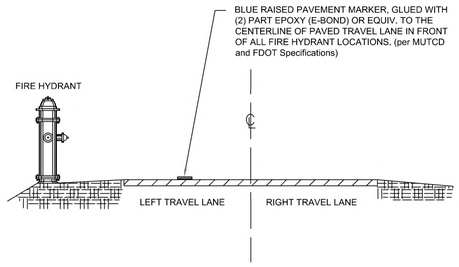
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DATE: 11/07/2022 **REFLECTIVE PAVEMENT MARKER FOR FIRE HYDRANT LOCATION** W423

City of DeLand - Standard Details

Approved Ford Valve for Service Lines

1" SERVICE



Pack Joint for Copper or Plastic Tubing (CTS) Inlet by Meter Swivel Nut

Catalog Number	Description: Valve Size	Serv. Line Size	Meter Size	Approx. Wt. Lbs.
B43-211W-NL	5/8"	1/2"	5/8"	1.4
B43-212W-NL	5/8"	1/2"	5/8"x3/4" & 3/4"	1.5
▶♦ B43-231W-NL	5/8"	3/4"	5/8"	1.6
▶♦ B43-232W-NL	5/8"	3/4"	5/8"x3/4" & 3/4"	1.7
▶ B43-331W-NL	3/4"	3/4"	5/8"	2.1
▶♦ B43-332W-NL	3/4"	3/4"	5/8"x3/4" & 3/4"	2.4
▶ B43-334W-NL	3/4"	3/4"	1"	2.3
▶ B43-341W-NL	3/4"	1"	5/8"	2.7
▶♦ B43-342W-NL	3/4"	1"	5/8"x3/4" & 3/4"	2.4
▶♦ B43-344W-NL	3/4"	1"	1"	2.7
▶♦ B43-444W-NL	1"	1"	1"	3.2
B43-454W-NL	1"	1-1/4"	1"	3.4

2" SERVICE



Pack Joint for Copper or Plastic Tubing (CTS) by Female Iron Pipe Thread

Catalog Number	Valve Size	CTS End	FIP End	Approx. Wt. Lbs.
▶♦ * B41-333-NL	3/4"	3/4"	3/4"	2.0
▶♦ B41-334-NL	3/4"	3/4"	1"	2.1
▶♦ B41-343-NL	3/4"	1"	3/4"	2.2
▶♦ B41-344-NL	3/4"	1"	1"	2.4
♦ BL41-344-4-875-NL	3/4"	1"	1"	3.1
▶♦ * B41-444-NL	1"	1"	1"	2.8
♦ B41-454-NL	1"	1-1/4"	1"	3.2
♦ B41-455-NL	1"	1-1/4"	1-1/4"	3.7
♦ B41-555-NL	1-1/4"	1-1/4"	1-1/4"	5.6
♦ **B41-666-NL	1-1/2"	1-1/2"	1-1/2"	7.0
B41-677-NL	1-1/2"	2"	2"	9.6
♦ **B41-777-NL	2"	2"	2"	11.1

DATE: 11/07/2022 **VALVE FOR WATER AND RECLAIM SERVICE LINE** W424

City of DeLand - Standard Details

Approved Muller Valve for Service Lines

1" SERVICE



P-24350N

Mueller 300 Ball Straight Meter Valve
Mueller Pack Joint Connection for CTS O.D.* tubing x meter swivel nut**.
Quarter turn check - lock wing. 360° turn option available by adding -3 suffix to catalog number.
Example: P-24350-3

Catalog size	3/4"x5/8" R †	3/4" R †	3/4"	5/8"x3/4"x1"	1" R †	1"
Meter size	5/8"	5/8"x3/4", 3/4"	5/8"x3/4", 3/4"	5/8"x3/4", 3/4"	1"	1"
Tubing size	3/4"	3/4"	3/4"	1"	1"	1"

2" SERVICE



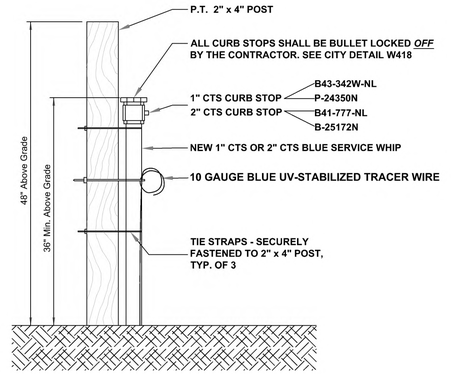
P-25172N

Mueller 300 Ball Curb Valve
Inlet: Mueller Pack Joint Connection for CTS O.D.* tubing
Outlet: F.I.P. thread
Quarter turn check-this valve may be ordered with 360° turn option by adding -3 to end of catalog number (P-25172-3)

3/4"R	3/4"	1"R	1"	1-1/2"	2"

DATE: 11/07/2022 **VALVE FOR WATER AND RECLAIM SERVICE LINE** W425

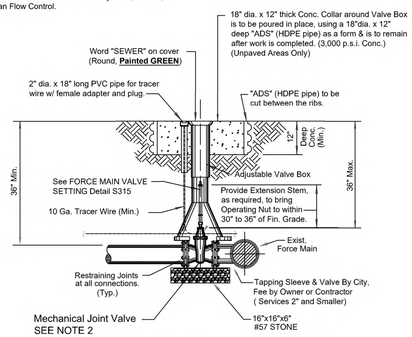
City of DeLand - Standard Details



DATE: 11/07/2022 **NEW POTABLE SERVICE WHIP** W426

City of DeLand - Standard Details

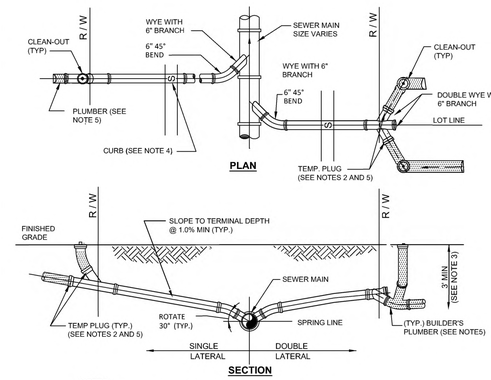
Notes:
1.All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use.
2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.



Note:
For Wet Taps larger than 2", Sleeves & Valves will be furnished and installed by the contractor in the presence of the city inspector. Tapping sleeve shall be Ford, Romac, or JCM stainless steel only.

DATE: 11/07/2022 **FORCE MAIN TAPPING SLEEVE & VALVE** S407

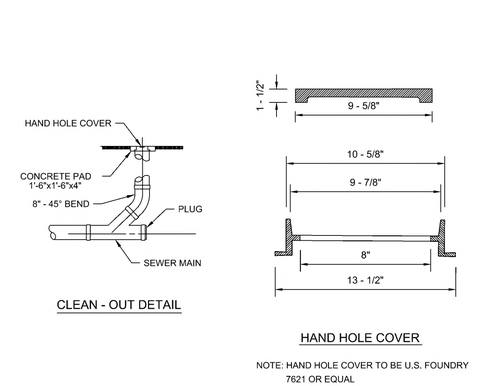
City of DeLand - Standard Details



NOTES:
1. INVERT OF SERVICE LATERAL MUST BE ABOVE SPRING LINE.
2. SERVICE LATERAL SHALL BE CAPPED BY THE CONTRACTOR.
3. WYE SHALL BE NO SHALLOWER THAN 3-FEET AND NO DEEPER THAN 5-FEET.
4. CUT OR CAST "S" IN CONCRETE CURB AT SEWER LATERAL LOCATION AND PAINT GREEN.
5. PLUMBER SHALL REMOVE PLUG, INSTALL CLEAN-OUT, AND CONNECT SERVICE LATERAL TO HOUSE.

DATE: 11/07/2022 **SANITARY SERVICE LATERIALS** S305

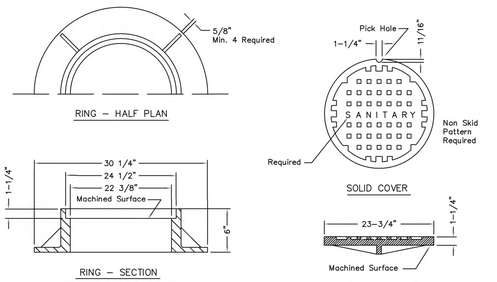
City of DeLand - Standard Details



NOTE: HAND HOLE COVER TO BE U.S. FOUNDRY 7621 OR EQUAL

DATE: 11/07/2022 **CLEAN - OUT** S308

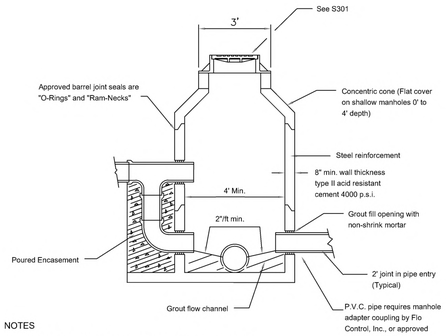
City of DeLand - Standard Details



NOTE:
Manufacturers model of storm ring and cover to be approved by City Engineer.

DATE: 11/07/2022 **SANITARY MANHOLE COVER - USF 170-E** S301

City of DeLand - Standard Details

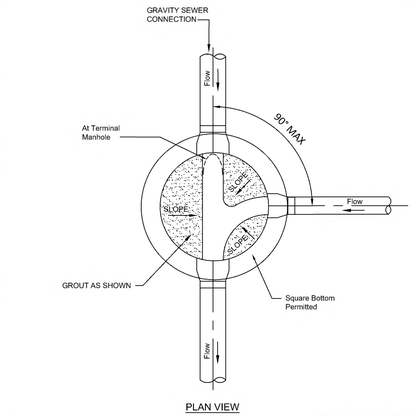


NOTES
1. Precast manhole drop may be approved by City Engineer. Shop drawing submittal required.
2. Drop required when 2' or over.
3. Manholes shall have an interior and exterior coating of at least 15 mils dry thickness PROLO EP214-351 Epoxi-Mastic
4. Polymer concrete manholes are accepted upon review and approval by the City of DeLand Engineering Dept.

SEE S303 FOR PLAN VIEW

DATE: 11/07/2022 **SANITARY MANHOLE** S302

City of DeLand - Standard Details

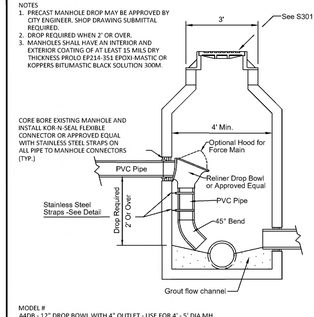


SEE S302 FOR SECTION

DATE: 11/07/2022 **SANITARY MANHOLE** S303

City of DeLand - Standard Details

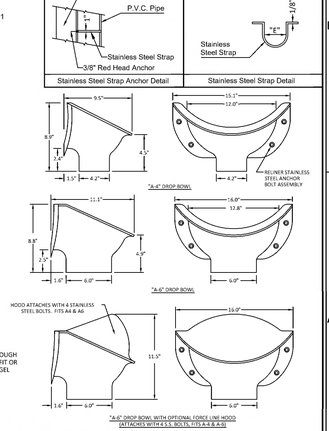
NOTES
1. PRECAST MANHOLE DROP MAY BE APPROVED BY CITY ENGINEER. SHOP DRAWING SUBMITTAL REQUIRED.
2. DROP REQUIRED WHEN 2' OR OVER.
3. MANHOLES SHALL HAVE AN INTERIOR AND EXTERIOR COATING OF AT LEAST 15 MILS DRY THICKNESS PROLO EP214-351 EPOXI-MASTIC OR KOPPERS BITUMASTIC BLACK SOLUTION 300M.



MODEL #
A4DB - 12" DROP BOWL WITH 4" OUTLET - USE FOR 4' - 5' DIA MH
A6R96 - 12" DROP BOWL WITH 4" OUTLET - USE FOR 6' - 8' DIA MH
A6DB - 12" DROP BOWL WITH 6" OUTLET - USE FOR 4' - 5' DIA MH
A6R96 - 12" DROP BOWL WITH 6" OUTLET - USE FOR 6' - 8' DIA MH

THE "A-4" BOWL WILL SERVICE UP THROUGH FULL 6" INLETS. THE "A-6" BOWL WILL SERVICE UP THROUGH FULL 8" INLETS. CAN BE USED FOR 10" AND 12" INLET MODERATE FLOWS. ALL SIZES ARE FOR RETROFIT OR NEW CONSTRUCTION. FABRICATED IN MARINE GRADE FIBERGLASS AND FINISHED IN BRIGHT WHITE GEL COAT.

USE 4 RELINER ANCHOR ASSEMBLIES TO ATTACH DROP BOWL TO MANHOLE WALL. USE RELINER STAINLESS STEEL PIPE BRACKETS TO SUPPORT DOWN PIPE. EXTERNAL PIPE COUPLER REQUIRED. PROVIDE SWEEP AT DOWN PIPE OUTLET.



DATE: 11/07/2022 **SANITARY MANHOLE - INSIDE DROP FOR GRAVITY & FORCEMAIN** S304

City of DeLand - Standard Details

HEIDT DESIGN
Civil Engineering • Planning & GIS
Land Development Services
Ecological Services • Landscape Architecture
Engineering Business Certificate of Authorization No. 28762
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5904-A Hampton Oaks Pkwy.
Tampa, Florida 33610
Office: 813-253-5311
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www.HeidtDesign.com

CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

WATER & SEWER DETAILS

PREPARED FOR: KH CW DELAND LLC

DESCRIPTION	DATE
REVIEW SUBMITTAL	02/20/2023

PROJECT NO: KGA-CD-1031
FILE: WSD
DESIGN BY: JONES
DRAWN BY: BLACK

STATE OF FLORIDA PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

This item has been digitally signed and sealed by Strickland T. Smith, P.E. on the date indicated here.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

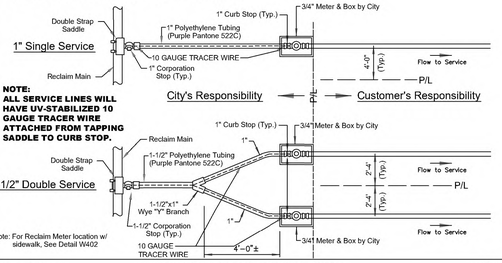
STRICKLAND T. SMITH
DATE:
LICENSE NO. 50652

C-603

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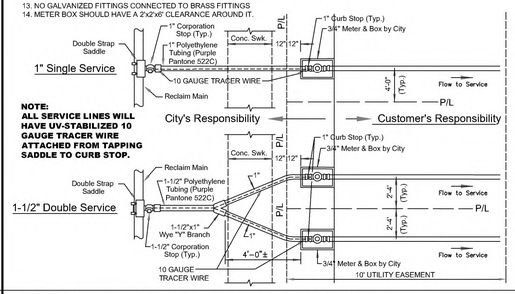
NOTES:
1. RECLAIM MAINS TO BE ON SOUTH or WEST SIDE OF R.O.W., APPROX. 4 FT. BACK OF CURB UNLESS OTHERWISE AUTHORIZED BY CITY ENGINEER.
2. SERVICE CONNECTIONS TO BE 4 FT. FROM SIDE LOT LINE ON EITHER SIDE OF LOT. THESE SERVICES TO BE CONSISTENT WITHIN THE SUBDIVISION. DRIVEWAYS SHALL NOT BE BUILT OVER METERS.
3. ALL LINES SHALL BE PRESSURE TESTED (TEST FOR TWO HOURS @ 150 P.S.I.) UNDER THE DIRECTION OF THE UTILITIES DEPARTMENT. AFTER SUCCESSFUL COMPLETION OF THE TESTING, THE PRESSURE SHALL REMAIN ON THE SYSTEM AT ALL TIMES.
4. TEN FT. SEPARATION REQUIRED BETWEEN PARALLEL WATER & SANITARY SEWER LINES.
5. SADDLE IS REQUIRED FOR ALL SERVICE CONNECTIONS TO 4" PVC MAINS. SADDLE IS REQUIRED FOR 2" SERVICE CONNECTIONS TO 6" and LARGER PVC MAINS. LARGEST SERVICE CONNECTION TO A 4" MAIN IS MIN. 1-1/2" and LARGEST TO ANY MAIN IS 2".
6. MINIMUM DISTANCE BETWEEN SERVICE TAPS TO BE NOT LESS THAN 36".
7. SINGLE SERVICE TAP SHALL BE 1".
8. DOUBLE SERVICE TAP SHALL BE 1-1/ 2".
9. ALL FITTINGS SHALL BE BRASS ONLY.
10. ALL CORPORATION STOPS, SHALL BE "FORD" OR "MUELLER" ONLY.
11. ALL 3/4", 1", 1-1/2", & 2" W.M., SHALL BE SDR 9, 200 psi, ASTMD 2737, (PURPLE) POLYETHYLENE TUBING.
12. ALL BRASS FITTINGS SHALL BE LEAD FREE.
13. NO GALVANIZED FITTINGS CONNECTED TO BRASS FITTINGS.
14. PLANTINGS AND OBSTRUCTIONS SHOULD BE AVOIDED WITHIN 3 FT. RADIUS FOR SERVICE ACTIVITY.
15. METER BOX SHOULD HAVE A 2'X2'X6' CLEARANCE AROUND IT.



DATE: 11/07/2022 **RECLAIM MAIN SERVICE CONNECTION** **R401**

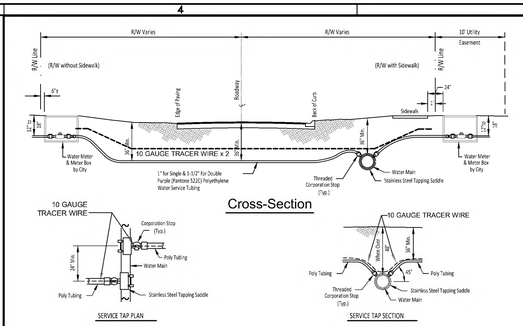
City of DeLand - Standard Details

NOTES:
1. RECLAIM MAINS TO BE ON SOUTH or WEST SIDE OF R.O.W., APPROX. 4 FT. BACK OF CURB UNLESS OTHERWISE AUTHORIZED BY CITY ENGINEER.
2. SERVICE CONNECTIONS TO BE 4 FT. FROM SIDE LOT LINE ON EITHER SIDE OF LOT. THESE SERVICES TO BE CONSISTENT WITHIN THE SUBDIVISION. DRIVEWAYS SHALL NOT BE BUILT OVER METERS.
3. ALL LINES SHALL BE PRESSURE TESTED (TEST FOR TWO HOURS @ 150 P.S.I.) UNDER THE DIRECTION OF THE UTILITIES DEPARTMENT. AFTER SUCCESSFUL COMPLETION OF THE TESTING, THE PRESSURE SHALL REMAIN ON THE SYSTEM AT ALL TIMES.
4. TEN FT. SEPARATION REQUIRED BETWEEN PARALLEL WATER & SANITARY SEWER LINES.
5. SADDLE IS REQUIRED FOR ALL SERVICE CONNECTIONS TO 4" PVC MAINS. SADDLE IS REQUIRED FOR 2" SERVICE CONNECTIONS TO 6" and LARGER PVC MAINS. LARGEST SERVICE CONNECTION TO A 4" MAIN IS MIN. 1-1/2" and LARGEST TO ANY MAIN IS 2".
6. MINIMUM DISTANCE BETWEEN SERVICE TAPS TO BE NOT LESS THAN 36".
7. SINGLE SERVICE TAP SHALL BE 1".
8. DOUBLE SERVICE TAP SHALL BE 1-1/ 2".
9. ALL FITTINGS SHALL BE BRASS ONLY.
10. ALL CORPORATION STOPS, SHALL BE "FORD" OR "MUELLER" ONLY.
11. ALL 3/4", 1", 1-1/2", & 2" W.M., SHALL BE SDR 9, 200 psi, ASTMD 2737, (PURPLE) POLYETHYLENE TUBING.
12. ALL BRASS FITTINGS SHALL BE LEAD FREE.
13. NO GALVANIZED FITTINGS CONNECTED TO BRASS FITTINGS.
14. METER BOX SHOULD HAVE A 2'x2'x6' CLEARANCE AROUND IT.



DATE: 11/07/2022 **RECLAIM MAIN SERVICE CONN. WITH SIDEWALK** **R402**

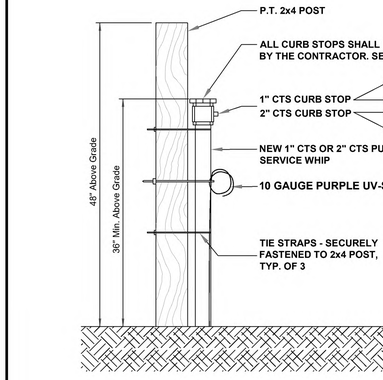
City of DeLand - Standard Details



NOTES:
1. SINGLE RECLAIM SERVICE SHALL BE, 1" POLYETHYLENE TUBING (PURPLE PANTONE 522C).
2. DOUBLE RECLAIM SERVICE SHALL BE, 1-1/2" POLYETHYLENE TUBING (PURPLE PANTONE 522C).
3. RECLAIM MAINS TO BE MIN. 36" BELOW GRADE and APPROX. 4' BACK OF CURB.
4. CURB STOP TO BE LOCATED APPROX. 2 FOOT BACK OF RIGHT-OF-WAY AND MUST HAVE LOCK WING.
5. SERVICE LINE TO BE MIN. 36" BELOW GRADE IN RIGHT-OF-WAY.
6. ALL 3/4", 1", 1-1/2" & 2" R.M., SHALL BE SDR 9, 200 psi, ASTMD 2737, (PURPLE PANTONE 522C) POLYETHYLENE TUBING.
7. ALL LOCATE WIRE SHALL BE (PURPLE) 10 GAUGE. DIRECTIONAL BORES REQUIRED TO HAVE TWO 10 GAUGE WIRES THAT ARE PULLED WITH DIRECTIONAL DRILL. OPEN CUT MAY USE ONLY ONE 10 GAUGE WIRE.
8. ALL SERVICE TAPS TO MEET AWWA STANDARD 45° FROM HORIZONTAL UNLESS PRIOR AUTHORIZATION RECEIVED FROM CITY.
9. ALL SERVICE LINES WILL HAVE UV-STABILIZED 10 GAUGE TRACER WIRE ATTACHED FROM TAPPING SADDLE TO CURB STOP.

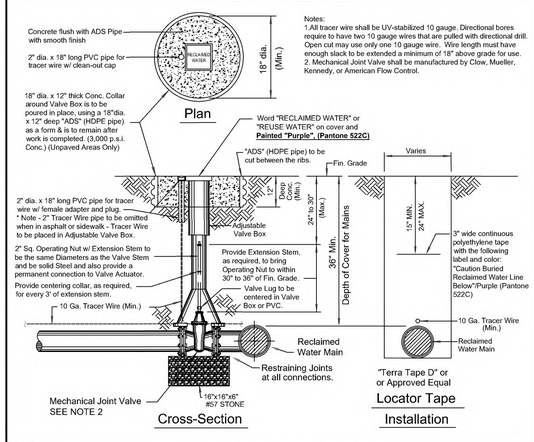
DATE: 11/07/2022 **RECLAIM MAIN SERVICE LINES** **R403**

City of DeLand - Standard Details



DATE: 11/07/2022 **NEW REUSE SERVICE WHIP** **R426**

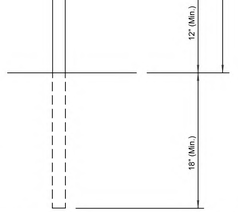
City of DeLand - Standard Details



Notes:
1.All tracer wire shall be UV-stabilized 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use.
2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.

DATE: 11/07/2022 **RECLAIMED WATER VALVE SETTING** **R450**

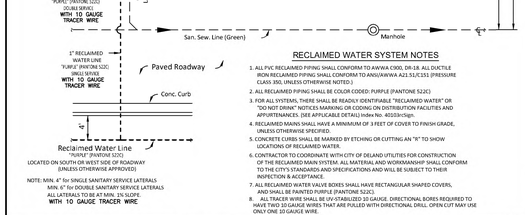
City of Deland - Standard Details



NOTES:
1. Sign background shall be white, letters shall be black (Hellvetica, Swiss 721, corel, or acceptable equal) and border shall be Pantone Purple 522C.
2. Height of sign will depend on location and surrounding landscape plant types. In all cases, the sign shall visable to the public.
3. Engineering grade reflective materials shall be used for sign.
4. Sign materials shall be of 0.040 gauge metal.
5. Sign post shall be 2-3/8" OD steel pipe, hot dip galvanized per ASTM A-123, post to be provided by customer.
6. Mounting hardware shall be stainless steel.
7. Signs shall be place by the contractor in accordance with the City approved plans and/ or as approved by the City. (e.g.) Sign should be posted by entrance to subdivision, storage ponds, irrigation pumps, gate entrances to school facility or game fields, and first and ninth Tees at Golf courses.
8. Public notification should occur in HOA document and City Reclaimed Water Brochure with meter application.

DATE: 11/07/2022 **RECLAIMED WATER SIGNAGE** **R451**

City of DeLand - Standard Details



RECLAIMED WATER SYSTEM NOTES

1. ALL PVC RECLAIMED PIPING SHALL CONFORM TO AWWA C900, DR-18. ALL DUCTILE IRON RECLAIMED PIPING SHALL CONFORM TO ANSI/AWWA A21.51/C151 (PRESSURE CLASS 350, UNLESS OTHERWISE NOTED.)
2. ALL RECLAIMED PIPING SHALL BE COLOR CODED: PURPLE (PANTONE 522C)
3. FOR ALL SYSTEMS, THERE SHALL BE READILY IDENTIFIABLE "RECLAIMED WATER" OR "DO NOT DRINK" NOTICES MARKING OR CODING ON DISTRIBUTION FACILITIES AND APPURTENANCES. (SEE APPLICABLE DETAIL) Index No. 40103sSign.
4. RECLAIMED MAINS SHALL HAVE A MINIMUM OF 3 FEET OF COVER TO FINISH GRADE, UNLESS OTHERWISE SPECIFIED.
5. CONCRETE ITEMS SHALL BE MARKED BY ETCHING OR CUTTING AN "R" TO SHOW LOCATIONS OF RECLAIMED WATER.
6. CONTRACTOR TO COORDINATE WITH CITY OF DELAND UTILITIES FOR CONSTRUCTION OF THE RECLAIMED MAIN SYSTEM. ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO THE CITY'S STANDARDS AND SPECIFICATIONS AND WILL BE SUBJECT TO THEIR INSPECTION & ACCEPTANCE.
7. ALL RECLAIMED WATER VALVE BOXES SHALL HAVE RECTANGULAR SHAPED COVERS, AND SHALL BE PAINTED PURPLE (PANTONE 522C).
8. ALL TRACER WIRE SHALL BE UV-STABILIZED 10 GAUGE. DIRECTIONAL BORES REQUIRED TO HAVE TWO 10 GAUGE WIRES THAT ARE PULLED WITH DIRECTIONAL DRILL. OPEN CUT MAY USE ONLY ONE 10 GAUGE WIRE.

DATE: 11/07/2022 **RECLAIMED WATER SYSTEM LAYOUT** **R452**

City of DeLand - Standard Details

1. THE CITY OF DeLand's UTILITIES DEPARTMENT (386-626-7250) SHALL BE GIVEN A MINIMUM OF 48 HOURS ADVANCE NOTICE (NOT INCLUDING HOLIDAYS OR WEEKENDS) PRIOR TO the BEGINNING OF ANY RECLAIMED WATER SYSTEM CONSTRUCTION.
2. DEWATERING SHALL BE PROVIDED TO KEEP GROUNDWATER ELEVATION A MINIMUM OF 6 INCHES BELOW PROPSED RECLAIMED WATER MAIN.
3. ALL RECLAIMED WATER MAINS SHALL BE LAID ON A FIRM FOUNDATION WITH ALL UNSUITABLE MATERIAL (MUCK, ROCK, COQUINA, ETC.) REMOVED AND REPLACED WITH CLEAN GRANULAR MATERIAL.
4. TRENCHES SHALL BE BACKFILLED WITH MATERIAL ACCEPTABLE TO THE CITY WITH A MINIMUM COMPACTION OF 95% IN UNPAVED AREAS AND 98% IN PAVED AREAS IN ACCORDANCE WITH AASHTO T-180.
5. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO ENSURE THAT TRENCH COMPACTION TESTS ARE PROVIDED AT POINTS 1 FOOT ABOVE THE PIPE AND AT 1 FOOT VERTICAL INTERVALS TO FINISH GRADE, AT A MINIMUM SPACING OF EVERY 300 FEET
6. 3" METALLIZED PIPE LOCATION TAPE SHALL BE LOCATED BETWEEN 15" AND 24" BELOW FINISHED GRADE OR AS SPECIFIED BY MANUFACTURER FOR ALL PVC LINES. MARKER TAPE SHALL BE PROVIDED ON ALL DIPS AS WELL.
7. ALL SINGLE RESIDENTIAL RECLAIMED WATER SERVICES SHALL BE 1" AND DOUBLE RESIDENTIAL SERVICES SHALL BE 1-1/2". SERVICES SHALL BE CTS 3408 HIGH DENSITY POLYETHYLENE TUBING RATED FOR A MINIMUM OF 200 PSI WITH SDR 9 (CTS). THE TUBING SHALL HAVE A VIRGIN HIGH DENSITY POLYETHYLENE CENTER FOR WHICH THE MANUFACTURER SHALL FURNISH A CERTIFICATE OF PURITY. THE TUBING SHALL BE "PURPLE" (PANTONE) IN COLOR AND SHALL HAVE THE WORDS "RECLAIMED WATER" PERMANENTLY PRINTED ON THE OUTSIDE. THE TUBING SHALL HAVE U.V. PROTECTION AND SHALL NOT BE AFFECTED BY DIRECT SUNLIGHT. THE TUBING SHALL COMPLY WITH OR EXCEED THE APPLICABLE STANDARDS OF A.S.D.M. D1248, D3350, D2239, D2737, N.S.F.-14 AND A.W.W.A. C901 AND SHALL COME WITH A LIFETIME WARRANTY. APPROVED SIZES: 1", 1-1/2" AND 2" DIAMETERS. ACCEPTABLE MANUFACTURERS: ENDOT ENDOCORE RWT OR APPROVED EQUAL
8. REFER TO "NEW POTABLE AND REUSE SERVICE WHIP" R426.
9. RECLAIMED WATER VALVES SHALL BE PLACED AT ALL STREET INTERSECTIONS AND AT MAXIMUM SPACING OF 1,000 FEET.
10. AT ALL RECLAIMED WATER MAIN TEES AND CROSSES, VALVES SHALL BE INSTALLED ON ALL LEGS EXCEPT ONE.
11. APPROVED WATER VALVE TYPES MUELLER OR CLOW:
    A. STANDARD GATE VALVES EQUAL TO OR LESS THAN 24" DIAMETER (AWWA C-500) OR RESILIENT SEAT GATE VALVES (AWWA C-509)
    B. TAPPING VALVES WITH MECHANICAL OR STAINLESS STEEL TAPPING SLEEVE.
12. ALL RECLAIMED WATER VALVES SHALL BE ADJUSTED TO FINISH GRADE AND THE CAPS SHALL BE PAINTED PURPLE (PANTONE 522C) TO MAKE THEM PLAINLY DISTINGUISHABLE.
13. AS STANDARD PRACTICE RECLAIMED WATER MAINS SHALL BE INSTALLED 4 FEET OFF THE BACK OF THE CURB ON THE OPPOSITE SIDE OF THE POTABLE WATER LINES OR AS APPROVED BY THE CITY.

DATE: 11/07/2022 **RECLAIMED WATER NOTES - 1 OF 3** **R460**

City of DeLand - Standard Details

14. ALL RECLAIMED WATER MAINS SHALL HAVE A MINIMUM COVER OF 36 INCHES. IN SPECIAL CASES WHERE IT IS IMPOSSIBLE OR INAPPROPRIATE TO PROVIDE ADEQUATE COVER, DUCTILE IRON PRESSURE CLASS 350 OR CONCRETE ENCASEMENT MAY BE USED AS APPROVED BY THE CITY.
15. THE CONTRACTOR SHALL NOTIFY THE CITY'S DESIGNATED INSPECTOR PRIOR TO ATTEMPTING TO CLEAR ANY RECLAIMED WATER MAIN FOR USE. THE INSPECTOR SHALL COORDINATE WITH CITY PERSONNEL AT THE RECLAIMED WATER PLANT 48 HOURS PRIOR TO BEGINNING OF ANY FULL-DIAMETER FLUSH OF MAINS. THE CONTRACTOR WILL CONDUCT A STANDARD WATER PRESSURE TEST, 150 PSI STATIC PRESSURE FOR A PERIOD OF 2 HOURS PER AWWA POTABLE WATER STANDARDS. THE RECLAIMED LINES WILL THEN BE DISINFECTED WITH CHLORINE, FLUSHED CLEAR AGAIN.
16. THE CONTRACTOR SHALL BE REQUIRED TO PIG ALL RECLAIMED MAINS IN EXCESS OF 4" IN DIAMETER AND PRIMARY DISTRIBUTION MAINS LOCATED ON COLLECTOR AND ARTERIAL ROADWAYS. LAUNCHING AND EXTRACTION POINTS SHALL BE DETERMINED BY THE CONTRACTOR. ALL PIGGING OPERATIONS SHALL BE WITNESSED BY A PUBLIC UTILITIES REPRESENTATIVE OR CITY UTILITY INSPECTOR.
17. RECLAIMED WATER MAINS SHALL BE PVC AWWA CLASS C-900 OR C-905, CL 150 (COLOR: "PURPLE" PANTONE 522C) OR DIP PRESSURE CLASS 350, STANDARD CEMENT LINED UNLESS APPROVED OTHERWISE BY THE CITY.
18. ALL RECLAIMED WATER MAINS SHALL USE A THRUST RESTRAINED JOINT METHOD IN COMPLIANCE WITH THE DUCTILE IRON PIPE RESEARCH ASSOCIATION (DIPRA) GUIDELINES. IN THE EVENT THAT PVC FITTINGS ARE SPECIFIED, THE RESTRAINED JOINT SHALL BE MODIFIED IN ACCORDANCE WITH THE RECOMMENDED ADDITIONAL RESTRAINED LENGTH REQUIRED FOR PIPE WRAPPED WITH POLYETHYLENE. IN NO INSTANCE SHALL THRUST BLOCKS BE PERMITTED.
19. MEGALIGS, BOLTLESS RESTRAINED JOINTS, OR GRIPPER GASKETS SHALL BE USED ON ALL RESTRAINED JOINT INSTALLATIONS. MINIMUM DEPTH OF BURY ON PIPES NOT MEETING REQUIRED COVER REQUIREMENTS SHALL FOLLOW THE MOST RECENT DIPRA THRUST RESTRAINT DESIGN GUIDELINES. SEE DETAILS W408 AND W409.
20. GRIPPER RING GASKETS BY ROMAC MAY BE USED AS APPROPRIATE FOR RESTRAINING PRESSURE PIPE TO FITTINGS, VALVES, ETC.
21. UPON CONSTRUCTION COMPLETION AND ACCEPTANCE OF THE SYSTEM, IT SHALL BE THE DESIGN ENGINEER'S RESPONSIBILITY TO INSURE THAT THE SYSTEM IS PROPERLY CERTIFIED AND ACCEPTED BY THE CITY OF DeLand UTILITIES AND "AS-BUILTS" ARE PROVIDED TO THE CITY, PRIOR TO ANY USE OF THIS SYSTEM.
22. ALL RECLAIMED WATER MAINS AND SERVICE LINES SHALL BE READILY DISTINGUISHABLE BY THEIR "PURPLE" (PANTONE 522C) COLOR OR TAPE MARKINGS. DUCTILE IRON PIPE SHALL BE WRAPPED WITH PURPLE PANTONE 522C POLYETHYLENE.
23. ALL RECLAIMED WATER SERVICES SHALL BE MARKED ALONG THE OUTSIDE EDGE OF CURB WITH AN "R". VALVES AND BLOW-OFFS FOR RECLAIMED WATER MAINS SHALL BE MARKED BY AN "X" SET INTO THE CURB.
24. RECLAIM WATER SERVICES SHALL BE NORMALLY DOUBLE 1-1/2" SERVICES LOCATED AT SIDE LOT LINES ALTERNATING WITH POTABLE WATER SERVICE LOCATIONS. IN INSTANCES WHERE RECLAIMED WATER SERVICES NEED TO BE OFFSET, DUE TO SEWER LATERAL CONNECTION. 1" SINGLE SERVICES SHALL BE SPECIFIED, THESE SERVICES MAY BE OFFSET FROM THE LOT LINE A MAXIMUM DISTANCE OF 4.0'.

DATE: 11/07/2022 **RECLAIMED WATER NOTES - 2 OF 3** **R461**

City of DeLand - Standard Details

25. MAXIMUM OBTAINABLE SEPARATION OF PUBLIC RECLAIMED WATER MAINS, STORMWATER MAINS, AND SANITARY SEWER MAINS SHALL BE MAINTAINED. A MINIMUM HORIZONTAL SEPARATION OF THREE (3) FEET (OUTSIDE TO OUTSIDE), TEN (10) FEET PREFERRED. A MINIMUM VERTICAL SEPARATION OF SIX (6) INCHES, IF WATER MAIN IS ABOVE STORM, SAN. SEW. & RECLAIMED MAINS. A MINIMUM VERTICAL SEPARATION OF EIGHTEEN (18) INCHES, IF WATER MAIN IS BELOW STORM, SAN. SEW. & RECLAIMED MAINS. (Ref Detail W420)
26. NO RECLAIMED WATER HOSE BIBBS ARE PERMITTED.
27. A 75-FOOT SETBACK DISTANCE SHALL BE PROVIDED FROM PUBLIC ACCESS REUSE WETTED AREAS TO ANY PUBLIC AND ANY PRIVATE POTABLE WATER SUPPLY WELLS.
28. LOW TRAJECTORY NOZZLES ARE REQUIRED WITHIN 100 FEET OF PUBLIC EATING, DRINKING OR BATHING FACILITIES.
29. ALL TAPPING OF MAINS SHALL BE PERFORMED BY THE CONTRACTOR AND WITNESSED BY THE CITY INSPECTOR. SCHEDULING OF THESE CONNECTIONS SHALL REQUIRED A MINIMUM 48 HOUR NOTIFICATION (MEASURED ON NORMAL WORK DAYS) DIRECTED TO THE CITY'S DESIGNATED SITE INSPECTOR WHO SHALL COORDINATE THE WORK DIRECTLY WITH THE CITY'S UTILITIES DEPARTMENT. SUBSEQUENTLY, THE CONNECTION SHALL BE SCHEDULED TO COMMENCE BETWEEN 7:00 A.M. AND NOON ON THE APPROPRIATE DAY, UNLESS ALTERNATE TIMES HAVE BEEN APPROVED BY THE CITY.
30. WITH RESPECT TO TIE-IN CONNECTIONS, THE CITY RESERVES THE RIGHT TO REQUIRE CONNECTIONS TO BE PERFORMED DURING PERIODS OF LOW FLOW IN ORDER TO MINIMIZE SERVICE DISRUPTION TO EXISTING CUSTOMERS.
31. ALL WORK PERFORMED UPON RECLAIMED WATER FACILITIES OWNED OR PROPOSED TO BE OWNED BY THE CITY, SHALL BE CONSTRUCTED BY AN UNDERGROUND UTILITY OR GENERAL CONTRACTOR LICENSED IN THE STATE OF FLORIDA AND REGISTERED WITH THE CITY.
32. FOR CONSTRUCTION PURPOSES, THE PLANS SHALL PROVIDE DIMENSION OF THE PROPOSED LOCATIONS OF ALL RECLAIMED WATER MAINS MEASURED FROM THE BACK OF CURB (OR EDGE OF PAVEMENT IF NO CURB EXISTS).
33. ALL HDPE PIPE RECLAIMED WATER MAINS SHALL BE SDR 11 UNLESS SPECIFICALLY NOTED OTHERWISE. THE HDPE PIPE SHALL BE SIZED TO MATCH THE EXTERNAL DIAMETER OF THE PVC OR DIP TO WHICH IT IS ATTACHED.
34. ALL P.V.C. PIPE SHALL BE STORED IN SUCH A WAY AS TO PREVENT WARPING, DEFLECTION, OR ANY DEFORMATION.
35. RECLAIMED WATER HYDRANTS ARE NOT ALLOWED BY THE CITY.
36. NO USED, RE-USED, RUSTED, SECOND HAND, OR ANY MATERIAL THAT IS NOT "NEW" SHALL BE USED IN ANY UTILITY IMPROVEMENT PROJECTS WITHIN THE CITIES SERVICE AREA.
37. LARGE RECLAIMED WATER METERS GREATER THAN 2" TAKES A MINIMUM OF 6 WEEKS FOR DELIVERY. IN ADDITION, ALL METERS AND VAULTS GREATER THAN 2" SHALL BE INSTALLED BY THE OWNER/ DEVELOPER OR CONTRACTOR. THE FEE COLLECTED BY THE CITY IS FOR MATERIALS ONLY. ALL METERS, 2" AND LESS, SHALL BE INSTALLED BY THE CITY, AFTER ALL FEES HAVE BEEN PAID.
38. TYPICALLY, THE CITY PREFERS DOUBLE SERVICE INSTALLATIONS WHEREVER FEASIBLE. WHEN DESIGN CONFLICTS EXIST, SINGLE SERVICES MAY BE ALLOWED. THIS MAY APPLY AT STORMWATER INLETS, FIRE HYDRANTS, FPL TRANSFORMERS, ETC. AND OTHER LOCATIONS DEEMED APPROPRIATE BY THE CITY.
39. ALL RECLAIMED WATER VALVE BOXES SHALL HAVE RECTANGULAR SHAPED COVERS, AND SHALL BE PAINTED "PURPLE" (PANTONE 522C) AND LABELED REUSE OR RECLAIM.
40. NO DIRECTIONAL BORES ON FRIDAYS, WEEKENDS OR HOLIDAYS. PULL BACKS ARE ALLOWED.

NOTE: DIP = DUCTILE IRON PIPE

DATE: 11/07/2022 **RECLAIMED WATER NOTES - 3 OF 3** **R462**

City of DeLand - Standard Details

HEIDT DESIGN
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Ecological Services • Landscape Architecture
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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

WATER & SEWER DETAILS

PREPARED FOR: KH CW DELAND LLC

DATE	DESCRIPTION
02/20/2023	REVIEW SUBMITTAL

PROJECT NO:	KGA-CD-1031
FILE:	WSD
DESIGN BY:	JONES
DRAWN BY:	BLACK

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

This item has been digitally signed and sealed by Strickland T. Smith, P.E. on the date indicated here.

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STRICKLAND T. SMITH
DATE:
LICENSE NO. 50652

C-604

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3M LOCATING MARKER BALLS PROGRAMMABLE AND NON-PROGRAMMABLE NOTES:

- Programmable and Non-Programmable Marking Balls will be used on all Sewer, Potable and Reclaim projects
- For information on the Programmable and Non-Programmable Balls that the City requires see spec sheet for details
- Programmable Balls will be placed at all fittings ie. Tees, Couplings, 90, 45, and 22.
- Information will be recorded on a spread sheet. For information that needs to be recorded see spec sheet for an example template for the 3M Marker Balls
- Non-Programmable Marking Balls will used as follow:

- Potable: End of Service Line when buried
- Wastewater: Ball will be placed at the curb line to mark lateral location prior to end of service.
- Reclaim: End of Service Line when buried

- Desired bury depth is 1.5 feet to 3 feet. Five foot is the maximum depth for these devices

1420-LOCATER FOR MARKER BALLS

3M™ Dynatel™ Electronic Marker System (EMS) Marker Locators 1420 series is microprocessor-based systems that quickly and efficiently locate underground markers—years after construction or maintenance. -

The 3M™ Dynatel™ 1420 Marker Locators are designed to be accurate, fast and integrated allowing you to accurately and easily:

• Locate, read and write to 3M iD markers

• Pinpoint the depth and location of all existing models of properly installed underground passive EMS markers

• Conduct direct depth reading of markers

• Locate two different marker frequencies simultaneously

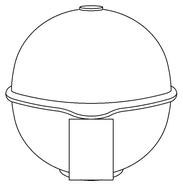
Specifications

2200RB Rechargeable Battery	Not Included
Cable/Pipe Locate	No
Carrying Bag Included	No
Coupler Size	No Coupler
Direct Connect Cable	N/A
EMS Caution Tape Finding Capability	No
Family	1420 Series
Fault Finding Capability	No

2200RB Rechargeable Battery	Not Included
Cable/Pipe Locate	No
Carrying Bag Included	No
Coupler Size	No Coupler
Direct Connect Cable	N/A
EMS Caution Tape Finding Capability	No
Family	1420 Series
Fault Finding Capability	No
Locator Type	Marker

3M DYNATEL LOCATING AND MARKING ELECTRONIC MARKER SYSTEM:

1423-XR/ID-POTABLE



The 3M™ EMS Extended-Range Ball Markers have a self-leveling design providing accurate, horizontal position regardless of how it is placed in the ground, making the job of precisely locating underground facilities easier.

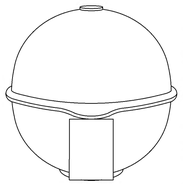
Featured Benefits

- Positive identification of underground water facilities
- iD Marker allows for programming of customer specific information
- Unique self leveling design simplifies installation
- No external power source needed
- Resistant to elements
- 5 foot (1.5 meter) detection distance
- Color conforms to APWA standards

SPECIFICATIONS:

COLOR:	BLUE
DIAMETER (METRIC):	10.4 CM
EMS CAUTION TAPE FINDING CAPABILITY:	N/A
MARKER DEPTH:	5 FEET (1.5M)
MARKER DIMENSION (INCH):	4 INCH DIAMETER
MARKER TYPE:	BALL
PROGRAMMABLE/PASSIVE:	PROGRAMMABLE
RANGE:	0 TO 5 LINEAR FOOT
RoHS 2011/65/EU Compliant:	UNDETERMINED
RoHS EU Comments:	CONTACT 3M FOR INFORMATION
Solution for:	ACCESS NETWORK: FTTH/FTTB/CATV
	ACCESS NETWORK: xDSL, LONG-HAUL/METRO
	LOOP NETWORK: OUTDOOR
	WIRELESS NETWORK: BACKHAUL

1424-XR/ID-SEWER



The 3M™ EMS Extended-Range Ball Markers have a self-leveling design providing accurate, horizontal position regardless of how it is placed in the ground, making the job of precisely locating underground facilities easier.

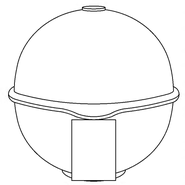
Featured Benefits

- Positive identification of underground wastewater facilities
- iD Marker allows for programming of customer specific information
- Unique self leveling design simplifies installation
- No external power source needed
- Resistant to elements
- 5 foot (1.5 meter) detection distance
- Color conforms to APWA standards

SPECIFICATIONS:

COLOR:	GREEN
DIAMETER (METRIC):	10.4 CM
EMS CAUTION TAPE FINDING CAPABILITY:	N/A
MARKER DEPTH:	5 FEET (1.5M)
MARKER DIMENSION (INCH):	4 INCH DIAMETER
MARKER TYPE:	BALL
NUMBER OF FREQUENCIES:	N/A
PROGRAMMABLE/PASSIVE:	PROGRAMMABLE
RANGE:	0 TO 5 LINEAR FOOT
RoHS 2011/65/EU Compliant:	UNDETERMINED
RoHS EU Comments:	CONTACT 3M FOR INFORMATION
Solution for:	ACCESS NETWORK: FTTH/FTTB/CATV
	ACCESS NETWORK: xDSL, LONG-HAUL/METRO
	LOOP NETWORK: OUTDOOR
	WIRELESS NETWORK: BACKHAUL

1428-XR/ID-RECLAIMED



The 3M™ EMS Extended-Range Ball Markers have a self-leveling design providing accurate, horizontal position regardless of how it is placed in the ground, making the job of precisely locating underground facilities easier.

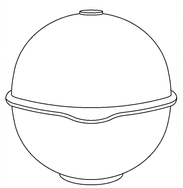
Featured Benefits

- Positive identification of underground general purpose / reclaimed water facilities
- iD Marker allows for programming of customer specific information
- Unique self leveling design simplifies installation
- No external power source needed
- Resistant to elements
- 5 foot (1.5 meter) detection distance
- Color conforms to APWA standards

SPECIFICATIONS:

COLOR:	PURPLE
DIAMETER (METRIC):	10.4 CM
EMS CAUTION TAPE FINDING CAPABILITY:	N/A
MARKER DEPTH:	5 FEET (1.5M)
MARKER DIMENSION (INCH):	4 INCH DIAMETER
MARKER TYPE:	BALL
NUMBER OF FREQUENCIES:	N/A
PROGRAMMABLE/PASSIVE:	PROGRAMMABLE
RANGE:	0 TO 5 LINEAR FOOT
RoHS 2011/65/EU Compliant:	UNDETERMINED
RoHS EU Comments:	CONTACT 3M FOR INFORMATION
Solution for:	ACCESS NETWORK: FTTH/FTTB/CATV
	ACCESS NETWORK: xDSL, LONG-HAUL/METRO
	LOOP NETWORK: OUTDOOR
	WIRELESS NETWORK: BACKHAUL

1403-XR-POTABLE



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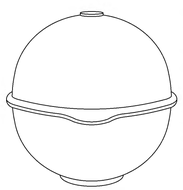
Featured Benefits

- Positive identification of underground water facilities
- Unique self leveling design simplifies installation
- No external power source needed
- Resistant to elements
- 5 foot (1.5 meter) detection distance
- Color conforms to APWA standards

SPECIFICATIONS:

COLOR:	BLUE
DIAMETER (METRIC):	10.4 CM
EMS CAUTION TAPE FINDING CAPABILITY:	N/A
MARKER DEPTH:	5 FEET (1.5M)
MARKER DIMENSION (INCH):	4 INCH DIAMETER
MARKER TYPE:	BALL
NUMBER OF FREQUENCIES:	N/A
PROGRAMMABLE/PASSIVE:	PASSIVE
RANGE:	0 TO 5 LINEAR FOOT
RoHS 2011/65/EU Compliant:	UNDETERMINED
RoHS EU Comments:	CONTACT 3M FOR INFORMATION
Solution for:	ACCESS NETWORK: FTTH/FTTB/CATV
	ACCESS NETWORK: xDSL, LONG-HAUL/METRO
	LOOP NETWORK: OUTDOOR
	WIRELESS NETWORK: BACKHAUL

1404-XR-SEWER



The 3M™ EMS Extended-Range Ball Markers have a self-leveling design providing accurate, horizontal position regardless of how it is placed in the ground, making the job of precisely locating underground facilities easier.

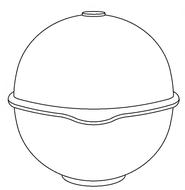
Featured Benefits

- Positive identification of underground wastewater facilities
- Unique self leveling design simplifies installation
- No external power source needed
- Resistant to elements
- 5 foot (1.5 meter) detection distance
- Color conforms to APWA standards

SPECIFICATIONS:

COLOR:	GREEN
DIAMETER (METRIC):	10.4 CM
EMS CAUTION TAPE FINDING CAPABILITY:	N/A
MARKER DEPTH:	5 FEET (1.5M)
MARKER DIMENSION (INCH):	4 INCH DIAMETER
MARKER TYPE:	BALL
NUMBER OF FREQUENCIES:	N/A
PROGRAMMABLE/PASSIVE:	PASSIVE
RANGE:	0 TO 5 LINEAR FOOT
RoHS 2011/65/EU Compliant:	UNDETERMINED
RoHS EU Comments:	CONTACT 3M FOR INFORMATION
Solution for:	ACCESS NETWORK: FTTH/FTTB/CATV
	ACCESS NETWORK: xDSL, LONG-HAUL/METRO
	LOOP NETWORK: OUTDOOR
	WIRELESS NETWORK: BACKHAUL

1408-XR-RECLAIMED



The 3M™ EMS Extended-Range Ball Markers have a self-leveling design providing accurate, horizontal position regardless of how it is placed in the ground, making the job of precisely locating underground facilities easier.

Featured Benefits

- Positive identification of underground general purpose facilities
- Unique self leveling design simplifies installation
- No external power source needed
- Resistant to elements
- 5 foot (1.5 meter) detection distance
- Color conforms to APWA standards

SPECIFICATIONS:

COLOR:	PURPLE
DIAMETER (METRIC):	10.4 CM
EMS CAUTION TAPE FINDING CAPABILITY:	N/A
MARKER DEPTH:	5 FEET (1.5M)
MARKER DIMENSION (INCH):	4 INCH DIAMETER
MARKER TYPE:	BALL
NUMBER OF FREQUENCIES:	N/A
PROGRAMMABLE/PASSIVE:	PASSIVE
RANGE:	0 TO 5 LINEAR FOOT
RoHS 2011/65/EU Compliant:	UNDETERMINED
RoHS EU Comments:	CONTACT 3M FOR INFORMATION
Solution for:	ACCESS NETWORK: FTTH/FTTB/CATV
	ACCESS NETWORK: xDSL, LONG-HAUL/METRO
	LOOP NETWORK: OUTDOOR
	WIRELESS NETWORK: BACKHAUL

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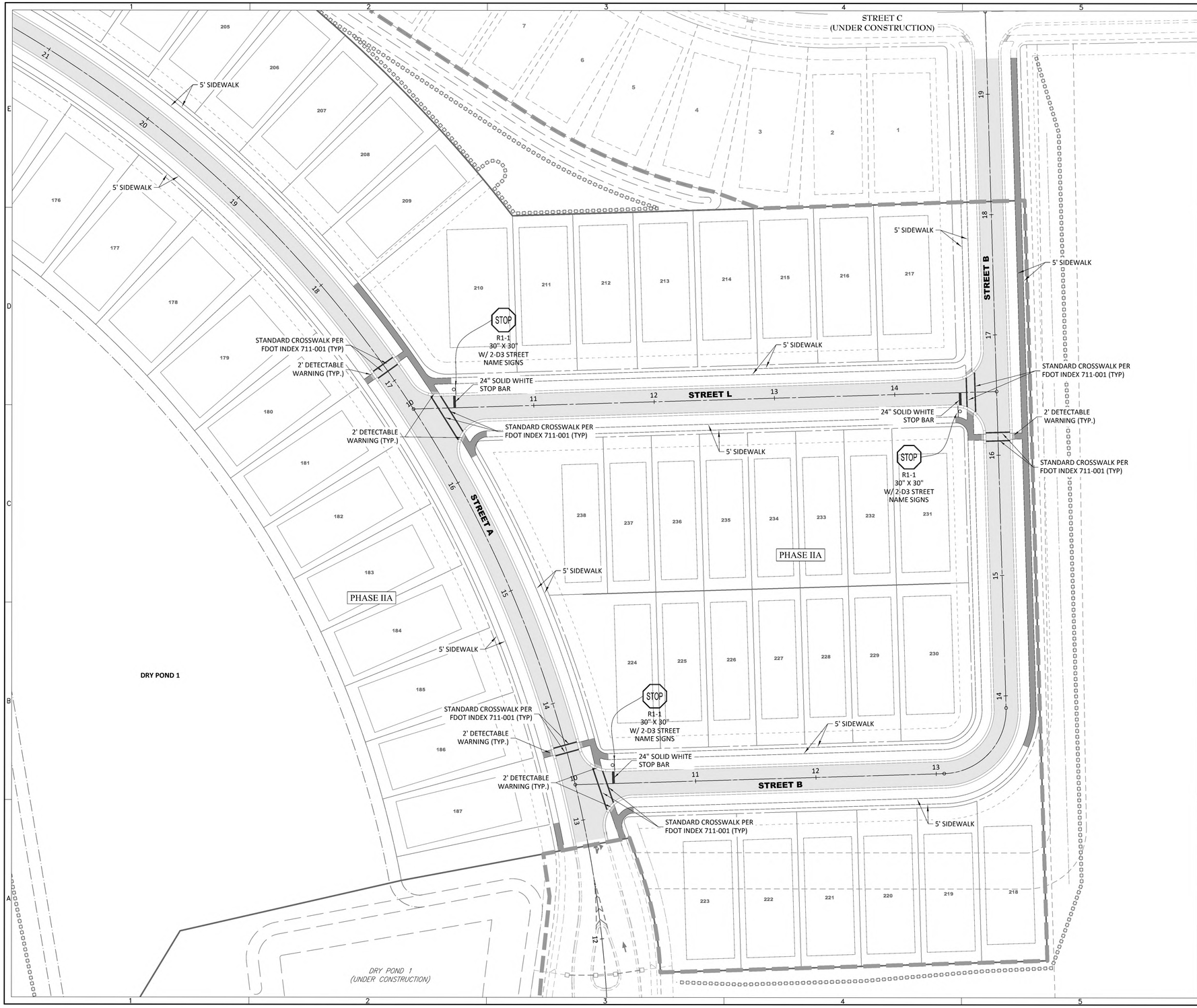
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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

WATER & SEWER DETAILS

PREPARED FOR: KH CW DELAND LLC

DESCRIPTION	DATE



N

0 40 80

GRAPHIC SCALE: 1" = 40'

ELEVATIONS BASED ON:
NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION:
NAVD 88 TO NGVD 29 = +1.07

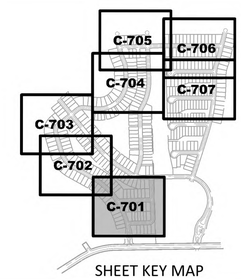
SIDEWALK LEGEND

PROPOSED CONCRETE SIDEWALK
TO BE INSTALLED BY INDIVIDUAL HOUSE CONTRACTOR

PROPOSED CONCRETE SIDEWALK
TO BE INSTALLED BY SITE DEVELOPER

SIDEWALK NOTES:

1. SIDEWALK INDICATED AS INSTALLED BY DEVELOPER SHALL BE COMPLETED PRIOR TO FINAL INFRASTRUCTURE INSPECTION OR SHALL BE SUBJECT TO COVERAGE UNDER A PERFORMANCE GUARANTEE.
2. SIDEWALKS INSTALLED BY BUILDERS SHALL BE COMPLETED PRIOR TO CERTIFICATE OF OCCUPANCY OF ITS CORRESPONDING DWELLING UNIT.
3. ALL SIDEWALKS SHALL BE 6" THICK WHERE SIDEWALK IS CROSSED BY A DRIVEWAY.
4. SIDEWALK DETECTABLE WARNING SURFACES SHALL BE ALIGNED IN THE DIRECTION OF PEDESTRIAN TRAVEL.



SHEET KEY MAP

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Transportation • Environmental
Ecological Services • Landscape Architecture
Engineering Business Certificate of Authorization No. 28782
Landscape Architecture Certificate of Authorization No. LC26000405
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Fax: 813-464-7629
www.HeidtDesign.com

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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

SIGNING, PAVEMENT MARKING & SIDEWALK PLAN

PREPARED FOR: KH CW DELAND LLC

DESCRIPTION	DATE
REVIEW SUBMITTAL	02/20/2023

PROJECT NO:	KGA-CD-1031
FILE:	SPM
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

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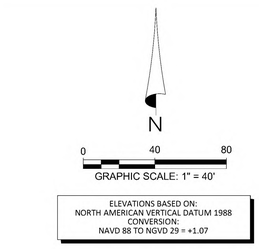
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CONVERSION:
NAVD 88 TO NGVD 29 = +1.07

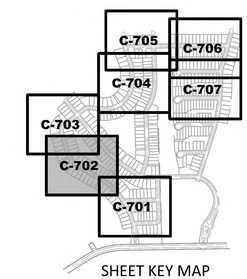
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SHEET KEY MAP

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5904-A Hampton Oaks Pkwy.
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Office: 813-253-5311
Fax: 813-464-7629
www.HeidtDesign.com

CRESSWIND DELAND PHASE 2A, 2B, 3A & 3B

SIGNING, PAVEMENT MARKING & SIDEWALK PLAN

PREPARED FOR: KH CW DELAND LLC

DATE	DESCRIPTION

DATE	DESCRIPTION
02/20/2023	REVIEW SUBMITTAL

PROJECT NO: KGA-CD-1031
FILE: SPM
DESIGN BY: DMYTRYK
DRAWN BY: JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

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0 40 80

GRAPHIC SCALE: 1" = 40'

ELEVATIONS BASED ON:
NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION:
NAVD 88 TO NGVD 29 = +1.07

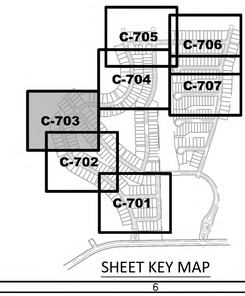
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CRESSWIND DELAND PHASE 2A, 2B, 3A & 3B

SIGNING, PAVEMENT MARKING & SIDEWALK PLAN

PREPARED FOR: KH CW DELAND LLC

DESCRIPTION	DATE
REVIEW SUBMITTAL	02/20/2023

PROJECT NO: KGA-CD-1031
FILE: SPM
DESIGN BY: DMYTRYK
DRAWN BY: JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

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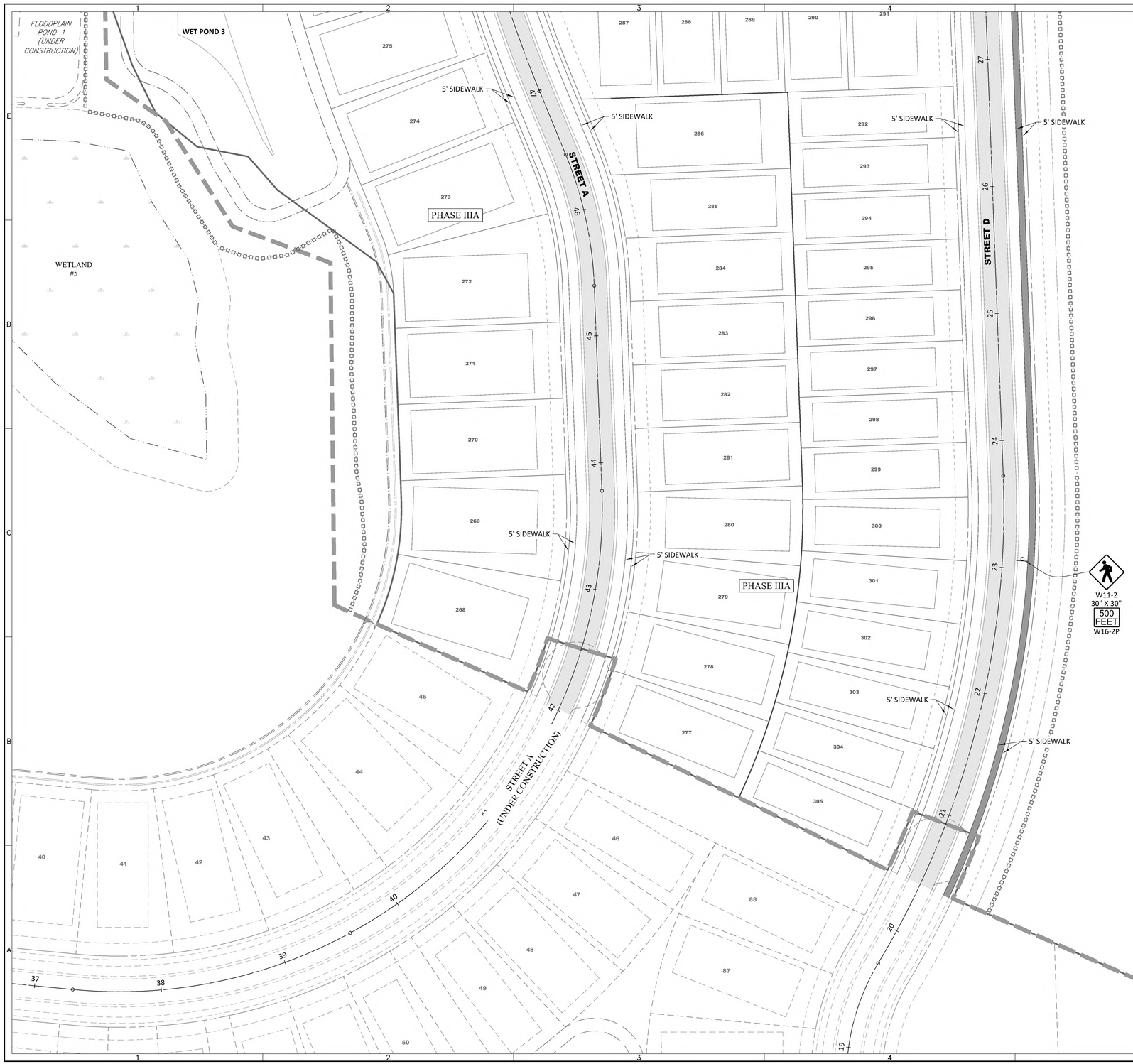
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NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION:
NAVD 88 TO NGVD 29 = +1.07

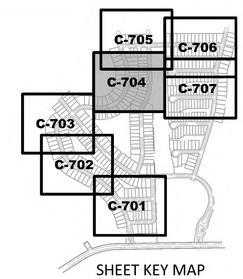
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SIGNING, PAVEMENT MARKING & SIDEWALK PLAN

PREPARED FOR: KH CW DELAND LLC

DATE	DESCRIPTION

DATE	REVIEW SUBMITTAL DESCRIPTION
02/20/2023	

PROJECT NO:	KGA-CD-1031
FILE:	SPM
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA PROFESSIONAL ENGINEER

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TEMPORARY CUL-DE-SAC

TEMPORARY CUL-DE-SAC

STOP R1-1 30" X 30" W/ 2-D3 STREET NAME SIGNS

W11-2 30" X 30"

W16-7P

STOP R1-1 30" X 30" W/ 2-D3 STREET NAME SIGNS

5' SIDEWALK

STANDARD CROSSWALK PER FDOT INDEX 711-001 (TYP)

2' DETECTABLE WARNING (TYP.)

24" SOLID WHITE STOP BAR

STREET K

STOP R1-1 30" X 30" W/ 2-D3 STREET NAME SIGNS

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STANDARD CROSSWALK PER FDOT INDEX 711-001 (TYP)

5' SIDEWALK

PHASE IIIA

PHASE IIIA

WET POND 3

STREET A

STREET D

5' SIDEWALK

5' SIDEWALK

5' SIDEWALK

5' SIDEWALK

5' SIDEWALK

521 520 276 275 274 273 272 306 307 308 309 310 311 312 313 287 288 289 290 291 286 292 293 285 294 284 295 352 353 354 326

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GRAPHIC SCALE: 1" = 40'

ELEVATIONS BASED ON:
NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION:
NAVD 88 TO NGVD 29 = +1.07

SIDEWALK LEGEND

PROPOSED CONCRETE SIDEWALK TO BE INSTALLED BY INDIVIDUAL HOUSE CONTRACTOR

PROPOSED CONCRETE SIDEWALK TO BE INSTALLED BY SITE DEVELOPER

SIDEWALK NOTES:

1. SIDEWALK INDICATED AS INSTALLED BY DEVELOPER SHALL BE COMPLETED PRIOR TO FINAL INFRASTRUCTURE INSPECTION OR SHALL BE SUBJECT TO COVERAGE UNDER A PERFORMANCE GUARANTEE.
2. SIDEWALKS INSTALLED BY BUILDERS SHALL BE COMPLETED PRIOR TO CERTIFICATE OF OCCUPANCY OF ITS CORRESPONDING DWELLING UNIT.
3. ALL SIDEWALKS SHALL BE 6" THICK WHERE SIDEWALK IS CROSSED BY A DRIVEWAY.
4. SIDEWALK DETECTABLE WARNING SURFACES SHALL BE ALIGNED IN THE DIRECTION OF PEDESTRIAN TRAVEL.

SHEET KEY MAP

C-705 C-706 C-704 C-707 C-703 C-702 C-701

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Civil Engineering • Planning & GIS
Transportation Engineering
Ecological Services • Landscape Architecture
Engineering Business Certificate of Authorization No. 28762
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CRESSWIND DELAND PHASE 2A, 2B, 3A & 3B

SIGNING, PAVEMENT MARKING & SIDEWALK PLAN

PREPARED FOR: KH CW DELAND LLC

DESCRIPTION	DATE

DESCRIPTION	DATE
REVIEW SUBMITTAL	02/20/2023

PROJECT NO:	KGA-CD-1031
FILE:	SPM
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

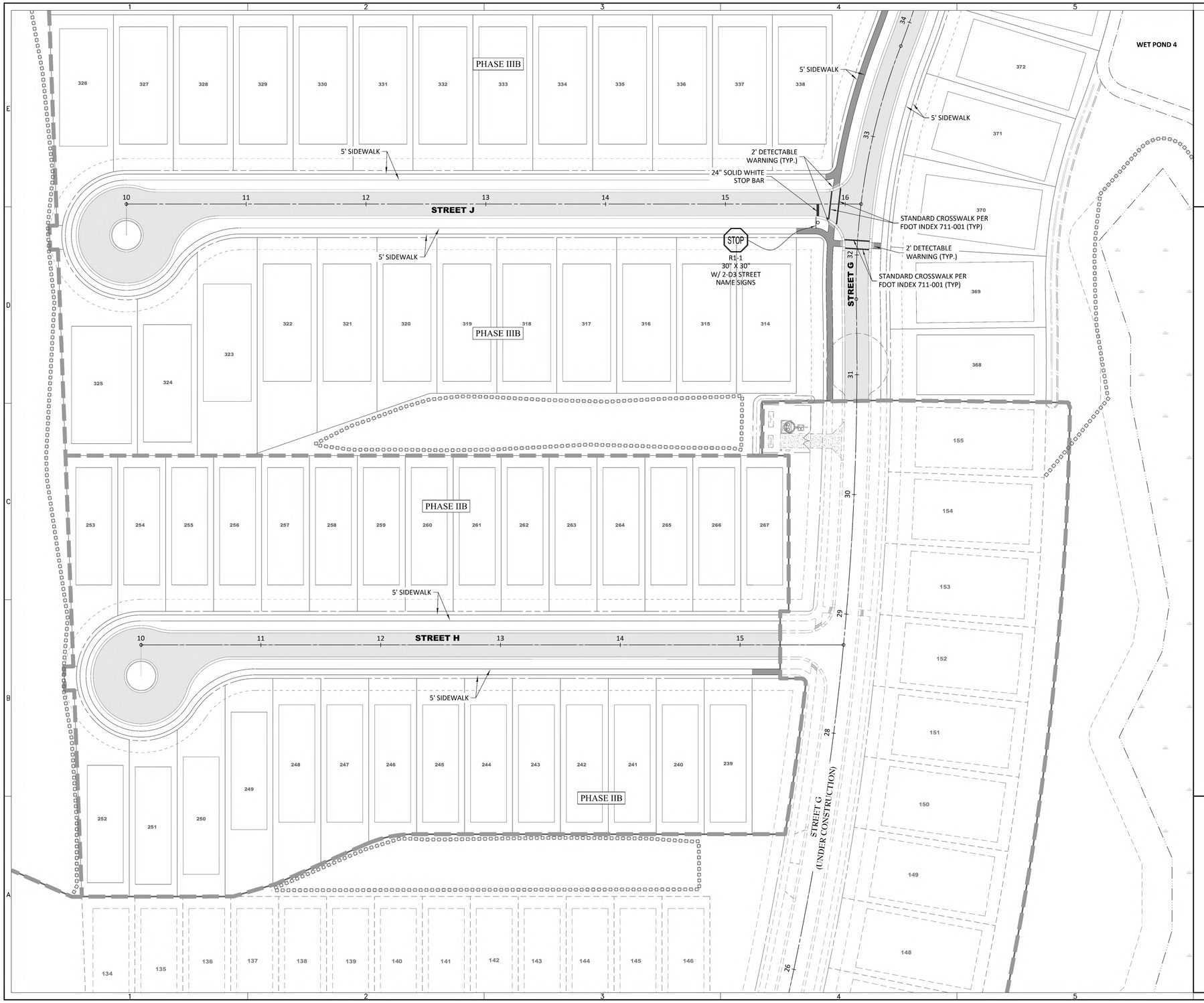
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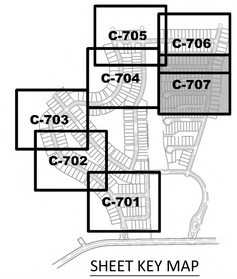
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SHEET KEY MAP

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CRESSWIND DELAND PHASE 2A, 2B, 3A & 3B

SIGNING, PAVEMENT MARKING & SIDEWALK PLAN

PREPARED FOR: KH CW DELAND LLC

DATE	DESCRIPTION

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02/20/2023	

PROJECT NO:	KGA-CD-1031
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DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

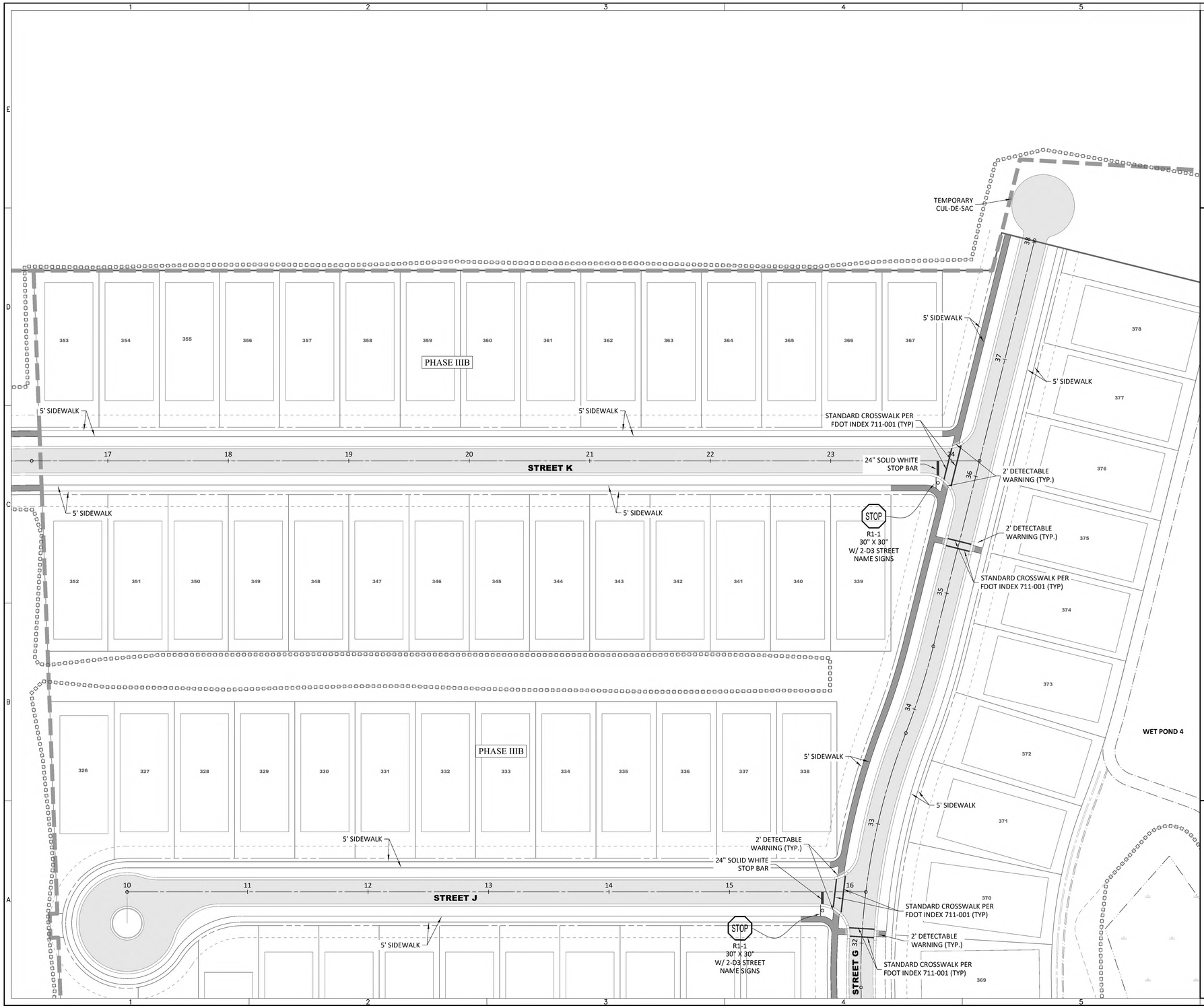
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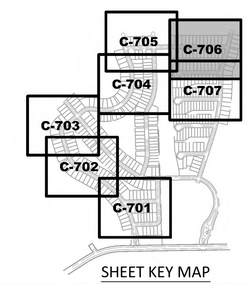
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CRESSWIND DELAND PHASE 2A, 2B, 3A & 3B
SIGNING, PAVEMENT MARKING & SIDEWALK PLAN

PREPARED FOR: KH CW DELAND LLC

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REVIEW SUBMITTAL	02/20/2023

PROJECT NO:	KGA-CD-1031
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DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

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SPECIFICATIONS FOR DESIGN AND INSTALLATION
OF TRAFFIC CONTROL DEVICES ON COUNTY ROADS

1) PURPOSE:

THESE SPECIFICATIONS HAVE BEEN DEVELOPED TO PROVIDE DEVELOPERS WITH A UNIFORM SYSTEM FOR INSTALLATION OF TRAFFIC CONTROL DEVICES ON THE COUNTY ROAD SYSTEM. A UNIFORM SYSTEM PROVIDES FOR REDUCED MAINTENANCE COSTS AND A HIGH STANDARD OF VISIBILITY FOR DRIVERS. ALL REQUIRED TRAFFIC CONTROL DEVICES SHALL BE INSTALLED BY THE DEVELOPER OF THE PROJECT.

2) FLORIDA STATE STATUTE 316.0745:

2.1) ANY AND ALL TRAFFIC CONTROL DEVICES INSTALLED ON THE COUNTY ROAD SYSTEM SHALL CONFORM TO FLORIDA STATE STATUTE 316.0745, UNIFORM SIGNALS AND DEVICES.
2.2) THIS STATUTE REQUIRES THAT ALL DEVICES CONFORM TO FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) SPECIFICATIONS. THE FDOT HAS ADOPTED THE FEDERAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AS THE STANDARDS TO BE USED IN THE STATE OF FLORIDA.

3) PAVEMENT MARKINGS:

3.1) ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC OR PREFORMED TAPES; RAISED PAVEMENT MARKERS SHALL BE CLASS "B".
3.2) PAVEMENT MARKINGS AND RAISED PAVEMENT MARKERS SHALL BE INSTALLED ON ALL ROADS CLASSIFIED OTHER THAN RESIDENTIAL WITH AN ADT GREATER THAN 500 VEHICLES, OR IF OTHER CONDITIONS EXIST THAT REQUIRE PAVEMENT MARKINGS, (SEE M.U.T.C.D. SECTION 3B-1).

4) TRAFFIC CONTROL SIGNS:

4.1) ALL SIGN BLANKS SHALL BE OF A TYPE CURRENTLY CERTIFIED BY THE FDOT FOR USE IN THE STATE OF FLORIDA.
4.2) ALL SIGN FACES SHALL BE HIGH INTENSITY PRISMATIC GRADE AND OF A TYPE CURRENTLY CERTIFIED BY THE FDOT FOR USE IN THE STATE OF FLORIDA.
4.3) ALL SIGNS SHALL BE NO LESS THAN THE STANDARD SIZE AS SPECIFIED BY THE FEDERAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. NO MINIMUM SIZE SIGNING SHALL BE ACCEPTED. LARGER SIGNS SHALL BE USED WHEN REQUIRED BY DESIGN SPEED, ETC.
4.4) STREET NAME SIGNS SHALL BE 9" ON COLLECTOR AND ARTERIAL ROADS. 9" SIGNS SHALL HAVE 6" SERIES B LETTERS. ALL STREET NAME SIGNS ON PRIVATE ROADS SHALL BE STANDARD D3 STREET NAME SIGNS WITH THE COLORS REVERSED. WHITE BACKGROUND WITH GREEN LETTERS AND BORDER. AT INTERSECTIONS WITH COUNTY MAINTAINED ROADS, THE COUNTY MAINTAINED ROAD SHALL BE GREEN BACKGROUND WITH WHITE LETTERS AND BORDER. STREET NAME SIGN BRACKETS FOR 6" SIGNS 30" LONG OR LESS, OR 9" SIGNS 24" LONG OR LESS, SHALL HAVE A 5 INCH BLADE OR CROSS. ALL OTHER STREET NAME SIGNS SHALL BE MOUNTED WITH BRACKETS WITH A 12 INCH BLADE OR 8 INCH CROSS. ALL STREET NAME SIGN BRACKETS SHALL BE SUPPLIED WITH BOLTS, SET SCREWS WILL NOT BE ACCEPTED.
4.5) ON ROADS TO BE MAINTAINED BY VOLUSIA COUNTY, ALL SIGNS OTHER THAN STREET NAMES SHALL BE DATE CODED WITH A YELLOW REFLECTIVE LABEL AFFIXED TO THE BACK OF THE SIGN. IT WILL BE PUNCHED TO SHOW MONTH, DAY AND YEAR OF INSTALLATION (SEE SAMPLE LABEL). ALTERNATE LABEL DESIGNS PROVIDING THE DATE CODE INFORMATION MAY BE USED IF A SAMPLE IS SUBMITTED AND APPROVED BY LAKE COUNTY PRIOR TO INSTALLATION.

SAMPLE LABEL: SIZE 2" X 4"

WARNING

REMOVAL OF, OR DEFACING ANY TRAFFIC CONTROL
DEVICE IS PUNISHABLE BY FINE AND/OR IMPRISONMENT
REPORT DAMAGE BY CALLING (727) 847-2411

INSTALLED

J F M A M J J A S O N D

10'S 20'S 30'S - 1 2 3 4 5 6 7 8 9

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4.6) ALL POST SYSTEMS, MOUNTING BRACKETS AND HARDWARE SHALL BE OF A TYPE CURRENTLY IN USE BY THE LAKE COUNTY PUBLIC WORKS DEPARTMENT AND CURRENTLY CERTIFIED BY THE FLORIDA DEPARTMENT OF TRANSPORTATION FOR USE IN THE STATE OF FLORIDA. ALTERNATIVE SYSTEMS, ETC., SHALL ONLY BE USED IF APPROVED BY THE COUNTY ENGINEER.

5) CERTIFICATION OF MATERIALS:

5.1) ALL TRAFFIC CONTROL DEVICES AND MATERIALS SHALL BE ON THE CURRENT FDOT APPROVED PRODUCTS LIST. PROOF OF CERTIFICATION IS REQUIRED FOR ALL TRAFFIC CONTROL DEVICES.
5.2) A TRAFFIC CONTROL DEVICES SUBMITTAL DATA FORM SHALL BE SUBMITTED FOR APPROVAL PRIOR TO INSTALLATION OF ANY TRAFFIC CONTROL DEVICE. NO TRAFFIC CONTROL DEVICE SHALL BE INSTALLED UNTIL THE CERTIFICATION SUBMITTAL HAS BEEN APPROVED BY THE TRAFFIC OPERATIONS DIVISION. THESE FORMS ARE AVAILABLE FROM THE TRAFFIC OPERATIONS DIVISION. COPIES OF THE APPROVED TRAFFIC CONTROL DEVICES SUBMITTAL DATA FORM SHALL BE SENT TO THE CONTRACTOR AND THE ENGINEERING INSPECTIONS DIVISION.

6) TRAFFIC CONTROL DEVICES PLAN:

6.1) A DETAILED SET OF PLANS FOR REQUIRED TRAFFIC CONTROL DEVICES SHALL BE SUBMITTED FOR ALL ROAD CONSTRUCTION, SITE DEVELOPMENT, SUBDIVISION, AND RIGHT-OF-WAY USE PERMITS. THESE PLANS SHALL BE IN CONFORMANCE WITH FDOT DESIGN STANDARDS. ALL PLANS SHALL BE SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF FLORIDA.
6.2) WITH THE SUBMITTAL OF FINAL PLANS TO THE DEVELOPMENT REVIEW DIVISION, TWO ADDITIONAL SETS OF THE TRAFFIC CONTROL PLAN PORTION OF THE ENTIRE PLAN SHALL BE SUBMITTED. THESE TWO SETS WILL BE FORWARDED TO THE TRAFFIC OPERATIONS DIVISION.

7) COST ESTIMATE:

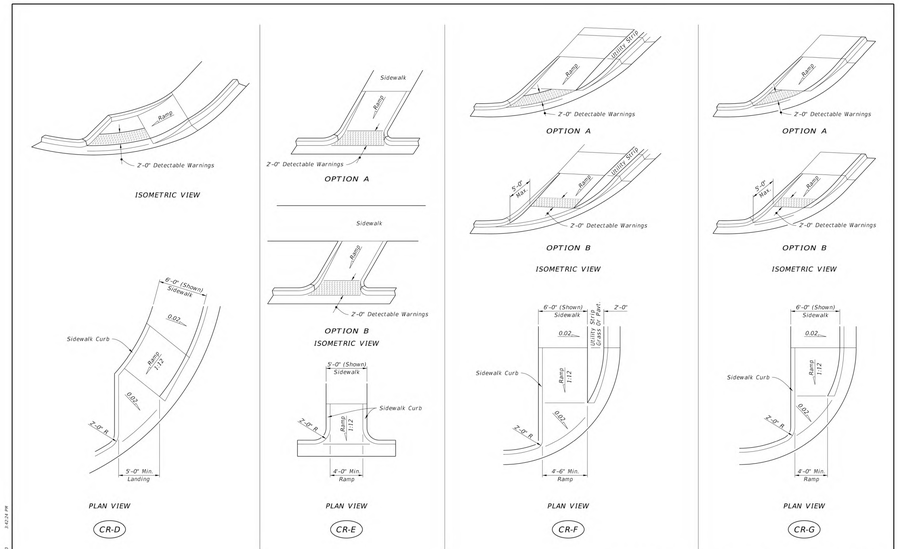
AN ENGINEER'S COST ESTIMATE SHALL BE REQUIRED FOR ALL PROPOSED TRAFFIC CONTROL DEVICES. THE ESTIMATE SHALL BE PROVIDED IN CONJUNCTION WITH THE TRAFFIC CONTROL DEVICES SUBMITTAL DATA FORM (SEE SECTION 5.2).

8) INSPECTION AND ACCEPTANCE:

8.1) UPON COMPLETION OF THE INSTALLATION OF THE TRAFFIC CONTROL DEVICES, THE CONTRACTOR SHALL CALL THE ENGINEERING INSPECTIONS DIVISION FOR AN INSPECTION AT LAKE COUNTY ROAD OPERATIONS.
8.2) THE INSPECTION SHALL BE MADE BY THE ENGINEERING INSPECTION DIVISION WITHIN 48 HOURS (TWO WORKING DAYS) OF THE REQUEST.
8.3) AN INSPECTION REPORT SHALL BE MADE BY THE ENGINEERING INSPECTIONS DIVISION. COPIES OF THE REPORT SHALL BE SENT TO THE ENGINEER AND THE DEVELOPER.
8.4) NO ROADWAY SHALL BE OPEN TO THE PUBLIC UNTIL ALL TRAFFIC CONTROL DEVICES HAVE BEEN INSPECTED AND ACCEPTED BY VOLUSIA COUNTY.

SPECIFICATIONS FOR DESIGN AND INSTALLATION
OF TRAFFIC CONTROL DEVICES ON NON-COUNTY ROADS

1. ALL TRAFFIC CONTROL DEVICES SHALL BE INSTALLED IN CONFORMANCE WITH THE FEDERAL MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND FLORIDA DEPARTMENT OF TRANSPORTATION STANDARDS.
2. STREET NAME SIGNS SHALL BE 6" ON LOCAL ROADS AND 9" ON COLLECTOR AND ARTERIAL ROADS. SIX-INCH SIGNS SHALL HAVE 4" SERIES C LETTERS AND 9" SIGNS SHALL HAVE 6" SERIES B LETTERS. ALL STREET NAME SIGNS ON PRIVATE STREETS (NON-COUNTY MAINTAINED) SHALL BE STANDARD D3 STREET NAMES WITH THE COLORS REVERSED, WHITE BACKGROUND WITH GREEN LETTERS AND BORDER. AT INTERSECTIONS WITH COUNTY MAINTAINED ROADS, THE COUNTY MAINTAINED ROAD SHALL BE GREEN BACKGROUND WITH WHITE LETTERS.
3. CONTRACTOR MUST CONTACT ENGINEER OF RECORD PRIOR TO ORDERING STREET NAME SIGNS. APPROVED STREET NAMES CANNOT BE DETERMINED UNTIL RECORDING OF THE PLAT.
4. EXISTING STRIPING AND OTHER PAVEMENT MARKINGS TO BE REMOVED SHALL BE DONE AS NECESSARY BY HYDROBLASTING. GRINDING IS NOT PERMITTED.

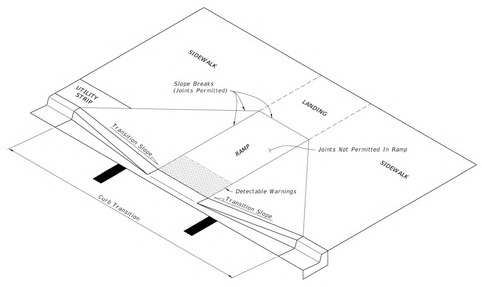


SIDEWALK CURB RAMPS CR-D, CR-E, CR-F & CR-G

LAST REVISION 11/01/20	REVISION	DESCRIPTION:	FDOT FY 2021-22 STANDARD PLANS	DETECTABLE WARNINGS AND SIDEWALK CURB RAMPS	INDEX 522-002	SHEET 4 of 7

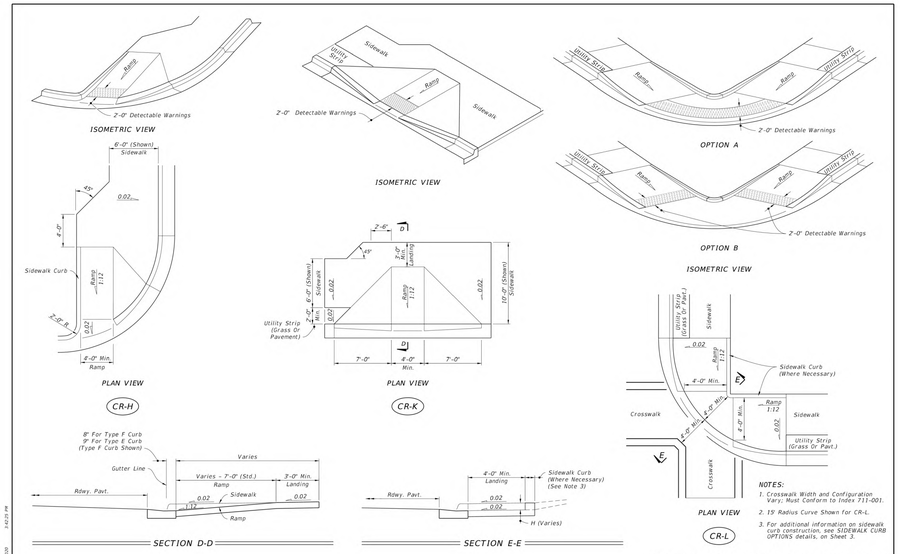
GENERAL NOTES:

1. Cross Slopes and Grades:
   - A. Sidewalk, ramp, and landing slopes (i.e. 0.02, 0.05, and 1:12) shown in this Index are maximums. With approval of the Engineer, provide the minimum feasible slope where the requirements cannot be met.
   - B. Landings must have cross-slopes less than or equal to 0.02 in any direction.
   - C. Maintain a single longitudinal slope along each side of the curb ramp. Ramp slopes are not required to exceed 15 feet in length.
   - D. Joints permitted at the location of Slope Breaks. Otherwise locate joints in accordance with Index 522-001. No joints are permitted within the ramp portion of the Curb Ramp.
2. Curb, Curb and Gutter and/or Sidewalk:
   - A. Refer to Index 522-001 for concrete thickness and sidewalk details.
   - B. Remove any existing curb, curb and gutter, or sidewalk to the nearest joint beyond the curb transition or to the extent that no remaining section is less than 5 feet long.
3. Curb Ramp Alpha-Identification:
   - A. Sidewalk curb ramp alpha-identifications (e.g. CR-A) are provided for reference purposes in the Plans.
   - B. Alpha-identifications CR-I and CR-J are intentionally omitted.
4. Detectable Warnings:
   - A. Install detectable warnings in accordance with Specification 527.
   - B. Place detectable warnings across the full width of the ramp or landing, to a minimum depth of 2 feet measured perpendicular to the curb line and no greater than 5 feet from the back of the curb or edge of pavement.
   - C. If detectable warnings are shown in the Plans on slopes greater than 5%, align the truncated domes with the centerline of the ramp; otherwise, the truncated domes are not required to be aligned.



CURB RAMP NOMENCLATURE

LAST REVISION 11/01/20	REVISION	DESCRIPTION:	FDOT FY 2021-22 STANDARD PLANS	DETECTABLE WARNINGS AND SIDEWALK CURB RAMPS	INDEX 522-002	SHEET 1 of 7



SIDEWALK CURB RAMPS CR-H, CR-K & CR-L

LAST REVISION 11/01/20	REVISION	DESCRIPTION:	FDOT FY 2021-22 STANDARD PLANS	DETECTABLE WARNINGS AND SIDEWALK CURB RAMPS	INDEX 522-002	SHEET 5 of 7

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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

SIGNING, PAVEMENT MARKING & SIDEWALK NOTES

PREPARED FOR: KH CW DELAND LLC

DATE	DESCRIPTION
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DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

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STORM WATER POLLUTION PREVENTION PLAN

CONTAINED IN THESE PLANS AND WITHIN THE FOLLOWING NOTES IS A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) TEMPLATE WHICH HAS BEEN DEVELOPED BY HEIDT DESIGN, LLC. CONTRACTOR IS RESPONSIBLE FOR COMPLETING, IMPLEMENTING AND MAINTAINING THE SWPPP THROUGHOUT CONSTRUCTION.

THE FOLLOWING ENTITIES ARE IDENTIFIED AS TEAM MEMBERS OF "SWPPP": HEIDT DESIGN, LLC, THE DEVELOPER AS IDENTIFIED IN THE TITLE BOX OF THESE PLANS, AND THE SITE CONTRACTOR AND HIS SUB-CONTRACTORS. EACH TEAM MEMBER HAS SPECIFIC RESPONSIBILITIES AND OBLIGATIONS. IN GENERAL, ALL TEAM MEMBERS, WITH REGARD TO THEIR INVOLVEMENT AND RESPONSIBILITIES ON THE PROJECT, ARE TO IMPLEMENT ALL NECESSARY STORM WATER MANAGEMENT CONTROLS TO ASSURE COMPLIANCE WITH THE NPDES GENERIC PERMIT FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES, THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT PERMIT, THE APPLICABLE LOCAL GOVERNING AGENCY (I.E. HILLSBOROUGH COUNTY, PASCO COUNTY, CITY OF TAMPA, ETC.) AND THE GUIDELINES LISTED IN THE SWPPP. THE DUTIES AND RESPONSIBILITIES OF THE TEAM MEMBERS AS THEY PERTAIN TO THE SWPPP ARE AS FOLLOWS:

HEIDT DESIGN, LLC:

A. DEVELOP SWPPP SITE MAP AND GUIDELINES INCLUDING, BUT NOT LIMITED TO, RETENTION/DETENTION PONDS, CONTROL STRUCTURES, EROSION CONTROL METHODS AND LOCATIONS AND STABILIZATION CRITERIA. THIS DESIGN IS INCLUDED WITHIN THESE CONSTRUCTION PLANS AND THE FOLLOWING NOTES AND INSTRUCTIONS.

B. SUBMIT AND OBTAIN THE NECESSARY DESIGN RELATED STORM WATER PERMITS FROM THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION, THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT AND OTHER APPLICABLE GOVERNMENTAL BODIES.

C. UPON NOTIFICATION BY THE DEVELOPER OF HIS INTENT TO COMMENCE CONSTRUCTION, SUBMIT A NOTICE OF INTENT TO THE FDEP ON BEHALF OF THE DEVELOPER AND COPY THE CONTRACTOR INCLUDING SWPPP CERTIFICATION AND COPY OF THE PERMIT.

D. SUBMIT TO SWFWMD AND THE OPERATOR OF THE MUNICIPAL SEPARATE STORM WATER SYSTEM, IF APPLICABLE, A LETTER OF CONSTRUCTION COMMENCEMENT.

CONTRACTOR:

A. DEVELOP, IMPLEMENT AND MAINTAIN A SITE SPECIFIC SWPPP IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION'S (FDEP) "NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM" (NPDES) GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES. THE TEMPLATE CONTAINED IN THESE PLANS SHALL BE USED AS A GUIDELINE TO COMPLETE THE SWPPP. SEE SECTION 4.7 OF THE NPDES GENERIC PERMIT FOR ITEMS THAT NEED TO BE ADDED TO THE PROVIDED TEMPLATE TO MEET THE REQUIREMENTS OF A SWPPP.

B. SIGN AND RETURN TO HEIDT A CONTRACTORS CERTIFICATION FORM CERTIFYING YOUR UNDERSTANDING OF AND WILLINGNESS TO COMPLY WITH THE STORM WATER POLLUTION PREVENTION PLAN NO LATER THAN 48 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION. ALSO, EACH SUBCONTRACTOR AFFECTED BY THE SWPPP MUST CERTIFY TO THE CONTRACTOR THAT THEY UNDERSTAND AND SHALL COMPLY WITH THE NPDES PERMIT AND SWPPP. A RECORD OF THESE CERTIFICATIONS SHALL BE MAINTAINED BY THE CONTRACTOR ON SITE.

C. DURING CONSTRUCTION, ASSURE COMPLIANCE WITH THE DESIGNED STORM WATER POLLUTION PREVENTION PLAN GUIDELINES AND THE NPDES GENERIC PERMIT FOR STORM WATER DISCHARGES FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES.

D. MAINTAIN A COPY OF THE CONSTRUCTION PLANS, WHICH INCLUDE THE STORM WATER POLLUTION PREVENTION PLAN, THE NOI, AND ALL INSPECTION REPORTS AND CERTIFICATIONS ON SITE. DEVELOP A SITE SPECIFIC SWPPP NARRATIVE TO IDENTIFY CONSTRUCTION MEANS AND METHODS AND LIST SUB-CONTRACTORS.

E. UNDERTAKE ALL REASONABLE BEST MANAGEMENT PRACTICES (BMP'S) TO ASSURE THAT SILTED OR OTHERWISE POLLUTED STORM WATER IS NOT ALLOWED TO DISCHARGE FROM THE SITE DURING ALL PHASES OF CONSTRUCTION. STABILIZATION BMP'S THAT MAY BE USED INCLUDE:

TEMPORARY OR PERMANENT SEEDING, MULCHING, GEOTEXTILES, SODDING, VEGETATIVE BUFFER STRIPS, PROTECTION OF TREES AND PRESERVATION OF MATURE VEGETATION. STRUCTURAL EROSION AND SEDIMENT CONTROL BMP'S THAT MAY BE USED INCLUDE: STRAW BALE DIKES, SILT FENCES, EARTH DIKES, BRUSH BARRIERS, DRAINAGE SWALES, CHECK DAMS, SUBSURFACE DRAIN, PIPE SLOPE DRAIN, LEVEL SPREADERS, STORM DRAIN INLET PROTECTION, OUTLET PROTECTION, SEDIMENT TRAPS, AND TEMPORARY SEDIMENT BASINS. DETENTION PONDS MAY ALSO BE USED AS TEMPORARY SEDIMENT BASINS. ADDITIONAL BMP'S THAT MAY NEED TO BE IMPLEMENTED INCLUDE: PROVIDING PROTECTED STORAGE AREAS FOR CHEMICALS, PAINTS, SOLVENTS, FERTILIZERS, AND OTHER POTENTIALLY TOXIC MATERIALS. PROVIDING WASTE RECEPTACLES AT CONVENIENT LOCATIONS AND PROVIDING REGULAR COLLECTION OF WASTES, INCLUDING BUILDING MATERIAL WASTES. MINIMIZING OFF-SITE TRACKING OF SEDIMENTS. MAKING ADEQUATE PREPARATIONS, INCLUDING TRAINING AND EQUIPMENT TO CONTAIN SPILLS OF OIL AND HAZARDOUS MATERIALS. COMPLYING WITH APPLICABLE STATE OR LOCAL WASTE DISPOSAL, SANITARY SEWER OR SEPTIC SYSTEM REGULATIONS AND THE USE OF APPROPRIATE POLLUTION PREVENTION MEASURES FOR ALLOWABLE NON-STORM WATER COMPONENTS OF DISCHARGE.

F. NOTIFY HEIDT DESIGN, LLC AND THE DEVELOPER IN WRITING OF ANY NON-STORM WATER POLLUTION SOURCES WHICH ARE BEING STORED, OR OTHERWISE USED DURING THE CONSTRUCTION OF THE PROJECT, I.E., FERTILIZERS, FUELS, PESTICIDES, OTHER CHEMICALS. THIS NOTIFICATION SHOULD BE ACCOMPANIED WITH THE CONTRACTOR'S DESIGN AND METHODS TO PREVENT POLLUTION RUN-OFF FROM THESE SOURCES.

G. DEVELOP A MAINTENANCE AND INSPECTION PLAN WHICH INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING:

THE SPECIFIC AREAS TO BE INSPECTED AND MAINTAINED THAT INCLUDES ALL THE DISTURBED AREAS AND MATERIAL STORAGE AREAS OF THE SITE.

1. THE EROSION AND SEDIMENT CONTROLS IDENTIFIED IN THE SWPPP TO BE MAINTAINED AND INSPECTED AND THOSE ADDITIONAL CONTROLS THAT THE CONTRACTOR DEEMS NECESSARY.
2. MAINTENANCE PROCEDURES.
3. THE PROCEDURE TO FOLLOW IF ADDITIONAL WORK IS REQUIRED OR WHOM TO CALL.
4. INSPECTIONS AND MAINTENANCE FORMS.
5. THE PERSONNEL ASSIGNED TO EACH TASK.

THE FOLLOWING SHALL BE INSPECTED A MINIMUM OF ONCE A WEEK OR WITHIN 24 HOURS AFTER 0.50 INCHES OF RAINFALL:

- STABILIZATION MEASURES (ONCE A MONTH IF FULLY STABILIZED).
- STRUCTURAL CONTROLS.
- DISCHARGE POINTS.
- CONSTRUCTION ENTRANCES AND EXITS.
- AREAS USED FOR STORAGE OF EXPOSED MATERIALS.

H. AN INSPECTION FORM SHALL BE COMPLETED FOR EACH INSPECTION. ANY PERMIT VIOLATIONS SHOULD BE NOTED AND CORRECTIVE MEASURES SHALL BE TAKEN NO LATER THAN 7 DAYS AFTER THE INSPECTION OCCURRED. IF REVISIONS TO THE SWPPP ARE NEEDED, A REPORT FORM FOR CHANGES IN THE SWPPP SHALL BE COMPLETED AND A COPY SENT TO HEIDT DESIGN, LLC. THE ORIGINAL SHALL BE KEPT ON-SITE AS DOCUMENTATION OF THE CHANGE. IF THE INSPECTION PASSES, A CERTIFICATION THAT THE FACILITY IS IN COMPLIANCE WITH THE SWPPP AND THE NPDES PERMIT MUST BE SIGNED BY A DULY AUTHORIZED REPRESENTATIVE OF THE PRINCIPAL EXECUTIVE OFFICIAL OF THE OPERATOR OF THE SWPPP WITH ONE OF THE FOLLOWING QUALIFICATIONS:

1. HAS SUCCESSFULLY COMPLETED THE FLORIDA STORMWATER, EROSION AND SEDIMENT CONTROL INSPECTOR TRAINING PROGRAM.
2. SUCCESSFULLY COMPLETED A SIMILAR TRAINING PROGRAM.
3. HAS ENOUGH PRACTICAL ON THE JOB TRAINING TO BE QUALIFIED TO PERFORM THE INSPECTIONS.
4. RETAIN INSPECTION REPORTS AND CERTIFICATIONS FOR AT LEAST THREE YEARS.

I. SITE STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICAL BUT IN NO CASE MORE THAN 7 DAYS, IN PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED.

J. RELEASES IN EXCESS OF REPORTABLE QUANTITIES.

1. THE DISCHARGE OF HAZARDOUS SUBSTANCES OR OIL IN THE STORMWATER DISCHARGE(S) FROM A FACILITY OR ACTIVITY SHALL BE PREVENTED OR MINIMIZED IN ACCORDANCE WITH THE APPLICABLE STORMWATER POLLUTION PREVENTION PLAN FOR THE FACILITY OR ACTIVITY. THIS PERMIT DOES NOT RELIEVE THE OPERATOR OF THE REPORTING REQUIREMENTS OF 40 CFR PART 117 AND 40 CFR PART 302. WHERE A RELEASE CONTAINING A HAZARDOUS SUBSTANCE IN AN AMOUNT EQUAL TO OR IN EXCESS OF A REPORTING QUANTITY ESTABLISHED UNDER EITHER 40 CFR 117 OR 40 CFR 302, OCCURS DURING A 24 HOUR PERIOD:
2. THE OPERATOR IS REQUIRED TO NOTIFY THE STATE WARNING POINT (800-210-0519 OR 850-413-9911) AS SOON AS HE OR SHE HAS KNOWLEDGE OF THE DISCHARGE;

   a. THE OPERATOR SHALL SUBMIT WITHIN 14 CALENDAR DAYS OF KNOWLEDGE OF THE RELEASE A WRITTEN DESCRIPTION OF: THE RELEASE (INCLUDING THE TYPE AND ESTIMATE OF THE AMOUNT OF MATERIAL RELEASED), THE DATE THAT SUCH RELEASE OCCURRED, THE CIRCUMSTANCES LEADING TO THE RELEASE, AND REMEDIAL STEPS TO BE TAKEN, TO THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION, NPDES STORMWATER SECTION, MAIL STATION 2500, 2600 BLAIR STONE ROAD, TALLAHASSEE, FLORIDA 32399-2400; AND

   b. THE STORMWATER POLLUTION PREVENTION PLAN REQUIRED UNDER PART V OF THIS PERMIT MUST BE MODIFIED WITHIN 14 CALENDAR DAYS OF KNOWLEDGE OF THE RELEASE TO PROVIDE A DESCRIPTION OF THE RELEASE, THE CIRCUMSTANCES LEADING TO THE RELEASE, AND THE DATE OF THE RELEASE. IN ADDITION, THE PLAN MUST BE REVIEWED TO IDENTIFY MEASURES TO PREVENT THE REOCCURRENCE OF SUCH RELEASES AND TO RESPOND TO SUCH RELEASES, AND THE PLAN MUST BE MODIFIED WHERE APPROPRIATE.

3. THIS PERMIT DOES NOT AUTHORIZE THE DISCHARGE OF HAZARDOUS SUBSTANCES OR OIL RESULTING FROM AN ON-SITE SPILL.

DEVELOPER:

A. NOTIFY HEIDT OF YOUR INTENT TO COMMENCE CONSTRUCTION. SIGN THE NOTICE OF INTENT FORM AS OPERATOR OF THE STORM WATER DISCHARGE FACILITY AND PERMITTEE AND RETURN TO HEIDT DESIGN, LLC.

B. SIGN A CERTIFICATION OF STORM WATER POLLUTION PREVENTION PLAN AND RETURN TO HEIDT DESIGN, LLC.

C. COMPLETE AND SUBMIT A NOTICE OF TERMINATION (NOT) AND CERTIFICATION. THE NOT SHALL BE SUBMITTED NO MORE THAN 14 DAYS AFTER;

1. COMPLETION OF THE PROJECT AND FINAL STABILIZATION OF THE SITE OR
2. WHEN RESPONSIBILITY FOR THE SITE HAS ENDED. FINAL STABILIZATION AS DEFINED BY EPA IS WHEN ALL SOIL DISTURBING ACTIVITIES AT THE SITE HAVE BEEN COMPLETED AND A UNIFORM (E.G. EVENLY DISTRIBUTED, WITHOUT LARGE BARE AREAS) PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70% OF THE NATIVE BACKGROUND VEGETATIVE COVER FOR THE AREA HAS BEEN ESTABLISHED ON ALL UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES. AS AN ALTERNATIVE, EQUIVALENT PERMANENT STABILIZATION MEASURES (SUCH AS RIPRAP, GABIONS, OR GEOTEXTILES) MAY BE EMPLOYED. THE CLIENT SHALL NOTIFY HEIDT DESIGN, LLC WHEN ONE OF THESE CRITERIA HAS BEEN MET.

PRE-DEVELOPED SITE INFORMATION:

TOTAL SITE ACREAGE: 82.79 AC ± (1)

LAND USE: TREE PLANTATION

VEGETATION: PINE TREES

RECEIVING WATERS OR MUNICIPAL SEPARATE STORM WATER SYSTEM: UNNAMED TRIBUTARY TO INTER-COASTAL WATERWAY

2 YEAR/24 HOUR RAINFALL DEPTH: 6"

SOIL TYPES: POTTSBURG, LEON, & RUTLEDGE SANDS

PROJECT INFORMATION:

1. PROJECT TYPE - SUBDIVISION
2. ANTICIPATED CONSTRUCTION SEQUENCE IS AS FOLLOWS:
   - COMPLETE EROSION CONTROL INSTALLATION
   - CLEARING AND GRUBBING
   - EARTHWORK ACTIVITIES
   - STORM WATER SYSTEM CONSTRUCTION
   - UTILITY CONSTRUCTION
   - BASE AND PAVEMENT CONSTRUCTION
   - FINAL STABILIZATION

THE BMP'S LISTED IN PART D OF THE CONTRACTOR SECTION OF THE SWPPP SHALL BE CONSIDERED DURING ALL PHASES OF CONSTRUCTION.

3. ANTICIPATED START DATE: 01/01/2024
4. ANTICIPATED COMPLETION DATE: 01/01/2026
5. TOTAL ACRES DISTURBED: 66.7 AC.
6. PRE-DEVELOPED "C" FACTOR: 0.20
7. POST-DEVELOPED "C" FACTOR: 0.4
8. THE STORM WATER MANAGEMENT SYSTEM, UPON COMPLETION OF CONSTRUCTION AND APPROPRIATE CERTIFICATION AND AS-BUILT SUBMITTALS WILL BE OPERATED AND MAINTAINED BY OWNER.
9. THE POTENTIAL SOURCE OF POLLUTION FROM THIS PROJECT IS ON-SITE DEVELOPMENT AND CONSTRUCTION ACTIVITY.

POND/LAKE EXCAVATION NOTE:

NO EXCAVATION SHALL EXTEND BELOW THE PERMITTED DESIGN DEPTHS/ELEVATIONS SHOWN ON THE DRAWINGS, UNLESS ADDITIONAL TESTING SUPPORTS OTHERWISE AND THE ENGINEER OF RECORD HAS RECEIVED WRITTEN PERMISSION/APPROVAL FROM THE WATER MANAGEMENT DISTRICT AND LOCAL AGENCY HAVING JURISDICTION. NO LOWER SEMI-CONFINING UNIT CLAYEY SOIL MATERIAL AND/OR NO LIMESTONE MATERIALS SHALL BE EXCAVATED, REGARDLESS IF THESE MATERIALS ARE ENCOUNTERED WITHIN THE PERMITTED EXCAVATION DEPTHS/ELEVATIONS. IF ANY LOWER SEMI-CONFINING UNIT CLAYEY SOIL MATERIALS OR LIMESTONE MATERIALS ARE ENCOUNTERED ABOVE THE PERMITTED DEPTHS/ELEVATIONS, THEN EXCAVATION OPERATIONS SHALL CEASE IN THE GENERAL AREA AND THE ENGINEER OF RECORD AND GEOTECHNICAL CONSULTANT SHALL BE NOTIFIED IMMEDIATELY.

NO TEMPORARY DEWATERING DITCHES OR SUMPS (FOR POND EXCAVATION) SHALL EXTEND BELOW THE PERMITTED DESIGN DEPTHS SHOWN ON THE DRAWINGS. IF ANY LOWER SEMI-CONFINING UNIT CLAYEY MATERIALS OR LIMESTONE MATERIALS ARE ENCOUNTERED ABOVE THE PERMITTED EXCAVATION DEPTHS, THEN EXCAVATION OPERATIONS IN THAT POND AREA SHALL IMMEDIATELY CEASE IN THE GENERAL AREA, AND THE PROJECT GEOTECHNICAL CONSULTANT SHALL BE NOTIFIED TO PROVIDE SUBSEQUENT EVALUATIONS/RECOMMENDATIONS, AS APPROPRIATE, WHICH SHALL BE IMPLEMENTED BY THE CONTRACTOR.

ANY SIGNIFICANT UNSTABLE BOTTOM AREAS DISCOVERED OR CREATED, AND ANY SIGNIFICANT BOTTOM BOILS, SHALL BE DOCUMENTED/REPORTED BY THE CONTRACTOR AND THEN REPAIRED/IMPROVED BY THE CONTRACTOR, AS DIRECTED BY THE CIVIL AND GEOTECHNICAL CONSULTANTS, PRIOR TO OBTAINING FINAL POND ACCEPTANCE. ALL POND EXCAVATION OPERATIONS BY THE CONTRACTOR SHALL BE COORDINATED WITH A SENIOR FIELD TECHNICIAN WORKING DIRECTLY FOR THE PROJECT CIVIL AND GEOTECHNICAL CONSULTANTS.

OWNER'S INSTRUCTIONS FOR MAINTENANCE AND INSPECTION OF STORMWATER FACILITIES

THE ENTIRE STORMWATER SYSTEM SHOULD BE INSPECTED ON AT LEAST A SEMI-ANNUAL BASIS. THIS SHOULD INCLUDE A VISUAL INSPECTION OF THE POND, POND BANKS, BLEED-DOWN ORIFICES, OTHER CONTROL STRUCTURES, AND DISCHARGE PIPES. THESE SHOULD BE KEPT FREE OF DEBRIS AND CLEANED ON A FREQUENCY AS REQUIRED TO KEEP THEM FUNCTIONAL, AS DESIGNED. MOWING/CLEARING AROUND THE STRUCTURES MAY BE REQUIRED TO PREVENT VEGETATION FROM CLOGGING THEM.

WETLAND PLANTS, IF INTENTIONALLY INSTALLED, SHOULD BE MONITORED AND MAINTAINED AS REQUIRED ON THE APPROVED CONSTRUCTION PLANS. AREAS OF LITTORAL SHELVING, WHICH ARE REQUIRED TO BE VEGETATED BUT NOT INTENTIONALLY PLANTED, SHOULD NOT BE CLEARED OF THE WETLAND PLANTS. THESE AREAS SHOULD HAVE AS HIGH A PLANT COVERAGE AS POSSIBLE, FOR MAXIMUM WATER FILTRATION.

SEDIMENT SUMPS, IF DESIGNED AND INSTALLED, SHOULD HAVE SEDIMENT REMOVED AS NECESSARY TO ALLOW THEM TO EFFICIENTLY REMOVE SUSPENDED PARTICLES. THEY SHOULD BE RE-DUG TO THE ORIGINAL DESIGN SPECIFICATIONS, IF SILTED IN.

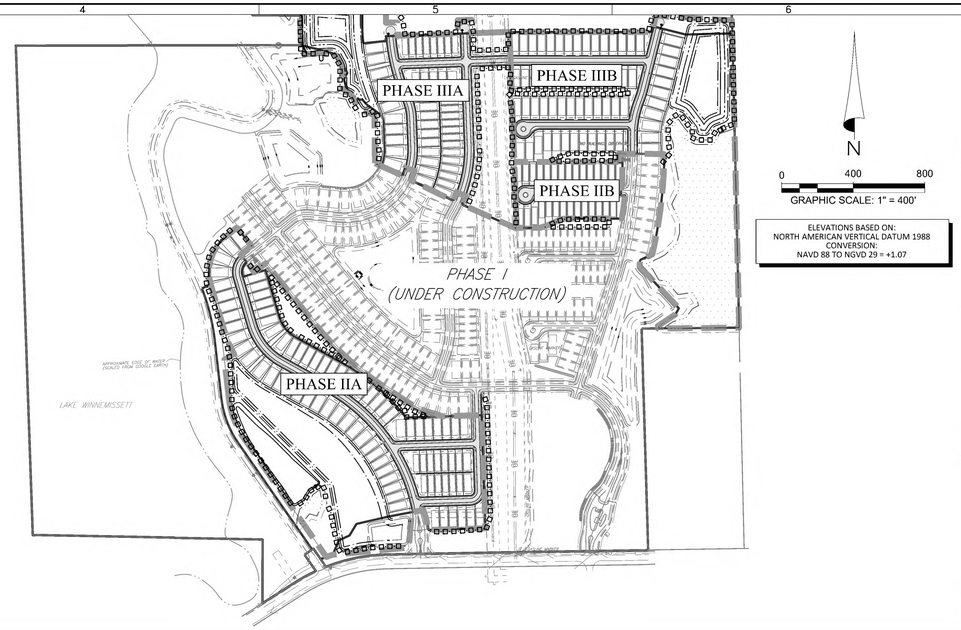
FOR PERCOLATION TREATMENT PONDS/SWALES, THE OWNER OF THE FACILITY SHALL INSPECT THE POND BOTTOM PERIODICALLY AFTER HEAVY RAINFALL EVENTS TO CHECK FOR PERSISTENT PONDING OR POOLING OF WATER. ALL LARGE DEBRIS SHALL BE REMOVED AND DISPOSED OF ELSEWHERE. IF PROLONGED PONDING PERSISTS, I.E., IN EXCESS OF 72 HOURS, THE OWNER SHALL RAKE OR SCARIFY THE SURFACE. IF REQUIRED, THE SOIL IN THE AREA OF PONDING SHALL BE REMOVED AND REPLACED WITH CLEAN SANDY, NON-COHESIVE SOILS.

PLEASE CHECK THE CONSTRUCTION PLANS TO SEE IF WRITTEN REPORTS ON MONITORING OR PLANT SURVIVAL RATES ARE REQUIRED TO BE SENT TO ANY REVIEWING AGENCIES. WRITTEN NOTES SHOULD ALWAYS BE KEPT WHICH DESCRIBE MAINTENANCE ACTIVITIES UNDERTAKEN DURING EACH INSPECTION.

SPECIFIC CONDITIONS OF ALL PERMITS MAY REQUIRE ADDITIONAL MAINTENANCE ACTIVITIES ABOVE AND BEYOND THOSE OUTLINED ABOVE. PLEASE BE AWARE OF ALL PERMIT CONDITIONS AS ISSUED BY REGULATORY AGENCIES TO ENSURE PERMIT COMPLIANCE.

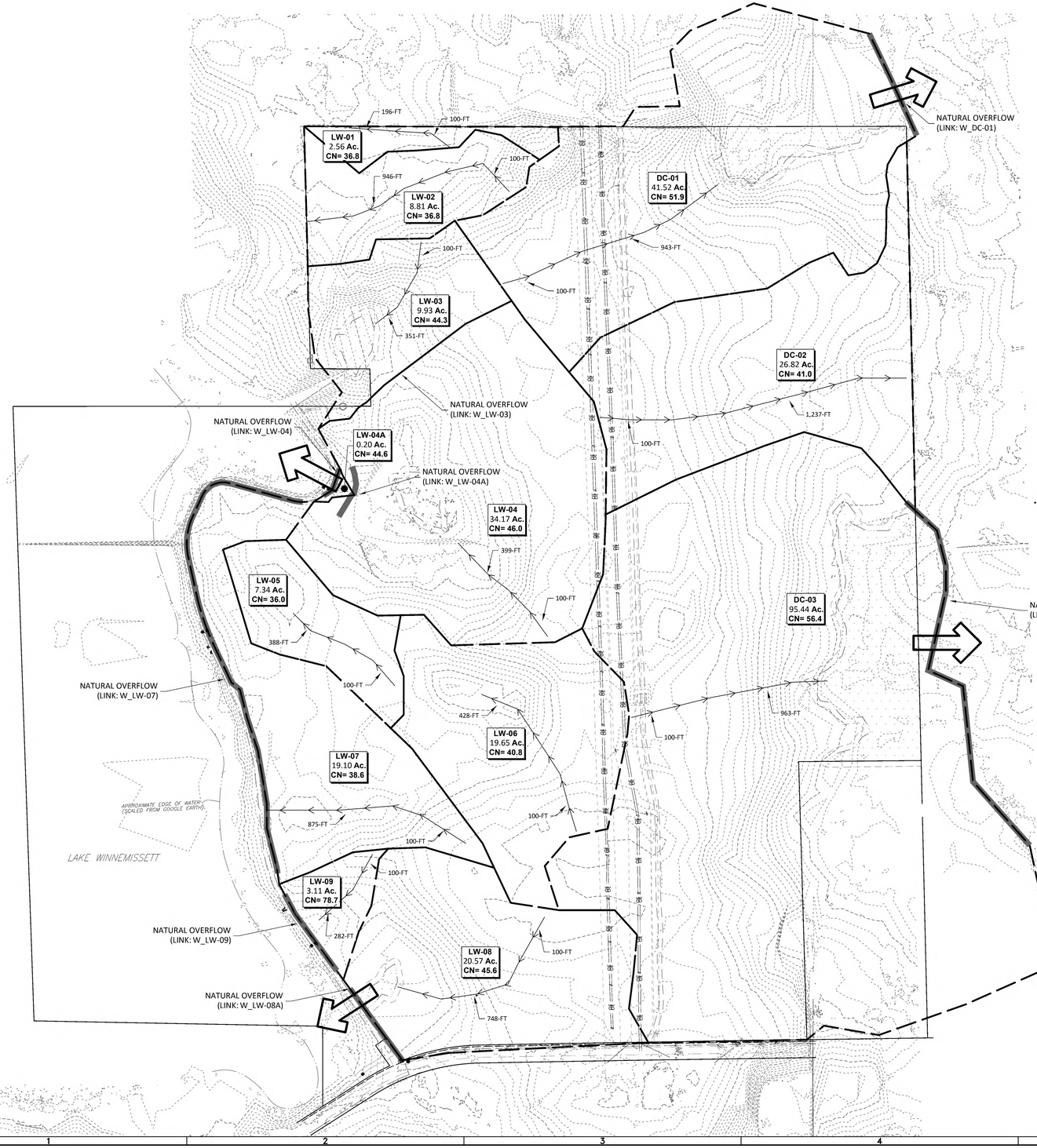
WETLAND NOTES:

THERE ARE NO WETLAND IMPACTS PROPOSED AND THEREFORE, NO MITIGATION REQUIRED.



GENERAL EROSION AND TURBIDITY CONTROL NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF ALL EROSION AND TURBIDITY CONTROLS AND THE QUALITY AND QUANTITY OF DISCHARGES TO OFFSITE OR WETLANDS.
2. PRIOR TO CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR HAVING A DEWATERING PLAN AND TURBIDITY CONTROL PLAN APPROVED BY THE APPLICABLE REVIEWING AGENCIES. REFER TO THE PROJECT'S PERMIT APPROVALS AND PERMIT CONDITIONS FOR AGENCIES REQUIRING SUCH REVIEW AND APPROVAL. QUESTIONS CONCERNING APPROPRIATE TECHNIQUES SHOULD BE ADDRESSED TO THOSE AGENCIES AND/OR DISCUSSED WITH THE PROJECT ENGINEER AND OWNER.
3. THE APPROPRIATE TURBIDITY AND EROSION CONTROL METHODOLOGIES SELECTED BY THE CONTRACTOR FOR THIS PROJECT SHOULD BE MADE FOLLOWING ASSESSMENT OF THE PLANS AND PROJECT SITE SPECIFIC FACTORS AND AFTER CONSULTATIONS, AS NEEDED, WITH THE PROJECT ENGINEER AND APPROPRIATE AGENCIES. THE CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING ANY AND ALL NECESSARY PERMITS FOR SUCH ACTIVITY; SEVERAL FACTORS TO CONSIDER ARE LISTED BELOW:
   A. CLAY CONTENT IN EXCAVATED MATERIALS AND/OR PERMEABILITY RATES
   B. DEPTH OF CUT IN PONDS, TRENCHES, OR UTILITY LINES
   C. AMBIENT GROUND WATER LEVELS
   D. ACTUAL RAINFALL AMOUNTS AND TIME OF YEAR RELATIVE TO NORMAL RAINY SEASON
   E. PROXIMITY TO WETLANDS, WATER BODIES OR OFFSITE PROPERTIES
   F. 'CLASS' DESIGNATION OF RECEIVING WATER BODIES (I.E., OUTSTANDING FLORIDA WATERS, SHELLFISH HARVESTING AREAS, ETC.)
   G. DENSITY, TYPE, AND PROXIMITY OF UPLAND VEGETATION TO BE RETAINED DURING CONSTRUCTION (FOR USE AS POSSIBLE FILTRATION AREAS)
   H. FILL HEIGHT RELATIVE TO NATURAL GRADE AND LENGTH AND STEEPNESS OF THE PROPOSED SLOPES
   I. EXISTING TOPOGRAPHY AND DIRECTIONS OF SURFACE FLOW
   J. TYPE OF EQUIPMENT USED
   K. PROJECT TYPE
   L. DURATION OF CONSTRUCTION ACTIVITIES
   M. SEPARATION DISTANCE OF ONSITE PONDS
   N. AMBIENT QUALITY OF SURFACE AND GROUNDWATER
   O. TEMPORARY STOCKPILE LOCATIONS AND HEIGHTS
4. AT THE ONSET OF CONSTRUCTION, THE CONTRACTOR, AS THE PARTY RESPONSIBLE FOR IMPLEMENTATION OF THE EROSION AND SEDIMENT CONTROL PLAN, SHALL ASSESS THE ABOVE DESCRIBED CONDITIONS AND FACTORS WITH RESPECT TO RELATIVE COST EFFECTIVENESS AND SELECT THE APPROPRIATE METHODS OF PROTECTION. A FAIRLY EXTENSIVE LIST OF TECHNIQUES ARE PRESENTED BELOW BUT IT MUST BE STRESSED THAT ANY OR ALL OF THE FOLLOWING MAY BE NECESSARY TO MAINTAIN WATER QUALITY AND QUANTITY STANDARDS. THE CONSTRUCTION SEQUENCING SHOULD BE THOUGHT OUT IN ADVANCE OF INITIATION TO PROVIDE ADEQUATE PROTECTION OF WATER QUALITY.
5. DISCHARGES WHICH EXCEED 29 N.T.U.'S OVER THE BACKGROUND LEVELS ARE IN VIOLATION OF STATE WATER QUALITY STANDARDS. DISCHARGES OF WATER QUANTITIES WHICH AFFECT OFFSITE PROPERTIES OR MAY DAMAGE WETLANDS ARE ALSO PROHIBITED BY REGULATING AGENCIES.
6. THE EROSION AND TURBIDITY CONTROL MEASURES SHOWN HEREON ARE THE MINIMUM REQUIRED FOR AGENCY APPROVAL. ADDITIONAL CONTROL AND MEASURES MAY BE REQUIRED DUE TO THE CONTRACTOR'S CONSTRUCTION SEQUENCE & UNFORESEEN WEATHER CONDITIONS. ANY ADDITIONAL MEASURES DEEMED NECESSARY BY THE SITE SUBCONTRACTOR SHALL BE INCLUDED IN THE LUMP SUM BID WITH NO EXTRAS FOR MATERIALS AND LABOR ALLOWED.
7. EROSION CONTROL SHALL BE INSTALLED PRIOR TO LAND CLEARING TO PROTECT WATER QUALITY AND TO IDENTIFY AREAS TO BE PROTECTED FROM CLEARING ACTIVITIES AND MAINTAINED FOR THE DURATION OF THE PROJECT UNTIL ALL SOIL IS STABILIZED.
8. FLOATING TURBIDITY BARRIERS SHALL BE IN PLACE IN FLOWING SYSTEMS OR IN OPEN WATER POND OR LAKE EDGES PRIOR TO INITIATION OF EARTHWORK AND MAINTAINED FOR THE DURATION OF THE PROJECT UNTIL ALL SOIL IS STABILIZED.
9. NO CLAY MATERIAL SHALL BE LEFT EXPOSED IN ANY STORMWATER STORAGE FACILITY. IF CLAY OR SANDY-CLAYS ARE ENCOUNTERED DURING STORMWATER STORAGE EXCAVATION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER AND GEOTECHNICAL ENGINEER IMMEDIATELY BEFORE PROCEEDING WITH FURTHER EXCAVATION. IF THE ENGINEER OF RECORD HAS DETERMINED THAT SUCH SOILS ARE NON-CONFINING AND MUST BE EXCAVATED TO MEET PERMIT AND DESIGN CONDITIONS, EXCAVATION MAY PROCEED AFTER OBTAINING WRITTEN AUTHORIZATION FROM THE APPROPRIATE GOVERNING AGENCY. IF SAID SOILS ARE LEFT EXPOSED AT THE PERMITTED AND DESIGNED DEPTH, THE SITE SUBCONTRACTOR SHALL OVER-EXCAVATE THE POND'S BOTTOM AND SIDE SLOPES BY A MINIMUM OF TWELVE (12") INCHES AND BACKFILL WITH CLEAN SANDS TO HELP PREVENT SUSPENSION OF FINE PARTICLES IN THE WATER COLUMN.
10. THE INSTALLATION OF TEMPORARY EROSION CONTROL BARRIERS SHALL BE COORDINATED WITH THE CONSTRUCTION OF THE PERMANENT EROSION CONTROL FEATURES TO THE EXTENT NECESSARY TO ASSURE EFFECTIVE AND CONTINUOUS CONTROL OF EROSION AND WATER POLLUTION THROUGHOUT THE LIFE OF THE CONSTRUCTION PHASE.
11. THE TYPE OF EROSION CONTROL BARRIERS USED SHALL BE GOVERNED BY THE NATURE OF THE CONSTRUCTION OPERATION AND SOIL TYPE THAT WILL BE EXPOSED. SILTY AND CLAYEY MATERIAL MAY REQUIRE SOLID SEDIMENT BARRIERS TO PREVENT TURBID WATER DISCHARGE, WHILE SANDY MATERIAL MAY NEED ONLY SILT SCREENS OR BALES TO PREVENT EROSION. FLOATING TURBIDITY CURTAINS SHOULD GENERALLY BE USED IN OPEN WATER SITUATIONS. DIVERSION DITCHES OR SWALES MAY BE REQUIRED TO PREVENT TURBID STORMWATER RUNOFF FROM BEING DISCHARGED TO WETLANDS OR OTHER WATER BODIES. IT MAY BE NECESSARY TO EMPLOY A COMBINATION OF BARRIERS, DITCHES, AND OTHER EROSION/TURBIDITY CONTROL MEASURES IF CONDITIONS WARRANT.
12. WHERE PUMPS ARE TO BE USED TO REMOVE TURBID WATERS FROM CONSTRUCTION AREAS, THE WATER SHALL BE TREATED PRIOR TO DISCHARGE TO THE WETLANDS. TREATMENT METHODS INCLUDE, FOR EXAMPLE, TURBID WATER BEING PUMPED INTO GRASSED SWALES OR APPROPRIATE UPLAND VEGETATED AREAS (OTHER THAN UPLAND PRESERVATION AREAS AND WETLAND BUFFERS), SEDIMENT BASINS, SEDIMENT FILTER BAGS, OR CONFINED BY AN APPROPRIATE ENCLOSURE SUCH AS TURBIDITY BARRIERS OR LOW BERMS, AND KEPT CONFINED UNTIL TURBIDITY LEVELS MEET STATE WATER QUALITY STANDARDS.
13. THE PERMITTEE SHALL SCHEDULE HIS OPERATIONS SUCH THAT THE AREA OF UNPROTECTED, ERODIBLE EARTH EXPOSED AT ANY ONE TIME IS NOT LARGER THAN THE MINIMUM AREA NECESSARY FOR EFFICIENT CONSTRUCTION OPERATION, AND THE DURATION OF EXPOSED, UNCOMPLETED CONSTRUCTION TO THE ELEMENTS SHALL BE AS SHORT AS PRACTICABLE. CLEARING AND GRUBBING SHALL BE SO SCHEDULED AND PERFORMED SUCH THAT GRADING OPERATIONS CAN FOLLOW IMMEDIATELY THEREAFTER. GRADING OPERATIONS SHALL BE SO SCHEDULED AND PERFORMED THAT PERMANENT EROSION CONTROL FEATURES CAN FOLLOW IMMEDIATELY THEREAFTER IF CONDITIONS ON THE PROJECT PERMIT.
14. WATER DERIVED FROM VARIOUS DEWATERING METHODS USED WITH APPROVED PERMITTING SHOULD BE PASSED THROUGH SUFFICIENTLY WIDE AREAS OF EXISTING UPLAND VEGETATION, OR THROUGH THE USE OF SEDIMENT FILTER BAGS, TO FILTER OUT EXCESS TURBIDITY. IF THIS IS NOT SUFFICIENT, THE WATER SHALL BE RETAINED IN PREVIOUSLY CONSTRUCTED PERMANENT STORMWATER PONDS OR ELSE RETAINED IN TEMPORARY SEDIMENTATION BASINS UNTIL THE CLARITY IS SUITABLE TO ALLOW FOR ITS DISCHARGE. PLUGGING THE OUTFALLS FROM COMPLETED STORMWATER PONDS MAY BE NEEDED TO AVOID DISCHARGE. HOWEVER, SUCH SITUATIONS SHOULD BE MONITORED CLOSELY TO PRECLUDE BERM FAILURE IF WATER LEVELS RISE TOO HIGH.
15. WATER CAN BE TRANSPORTED AROUND THE SITE BY THE USE OF INTERNAL SWALES OR BY PUMPS AND PIPES.
16. SHEET FLOW OF NEWLY FILLED OR SCRAPED AREAS MAY BE CONTROLLED OR CONTAINED BY THE USE OF BRUSH BARRIERS, DIVERSION SWALES, INTERCEPTOR DITCHES OR LOW BERMS. FLOW SHOULD BE DIRECTED TOWARD AREAS WHERE SEDIMENTS CAN SUFFICIENTLY SETTLE OUT.
17. EXPOSED SOILS SHALL BE STABILIZED AS SOON AS POSSIBLE, ESPECIALLY SLOPES LEADING TO WETLANDS. STABILIZATION METHODS INCLUDING, BUT NOT LIMITED TO, SOLID SOD, SEEDING AND MULCHING OR HYDRO-MULCHING TO PROVIDE A TEMPORARY OR PERMANENT GRASS COVER, MULCH BLANKETS, AND FILTER FABRICS CAN BE EMPLOYED TO PROVIDE VEGETATIVE COVER.
18. ENERGY DISSIPATERS (SUCH AS RIP RAP, A GRAVEL BED, BALES, ETC.) SHALL BE INSTALLED AT THE DISCHARGE POINT OF PIPES OR SWALES IF SCOURING IS OBSERVED.
19. INSTALL ROADWAY CURB AND GUTTERS AS SOON AS POSSIBLE TO REDUCE THE SURFACE AREA FOR EROSION TO OCCUR.
20. IMPLEMENT STORM DRAIN INLET PROTECTION (BALES OR GRAVEL) TO LIMIT SEDIMENTATION WITHIN THE STORMWATER SYSTEM. PERFORM INSPECTIONS AND PERIODIC CLEANING OF SEDIMENTS WHICH WASH OUT INTO THE STREETS UNTIL ALL SOIL IS STABILIZED.
21. WATER DISCHARGE VELOCITIES FROM IMPOUNDED AREAS



N

0 250 500

GRAPHIC SCALE: 1" = 250'

ELEVATIONS BASED ON:
NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION:
NAVD 88 TO NGVD 29 = +1.07

DRAINAGE LEGEND

- 15 — EXISTING CONTOUR
- 1.00 AC. — MAJOR DRAINAGE AREA ACREAGE
- MAJOR DRAINAGE AREA
- TIME OF CONCENTRATION LINE (Tc)
- NATURAL OVERFLOW LOCATION

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CRESSWIND DELAND PHASE 2A, 2B, 3A & 3B
PRE-DEVELOPMENT DRAINAGE AREA MAP

PREPARED FOR: KH CW DELAND LLC

DATE	DESCRIPTION

DATE	DESCRIPTION
02/20/2023	REVIEW SUBMITTAL

PROJECT NO: KGA-CD-1031
FILE: DA-PRE
DESIGN BY: DMYTRYK
DRAWN BY: JONES

STATE OF FLORIDA
PROFESSIONAL ENGINEER

Strickland T. Smith, State of Florida, Professional Engineer, License No. 50652

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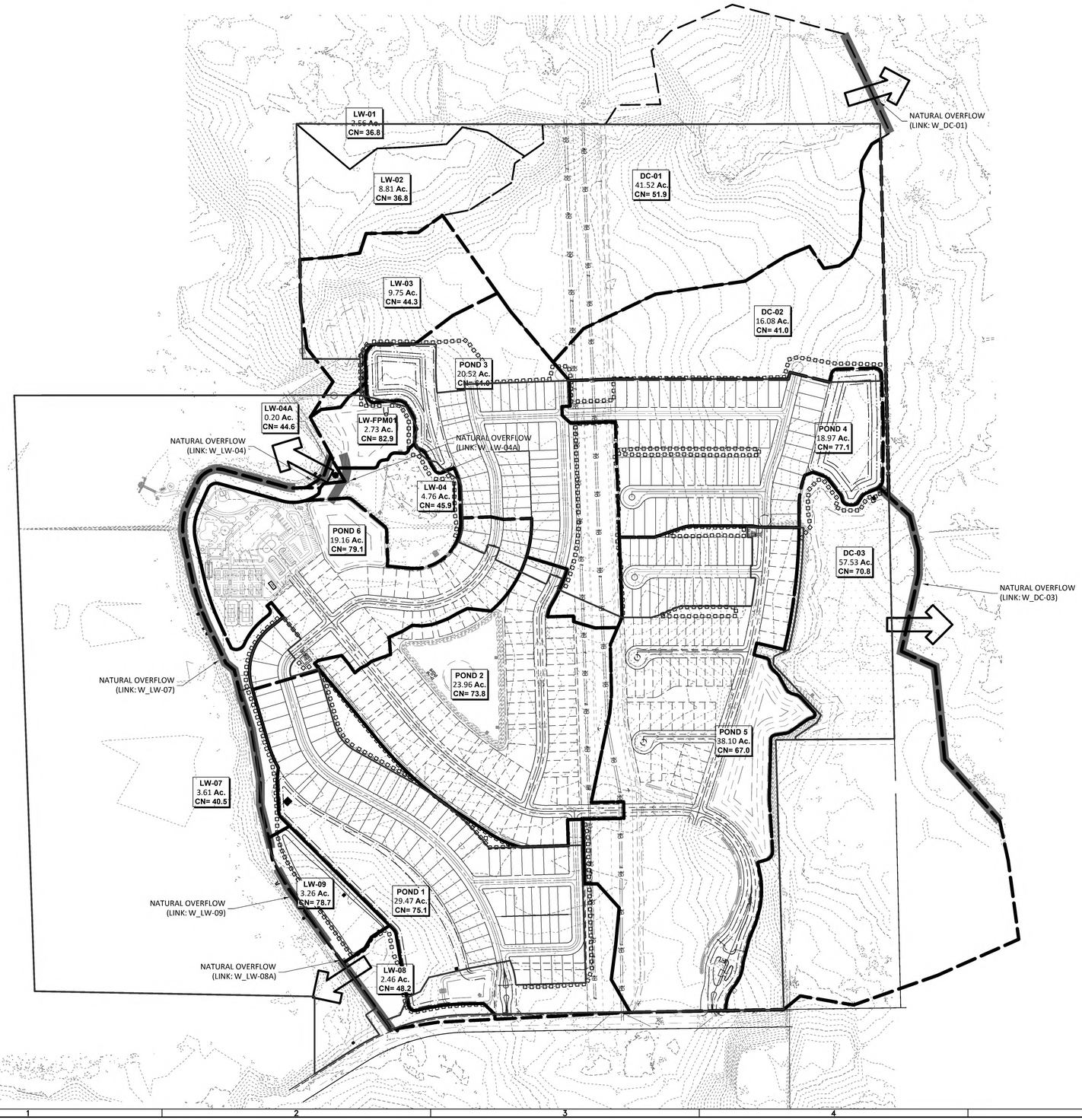
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DRAINAGE LEGEND

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- 1.00 AC. — MAJOR DRAINAGE AREA ACREAGE
- — — — MAJOR DRAINAGE AREA
- NATURAL OVERFLOW LOCATION

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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

POST-DEVELOPMENT DRAINAGE AREA MAP

PREPARED FOR: KH CW DELAND LLC

DATE	DESCRIPTION

DATE	DESCRIPTION

PROJECT NO:	KGA-CD-1031
FILE:	DA-POST
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

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DRAINAGE LEGEND

- 15 — CONTOUR
- 1.00 AC. — MAJOR DRAINAGE AREA ACREAGE
- — — — MAJOR DRAINAGE AREA
- ——— PROPERTY BOUNDRY
- (1) — STORM STRUCTURE NUMBER

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CRESSWIND DELAND PHASE 2A, 2B, 3A & 3B

SUB-BASIN DRAINAGE AREA MAP

PREPARED FOR: KH CW DELAND LLC

DATE	DESCRIPTION
02/20/2023	REVIEW SUBMITTAL

PROJECT NO:	KGA-CD-1031
FILE:	DA-SUB
DESIGN BY:	DMYTRYK
DRAWN BY:	JONES

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DRAINAGE LEGEND

1.00 AC.	MAJOR DRAINAGE AREA ACREAGE
	MAJOR DRAINAGE AREA
	PROPERTY BOUNDRY
1	STORM STRUCTURE NUMBER

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SUB-BASIN DRAINAGE AREA MAP

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DATE	DESCRIPTION

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FILE:	DA-SUB
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DRAWN BY:	JONES

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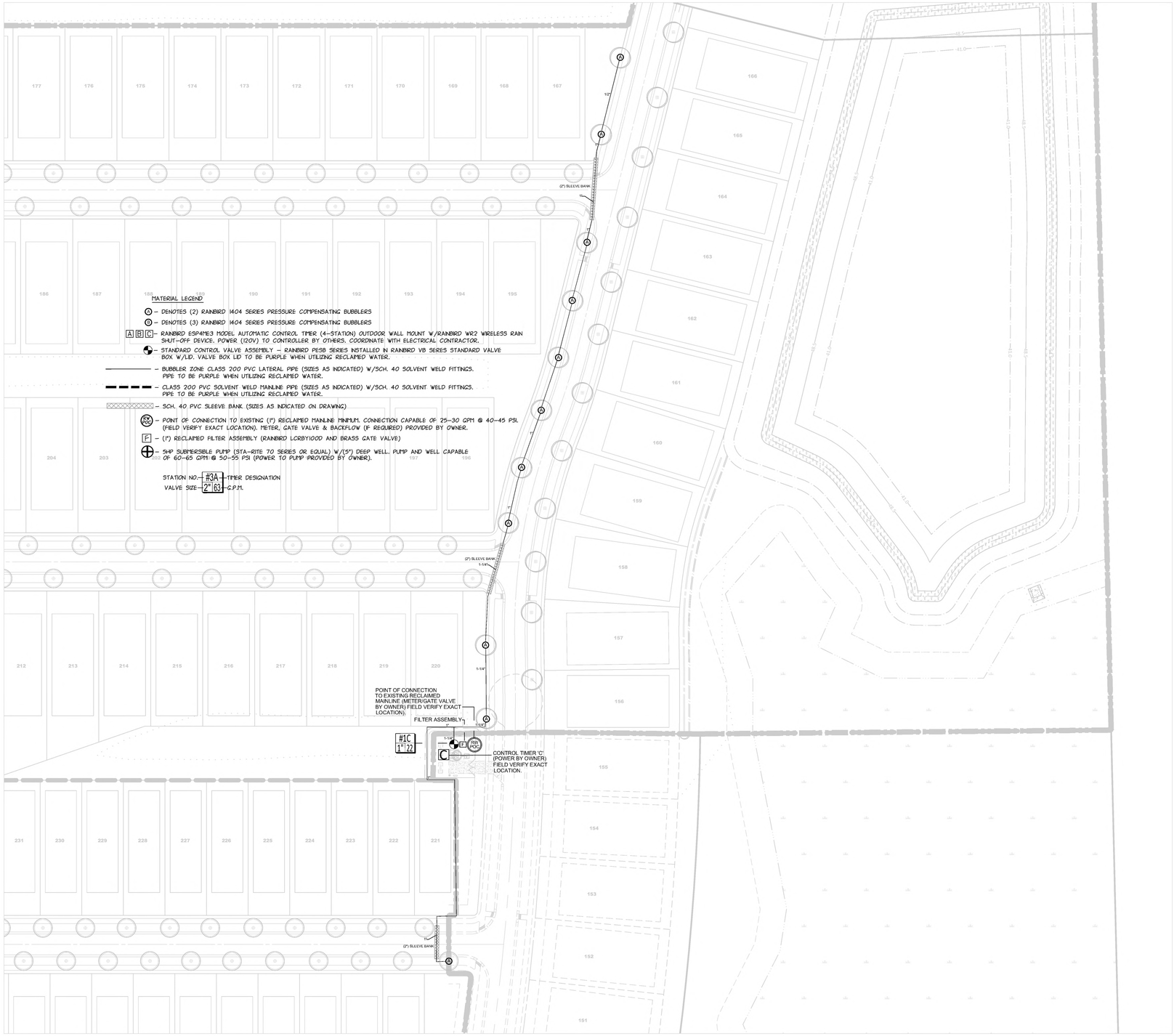
CRESSWIND PHASE II

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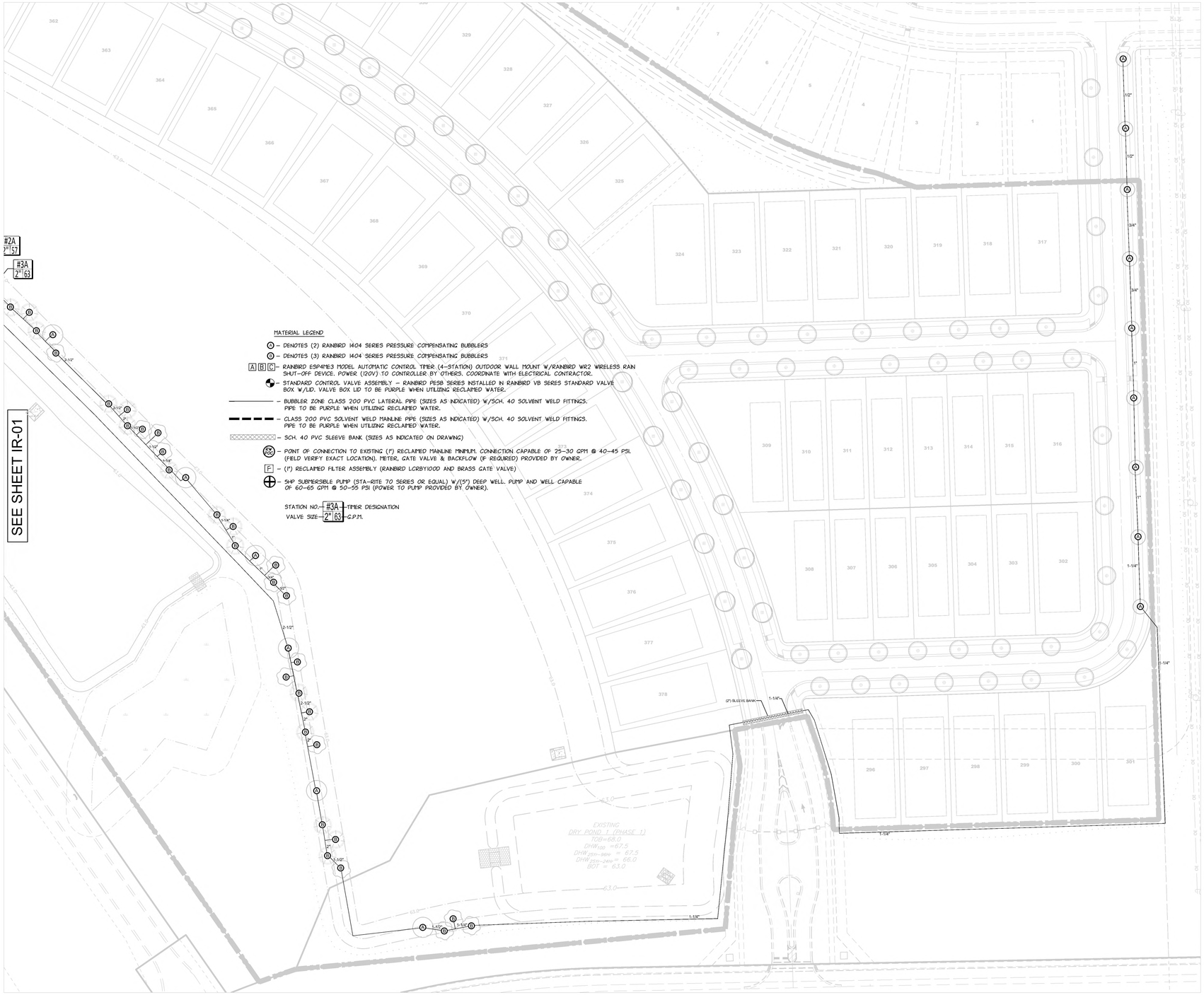
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IRRIGATION DESIGN: PUMP & WELL #1 'A' TIMER

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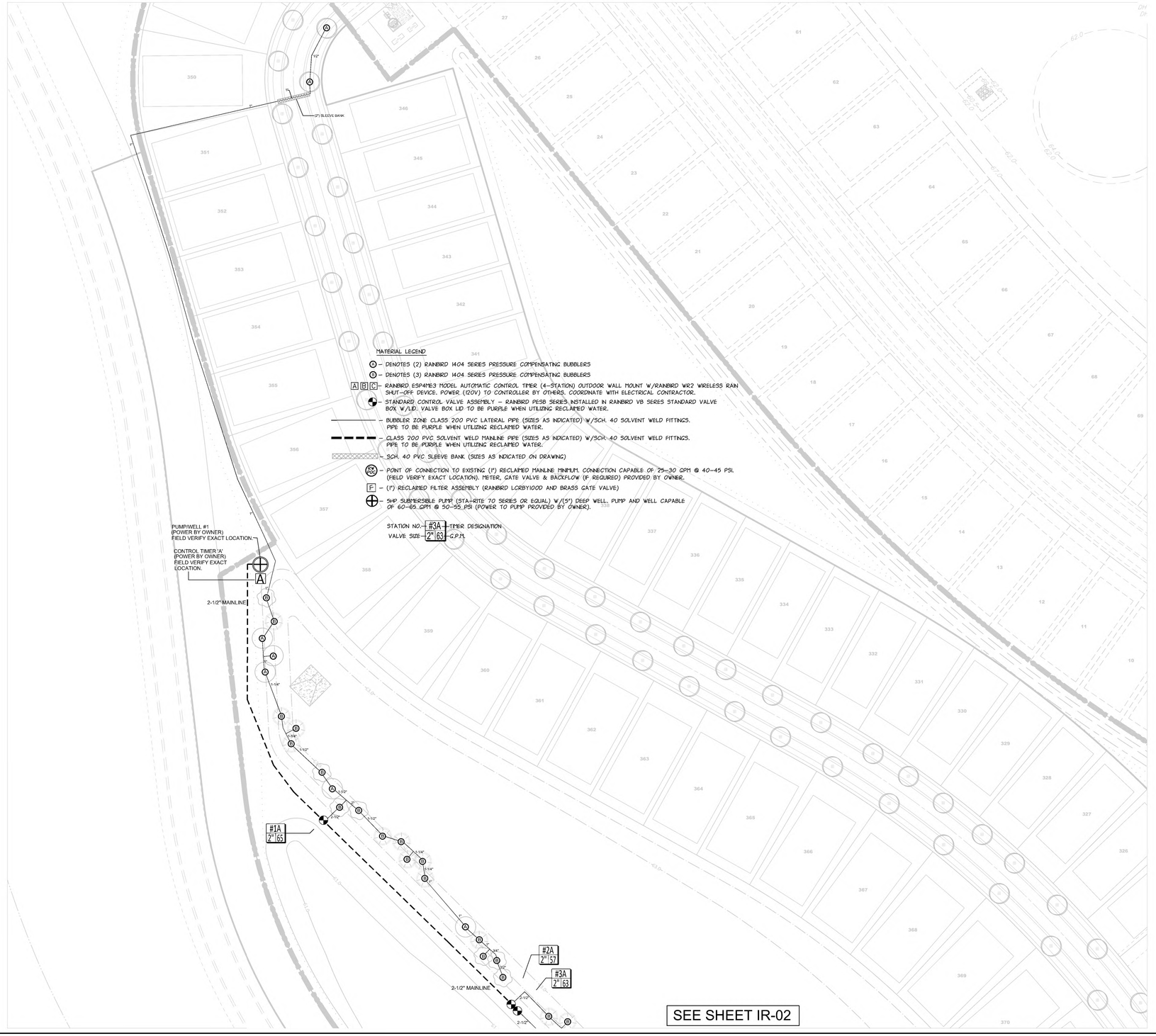
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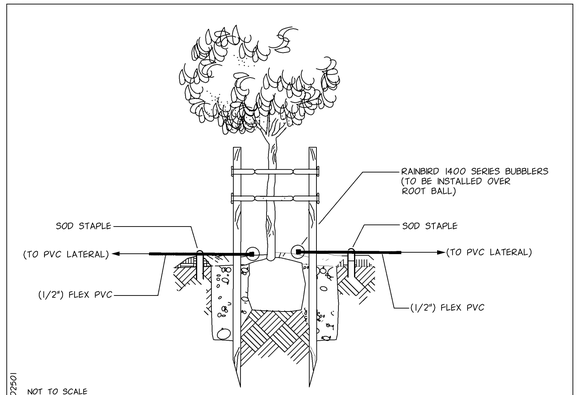
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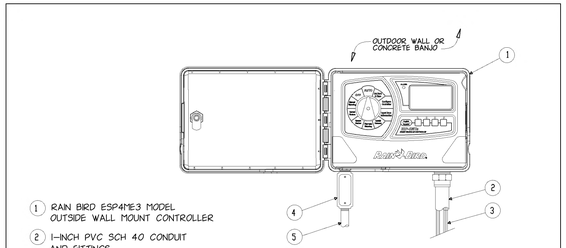
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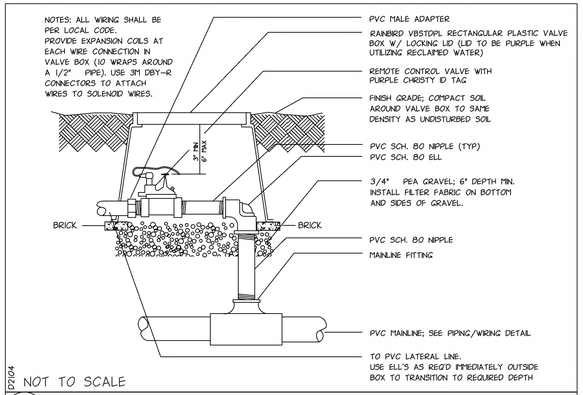


A TREE BUBBLER DETAIL

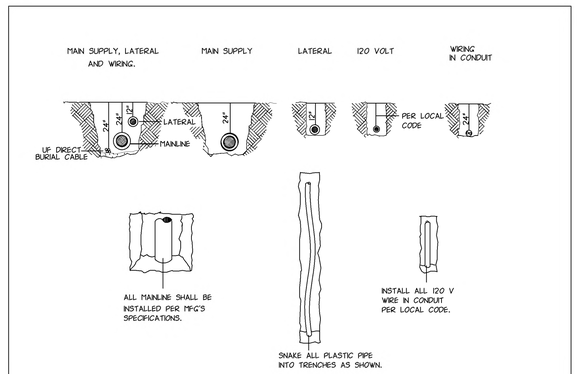


1. RAIN BIRD ESP4ME3 MODEL OUTSIDE WALL MOUNT CONTROLLER
2. 1-INCH PVC SCH 40 CONDUIT AND FITTINGS
3. WIRES TO REMOTE CONTROL VALVES
4. JUNCTION BOX
5. 1/2-INCH PVC SCH 40 CONDUIT TO POWER SUPPLY

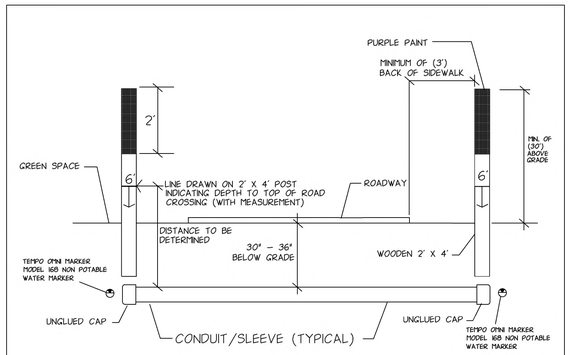
B CONTROL TIMER DETAIL



C CONTROL VALVE DETAIL (BUBBLER)



D TRENCH DETAIL



E SLEEVE W/DEPTH INDICATOR MARKING

1. PRESSURE COMPENSATING BUBBLERS TO BE INSTALLED ON ALL NEW TREES.
2. AUTOMATIC CONTROL TIMER LOCATION TO BE VERIFIED WITH ARCHITECT AND/OR OWNER. ALL CONTROL WIRE TO #14 GAUGE DIRECT BURIAL.
3. FIELD ALTERATIONS MADE IN THE IRRIGATION CONTRACT DRAWING MUST BE IN THE BEST INTEREST OF THE TREES AND LANDSCAPE IRRIGATION SYSTEM. CHANGES MADE BY THE IRRIGATION CONTRACTOR WHICH ARE DEEMED, BY THE ARCHITECT AND/OR OWNER, NOT TO BE IN CONFORMITY WITH THIS CRITERIA WILL BE REMOVED AND REPLACED AT THE IRRIGATION CONTRACTOR'S EXPENSE. IF A QUESTION SHOULD ARISE AS TO THE BEST WAY TO COMPLETE A FIELD ALTERATION, CONTACT THE ARCHITECT AND/OR OWNER FOR APPROVAL.
4. THE CONTRACTOR SHALL STAKE OUT THE LOCATION OF EACH RUN OF PIPE, SPRINKLER HEADS, SPRINKLER VALVES PRIOR TO TRENCHING. TRENCHES FOR PIPE SHALL BE CUT TO REQUIRED GRADE LINES, AND COMPACTED TO PROVIDE ACCURATE GRADE AND UNIFORM BEARING FOR THE FULL LENGTH OF THE LINE. THE BOTTOM OF TRENCHES SHALL BE FREE OF ROCK OR OTHER SHARP EDGED OBJECTS. MINIMUM COVER SHALL BE AS FOLLOWS: PRESSURE MAINLINE 24" AT TOP OF PIPE TO FINISH GRADE. LATERAL PIPING 12" AT TOP OF PIPE FROM FINISH GRADE.
5. INITIAL BACKFILL ON PVC LINE SHALL BE PULVERIZED NATIVE FREE SOIL, FREE OF FOREIGN MATTER, WITHIN RADIUS OF 4" OF THE PIPE SHALL BE CLEAN SOIL OR SAND. PLANT LOCATIONS SHALL TAKE PRECEDENCE OVER SPRINKLER AND PIPE LOCATIONS. THE CONTRACTOR SHALL COORDINATE THE PLACING OF SPECIMEN TREES AND SHRUBS WITH THE ROUTING OF LINES AND FINAL HEAD LOCATIONS.
6. THE IRRIGATION AND LANDSCAPE CONTRACTORS SHALL COORDINATE THE PLACEMENT OF THE SPRINKLER EQUIPMENT AND LANDSCAPE MATERIAL WITHIN THE PLANTED AREAS. THE IRRIGATION CONTRACTOR SHALL INSTALL HIS MATERIAL AT THE EDGE OF THE PLANTED AREAS AVOIDING PLANTS, ROOT BALLS, LIGHTS, BOLLARDS, FENCES, ETC.
7. BEFORE BUBBLERS ARE SET, THE CONTRACTOR SHALL FLUSH THE LINES THOROUGHLY TO MAKE SURE THERE IS NO FOREIGN MATTER IN THE LINES. THE CONTRACTOR SHALL FLUSH THE MAIN LINES FROM FROM DEAD END FITTINGS FOR A MINIMUM OF FIVE MINUTES UNDER A FULL HEAD OF PRESSURE.
8. OPEN CUTS IN ASPHALT, WALKS AND/OR TRENCHES MUST BE PROTECTED FROM VEHICLE AND PEDESTRIAN TRAFFIC AT ALL TIMES. IT WILL BE THE IRRIGATION CONTRACTORS RESPONSIBILITY TO BARRICADE AND DIVERT TRAFFIC.
9. SLEEVING BENEATH SIDEWALKS (NOT SHOWN) SHALL BE LOCATED BY THE IRRIGATION CONTRACTOR. SIZE SLEEVING TWO TIMES LARGER THAN THE PIPE TO BE PLACED INSIDE THE SLEEVE. SLEEVING MATERIAL TO BE SCHEDULE 40 PVC. NO SLEEVING SHALL BE SMALLER THAN (2") SCHEDULE 40 PVC. SLEEVE ALL WIRE CROSSINGS EITHER IN CONDUIT (AS SPECIFIED) OR IN SCHEDULE 40 PVC PIPE (IF CONTROL WIRE IS DIRECT BURIAL).
10. ALL TRENCHES WITHIN (50') OF EXISTING TREES TO BE HAND EXCAVATED TO AVOID CONFLICTS W/TREES.
11. NO ROOTS SHALL BE CUT WITHIN (50') RADIUS OF ALL EXISTING TREES. IRRIGATION PIPES SHOULD BE DIRECTIONAL BORED WITHIN THIS (50') AREA.

VALVE SCHEDULES

CONTROLLER 'A' (PUMP AND WELL)

ZONE #1A – 65 GPM – 2" CONTROL VALVE – BUBBLER
ZONE #2A – 57 GPM – 2" CONTROL VALVE – BUBBLER
ZONE #3A – 63 GPM – 2" CONTROL VALVE – BUBBLER
STATION #4A IS OPEN

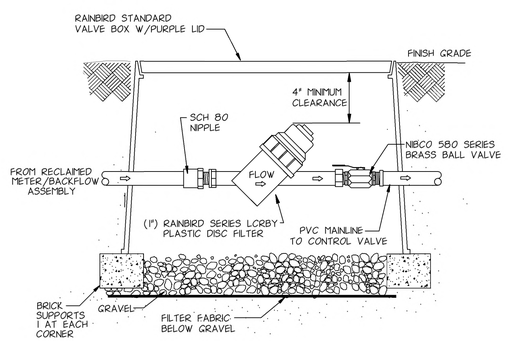
CONTROLLER 'B' (PUMP AND WELL)

ZONE #1B – 38 GPM – 1.5" CONTROL VALVE – BUBBLER
STATIONS #2B THROUGH #4B ARE OPEN

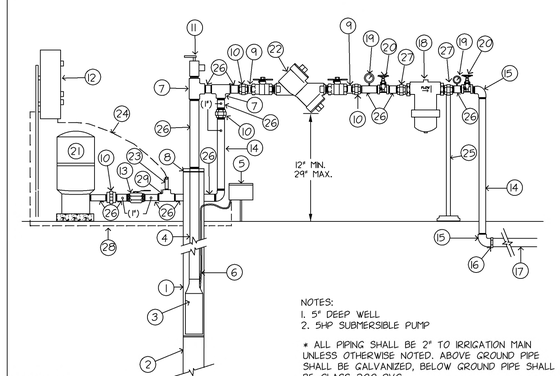
CONTROLLER 'C' (RECLAIMED WATER)

ZONE #1C – 22 GPM – 1" CONTROL VALVE – BUBBLER
STATIONS #2C THROUGH #4C ARE OPEN

F GENERAL NOTES/VALVE SCHEDULES



G RECLAIMED FILTER ASSEMBLY



LEGEND

1. WELL CASING (DEPTH TBD)
2. OPEN HOLE (DEPTH TBD)
3. 5HP SUBMERSIBLE PUMP w/3-PHASE MOTOR (PUMP AND WELL CAPABLE OF 60-65 GPM @ 45-50 PSI)
4. DROP PIPE (GALV. SCH 40)
5. JUNCTION BOX
6. SUBMERSIBLE CABLE
7. GALVANIZED TEE
8. WELL SEAL
9. 2" DIELECTRIC NIPPLE
10. GALVANIZED UNION
11. CLA-VAL #55F PRESSURE RELIEF VALVE (3/4")
12. 10HP (FOR 230V, SINGLE PHASE) ITT/GOULD SPD CONTROL PANEL (DERATE TO 50% FOR SINGLE PHASE INPUT)
13. (1") BRASS BALL VALVE
14. GALVANIZED PIPE
15. GALVANIZED ELBOW
16. PVC ADAPTER
17. IRRIGATION MAINLINE (SIZE AS PER PLANS)
18. 2" AMIAD T SUPER STST 100 MESH FILTER
19. 290 PSI PRESSURE GAUGE (LIQUID FILLED)
20. GATE VALVE
21. 20-GALLON PRESSURE TANK (ABOVE GROUND)
22. BACKFLOW DEVICE PER LOCAL CODE
23. PRESSURE TRANSDUCER (INCLUDED IN SPD PACKAGE)
24. TRANSDUCER CABLE (INCLUDED WITH TRANSDUCER)
25. PIPE SUPPORTS. (2) REQUIRED FOR LARGE PIPE AND (1) FOR 2" PIPE
26. GALVANIZED NIPPLE
27. SCHEDULE 80 PVC UNION
28. THREE PHASE POWER FROM VFD TO MOTOR
29. 1" X 1/2" GALVANIZED TEE

H IRRIGATION WELL AND VFD PUMP STATION

REVISION	DATE	BY

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IRRIGATION DETAILS

CRESSWIND PHASE II

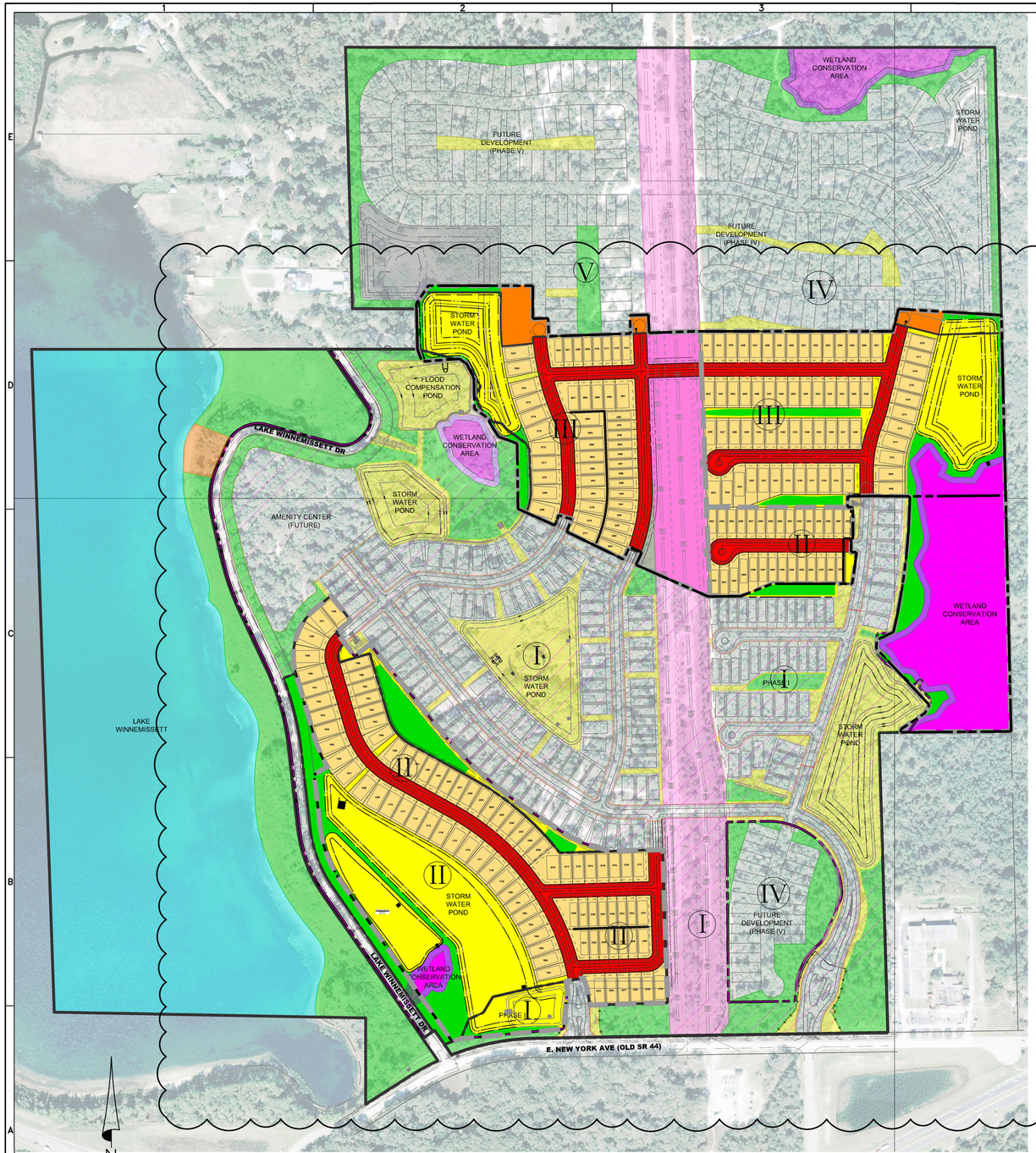
DELAND, FLORIDA

Ronald Newberg
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LEGEND:

TREE PROTECTION AREAS (TPA)
FUTURE PHASES
- TREE PROTECTION AREA
- NET WETLAND CONSERVATION
- WETLAND SETBACK

TREE PROTECTION AREAS (TPA)
PHASE 1 PLAT BOUNDARY
- TREE PROTECTION AREA
- NET WETLAND CONSERVATION

TREE PROTECTION AREAS (TPA)
PHASE 2-3 PLAT BOUNDARY
- TREE PROTECTION AREA
- NET WETLAND CONSERVATION

OPEN SPACES
FUTURE PHASES
- PROPOSED OPEN SPACE
- UTILITY EASEMENT
- PROPOSED POND

OPEN SPACES
PHASE 1 PLAT BOUNDARY
- OPEN SPACE AREA
- UTILITY EASEMENT

OPEN SPACES
PHASE 2-3 PLAT BOUNDARY
- OPEN SPACE AREA
- UTILITY EASEMENT

OTHER AREAS
FUTURE PHASES
- LAKE WINNEMISSETT
- PROPOSED AMENITY SITE

OTHER AREAS
PHASE 2-3 PLAT BOUNDARY
- FUTURE DEVELOPMENT
- LOT AREA
- ROW AREA

SITE DATA AND OPEN SPACE CALCULATIONS

Description	Ac. +/-	%
Total Site Area:	318.4	
Less Lake Winnemissett Area:	51.7	
Less Lake Winnemissett Road 43' ROW (Phase 1 Plat):	3.7	
Net Landward Area:	**263.0**	
Retention Ponds[2] :	20.1	
Tree Protection Areas (TPA):		
Tree Protection Areas Future:	24.13	9.2%
Tree Protection Areas (Phase 2-3 Plat):	7.37	2.8%
Tree Protection Areas (Phase 1 Plat):	12.7	4.8%
Net Wetland Conservation[1] Future:	2.28	0.9%
Net Wetland Conservation[1] (Phase 2-3 Plat):	8.87	3.4%
Net Wetland Conservation[1] (Phase 1 Plat):	0.75	0.3%
Wetland Setbacks Future:	0.76	0.3%
Wetland Setbacks (Phase 2-3 Plat):	1.44	0.5%
Wetland Setbacks (Phase 1 Plat):	0.50	0.2%
Total TPA[3]:	**58.8**	**22.4%**
Open Space		
Other Open Space[4]:	2.22	
Other Open Space[4]: (Phase 2-3 Plat)	1.38	
Other Open Space[4]: (Phase 1 Plat)	20.20	
Utility Easement:	5.84	
Utility Easement: (Phase 2-3 Plat)	5.23	
Utility Easement: (Phase 1 Plat)	9.90	
Stormwater Ponds and Pond Banks:	5.59	
Stormwater Ponds and Pond Banks: (Phase 2-3 Plat)	16.01	
Net Wetland Conservation[1] :	11.90	
Wetland Setbacks:	2.70	
Amenity Site[5]:	7.27	
Tree Protection Areas (TPA):	44.2	
Total Open Space Without TPA:	**88.3**	**33.6%**
Total Open Space With TPA:	**132.5**	**50.4%**
Impervious Surface Ratio (ISR):		
Net Landward Area:	**263.0**	
Pervious Areas:		
Stormwater Ponds and Pond Banks:	21.6	
Wetlands and Wetland Setbacks:	14.1	
Estimated Pervious Portion of Amenity Center[6]:	3.2	
Other Open Space[4]:	23.8	
Tree Protection Areas (TPA):	44.2	
Utility Easement:	21.0	
Estimated Pervious Portion of Lots:	23.8	
Estimated Pervious Area of ROW[7]:	5.6	
Total Pervious Area:	157.3	
Total Impervious Area:	**105.7**	**40.2%**

Notes:

1) Area does not include wetland setbacks and deducts 1.2 Acres of proposed wetland impact.

2) Area does not include maintenance berms pond banks.

3) Based on Net Landward Area.

4) Includes open spaces between back-to-back lots, and other inefficient lands adjacent to wetlands that are not proposed to be developed. Available Open Space and final Open Space calculations are subject to final layout, engineering design, and permitting.

5) Entire Amenity Center for Open Space Calculations.

6) Includes sidewalks, buildings, pool and pool deck, parking, tennis and pickleball courts. Based on a conceptual design and is an estimate.

7) For proposed internal roadways (50' and 56' ROW). This calculation will be determined by the number of driveways that extend into the ROW. For planning purposes, it is estimated using an

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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B
PERMIT OVERAL SITE DATA
& OPEN SPACE CALCS

PREPARED FOR: KH CW DELAND LLC

NO.	DATE	DESCRIPTION
1	08/09/2023	REVISED PER CITY COMMENTS
	02/20/2023	REVIEW SUBMITTAL

PROJECT NO:	KGA-CD-1031
FILE:	L-100
DESIGN BY:	RHENDRY
DRAWN BY:	RHENDRY

FLORIDA REGISTERED
LANDSCAPE ARCHITECT

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Digitally signed by Keven J Steele
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3AF3F, CN=Keven J Steele
Reason: I am the author of this
document
Location:
Date: 2023.08.17 17:53:53-04'00'
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KEVEN J STEELE
DATE:
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L-100

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I. PD PLANNED DEVELOPEMENT AGREEMENT:

2. Site

Landscape buffer requirements: Minimum 50-foot perimeter buffer along all boundaries. Existing wetlands, existing lakes and proposed lake areas shall be included as uses allowed within buffer areas (If right-of-way dedications are required by Volusia County, the landscape buffers will be measured from the new right-of-way line.) Existing vegetation within the buffers will be preserved to the extent practical, however changing the grade within the proposed landscape buffer will be permitted, provided that the graded area will be replanted using native or low-water landscape material.

Fences: Open style fencing shall be permitted along rear single family lot property lines to encourage visibility of water features and open spaces; however, this requirement shall not apply to those lots that share a common rear property boundary with another lot, a conservation area or other areas not otherwise considered open space. The property owner's association for the development shall be responsible for determination and enforcement of fencing requirements within the development.
A 6 foot to 8-foot height black vinyl coated chain link fence may be used within the development's perimeter landscape buffers. A 6-foot height black vinyl chain link fence may also be used to surround City owned lift stations provided they are screened with landscape hedge material.

Open Space: Open Space and/or Common Area shall meet the requirements of the Land Development Regulations Ordinance #2013-11.

J. Environmental Considerations. All landscape buffers noted on the Planned Development Plan as "natural" must contain an amount of visual screening equal to the Landscape Buffer Standard C (30 feet) per Table 33-92.02(b) of the Land Development Regulations Ordinance No. 2013-11, as amended. If landscape buffers in their natural condition contain insufficient plant material to meet the visual screening standard, the Developer will bring the buffer into compliance with the Buffer Standard referenced above. Said plantings shall be in place on or before the completion of construction for those proposed improvements and/or homes, as the case may be, which front a required buffer. Buffer standard shall not apply in adjacent areas where existing wetlands, existing lakes or proposed lakes are present within the buffer areas.

The Planned Development Plan encourages environmental preservation and sustainable development through the provision of substantial perimeter buffers, natural areas, wetland conservation easements, open space, the incorporation of elements of Impact Development ("LID") stormwater strategies, as developed by the UF/IFAS, Center for Landscape Conservation and Ecology, and use of Florida-Friendly Landscaping. The proposed buffers will add Florida-Friendly vegetation where needed to screen adjoining residential properties. The Planned Development Plan depicts a minimum fifty (50) foot perimeter buffer along the east, north and south sides of the development, and a combination of existing natural areas, wetlands and stormwater ponds along Lake Winnemissett Drive on the west, to preserve the existing scenic roadway, A passive park with walkway, to the extent approved by easement holders, is proposed through the existing power line and gas line easements through the center of the development. The proposed minimum twelve (12) foot wide paved walkway, if approved, will be connected to various locations throughout the development as depicted on the Planned Development Plan. Existing trees and native vegetation within the power and gas line easement areas will be retained to the extent practical and may be enhanced with Florida-Friendly plantings, as approved by the easement holders. Maintenance, as approved by the easement holders of the passive park, walkway, existing vegetation and any easement holder approved landscape enhancements shall be the responsibility of the POA. The Planned Development Plan shall meet the minimum environmental standards of the Land Development Regulations Ordinance No. 2013-11, as amended.

Landscaping. The Developer shall incorporate Florida-Friendly planting principles as part of any tree replacement required for development of the Property and shall plant Florida-Friendly replacement and mitigation trees between Lake Winnemissett Drive and the lakeshore. Temporary irrigation may be installed in the area between Lake Winnemissett Drive and the lakeshore in order to ensure the successful establishment of replacement trees planted in that area.

Tree Survey. As part of any Preliminary or Final plat submittal, a tree survey shall be required. Both Historical and Specimen trees meeting the species and size requirement of Land Development Regulations Ordinance No. 2013-11, as amended, shall be located and shown on a survey. Historic trees located in the tree preservations areas shown on the Planned Development Plan will be preserved. Any historic tree not located in a tree preservation area is permitted to be removed and will be replaced at the required percentage provided for in Section 33-57.05(d) of the Land Development Regulations. Trees located within wetlands (including wetland buffers) are not required to be located or counted. Other trees, excluding those identified in City code as "nuisance trees", having a diameter of 6" or larger may be grouped into defined areas on the tree survey and an average number of trees determined based on an actual count of trees inside a smaller sub-area within the larger defined area. Unless otherwise stated herein, tree removal and replacement shall be done at the ratios identified in City Code Section 33-57, as amended. Trees planted within approved on-site private road rights-of-way may count towards required lot trees. Trees within any proposed lot, amenity site or open space parcel shall be exempt from City Code Section 33-57.07(b)5. The Developer shall not be responsible for the replacement of those currently existing trees within utility easements which are later removed by the utility provider or required to be removed as part of this development. The area within the existing power and gas line utility easements shall be exempt from City Code Section 33-57.07(a)2. Land area located below normal water line of Lake Winnemissett shall be exempt from all requirements of City Code Section 33-57. Trees may be planted within the existing on-site wetlands or Lake Winnemissett shoreline to meet the requirements of City Code section 33-57.07(a)1 provided said trees shall be wetland-friendly native species and compliant with SJRWMD permits and standards. Where proposed wet detention lakes are located within PD Buffer areas, the Developer shall plant littoral zones along the shoreline adjacent to the PD boundary or adjacent to the existing wetland areas within the Planned Development. Littoral zones shall be a minimum of ten (10) square feet per linear foot of shoreline located within a buffer adjacent to any property line. Littoral zones shall extend a minimum of 2.5 vertical feet below control water line and include an upland transitional planting zone 2.5 vertical feet above the control water line. Littoral plantings including upland transition zones shall be wetland-friendly and native species. Any existing trees transplanted on-site shall be credited at twice its DBH inches towards the overall project tree replacement requirements. Transplanted trees shall be monitored for a period of three (3) years to determine survivability. Any transplanted tree that does not survive shall be mitigated for at the ratios identified in City Code Section 33-57, as amended. Non-specimen and specimen trees may be relocated or removed from proposed individual single family lots provided they are replaced in accordance with this Agreement. Historic tree removal and replacement shall be conducted as required by Section 33-57.05(d). Portions of Tree Protection Areas may be less than 30 feet in width when connected to larger Tree Protection Areas. Any amendments to an approved Tree Removal and Replacement Plan to accommodate actual project site conditions may be processed administratively by the City Forester. All existing and new trees planted within project open space tracts, common area tracts, littoral zone areas, parks and private rights-of-ways shall be the maintenance responsibility of the POA. The clearing of the proposed Lakefront Park shall be limited to preserve existing trees. No other portions of the lakeshore shall be cleared unless required to remove invasive species pursuant to and compliant with SJRWMD requirements or City permits and any areas where invasive species are removed will be replanted with Florida-Friendly trees, as approved by the City.

R. Building or Property Owners Association

2. Removal of Trees from Shore of Lake Winnemissett. Except for removal of trees as reasonably required in connection with the development of the improvements adjacent to the shore of Lake Winnemissett and except for removal of non-native or invasive species, removal of dead, dangerous, damaged or diseased trees and tree limbs, or except for normal and customary trimming of limbs no higher than six (6') feet above ground level in order to enhance the visibility of the Lake from the Property and except for normal and customary trimming of all limbs for safety or storm preparation purposes, except as the result of force majeure, the removal, destruction or damaging of trees within the area between Lake Winnemissett Drive and the shore of Lake Winnemissett shall not be permitted. The POA shall re-establish trees removed, destroyed or damaged in violation of this provision with trees of equivalent or like kind and condition as those removed, destroyed or damaged. Any invasive trees removed along the Lake Winnemissett shoreline will be replaced with Florida-Friendly trees to maintain the natural shoreline and tree canopy over Lake Winnemissett Drive.

LEGEND

AREA A — SAMPLE AREAS

TREE REMOVAL SAMPLE AREA SITE INFORMATION

DESCRIPTION	SQ FT	ACRES
TOTAL PROJECT AREA	13,867,374	318.4
LAKE WINNEMISSETT	2,250,406	51.7
WETLAND AREA	518,490	11.9
UTILITY EASEMENT	925,197	21.2
ROW AREA (LAKE WINNEMISSETT BLVD)	159,118	3.7
TOTAL TREE REMOVAL SAMPLE AREAS REQUIRED (10%)	1,386,737	31.8

PROTECTED TREE SAMPLE AREAS A, B, C, D, AND E SUMMARY (EXCLUDED FROM AREA: SPECIMEN AND HISTORIC TREES)

	TOTAL TREES	TOTAL INCHES (DBH)	TOTAL REPLACEMENT (1/3RD TOTAL DBH OF REMOVED TREES) & LAUREL OAKS IN DETERIORATED CONDITION	TOTAL AREA (SQUARE FEET)	TOTAL AREA (ACRES)	AVERAGE REPLACEMENT DBH PER ACRE	AVERAGE SAVED DBH PER ACRE
AREA A	680	9,107	2,439	693,889	15.93	153.1	571.7
AREA B	303	2,989	996	274,613	6.30	158.0	474.1
AREA C	144	2,033	583	174,097	4.00	146.0	508.7
AREA D	371	3,271	1,080	249,347	5.72	188.7	571.4
AREA E	614	5,582	1,846	250,002	5.74	321.6	972.6
TOTAL	**2,112**	**22,982**	**6,945**	**1,641,949**	**37.69**	**193.5**	**619.7**

TOTAL PROJECT SITE	13,867,374	318.35
10% OF TOTAL PROJECT SITE	1,386,737	31.84
11.8% SAMPLE TREE AREA	1,641,949	37.69

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GRAPHIC SCALE: 1" = 200'

ELEVATIONS BASED ON:
NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION:
NAVD 88 TO NGVD 29 = +1.07

MINIMUM TREE COVERAGE AND SPECIMEN TREE PROTECTION REQUIREMENT NOTE:
In this phase there is a deficiency in the minimum tree coverage and specimen tree protection requirement. As the enhanced phases and future phase landscape plans are finalized, there will be additional inches/trees added to the plans to comply with the minimum coverage requirements. There will also be tree protection areas that will have smaller trees that will be added to the inches saved.

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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B
PERMIT OVERALL TREE SAMPLE AREA SUMMARY

PREPARED FOR: KH CW DELAND LLC

NO.	DATE	DESCRIPTION
2	07/31/2023	REVISED CHART LABELS
	02/20/2023	REVIEW SUBMITTAL
	DATE	DESCRIPTION

PROJECT NO: KGA-CD-1031
FILE: L-101
DESIGN BY: RHENDRY
DRAWN BY: RHENDRY

FLORIDA REGISTERED LANDSCAPE ARCHITECT

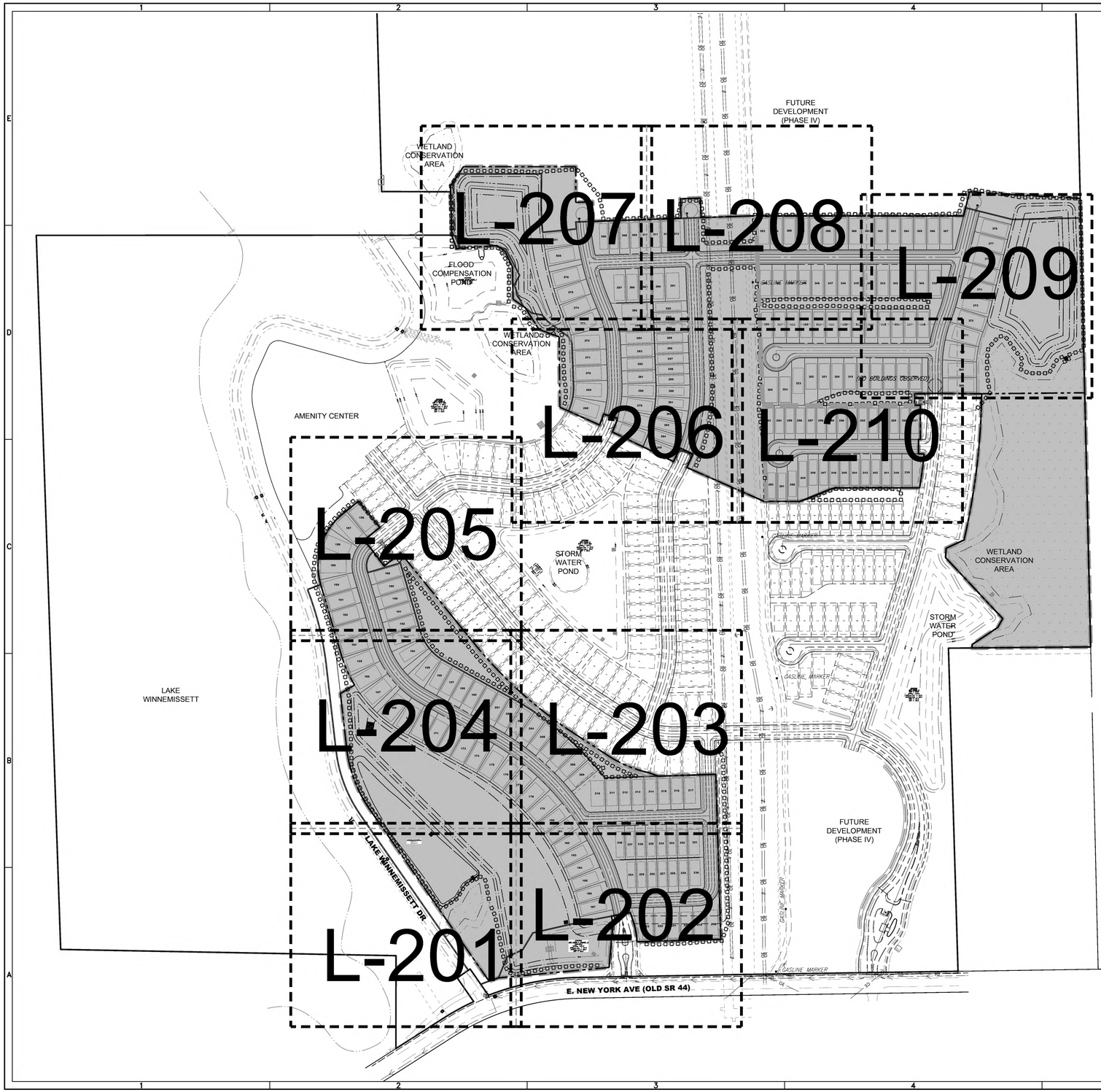
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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

OVERALL SPECIMEN & HISTORIC TREE REMOVAL PLAN COVER

PREPARED FOR: KH CW DELAND LLC

DESCRIPTION	DATE
REVIEW SUBMITTAL	02/20/2023

PROJECT NO:	KGA-CD-1031
FILE:	L-200
DESIGN BY:	RHENDRY
DRAWN BY:	RHENDRY

FLORIDA REGISTERED LANDSCAPE ARCHITECT

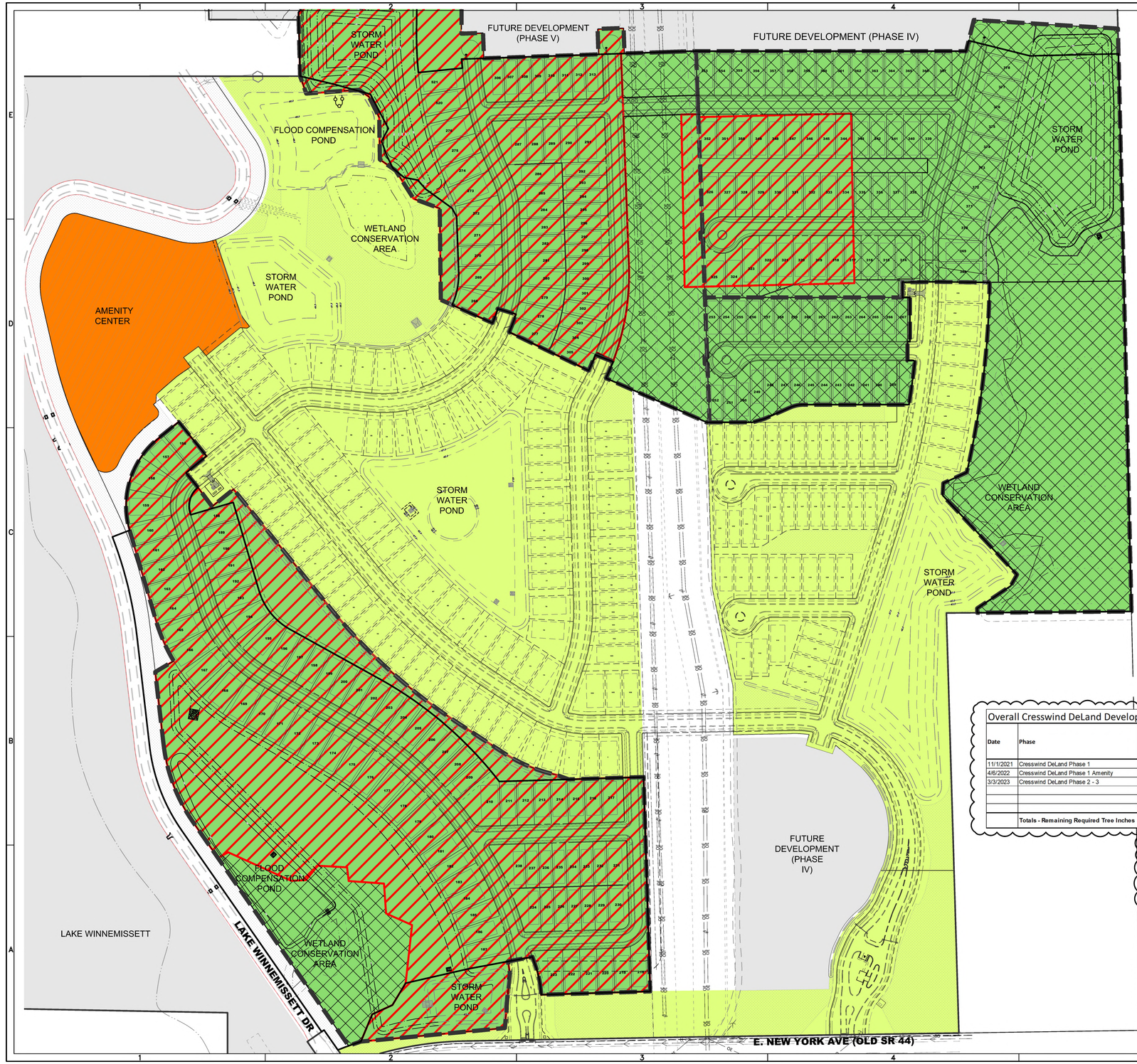
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TREE REMOVAL & PRESERVATION CALCULATIONS

- PHASE 2 & 3 AREA
- PHASE 2 & 3 - Surveyed Area - Arborist Reviewed Specimen and Historic Trees
- PHASE 2 & 3 - Non-Surveyed Area Arborist Surveyed Specimen and Historic Trees (Applying Sample Area Average for Protected Tree Replacement)
- PHASE 1 AMENITY AREA -Approved
- PHASE 1 AREA - Approved
- SILT FENCE
- TREE BARRICADE
- PHASE LINE
- PROJECT BOUNDARY
- FUTURE DEVELOPMENT
- TREE PROTECTION AREA

OVERALL TOTAL FOR ALL TREES SAVED

#	Saved Trees	Total Trees Saved	Total DBH Surveyed
1	Non-Specimen Tree Saved Arborist Report	4	33
2	Specimen Tree Saved	6	101
3	Protected Tree Survey Saved	219	2,529
4	Protected Tree Non-Survey Saved	418	4,625
	Total DBH Saved	**647**	**7,288**

OVERALL TOTALS FOR ALL TREES REMOVED

#	Removed Trees	Total Trees Removed	Total DBH Surveyed	Total DBH Replacement Inches Required
1	Non-Specimen Tree Removal Arborist Report	12	81	27
2	Specimen Tree Removal from Arborist Report	60	741	371
3	Specimen Tree Removed	46	964	482
4	Protected Tree Survey Removal	2,139	26,453	8,818
5	Protected Tree Non-Survey Removal	1,271	0	4,391
	Total DBH Removed	**3,528**	**28,239**	**14,089**

TREE PROVIDED CHART

Trees Provided	Quantity	DBH	Total DBH
Lot Trees	635	2	1,270
Red Maple	11	2	22
Southern Red Cedar	21	2	42
Southern Magnolia	143	2	286
Live Oak	133	2	266
Live Oak	0	5	0
Bald Cypress	26	2	52
Eagleston Holly	29	2	58
Total	**998**		**1,996**

Overall Cresswind DeLand Developer Provided Tree Replacement Surety Account

Date	Phase	DBH Inches Required Per Code	DBH Inches Transplanted	DBH Inches Provided Permit Landscape Plan	33-57.14 Tree Protection DBH	Additional DBH Inches Field Review	Total DBH Tree Replacement Inches	Total DBH Replacement Inches Required
11/1/2021	Cresswind DeLand Phase 1	11,542	0	1,999	0	0	1,999	9,543
4/6/2022	Cresswind DeLand Phase 1 Amenity	559	0	578	0	0	578	-19
3/3/2023	Cresswind DeLand Phase 2 - 3	14,089	0	1,996	0	0	1,996	12,093
	Totals - Remaining Required Tree Inches	**26,190**	**0**	**4,573**	**0**	**0**	**4,573**	**21,617**

TREE REPLACEMENT SURETY ACCOUNT NOTE:
Surety Bond amount will be provided to City and will be updated for each future phase of construction. Based on the 21,617 cumulative amount of replacement inches noted above, the total Tree Replacement Fund amount is $1,621,275 ($75/inch). A payment in the amount of $750,000 ($375,000 cash and $375,000 bond) was previously made to the City in Phase 1. An amount of ½ the balance of the remaining $871,275, equaling $435,637.50, will be provided to the City prior to the start of construction of Phases 2 & 3. The payment can be in the form of cash or bond, or a combination thereof.

MINIMUM TREE COVERAGE AND SPECIMEN TREE PROTECTION REQUIREMENT NOTE:
In this phase there is a deficiency in the minimum tree coverage and specimen tree protection requirement. As the enhanced phases and future phase landscape plans are finalized, there will be additional inches/trees added to the plans to comply with the minimum coverage requirements. There will also be tree protection areas that will have smaller trees that will be added to the inches saved.

TREE SAMPLING NOTE:
Tree sampling areas were established in the approved Phase 1. Please see sheet L-101 for these areas. The sample area replacement tree and DBH count were established in the approved Phase 1 plans. Please see approved Phase 1 plans for trees surveyed within these area. These areas did not include specimen and historic trees.

N

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GRAPHIC SCALE: 1" = 150'

ELEVATIONS BASED ON:
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CRESSWIND DELAND PHASE 2A, 2B, 3A & 3B

TREE REMOVAL & SAVE EXHIBIT

PREPARED FOR: KH CW DELAND LLC

#	DATE	DESCRIPTION
2	07/31/2023	REVISED CHART LABELS
1	06/08/2023	REVISED PER CITY COMMENTS
	02/20/2023	REVIEW SUBMITTAL
	DATE	DESCRIPTION

PROJECT NO: KGA-CD-1031
FILE: L-200A
DESIGN BY: RHENDRY
DRAWN BY: RHENDRY

FLORIDA REGISTERED LANDSCAPE ARCHITECT

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1 Non Specimen Tree Save From Arborist Report

TREE TAG #	# OF TREES	SURVEY DBH	TREE TYPE	CONDITION	Total
463	1	15	LONGLEAF_PINE	EXCELLENT	15
464	1	6	LONGLEAF_PINE	EXCELLENT	6
466	1	6	LONGLEAF_PINE	EXCELLENT	6
465	1	6	LONGLEAF_PINE	EXCELLENT	6
	4	33	Total DBH Saved		33

2 Specimen Tree Save

# OF TREES	SURVEY DBH	TREE TYPE	Total
2	12	Turkey Oak	12
1	18	Long Leaf Pine	18
1	21	Long Leaf Pine	21
1	22	Long Leaf Pine	22
1	28	Long Leaf Pine	28
6		Total DBH Saved	101

3 Protected Tree Save

# OF TREES	SURVEY DBH	TREE TYPE	Total
4	6	Cherry Laurel	24
16	6	Laurel Oak	96
1	6	Magnolia	6
5	6	Sand Pine	30
3	7	Cherry Laurel	21
13	7	Laurel Oak	91
2	7	Long Leaf Pine	14
8	7	Sand Pine	56
1	7	Turkey Oak	7
1	8	Cherry Laurel	8
13	8	Laurel Oak	104
7	8	Sand Pine	56
1	9	Cherry Laurel	9
6	9	Laurel Oak	54
7	9	Sand Pine	63
1	10	Cherry Laurel	10
9	10	Laurel Oak	90
2	10	Long Leaf Pine	20
5	10	Sand Pine	50
2	10	Palm	20
2	11	Cherry Laurel	22
6	11	Laurel Oak	66
1	11	Palm	11
	11	Scrub Oak	0
6	11	Sand Pine	66
1	11	Turkey Oak	11
1	12	Long Leaf Pine	12
14	12	Laurel Oak	168
9	12	Palm	108
4	12	Sand Pine	48
2	13	Cherry Laurel	26
7	13	Laurel Oak	91
1	13	Palm	13
3	13	Sand Pine	39
5	14	Long Leaf Pine	70
1	14	Palm	14
5	14	Sand Pine	70
2	15	Laurel Oak	30
1	15	Sand Pine	15
7	16	Laurel Oak	112
4	16	Palm	64
4	17	Laurel Oak	68
1	17	Sand Pine	17
1	17	Palm	17
2	18	Laurel Oak	36
3	18	Palm	54
2	18	Sand Pine	36
1	19	Laurel Oak	19
1	19	Sand Pine	19
2	20	Laurel Oak	40
2	22	Laurel Oak	44
1	23	Laurel Oak	23
4	24	Laurel Oak	96
1	24	Sand Pine	24
1	25	Laurel Oak	25
1	26	Laurel Oak	26
1	28	Laurel Oak	28
1	34	Laurel Oak	34
1	38	Laurel Oak	38
219		Total DBH Saved	2,529

4 Protected Tree Save Non-Surveyed Saved

Location	Acres	Tree Sample Replacement Trees Per 1 ac = 56 Trees	Tree Sample Replacement DBH Per 1 ac = 619.7 Replacement DBH	Total DBH
Non Surveyed Area	7.46	418	619.7	4,625

OVERALL TOTAL FOR ALL TREES SAVED

#	Saved Trees	Total Trees Saved	Total DBH Surveyed
1	Non-Specimen Tree Saved Arborist Report	4	33
2	Specimen Tree Saved	6	101
3	Protected Tree Survey Saved	219	2,529
4	Protected Tree Non-Survey Saved	418	4,625
	Total DBH Saved	647	7,288

1 Non Specimen Tree Removal From Arborist Report

TREE TAG #	# OF TREES	SURVEY DBH	TREE TYPE	CONDITION	REPLACEMENT DBH (1/3 SURVEY DBH)	Total
444	1	6	LONGLEAF_PINE	EXCELLENT	2.0	2.0
447	1	6	LONGLEAF_PINE	EXCELLENT	2.0	2.0
453	1	6	LONGLEAF_PINE	EXCELLENT	2.0	2.0
458	1	6	LONGLEAF_PINE	EXCELLENT	2.0	2.0
459	1	6	LONGLEAF_PINE	EXCELLENT	2.0	2.0
460	1	6	LONGLEAF_PINE	EXCELLENT	2.0	2.0
461	1	6	LONGLEAF_PINE	EXCELLENT	2.0	2.0
464	1	6	LONGLEAF_PINE	EXCELLENT	2.0	2.0
465	1	6	LONGLEAF_PINE	EXCELLENT	2.0	2.0
466	1	6	LONGLEAF_PINE	EXCELLENT	2.0	2.0
PH1	1	6	SAND_PINE	EXCELLENT	2.0	2.0
463	1	15	LONGLEAF_PINE	EXCELLENT	5.0	5.0
	12	81	Total DBH Removed			27

2 Specimen Tree Removal From Arborist Report

TREE TAG #	# OF TREES	SURVEY DBH	TREE TYPE	CONDITION	REPLACEMENT DBH (50% DBH)	Total
446	1	10	LIVE_OAK	EXCELLENT	5.0	5
468	1	10	LIVE_OAK	GOOD	5.0	5
480	1	10	LIVE_OAK	EXCELLENT	5.0	5
482	1	10	LIVE_OAK	EXCELLENT	5.0	5
486	1	10	LIVE_OAK	EXCELLENT	5.0	5
498	1	10	LIVE_OAK	EXCELLENT	5.0	5
499	1	10	LIVE_OAK	EXCELLENT	5.0	5
504	1	10	LIVE_OAK	EXCELLENT	5.0	5
505	1	10	LIVE_OAK	EXCELLENT	5.0	5
506	1	10	LIVE_OAK	EXCELLENT	5.0	5
507	1	10	LIVE_OAK	EXCELLENT	5.0	5
525	1	10	LIVE_OAK	EXCELLENT	5.0	5
866	1	10	LIVE_OAK	POOR	5.0	5
867	1	10	LIVE_OAK	HAZARDOUS	5.0	5
469	1	11	LIVE_OAK	EXCELLENT	5.5	6
470	1	11	LIVE_OAK	EXCELLENT	5.5	6
471	1	11	LIVE_OAK	POOR	5.5	6
483	1	11	LIVE_OAK	GOOD	5.5	6
485	1	11	LIVE_OAK	EXCELLENT	5.5	6
487	1	11	LIVE_OAK	EXCELLENT	5.5	6
492	1	11	LIVE_OAK	EXCELLENT	5.5	6
495	1	11	LIVE_OAK	EXCELLENT	5.5	6
496	1	11	LIVE_OAK	EXCELLENT	5.5	6
524	1	11	LIVE_OAK	EXCELLENT	5.5	6
526	1	11	LIVE_OAK	EXCELLENT	5.5	6
443	1	12	LIVE_OAK	EXCELLENT	6.0	6
448	1	12	LIVE_OAK	EXCELLENT	6.0	6
455	1	12	LIVE_OAK	EXCELLENT	6.0	6
467	1	12	LIVE_OAK	EXCELLENT	6.0	6
475	1	12	LIVE_OAK	EXCELLENT	6.0	6
481	1	12	LIVE_OAK	EXCELLENT	6.0	6
484	1	12	LIVE_OAK	EXCELLENT	6.0	6
490	1	12	LIVE_OAK	EXCELLENT	6.0	6
491	1	12	LIVE_OAK	EXCELLENT	6.0	6
494	1	12	LIVE_OAK	EXCELLENT	6.0	6
497	1	12	LIVE_OAK	EXCELLENT	6.0	6
500	1	12	LIVE_OAK	EXCELLENT	6.0	6
501	1	12	LIVE_OAK	EXCELLENT	6.0	6
502	1	12	LIVE_OAK	EXCELLENT	6.0	6
450	1	13	LIVE_OAK	EXCELLENT	6.5	7
456	1	13	LIVE_OAK	EXCELLENT	6.5	7
474	1	13	LIVE_OAK	EXCELLENT	6.5	7
477	1	13	LIVE_OAK	EXCELLENT	6.5	7
503	1	13	LIVE_OAK	EXCELLENT	6.5	7
868	1	13	LIVE_OAK	HAZARDOUS	6.5	7
445	1	14	LIVE_OAK	EXCELLENT	7.0	7
462	1	14	LIVE_OAK	EXCELLENT	7.0	7
476	1	14	LIVE_OAK	EXCELLENT	7.0	7
488	1	14	LIVE_OAK	EXCELLENT	7.0	7
489	1	14	LIVE_OAK	EXCELLENT	7.0	7
454	1	15	LIVE_OAK	EXCELLENT	7.5	8
527	1	15	LIVE_OAK	EXCELLENT	7.5	8
PH1	1	15	LIVE_OAK	EXCELLENT	7.5	8
449	1	16	LIVE_OAK	EXCELLENT	8.0	8
493	1	16	LIVE_OAK	EXCELLENT	8.0	8
PH1	1	16	LIVE_OAK	EXCELLENT	8.0	8
452	1	17	LIVE_OAK	EXCELLENT	8.5	9
451	1	18	LIVE_OAK	EXCELLENT	9.0	9
457	1	18	LIVE_OAK	GOOD	9.0	9
869	1	18	LONGLEAF_PINE	EXCELLENT	9.0	9
	60	741	Total DBH Removed			371

3 Specimen Tree Removal

# OF TREES	SURVEY DBH	TOTAL DBH	TREE TYPE	REPLACEMENT DBH (50% DBH)	Total
1	12	12	Turkey Oak	6.0	6
1	16	16	Turkey Oak	8.0	8
1	17	17	Turkey Oak	8.5	9
11	18	198	Long Leaf Pine	9.0	99
4	19	76	Long Leaf Pine	9.5	38
5	20	100	Long Leaf Pine	10.0	50
3	21	63	Long Leaf Pine	10.5	32
8	22	176	Long Leaf Pine	11.0	88
1	23	23	Long Leaf Pine	11.5	12
5	24	120	Long Leaf Pine	12.0	60
2	25	50	Long Leaf Pine	12.5	25
1	26	26	Long Leaf Pine	13.0	13
1	27	27	Long Leaf Pine	13.5	14
1	29	29	Long Leaf Pine	14.5	15
1	31	31	Long Leaf Pine	15.5	16
46		964	Total DBH Removed		482

4 Protected Tree Removal

# OF TREES	SURVEY DBH	TOTAL DBH	TREE TYPE	REPLACEMENT DBH (1/3 SURVEY DBH)	Total
2	6	12	Cedar	2.0	4.0
23	6	138	Cherry Laurel	2.0	46.0
81	6	486	Laurel Oak	2.0	162.0
4	6	24	Long Leaf Pine	2.0	8.0
1	6	6	Magnolia	2.0	2.0
76	6	456	Sand Pine	2.0	152.0
3	6	18	Scrub Oak	2.0	6.0
23	6	138	Turkey Oak	2.0	46.0
2	7	14	Cedar	2.3	4.7
23	7	161	Cherry Laurel	2.3	53.7
71	7	497	Laurel Oak	2.3	165.7
6	7	42	Long Leaf Pine	2.3	14.0
63	7	441	Sand Pine	2.3	147.0
12	7	84	Turkey Oak	2.3	28.0
12	7	84	Cherry Laurel	2.3	28.0
29	8	232	Cherry Laurel	2.7	77.3
54	8	432	Laurel Oak	2.7	144.0
7	8	56	Long Leaf Pine	2.7	18.7
2	8	16	Palm	2.7	5.3
48	8	384	Sand Pine	2.7	128.0
11	8	88	Turkey Oak	2.7	29.3
33	9	297	Cherry Laurel	3.0	99.0
53	9	477	Laurel Oak	3.0	159.0
12	9	108	Long Leaf Pine	3.0	36.0
53	9	477	Sand Pine	3.0	159.0
1	9	9	Scrub Oak	3.0	3.0
6	9	54	Turkey Oak	3.0	18.0
26	10	260	Cherry Laurel	3.3	86.7
146	10	1460	Laurel Oak	3.3	486.7
14	10	140	Long Leaf Pine	3.3	46.7
5	10	50	Palm	3.3	16.7
44	10	440	Sand Pine	3.3	146.7
2	10	20	Scrub Oak	3.3	6.7
4	10	40	Turkey Oak	3.3	13.3
1	11	11	Cedar	3.7	3.7
23	11	253	Cherry Laurel	3.7	84.3
82	11	902	Laurel Oak	3.7	300.7
7	11	77	Long Leaf Pine	3.7	25.7
2	11	22	Palm	3.7	7.3
35	11	385	Sand Pine	3.7	128.3
1	11	11	Scrub Oak	3.7	3.7
3	11	33	Turkey Oak	3.7	11.0
23	12	276	Cherry Laurel	4.0	92.0
131	12	1572	Laurel Oak	4.0	524.0
22	12	264	Long Leaf Pine	4.0	88.0
14	12	168	Palm	4.0	56.0
35	12	420	Sand Pine	4.0	140.0
8	13	104	Cherry Laurel	4.3	34.7
84	13	1092	Laurel Oak	4.3	364.0
10	13	130	Long Leaf Pine	4.3	43.3
8	13	104	Palm	4.3	34.7
24	13	312	Sand Pine	4.3	104.0
7	14	98	Cherry Laurel	4.7	32.7
55	14	770	Laurel Oak	4.7	256.7
15	14	210	Long Leaf Pine	4.7	70.0
8	14	112	Palm	4.7	37.3
8	14	112	Sand Pine	4.7	37.3
4	15	60	Cherry Laurel	5.0	20.0
74	15	1110	Laurel Oak	5.0	370.0
10	15	150	Long Leaf Pine	5.0	50.0
12	15	180	Palm	5.0	60.0
8	15	120	Sand Pine	5.0	40.0
4	16	64	Cherry Laurel	5.3	21.3
59	16	944	Laurel Oak	5.3	314.7
8	16	128	Long Leaf Pine	5.3	42.7
1	16	16	Magnolia	5.3	5.3

Protected Tree Removal Continued

# OF TREES	SURVEY DBH	TOTAL DBH	TREE TYPE	REPLACEMENT DBH (1/3 SURVEY DBH)	Total
3	16	48	Palm	5.3	16.0
11	16	176	Sand Pine	5.3	58.7
1	17	17	Cherry Laurel	5.7	5.7
48	17	816	Laurel Oak	5.7	272.0
8	17	136	Long Leaf Pine	5.7	45.3
4	17	68	Palm	5.7	22.7
3	17	51	Sand Pine	5.7	17.0
38	18	684	Laurel Oak	6.0	228.0
12	18	216	Palm	6.0	72.0
9	18	162	Sand Pine	6.0	54.0
27	19	513	Laurel Oak	6.3	171.0
3	19	57	Palm	6.3	19.0
2	19	38	Sand Pine	6.3	12.7
39	20	780	Laurel Oak	6.7	260.0
9	20	180	Palm	6.7	60.0
4	20	80	Sand Pine	6.7	26.7
16	21	336	Laurel Oak	7.0	112.0
1	21	21	Palm	7.0	7.0
2	21	42	Sand Pine	7.0	14.0
36	22	792	Laurel Oak	7.3	264.0
1	22	22	Palm	7.3	7.3
11	23	253	Laurel Oak	7.7	84.3
1	23	23	Sand Pine	7.7	7.7
1	24	24	Cherry Laurel	8.0	8.0
33	24	792	Laurel Oak	8.0	264.0
1	24	24	Palm	8.0	8.0
2	24	48	Sand Pine	8.0	16.0
14	25	350	Laurel Oak	8.3	116.7
1	25	25	Sand Pine	8.3	8.3
1	26	26	Cherry Laurel	8.7	8.7
12	26	312	Laurel Oak	8.7	104.0
7	27	189	Laurel Oak	9.0	63.0
9	28	252	Laurel Oak	9.3	84.0
4	29	116	Laurel Oak	9.7	38.7
9	30	270	Laurel Oak	10.0	90.0
2	31	62	Laurel Oak	10.3	20.7
1	32	32	Laurel Oak	10.7	10.7
1	33	33	Laurel Oak	11.0	11.0
2	34	68	Laurel Oak	11.3	22.7
1	35	35	Laurel Oak	11.7	11.7
3	36	108	Laurel Oak	12.0	36.0
1	37	37	Laurel Oak	12.3	12.3
2	38	76	Laurel Oak	12.7	25.3
2	40	80	Laurel Oak	13.3	26.7
1	42	42	Laurel Oak	14.0	14.0
2	45	90	Laurel Oak	15.0	30.0
2,139		26,453	Overall Total DBH Removed Surveyed		8,818

5 Protected Tree Non-Surveyed Removal

Location	Acres	Tree Sample Replacement Per 1 ac = 56 Trees	Tree Sample Replacement Per 1 ac = 193.5 Replacement DBH	Total DBH
Non Surveyed Area	22.69	1,271	193.5	4,391

OVERALL TOTALS FOR ALL TREES REMOVED

#	Removed Trees	Total Trees Removed	Total DBH Surveyed	Total DBH Replacement Inches Required
1	Non-Specimen Tree Removal Arborist Report	12	81	27
2	Specimen Tree Removal from Arborist Report	60	741	371
3	Specimen Tree Removed	46	964	482
4	Protected Tree Survey Removal	2,139	26,453	8,818
5	Protected Tree Non-Survey Removal	1,271	0	4,391
	Total DBH Removed	3,528	28,239	14,089

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www.HeidtDesign.com

CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B
TREE REMOVAL & SAVE
CALCULATIONS

PREPARED FOR: KH CW DELAND LLC

DESCRIPTION	DATE
REVISED PER CITY COMMENTS	06/09/2023
REVIEW SUBMITTAL	02/20/2023
DESCRIPTION	DATE
1	

PROJECT NO: KGA-CD-1031
FILE: L-200B
DESIGN BY: RHENDRY
DRAWN BY: RHENDRY

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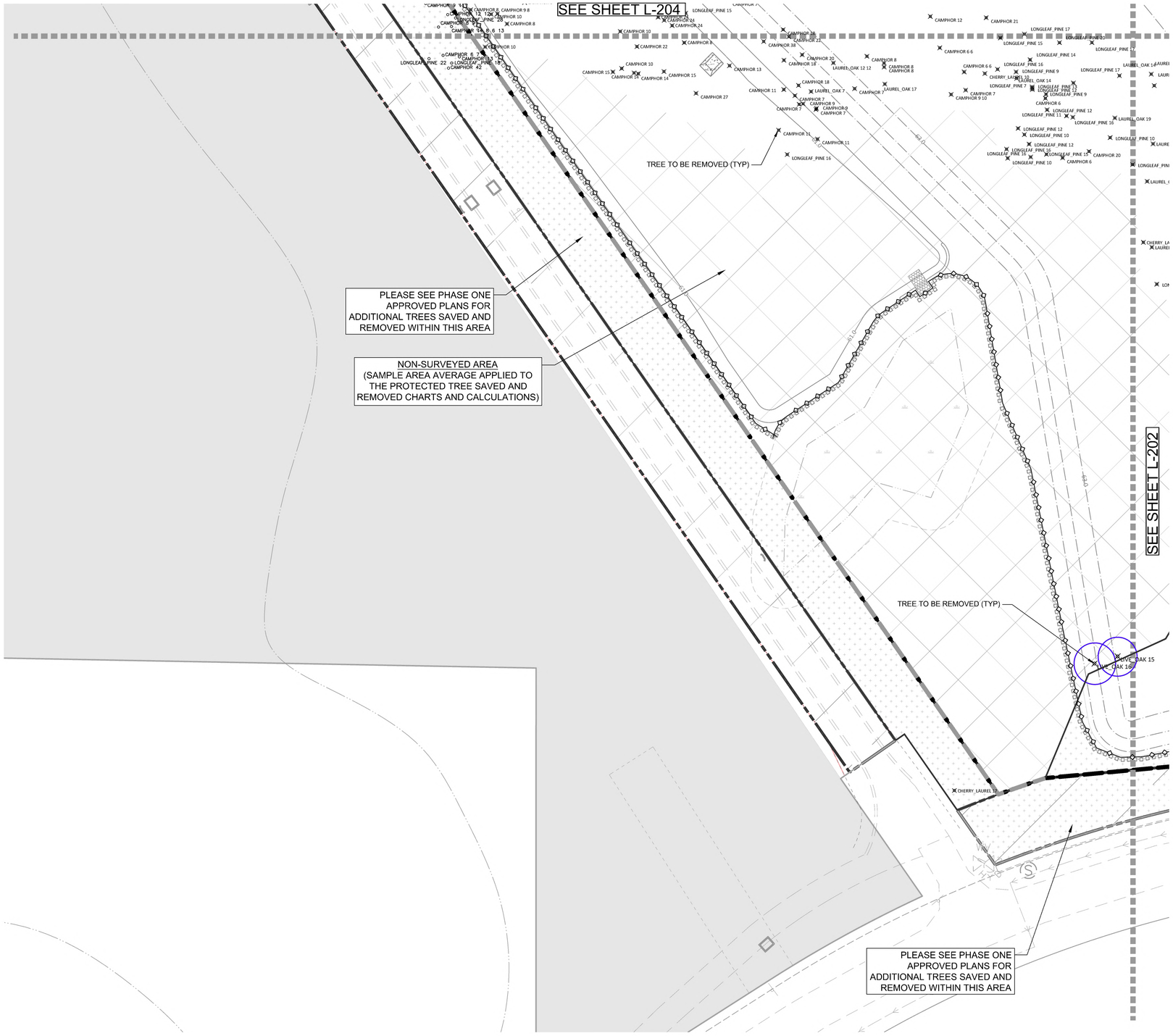
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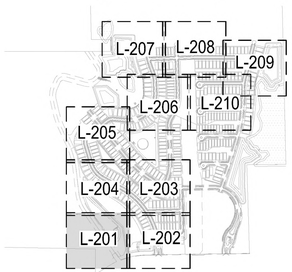
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LEGEND

- TREE TO BE SAVED (LIVE OAK 24)
- TREE TO BE REMOVED (LIVE OAK 24)
- SILT FENCE
- TREE BARRICADE
- PHASE LINE
- PROJECT BOUNDARY
- FUTURE DEVELOPMENT
- AMENITY AREA
- PHASE ONE AREA
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- ARBORIST IDENTIFIED TREE
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SHEET KEY



ELEVATIONS BASED ON:
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CONVERSION:
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GRAPHIC SCALE: 1" = 40'

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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

TREE REMOVAL & SAVE PLAN

PREPARED FOR: KH CW DELAND LLC

NO.	DATE	DESCRIPTION
1	06/09/2023	REVISED PER CITY COMMENTS
	02/20/2023	REVIEW SUBMITTAL
	DATE	DESCRIPTION

PROJECT NO:	KGA-CD-1031
FILE:	L-201
DESIGN BY:	RHENDRY
DRAWN BY:	RHENDRY

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SEE SHEET L-203

SEE SHEET L-201

TREE TO BE REMOVED (TYP)

PHASE 1 LIMITS (TYP)

EXISTING DRY POND 1 (PHASE 1)
TOB=68.0
DHW_{100} =67.5
$DHW_{25YR-96HR}$ = 67.5
$DHW_{25YR-24HR}$ = 66.0
BOT = 63.0

PLEASE SEE PHASE ONE APPROVED PLANS FOR ADDITIONAL TREES SAVED AND REMOVED WITHIN THIS AREA

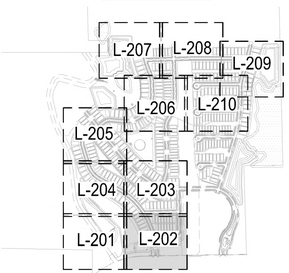
PLEASE SEE PHASE ONE APPROVED PLANS FOR ADDITIONAL TREES SAVED AND REMOVED WITHIN THIS AREA

50' PERIMETER LANDSCAPE BUFFER

LEGEND

- LIVE OAK 24 — TREE TO BE SAVED
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PREPARED FOR: KH CW DELAND LLC

-	DATE	DESCRIPTION
	02/20/2023	REVIEW SUBMITTAL
	06/09/2023	REVISED PER CITY COMMENTS

PROJECT NO: KGA-CD-1031
FILE: L-201
DESIGN BY: RHENDRY
DRAWN BY: RHENDRY

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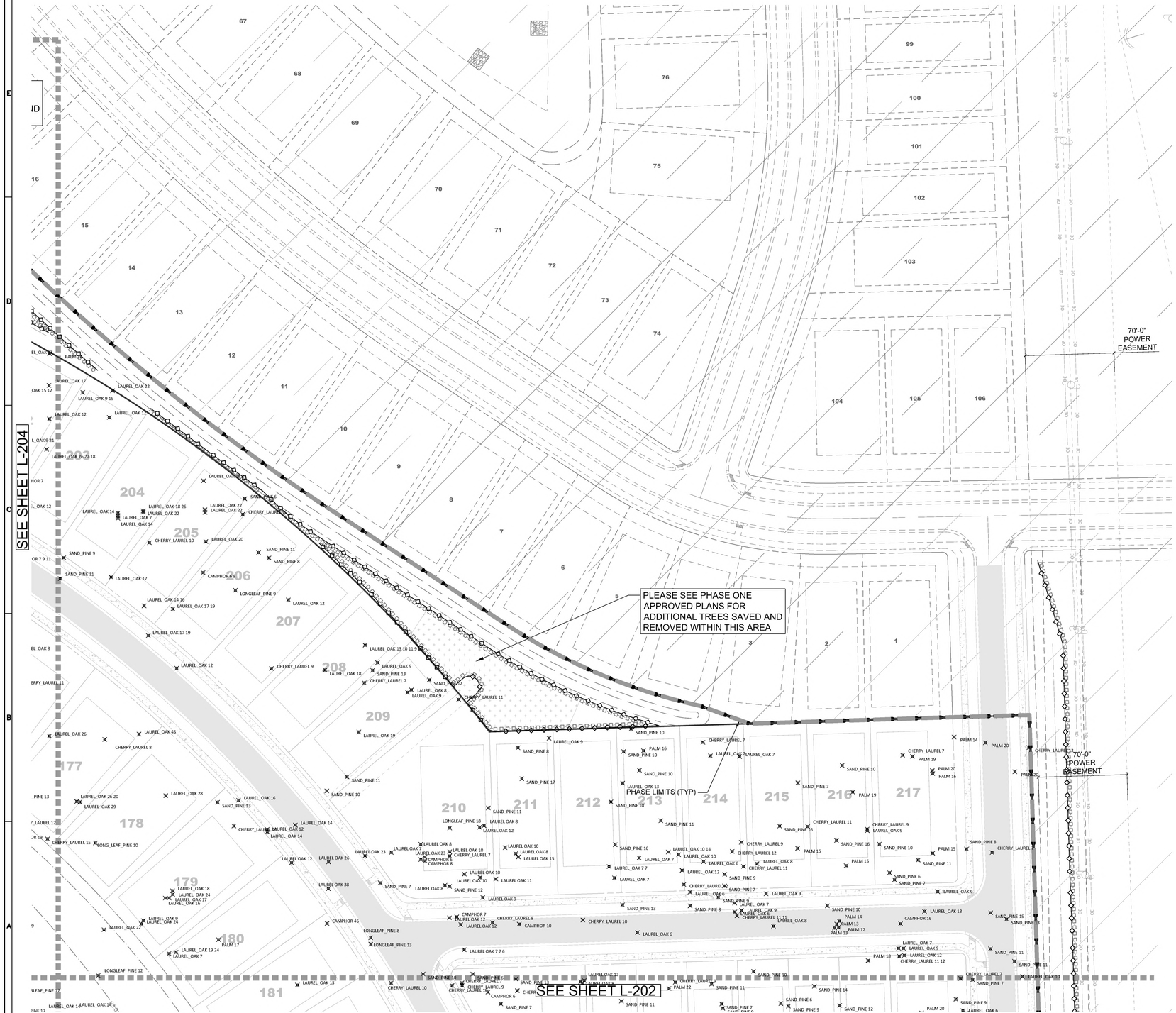
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L-202

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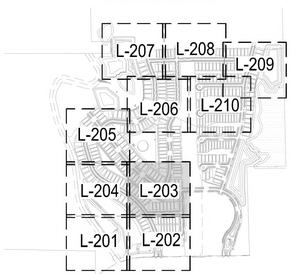
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PREPARED FOR: KH CW DELAND LLC

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DRAWN BY: RHENDRY

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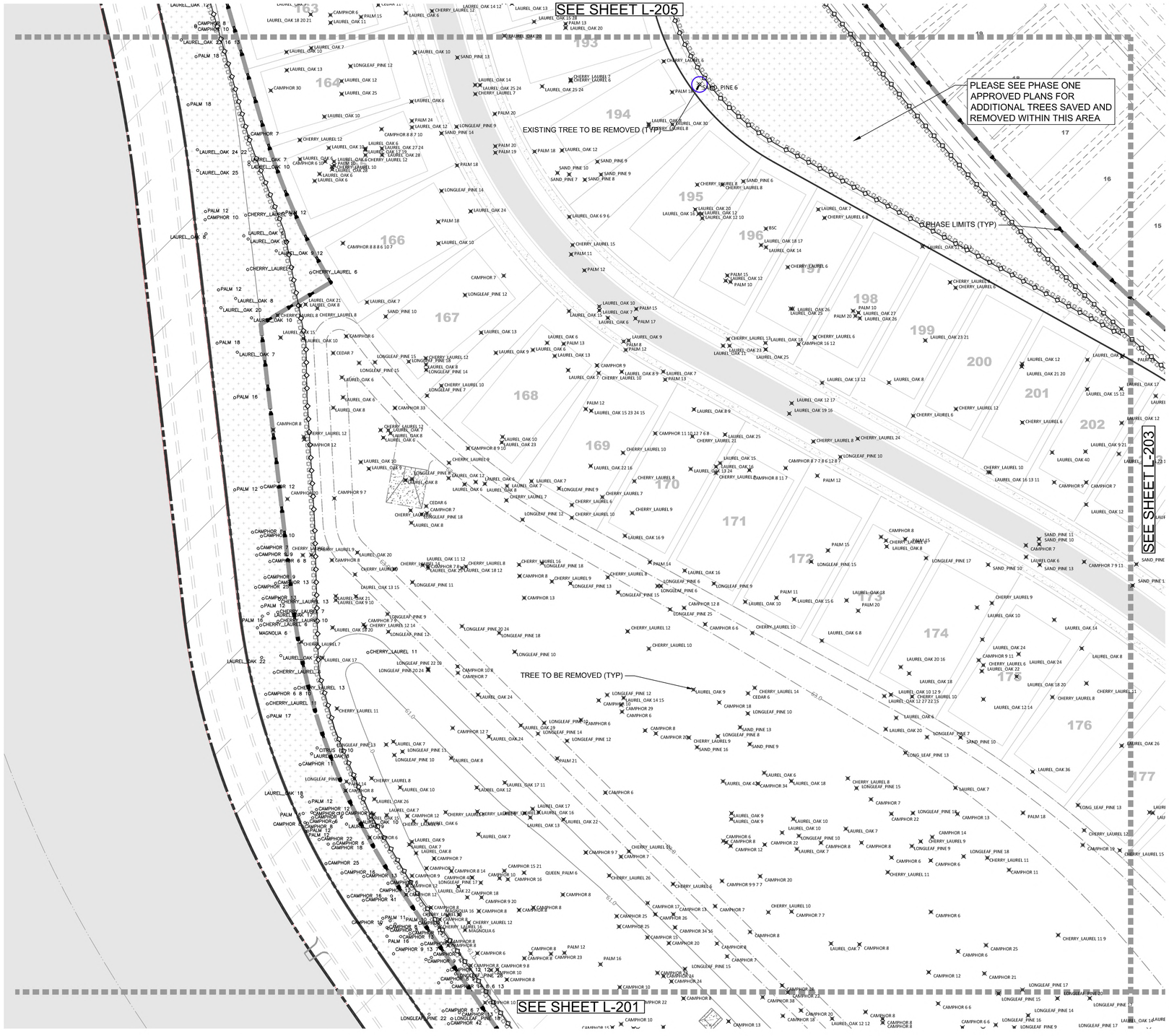
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REGISTRATION NO. LA6667179

L-203

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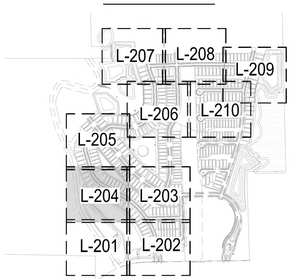
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LEGEND

- TREE TO BE SAVED (LIVE OAK 24)
- TREE TO BE REMOVED (LIVE OAK 24)
- SILT FENCE
- TREE BARRICADE
- PHASE LINE
- PROJECT BOUNDARY
- FUTURE DEVELOPMENT
- AMENITY AREA
- PHASE ONE AREA
- TREE PROTECTION AREA
- ARBORIST IDENTIFIED TREE GOOD OR EXCELLENT
- ARBORIST IDENTIFIED TREE
- ARBORIST IDENTIFIED TREE HAZARDOUS, POOR, OR FAIR

SHEET KEY



ELEVATIONS BASED ON:
NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION:
NAVD 88 TO NGVD 29 = +1.07

N

0 40 80
GRAPHIC SCALE: 1" = 40'

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Fax: 813-464-7629
www.HeidtDesign.com

CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

TREE REMOVAL & SAVE PLAN

PREPARED FOR: KH CW DELAND LLC

NO.	DATE	DESCRIPTION
1	06/09/2023	REVISED PER CITY COMMENTS
	02/20/2023	REVIEW SUBMITTAL
	DATE	DESCRIPTION

PROJECT NO: KGA-CD-1031
FILE: L-201
DESIGN BY: RHENDRY
DRAWN BY: RHENDRY

FLORIDA REGISTERED
LANDSCAPE ARCHITECT

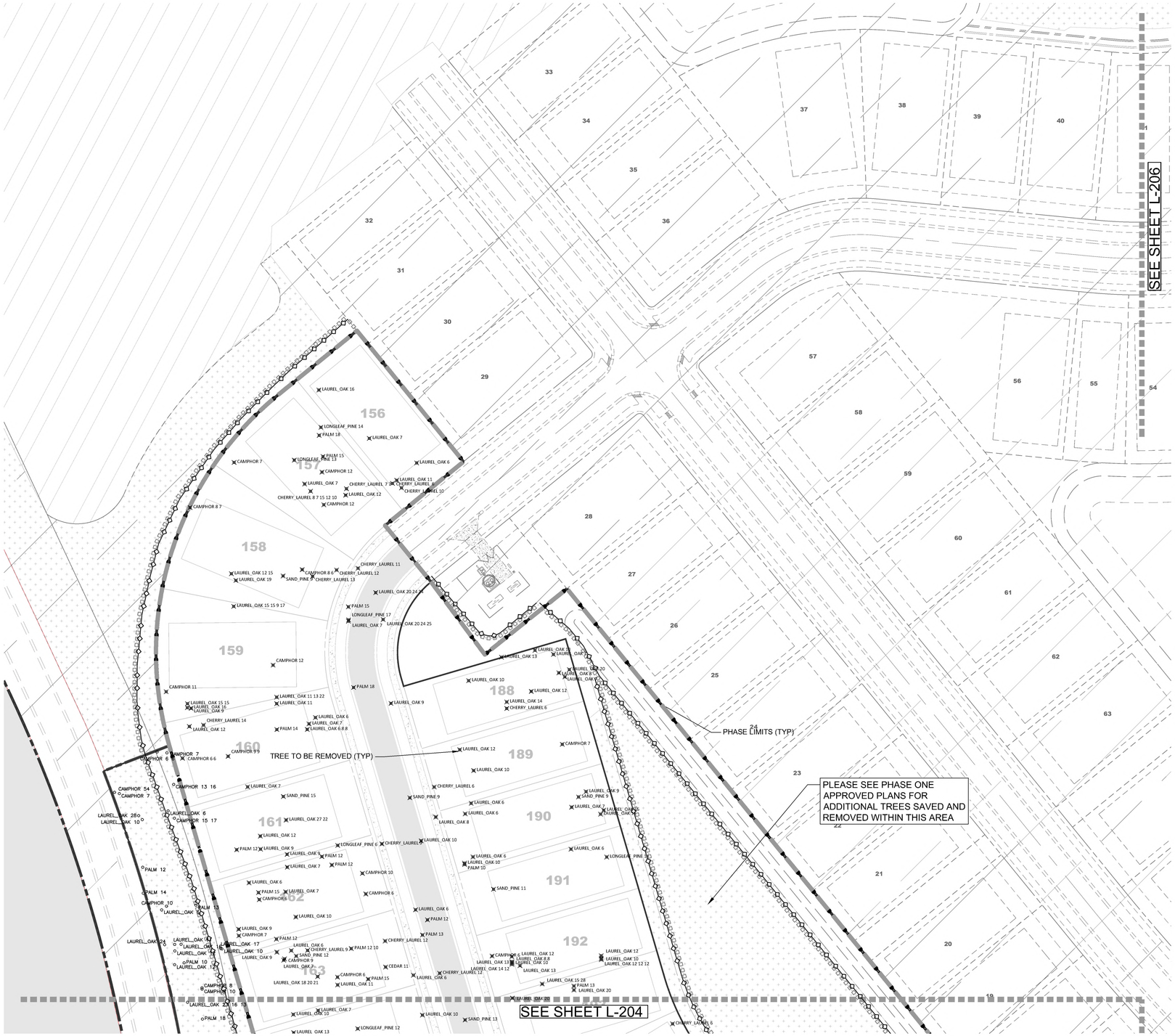
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DATE:
REGISTRATION NO LA6667179

L-204

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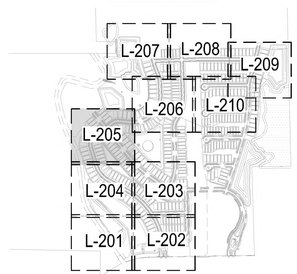
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LEGEND

- TREE TO BE SAVED (LIVE OAK 24)
- TREE TO BE REMOVED (LIVE OAK 24)
- SILT FENCE
- TREE BARRICADE
- PHASE LINE
- PROJECT BOUNDARY
- FUTURE DEVELOPMENT
- AMENITY AREA
- PHASE ONE AREA
- TREE PROTECTION AREA
- ARBORIST IDENTIFIED TREE GOOD OR EXCELLENT
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SHEET KEY



ELEVATIONS BASED ON:
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CONVERSION:
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N

0 40 80
GRAPHIC SCALE: 1" = 40'

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CRESSWIND DELAND PHASE 2A, 2B, 3A & 3B

TREE REMOVAL & SAVE PLAN

PREPARED FOR: KH CW DELAND LLC

-	DATE	DESCRIPTION
1	02/20/2023	REVIEW SUBMITTAL
2	06/09/2023	REVISED PER CITY COMMENTS

PROJECT NO: KGA-CD-1031
FILE: L-201
DESIGN BY: RHENDRY
DRAWN BY: RHENDRY

FLORIDA REGISTERED LANDSCAPE ARCHITECT

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L-205

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SEE SHEET L-207

SEE SHEET L-208

SEE SHEET L-210

SEE SHEET L-205

WETLAND CONSERVATION SETBACK (TYP)

WETLAND CONSERVATION AREA (TYP)

PHASE LIMITS (TYP)

PLEASE SEE PHASE ONE APPROVED PLANS FOR ADDITIONAL TREES SAVED AND REMOVED WITHIN THIS AREA

LONGLEAF_PINE 18

LIVE_OAK 10

LIVE_OAK 13

TREE TO BE REMOVED (TYP)

LIVE_OAK 10

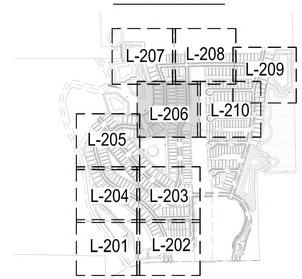
PHASE LIMITS (TYP)

NON-SURVEYED AREA
(SAMPLE AREA AVERAGE APPLIED TO THE PROTECTED TREE SAVED AND REMOVED CHARTS AND CALCULATIONS)

LEGEND

- LIVE OAK 24 — TREE TO BE SAVED
- LIVE OAK 24 — TREE TO BE REMOVED
- SILT FENCE
- TREE BARRICADE
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- PROJECT BOUNDARY
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SHEET KEY



ELEVATIONS BASED ON:
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GRAPHIC SCALE: 1" = 40'

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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

TREE REMOVAL & SAVE PLAN

PREPARED FOR: KH CW DELAND LLC

DATE	DESCRIPTION
08/09/2023	REVISED PER CITY COMMENTS
02/20/2023	REVIEW SUBMITTAL

PROJECT NO: KGA-CD-1031
FILE: L-201
DESIGN BY: RHENDRY
DRAWN BY: RHENDRY

FLORIDA REGISTERED LANDSCAPE ARCHITECT

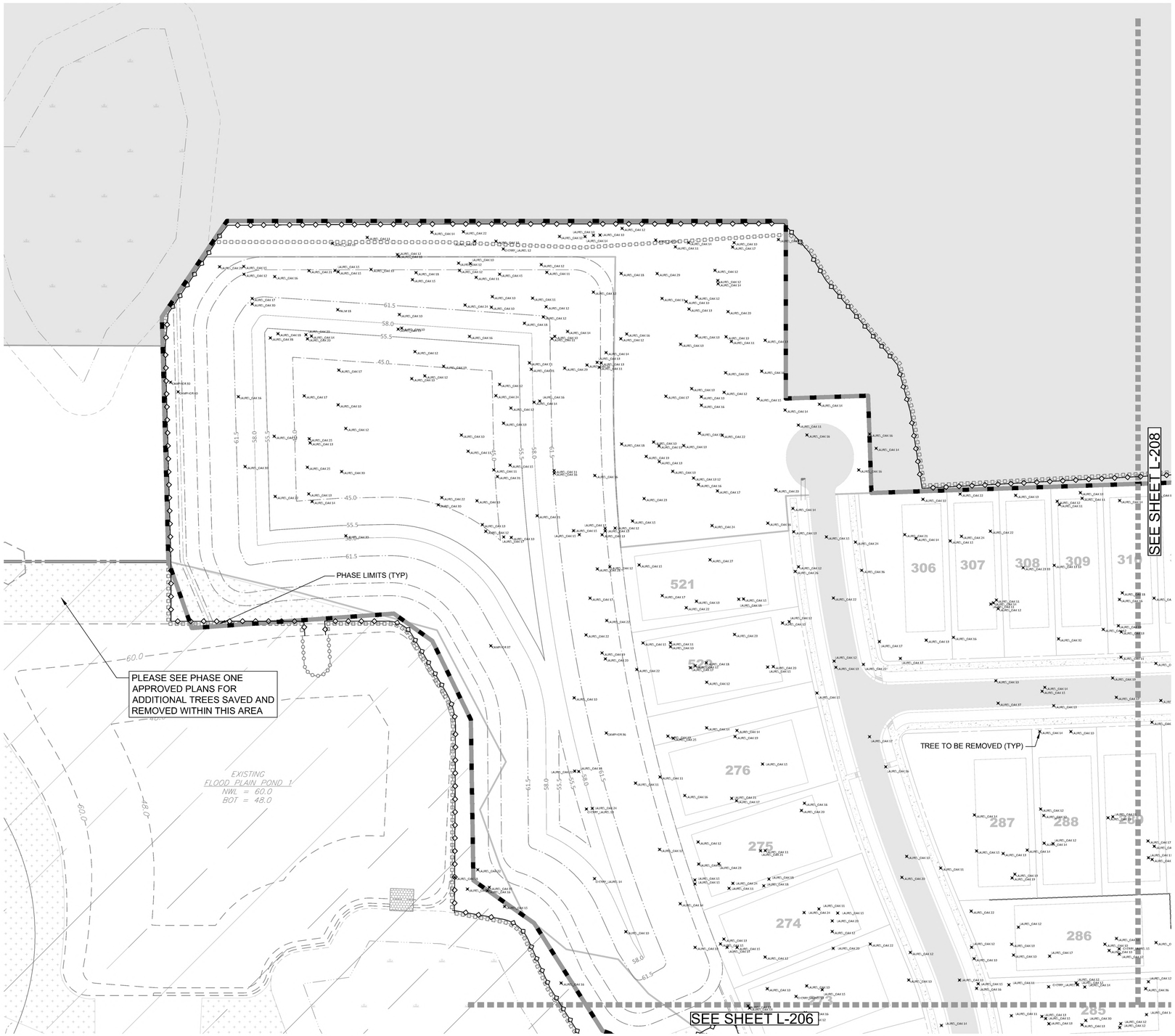
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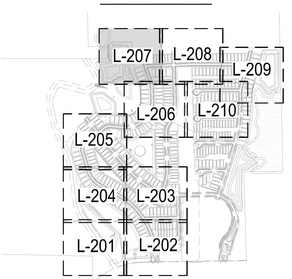
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LEGEND

- TREE TO BE SAVED (LIVE OAK 24)
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- SILT FENCE
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SHEET KEY



ELEVATIONS BASED ON:
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CONVERSION:
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0 40 80
GRAPHIC SCALE: 1" = 40'

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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

TREE REMOVAL & SAVE PLAN

PREPARED FOR: KH CW DELAND LLC

NO	DESCRIPTION	DATE
1	REVISED PER CITY COMMENTS	08/09/2023
	REVIEW SUBMITTAL	02/20/2023
	DESCRIPTION	DATE

PROJECT NO: KGA-CD-1031
FILE: L-201
DESIGN BY: RHENDRY
DRAWN BY: RHENDRY

FLORIDA REGISTERED LANDSCAPE ARCHITECT

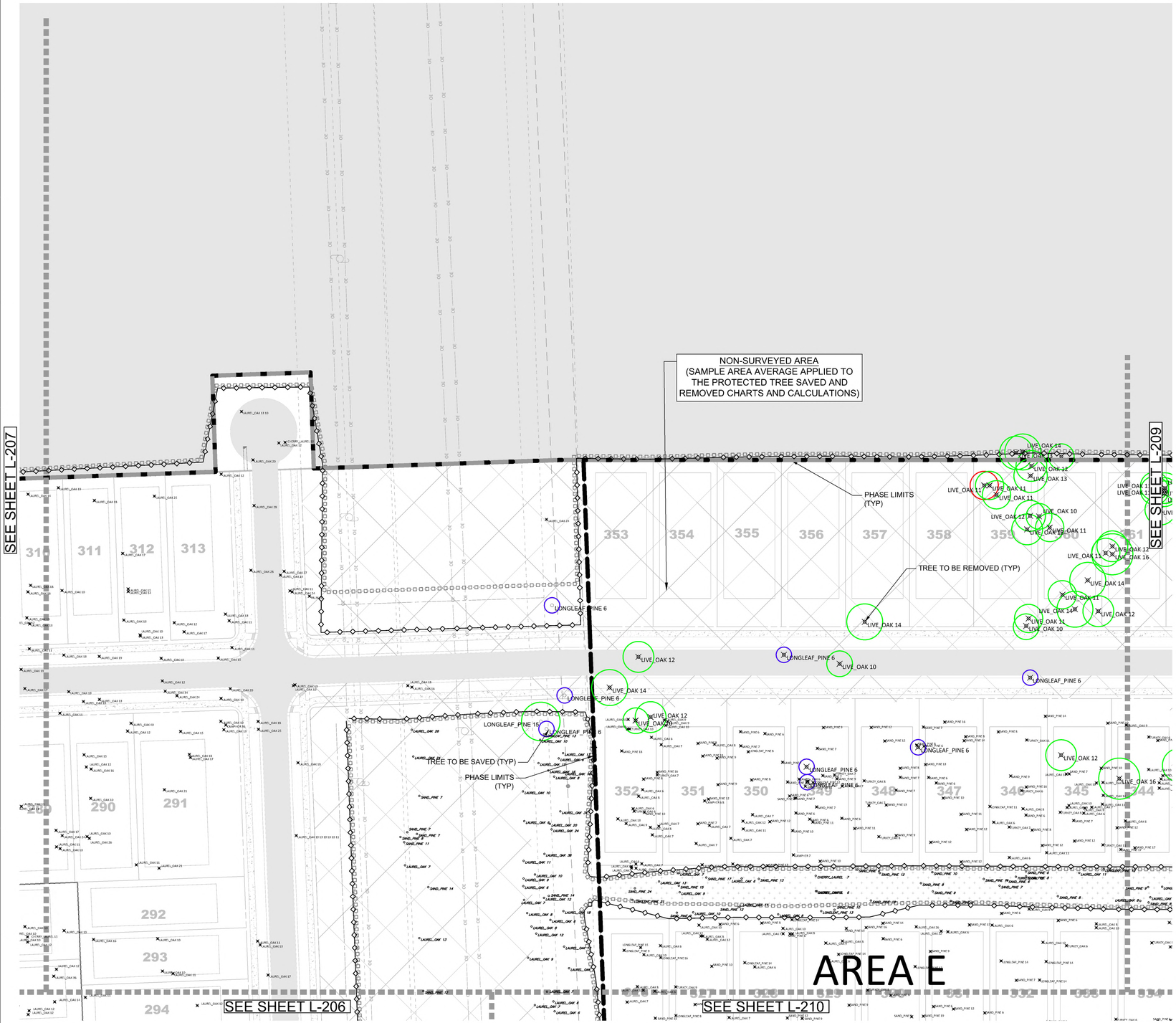
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L-207

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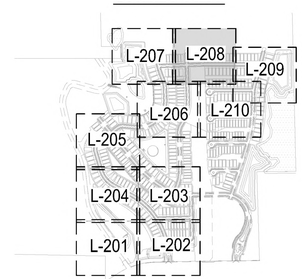
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LEGEND

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- TREE TO BE REMOVED (LIVE OAK 24)
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- TREE BARRICADE
- PHASE LINE
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SHEET KEY



ELEVATIONS BASED ON:
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0 40 80
GRAPHIC SCALE: 1" = 40'

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CRESSWIND DELAND PHASE 2A, 2B, 3A & 3B

TREE REMOVAL & SAVE PLAN

PREPARED FOR: KH CW DELAND LLC

#	DESCRIPTION	DATE
1	REVISED PER CITY COMMENTS	08/09/2023
	REVIEW SUBMITTAL	02/20/2023
	DESCRIPTION	DATE

PROJECT NO: KGA-CD-1031
FILE: L-201
DESIGN BY: RHENDRY
DRAWN BY: RHENDRY

FLORIDA REGISTERED LANDSCAPE ARCHITECT

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L-208

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NON-SURVEYED AREA
(SAMPLE AREA AVERAGE APPLIED TO THE PROTECTED TREE SAVED AND REMOVED CHARTS AND CALCULATIONS)

PHASE LIMITS (TYP)

TREE TO BE REMOVED (TYP)

SEE SHEET L-208

SEE SHEET L-210

SEE SHEET L-210

WETLAND CONSERVATION SETBACK (TYP)

WETLAND CONSERVATION AREA (TYP)

25'-0"

LEGEND

- TREE TO BE SAVED (LIVE OAK 24)
- TREE TO BE REMOVED (LIVE OAK 24)
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- TREE BARRICADE
- PHASE LINE
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SHEET KEY

L-207 L-208 L-209
L-206 L-210
L-205
L-204 L-203
L-201 L-202

ELEVATIONS BASED ON:
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CONVERSION:
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0 40 80
GRAPHIC SCALE: 1" = 40'

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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

TREE REMOVAL & SAVE PLAN

PREPARED FOR: KH CW DELAND LLC

#	DESCRIPTION	DATE
1	REVISED PER CITY COMMENTS	06/05/2023
	REVIEW SUBMITTAL	02/20/2023
	DESCRIPTION	DATE

PROJECT NO: KGA-CD-1031
FILE: L-201
DESIGN BY: RHENDRY
DRAWN BY: RHENDRY

FLORIDA REGISTERED
LANDSCAPE ARCHITECT

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DATE:
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AREA E

SEE SHEET L-208

SEE SHEET L-209

SEE SHEET L-206

SEE SHEET L-209

TREE TO BE REMOVED (TYP)

PHASE 1 LIMITS (TYP)

NON-SURVEYED AREA
(SAMPLE AREA AVERAGE APPLIED TO THE PROTECTED TREE SAVED AND REMOVED CHARTS AND CALCULATIONS)

PLEASE SEE PHASE ONE APPROVED PLANS FOR ADDITIONAL TREES SAVED AND REMOVED WITHIN THIS AREA

LEGEND

- TREE TO BE SAVED (LIVE OAK 24)
- TREE TO BE REMOVED (LIVE OAK 24)
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SHEET KEY

L-207 L-208 L-209
L-206 L-210
L-205
L-204 L-203
L-201 L-202

ELEVATIONS BASED ON:
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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

TREE REMOVAL & SAVE PLAN

PREPARED FOR: KH CW DELAND LLC

#	DESCRIPTION	DATE
1	REVISED PER CITY COMMENTS	06/09/2023
	REVIEW SUBMITTAL	02/20/2023
	DESCRIPTION	DATE

PROJECT NO: KGA-CD-1031
FILE: L-201
DESIGN BY: RHENDRY
DRAWN BY: RHENDRY

FLORIDA REGISTERED
LANDSCAPE ARCHITECT

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KEVEN J STEELE
DATE:
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LEGEND

LOT TREES FOR SINGLE & TWO FAMILY DWELLINGS

Code	Size of Lot (sq ft)	Min. Number of Trees
	0 - 3,750	1
	3,751-6,250	2
	6,251-8,750	3
	8,751-11,250	4
	11,251-13,750	5
	13,751-16,250	6
	16,251-18,750	7

- SILT FENCE
- TREE BARRICADE
- PHASE LINE
- PROJECT BOUNDARY
- FUTURE DEVELOPMENT
- FUTURE AMENITY
- PHASE ONE AREA
- TREE PROTECTION AREA

LOT TREES			
Lot Size	**Quantity of Lots**	**Required 2" DBH trees per lot**	**Total Trees Required/Provided**
Lot Trees: 0-3,750	0	1	0
Lot Trees: 3,751-6,260	57	2	114
Lot Trees: 6,251-8,750	152	3	456
Lot Trees: 8,751-11,250	15	4	60
Lot Trees: 11,251-13,750	1	5	5
Lot Trees: 13,751-16,250	0	6	0
Lot Trees: 16,251-18,750	0	7	0
		Lot Trees Required	**635**

LOT NUMBER	SIZE OF LOT (sq ft)
N/A	0-3,750
225-229, 232-237, 239-247, 251-267, 292-305, & 307-312	3,751-6250
156, 160-209, 211-222, 224, 230-231, 248-250, 270-271, 274-285, 288-290, 306, 313-322, 324, 326-369, 371-378, & 520-521	6,251-8,750
157-159, 223, 238, 268, 272-273, 286-287, 291, 323, 325, & 370	8,751-11,250
210	11,251-13,750
N/A	13,751-16,250
N/A	16,251-18,750

LOT TREE REQUIREMENTS

- All lot trees shall be chosen from the List of Approved Tree Replacement Species Chart (See sheet L-480 for list)
- Lot trees shall consist of 75% Canopy Trees and 25% Palms or Understory Trees
- All lot trees shall be a minimum specification of 2" DBH, 45 Gallon and 8 FT Tall.

N

0 150 300

GRAPHIC SCALE: 1" = 150'

ELEVATIONS BASED ON:
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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

LOT TREE REQUIREMENTS

PREPARED FOR: KH CW DELAND LLC

NO.	DATE	DESCRIPTION
1	06/09/2023	REVISED PER CITY COMMENTS
	02/20/2023	REVIEW SUBMITTAL

PROJECT NO: KGA-CD-1031
FILE: L-400B
DESIGN BY: RHENDRY
DRAWN BY: RHENDRY

FLORIDA REGISTERED LANDSCAPE ARCHITECT

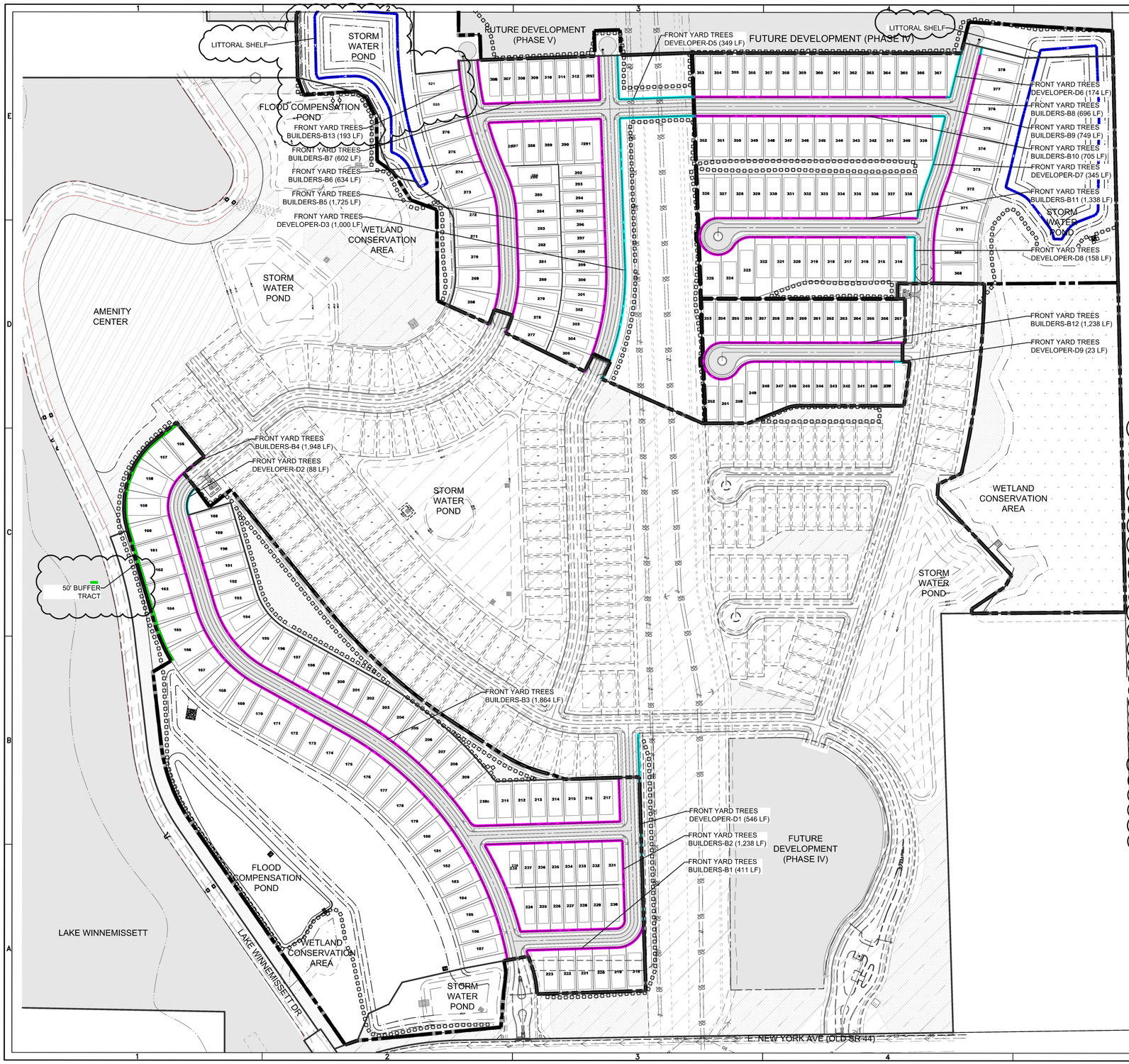
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DATE:
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L-400B

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LEGEND

UTILITY FACILITIES
- Utility Facilities 5-Wide Screening

50' BUFFER TRACT
- 50' Buffer Tract

FRONT YARD TREES
- Developer Front Yard Trees
- Builder Front Yard Trees

VEHICULAR USE AREAS, INTERIOR (VUA)
- Vehicular Use Areas

LITTORAL SHELF
- Littoral Shelf Area

- SILT FENCE
- TREE BARRICADE
- PHASE LINE
- PROJECT BOUNDARY
- FUTURE DEVELOPMENT
- FUTURE AMENITY
- PHASE ONE AREA
- TREE PROTECTION AREA

LAKE WINNEMISSETT REQUIRED TREES & SHRUBS - PHASE 2 & 3

SITE	DESCRIPTION	TOTAL LENGTH (LF)	TOTAL SHRUBS REQUIRED	TOTAL CANOPY TREES REQUIRED	DIAMETER OF CANOPY TREES REQUIRED (DBH)	TOTAL UNDERSTORY TREES REQUIRED	DIAMETER OF TREES UNDERSTORY REQUIRED (DBH)	TOTAL DIAMETER OF TREES REQUIRED (DBH)
LOT TREES	LOT TREES	N/A	N/A	635	2	0	0	1,270
UTILITY FACILITIES 5-WIDE SCREENING	SCREENING	0	0	N/A	N/A	N/A	N/A	0
50' BUFFER TRACT	SCREENING	N/A	N/A	N/A	N/A	N/A	N/A	0
FRONT YARD TREE (DEVELOPER)	STREET TREES	2,683	N/A	35	2	0	2	70
FRONT YARD TREE (BUILDER)	STREET TREES	13,341	N/A	177	2	0	2	354
VEHICULAR USE AREA	VUA	N/A	N/A	0	0	0	0	0
			TOTALS	0	847	0		1,694

LAKE WINNEMISSETT PROVIDED TREES & SHRUBS - PHASE 2 & 3

SITE	TOTAL OF SHRUBS PROVIDED	TOTAL CANOPY TREES PROVIDED	DIAMETER OF CANOPY TREES PROVIDED (DBH)	TOTAL UNDERSTORY TREES PROVIDED	DIAMETER OF TREES UNDERSTORY PROVIDED (DBH)	TOTAL DIAMETER OF TREES PROVIDED (DBH)
LOT TREES	N/A	635	2	0	2	1,270
UTILITY FACILITIES 5-WIDE SCREENING	0	0	0	0	0	0
50' BUFFER TRACT	EXISTING VEGITATION	EXISTING VEGITATION	2	EXISTING VEGITATION	2	EXISTING VEGITATION
FRONT YARD TREE (DEVELOPER)	N/A	42	2	29	2	142
FRONT YARD TREE (BUILDER)	N/A	321	2	0	2	642
VEHICULAR USE AREA	0	0	0	0	0	0
	0	998		29		2,054

*50% OF CANOPY TREES, UNDERSTORY TREES AND SHRUBS SHALL BE SELECTED FROM THE "LIST OF PERMITTED SHRUBS AND TREES FOR LANDSCAPING AND TREE PROTECTION" LIST CONTAINED IN ARTICLE VI, ADDENDUM A. *"NO MORE THAN 25% OF TREE COVERAGE TO CONSIST OF PALMS.

LOT TREE NOTE:
- Lot Trees are shown and calculated on sheet L-400B

LITTORAL SHELF AREA NOTE:
- All Littoral shelf areas must have a minimum ten (10) square feet per linear foot of shoreline.
- Littoral zones shall extend a minimum of 2.5 vertical feet below the control water line and include an upland transitional planting zone 2.5 vertical feet below control water line and include and upland transitional planting zone 2.5 vertical feet above the control water line.
- Littoral plantings including upland transition zones shall be wetland-friendly and native species.

N

0 150 300

GRAPHIC SCALE: 1" = 150'

ELEVATIONS BASED ON:
NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION:
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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

FRONT YARD & BUFFER TREE REQUIREMENTS

PREPARED FOR: KH CW DELAND LLC

NO.	DATE	DESCRIPTION
1	06/09/2023	REVISED PER CITY COMMENTS
	02/20/2023	REVIEW SUBMITTAL
	DATE	DESCRIPTION

PROJECT NO:	KGA-CD-1031
FILE:	L-400C
DESIGN BY:	RHENDRY
DRAWN BY:	RHENDRY

FLORIDA REGISTERED LANDSCAPE ARCHITECT

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N
0 200 400
GRAPHIC SCALE: 1" = 200'

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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

OVERALL PERMIT LANDSCAPE PLAN

PREPARED FOR: KH CW DELAND LLC

DATE	DESCRIPTION
02/20/2023	REVIEW SUBMITTAL

PROJECT NO: KGA-CD-1031
FILE: L-400
DESIGN BY: RHENDRY
DRAWN BY: RHENDRY

FLORIDA REGISTERED LANDSCAPE ARCHITECT

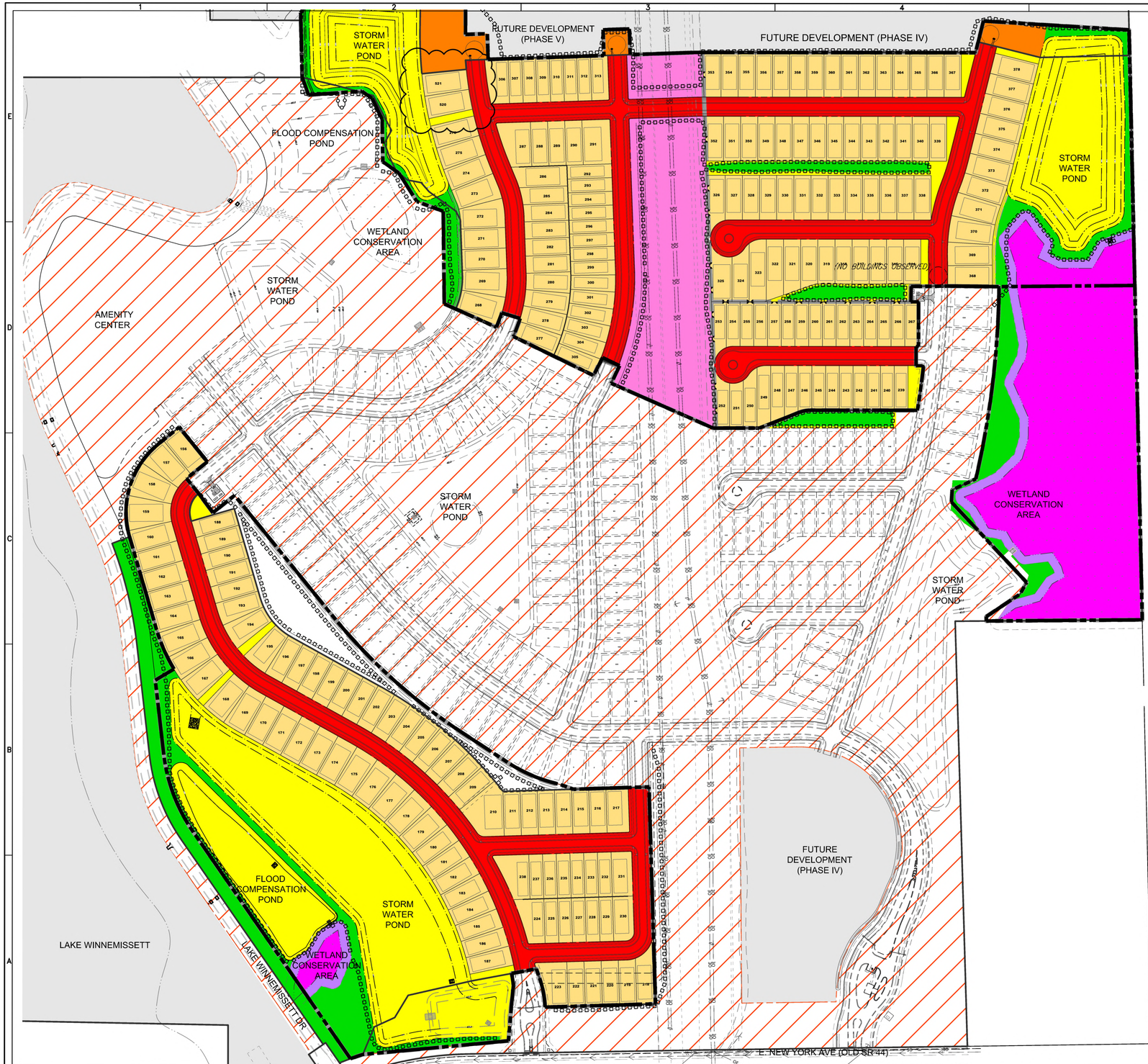
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L-400

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LEGEND

SITE DATA & OPEN SPACE CALCULATIONS

- Future Phases Development
- Lot Area
- Open Space Area
- Tree Protection Area
- ROW Area
- Utility Easement
- Net Wetland Conservation
- Future Development
- Approved Phase 1 Development

- SILT FENCE
- TREE BARRICADE
- PHASE LINE
- PROJECT BOUNDARY

PHASE 2-3 PLAT BOUNDARY SITE DATA AND OPEN SPACE CALCULATIONS

Description	Acreage	Percentage
Future Development	1.33	1.5%
Lot Area	35.36	40.4%
Open Space Area	1.38	1.6%
Stormwater Ponds	16.01	18.3%
Tree Protection Area	7.37	8.4%
Row Area	10.45	12.0%
Utility Easement	5.23	6.0%
Wetland Setback Area	1.44	1.6%
Wetland Area	8.87	10.1%
Phase 2-3 Parcel Area	87.44	100.0%

NOTE:

- See sheet L-100 for Overall Site Data and Open space Calculations Chart

- The plat boundary and open space boundary differ slightly as the plat does not incorporate some of the fringe open space areas around Phases 2 & 3 that are included in the open space calculations.

N

0 150 300

GRAPHIC SCALE: 1" = 150'

ELEVATIONS BASED ON:
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CRESWIND DELAND
PHASE 2A, 2B, 3A & 3B
SITE DATA & OPEN SPACE CALCULATIONS

PREPARED FOR: KH CW DELAND LLC

	DATE	DESCRIPTION
2	07/31/2023	ADDED NOTE ABOUT PARCEL ACREAGE
1	06/09/2023	REVISED PER CITY COMMENTS
	02/20/2023	REVIEW SUBMITTAL

PROJECT NO:	KGA-CD-1031
FILE:	L-400A
DESIGN BY:	RHENDRY
DRAWN BY:	RHENDRY

FLORIDA REGISTERED
LANDSCAPE ARCHITECT

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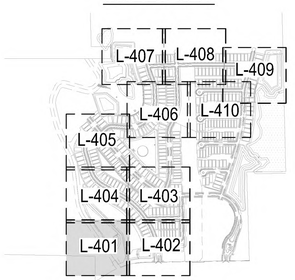
2023-02-07 07:04

PLANT SCHEDULE LANDSCAPE		
CANOPY TREE	CODE	COMMON NAME
	AR3	Red Maple
	JS3	Southern Red Cedar
	MG3	Southern Magnolia
	QV3	Southern Live Oak
	TD3	Bald Cypress
UNDERSTORY TREE	CODE	COMMON NAME
	IE3	Eagleston Holly
LITTORAL PLANTINGS	CODE	COMMON NAME
	LIT	Littoral Shelf
		TREE PROTECTION AREA

NOTES:
- TREE SPECIFICATIONS ON SHEET L-480
- PLANT SUBSTITUTIONS WILL NEED TO BE APPROVED BY CITY FORESTER
- PROVIDE FINAL AS-BUILTS TO CITY PRIOR TO LANDSCAPE INSPECTION

SILT FENCE
TREE BARRICADE
PHASE LINE
PROJECT BOUNDARY
FUTURE DEVELOPMENT
FUTURE AMENITY
PHASE ONE AREA
TREE PROTECTION AREA

SHEET KEY



N

ELEVATIONS BASED ON:
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0 40 80
GRAPHIC SCALE: 1" = 40'

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www.HeidtDesign.com

CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

PERMIT LANDSCAPE PLAN

PREPARED FOR: KH CW DELAND LLC

-	06/09/2023	REVISED PER CITY COMMENTS
-	02/20/2023	REVIEW SUBMITTAL
	DATE	DESCRIPTION

PROJECT NO: KGA-CD-1031
FILE: L-401
DESIGN BY: RHENDRY
DRAWN BY: RHENDRY

FLORIDA REGISTERED LANDSCAPE ARCHITECT

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KEVEN J STEELE
DATE:
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L-401

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SEE SHEET L-403

SEE SHEET L-401

2023-02-07 07:04

PLANT SCHEDULE LANDSCAPE		
CANOPY TREE	CODE	COMMON NAME
	AR3	Red Maple
	JS3	Southern Red Cedar
	MG3	Southern Magnolia
	QV3	Southern Live Oak
	TD3	Bald Cypress
UNDERSTORY TREE	CODE	COMMON NAME
	IE3	Eagleston Holly
LITTORAL PLANTINGS	CODE	COMMON NAME
	LIT	Littoral Shelf
		TREE PROTECTION AREA

FRONT YARD TREE-B4
Per City of DeLand Developement Code, Section 33-92.02(b) and PD Agreement, no closer than 5' or further than 15' from the right-of-way. One shade tree per 75 LF of right-of-way. Trees shall be planted alternately on either side of the street. Existing and native tree species that need less water and maintenance are preferred.

1,948 LN FT / 75' 25 CANOPY TREES REQUIRED

FRONT YARD TREE-B2
Per City of DeLand Land Developement Code, Section 33-92.02(b) and PD Agreement, no closer than 5' or further than 15' from the right-of-way. One shade tree per 75 LF of right-of-way. Trees shall be planted alternately on either side of the street. Existing and native tree species that need less water and maintenance are preferred.

1,238 LN FT / 75' 16 CANOPY TREES REQUIRED

FRONT YARD TREE (DEVELOPER)-D1
Per City of DeLand Land Developement Code, Section 33-92.02(b) and PD Agreement, no closer than 5' or further than 15' from the right-of-way. One shade tree per 75 LF of right-of-way. Trees shall be planted alternately on either side of the street. Existing and native tree species that need less water and maintenance are preferred.

546 LN FT / 75' 7 CANOPY TREES REQUIRED

FRONT YARD TREE- B1
Per City of DeLand Land Developement Code, Section 33-92.02(b) and PD Agreement, no closer than 5' or further than 15' from the right-of-way. One shade tree per 75 LF of right-of-way. Trees shall be planted alternately on either side of the street. Existing and native tree species that need less water and maintenance are preferred.

411 LN FT / 75' 5 CANOPY TREES REQUIRED

181 182 183 184 185 186 187 238 237 236 235 234 233 232 231 230 224 225 223 222 221 220 219 218

MG3 11
MG3 7
QV3 5
QV3 5
IE3 4
AR3 1
JS3 3

70'-0" POWER EASEMENT

DRY STORM WATER POND #1 SEE CIVIL DRAWINGS

FUTURE DEVELOPMENT (PHASE II)

APPROVED DEVELOPMENT (PHASE I)

PHASE 2-3 LIMITS (TYP)

TREE PROTECTION AREA

TREE PROTECTION AREA

TREE PROTECTION AREA

50' PERIMETER LANDSCAPE BUFFER

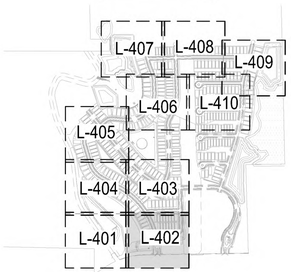
PROJECT BOUNDARY

E. NEW YORK AVE (OLD SR 44)

NOTES:
- TREE SPECIFICATIONS ON SHEET L-480
- PLANT SUBSTITUTIONS WILL NEED TO BE APPROVED BY CITY FORESTER
- PROVIDE FINAL AS-BUILTS TO CITY PRIOR TO LANDSCAPE INSPECTION

SILT FENCE
TREE BARRICADE
PHASE LINE
PROJECT BOUNDARY
FUTURE DEVELOPMENT
FUTURE AMENITY
PHASE ONE AREA
TREE PROTECTION AREA

SHEET KEY



ELEVATIONS BASED ON:
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CONVERSION:
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0 40 80
GRAPHIC SCALE: 1" = 40'

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CRESWIND DELAND
PHASE 2A, 2B, 3A & 3B

PERMIT LANDSCAPE PLAN

PREPARED FOR: KH CW DELAND LLC

NO.	DATE	DESCRIPTION
1	02/20/2023	REVIEW SUBMITTAL
	06/09/2023	REVISED PER CITY COMMENTS

PROJECT NO:	KGA-CD-1031
FILE:	L-401
DESIGN BY:	RHENDRY
DRAWN BY:	RHENDRY

FLORIDA REGISTERED LANDSCAPE ARCHITECT

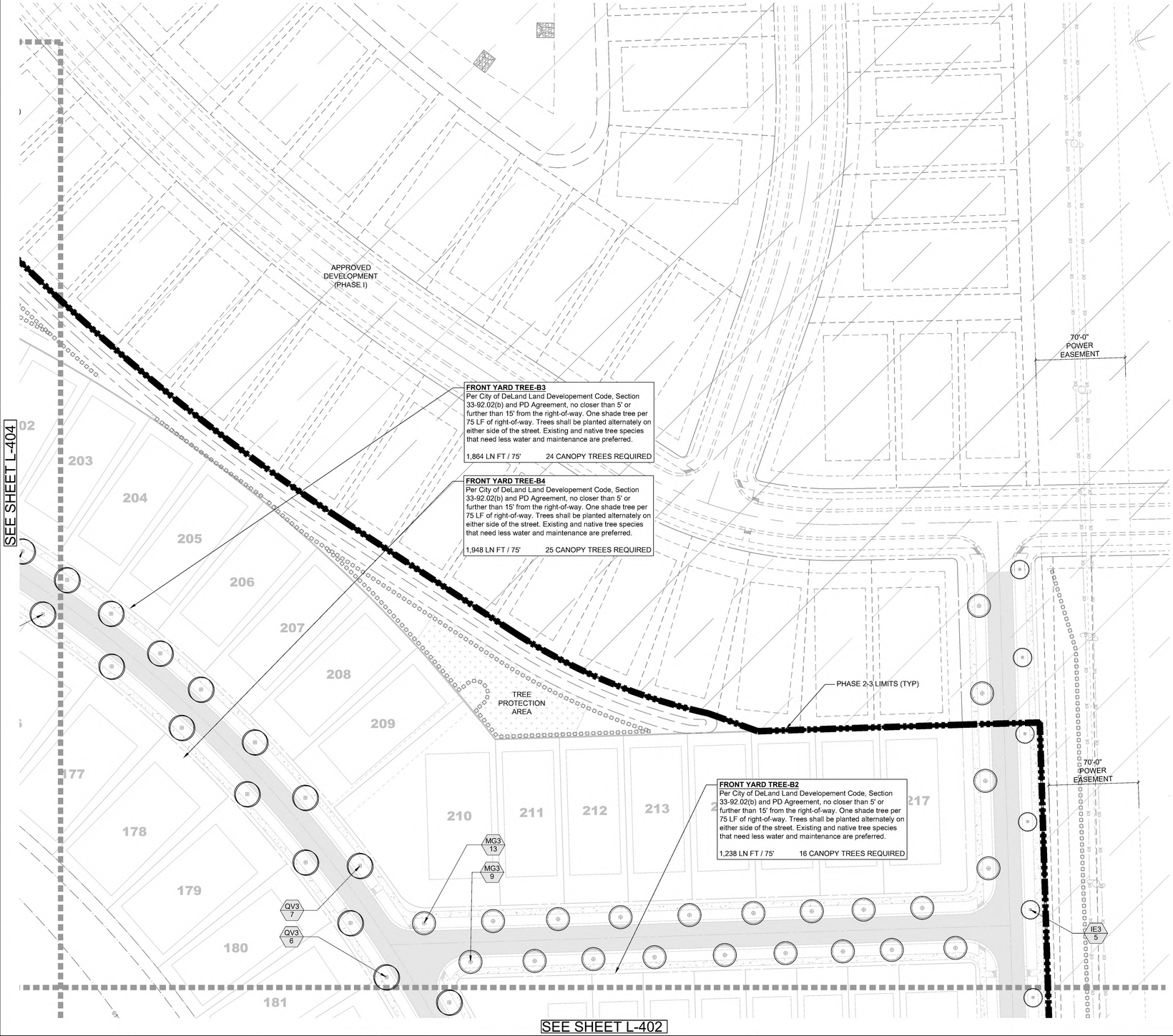
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DATE:
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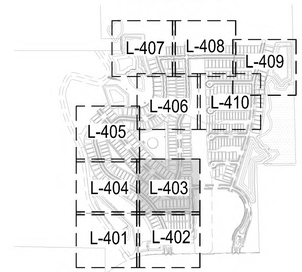
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PLANT SCHEDULE LANDSCAPE		
CANOPY TREE	CODE	COMMON NAME
	AR3	Red Maple
	JS3	Southern Red Cedar
	MG3	Southern Magnolia
	QV3	Southern Live Oak
	TD3	Bald Cypress
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	IE3	Eagleston Holly
LITTORAL PLANTINGS	CODE	COMMON NAME
	LIT	Littoral Shelf
		TREE PROTECTION AREA

NOTES:
- TREE SPECIFICATIONS ON SHEET L-480
- PLANT SUBSTITUTIONS WILL NEED TO BE APPROVED BY CITY FORESTER
- PROVIDE FINAL AS-BUILTS TO CITY PRIOR TO LANDSCAPE INSPECTION

SILT FENCE
TREE BARRICADE
PHASE LINE
PROJECT BOUNDARY
FUTURE DEVELOPMENT
FUTURE AMENITY
PHASE ONE AREA
TREE PROTECTION AREA

SHEET KEY



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CRESWIND DELAND
PHASE 2A, 2B, 3A & 3B

PERMIT LANDSCAPE PLAN

PREPARED FOR: KH CW DELAND LLC

DESCRIPTION	DATE
REVISED PER CITY COMMENTS	08/09/2023
REVIEW SUBMITTAL	02/20/2023
DESCRIPTION	DATE
1	

PROJECT NO:	KGA-CD-1031
FILE:	L-401
DESIGN BY:	RHENDRY
DRAWN BY:	RHENDRY

FLORIDA REGISTERED LANDSCAPE ARCHITECT

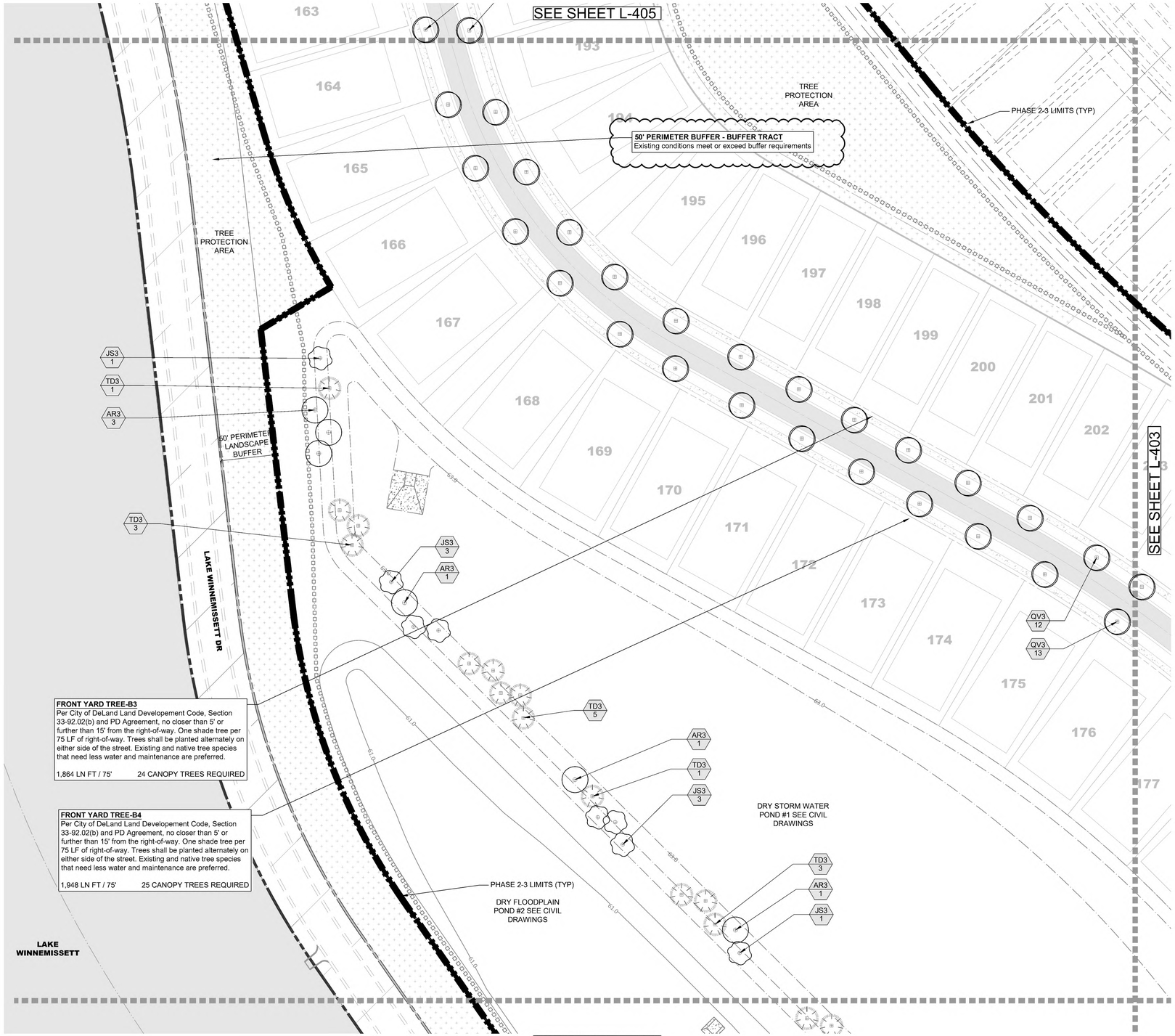
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PLANT SCHEDULE LANDSCAPE		
CANOPY TREE	CODE	COMMON NAME
	AR3	Red Maple
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	MG3	Southern Magnolia
	QV3	Southern Live Oak
	TD3	Bald Cypress
UNDERSTORY TREE	CODE	COMMON NAME
	IE3	Eagleston Holly
LITTORAL PLANTINGS	CODE	COMMON NAME
	LIT	Littoral Shelf
		TREE PROTECTION AREA

NOTES:
- TREE SPECIFICATIONS ON SHEET L-480
- PLANT SUBSTITUTIONS WILL NEED TO BE APPROVED BY CITY FORESTER
- PROVIDE FINAL AS-BUILTS TO CITY PRIOR TO LANDSCAPE INSPECTION

SILT FENCE
TREE BARRICADE
PHASE LINE
PROJECT BOUNDARY
FUTURE DEVELOPMENT
FUTURE AMENITY
PHASE ONE AREA
TREE PROTECTION AREA

SHEET KEY



ELEVATIONS BASED ON:
NORTH AMERICAN VERTICAL DATUM 1988 CONVERSION:
NAVD 88 TO NGVD 29 = +1.07

N

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GRAPHIC SCALE: 1" = 40'

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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

PERMIT LANDSCAPE PLAN

PREPARED FOR: KH CW DELAND LLC

-	06/09/2023	REVISED PER CITY COMMENTS
-	02/20/2023	REVIEW SUBMITTAL
	DATE	DESCRIPTION

PROJECT NO:	KGA-CD-1031
FILE:	L-401
DESIGN BY:	RHENDRY
DRAWN BY:	RHENDRY

FLORIDA REGISTERED LANDSCAPE ARCHITECT

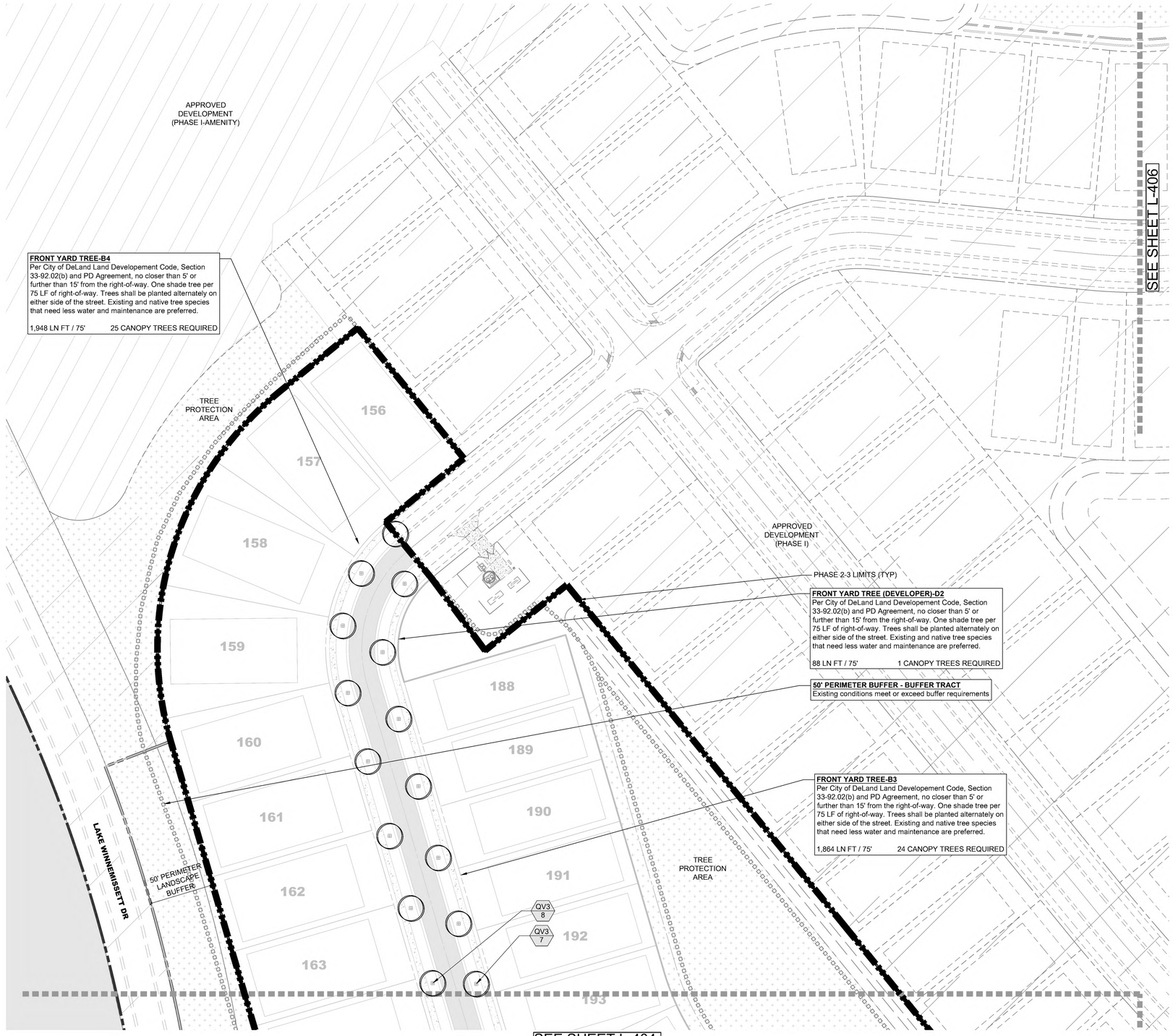
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KEVEN J STEELE
DATE:
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L-404

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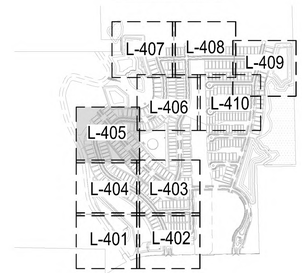
PLANT SCHEDULE LANDSCAPE

CANOPY TREE	CODE	COMMON NAME
	AR3	Red Maple
	JS3	Southern Red Cedar
	MG3	Southern Magnolia
	QV3	Southern Live Oak
	TD3	Bald Cypress
UNDERSTORY TREE	CODE	COMMON NAME
	IE3	Eagleston Holly
LITTORAL PLANTINGS	CODE	COMMON NAME
	LIT	Littoral Shelf
		TREE PROTECTION AREA

NOTES:
- TREE SPECIFICATIONS ON SHEET L-480
- PLANT SUBSTITUTIONS WILL NEED TO BE APPROVED BY CITY FORESTER
- PROVIDE FINAL AS-BUILTS TO CITY PRIOR TO LANDSCAPE INSPECTION

SILT FENCE
TREE BARRICADE
PHASE LINE
PROJECT BOUNDARY
FUTURE DEVELOPMENT
FUTURE AMENITY
PHASE ONE AREA
TREE PROTECTION AREA

SHEET KEY



ELEVATIONS BASED ON:
NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION:
NAVD 88 TO NGVD 29 = +1.07

N

0 40 80
GRAPHIC SCALE: 1" = 40'

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Fax: 813-464-7629
www.HeidtDesign.com

CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

PERMIT LANDSCAPE PLAN

PREPARED FOR: KH CW DELAND LLC

#	DESCRIPTION	DATE
1	REVISED PER CITY COMMENTS	06/09/2023
	REVIEW SUBMITTAL	02/20/2023
	DESCRIPTION	DATE

PROJECT NO: KGA-CD-1031
FILE: L-401
DESIGN BY: RHENDRY
DRAWN BY: RHENDRY

FLORIDA REGISTERED
LANDSCAPE ARCHITECT

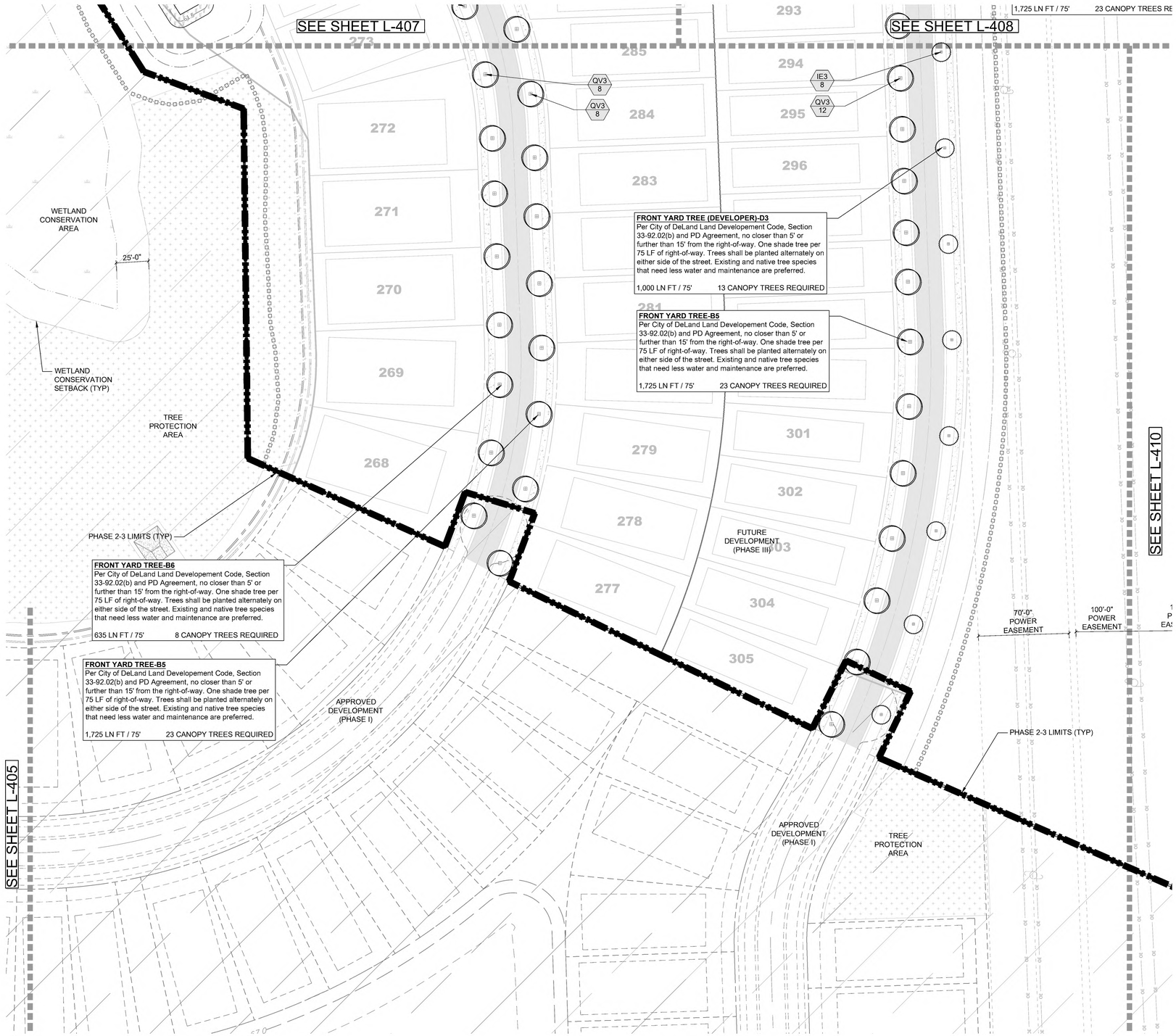
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KEVEN J STEELE
DATE:
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L-405

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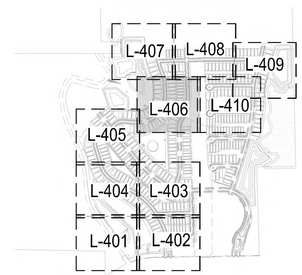
PLANT SCHEDULE LANDSCAPE

CANOPY TREE	CODE	COMMON NAME
	AR3	Red Maple
	JS3	Southern Red Cedar
	MG3	Southern Magnolia
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UNDERSTORY TREE	CODE	COMMON NAME
	IE3	Eagleston Holly
LITTORAL PLANTINGS	CODE	COMMON NAME
	LIT	Littoral Shelf
		TREE PROTECTION AREA

NOTES:
- TREE SPECIFICATIONS ON SHEET L-480
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SILT FENCE
TREE BARRICADE
PHASE LINE
PROJECT BOUNDARY
FUTURE DEVELOPMENT
FUTURE AMENITY
PHASE ONE AREA
TREE PROTECTION AREA

SHEET KEY



ELEVATIONS BASED ON:
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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

PERMIT LANDSCAPE PLAN

PREPARED FOR: KH CW DELAND LLC

NO.	DATE	DESCRIPTION
1	06/09/2023	REVISED PER CITY COMMENTS
	02/20/2023	REVIEW SUBMITTAL
	DATE	DESCRIPTION

PROJECT NO: KGA-CD-1031
FILE: L-401
DESIGN BY: RHENDRY
DRAWN BY: RHENDRY

FLORIDA REGISTERED LANDSCAPE ARCHITECT

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KEVEN J STEELE
DATE:
REGISTRATION NO.LA6667179

L-406

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PLANT SCHEDULE LANDSCAPE		
CANOPY TREE	CODE	COMMON NAME
	AR3	Red Maple
	JS3	Southern Red Cedar
	MG3	Southern Magnolia
	QV3	Southern Live Oak
	TD3	Bald Cypress
UNDERSTORY TREE	CODE	COMMON NAME
	IE3	Eagleston Holly
LITTORAL PLANTINGS	CODE	COMMON NAME
	LIT	Littoral Shelf
		TREE PROTECTION AREA

WET STORM WATER POND #3 SEE CIVIL DRAWINGS

TREE PROTECTION AREA

FRONT YARD TREE-B7
Per City of DeLand Land Developement Code, Section 33-92.02(b) and PD Agreement, no closer than 5' or further than 15' from the right-of-way. One shade tree per 75 LF of right-of-way. Trees shall be planted alternately on either side of the street. Existing and native tree species that need less water and maintenance are preferred.

602 LN FT / 75' 8 CANOPY TREES REQUIRED

PHASE 2-3 LIMITS (TYP)

FUTURE DEVELOPMENT (PHASE V)

LITTORAL SHELF PLANTINGS, SEE DETAIL ON SHEET L-480 (TYP)

LIT 14,972 sf

FRONT YARD TREE-B13
Per City of DeLand Land Developement Code, Section 33-92.02(b) and PD Agreement, no closer than 5' or further than 15' from the right-of-way. One shade tree per 75 LF of right-of-way. Trees shall be planted alternately on either side of the street. Existing and native tree species that need less water and maintenance are preferred.

164 LN FT / 75' 2 CANOPY TREES REQUIRED

FRONT YARD TREE-B5
Per City of DeLand Land Developement Code, Section 33-92.02(b) and PD Agreement, no closer than 5' or further than 15' from the right-of-way. One shade tree per 75 LF of right-of-way. Trees shall be planted alternately on either side of the street. Existing and native tree species that need less water and maintenance are preferred.

1,725 LN FT / 75' 23 CANOPY TREES REQUIRED

FRONT YARD TREE-B6
Per City of DeLand Land Developement Code, Section 33-92.02(b) and PD Agreement, no closer than 5' or further than 15' from the right-of-way. One shade tree per 75 LF of right-of-way. Trees shall be planted alternately on either side of the street. Existing and native tree species that need less water and maintenance are preferred.

635 LN FT / 75' 8 CANOPY TREES REQUIRED

SEE SHEET L-406

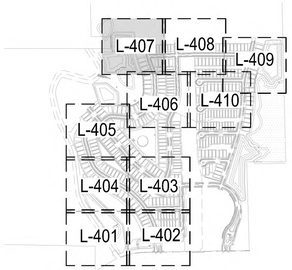
SEE SHEET L-408

QV3 3
MG3 4
MG3 5
QV3 3
QV3 7

NOTES:
- TREE SPECIFICATIONS ON SHEET L-480
- PLANT SUBSTITUTIONS WILL NEED TO BE APPROVED BY CITY FORESTER
- PROVIDE FINAL AS-BUILTS TO CITY PRIOR TO LANDSCAPE INSPECTION

SILT FENCE
TREE BARRICADE
PHASE LINE
PROJECT BOUNDARY
FUTURE DEVELOPMENT
FUTURE AMENITY
PHASE ONE AREA
TREE PROTECTION AREA

SHEET KEY



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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

PERMIT LANDSCAPE PLAN

PREPARED FOR: KH CW DELAND LLC

NO.	DATE	DESCRIPTION
1	06/09/2023	REVISED PER CITY COMMENTS
	02/20/2023	REVIEW SUBMITTAL
	DATE	DESCRIPTION

PROJECT NO:	KGA-CD-1031
FILE:	L-401
DESIGN BY:	RHENDRY
DRAWN BY:	RHENDRY

FLORIDA REGISTERED LANDSCAPE ARCHITECT

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2023-02-07 07:04

PLANT SCHEDULE LANDSCAPE		
CANOPY TREE	CODE	COMMON NAME
	AR3	Red Maple
	JS3	Southern Red Cedar
	MG3	Southern Magnolia
	QV3	Southern Live Oak
	TD3	Bald Cypress
UNDERSTORY TREE	CODE	COMMON NAME
	IE3	Eagleston Holly
LITTORAL PLANTINGS	CODE	COMMON NAME
	LIT	Littoral Shelf
		TREE PROTECTION AREA

FRONT YARD TREE-B7
Per City of DeLand Land Developement Code, Section 33-92.02(b) and PD Agreement, no closer than 5' or further than 15' from the right-of-way. One shade tree per 75 LF of right-of-way. Trees shall be planted alternately on either side of the street. Existing and native tree species that need less water and maintenance are preferred.

602 LN FT / 75' 8 CANOPY TREES REQUIRED

FRONT YARD TREE (DEVELOPER)-D5
Per City of DeLand Land Developement Code, Section 33-92.02(b) and PD Agreement, no closer than 5' or further than 15' from the right-of-way. One shade tree per 75 LF of right-of-way. Trees shall be planted alternately on either side of the street. Existing and native tree species that need less water and maintenance are preferred.

349 LN FT / 75' 4 CANOPY TREES REQUIRED

FRONT YARD TREE-B9
Per City of DeLand Land Developement Code, Section 33-92.02(b) and PD Agreement, no closer than 5' or further than 15' from the right-of-way. One shade tree per 75 LF of right-of-way. Trees shall be planted alternately on either side of the street. Existing and native tree species that need less water and maintenance are preferred.

749 LN FT / 75' 9 CANOPY TREES REQUIRED

FRONT YARD TREE-B10
Per City of DeLand Land Developement Code, Section 33-92.02(b) and PD Agreement, no closer than 5' or further than 15' from the right-of-way. One shade tree per 75 LF of right-of-way. Trees shall be planted alternately on either side of the street. Existing and native tree species that need less water and maintenance are preferred.

705 LN FT / 75' 9 CANOPY TREES REQUIRED

FRONT YARD TREE (DEVELOPER)-D3
Per City of DeLand Land Developement Code, Section 33-92.02(b) and PD Agreement, no closer than 5' or further than 15' from the right-of-way. One shade tree per 75 LF of right-of-way. Trees shall be planted alternately on either side of the street. Existing and native tree species that need less water and maintenance are preferred.

1,000 LN FT / 75' 13 CANOPY TREES REQUIRED

FRONT YARD TREE-B5
Per City of DeLand Land Developement Code, Section 33-92.02(b) and PD Agreement, no closer than 5' or further than 15' from the right-of-way. One shade tree per 75 LF of right-of-way. Trees shall be planted alternately on either side of the street. Existing and native tree species that need less water and maintenance are preferred.

1,725 LN FT / 75' 23 CANOPY TREES REQUIRED

FUTURE DEVELOPMENT (PHASE IV)

PHASE 2-3 LIMITS (TYP)

TREE PROTECTION AREA

70'-0" POWER EASEMENT

100'-0" POWER EASEMENT

30'-0" GAS EASEMENT

SEE SHEET L-407

SEE SHEET L-409

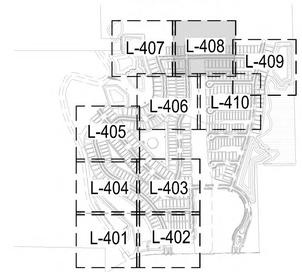
SEE SHEET L-406

SEE SHEET L-410

NOTES:
- TREE SPECIFICATIONS ON SHEET L-480
- PLANT SUBSTITUTIONS WILL NEED TO BE APPROVED BY CITY FORESTER
- PROVIDE FINAL AS-BUILTS TO CITY PRIOR TO LANDSCAPE INSPECTION

SILT FENCE
TREE BARRICADE
PHASE LINE
PROJECT BOUNDARY
FUTURE DEVELOPMENT
FUTURE AMENITY
PHASE ONE AREA
TREE PROTECTION AREA

SHEET KEY



ELEVATIONS BASED ON:
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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

PERMIT LANDSCAPE PLAN

PREPARED FOR: KH CW DELAND LLC

NO.	DATE	DESCRIPTION
1	06/09/2023	REVISED PER CITY COMMENTS
	02/20/2023	REVIEW SUBMITTAL
	DATE	DESCRIPTION

PROJECT NO: KGA-CD-1031
FILE: L-401
DESIGN BY: RHENDRY
DRAWN BY: RHENDRY

FLORIDA REGISTERED LANDSCAPE ARCHITECT

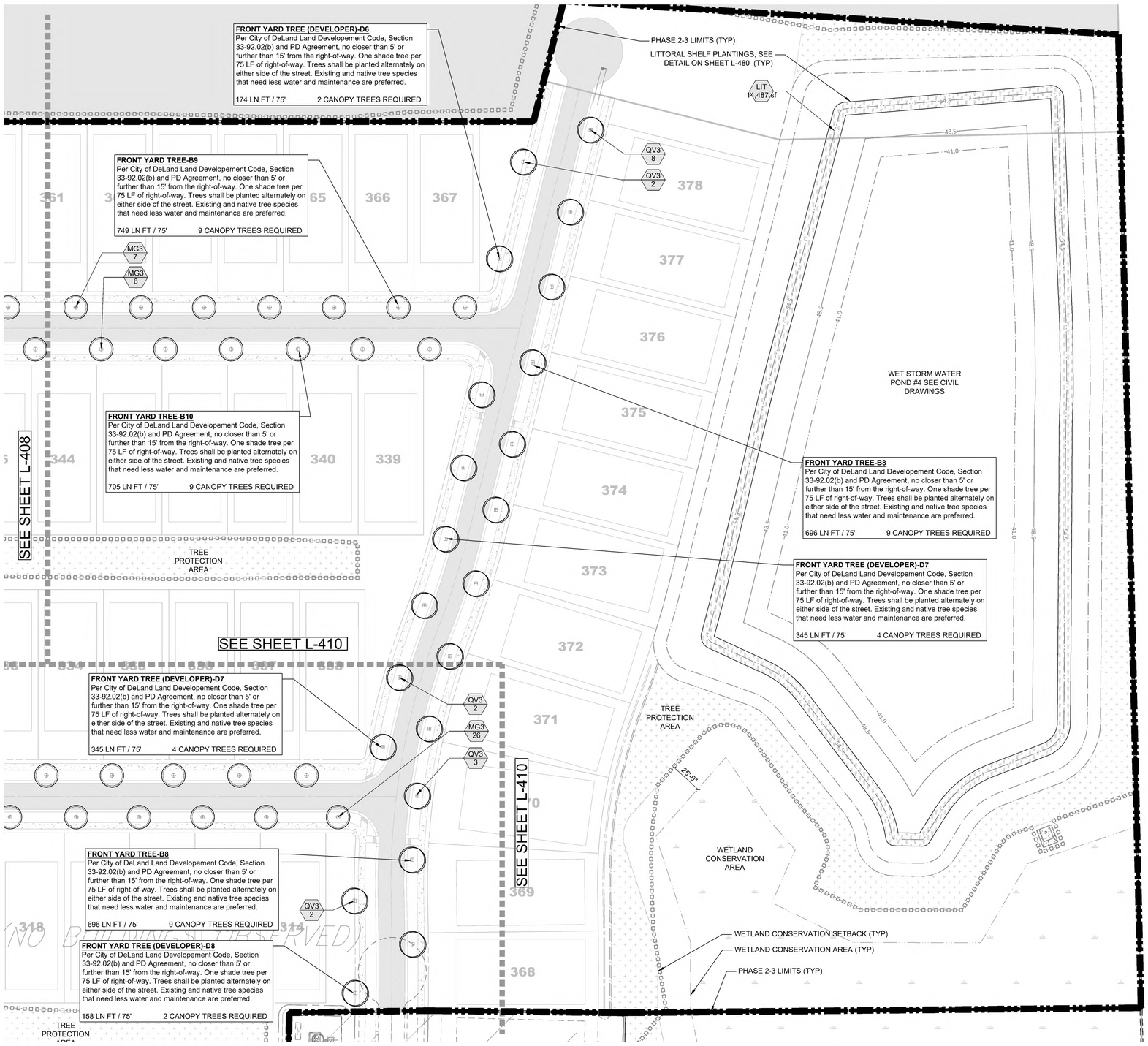
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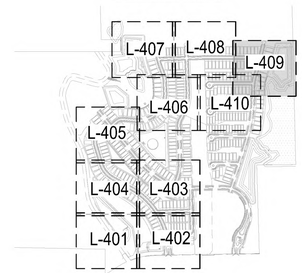
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PLANT SCHEDULE LANDSCAPE		
CANOPY TREE	CODE	COMMON NAME
	AR3	Red Maple
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	TD3	Bald Cypress
UNDERSTORY TREE	CODE	COMMON NAME
	IE3	Eagleston Holly
LITTORAL PLANTINGS	CODE	COMMON NAME
	LIT	Littoral Shelf
		TREE PROTECTION AREA

NOTES:
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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

PERMIT LANDSCAPE PLAN

PREPARED FOR: KH CW DELAND LLC

-	06/09/2023	REVISED PER CITY COMMENTS
-	02/20/2023	REVIEW SUBMITTAL
	DATE	DESCRIPTION

PROJECT NO:	KGA-CD-1031
FILE:	L-401
DESIGN BY:	RHENDRY
DRAWN BY:	RHENDRY

FLORIDA REGISTERED LANDSCAPE ARCHITECT

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KEVEN J STEELE
DATE:
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L-409

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SEE SHEET L-408

SEE SHEET L-409

SEE SHEET L-406

SEE SHEET L-409

FRONT YARD TREE (DEVELOPER)-D7
Per City of DeLand Land Developement Code, Section 33-92.02(b) and PD Agreement, no closer than 5' or further than 15' from the right-of-way. One shade tree per 75 LF of right-of-way. Trees shall be planted alternately on either side of the street. Existing and native tree species that need less water and maintenance are preferred.

345 LN FT / 75' 4 CANOPY TREES REQUIRED

FRONT YARD TREE-B11
Per City of DeLand Land Developement Code, Section 33-92.02(b) and PD Agreement, no closer than 5' or further than 15' from the right-of-way. One shade tree per 75 LF of right-of-way. Trees shall be planted alternately on either side of the street. Existing and native tree species that need less water and maintenance are preferred.

1,338 LN FT / 75' 17 CANOPY TREES REQUIRED

FRONT YARD TREE-B8
Per City of DeLand Land Developement Code, Section 33-92.02(b) and PD Agreement, no closer than 5' or further than 15' from the right-of-way. One shade tree per 75 LF of right-of-way. Trees shall be planted alternately on either side of the street. Existing and native tree species that need less water and maintenance are preferred.

696 LN FT / 75' 9 CANOPY TREES REQUIRED

FRONT YARD TREE (DEVELOPER)-D8
Per City of DeLand Land Developement Code, Section 33-92.02(b) and PD Agreement, no closer than 5' or further than 15' from the right-of-way. One shade tree per 75 LF of right-of-way. Trees shall be planted alternately on either side of the street. Existing and native tree species that need less water and maintenance are preferred.

158 LN FT / 75' 2 CANOPY TREES REQUIRED

FRONT YARD TREE-B12
Per City of DeLand Land Developement Code, Section 33-92.02(b) and PD Agreement, no closer than 5' or further than 15' from the right-of-way. One shade tree per 75 LF of right-of-way. Trees shall be planted alternately on either side of the street. Existing and native tree species that need less water and maintenance are preferred.

1,238 LN FT / 75' 16 CANOPY TREES REQUIRED

FRONT YARD TREE-D9
Per City of DeLand Land Developement Code, Section 33-92.02(b) and PD Agreement, no closer than 5' or further than 15' from the right-of-way. One shade tree per 75 LF of right-of-way. Trees shall be planted alternately on either side of the street. Existing and native tree species that need less water and maintenance are preferred.

23 LN FT / 75' 1 CANOPY TREES REQUIRED

QV3 2
MG3 26
QV3 3
QV3 2
MG3 30

TREE PROTECTION AREA

APPROVED DEVELOPMENT (PHASE I)

APPROVED DEVELOPMENT (PHASE I)

PHASE 2-3 LIMITS (TYP)

100'-0" POWER EASEMENT

100'-0" POWER EASEMENT

30'-0" GAS EASEMEN

322 323 325 324 318 314 368 253 254 255 256 257 258 259 260 261 262 267 249 248 247 246 245 244 243 242 241 240 239 252 251 250

(NO BUILDING RESERVED)

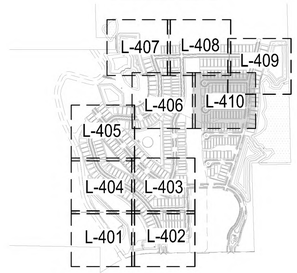
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PLANT SCHEDULE LANDSCAPE		
CANOPY TREE	CODE	COMMON NAME
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	MG3	Southern Magnolia
	QV3	Southern Live Oak
	TD3	Bald Cypress
UNDERSTORY TREE	CODE	COMMON NAME
	IE3	Eagleston Holly
LITTORAL PLANTINGS	CODE	COMMON NAME
	LIT	Littoral Shelf
		TREE PROTECTION AREA

NOTES:
- TREE SPECIFICATIONS ON SHEET L-480
- PLANT SUBSTITUTIONS WILL NEED TO BE APPROVED BY CITY FORESTER
- PROVIDE FINAL AS-BUILTS TO CITY PRIOR TO LANDSCAPE INSPECTION

SILT FENCE
TREE BARRICADE
PHASE LINE
PROJECT BOUNDARY
FUTURE DEVELOPMENT
FUTURE AMENITY
PHASE ONE AREA
TREE PROTECTION AREA

SHEET KEY



ELEVATIONS BASED ON:
NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION:
NAVD 88 TO NGVD 29 = +1.07

N

0 40 80
GRAPHIC SCALE: 1" = 40'

HEIDT DESIGN
Civil Engineering • Planning & GIS
Environmental Services
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Engineering Business Certificate of Authorization No. 28762
Landscape Architecture Certificate of Authorization No. LC26000405
5904-A Hampton Oaks Pkwy.
Tampa, Florida 33610
Office: 813-253-5311
Fax: 813-464-7629
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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

PERMIT LANDSCAPE PLAN

PREPARED FOR: KH CW DELAND LLC

NO.	DESCRIPTION	DATE
-	REVISED PER CITY COMMENTS	06/09/2023
-	REVIEW SUBMITTAL	02/20/2023

PROJECT NO:	KGA-CD-1031
FILE:	L-401
DESIGN BY:	RHENDRY
DRAWN BY:	RHENDRY

FLORIDA REGISTERED LANDSCAPE ARCHITECT

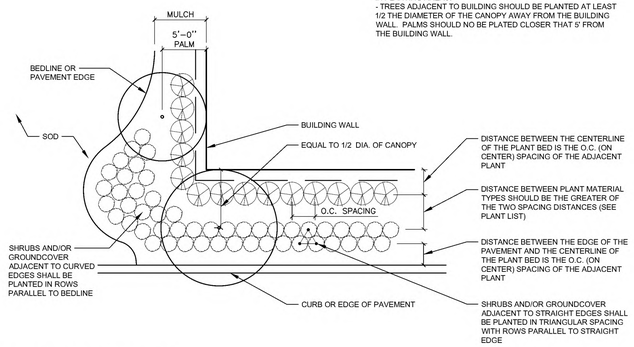
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KEVEN J STEELE
DATE:
REGISTRATION NO.LA6667179

L-410

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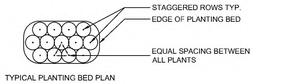


NOTE:
- CENTER TO CENTER SPACING (O.C.) VARIES FOR DIFFERENT PLANT SPECIES. SPACE EACH VARIETY OF THE PLANT EQUALLY IN PLANTING AREAS.
- TREES ADJACENT TO BUILDING SHOULD BE PLANTED AT LEAST 1/2 THE DIAMETER OF THE CANOPY AWAY FROM THE BUILDING WALL. PALMS SHOULD NO BE PLATED CLOSER THAT 5' FROM THE BUILDING WALL.

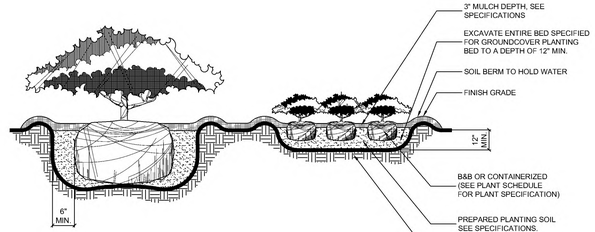
1 SPACING DETAIL

N.T.S.
DETAIL–REFERENCES

NOTES:
1. THE CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.
2. IN SEMI-IMPERVIOUS SOIL CONDITIONS, ROOTBALL ELEVATION SHALL BE 2"-4" ABOVE FINISH GRADE. COORDINATE WITH LANDSCAPE ARCHITECT PRIOR TO SETTING ROOTBALL ELEVATIONS.
3. SOAK EACH PLANT ROOTBALL AND PIT IMMEDIATELY AFTER INSTALLATION. REPEAT AS NEEDED TO ENSURE OPTIMUM COMPACTION AND SUFFICIENT WATERING OF PLANT MATERIALS.

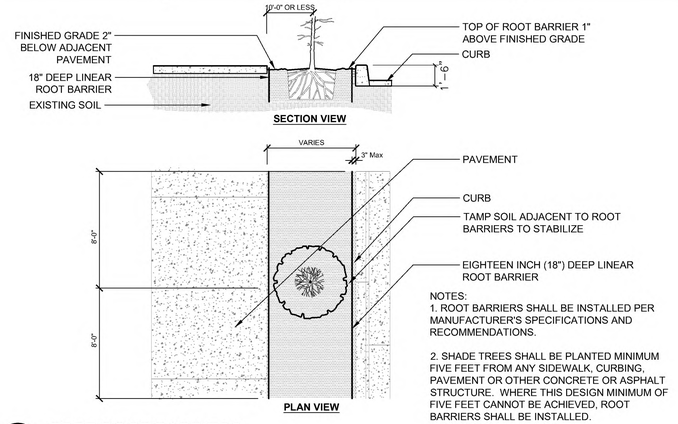


TYPICAL PLANTING BED PLAN



2 SHRUB AND GROUNDCOVER DETAIL

N.T.S.
DETAIL–REFERENCES

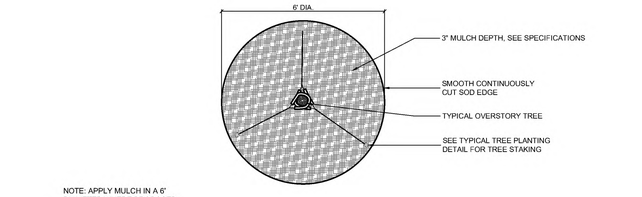


NOTES:
1. ROOT BARRIERS SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.

2. SHADE TREES SHALL BE PLANTED MINIMUM FIVE FEET FROM ANY SIDEWALK, CURBING, PAVEMENT OR OTHER CONCRETE OR ASPHALT STRUCTURE. WHERE THIS DESIGN MINIMUM OF FIVE FEET CANNOT BE ACHIEVED, ROOT BARRIERS SHALL BE INSTALLED.

3 TREE ROOT BARRIERS

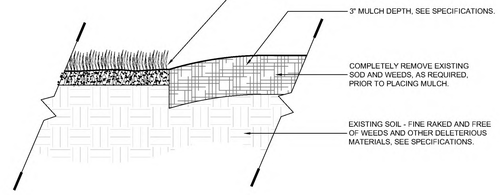
N.T.S.



NOTE: APPLY MULCH IN A 6' DIAMETER WHERE PROPOSED TREE PLANTINGS OCCUR IN SOD.

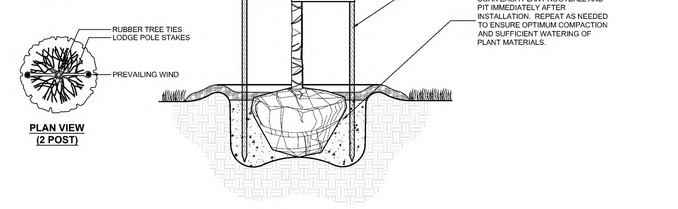
4 TREE MULCH RING IN SOD AREAS

N.T.S.
DETAIL–REFERENCES



5 MULCH EDGE DETAIL

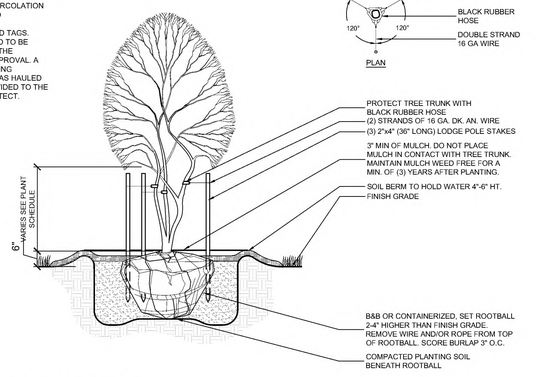
N.T.S.
DETAIL–REFERENCES



6 TREE STAKING - ALTERNATIVE

N.T.S.
DETAIL–REFERENCES

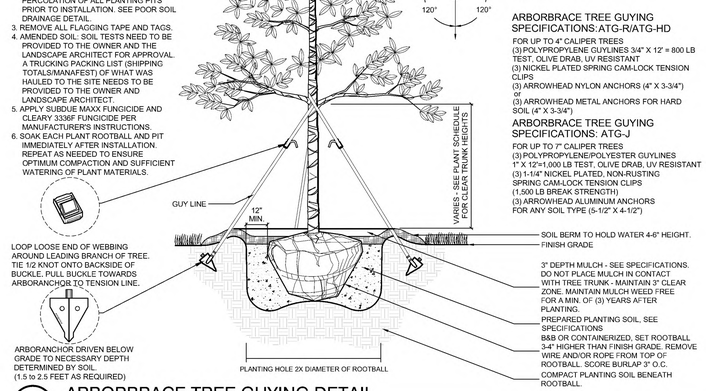
NOTES:
1. FINAL TREE LOCATION TO BE APPROVED BY OWNER.
2. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.
3. REMOVE ALL FLAGGING TAPE AND TAGS.
4. AMENDED SOIL: SOIL TESTS NEED TO BE PROVIDED TO THE OWNER AND THE LANDSCAPE ARCHITECT FOR APPROVAL. A TRUCKING PACKING LIST (SHIPPING TOTALS/MANAFEST) OF WHAT WAS HAULED TO THE SITE NEEDS TO BE PROVIDED TO THE OWNER AND LANDSCAPE ARCHITECT.



7 MULTI-TRUNK TREE DETAIL

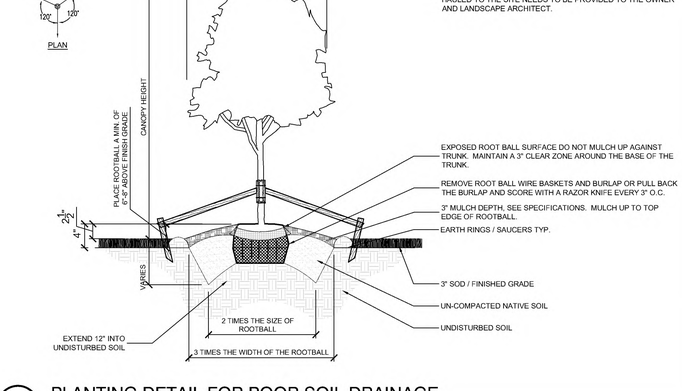
N.T.S.
DETAIL–REFERENCES
REFNOTE

NOTES:
1. FINAL TREE LOCATION TO BE APPROVED BY OWNER.
2. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION. SEE POOR SOIL DRAINAGE DETAIL.
3. REMOVE ALL FLAGGING TAPE AND TAGS.
4. AMENDED SOIL: SOIL TESTS NEED TO BE PROVIDED TO THE OWNER AND THE LANDSCAPE ARCHITECT FOR APPROVAL. A TRUCKING PACKING LIST (SHIPPING TOTALS/MANAFEST) OF WHAT WAS HAULED TO THE SITE NEEDS TO BE PROVIDED TO THE OWNER AND LANDSCAPE ARCHITECT.
5. APPLY SUBDUE MAXX FUNGICIDE AND CLEARY 3336F FUNGICIDE PER MANUFACTURER'S INSTRUCTIONS.
6. SOAK EACH PLANT ROOTBALL AND PIT IMMEDIATELY AFTER INSTALLATION. REPEAT AS NEEDED TO ENSURE OPTIMUM COMPACTION AND SUFFICIENT WATERING OF PLANT MATERIALS.



8 ARBORBRACE TREE GUYING DETAIL

N.T.S.
DETAIL–REFERENCES



9 PLANTING DETAIL FOR POOR SOIL DRAINAGE

N.T.S.
DETAIL–REFERENCES
REFNOTE

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CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

PERMIT LANDSCAPE DETAILS

PREPARED FOR: KH CW DELAND LLC

DATE	DESCRIPTION
02/20/2023	REVIEW SUBMITTAL

PROJECT NO:	KGA-CD-1031
FILE:	L-470
DESIGN BY:	RHENDRY
DRAWN BY:	RHENDRY

FLORIDA REGISTERED LANDSCAPE ARCHITECT

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KEVEN J STEELE
DATE:
REGISTRATION NO.LA6667179

L-470

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PLANT SCHEDULE LANDSCAPE

CANOPY TREE	CODE	QTY	COMMON NAME	BOTANICAL NAME	CONT	CAL	SIZE	NATIVE	DROUGHT		REMARKS
	AR3	11	Red Maple	Acer rubrum	45 G	2"DBH	8` HT x 54" SPR	Yes	Yes		Florida Grade #1, straight central leader with even branching
	JS3	21	Southern Red Cedar	Juniperus silicicola	65 G	2"DBH	8` HT x 28" SPR	Yes	Yes		Florida Grade #1, straight central leader with even branching
	MG3	143	Southern Magnolia	Magnolia grandiflora	45 G	2"DBH	8` HT x 54" SPR	Yes	Yes		Florida Grade #1, straight central leader with even branching, full to ground
	QV3	133	Southern Live Oak	Quercus virginiana	45 G	2"DBH	8` HT x 54" SPR	Yes	Yes		Florida Grade #1, straight central leader with even branching
	TD3	26	Bald Cypress	Taxodium distichum	65 G	2"DBH	12`-14` HT x 4`-6` SPR	Yes	Yes		Florida Grade #1, straight central leader with even branching
UNDERSTORY TREE	CODE	QTY	COMMON NAME	BOTANICAL NAME	CONT	CAL	SIZE	NATIVE	DROUGHT		REMARKS
	IE3	29	Eagleston Holly	Ilex x attenuata `Eagleston`	45 G	2"DBH	8` HT x 28" SPR	No	Yes		Florida Grade #1, straight central leader with even branching, full to ground
LITTORAL PLANTINGS	CODE	QTY	COMMON NAME	BOTANICAL NAME	CONT	SIZE	NATIVE	DROUGHT		SPACING	
	LIT	29,459 sf	Littoral Shelf	Littoral Shelf	SEE DETAIL						

LITTORAL SHELF AREA NOTE:
- All Littoral shelf areas must have a minimum ten (10) square feet per linear foot of shoreline.
- Littoral zones shall extend a minimum of 2.5 vertical feet below the control water line and include an upland transitional planting zone 2.5 vertical feet below control water line and include and upland transitional planting zone 2.5 vertical feet above the control water line.
- Littoral plantings including upland transition zones shall be wetland-friendly and native species.

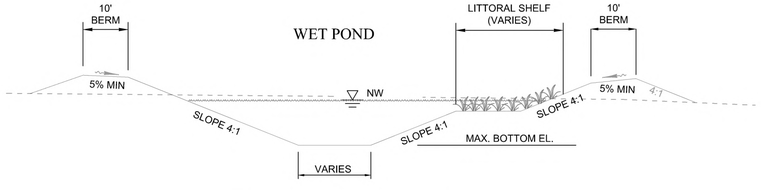
Littoral Planting Schedule

Pond #5

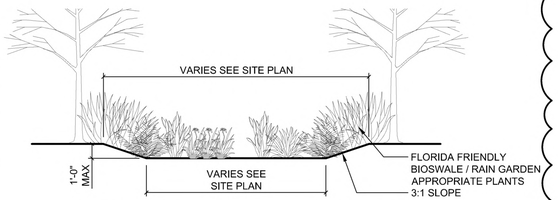
Quantity	SqFt	Percentage	Shelf Zone	Common	Botanical	Cont.	Spacing	Remarks
704	5,634	12.5%	Transitional	Sand Cordgrass	Spartina bakeri	Bare Root or 4" Pot	36" o.c.	Full form and spread
704	5,634	12.5%	Transitional	St. John's Wort	Hypericum spp.	Bare Root or 4" Pot	36" o.c.	Full form and spread
704	5,634	12.5%	Shallow	Blue Flag Iris	Iris virginica	Bare Root or 4" Pot	36" o.c.	Full form and spread
704	5,634	12.5%	Shallow	Golden Canna	Canna flaccida	Bare Root or 4" Pot	36" o.c.	Full form and spread
704	5,634	12.5%	Mid	Pickerelweed	Pontederia cordata	Bare Root or 4" Pot	36" o.c.	Full form and spread
704	5,634	12.5%	Mid	Arrowhead	Sagitarria lancifolia	Bare Root or 4" Pot	36" o.c.	Full form and spread
704	5,634	12.5%	Deep	Soft Bulrush	Scirpus validus	Bare Root or 4" Pot	36" o.c.	Full form and spread
704	5,634	12.5%	Deep	Fragrant White Lily	Nymphaea oderata	Bare Root or 4" Pot	36" o.c.	Full form and spread
Total	**45,072**	**100%**						

Pond #6

Quantity	SqFt	Percentage	Shelf Zone	Common	Botanical	Cont.	Spacing	Remarks
265	2,118	12.5%	Transitional	Sand Cordgrass	Spartina bakeri	Bare Root or 4" Pot	36" o.c.	Full form and spread
265	2,118	12.5%	Transitional	St. John's Wort	Hypericum spp.	Bare Root or 4" Pot	36" o.c.	Full form and spread
265	2,118	12.5%	Shallow	Blue Flag Iris	Iris virginica	Bare Root or 4" Pot	36" o.c.	Full form and spread
265	2,118	12.5%	Shallow	Golden Canna	Canna flaccida	Bare Root or 4" Pot	36" o.c.	Full form and spread
265	2,118	12.5%	Mid	Pickerelweed	Pontederia cordata	Bare Root or 4" Pot	36" o.c.	Full form and spread
265	2,118	12.5%	Mid	Arrowhead	Sagitarria lancifolia	Bare Root or 4" Pot	36" o.c.	Full form and spread
265	2,118	12.5%	Deep	Soft Bulrush	Scirpus validus	Bare Root or 4" Pot	36" o.c.	Full form and spread
265	2,118	12.5%	Deep	Fragrant White Lily	Nymphaea oderata	Bare Root or 4" Pot	36" o.c.	Full form and spread
Total	**16,942**	**100%**						



LITTORAL SHELF SECTION DETAIL

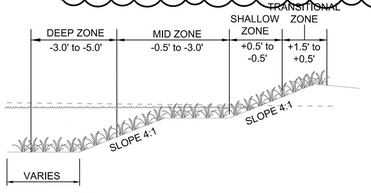


BIOSWALE/RAIN GARDEN SECTION DETAIL

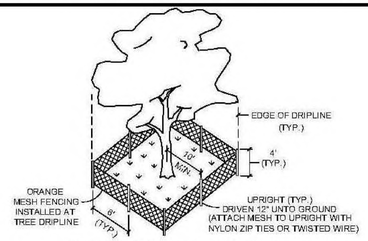
Bioswale/Rain Garden Suggested Planting List

	Common Name	Botanical Name
Flowers	African Iris	Dietes iridioides
	Blue flag Iris	Iris virginica
	Canna Lily	Canna spp.
	Goldenrod	Solidago spp.
	Milkweed	Asclepias spp.
	Shrimp Plant	Justicia brandegeana
	Swamp sunflower	Helianthus angustifolius
Grasses &Shrubs	Florida Gamma Grass	Tripsacum floridana
	Muhly Grass	Muhlenbergia capillaries
	Wiregrass	Aristida stricta var. beyrichiana
	Virginia willow	Itea virginica
Ground Covers	Holly Fern	Cyrtomium falcatum
	Periwinkle	Vinca major
	St. Bernard's Lily	Anthericum sanderii

*For more information and plant suggestions please see UF IFAS Extensions.



LITTORAL SHELF PLANTING ZONE DETAIL



TYP. CITY TREE BARRICADE DETAIL

N.T.S.

TREE BARRICADES ARE REQUIRED AROUND ALL TREES WHICH HAVE BEEN DESIGNATED ON THE SITE PLAN TO BE RETAINED AND PROTECTED. PRIOR TO ANY CLEARING OR CONSTRUCTION ACTIVITY OCCURRING ON THE SITE, TREE BARRICADES SHALL BE CONSTRUCTED BY THE CONTRACTOR AND APPROVED BY THE CITY. TREE BARRICADES SHALL BE PLACED AT THE EDGE OF THE DRIPLINE OR A MINIMUM OF 10' FROM THE TRUNK OF THE TREE, WHICH EVER IS GREATER.

FOR THE BARRIER THE CITY RECOMMENDS SAFETY BARRICADE FENCING.

NOTE: EXISTING TREES IN LANDSCAPE BUFFER SHALL ALSO BE PROTECTED.

DATE: JANUARY 31, 2023	TREE BARRICADE DETAIL	M112
	City of DeLand - Standard Details	

List of Approved Tree Replacement Species

Common Name	Scientific Name
Basswood, Florida (c)	*Tilia americana var. caroliniana* N
Bottlebrush, Upright (u)	*Callistemon rigidus* D
Cedar, Eastern Red (c)	*Juniperus virginiana* D, N
Cedar, Southern Red (c)	*Juniperus silicicola* D, N
Chaste Tree (u)	*Vitex trifolia*
Cherry, Black (c)	*Prunus serotina* D, N
Cherry Laurel (u)	*Prunus caroliniana* D, N
Chickasaw Plum (u)	*Prunus angustifolia* D, N
Citrus (u)	*Citrus spp.*
Crape Myrtle (u)	*Lagerstroemia Indica* D
Cypress, Bald (c)	*Taxodium distichum* D, N
Devilwood (u)	*Osmanthus americanus* N
Dogwood (u)	*Cornus florida* N
Elm, Weeping (u)	*Ulmus parvifolia* D
Elm, Winged (c)	*Ulmus alata* D, N
Fringe Tree (u)	*Chionanthus virginicus* N
Hawthorn (u)	*Crataegus spp.* D
Holly, American (c)	*Ilex opaca* D, N
Holly, Dahoon (u)	*Ilex cassine* D, N
Holly, Possumhaw (u)	*Ilex decidua* D, N
Holly, Yaupon (u)	*Ilex vomitoria* D, N
Japanese Blueberry (c)	*Elaeocarpus decipiens* D
Ligustrum (u)	*Ligustrum lucidum*
Loblolly Bay (u/c)	*Gordonia lasianthus* N
Loquat (u)	*Eriobotrya japonica*
Magnolia, Saucer (u)	*Magnolia x soulangiana*
Magnolia, Southern (c)	*Magnolia grandiflora* N
Magnolia, Sweetbay (c)	*Magnolia virginiana*
Maple, Florida Red (c)	*Acer rubrum*
Mulberry, Red (c)	*Morus rubra* N
Oak, Live (c)	*Quercus virginiana* D, N
Oak, Sand Live (c)	*Quercus virginiana var. geminata* N
Oak, Shumard (c)	*Quercus shumardii* D, N
Oak, Turkey (c)	*Quercus laevis* N
Olive (u)	*Olea europaea*
Palm Cabbage (c)	*Sabal palmetto* D, N
Palm, Mule (c)	*X Butiagrus nabonnandii*
Palm, Windmill (u)	*Trachycarpus fortunei* D
Pecan (c)	*Carya illinoiensis* D, N
Persimmon (c)	*Diospyros virginiana* D, N
Persimmon, Oriental (u)	*Diospyros kaki*
Pine, Loblolly (c)	*Pinus taeda* N
Pine, Longleaf (c)	*Pinus palustris* D, N
Pine Slash (c)	*Pinus elliottii* D, N
Podocarpus (u)	*Podocarpus macrophyllus* D
Podocarpus, Nagi (u)	*Podocarpus nagi* D
Redbud (u)	*Cercis canadensis* D, N
Sweetgum (c)	*Liquidambar styraciflua* N
Sycamore (c)	*Platanus occidentalis* D, N
Tulip Tree (c)	*Liriodendron tulipifera* N

Table Inset

u	-	Understory tree (mature height - 25 feet or less)
c	-	Canopy tree (mature height - 25 feet or more)
u/c	-	Depending upon environment, can be either understory or canopy
D	-	Drought Tolerant
N	-	Native

Ord. No. 2004-39, § 9; 10-18-04; Ord. No. 2008-08, Addem. A, 4-7-08)

Last Updated 11/3/2022

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CRESWIND DELAND
PHASE 2A, 2B, 3A & 3B

PERMIT LANDSCAPE SCHEDULE

PREPARED FOR: KH CW DELAND LLC

NO.	DATE	DESCRIPTION
1	08/09/2023	REVISED PER CITY COMMENTS
	02/20/2023	REVIEW SUBMITTAL

PROJECT NO: KGA-CD-1031
FILE: L-480
DESIGN BY: RHENDRY
DRAWN BY: RHENDRY

FLORIDA REGISTERED LANDSCAPE ARCHITECT

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KEVEN J STEELE
DATE:
REGISTRATION NO.LA6667179

L-480

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GENERAL LANDSCAPE SPECIFICATIONS AND NOTES

1) SCOPE OF WORK

a) The work consists of: furnishing all labor, materials, equipment, tools, transportation, and any other appurtenances necessary for the completion of this project as shown on the drawings, as included in the plant list, and as herein specified.

b) Work shall include maintenance and watering of all contract planting areas until certification of acceptability by the owner.

2) PROTECTION OF EXISTING STRUCTURES

a) All existing buildings, walks, walls, paving, piping, other site construction items, and planting already completed or established shall be protected from damage by the contractor unless otherwise specified. All damage resulting from negligence shall be repaired or replaced to the satisfaction of the owner, at no cost to the owner.

3) PROTECTION OF EXISTING PLANT MATERIALS OUTSIDE LIMIT OF WORK

a) The contractor shall be responsible for all unauthorized cutting or damage to trees and shrubs existing or otherwise, caused by careless equipment operation, material stockpiling, etc. This shall include compaction by driving or parking inside the drip-line and spilling oil, gasoline, or other deleterious materials within the drip-line. No materials shall be burned where heat will damage any plant. Existing trees killed or damaged so that they are misshapen and/ or unsightly shall be replaced at municipality standards/requirements toward tree replacement.

4) MATERIALS

a) Material samples listed below shall be submitted for approval, on the site or as otherwise determined by the owner or owner's representative. Upon samples' approval, delivery of materials may commence.

b) Material Sample Size

i) Mulch	One (1) Cubic Foot
ii) Topsoil Mix	One (1) Cubic Foot (including existing soils report)
iii) Plants	One (1) of each variety (or tagged in nursery)

c) Plant Materials

i) Plant species and size shall conform to those indicated on the drawings. Nomenclature shall conform to standardized plant names, 1942 edition. All nursery material shall be in accordance with grades and standards for nursery plants, latest edition, published by the Florida Department of Agriculture and Consumer Services. All plants shall be Florida Grade No. 1 or better as determined by the Florida Division of Plant Industry. All plants shall be healthy, vigorous, sound, well-branched, and free of disease and insects, insect eggs and larvae and shall have adequate root systems. Trees for planting in rows shall be uniform in size and shape. All materials shall be subject to approval by the owner or owner's representative. Where any requirements are omitted from the plant list, the plants furnished shall be normal for the variety. Plants shall be pruned prior to delivery only with approval from owner or owner's representative. No substitutions shall be made without written permission from the owner's representative. All substitutions must be approved prior to purchasing. Unauthorized substitutions may require replacement at the contractor's expense.

ii) The height and/or width of trees shall be measured from the ground or across the normal spread of branches with the plants in their normal position. This measurement shall not include the immediate terminal growth. Plants larger in size than those specified in the plant list may be used if approved by the owner or owner's representative. If the use of larger plants is approved, the ball of earth or spread of roots shall be increased in proportion to the size of the plant.

iii) Plants shall be subject to inspection and approval at the place of growth, or upon delivery to the site, as determined by the owner, for quality, size, and variety; such approval shall not impair the right of inspection and rejection at the site during progress of the work or after completion for size and condition of root balls or roots, latent defects or injuries. Rejected plants shall be removed immediately from the site. Notice requesting inspection shall be submitted in writing by the contractor at least one (1) week prior to anticipated date.

5) SOIL MIXTURE (PLANTING MEDIUM, PLANTING MIX, TOPSOIL MIX)

a) Soil mixture (planting medium for all plant pits) shall consist of two parts of topsoil/compost and one part sand, as described below. Soil mixture shall be based on the soil test recommendation provided by the contractor.

b) Topsoil for use in preparing soil mixture for backfilling plant pits shall be fertile, friable, and of a loamy character; reasonably free of subsoil, clay lumps, brush weeds and other litter; free of roots, stumps, stones larger than 2" in any direction, and other extraneous or toxic matter harmful to plant growth. It shall contain three (3) to five (5) percent decomposed organic matter and a PH between 5.5 and 7.0 - submit sample and PH testing results for approval.

c) Sand shall be coarse, clean, well-draining, native sand. Contractor shall submit results of soil tests for topsoil and sand proposed for use under this contract for approval by the owner or owner's representative. Contractor is responsible for evaluating the on site soils ability to drain and provide their findings and recommendation to the owner's representative.

d) All plantings to be planted with the appropriate topsoil, additives, and fertilizer mixtures. The use of on site soil only is not permitted.

e) Contractor to submit samples of topsoil mixture and soil report for owner's representative approval prior to plant installation operations commence.

6) WATER/IRRIGATION

a) Water necessary for planting and maintenance shall be of satisfactory quality to sustain an adequate plant growth and shall not contain harmful, natural or man-made elements detrimental to plants. Water meeting the above standard shall be obtained on the site from the owner, if available, and the contractor shall be responsible to make arrangements for its use by his tanks, hoses, sprinklers, etc. If such water is not available at the site, the contractor shall provide satisfactory water from sources off the site at no additional cost to the owner.

b) All proposed plantings shall be watered with a fully automatic underground irrigation system designed to provide one-hundred percent (100%) coverage.

c) Spray heads shall be set three inches (3") from curb or edge of pavement. Rotors shall be set six inches (6") from curb or twelve inches (12") from edge of pavement if no curb exists.

d) Verify locations of all underground utilities prior to installation of irrigation system. Mainline shall not be located without prior approval of the Owner's Representative and the Landscape Architect. All utilities and structures may not be shown on these plans. It is the responsibility of the Contractor to verify all utility locations.

e) All pressure mainlines under pavement shall be contained within sleeves. Where electric valve control lines pass through a sleeve with other main or lateral lines, electric lines shall be contained within a separate conduit.

f) Where shrub heads are within groundcover areas, appropriate pop up size shall be used. Irrigation shall be designed and installed with consideration to mature shrub height.

g) Locate all valves a minimum of twenty-four inches (24") from back of curb or edge of pavement. No valves shall be located within sodded lawn areas.

h) All sleeves utilized by the irrigation contractor shall be located on an As-Built Plan, and submitted to the Owner's Representative. The As-Built plan shall show location and depth below finish grade, to the nearest one-tenth foot (1/10') of each end of each sleeve utilized.

i) All valves shall be installed in a plastic valve box with locking lid.

j) Irrigation contractor shall secure any and all necessary permits for the work prior to commencement of operations on-site. Copies of the permits shall be sent to the Owner's Representative and/or General Contractor.

k) Work within the right-of-way shall conform to the standards and specifications of local and / or state highway jurisdiction.

l) Verify pump station and irrigation controller locations at project site with Owner's Representative prior to construction.

m) All sodded areas shall be irrigated with sprays and/or rotors. Bahia areas are not to be irrigated unless otherwise noted on the plans. Mulched areas void of plantings shall not be irrigated. All sodded areas shall be irrigated.

n) Irrigation shall be zoned to group plants of similar water usage on same zone according to low, medium, and high water usage. Separate zoning shall be provided for 1) rotors 2) pop-up sprinklers, 3) drip irrigation, and 4) bubblers.

o) Irrigation system shall include an automatic rain shut off device to interrupt irrigation cycle when rain dictates.

p) The Contractor shall be responsible for ensuring that irrigation is operating properly and is set to the correct timing for plant materials to get appropriate amount of water and adjusted to climatic factors and seasonal changes in water usage requirements.

*Watering/irrigation restrictions may apply - refer to property's jurisdictional authority.

7) FERTILIZER

a) Contractor shall provide fertilizer application schedule to owner or owner's representative, as applicable to soil type, plant installation, and site's proposed used. Suggested fertilizer types shall be organic or otherwise naturally-derived.

b) Fertilizer restrictions may apply - refer to properties jurisdictional authority.

8) MULCH

a) Mulch material shall be moistened at the time of application to prevent wind displacement, and applied at a minimum depth of 3 inches. Clear mulch from each plant's crown (base). See plant list for type of mulch and grade.

9) DIGGING AND HANDLING

a) Protect roots or root balls of plants at all times from sun, drying winds, water and freezing, as necessary until planting. Plant materials shall be adequately packed to prevent damage during transit. Trees transported more than ten (10) miles or which are not planted within three (3) days of delivery to site shall be sprayed with an antitranspirant product ("wiltpruf" or equal) to minimize transpirational water loss.

b) Balled and burlapped plants (B&B) shall be dug with firm, natural balls of soil of sufficient size to encompass the fibrous and feeding roots of the plants. No plants moved with a root ball shall be planted if the ball is cracked or broken. Plants balled and burlapped or container grown shall not be handled by stems.

c) Bare root plants shall not be used unless otherwise specified.

d) Protection of palms (if applicable): Only a minimum of fronds shall be removed from the crown of the palm trees to facilitate moving and handling. Clear trunk (CT) shall be as specified after the minimum of fronds have been removed. All palms shall be braced per palm planting detail.

e) Excavation of tree pits shall be performed using extreme care to avoid damage to surface and subsurface elements such as utilities or hardscape elements, footers and prepared sub- bases.

10) CONTAINER GROWN MATERIAL

a) An established container grown plant shall be transplanted into a container and grown in that container sufficiently long for the new fibrous roots to have developed so that the root mass will retain its shape and hold together when removed from the container. Container grown material shall not be handled by their stems.

b) All container grown material shall be healthy, vigorous, well-rooted plants established in the container in which they are sold. The plants shall have tops which are of good quality and are in a healthy growing condition.

c) Plant roots bound in containers are not acceptable. All tree rootballs shall be shaved 1" - 1½" off all sides with either a sharp spade or blade prior to planting or from top to bottom with a balling spade after the tree has been planted to eliminate circling roots.

d) Substitution of non-container grown material for material explicitly specified to be container grown will not be permitted without written approval is obtained from the owner or owner's representative.

e) RPG= "roots plus grower" container where specified.

11) B&B OR FIELD GROWN MATERIAL

a) When the use of B&B or field grown material is permitted as indicated by the owner or owner's representative, the minimum sizes of rootballs shall be equal to that specified for the next larger size of nursery grown material of the same variety.

12) TRANSPLANTS

a) Plants collected from wild or native stands shall be considered nursery grown when they have been successfully re-established in a nursery row and grown under regular nursery cultural practices for a minimum of two (2) growing seasons and have attained adequate root and top growth to indicate full recovery from transplanting into the nursery row.

13) MATERIALS LIST

a) Quantities necessary to complete the work on the drawings shall be furnished by the contractor. Quantity estimates have been made carefully, but the landscape architect or owner assumes no liability for omissions or errors. Should a discrepancy occur between the plans and the plant list quantity, the plans shall control. The owner's representative shall be notified for clarification prior to bidding or installation. All dimensions and/or sizes specified shall be the minimum acceptable size.

14) FINE GRADING

a) Fine grading under this contract shall consist of final finished grading of lawn and planting areas that have been rough graded by others.

b) Berming (as shown on the drawings) shall be the responsibility of the landscape contractor, unless otherwise noted, and shall consist of suitable planting soil.

c) The contractor shall fine grade the lawn and planting areas to bring the rough grade up to final finished grade allowing for thickness of sod and/or mulch depth. This contractor shall fine grade by hand and/or with all equipment necessary including a grading tractor with front-end loader for transporting soil within the site.

d) All planting areas shall be graded and maintained for positive drainage to surface/subsurface storm drain systems. Areas adjacent to buildings shall slope away from the buildings. Refer to civil engineer's plans for final grades, if applicable.

15) PLANTING PROCEDURES

a) Cleaning up before commencing work: the contractor shall clean work and surrounding areas of all rubbish or objectionable matter. All mortar, cement, and toxic material shall be removed from the surface of all plant beds. These materials shall not be mixed with the soil. Should the contractor find such soil conditions beneath the soil which will in any way adversely affect the plant growth, he shall immediately call it to the attention of the owner's representative. Failure to do so before planting shall make the corrective measures the responsibility of the contractor.

b) Verify locations of all utilities, conduits, supply lines and cables, including but not limited to: electric, gas (lines and tanks), water, sanitary sewer, stormwater systems, cable, and telephone. Properly maintain and protect existing utilities. Call National One Call (811) - to locate utilities or refer to the civil engineering plans.

c) Contractor is responsible to remove all existing and imported limerock and limerock sub-base from all landscape planting areas to a minimum depth of 36". Contractor is responsible to backfill these planting areas to rough finished grade with clean topsoil from an on-site source or an imported source. If limerock or other adverse conditions occur in planted areas after 36" deep excavation by the contractor, and positive drainage cannot be achieved, contractor shall utilize planting detail that addresses poor drainage.

d) Furnish nursery's certificate of compliance with all requirements as herein specified and required. Inspect and select plant materials before plants are dug at nursery or growing site.

e) Comply with applicable federal, state, county, and local regulations governing landscape materials and work. Conform to accepted horticultural practices as used in the trade. Upon arrival at the site, plants shall be thoroughly watered and properly maintained until planted. Plants stored on-site shall not remain unplanted or appropriately healed in for a period exceeding twenty-four (24) hours. At all times workmanlike methods customary in good horticultural practices shall be exercised.

f) The work shall be coordinated with other trades to prevent conflicts. Coordinate planting with irrigation work to assure availability of water and proper location of irrigation appurtenances and plants.

g) All planting pits shall be excavated to size and depth in accordance with the USA Standard for Nursery Stock 260.1, unless shown otherwise on the drawings, and back filled with the prepared planting soil mixture as specified in section 5. Test all tree pits with water before planting to assure proper drainage percolation is available. No allowance will be made for lost plants due to improper drainage. If poor drainage exists, utilize "poor drainage condition" planting detail. Trees shall be set plumb and held in position until the planting mixture has been flushed into place with a slow, full hose stream. All planting shall be performed by personnel familiar with planting procedures and under the supervision of a qualified landscape foreman. Proper "jetting in" shall be assured to eliminate air pockets around the roots. "jet stick" or equal is recommended.

h) Take all necessary precautions to avoid damage to buildings and building structures while installing trees.

i) Soil mixture shall be as specified in section 5 of these specifications.

j) Trees and shrubs shall be set straight at an elevation that, after settlement, the plant crown will stand one (1) to two (2) inches above grade. Each plant shall be set in the center of the pit. Planting soil mixture shall be back filled, thoroughly tamped around the ball, and settled by water (after tamping).

k) Amend Pine and Oak plant pits with ectomycorrhizal soil application per manufacturer's recommendation. All other plant pits shall be amended with ectomycorrhizal soil application per manufacturer's recommendation. Provide product information submittal (prior to inoculation) for approval.

l) Fill hole with soil mixture, making certain all soil is saturated. To do this, fill hole with water and allow to soak minimum twenty (20) minutes, stirring if necessary to get soil thoroughly wet. Pack lightly with feet. Add more wet soil mixture. Do not cover top of ball with soil mixture, only with mulch. All burlap, rope, wires, baskets, etc., shall be removed from the sides and tops of balls, but no burlap shall be pulled from underneath.

m) Trees shall be pruned, at the direction of the owner or owner's representative, to preserve the natural character of the plant. All soft wood or sucker growth and all broken or badly damaged branches shall be removed with a clean cut. All pruning to be performed by licensed arborist, in accordance with ANSI A-300.

n) Shrubs and ground cover plants shall be evenly spaced in accordance with the drawings and as indicated on the plant list. Cultivate all planting areas to a minimum depth of 6", remove and dispose all debris. Mix top 4" the planting soil mixture as specified in section 5. Thoroughly water all plants after installation.

o) Tree guying and bracing shall be installed by the contractor in accordance with the plans to insure stability and maintain trees in an upright position. If the contractor and owner decide to waive the tree guying and bracing, the owner shall notify the landscape architect in writing and agree to indemnify and hold harmless the landscape architect in the event unsupported trees planted under this contract fall and damage person or property. All guying and bracing shall be removed in one year or once the trees are established.

p) Provide a three inch (minimum) layer of specified mulch over the entire area of each shrub bed, ground cover, vine bed, and tree pit planted under this contract (except annual beds).

q) All plant beds shall be kept free of noxious weeds until final acceptance of work. If directed by the owner, "round-up" shall be applied for weed control by qualified personnel to all planting areas in spot applications per manufacturer's precautions and specifications. Prior to final inspection, treat all planting beds with an approved pre-emergent herbicide at an application rate recommended by the manufacturer. (As allowed by jurisdictional authority).

16) LAWN SODDING

a) The work consists of lawn bed preparation, soil preparation, and sodding complete, in strict accordance with the specifications and the applicable drawings to produce a turf grass lawn acceptable to the owner.

b) All areas that are to be sodded shall be cleared of any rough grass, weeds, and debris, and the ground brought to an even grade. The entire surface shall be rolled with a roller weighing not more than one-hundred (100) pounds per foot of width. During the rolling, all depressions caused by settlement shall be filled with additional soil, and the surface shall be regraded and rolled until presenting a smooth and even finish to the required grade.

c) Prepare loose bed four (4) inches deep. Hand rake until all bumps and depressions are removed. Wet prepared area thoroughly.

d) Contractor to provide a clean, sharp edge on all landscape beds and tree pits. A sharp spade cut edge (minimum 3" deep) shall be provided unless other bed edging methods are specifically identified on the plans.

e) Sodding

i) The contractor shall sod all areas that are not paved or planted as designated on the drawings within the contract limits, unless specifically noted otherwise.

ii) All sod shall be certified to meet Florida State Plant Board specifications, absolutely true to varietal type and free from weeds, fungus, insects and disease of any kind.

iii) Sod panels shall be laid tightly together so as to make a solid sodded lawn area. Sod shall be laid uniformly against the edges of all curbs and other hardscape elements, paved and planted areas. Immediately following sod laying, the lawn areas shall be rolled with a lawn roller customarily used for such purposes, and then thoroughly irrigated. If, in the opinion of the owner, top-dressing is necessary after rolling to fill the voids between the sod panels and to even out inconsistencies in the sod, clean sand, as approved by the owner's representative, shall be uniformly spread over the entire surface of the sod and thoroughly watered in. Fertilize installed sod as allowed by property's jurisdictional authority.

e) During delivery, prior to, and during the planting of the lawn areas, the sod panels shall at all times be protected from excessive drying and unnecessary exposure of the roots to the sun. All sod shall be stacked so as not to be damaged by sweating or excessive heat and moisture.

f) Lawn maintenance:

i) Within the contract limits, the contractor shall produce a dense, well established lawn. The contractor shall be responsible for the repair and re-sodding of all eroded, sunken or bare spots (larger than 12"x12") until certification of acceptability by the owner's representative. Repaired sodding shall be accomplished as in the original work (including regrading if necessary).

ii) Contractor responsible for establishing and maintaining sod/lawn until acceptance by the owner's representative. Prior to and upon acceptance, contractor to provide watering/irrigation schedule to owner or owner's representative. Observe all applicable watering restrictions as set forth by the property's jurisdictional authority.

17) CLEANUP

a) Upon completion of all planting work and before final acceptance, the contractor shall remove all material, equipment, and debris resulting from his work. All paved areas shall be broom-cleaned and the site left in a neat and acceptable condition as approved by the owner's representative.

18) PLANT MATERIAL MAINTENANCE

a) All plants and planting included under this contract shall be maintained by watering, cultivating, spraying, and all other operations (such as re-staking or repairing guy supports) necessary to insure a healthy plant condition by the contractor until certification of acceptability by the owner's representative. Maintenance after the certification of acceptability shall be in accordance with the specifications in this section. Contractors are requested to provide a bid estimate to cover landscape and irrigation maintenance for a period of 90 calendar days commencing after acceptance. Date of final acceptance marks the beginning of the warranty period.

19) MAINTENANCE (ALTERNATE BID ITEM)

a) Contractors are requested to provide a bid estimate for maintenance following the initial 90-day maintenance period on a cost-per-month basis.

20) FINAL INSPECTION AND ACCEPTANCE OF WORK

a) Final inspection at the end of the warranty period shall be on planting, construction and all other incidental work pertaining to this contract. Any replacement at this time shall be subject to the same one (1) year warranty (or as specified by the landscape architect or owner in writing) beginning with the time of replacement and ending with the same inspection and acceptance herein described.

b) An "as-built" of the landscape and irrigation plans shall be made by the landscape and irrigation contractor. The "as-built" shall be updated daily and shall be kept on site at all times during the construction period. Any and all deviations from the original construction documents shall be duly and accurately recorded. A reproducible of each "as-built" shall be provided to the owner's representative prior to final acceptance and payment of retainage.

21) WARRANTY

a) The life and satisfactory condition of all 7 gallon and larger plant material installed by the landscape contractor shall be warranted by the contractor for a minimum of one (1) calendar year commencing at the time of certification of acceptability by the owner's representative.

b) The life and satisfactory condition of all other plant material (including sod) installed by the landscape contractor shall be warranted by the contractor for a minimum of one (1) calendar year commencing at the time of certification of acceptability by the owner's representative.

c) Any plant not found in a healthy growing condition at the end of the warranty period shall be removed from the site and replaced within 2 weeks or as soon as weather conditions permit. All replacements shall be plants of the same kind and size as specified in the plant list. They shall be furnished, planted and mulched as specified under "planting procedures", at no additional cost to the owner.

d) In the event the owner does not contract with the contractor for landscape (and irrigation) maintenance, the contractor is encouraged to visit the project site periodically during the one year warranty period to evaluate maintenance procedures being performed, and shall notify the owner in writing of maintenance procedures or conditions which threaten vigorous and healthy plant growth. It is suggested such site visits shall be conducted a minimum of once per month for a period of twelve (12) months from the date of acceptance.

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www.HeidtDesign.com

CRESSWIND DELAND
PHASE 2A, 2B, 3A & 3B

PERMIT LANDSCAPE NOTES

PREPARED FOR: KH CW DELAND LLC

DESCRIPTION	DATE

DESCRIPTION	DATE
REVIEW SUBMITTAL	02/20/2023

PROJECT NO:	KGA-CD-1031
FILE:	L-481
DESIGN BY:	RHENDRY
DRAWN BY:	RHENDRY

FLORIDA REGISTERED LANDSCAPE ARCHITECT

The seal appearing on this document was authorized by Keven J. Steele, P.L.A. LA6667179 on the date indicated here unless accompanied by an electronic signature as described in this section.

KEVEN J STEELE
DATE:
REGISTRATION NO. LA6667179

L-481

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REVISION	DATE	BY

Irrigation Concepts Inc.
3338 36th AVENUE NORTH, ST. PETERSBURG, FLORIDA 33713
(727) 521-0180 • fax (727) 521-0230

IRRIGATION DESIGN: PUMP & WELL #2 'B' TIMER

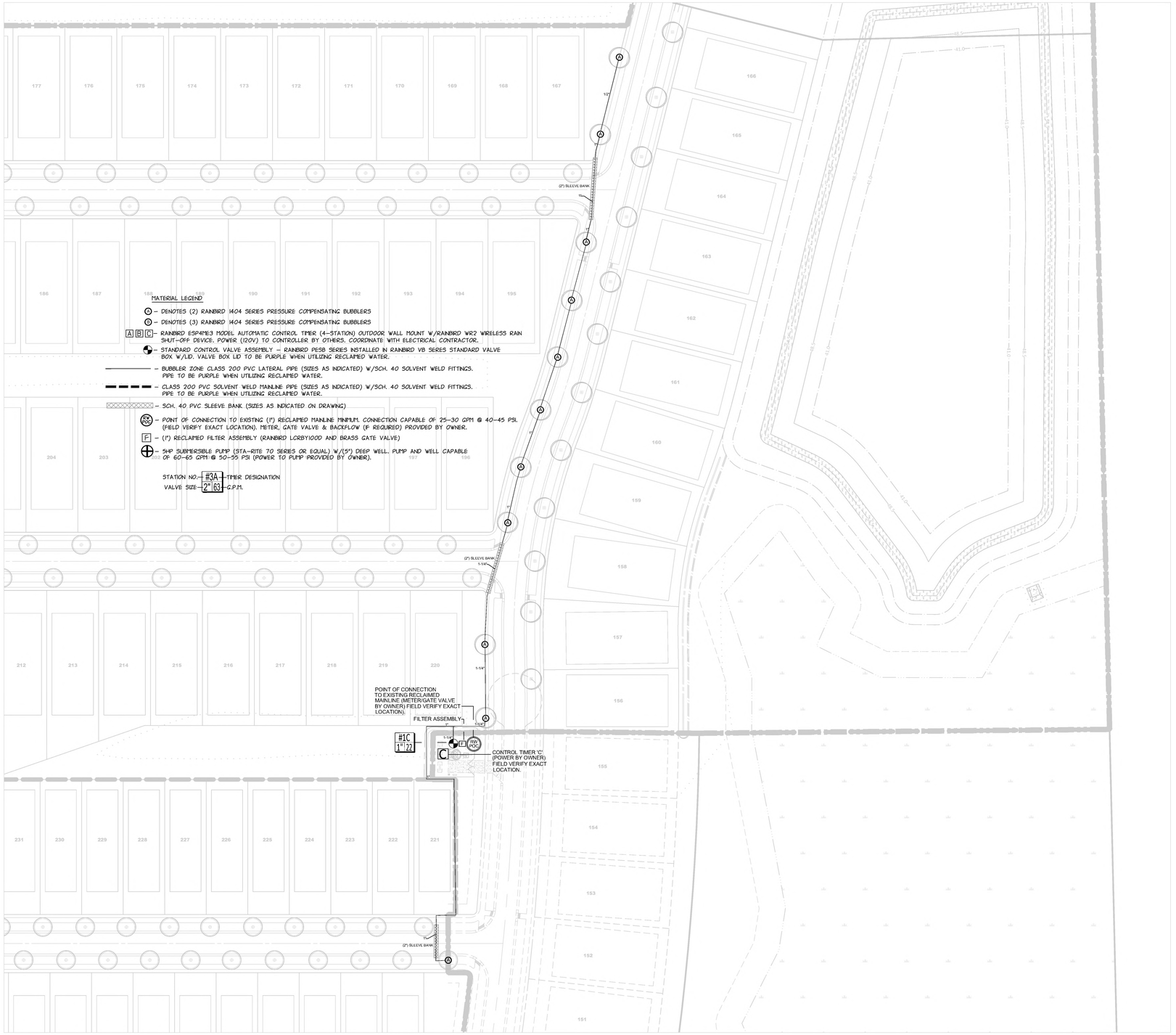
CRESSWIND PHASE II

DELAND, FLORIDA

Ronald Newberg
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SHEET:
IR-03
3 of 5



REVISION	DATE	BY

Irrigation Concepts INC.
3338 36th AVENUE NORTH, ST. PETERSBURG, FLORIDA 33713
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IRRIGATION DESIGN: RECLAIMED CONNECTION 'C' TIMER

CRESSWIND PHASE II

DELAND, FLORIDA

Ronald Newberg

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SHEET:
IR-04
4 of 5

#2A
2" 57

#3A
2" 63

SEE SHEET IR-01

MATERIAL LEGEND

- ⓐ – DENOTES (2) RAINBIRD 1404 SERIES PRESSURE COMPENSATING BUBBLERS
- ⓑ – DENOTES (3) RAINBIRD 1404 SERIES PRESSURE COMPENSATING BUBBLERS
- [A][B][C] – RAINBIRD ESP4ME3 MODEL AUTOMATIC CONTROL TIMER (4-STATION) OUTDOOR WALL MOUNT W/RAINBIRD WR2 WIRELESS RAIN SHUT-OFF DEVICE. POWER (120V) TO CONTROLLER BY OTHERS. COORDINATE WITH ELECTRICAL CONTRACTOR.
- – STANDARD CONTROL VALVE ASSEMBLY – RAINBIRD PESB SERIES INSTALLED IN RAINBIRD VB SERIES STANDARD VALVE BOX W/LID. VALVE BOX LID TO BE PURPLE WHEN UTILIZING RECLAIMED WATER.
- ——— – BUBBLER ZONE CLASS 200 PVC LATERAL PIPE (SIZES AS INDICATED) W/SCH. 40 SOLVENT WELD FITTINGS. PIPE TO BE PURPLE WHEN UTILIZING RECLAIMED WATER.
- – – – – – CLASS 200 PVC SOLVENT WELD MAINLINE PIPE (SIZES AS INDICATED) W/SCH. 40 SOLVENT WELD FITTINGS. PIPE TO BE PURPLE WHEN UTILIZING RECLAIMED WATER.
- – SCH. 40 PVC SLEEVE BANK (SIZES AS INDICATED ON DRAWING)
- POC – POINT OF CONNECTION TO EXISTING (1") RECLAIMED MAINLINE MINIMUM. CONNECTION CAPABLE OF 25-30 GPM @ 40-45 PSI (FIELD VERIFY EXACT LOCATION). METER, GATE VALVE & BACKFLOW (IF REQUIRED) PROVIDED BY OWNER.
- [F] – (1") RECLAIMED FILTER ASSEMBLY (RAINBIRD LCRBY100D AND BRASS GATE VALVE)
- – 5HP SUBMERSIBLE PUMP (STA-RITE 7G SERIES OR EQUAL) W/(5") DEEP WELL. PUMP AND WELL CAPABLE OF 60-65 GPM @ 50-55 PSI (POWER TO PUMP PROVIDED BY OWNER).

STATION NO.– #3A – TIMER DESIGNATION
VALVE SIZE– 2" 63 – G.P.M.

EXISTING
DRY POND 1 (PHASE 1)
TOP=68.0
DHW100 =67.5
DHW25YR-96HR = 67.5
DHW25YR-24HR = 66.0
BOT = 63.0

127' SLEEVE BANK

N

0 50 100
GRAPHIC SCALE: 1" = 50'

REVISION	DATE	BY

Irrigation Concepts Inc.
3338 36th AVENUE NORTH, ST. PETERSBURG, FLORIDA 33713
(727) 521-0180 • fax (727) 521-0230

IRRIGATION DESIGN:
PUMP & WELL #1
'A' TIMER

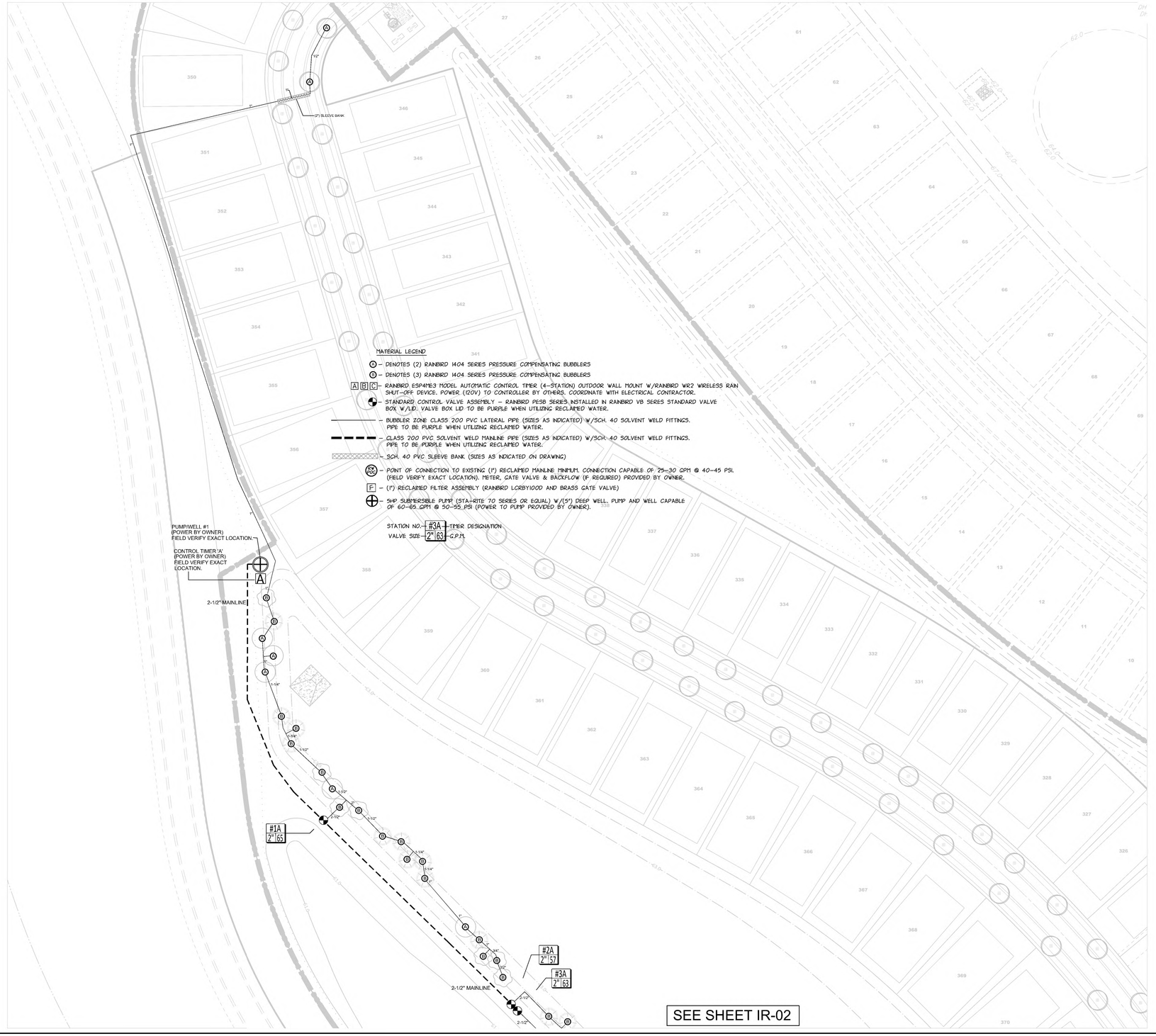
CRESSWIND PHASE II

DELAND, FLORIDA

Ronald Newberg
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SHEET:
IR-02
2 of 5



REVISION	DATE	BY

Irrigation Concepts Inc.
3338 36th AVENUE NORTH, ST. PETERSBURG, FLORIDA 33713
(727) 521-0180 • fax (727) 521-0230

IRRIGATION DESIGN: PUMP & WELL #1 'A' TIMER

CRESSWIND PHASE II

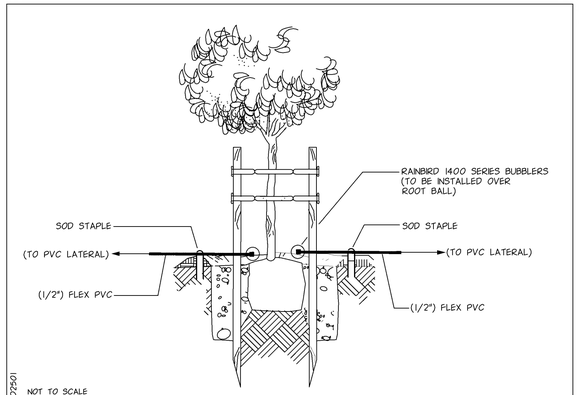
DELAND, FLORIDA

Ronald Newberg

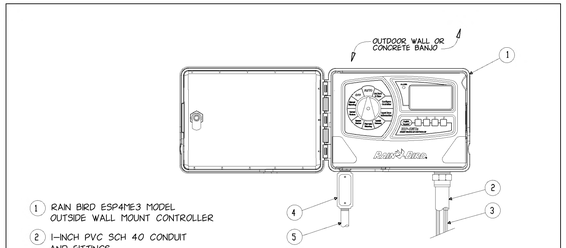
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SHEET:
IR-01
1 of 5

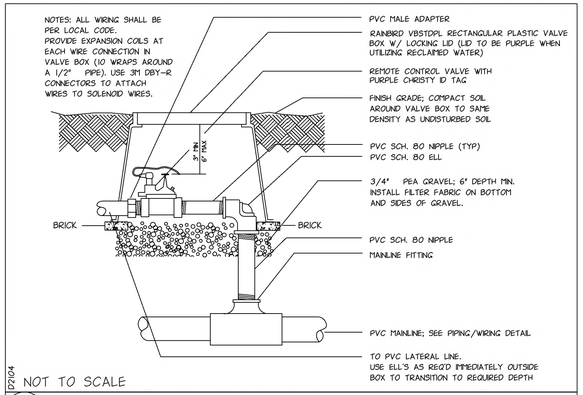


A TREE BUBBLER DETAIL

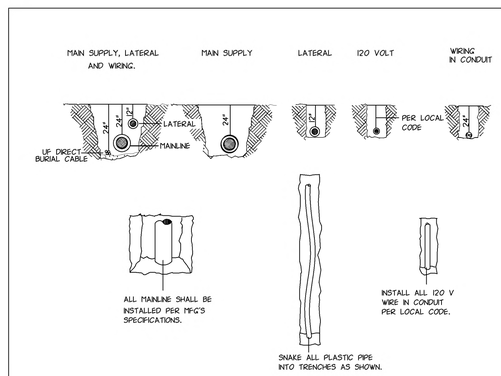


1. RAIN BIRD ESP4ME3 MODEL OUTSIDE WALL MOUNT CONTROLLER
2. 1-INCH PVC SCH 40 CONDUIT AND FITTINGS
3. WIRES TO REMOTE CONTROL VALVES
4. JUNCTION BOX
5. 1/2-INCH PVC SCH 40 CONDUIT TO POWER SUPPLY

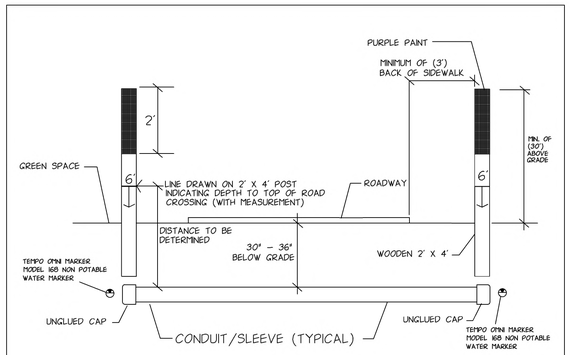
B CONTROL TIMER DETAIL



C CONTROL VALVE DETAIL (BUBBLER)



D TRENCH DETAIL



E SLEEVE W/DEPTH INDICATOR MARKING

1. PRESSURE COMPENSATING BUBBLERS TO BE INSTALLED ON ALL NEW TREES.
2. AUTOMATIC CONTROL TIMER LOCATION TO BE VERIFIED WITH ARCHITECT AND/OR OWNER. ALL CONTROL WIRE TO #14 GAUGE DIRECT BURIAL.
3. FIELD ALTERATIONS MADE IN THE IRRIGATION CONTRACT DRAWING MUST BE IN THE BEST INTEREST OF THE TREES AND LANDSCAPE IRRIGATION SYSTEM. CHANGES MADE BY THE IRRIGATION CONTRACTOR WHICH ARE DEEMED, BY THE ARCHITECT AND/OR OWNER, NOT TO BE IN CONFORMITY WITH THIS CRITERIA WILL BE REMOVED AND REPLACED AT THE IRRIGATION CONTRACTOR'S EXPENSE. IF A QUESTION SHOULD ARISE AS TO THE BEST WAY TO COMPLETE A FIELD ALTERATION, CONTACT THE ARCHITECT AND/OR OWNER FOR APPROVAL.
4. THE CONTRACTOR SHALL STAKE OUT THE LOCATION OF EACH RUN OF PIPE, SPRINKLER HEADS, SPRINKLER VALVES PRIOR TO TRENCHING. TRENCHES FOR PIPE SHALL BE CUT TO REQUIRED GRADE LINES, AND COMPACTED TO PROVIDE ACCURATE GRADE AND UNIFORM BEARING FOR THE FULL LENGTH OF THE LINE. THE BOTTOM OF TRENCHES SHALL BE FREE OF ROCK OR OTHER SHARP EDGED OBJECTS. MINIMUM COVER SHALL BE AS FOLLOWS: PRESSURE MAINLINE 24" AT TOP OF PIPE TO FINISH GRADE. LATERAL PIPING 12" AT TOP OF PIPE FROM FINISH GRADE.
5. INITIAL BACKFILL ON PVC LINE SHALL BE PULVERIZED NATIVE FREE SOIL, FREE OF FOREIGN MATTER, WITHIN RADIUS OF 4" OF THE PIPE SHALL BE CLEAN SOIL OR SAND. PLANT LOCATIONS SHALL TAKE PRECEDENCE OVER SPRINKLER AND PIPE LOCATIONS. THE CONTRACTOR SHALL COORDINATE THE PLACING OF SPECIMEN TREES AND SHRUBS WITH THE ROUTING OF LINES AND FINAL HEAD LOCATIONS.
6. THE IRRIGATION AND LANDSCAPE CONTRACTORS SHALL COORDINATE THE PLACEMENT OF THE SPRINKLER EQUIPMENT AND LANDSCAPE MATERIAL WITHIN THE PLANTED AREAS. THE IRRIGATION CONTRACTOR SHALL INSTALL HIS MATERIAL AT THE EDGE OF THE PLANTED AREAS AVOIDING PLANTS, ROOT BALLS, LIGHTS, BOLLARDS, FENCES, ETC.
7. BEFORE BUBBLERS ARE SET, THE CONTRACTOR SHALL FLUSH THE LINES THOROUGHLY TO MAKE SURE THERE IS NO FOREIGN MATTER IN THE LINES. THE CONTRACTOR SHALL FLUSH THE MAIN LINES FROM FROM DEAD END FITTINGS FOR A MINIMUM OF FIVE MINUTES UNDER A FULL HEAD OF PRESSURE.
8. OPEN CUTS IN ASPHALT, WALKS AND/OR TRENCHES MUST BE PROTECTED FROM VEHICLE AND PEDESTRIAN TRAFFIC AT ALL TIMES. IT WILL BE THE IRRIGATION CONTRACTORS RESPONSIBILITY TO BARRICADE AND DIVERT TRAFFIC.
9. SLEEVING BENEATH SIDEWALKS (NOT SHOWN) SHALL BE LOCATED BY THE IRRIGATION CONTRACTOR. SIZE SLEEVING TWO TIMES LARGER THAN THE PIPE TO BE PLACED INSIDE THE SLEEVE. SLEEVING MATERIAL TO BE SCHEDULE 40 PVC. NO SLEEVING SHALL BE SMALLER THAN (2") SCHEDULE 40 PVC. SLEEVE ALL WIRE CROSSINGS EITHER IN CONDUIT (AS SPECIFIED) OR IN SCHEDULE 40 PVC PIPE (IF CONTROL WIRE IS DIRECT BURIAL).
10. ALL TRENCHES WITHIN (50') OF EXISTING TREES TO BE HAND EXCAVATED TO AVOID CONFLICTS W/TREES.
11. NO ROOTS SHALL BE CUT WITHIN (50') RADIUS OF ALL EXISTING TREES. IRRIGATION PIPES SHOULD BE DIRECTIONAL BORED WITHIN THIS (50') AREA.

VALVE SCHEDULES

CONTROLLER 'A' (PUMP AND WELL)

ZONE #1A – 65 GPM – 2" CONTROL VALVE – BUBBLER
ZONE #2A – 57 GPM – 2" CONTROL VALVE – BUBBLER
ZONE #3A – 63 GPM – 2" CONTROL VALVE – BUBBLER
STATION #4A IS OPEN

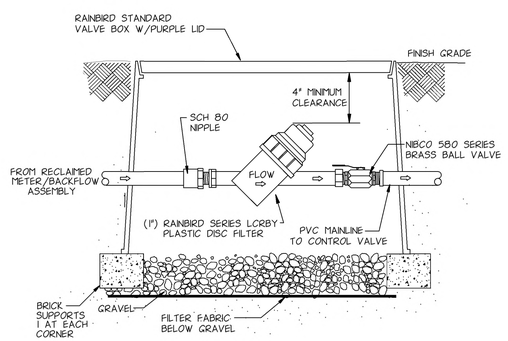
CONTROLLER 'B' (PUMP AND WELL)

ZONE #1B – 38 GPM – 1.5" CONTROL VALVE – BUBBLER
STATIONS #2B THROUGH #4B ARE OPEN

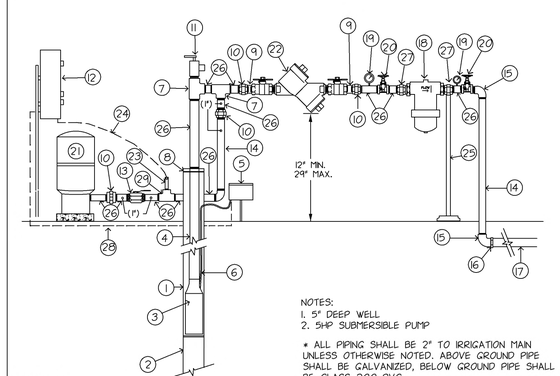
CONTROLLER 'C' (RECLAIMED WATER)

ZONE #1C – 22 GPM – 1" CONTROL VALVE – BUBBLER
STATIONS #2C THROUGH #4C ARE OPEN

F GENERAL NOTES/VALVE SCHEDULES



G RECLAIMED FILTER ASSEMBLY



LEGEND

1. WELL CASING (DEPTH TBD)
2. OPEN HOLE (DEPTH TBD)
3. 5HP SUBMERSIBLE PUMP w/3-PHASE MOTOR (PUMP AND WELL CAPABLE OF 60-65 GPM @ 45-50 PSI)
4. DROP PIPE (GALV. SCH 40)
5. JUNCTION BOX
6. SUBMERSIBLE CABLE
7. GALVANIZED TEE
8. WELL SEAL
9. 2" DIELECTRIC NIPPLE
10. GALVANIZED UNION
11. CLA-VAL #55F PRESSURE RELIEF VALVE (3/4")
12. 10HP (FOR 230V, SINGLE PHASE) ITT/GOULD SPD CONTROL PANEL (DERATE TO 50% FOR SINGLE PHASE INPUT)
13. (1") BRASS BALL VALVE
14. GALVANIZED PIPE
15. GALVANIZED ELBOW
16. PVC ADAPTER
17. IRRIGATION MAINLINE (SIZE AS PER PLANS)
18. 2" AMIAD T SUPER STST 100 MESH FILTER
19. 290 PSI PRESSURE GAUGE (LIQUID FILLED)
20. GATE VALVE
21. 20-GALLON PRESSURE TANK (ABOVE GROUND)
22. BACKFLOW DEVICE PER LOCAL CODE
23. PRESSURE TRANSDUCER (INCLUDED IN SPD PACKAGE)
24. TRANSDUCER CABLE (INCLUDED WITH TRANSDUCER)
25. PIPE SUPPORTS. (2) REQUIRED FOR LARGE PIPE AND (1) FOR 2" PIPE
26. GALVANIZED NIPPLE
27. SCHEDULE 80 PVC UNION
28. THREE PHASE POWER FROM VFD TO MOTOR
29. 1" X 1/2" GALVANIZED TEE

H IRRIGATION WELL AND VFD PUMP STATION

REVISION	DATE	BY

Irrigation Concepts, Inc.
3338 36th AVENUE NORTH, ST. PETERSBURG, FLORIDA 33713
(727) 521-0100 • Fax (727) 521-0030

IRRIGATION DETAILS

CRESSWIND PHASE II

DELAND, FLORIDA

Ronald Newberg
Digitally signed by Ronald Newberg
Date: 2023.06.08 07:34:46 -04'00'

DRAWN	GAB
CHECK	RMN
DATE	06/02/2023
SCALE	NA
FP #	

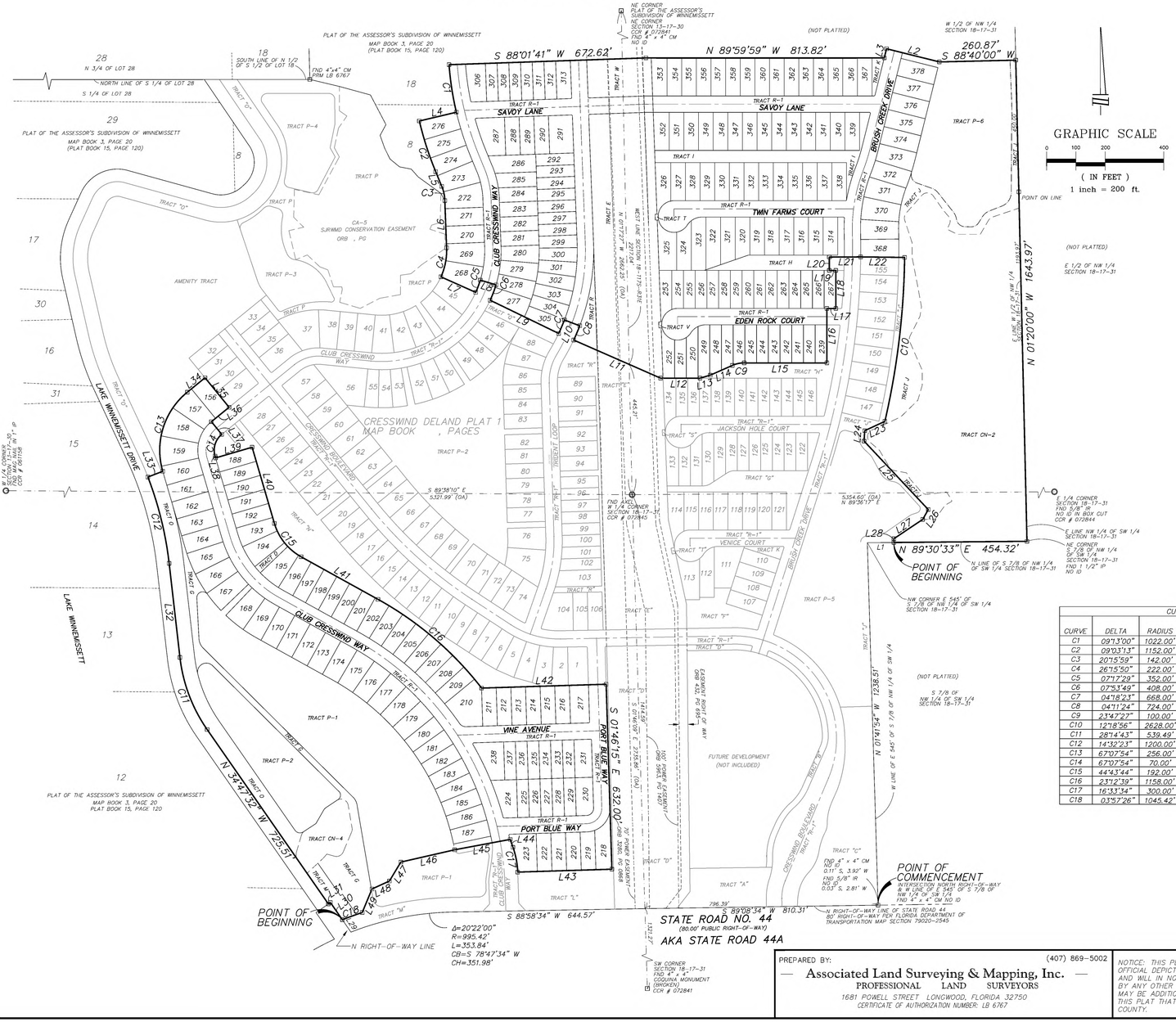
SHEET:
IR-05
5 of 5

P:\WORK IN PROGRESS\C ONCEPTS\0 IY\CRESSWIND PHASE 2\SP FILES\CRESSWIND PH 2 IRRIGATION\CRESSWIND PH 2 IRRIGATION DETAILS TYLER.DWG Modified: 6/2/23 7:41 PM Printed: 6/8/23 7:10

CRESSWIND DELAND PLAT 2-3

A PORTION OF SECTION 13, TOWNSHIP 17 SOUTH, RANGE 30 EAST AND A PORTION OF SECTION 18, TOWNSHIP 17 SOUTH, RANGE 31 EAST, VOLUSIA COUNTY, FLORIDA, REPLATTING A PORTION OF LOTS 1, 2, 3, 6, 7, 8, 10 THROUGH 16, 18 AND 31, ASSESSOR'S SUBDIVISION OF WINNEMISSETT AS RECORDED IN MAP BOOK 3, PAGE 20, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA CITY OF DELAND

MAP BOOK PAGE


NE CORNER PLAT OF THE ASSESSOR'S SUBDIVISION OF WINNEMISSETT
NE CORNER SECTION 13-17-30 CCR # 072841 FND 4" x 4" CM NO ID
PLAT OF THE ASSESSOR'S SUBDIVISION OF WINNEMISSETT MAP BOOK 3, PAGE 20 (PLAT BOOK 15, PAGE 120)
S 88°01'41" W 672.62'
N 89°59'59" W 813.82'
(NOT PLATTED)
W 1/2 OF NW 1/4 SECTION 18-17-31
260.87'
S 88°40'00" W
SOUTH LINE OF N 1/2 OF S 1/2 OF LOT 18
FND 4"x4" CM PRM LB 6767
N 3/4 OF LOT 28
NORTH LINE OF S 1/4 OF LOT 28
S 1/4 OF LOT 28
PLAT OF THE ASSESSOR'S SUBDIVISION OF WINNEMISSETT MAP BOOK 3, PAGE 20 (PLAT BOOK 15, PAGE 120)
SAVOY LANE
BRUSH CREEK DRIVE
TWIN FARMS COURT
EDEN ROCK COURT
JACKSON HOLE COURT
VENICE COURT
CLUB CRESSWIND WAY
CLUB CRESSWIND WAY
VINE AVENUE
PORT BLUE WAY
PORT BLUE WAY
TRACT P-4
TRACT P
TRACT P-3
TRACT P-2
TRACT P-1
TRACT P-5
TRACT P-6
TRACT CN-2
TRACT CN-4
AMENITY TRACT
CA-5 SJRWMD CONSERVATION EASEMENT ORB , PG
TRACT "O"
TRACT "P"
TRACT "Q"
TRACT "R"
TRACT "S"
TRACT "T"
TRACT "U"
TRACT "V"
TRACT "W"
TRACT "X"
TRACT "Y"
TRACT "Z"
TRACT "A"
TRACT "B"
TRACT "C"
TRACT "D"
TRACT "E"
TRACT "F"
TRACT "G"
TRACT "H"
TRACT "I"
TRACT "J"
TRACT "K"
TRACT "L"
TRACT "M"
TRACT "N"
TRACT 70-1"
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TRACT R-1
TRACT R-1
TRACT R-1

CRESSWIND DELAND PLAT 2-3

A PORTION OF SECTION 13, TOWNSHIP 17 SOUTH, RANGE 30 EAST AND A PORTION OF SECTION 18, TOWNSHIP 17 SOUTH, RANGE 31 EAST, VOLUSIA COUNTY, FLORIDA, REPLATTING A PORTION OF LOTS 1, 2, 3, 6, 7, 8, 10 THROUGH 16, 18 AND 31, ASSESSOR'S SUBDIVISION OF WINNEMISSETT AS RECORDED IN MAP BOOK 3, PAGE 20, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA
CITY OF DELAND

MAP BOOK PAGE



GRAPHIC SCALE
0 30 60 120
(IN FEET)
1 inch = 60 ft.

CURVE TABLE

CURVE	DELTA	RADIUS	LENGTH	CHORD BEARING	CHORD DISTANCE
C1	67°07'54"	98.00'	114.82'	S17°16'53"W	108.37'
C2	44°43'45"	350.00'	273.23'	S38°38'56"E	266.35'
C3	134°40'19"	20.32'	47.76'	S65°00'01"W	37.50'
C4	25°48'19"	508.00'	228.80'	S48°06'39"E	226.87'
C5	44°43'45"	192.00'	149.89'	S38°38'56"E	146.11'
C6	67°07'54"	70.00'	82.02'	S17°16'53"W	77.41'
C7	67°07'54"	256.00'	299.95'	S17°16'53"W	283.08'
C8	14°32'23"	1200.00'	304.52'	N13°49'01"W	303.70'
C9	67°07'54"	126.00'	147.63'	S17°16'53"W	139.33'
C10	16°24'38"	126.00'	36.09'	S42°38'31"W	35.97'
C11	23°21'10"	126.00'	51.36'	S22°45'37"W	51.00'
C12	23°21'10"	126.00'	51.36'	S00°35'33"E	51.00'
C13	04°00'56"	126.00'	8.83'	S14°16'36"E	8.83'
C14	44°43'45"	378.00'	295.09'	S38°38'56"E	287.66'
C15	1°43'21"	378.00'	11.36'	S17°08'44"E	11.36'
C16	08°36'02"	378.00'	56.74'	S22°18'26"E	56.69'
C17	08°36'02"	378.00'	56.74'	S30°54'28"E	56.69'
C18	08°36'02"	378.00'	56.74'	S39°30'30"E	56.69'
C19	02°38'20"	378.00'	17.41'	S45°07'41"E	17.41'
C20	08°36'09"	378.00'	56.75'	S50°44'55"E	56.70'
C21	05°57'48"	378.00'	39.34'	S58°01'54"E	39.33'
C22	44°43'45"	322.00'	251.38'	S38°38'56"E	245.04'
C23	08°15'34"	322.00'	46.42'	S20°24'51"E	46.38'
C24	14°12'32"	322.00'	79.85'	S31°38'54"E	79.65'
C25	05°01'36"	322.00'	28.25'	S41°15'58"E	28.24'
C26	14°12'32"	322.00'	79.85'	S50°53'02"E	79.65'
C27	03°01'30"	322.00'	17.00'	S59°30'03"E	17.00'
C28	08°15'34"	192.00'	27.68'	S20°24'51"E	27.65'
C29	14°12'32"	192.00'	47.61'	S31°38'54"E	47.49'
C30	05°01'36"	192.00'	16.84'	S41°15'58"E	16.84'
C31	14°12'32"	192.00'	47.61'	S50°53'02"E	47.49'
C32	03°01'30"	192.00'	10.14'	S59°30'03"E	10.14'
C33	18°55'26"	508.00'	167.78'	S25°44'46"E	167.02'
C34	01°43'21"	508.00'	15.27'	S17°08'44"E	15.27'
C35	08°36'02"	508.00'	76.26'	S22°18'26"E	76.18'
C36	08°36'02"	508.00'	76.26'	S30°54'28"E	76.18'
C37	08°36'02"	508.00'	76.26'	S39°30'30"E	76.18'
C38	02°38'20"	508.00'	23.40'	S45°07'41"E	23.39'
C39	08°36'09"	508.00'	76.27'	S50°44'55"E	76.20'
C40	05°57'48"	508.00'	52.87'	S58°01'54"E	52.85'
C41	16°24'38"	256.00'	73.32'	S42°38'31"W	73.07'
C42	23°21'10"	256.00'	104.34'	S22°45'37"W	103.62'
C43	23°21'10"	256.00'	104.34'	S00°35'33"E	103.62'
C44	04°00'56"	256.00'	17.94'	S14°16'36"E	17.94'
C293	08°53'22"	1250.00'	193.94'	S10°59'30"E	193.74'

LINE TABLE

LINE	BEARING	LENGTH
L1	N81°47'57"E	80.43'
L2	N28°59'12"E	56.00'
L3	S61°00'48"E	39.34'
L4	S61°00'48"E	18.40'
L5	N61°00'48"W	39.34'
L6	N73°42'56"E	130.00'
L7	S16°17'04"E	6.67'
L8	N39°09'10"W	56.00'
L9	S50°50'50"W	77.86'
L10	S39°09'10"E	130.00'
L11	S50°50'50"W	77.86'
L12	N68°54'48"E	54.27'
L13	S61°00'48"E	39.34'
L14	S61°00'48"E	18.40'
L15	S61°00'48"E	18.40'
L16	S16°17'04"E	20.93'
L17	S16°17'04"E	20.93'
L18	N50°50'50"E	17.86'
L19	N50°50'50"E	17.86'

PREPARED BY:
(407) 869-5002
— Associated Land Surveying & Mapping, Inc. —
PROFESSIONAL LAND SURVEYORS
1681 POWELL STREET LONGWOOD, FLORIDA 32750
CERTIFICATE OF AUTHORIZATION NUMBER: LB 6767

NOTICE: THIS PLAT, AS RECORDED IN ITS GRAPHIC FORM, IS THE OFFICIAL DEPICTION OF THE SUBDIVIDED LANDS DESCRIBED HEREIN AND WILL IN NO CIRCUMSTANCES BE SUPPLANTED IN AUTHORITY BY ANY OTHER GRAPHIC OR DIGITAL FORM OF THE PLAT. THERE MAY BE ADDITIONAL RESTRICTIONS THAT ARE NOT RECORDED ON THIS PLAT THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.

CRESSWIND DELAND PLAT 2-3

A PORTION OF SECTION 13, TOWNSHIP 17 SOUTH, RANGE 30 EAST AND A PORTION OF SECTION 18, TOWNSHIP 17 SOUTH, RANGE 31 EAST, VOLUSIA COUNTY, FLORIDA, REPLATTING A PORTION OF LOTS 1, 2, 3, 6, 7, 8, 10 THROUGH 16, 18 AND 31, ASSESSOR'S SUBDIVISION OF WINNEMISSETT AS RECORDED IN MAP BOOK 3, PAGE 20, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA CITY OF DELAND

MAP BOOK PAGE



GRAPHIC SCALE

0 30 60 120

(IN FEET)

CURVE TABLE					
CURVE	DELTA	RADIUS	LENGTH	CHORD BEARING	CHORD DISTANCE
C45	16°33'34"	300.00'	86.71'	N10°55'55"W	86.40'
C46	28°53'02"	1000.00'	504.12'	N25°03'13"W	498.80'
C47	02°57'52"	1000.00'	51.74'	N12°05'38"W	51.73'
C48	19°33'59"	1000.00'	341.50'	N23°21'33"W	339.84'
C49	06°21'11"	1000.00'	110.88'	N36°19'08"W	110.83'
C50	90°00'00"	53.00'	83.25'	N43°13'45"E	74.95'
C51	107°26'27"	4.00'	7.50'	S34°30'31"W	6.45'
C52	90°00'00"	81.00'	127.23'	N43°13'45"E	114.55'
C53	19°04'01"	81.00'	26.96'	N78°41'44"E	26.83'
C54	70°55'59"	81.00'	100.28'	N33°41'44"E	94.00'
C55	76°44'50"	4.00'	5.36'	S53°23'50"E	4.97'
C56	90°00'00"	25.00'	39.27'	N43°13'45"E	35.36'
C57	90°00'00"	4.00'	6.28'	N46°46'15"W	5.66'
C58	118°15'27"	4.00'	8.26'	S29°06'01"W	6.87'
C59	15°00'17"	1028.00'	269.21'	N22°31'34"W	268.44'
C60	07°36'16"	1028.00'	136.44'	N26°13'34"W	136.34'
C61	07°24'01"	1028.00'	132.78'	N18°43'26"W	132.68'
C62	90°00'00"	4.00'	6.28'	N43°13'45"E	5.66'
C63	56°59'41"	25.00'	24.87'	S63°16'24"E	23.86'
C64	04°43'10"	1028.00'	84.68'	N37°08'09"W	84.65'

LINE TABLE		
LINE	BEARING	LENGTH
L20	N19°12'42"W	28.46'
L21	S79°23'18"W	34.83'
L22	S19°12'42"E	41.40'
L23	S19°12'42"E	12.94'

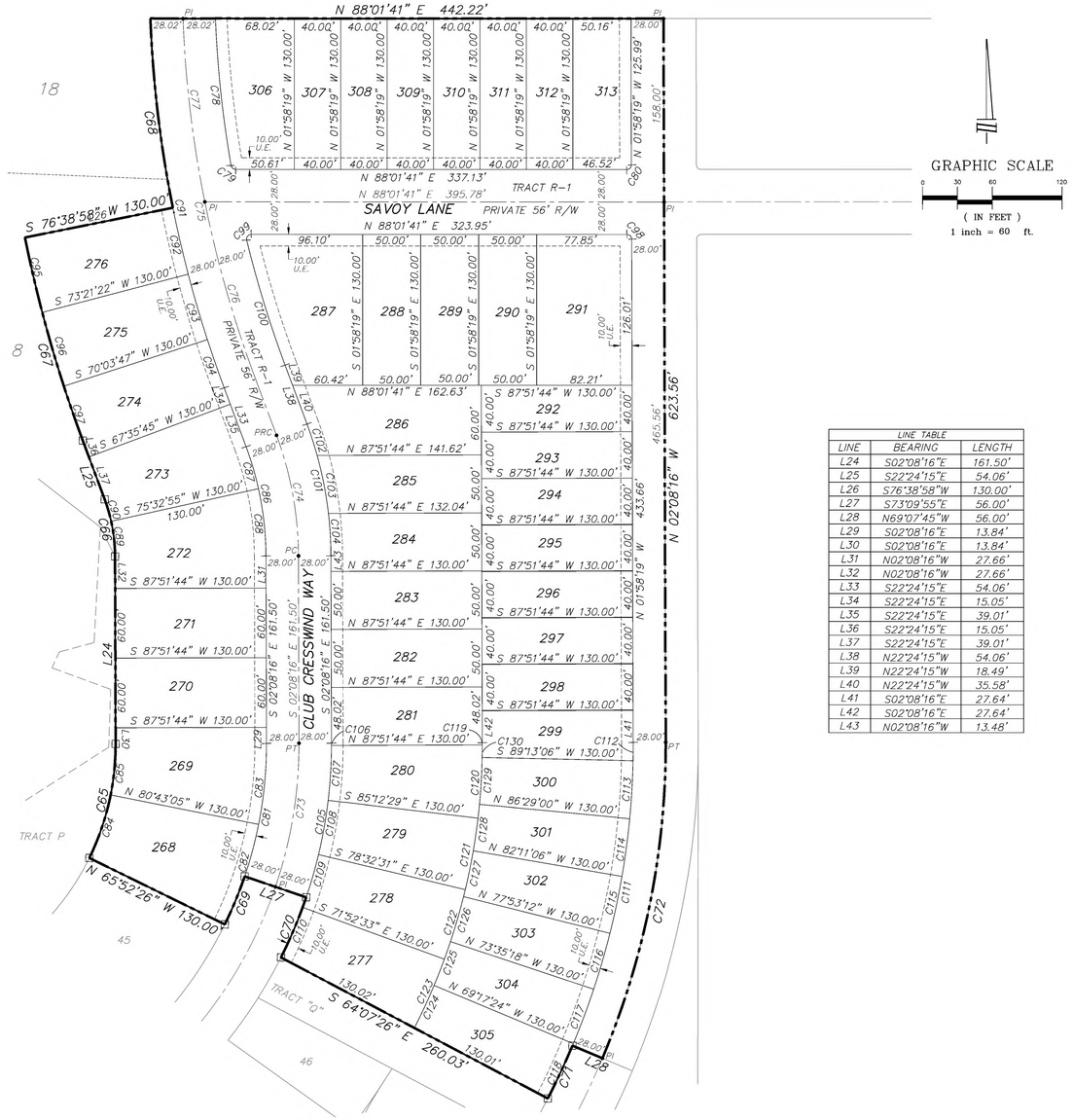
PREPARED BY: (407) 869-5002
— Associated Land Surveying & Mapping, Inc. —
PROFESSIONAL LAND SURVEYORS
1681 POWELL STREET LONGWOOD, FLORIDA 32750
CERTIFICATE OF AUTHORIZATION NUMBER: LB 6767

NOTICE: THIS PLAT, AS RECORDED IN ITS GRAPHIC FORM, IS THE OFFICIAL DEPICTION OF THE SUBDIVIDED LANDS DESCRIBED HEREIN AND WILL IN NO CIRCUMSTANCES BE SUPPLANTED IN AUTHORITY BY ANY OTHER GRAPHIC OR DIGITAL FORM OF THE PLAT. THERE MAY BE ADDITIONAL RESTRICTIONS THAT ARE NOT RECORDED ON THIS PLAT THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.

CRESSWIND DELAND PLAT 2-3

A PORTION OF SECTION 13, TOWNSHIP 17 SOUTH, RANGE 30 EAST AND A PORTION OF SECTION 18, TOWNSHIP 17 SOUTH, RANGE 31 EAST, VOLUSIA COUNTY, FLORIDA, REPLATTING A PORTION OF LOTS 1, 2, 3, 6, 7, 8, 10 THROUGH 16, 18 AND 31, ASSESSOR'S SUBDIVISION OF WINNEMISSETT AS RECORDED IN MAP BOOK 3, PAGE 20, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA
CITY OF DELAND

MAP BOOK PAGE



LINE TABLE		
LINE	BEARING	LENGTH
L24	S02°08'16"E	161.50'
L25	S22°24'15"E	54.06'
L26	S76°38'58"W	130.00'
L27	S73°09'55"E	56.00'
L28	N69°07'45"W	56.00'
L29	S02°08'16"E	13.84'
L30	S02°08'16"E	13.84'
L31	N02°08'16"W	27.66'
L32	N02°08'16"W	27.66'
L33	S22°24'15"E	54.06'
L34	S22°24'15"E	15.05'
L35	S22°24'15"E	39.01'
L36	S22°24'15"E	15.05'
L37	S22°24'15"E	39.01'
L38	N22°24'15"W	54.06'
L39	N22°24'15"W	18.49'
L40	N22°24'15"W	35.58'
L41	S02°08'16"E	27.64'
L42	S02°08'16"E	27.64'
L43	N02°08'16"W	13.48'

CURVE TABLE					
CURVE	DELTA	RADIUS	LENGTH	CHORD BEARING	CHORD DISTANCE
C65	26°15'50"	222.00'	101.76'	N10°59'39"E	100.87'
C66	20°15'59"	142.00'	50.23'	N12°16'16"W	49.97'
C67	09°03'13"	1152.00'	182.03'	S17°52'39"E	181.85'
C68	09°13'00"	1022.00'	164.40'	S08°44'32"E	164.22'
C69	07°17'29"	352.00'	44.80'	N20°28'50"E	44.77'
C70	07°53'49"	408.00'	56.23'	N20°47'00"E	56.19'
C71	04°18'22"	668.00'	50.21'	N23°01'26"E	50.19'
C72	23°00'31"	696.00'	279.50'	N09°22'00"E	277.62'
C73	18°58'21"	380.00'	125.83'	N07°20'55"E	125.26'
C74	20°15'59"	300.00'	106.12'	N12°16'16"W	105.56'
C75	09°10'55"	994.00'	159.29'	S08°47'09"E	159.12'
C76	09°01'39"	994.00'	156.61'	S17°53'26"E	156.45'
C77	09°10'55"	994.00'	159.29'	S08°47'09"E	159.12'
C78	07°33'42"	966.00'	127.49'	S08°02'25"E	127.40'
C79	80°09'03"	4.00'	5.60'	S51°53'48"E	5.15'
C80	90°09'57"	4.00'	6.29'	N42°56'42"E	5.67'
C81	18°58'21"	352.00'	116.56'	N07°20'55"E	116.03'
C82	14°50'39"	352.00'	91.20'	N16°42'15"E	90.94'
C83	11°25'11"	352.00'	70.16'	N03°34'20"E	70.04'
C84	14°50'39"	222.00'	57.52'	N16°42'15"E	57.36'
C85	11°25'11"	222.00'	44.25'	N03°34'20"E	44.17'
C86	20°15'59"	272.00'	96.21'	N12°16'16"W	95.71'
C87	07°57'10"	272.00'	37.75'	N18°25'40"W	37.72'
C88	12°18'49"	272.00'	58.46'	N08°17'41"W	58.34'
C89	12°18'49"	142.00'	30.52'	N08°17'41"W	30.46'
C90	07°57'10"	142.00'	19.71'	N18°25'40"W	19.69'
C91	18°16'13"	1022.00'	325.89'	S13°16'09"E	324.51'
C92	03°17'36"	1022.00'	58.74'	S14°59'50"E	58.73'
C93	03°17'36"	1022.00'	58.74'	S18°17'26"E	58.73'
C94	02°28'02"	1022.00'	44.01'	S21°10'14"E	44.01'
C95	03°17'36"	1152.00'	66.21'	S14°59'50"E	66.20'
C96	03°17'36"	1152.00'	66.21'	S18°17'26"E	66.20'
C97	02°28'02"	1152.00'	49.61'	S21°10'14"E	49.60'
C98	89°50'03"	4.00'	6.27'	N47°03'18"W	5.65'
C99	103°44'38"	4.00'	7.24'	S36°09'22"W	6.29'
C100	06°41'18"	966.00'	112.77'	S19°03'36"E	112.70'
C101	20°15'59"	328.00'	116.02'	N12°16'16"W	115.42'
C102	04°58'21"	328.00'	28.47'	N19°55'05"W	28.46'
C103	08°54'07"	328.00'	50.96'	N12°58'52"W	50.91'
C104	06°23'32"	328.00'	36.59'	N05°20'02"W	36.57'
C105	18°58'21"	408.00'	135.10'	N07°20'55"E	134.49'
C106	00°16'41"	408.00'	1.98'	N01°59'56"W	1.98'
C107	06°39'07"	408.00'	47.37'	N01°27'58"E	47.34'
C108	06°39'58"	408.00'	47.47'	N08°07'30"E	47.44'
C109	06°39'58"	408.00'	47.47'	N14°47'28"E	47.44'
C110	06°36'27"	408.00'	47.05'	N21°25'40"E	47.03'
C111	23°00'31"	668.00'	268.25'	N09°22'00"E	266.45'
C112	01°21'22"	668.00'	15.81'	N01°27'35"W	15.81'
C113	04°17'54"	668.00'	50.11'	N01°22'03"E	50.10'
C114	04°17'54"	668.00'	50.11'	N05°39'57"E	50.10'
C115	04°17'54"	668.00'	50.11'	N09°57'51"E	50.10'
C116	04°17'54"	668.00'	50.11'	N14°15'45"E	50.10'
C117	04°17'54"	668.00'	50.11'	N18°33'39"E	50.10'
C118	04°28'02"	668.00'	52.08'	N22°56'37"E	52.07'
C119	00°12'39"	538.00'	1.98'	N02°01'57"W	1.98'
C120	06°43'08"	538.00'	63.09'	N01°25'57"E	63.05'
C121	06°39'58"	538.00'	62.59'	N08°07'30"E	62.56'
C122	06°39'58"	538.00'	62.59'	N14°47'28"E	62.56'
C123	06°53'03"	538.00'	64.64'	N21°33'58"E	64.60'
C124	04°17'54"	538.00'	40.36'	N22°51'33"E	40.35'
C125	04°17'54"	538.00'	40.36'	N18°33'39"E	40.35'
C126	04°17'54"	538.00'	40.36'	N14°15'45"E	40.35'
C127	04°17'54"	538.00'	40.36'	N09°57'51"E	40.35'
C128	04°17'54"	538.00'	40.36'	N05°39'57"E	40.35'
C129	04°17'54"	538.00'	40.36'	N01°22'03"E	40.35'
C130	01°21'22"	538.00'	12.73'	N01°27'35"W	12.73'

PREPARED BY:
(407) 869-5002
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PROFESSIONAL LAND SURVEYORS
1681 POWELL STREET LONGWOOD, FLORIDA 32750
CERTIFICATE OF AUTHORIZATION NUMBER: LB 6767

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CRESSWIND DELAND PLAT 2-3

A PORTION OF SECTION 13, TOWNSHIP 17 SOUTH, RANGE 30 EAST AND A PORTION OF SECTION 18, TOWNSHIP 17 SOUTH, RANGE 31 EAST, VOLUSIA COUNTY, FLORIDA, REPLATTING A PORTION OF LOTS 1, 2, 3, 6, 7, 8, 10 THROUGH 16, 18 AND 31, ASSESSOR'S SUBDIVISION OF WINNEMISSETT AS RECORDED IN MAP BOOK 3, PAGE 20, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA
CITY OF DELAND

MAP BOOK PAGE



LINE TABLE		
LINE	BEARING	LENGTH
L44	S61°00'48"E	39.34'
L45	S28°59'12"W	56.00'
L46	S61°00'48"E	18.40'
L47	S61°00'48"E	36.60'
L48	S61°00'48"E	36.60'
L49	S61°00'48"E	5.66'
L50	S61°00'48"E	10.72'
L51	N79°23'18"E	158.00'

CURVE TABLE					
CURVE	DELTA	RADIUS	LENGTH	CHORD BEARING	CHORD DISTANCE
C131	50°24'07"	1000.00'	879.68'	N35°48'45"W	851.59'
C132	21°31'05"	1000.00'	375.56'	N50°15'16"W	373.36'
C133	28°53'02"	1000.00'	504.12'	N25°03'13"W	498.80'
C134	21°17'06"	1158.00'	430.19'	N50°22'15"W	427.72'
C135	02°10'10"	1158.00'	43.85'	N59°55'43"W	43.84'
C136	02°43'45"	1158.00'	55.16'	N57°28'46"W	55.15'
C137	02°43'47"	1158.00'	55.17'	N54°45'00"W	55.16'
C138	02°43'49"	1158.00'	55.18'	N52°01'12"W	55.18'
C139	02°43'51"	1158.00'	55.19'	N49°17'22"W	55.19'
C140	02°43'53"	1158.00'	55.20'	N46°33'30"W	55.20'
C141	02°43'55"	1158.00'	55.21'	N43°49'36"W	55.21'
C142	02°43'57"	1158.00'	55.23'	N41°05'41"W	55.22'
C143	21°31'05"	1028.00'	386.08'	N50°15'16"W	383.81'
C144	02°25'11"	1028.00'	43.41'	N59°48'13"W	43.41'
C145	02°43'42"	1028.00'	48.95'	N57°13'47"W	48.95'
C146	02°43'42"	1028.00'	48.95'	N54°30'04"W	48.95'
C147	02°43'42"	1028.00'	48.95'	N51°46'22"W	48.95'
C148	02°43'42"	1028.00'	48.95'	N49°02'40"W	48.95'
C149	02°43'42"	1028.00'	48.95'	N46°18'58"W	48.95'
C150	02°43'42"	1028.00'	48.95'	N43°35'16"W	48.95'
C151	02°43'42"	1028.00'	48.95'	N40°51'34"W	48.95'
C152	50°24'07"	972.00'	855.05'	N35°48'45"W	827.74'
C153	01°35'34"	972.00'	27.02'	N60°13'02"W	27.02'
C154	04°06'28"	972.00'	69.69'	N57°22'01"W	69.67'
C155	04°06'28"	972.00'	69.69'	N53°15'32"W	69.67'
C156	04°06'28"	972.00'	69.69'	N49°09'04"W	69.67'
C157	04°06'28"	972.00'	69.69'	N45°02'35"W	69.67'

CURVE TABLE					
CURVE	DELTA	RADIUS	LENGTH	CHORD BEARING	CHORD DISTANCE
C158	04°06'28"	972.00'	69.69'	N40°56'07"W	69.67'
C159	03°21'49"	972.00'	57.06'	N37°11'58"W	57.05'
C160	03°21'49"	972.00'	57.06'	N33°50'09"W	57.05'
C161	03°21'49"	972.00'	57.06'	N30°28'20"W	57.05'
C162	03°21'49"	972.00'	57.06'	N27°06'31"W	57.05'
C163	03°21'49"	972.00'	57.06'	N23°44'42"W	57.05'
C164	03°21'49"	972.00'	57.06'	N20°22'53"W	57.05'
C165	03°21'49"	972.00'	57.06'	N17°01'04"W	57.05'
C166	03°21'49"	972.00'	57.06'	N13°39'15"W	57.05'
C167	01°21'39"	972.00'	23.09'	N11°17'31"W	23.09'
C168	50°24'07"	842.00'	740.69'	N35°48'45"W	717.04'
C169	01°35'34"	842.00'	23.40'	N60°13'02"W	23.40'
C170	04°06'28"	842.00'	60.37'	N57°22'01"W	60.36'
C171	04°06'28"	842.00'	60.37'	N53°15'32"W	60.36'
C172	04°06'28"	842.00'	60.37'	N49°09'04"W	60.36'
C173	04°06'28"	842.00'	60.37'	N45°02'35"W	60.36'
C174	04°06'28"	842.00'	60.37'	N40°56'07"W	60.36'
C175	03°21'49"	842.00'	49.43'	N37°11'58"W	49.42'
C176	03°21'49"	842.00'	49.43'	N33°50'09"W	49.42'
C177	03°21'49"	842.00'	49.43'	N30°28'20"W	49.42'
C178	03°21'49"	842.00'	49.43'	N27°06'31"W	49.42'
C179	03°21'49"	842.00'	49.43'	N23°44'42"W	49.42'
C180	03°21'49"	842.00'	49.43'	N20°22'53"W	49.42'
C181	03°21'49"	842.00'	49.43'	N17°01'04"W	49.42'
C182	03°21'49"	842.00'	49.43'	N13°39'15"W	49.42'
C183	01°21'39"	842.00'	20.00'	N11°17'31"W	20.00'

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CRESSWIND DELAND PLAT 2-3

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CITY OF DELAND

MAP BOOK PAGE

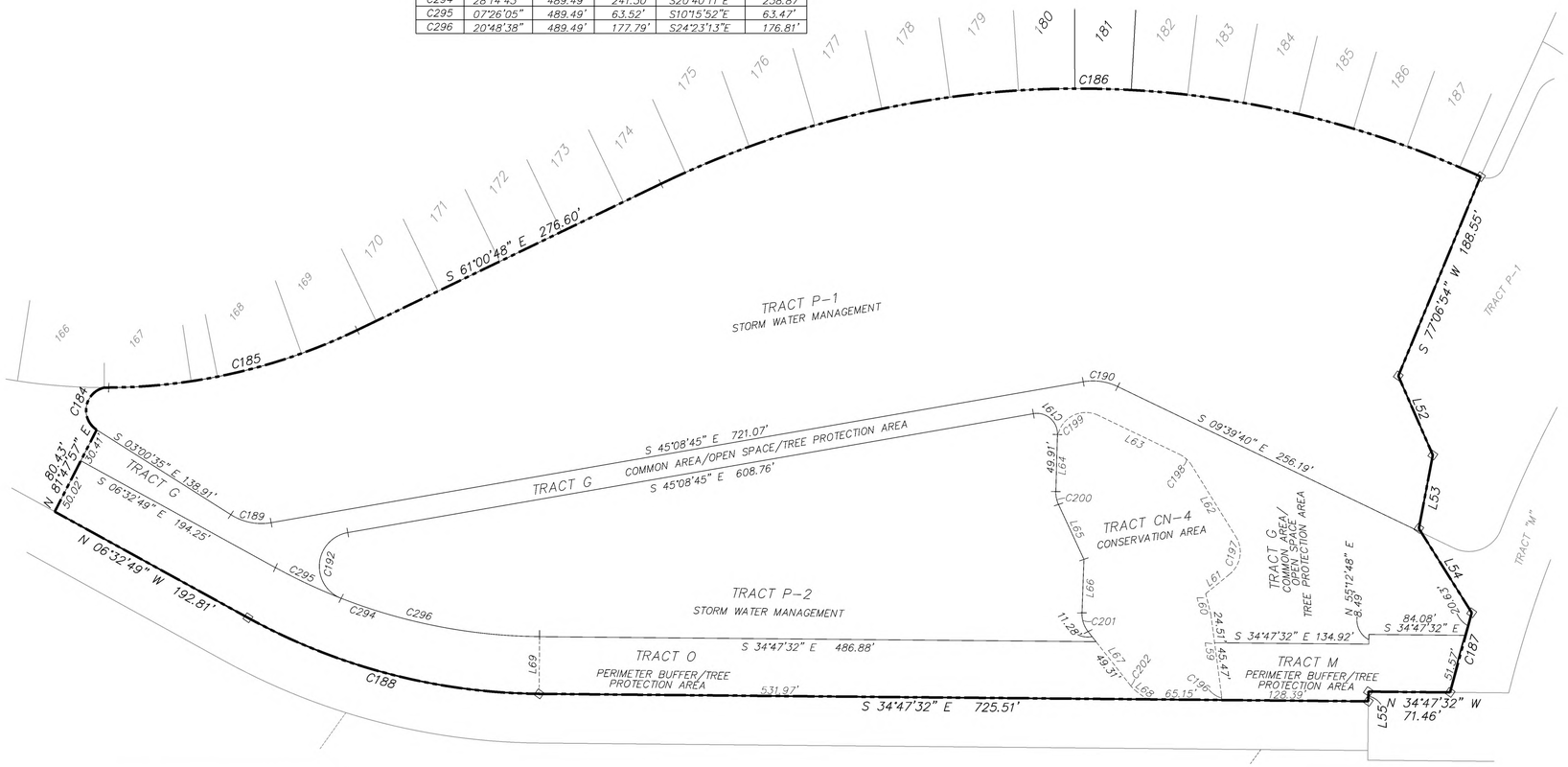
GRAPHIC SCALE
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(IN FEET)

CURVE TABLE

CURVE	DELTA	RADIUS	LENGTH	CHORD BEARING	CHORD DISTANCE
C184	147°21'59"	20.00'	51.44'	S70°40'25"W	38.39'
C185	25°22'13"	508.00'	224.94'	S48°19'42"E	223.11'
C186	50°24'07"	842.00'	740.69'	N35°48'45"W	717.04'
C187	03°57'26"	1045.42'	72.20'	S69°56'10"W	72.19'
C188	28°14'43"	539.49'	265.95'	S20°40'11"E	263.27'
C189	42°08'10"	50.00'	36.77'	S24°04'40"E	35.95'
C190	35°29'05"	50.00'	30.97'	N27°24'13"W	30.47'
C191	148°50'09"	18.00'	31.87'	N05°34'29"E	27.87'
C192	101°26'29"	30.00'	77.93'	N60°26'10"E	57.79'
C193	88°25'22"	20.00'	30.87'	S79°00'13"E	27.89'
C194	101°26'29"	15.00'	26.56'	N05°34'29"E	23.22'
C195	26°30'10"	27.00'	12.49'	S43°02'38"W	12.38'
C196	11°25'40"	25.00'	4.99'	N52°54'49"E	4.98'
C197	82°40'20"	25.00'	36.07'	N64°14'18"E	33.02'
C198	32°33'48"	25.00'	14.21'	N06°37'14"E	14.02'
C199	114°02'36"	25.00'	49.76'	N66°40'58"W	41.94'
C200	26°30'10"	25.00'	11.56'	S43°02'38"W	11.46'
C201	40°17'43"	25.00'	17.58'	S36°38'15"W	17.22'
C202	14°58'26"	25.00'	6.53'	S09°00'11"W	6.52'
C294	28°14'43"	489.49'	241.30'	S20°40'11"E	238.87'
C295	07°26'05"	489.49'	63.52'	S10°15'52"E	63.47'
C296	20°48'38"	489.49'	177.79'	S24°23'13"E	176.81'

LINE TABLE

LINE	BEARING	LENGTH
L52	S31°06'55"W	75.48'
L53	S65°26'54"W	65.39'
L54	S22°33'27"W	86.99'
L55	S55°12'24"W	8.49'
L59	N47°11'59"E	69.98'
L60	N40°45'08"E	19.18'
L61	S74°25'32"E	27.13'
L62	N22°54'08"E	73.84'
L63	N09°39'40"W	79.01'
L64	S56°17'44"W	44.90'
L65	S29°47'33"W	52.95'
L66	S56°47'06"W	46.81'
L67	S16°29'24"W	60.59'
L68	S01°30'58"W	11.85'
L69	N55°12'28"E	51.49'



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CRESSWIND DELAND PLAT 2-3

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CITY OF DELAND

MAP BOOK PAGE

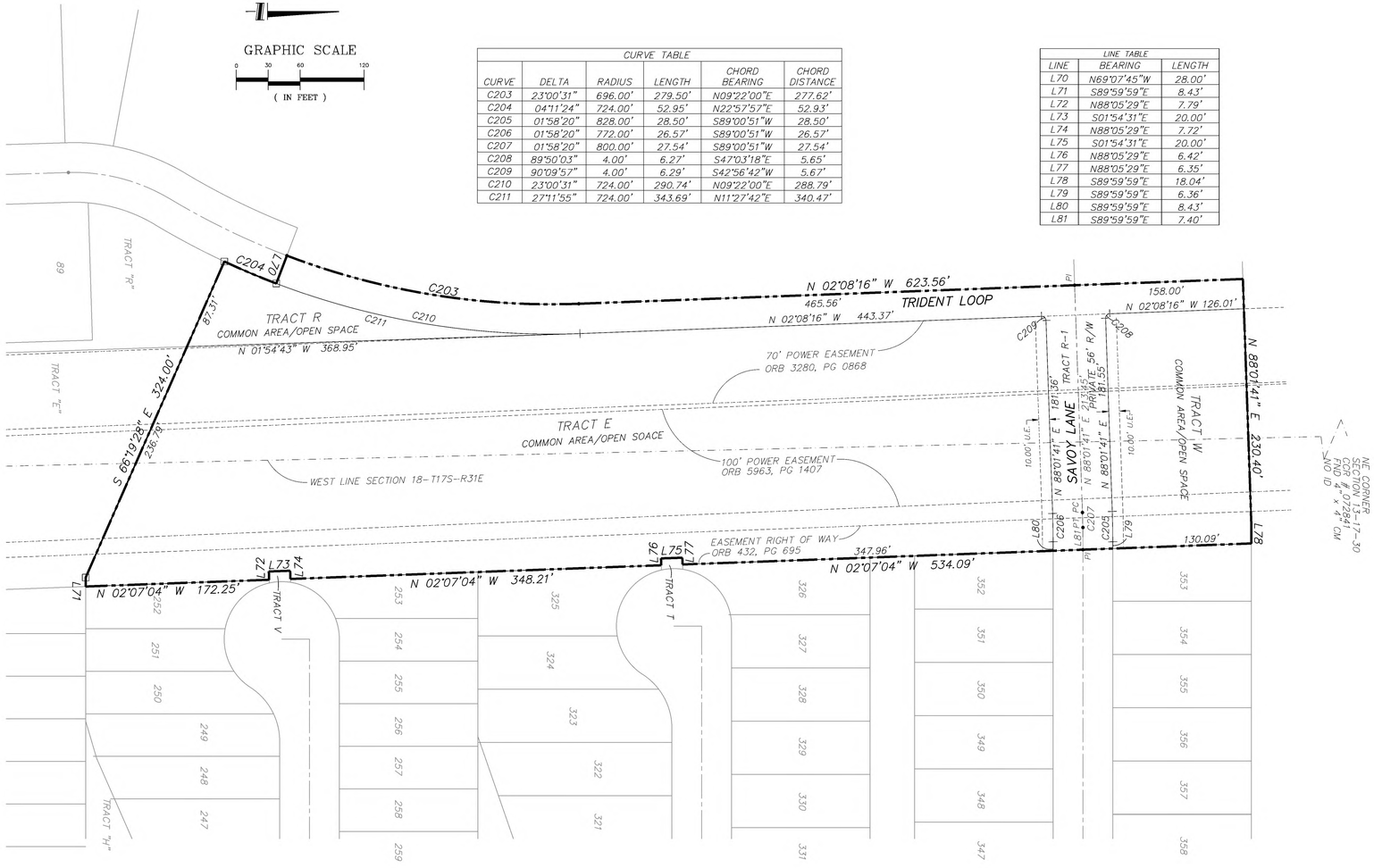
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(IN FEET)

CURVE TABLE

CURVE	DELTA	RADIUS	LENGTH	CHORD BEARING	CHORD DISTANCE
C203	23°00'31"	696.00'	279.50'	N09°22'00"E	277.62'
C204	04°11'24"	724.00'	52.95'	N22°57'57"E	52.93'
C205	01°58'20"	828.00'	28.50'	S89°00'51"W	28.50'
C206	01°58'20"	772.00'	26.57'	S89°00'51"W	26.57'
C207	01°58'20"	800.00'	27.54'	S89°00'51"W	27.54'
C208	89°50'03"	4.00'	6.27'	S47°03'18"E	5.65'
C209	90°09'57"	4.00'	6.29'	S42°56'42"W	5.67'
C210	23°00'31"	724.00'	290.74'	N09°22'00"E	288.79'
C211	27°11'55"	724.00'	343.69'	N11°27'42"E	340.47'

LINE TABLE

LINE	BEARING	LENGTH
L70	N69°07'45"W	28.00'
L71	S89°59'59"E	8.43'
L72	N88°05'29"E	7.79'
L73	S01°54'31"E	20.00'
L74	N88°05'29"E	7.72'
L75	S01°54'31"E	20.00'
L76	N88°05'29"E	6.42'
L77	N88°05'29"E	6.35'
L78	S89°59'59"E	18.04'
L79	S89°59'59"E	6.36'
L80	S89°59'59"E	8.43'
L81	S89°59'59"E	7.40'



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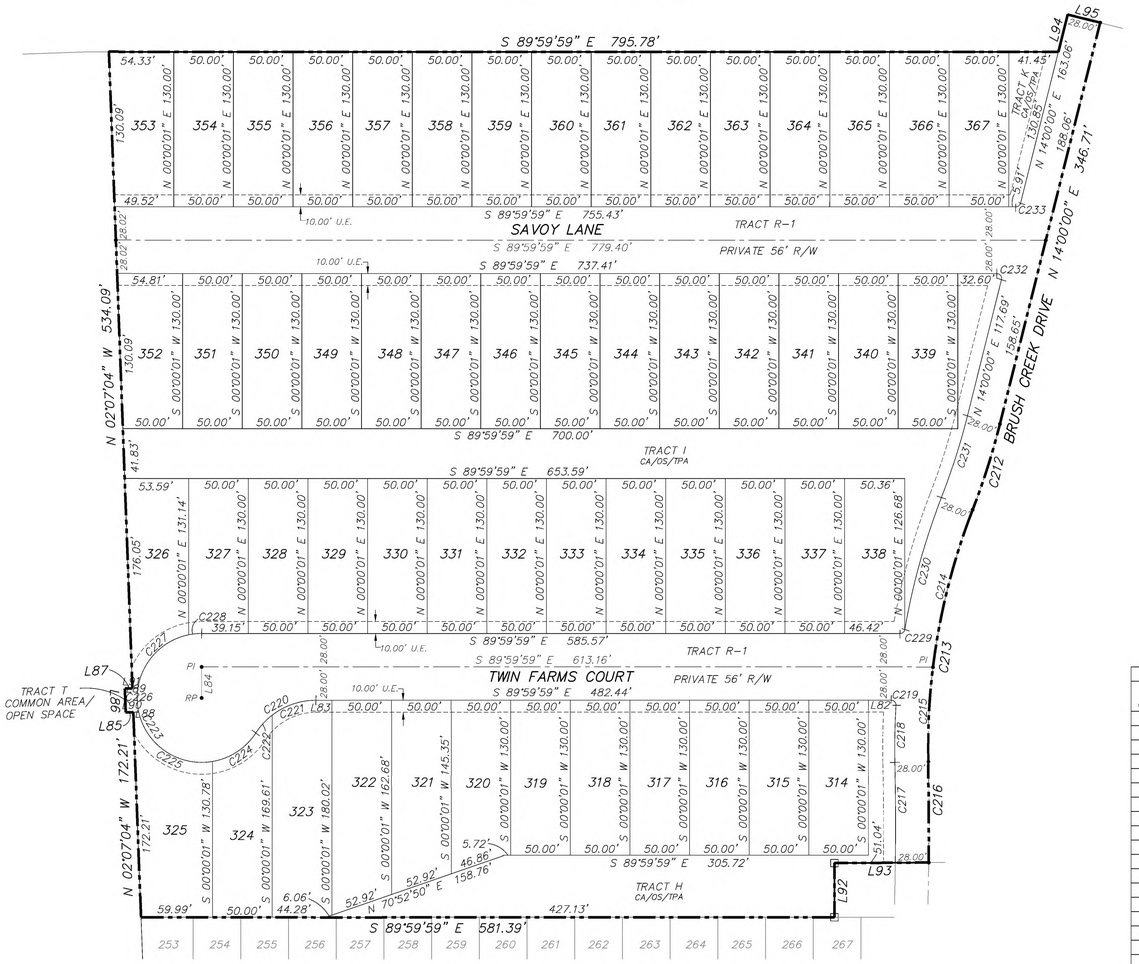
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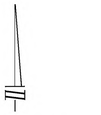
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CITY OF DELAND

MAP BOOK PAGE

SHEET 10 OF 14





LINE TABLE		
LINE	BEARING	LENGTH
L82	S89°59'59"E	18.96'
L83	N89°59'59"W	13.48'
L84	N00°00'01"E	26.00'
L85	N88°05'29"E	6.42'
L86	S01°54'31"E	20.00'
L87	N88°05'29"E	6.35'
L88	N88°05'29"E	4.50'
L89	N88°05'29"E	4.58'
L90	N88°05'29"E	10.93'
L91	N88°05'29"E	10.93'
L92	N00°00'01"E	45.46'
L93	S89°40'13"W	79.04'
L94	N14°00'00"E	32.21'
L95	S76°00'00"E	28.00'

CURVE TABLE					
CURVE	DELTA	RADIUS	LENGTH	CHORD BEARING	CHORD DISTANCE
C212	7°13'04"	600.00'	75.59'	N17°36'32"E	75.54'
C213	22°29'11"	550.00'	215.85'	S09°58'29"W	214.47'
C214	14°12'04"	550.00'	136.32'	S14°07'02"W	135.97'
C215	08°17'07"	550.00'	79.53'	S02°52'27"W	79.46'
C216	01°58'53"	2450.00'	84.73'	N00°16'40"W	84.72'
C217	01°59'37"	2422.00'	84.27'	N00°16'18"W	84.27'
C218	04°44'05"	578.00'	47.76'	S01°05'56"W	47.75'
C219	93°27'57"	4.00'	6.53'	N43°16'00"W	5.83'
C220	57°03'11"	60.00'	59.75'	S61°28'25"W	57.31'
C221	37°29'27"	60.00'	39.26'	S71°15'17"W	38.56'
C222	19°33'45"	60.00'	20.49'	S42°43'42"W	20.39'
C223	237°02'43"	54.00'	223.41'	S28°31'49"E	94.89'
C224	47°17'59"	54.00'	44.58'	N56°35'49"E	43.32'
C225	87°10'22"	54.00'	82.16'	S56°10'00"E	74.46'
C226	21°20'38"	54.00'	20.12'	S01°54'31"E	20.00'
C227	69°38'16"	54.00'	65.63'	S43°34'56"W	61.67'
C228	11°35'28"	54.00'	10.92'	S84°11'48"W	10.91'
C229	80°11'16"	4.00'	5.60'	N49°54'23"E	5.15'
C230	11°24'19"	578.00'	115.06'	S15°30'55"W	114.87'
C231	07°13'04"	572.00'	72.06'	N17°36'32"E	72.01'
C232	103°59'59"	4.00'	7.26'	N38°00'00"W	6.30'
C233	76°00'01"	4.00'	5.31'	N52°00'00"E	4.93'

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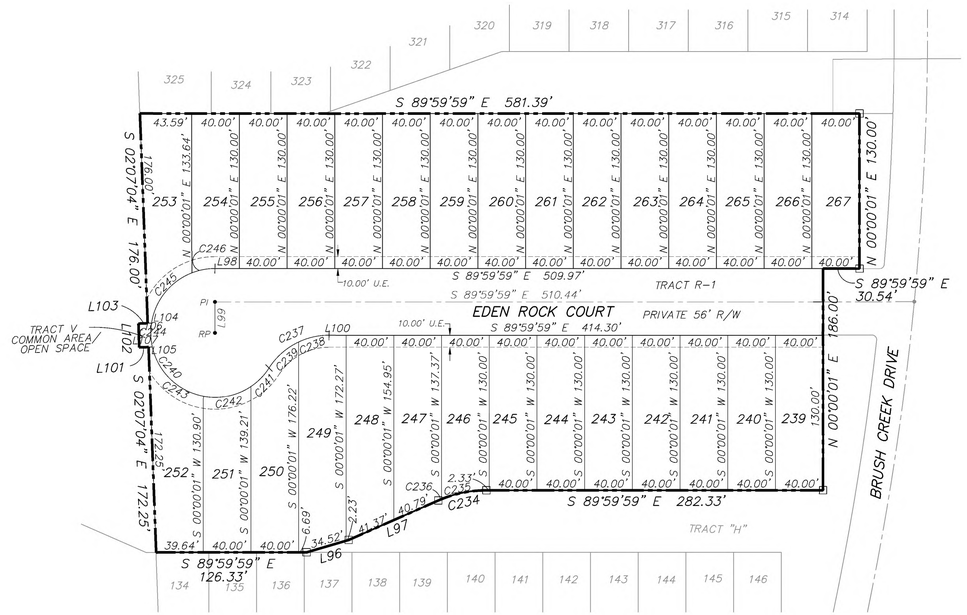
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CRESSWIND DELAND PLAT 2-3

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CITY OF DELAND

MAP BOOK PAGE

SHEET 11 OF 14



GRAPHIC SCALE
0 30 60 120
(IN FEET)
1 inch = 60 ft.

LINE TABLE		
LINE	BEARING	LENGTH
L96	N73°37'56"E	36.75'
L97	N66°12'34"E	82.17'
L98	S89°59'59"E	20.51'
L99	N00°00'01"E	26.00'
L100	S89°59'59"E	14.30'
L101	N88°05'29"E	7.79'
L102	S01°54'31"E	20.00'
L103	N88°05'29"E	7.72'
L104	N88°05'29"E	3.21'
L105	N88°05'29"E	3.14'
L106	N88°05'29"E	10.93'
L107	N88°05'29"E	10.93'

CURVE TABLE					
CURVE	DELTA	RADIUS	LENGTH	CHORD BEARING	CHORD DISTANCE
C234	23°47'27"	100.00'	41.52'	S78°06'17"W	41.23'
C235	22°07'40"	100.00'	38.62'	S78°56'11"W	38.38'
C236	01°39'47"	100.00'	2.90'	S67°02'27"W	2.90'
C237	57°03'12"	60.00'	59.75'	S61°28'25"W	57.31'
C238	25°11'35"	60.00'	26.38'	S77°24'13"W	26.17'
C239	31°51'37"	60.00'	33.36'	S48°52'38"W	32.94'
C240	237°03'12"	54.00'	223.42'	S28°31'35"E	94.89'
C241	23°05'57"	54.00'	21.77'	N44°29'48"E	21.62'
C242	44°27'10"	54.00'	41.90'	N78°16'21"E	40.85'
C243	66°55'14"	54.00'	63.07'	S46°02'27"E	59.55'
C244	21°20'38"	54.00'	20.12'	S01°54'31"E	20.00'
C245	60°04'42"	54.00'	56.62'	S38°48'09"W	54.06'
C246	21°09'30"	54.00'	19.94'	S79°25'16"W	19.83'

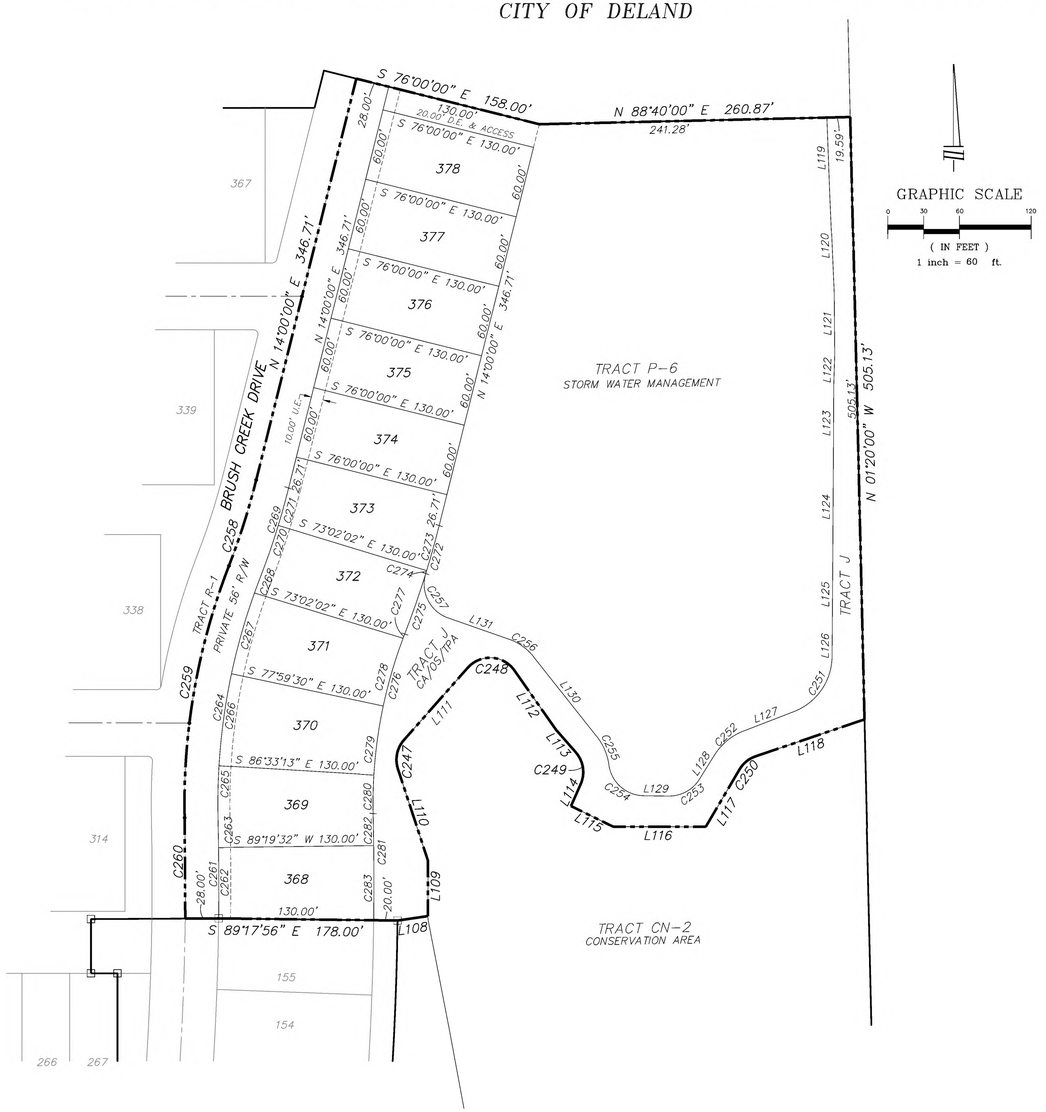
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CITY OF DELAND

MAP BOOK PAGE



CURVE TABLE

CURVE	DELTA	RADIUS	LENGTH	CHORD BEARING	CHORD DISTANCE
C247	59°33'17"	25.00'	25.99'	S11°39'03"W	24.83'
C248	103°34'28"	25.00'	45.19'	N86°47'04"W	39.29'
C249	65°02'11"	25.00'	28.38'	N08°40'46"W	26.88'
C250	40°47'08"	25.00'	17.80'	S50°52'34"W	17.42'
C251	68°20'55"	50.00'	59.65'	N34°43'25"E	56.17'
C252	36°55'56"	50.00'	32.23'	S50°25'54"W	31.67'
C253	58°48'18"	30.00'	30.79'	N61°22'05"E	29.46'
C254	81°11'16"	30.00'	42.51'	S48°38'07"E	39.04'
C255	30°22'07"	50.00'	26.50'	N23°13'33"W	26.19'
C256	32°14'52"	45.00'	25.33'	N54°32'02"W	24.99'
C257	87°49'05"	30.00'	45.98'	S26°44'55"E	41.61'
C258	7°13'04"	600.00'	75.59'	N17°36'32"E	75.54'
C259	22°29'11"	550.00'	215.85'	S09°58'29"W	214.47'
C260	01°58'53"	2450.00'	84.73'	N00°16'40"W	84.72'
C261	01°58'11"	2478.00'	85.19'	N00°17'01"W	85.18'
C262	01°22'32"	2478.00'	59.49'	N00°00'48"E	59.49'
C263	00°35'39"	2478.00'	25.70'	N00°58'17"W	25.70'
C264	22°29'11"	522.00'	204.86'	S09°58'29"W	203.55'
C265	04°42'54"	522.00'	42.96'	S01°05'20"W	42.94'
C266	08°33'43"	522.00'	78.00'	S07°43'39"W	77.93'
C267	07°43'53"	522.00'	70.44'	S15°52'26"W	70.39'
C268	01°28'41"	522.00'	13.47'	S20°28'44"W	13.47'
C269	07°13'04"	628.00'	79.11'	N17°36'32"E	79.06'
C270	04°15'06"	628.00'	46.60'	N19°05'31"E	46.59'
C271	02°57'58"	628.00'	32.51'	N15°28'59"E	32.51'
C272	03°09'37"	758.00'	41.81'	N15°34'49"E	41.80'
C273	02°57'58"	758.00'	39.24'	N15°28'59"E	39.24'
C274	00°11'39"	758.00'	2.57'	N17°03'48"E	2.57'
C275	04°03'27"	758.00'	53.68'	N19°11'21"E	53.67'
C276	22°29'11"	392.00'	153.84'	S09°58'29"W	152.86'
C277	00°33'26"	392.00'	3.81'	S20°56'21"W	3.81'
C278	08°39'09"	392.00'	59.20'	S16°20'04"W	59.14'
C279	08°33'43"	392.00'	58.58'	S07°43'39"W	58.52'
C280	04°42'54"	392.00'	32.26'	S01°05'20"W	32.25'
C281	10°58'11"	2608.00'	89.66'	N00°17'01"W	89.65'
C282	00°35'39"	2608.00'	27.05'	N00°58'17"W	27.05'
C283	01°22'32"	2608.00'	62.61'	N00°00'48"E	62.61'

LINE TABLE

LINE	BEARING	LENGTH
L108	S81°36'44"W	25.77'
L109	N00°06'56"E	46.49'
L110	N18°07'35"W	81.07'
L111	N41°25'42"E	80.68'
L112	S34°59'50"E	60.38'
L113	S41°11'51"E	25.54'
L114	S23°50'20"W	20.10'
L115	S63°53'25"E	39.34'
L116	S89°53'05"E	77.56'
L117	N30°29'00"E	55.91'
L118	N71°16'08"E	96.29'
L119	S02°07'49"E	67.25'
L120	S02°29'30"E	79.93'
L121	S00°26'48"E	51.67'
L122	S01°44'14"W	26.22'
L123	S00°17'52"W	62.25'
L124	S00°22'45"W	78.34'
L125	S00°22'45"W	68.17'
L126	S00°32'57"W	18.16'
L127	S68°53'52"W	45.10'
L128	S31°57'56"W	23.91'
L129	N89°13'45"W	20.72'
L130	N38°24'36"W	85.25'
L131	N70°39'28"W	54.10'

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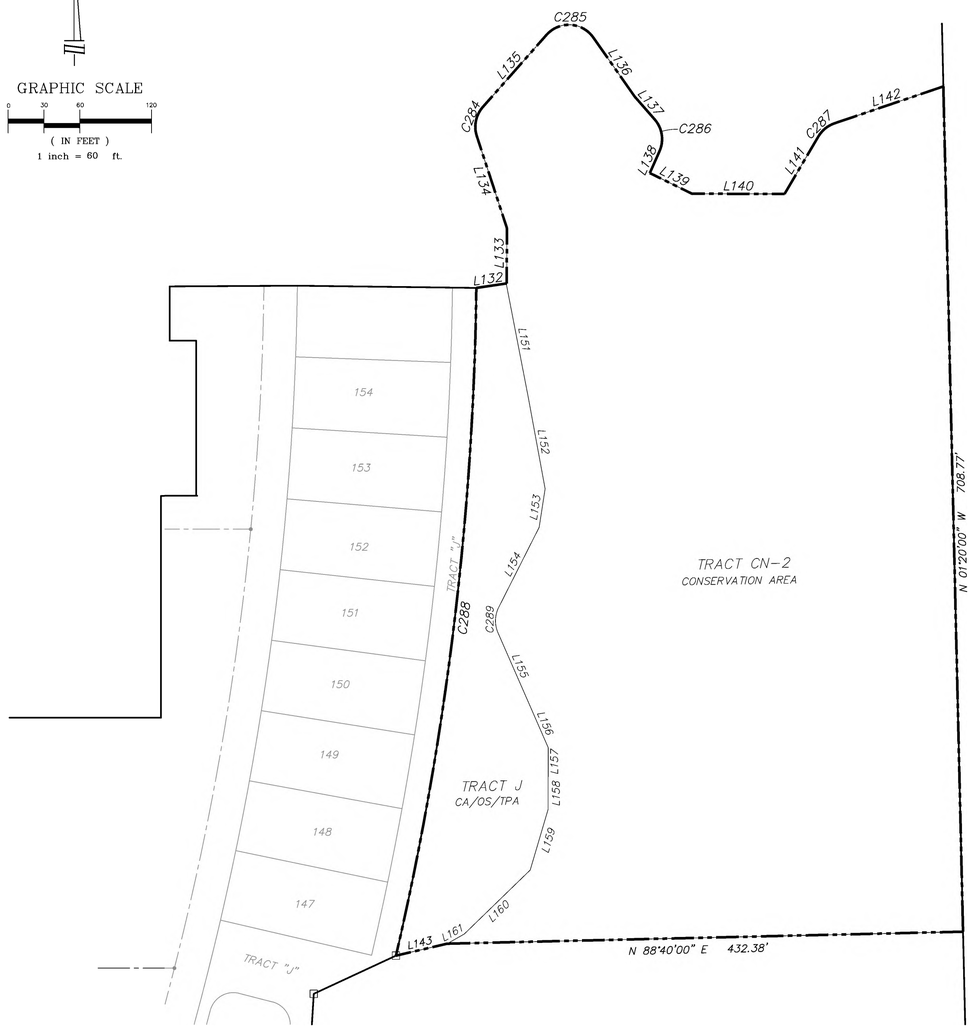
CRESSWIND DELAND PLAT 2-3

MAP BOOK PAGE

SHEET 13 OF 14

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CITY OF DELAND

GRAPHIC SCALE
0 30 60 120
(IN FEET)
1 inch = 60 ft.



LINE TABLE		
LINE	BEARING	LENGTH
L132	S81°36'44"W	25.77'
L133	N00°06'56"E	46.49'
L134	N18°07'35"W	81.07'
L135	N41°25'42"E	80.68'
L136	S34°59'50"E	60.38'
L137	S41°11'51"E	25.54'
L138	S23°50'20"W	20.10'
L139	S63°53'25"E	39.34'
L140	S89°53'05"E	77.56'
L141	N30°29'00"E	55.91'
L142	N71°16'08"E	96.29'
L143	N76°51'26"E	44.05'
L144	S76°51'26"W	44.05'
L145	N65°05'13"E	75.96'
L146	N03°30'44"E	35.58'
L147	N43°09'02"W	320.47'
L148	N29°18'35"E	38.58'
L149	N56°12'52"E	118.47'
L150	N00°29'27"W	12.94'
L151	N10°56'11"W	97.33'
L152	N10°27'50"W	77.84'
L153	N08°51'35"E	32.68'
L154	N26°47'00"E	75.18'
L155	N23°36'30"W	66.20'
L156	N23°36'30"W	38.88'
L157	N00°06'56"E	25.05'
L158	N00°06'55"E	26.71'
L159	N16°26'41"E	53.01'
L160	N45°50'05"E	77.03'
L161	N60°28'52"E	16.42'

CURVE TABLE					
CURVE	DELTA	RADIUS	LENGTH	CHORD BEARING	CHORD DISTANCE
C284	59°33'17"	25.00'	25.99'	S11°39'03"W	24.83'
C285	103°34'28"	25.00'	45.19'	N86°47'04"W	39.29'
C286	65°02'11"	25.00'	28.38'	N08°40'46"W	26.88'
C287	40°47'08"	25.00'	17.80'	S50°52'34"W	17.42'
C288	12°18'56"	2628.00'	564.88'	N06°51'32"E	563.80'
C289	50°23'31"	25.00'	21.99'	S01°35'15"W	21.29'

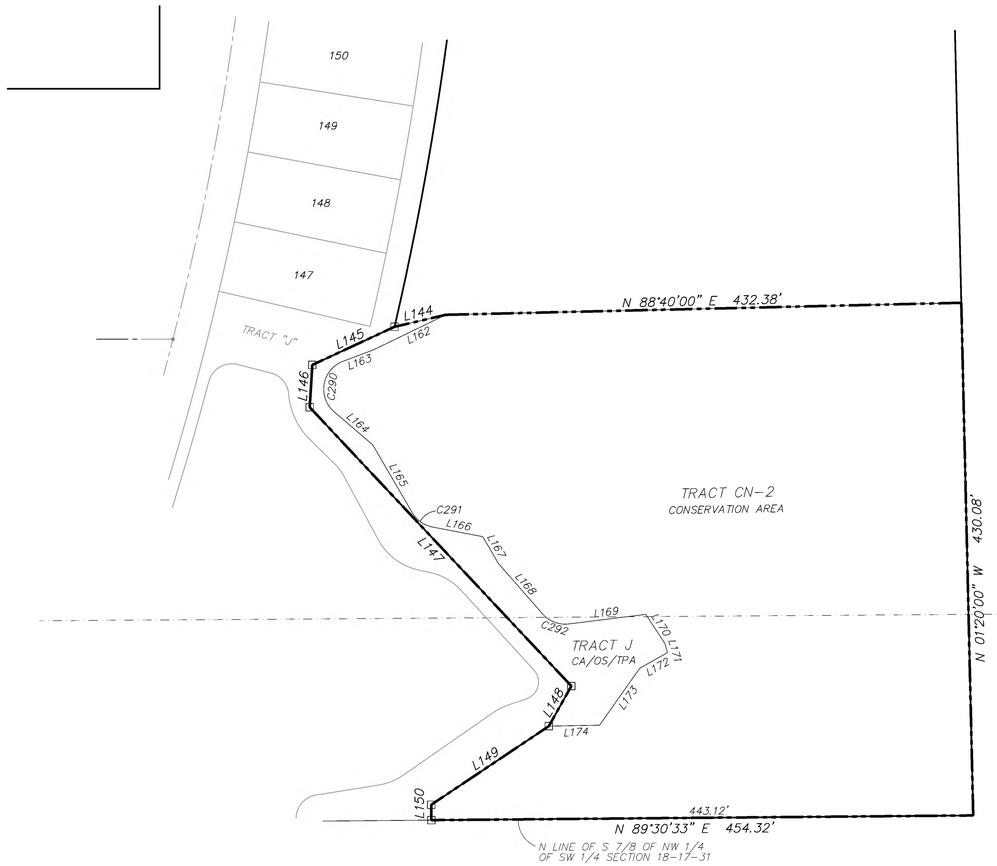
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MAP BOOK PAGE



GRAPHIC SCALE
0 30 60 120
(IN FEET)
1 inch = 60 ft.

LINE TABLE		
LINE	BEARING	LENGTH
L144	S76°51'26"W	44.05'
L145	N65°05'13"E	75.96'
L146	N03°30'44"E	35.58'
L147	N43°09'02"W	320.47'
L148	N29°18'35"E	38.58'
L149	N56°12'52"E	118.47'
L150	N00°29'27"W	12.94'
L162	N64°07'18"E	67.20'
L163	N69°20'48"E	27.34'
L164	N49°24'36"W	42.46'
L165	N30°15'11"W	66.02'
L166	N79°08'50"W	42.85'
L167	N30°15'12"W	26.15'
L168	N41°11'54"W	56.18'
L169	S82°54'38"W	64.97'
L170	N33°16'41"W	29.08'
L171	N16°12'52"W	8.05'
L172	N60°28'53"E	26.68'
L173	N35°13'43"E	58.48'
L174	N88°55'10"E	42.47'

CURVE TABLE					
CURVE	DELTA	RADIUS	LENGTH	CHORD BEARING	CHORD DISTANCE
C290	118°45'25"	25.00'	51.82'	S09°58'06"W	43.03'
C291	48°53'39"	25.00'	21.33'	S54°42'01"E	20.69'
C292	55°53'28"	25.00'	24.39'	S69°08'38"E	23.43'

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PLANNING DEPARTMENT STAFF REPORT
TO
PLANNING BOARD

September 13, 2023

APPLICATION: AN23-103

STAFF PLANNER: Kendall Story

1. **Requested Action:** Annexation of property located in unincorporated Volusia County into the City limits of DeLand

2. **Location:** Northwest corner of S. Blue Lake Ave. & E. Taylor Rd.

3. **Petitioner**: Mr. Michael Woods, Esq., Cobb Cole

4. **Owner**: Stewart Family Properties, LLC

5. **Size of parcel(s):** ± 28.667 acres

6. **Parcel ID**: 7022-00-00-0090 & 7022-00-00-0191

7. **Land Use Designation & Zoning of Subject Property:**

Future Land Use: Volusia County: Rural

Existing Zoning: Volusia County: A-2 – Rural Agriculture

Existing Use: Undeveloped

8. **Surrounding Land Use & Zoning:**

	LAND USE	ZONING
North:	VC: Rural; LDR	VC: A-2; Saddlebrook PD
South:	VC: Rural; New Community Development	Bridle Oaks PD; Victoria Park PD
East:	VC: Rural	VC: A-3
West:	VC: Urban Low Intensity	VC: RA; VC: A-4

9. Physical Characteristics: The proposed annexation consists of ± 28.667 acres, as well as the northern half of the E. Taylor Road right-of-way and the west half of the S. Blue Lake Ave. right-of-way. The subject property does not contain any wetlands and lies outside of the FEMA floodplain. The parcel is undeveloped, heavily wooded and has a 100' wide FPL easement that

runs north to south, near the center of the property. Road frontage for the subject property consists of ± 1,250 linear ft. along E. Taylor Rd. and ± 451 linear ft. along S. Blue Lake Ave.
The subject property is owned by the Stewart Family Estate whom wish to subdivide the property. The applicant's ultimate goal is to develop the parcels into 65 single-family residential lots.

10. Public Services & Utilities: The City's Utilities Department states that the closest city water and sewer mains are found within the right-of-way of E. Taylor Road, in front of the property. The property is located within Police Patrol Zone 5, and service is available to the site with an approximate response time of 7 minutes. The Fire Department confirmed that adequate fire protection can be provided, with an approximate response time of less than 5 minutes. The County of Volusia has indicated that there are no code enforcement actions or liens associated with this property.

11. Growth Management Plan Consistency: An application for a change in land use (SMLU-23-102) has been submitted to amend the future land use from Volusia County Rural (R) to the City's Transitional Rural Development (TRD) designation. Additionally, an application for a zoning change (Z23-104) from Volusia County A-2 (Rural Agriculture) to the City's PD (Planned Development) has also been submitted. To the north of the subject property is the Saddlebrook residential Planned Development which consists of single-family residential lots ranging in widths from 50-70 ft. wide. Immediately to the south of the subject property is the E. Taylor Rd. right-of-way which is a 100 ft. wide right-of-way. South of E. Taylor Rd. is the Victoria Oaks Phase D Planned Development which consists of single-family residential lots ranging in widths from 40-60 ft. wide. To the west is Volusia County's A-3 (Transitional Agriculture) zoning district which requires 1 acre per dwelling unit. To the east is Volusia County's RA (Rural Agricultural Estates) zoning district and requires 1.5 acres per dwelling unit.

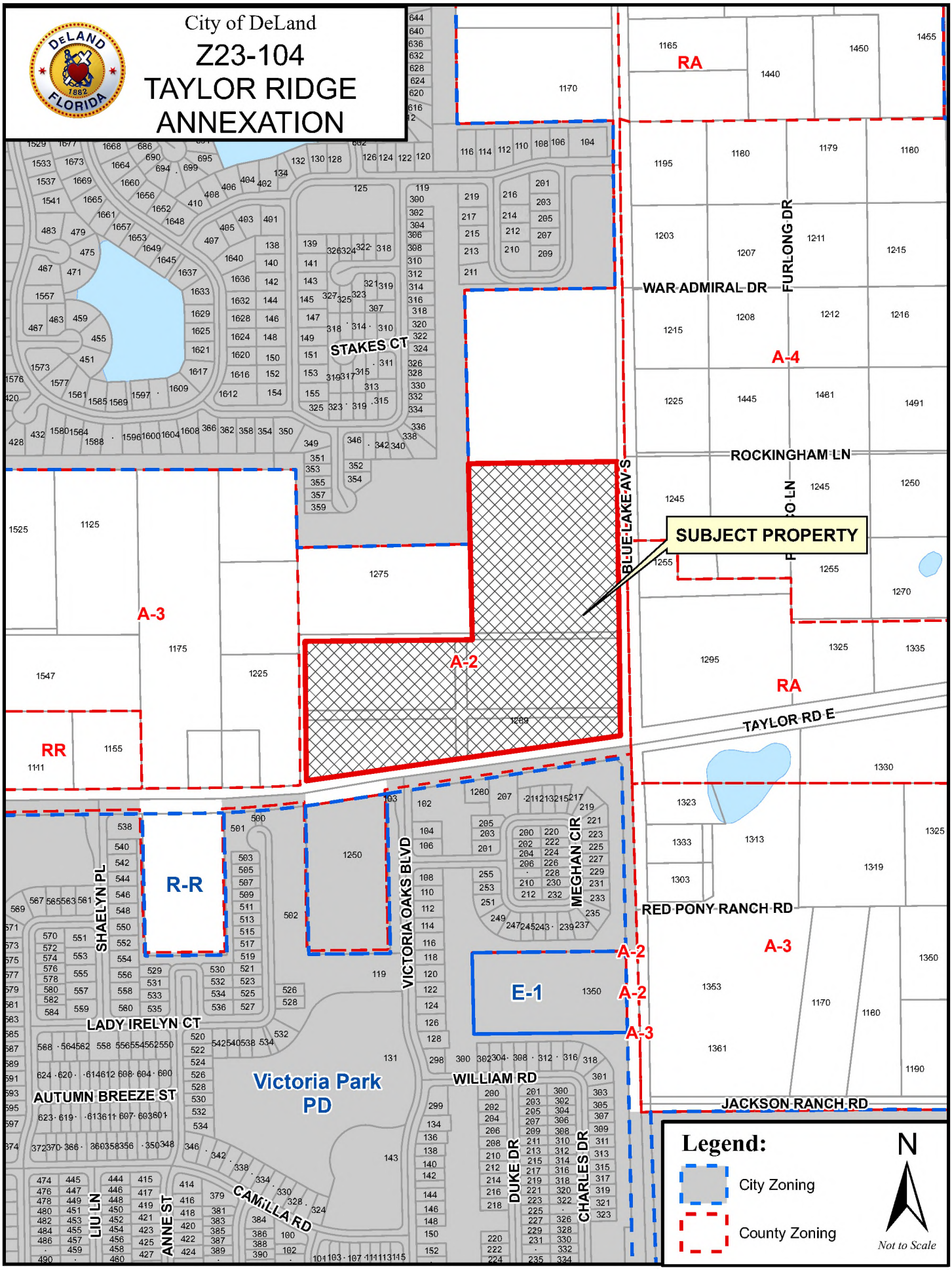
12. Analysis: The City's guidelines for annexation require a property be sufficiently **contiguous** to property already within the city limits and to be accessible to public services provided. In addition, the State requires the property be **reasonably compact**, **not circuitous**, and **does not create an enclave**. The subject property is contiguous to the City of DeLand, is reasonably compact and is not circuitous. However, the subject property is currently located inside an existing enclave of County jurisdiction. The requested annexation will reduce the enclave and will not adversely impact the provisions of governmental services. The parcel is contiguous to the northwest by ± 334 ft., and to the south by ± 1,250 ft.

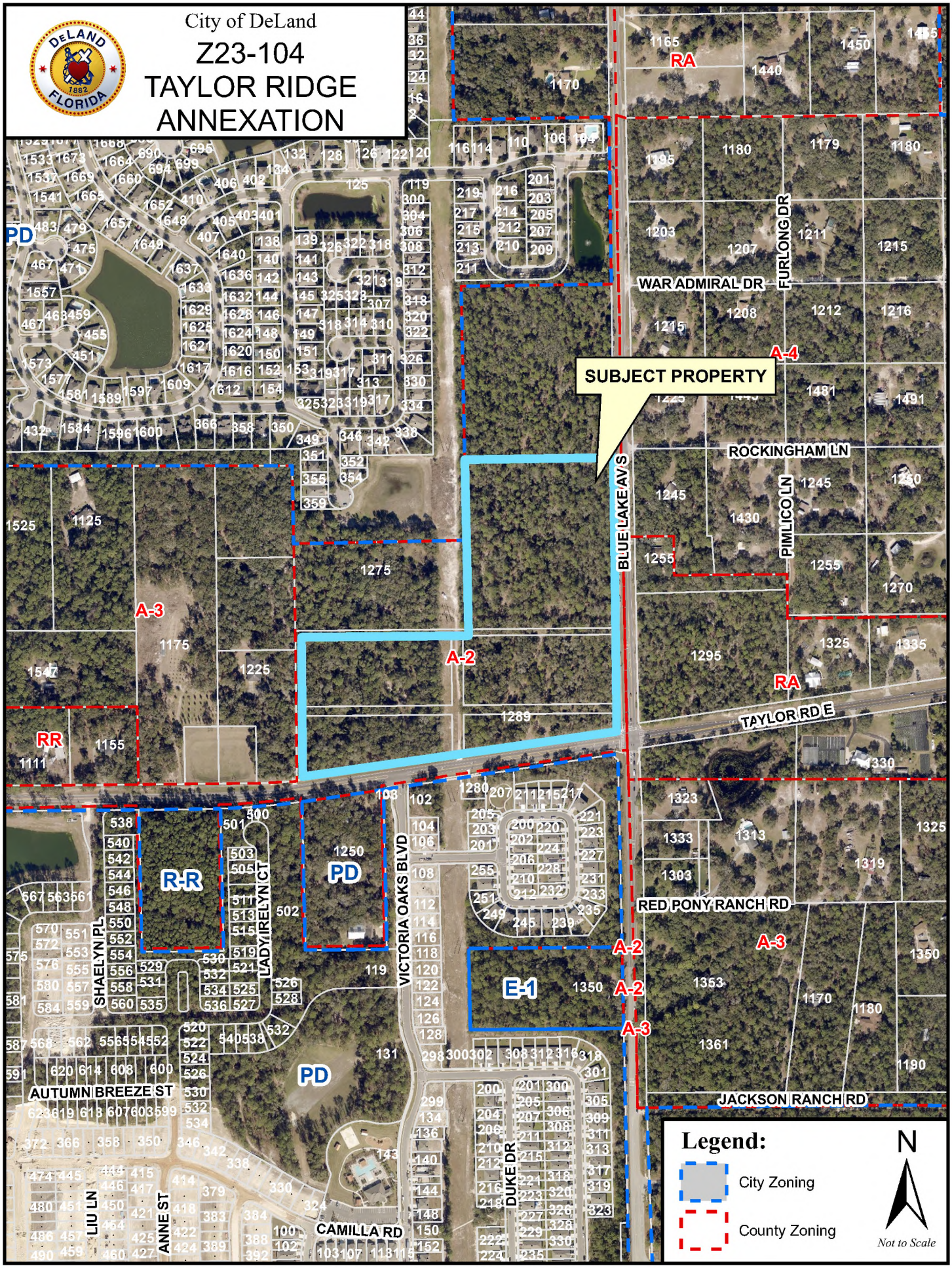
13. History: On February 21, 2022, a request for an annexation, a land use amendment to Low Density Residential and a rezone to the Taylor Ridge PD went before the City Commission. The proposed development did not receive approval of the annexation request, with a 4-1 vote (Apgar) to deny the annexation.

Recommendation: The annexation of this property will not create a new enclave for either the City or the County; therefore, Staff recommends that the Planning Board forward this annexation petition to the City Commission, with a recommendation for approval.

Based upon the concurrency requirements of the State of Florida and the City's concurrency management plan, as adopted in Article 5, Sec. 33-41 of the Land Development Regulations, approval of the proposed annexation does not automatically provide vested development rights. At the time the developer applies for a development permit, adequate infrastructure must exist to support the proposed development. If such infrastructure does not exist, the developer may be required to incur additional expense to ensure that the necessary infrastructure is provided.

L:\COMMDEV\PLANNING\Staff Reports\2023\PB\SR-AN23-103 Taylor Ridge Annex

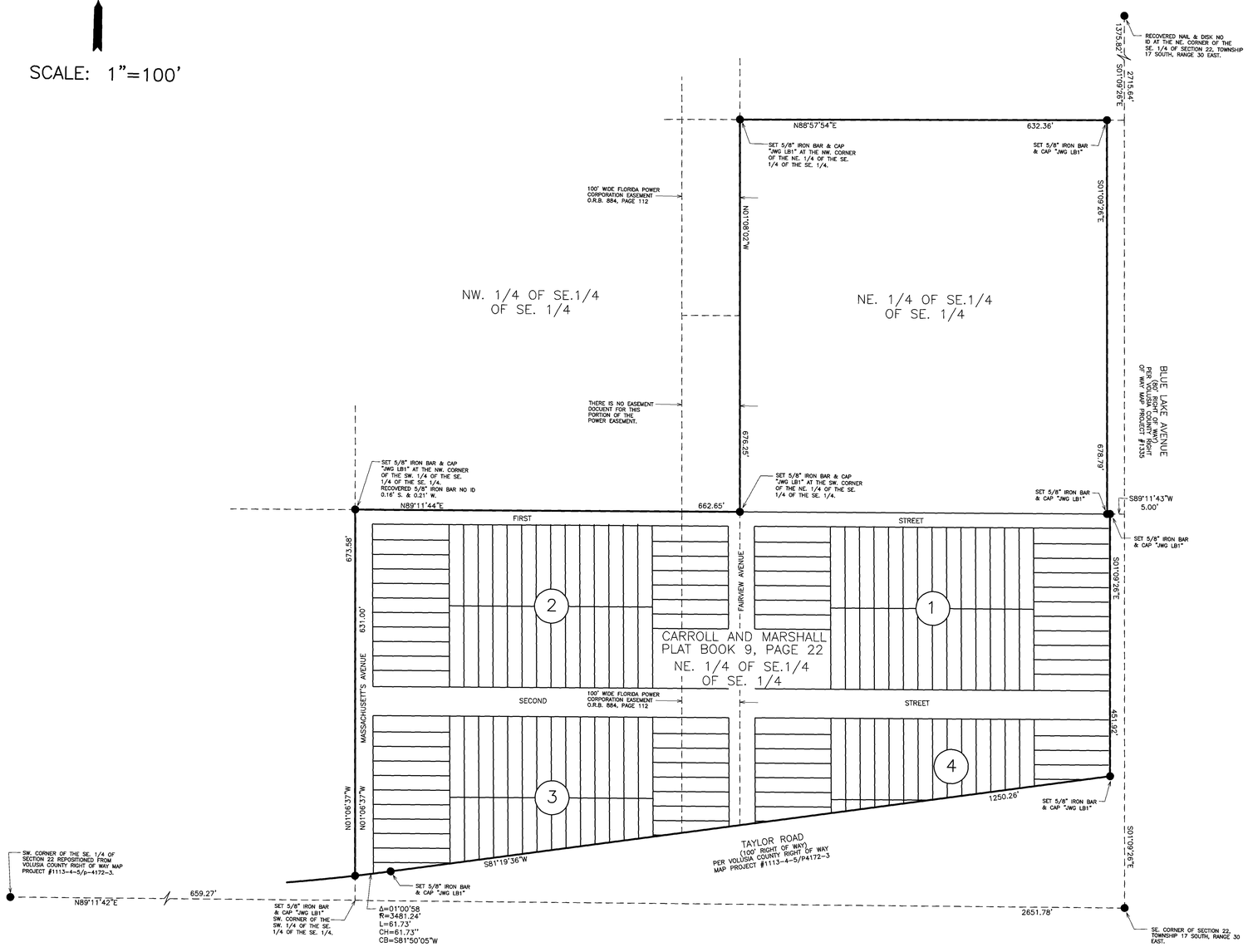

City of DeLand
Z23-104
TAYLOR RIDGE
ANNEXATION
SUBJECT PROPERTY
A-4
A-3
A-2
RA
RR
R-R
E-1
Victoria Park
PD
WAR ADMIRAL DR
FURLONG DR
ROCKINGHAM LN
BLUE LAKE AV S
TAYLOR RD E
RED PONY RANCH RD
JACKSON RANCH RD
WILLIAM RD
STAKES CT
MEGHAN CIR
VICTORIA OAKS BLVD
SHAELYN PL
LADY IRELYN CT
AUTUMN BREEZE ST
LIU LN
ANNE ST
CAMILLA RD
DUKE DR
CHARLES DR
Legend:
City Zoning
County Zoning
N
Not to Scale


City of DeLand
Z23-104
TAYLOR RIDGE
ANNEXATION
SUBJECT PROPERTY
A-4
A-3
A-2
RA
RR
PD
R-R
E-1
WAR ADMIRAL DR
FURLONG DR
ROCKINGHAM LN
PIMLICO LN
BLUE LAKE AV S
TAYLOR RD E
RED PONY RANCH RD
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SHAELYN PL
AUTUMN BREEZE ST
DUKE DR
CAMILLA RD
ANNE ST
LIU LN
Legend:
City Zoning
County Zoning
N
Not to Scale

BOUNDARY SURVEY

SECTION 22, TOWNSHIP 17 SOUTH, RANGE 30 EAST
VOLUSIA COUNTY, FLORIDA

SCALE: 1"=100'



DESCRIPTION

Parcel 1:
The South 1/2 of the Southeast 1/4 of the Southeast 1/4, lying North of Taylor Road, Section 22, Township 17 South, Range 30 East, Volusia County, Florida, Less and Except Road Right of Ways.

also described as:

All of Blocks 1 and 2, and that portion of Blocks 3 and 4, lying North of Taylor Road, Carroll and Marshall Addition to Deland, according to the map thereof as recorded in Map Book 9, Page 22, Public Records of Volusia County, Florida, Less and Except Road Right of Ways.

Parcel 2:
The Northeast 1/4 of the Southeast 1/4 of the Southeast 1/4, Section 22, Township 17 South, Range 30 East, Volusia County, Florida, Less Road Right of Way.

CONTAINING: 26.011 acres, more or less.

LEGEND

R = RADIUS
Δ = DELTA
L = LENGTH
CH = CHORD LENGTH
CB = CHORD BEARING
ASPH = ASPHALT
BC = BACK OF CURB
BNDY = BOUNDARY
C&G = CURB & GUTTER
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CONC. = CONCRETE
CSL = CONCRETE SLAB
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POC = POINT OF COMMENCEMENT
RCP = REINFORCED CONCRETE PIPE
REC = RECOVERED
TB = TANGENT BEARING
W/ = WITH
= CABLE RISER
= ELECTRIC SERVICE BOX
= GUY ANCHOR
= MAILBOX
= MANHOLE-SANITARY
= PEDESTRIAN CROSSING SIGN
= POWER POLE-CONCRETE
= POWER POLE-METAL
= POWER POLE-WOOD
= SIGN
= TELEPHONE PEDESTAL
= WELL PUMP
= 4"X4" CONCRETE MONUMENT
= 5/8" IRON BAR & CAP, UNLESS NOTED OTHERWISE

NOTES
1. This Plat represents a Boundary Survey of the Description provided by client to Jones, Wood & Gentry, Inc. and does not indicate ownership.

2. Bearings shown hereon are based on the East Boundary of the Southeast 1/4 of Section 22 as bearing S01°09'26"E, per Florida State Plane coordinates Zone East.

3. A Commitment for Title Insurance was prepared by Chicago Title Insurance Company, Commitment No. RTG2121201 with a commitment date of July 12, 2021 at 5:00 P.M. and was provided to Jones, Wood & Gentry, Inc. for use in preparing this survey. Research of the public records was not a part of the Scope of Surveying Services contract. Items listed in Schedule B Section II of the title commitment, to the extent they affect and can be shown graphically on the survey, relative to the subject property, are listed below:
ITEM 6. Restrictions, covenants, conditions, easements and other matters as contained on the Plat of CARROLL AND MARSHALL ADDITION TO DELAND, recorded in Map Book 9, Page 22, of the Public Records of Volusia County, Florida.
ITEM 7. Easement in favor of Florida Power Corporation recorded November 1, 1966 in Official Records Book 884, Page 112; Subordination of Utility Interests recorded March 19, 1991 in Official Records Book 3603, Page 829. O.R.B. 884, Page 112 describes a 100' wide Power easement. But does not describe that part of the property known as "The S. 1/2 of the NW. 1/4 of the SE. 1/4 of the SE. 1/4 of SECTION 22" as shown hereon. O.R.B. 3603, Page 829 does not affect the property. That description described the a portion of the powerline easement where the Taylor Road widening occured and no longer affects the property.

4. Elevations shown hereon are based on Volusia County 1988 datum Vertical Control Points:
BLA#4 X-Cut in Concrete Published Elevation 84.343.

MEMBERS F.S.M.S.
JONES, WOOD & GENTRY, INC.
PROFESSIONAL SURVEYORS AND MAPPERS – LB1
9645 EAST COLONIAL DRIVE
SUITE 114
ORLANDO, FLORIDA 32817
407-898-7780

NOT VALID WITHOUT SIGNATURE AND SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER
DANIEL E. GENTRY JR., Florida Registration Number 5047
DANIEL E. GENTRY JR. CERTIFICATE NO. 5047 STATE OF FLORIDA REGISTERED SURVEYOR AND MAPPER

FOR: HANOVER LAND COMPANY, LLC

IT IS CERTIFIED THAT THE SURVEY REPRESENTED HEREON WAS MADE UNDER MY RESPONSIBLE CHARGE AND MEETS THE STANDARDS OF PRACTICE SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN RULE 5J-17, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO CHAPTER 472 FLORIDA STATUTES. UNLESS IT BEARS THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER THIS DRAWING, SKETCH, PLAT OR MAP/REPORT IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT VALID.

BY: DG3
DATE: 10-04-21
DRAWING: 29293-COV.DWG
JOB #: 29293
SHEET: 1 OF

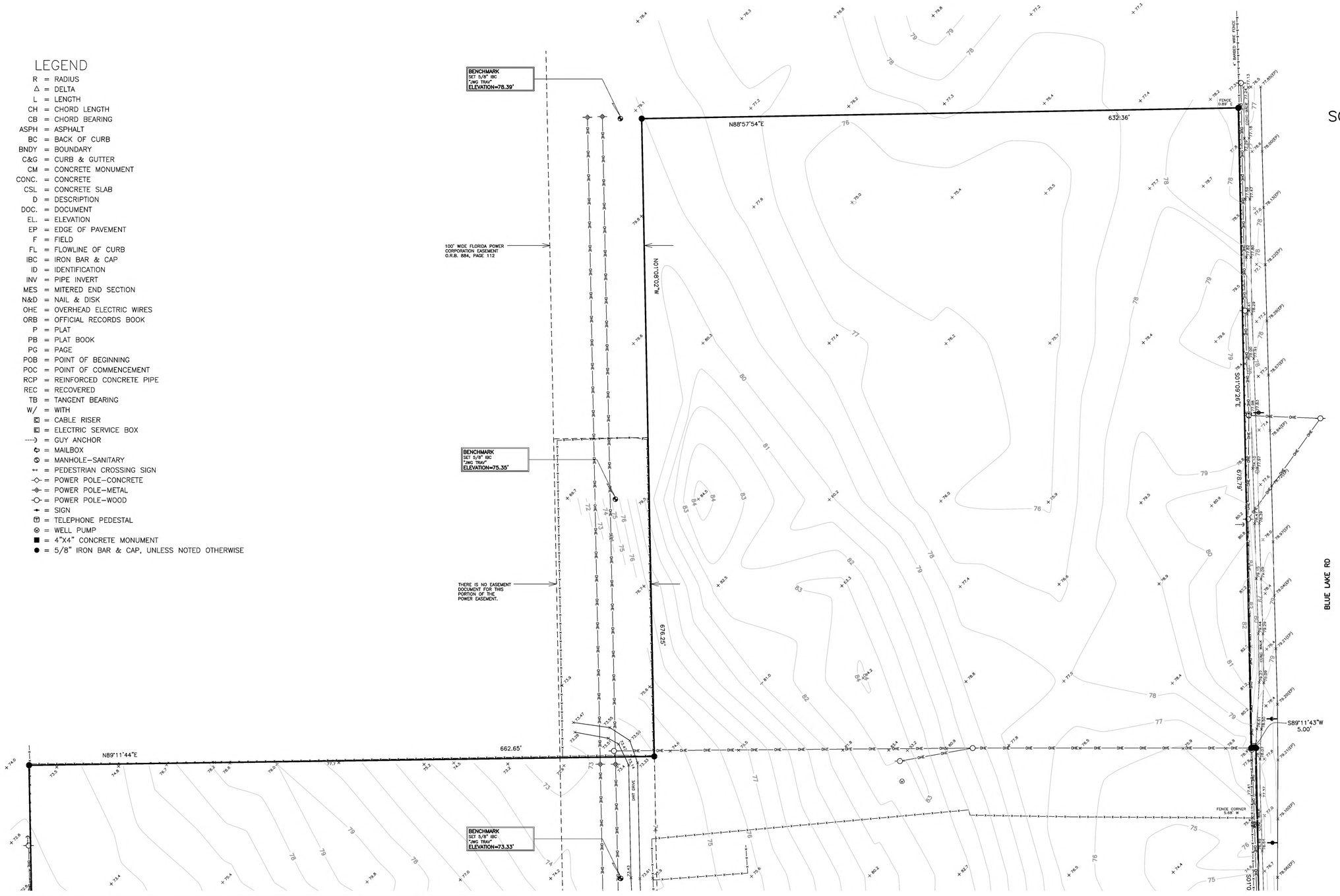
CERTIFIED TO:
Central Florida Investment Company, LLC
CMM Investments, LLC
Stewart Family Properties, LLC
Hanover Land Company, LLC
Reliant Title Group, Inc. d/b/a Volusia Title Services
Chicago Title Insurance Company

BOUNDARY & TOPOGRAPHIC SURVEY

SEE SHEET 1 FOR DESCRIPTION
SECTION 22, TOWNSHIP 17 SOUTH. RANGE 30 EAST
VOLUSIA COUNTY, FLORIDA

LEGEND

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= PEDESTRIAN CROSSING SIGN
= POWER POLE–CONCRETE
= POWER POLE–METAL
= POWER POLE–WOOD
= SIGN
= TELEPHONE PEDESTAL
= WELL PUMP
= 4"X4" CONCRETE MONUMENT
= 5/8" IRON BAR & CAP, UNLESS NOTED OTHERWISE



SCALE: 1"=50'

JONES, WOOD & GENTRY, INC.
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ORLANDO, FLORIDA 32817
407–898–7780

FOR: HANOVER LAND COMPANY, LLC

BY: DG3
DATE: 10–04–21
DRAWING: 29293–BDY.dwg
JOB: 29293
SHEET: 2 OF 3

BOUNDARY & TOPOGRAPHIC SURVEY

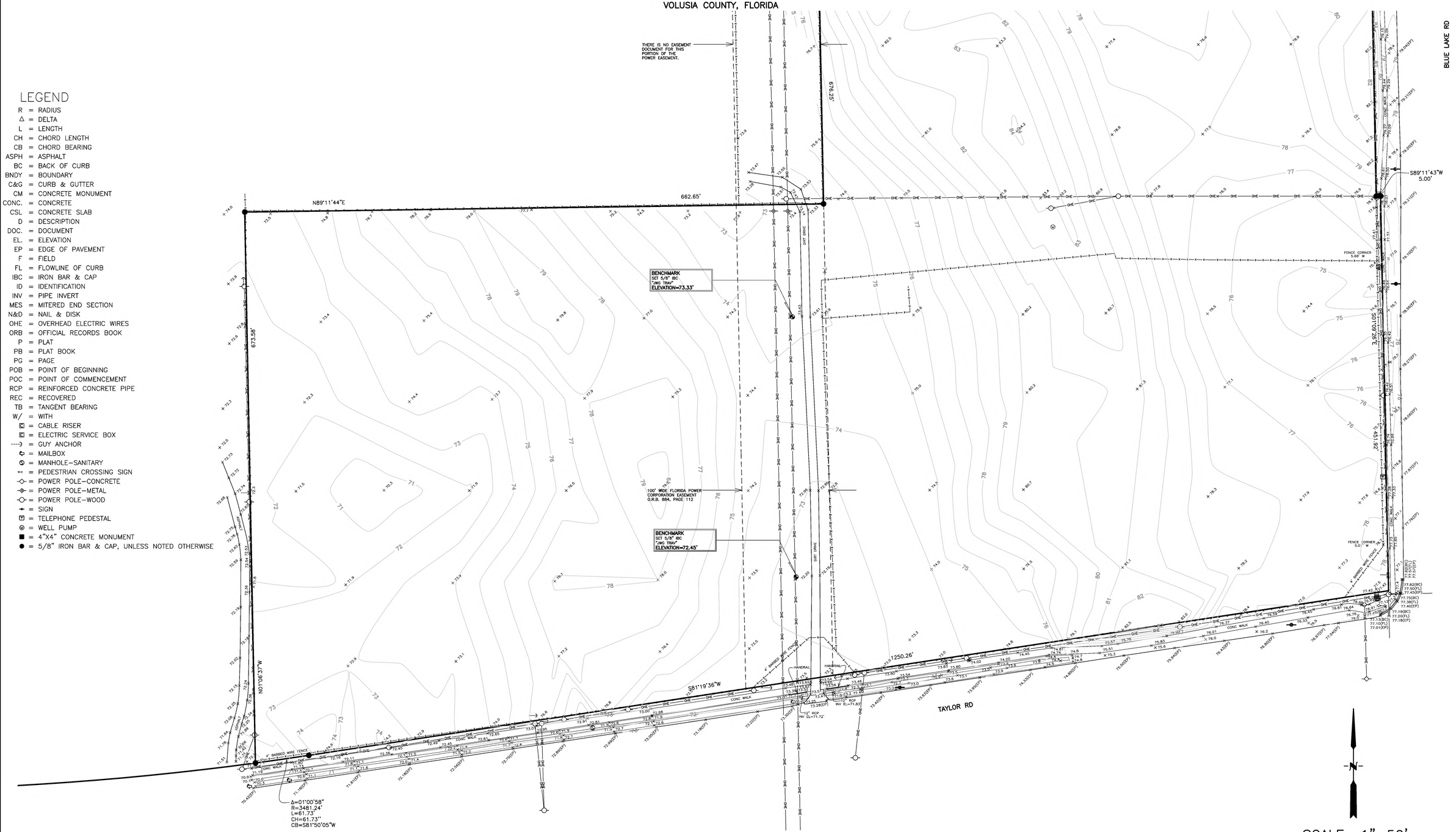
SEE SHEET 1 FOR DESCRIPTION

SECTION 22, TOWNSHIP 17 SOUTH. RANGE 30 EAST

VOLUSIA COUNTY, FLORIDA

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BY: DG3
DATE: 10–04–21
DRAWING: 29293–BDY.dwg
JOB: 29293
SHEET: 3 OF 3

SUPPORTING STATEMENT

TAYLOR RIDGE - ANNEXATION

The purpose of the annexation request is to bring the subject property within the jurisdiction of the City of DeLand. It is located within an enclave of unincorporated property and has been identified as likely to be included within the City Limits of DeLand by the Greater DeLand Act and the DeLand 2050 plan, among other documents.

TAYLOR RIDGE PD

METES & BOUNDS LEGAL DESCRIPTION

DESCRIPTION

BOUNDARY AND RW

That part of the Southeast 1/4 of the Southeast 1/4 of Section 22, Township 17 South, Range 30 East, Volusia County, Florida being more particularly described as follows:

COMMENCE at the Northeast corner of the Southeast 1/4 of Section 22, Township 17 South, Range 30 East, Volusia County, Florida thence S01°09'26"E 1357.82 feet along the East boundary of said Southeast 1/4 to the Northeast corner of the Southeast 1/4 of said Southeast 1/4 for the POINT OF BEGINNING; thence North 89 degrees 36 minutes 35 seconds East 15.00 feet along the North boundary of the Southwest 1/4 of the Southwest 1/4 of Section 23, Township 17 South, Range 30 East Volusia County, Florida to a point on the centerline of Blue Lake Avenue as shown on Volusia County right of way map Project #1335; thence South 01 degrees 09 minutes 26 seconds East 1175.64 feet along said centerline to a point on the centerline of Taylor Road per Volusia County Right of Way map project #1113-4-5/P4172-3; thence South 81 degrees 19 minutes 36 seconds West 1284.01 feet along said centerline to the beginning of a tangent curve concave Northerly and having a radius of 3531.24 feet and a central angle 01 degrees 06 minutes 33 seconds; thence run Westerly 68.36 feet along the arc of said curve and said centerline to a point on the West boundary of the Southwest 1/4 of the Southeast 1/4 of said Southeast 1/4; thence North 01 degrees 06 minutes 37 seconds West 50.32 feet along said West boundary to a point on the North right of way line of the aforesaid Taylor Road; thence N01°06'37"W 631.00 feet along said West boundary to the Northwest corner of the Southwest 1/4 of the Southeast 1/4 of said Southeast 1/4; thence N89°11'44"E 662.65 feet along the North boundary of the Southwest 1/4 of the Southeast 1/4 of said Southeast 1/4 to the Southwest corner of the Northeast 1/4 of the Southeast 1/4 of said Southeast 1/4; thence N01°08'02"W 676.25 feet along the West boundary of the Northeast 1/4 of the Southeast 1/4 of said Southeast 1/4 to the Northwest corner of the Northeast 1/4 of the Southeast 1/4 of said Southeast 1/4; thence N88°57'54"E 632.36 feet along the North boundary of the Northeast 1/4 of the Southeast 1/4 of said Southeast 1/4 to a point on the West right of way line of said Blue Lake Avenue; thence continue N88°57'54"E 30.00 feet along said North boundary to the Point of Beginning.

CONTAINING: 28.667 acres, more or less.

PLANNING DEPARTMENT STAFF REPORT
TO
THE CITY OF DELAND PLANNING BOARD

September 13, 2023

A. APPLICATION NO.: SMLU23-102

APPLICANT: Mr. Michael Woods, Esq., Cobb Cole

STAFF PLANNER: Kendall Story

REQUEST: To amend the land use designation from Volusia County Rural to City of DeLand Transitional Residential Development

B. SITE FACTORS:

Location: Northwest corner of S. Blue Lake Ave. & E. Taylor Rd.
Parcel ID #: 7022-00-00-0090 & 7022-00-00-0191
Parcel Size: ± 26.011 acres
Land Use: Volusia County Rural
Existing Use: Vacant, undeveloped

	SURROUNDING USE:
North:	LDR
South:	New Community Development
East:	VC: Rural
West:	VC: Urban Low Intensity

C. REQUESTED ACTION & HISTORY:

1. REQUEST: The applicant is requesting the future land use designation be amended for a parcel located on the northwest corner of S. Blue Lake Ave. & E. Taylor Rd., from Volusia County's Rural land use designation to the City of DeLand's Transitional Residential Development (TRD) land use designation. The ± 26.011 acres proposed for annexation is being proposed to be subdivided into 65 residential lots. *The Applicant has petitioned for annexation (#AN23-104), and is requesting a rezoning of the property to City of DeLand's Planned Development zoning district (#Z23-103).*

2. CHRONOLOGY OF PAST EVENTS: The southern portion of the subject property includes a portion of the Carroll and Marshall subdivision plat. In 1925 it was originally platted into 4 blocks, each containing 36 lots. A current survey of the Carroll and Marshall plat includes a 100' wide FPL easement that runs north to south, down the center of the property.

D. ALTERNATIVES & ANALYSIS:

The purpose of this section is to analyze the reasonableness of the applicant's request for an amendment of the land use designation for the subject property. This analysis will include a description of the current and future land uses of the site and the surrounding area, potential impacts on the transportation system, and any significant adverse environmental impacts. Due to

recent legislation, small scale land use amendments now have a maximum acreage of up to 50 acres. The original maximum was 10 acres.

1. **Availability of Public Facilities (water, sewer, solid waste, drainage, traffic, recreation, and schools if residential):**

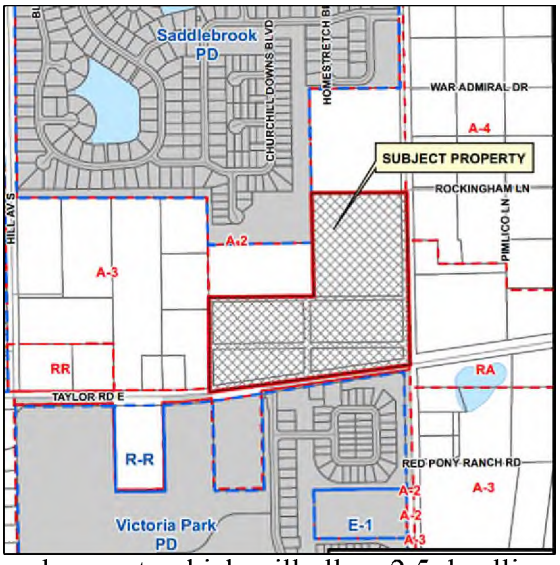
   The City's Utilities Department states that the closest city water main is found in front of the property on E. Taylor Rd. and on S. Blue Lake Ave. The closest sewer main is also found in front of the property on E. Taylor Rd. and on S. Blue Lake Ave.

   Due to the proposed use and size, a Traffic Impact Analysis was not required.

   The change in designation will not generate a new demand for recreation.

   Volusia County already provides a sanitary landfill for the disposal of solid waste. The landfill has adequate capacity at this time.

2. **Compatibility with Land Use and Other Elements:** The Future Land Use element requires that the subject property be consistent with surrounding development. The Comprehensive Plan describes the Transitional Residential Development (TRD) land use designation as being located where the more rural areas of Volusia County, on the perimeter of the city limits, can transition from lower densities of .2 units/acre to densities as high as 3.25 units/acre, but under specific circumstances. Specific density depends on locational factors and meeting higher development standards to add compatibility to adjacent uses have access to public facilities.



   The applicant has submitted a corresponding application to rezone (Z23-104) to PD, Planned Development, which will allow 2.5 dwelling unit per acre. To the northwest, the subject property is adjacent to the Saddlebrook PD; south of E. Taylor Rd. is the Victoria Park PD. The Saddlebrook subdivision consists of single-family residential lots ranging in widths from 50-75 ft. wide, with a density of approximately 3.1 dwelling units per acre. Immediately to the west is Volusia County's Urban Low Intensity (ULI) future land use which allows densities ranging from 0.2 to 4 dwelling units per acre. To the east is S. Blue Lake Ave. which abuts Volusia County's Rural (R) future land use, which requires a minimum of 1 acre per dwelling unit.

   Intent of the TRD: TRD is intended for areas with lower density development to provide a transition between existing low density residential and agricultural uses within unincorporated Volusia County and low density suburban residential uses within the city.

   Density Bonus: In some circumstances, a density bonus may be granted that increases the maximum of 2.0 dwelling units per acre, to as much as 3.25 dwelling units per acre, if specific criteria outlined in the TRD are met. These criteria include enhanced amenities

and open space. Specifically, the TRD designation stipulates all the following must be provided for a development to be eligible for the density bonus.

A. Internal trail and bike lanes with connection to adjacent trails and natural areas are constructed throughout the development area.
B. Sidewalks and bike lanes are provided throughout the development area.
C. The project must be located within a mile of an arterial, interstate or the SunRail stations.
D. A least three enhanced on-site amenities such as a recreation center, pool, clubhouse, fitness center, dog park, etc. are constructed to serve the residents. Community enhancements are being provided in the Taylor Ridge PD. These enhancements include:
    - Mulched pathways running from a centralized amenity parcel to Taylor Rd.
    - An 8' wide multi-use sidewalk that connects natural areas throughout the development
    - And 3 enhanced on-site amenities which will include:
        1. A fenced-in dog park
        2. A playground for children in the neighborhood.
        3. A community gathering area with a large pavilion that offers picnic tables, grills for the residents to use and outdoor games such as "horseshoes".

The development is consistent with the Comprehensive Plan, in that the underlying land use of Transitional Residential Development designation allows a density bonus up to 2.5 dwelling units per acre provided specific performance standards have been met. This project proses a density of 2.5 dwelling units per acres and provided the enhanced amenities internal sidewalks and bike lanes and is within a mile of an arterial roadway.

3. **Future Land Use Map:** The proposed change in the land use designation to Transitional Residential Development (TRD) will be shown on the revised Future Land Use Map.

4. **Location of Lakes, Floodplains, and Wetlands:** The property does not contain bodies of water, nor is it located within a floodplain.

5. **Analysis of Natural Resources:**
    a. *Soil types:*
    Astatula Fine Sand, 0-8% slope
    b. *Presence of Endangered Species*: None known of at this time.

6. **Existing and Future Impact upon Infrastructure Capacity:**

    a. *Water* – The City's Utility Department indicates sufficient water supply is available for the proposed use.

    b. *Sewer* – The City's Utility Department has indicated sufficient existing capacity.

    c. *Drainage* – The City adheres to the County's 100-year frequency, 24-hour storm event standard for landlocked basins. Stormwater capture for future development will be addressed on-site and will be further evaluated at the time of preliminary plat.

d. *Solid Waste* – Solid waste services are available for the property.

e. *Transportation* – The proposed use of the property is for residential use.

In order to estimate traffic generation by development on the subject property, Staff must make projections for the most intense type of development allowed under the existing and proposed land use designations. Development under the most intensive of the uses allowed under the current land use designation of Volusia County Rural must be compared with the most intensive use proposed under the City's Transitional Residential Development designation.

The Volusia County Rural land use designation allows, under specific conditions (if the parcel is within 660 ft. of an existing residential subdivision), a maximum allowable density of 1 dwelling unit per acre; and with the most-intense allowable use (single-family residential); would generate **245** calculated trips per day according to Trip Generation by the Institute of Transportation Engineers. (11^{th} ed.)

Assuming adoption of the Transitional Residential Development land use designation for the ± 26.01 acres of property, traffic generation will be calculated based on the DeLand Comprehensive Plan assumption of utilization of 3.25 dwelling units per acre for single-family residential uses; and therefore, would generate **797** calculated trips per day at build-out, according to Trip Generation. Consequently, the requested land use amendment would result in an increase of **552** trips per day. Per 2018 Volusia County Traffic Counts, this area of E. Taylor Rd., from Stratford Dr. to MLK Jr. Beltway, has a current Daily LOS of "C", and an Allowable LOS of "E", and therefore has sufficient capacity at the land use category's most-intense use. The same is true for the portion of S. Blue Lake Ave., from E. Taylor Rd. to Beresford Ave., which is currently operating at a Daily LOS of "C", and having an Allowable LOS of "E".

f. *Fire/Rescue Service* - The City can provide an adequate LOS of Fire/Rescue service.

g. *Police Service* - The Police Department states that the City can provide an adequate LOS of Police protection.

7. **Impact upon Recreation and Open Space:** No need for new recreational facilities is anticipated.

8. **New Public Facilities Needed to Serve Land Use:** No need for new public facilities is anticipated.

9. **Impact Upon Existing Deficiencies:** As identified in the City's Comprehensive Plan, drainage is the only existing deficiency within the City. Any future development on this site will be required to manage its own stormwater and will be further reviewed as part of the Preliminary Plat submittal.

10. **Impact upon Ability of the City to Fund Capital Improvements:** The development should not create an additional impact upon the City's ability to fund the projects listed in the adopted Five-Year Capital Improvement Program.

11. **Impact upon Adopted Five-Year Schedule in Capital Improvements Element:** The proposed land use amendment will not require revision to the City's adopted Five-Year Capital Improvement Program.

12. **Compatibility with Existing Zoning Classification:** The existing zoning classification will be amended upon approval of the land use amendment to a classification permitted by the new land use designation.

13. **Will the proposed land use change impact schools?** Although the project will allow for a maximum of 85 houses, the applicant is proposing a lesser amount of 65. The applicant will need to provide a current Finding of Adequate Capacity letter from the Volusia County School Board.

14. **How does this proposal fit with the guidelines developed for DeLand 2050 and the City's Strategic Plan?**

    a. Located in the Urban Core (Category 2) – i.e. "where the majority of the new, higher intensity growth will take place." Based on these criteria, a significant increase in density is not appropriate but changes in keeping with the surrounding development pattern would be acceptable. – *Consistent; the increase in density is appropriate based on the surrounding properties and location.*

    b. DeLand 2050 Land Use Guidelines: "Concentrate development at the core of the city or at transit-oriented sites and corridors. The urban core is the key area to focus development, maintaining a strong job base and taking advantage of existing infrastructure. Locating higher intensity along select corridors or major centers will encourage transit and lessen traffic congestion." – *Consistent; subject property is located at the intersection of E. Taylor Rd. and S. Blue Lake Ave., and provides access to both Interstate 4 and the Downtown.*

E. **CONCLUSION:** The facility analysis presented in the above sections suggests the proposed land use should not cause any of the City's facilities to degrade below the adopted or current operational LOS. The proposed land use designation, Transitional Residential Development, is consistent with the surrounding area, and is not expected to create land use incompatibilities.

F. **STAFF RECOMMENDATION:** Staff recommends approval of the proposed amendment of the subject property's future land use designation to the City's Transitional Residential Development.

G. VGMC INFRASTRUCTURE IMPACT ASSESSMENT:

In accordance with standard practice from the Florida Department of Economic Opportunity (DEO) and other review agencies, an impact comparison analysis of the proposed amendment has been completed based upon the theoretical maximum development potential under the currently adopted future land use designation versus the proposed designation.

The following seven public facilities and services were examined: (Table 4)

1. Transportation
2. Sanitary Sewer
3. Potable Water
4. Solid Waste
5. Stormwater Drainage
6. Recreation
7. Schools

Table 4. Impact Analysis (Theoretical Max.)

Development Variable	**EXISTING** Future Land Use	**PROPOSED** Future Land Use	Net Change
	Theoretical Maximums		
Permitted Density/Intensity	1 du/acre	3.25 du/acre	+2.25 du/acre
Dwelling Units	26	85	+59
Non-residential Sq. Ft.	N/A	N/A	N/A
1. Population	63	207	+144
2. PM Peak Hr. Trips/Daily Trips	24 peak/245 ADT	80 peak/802 ADT	+56/+557
3. Sanitary Sewer (gallons/day)	5,200	17,000	+11,800
4. Potable Water (gallons/day)	7,800	25,500	+17,700
5. Solid Waste (pounds/day)	84	273	+189
6. Stormwater Drainage	N/A	N/A	N/A
7. Recreation/Open Space	0.44	0.60	+.16

Notes:

1. Population: *2.44 persons per household (per 2020 Census)*

2. Transportation: *ITE Trip Generation Manual, 11th Edition: Retail < 40ksf (822): 6.59 PM PEAK/1,000 sq. ft.; 54.45 AADT/1,000 sq. ft. Single Family Residential (216): **0.94** PM **peak** hr trips/du & **9.43 ADT**/du*

3. Sanitary Sewer: *200 GPD per Equivalent Residential Unit; 0.10 GPD per sq. ft. commercial use*

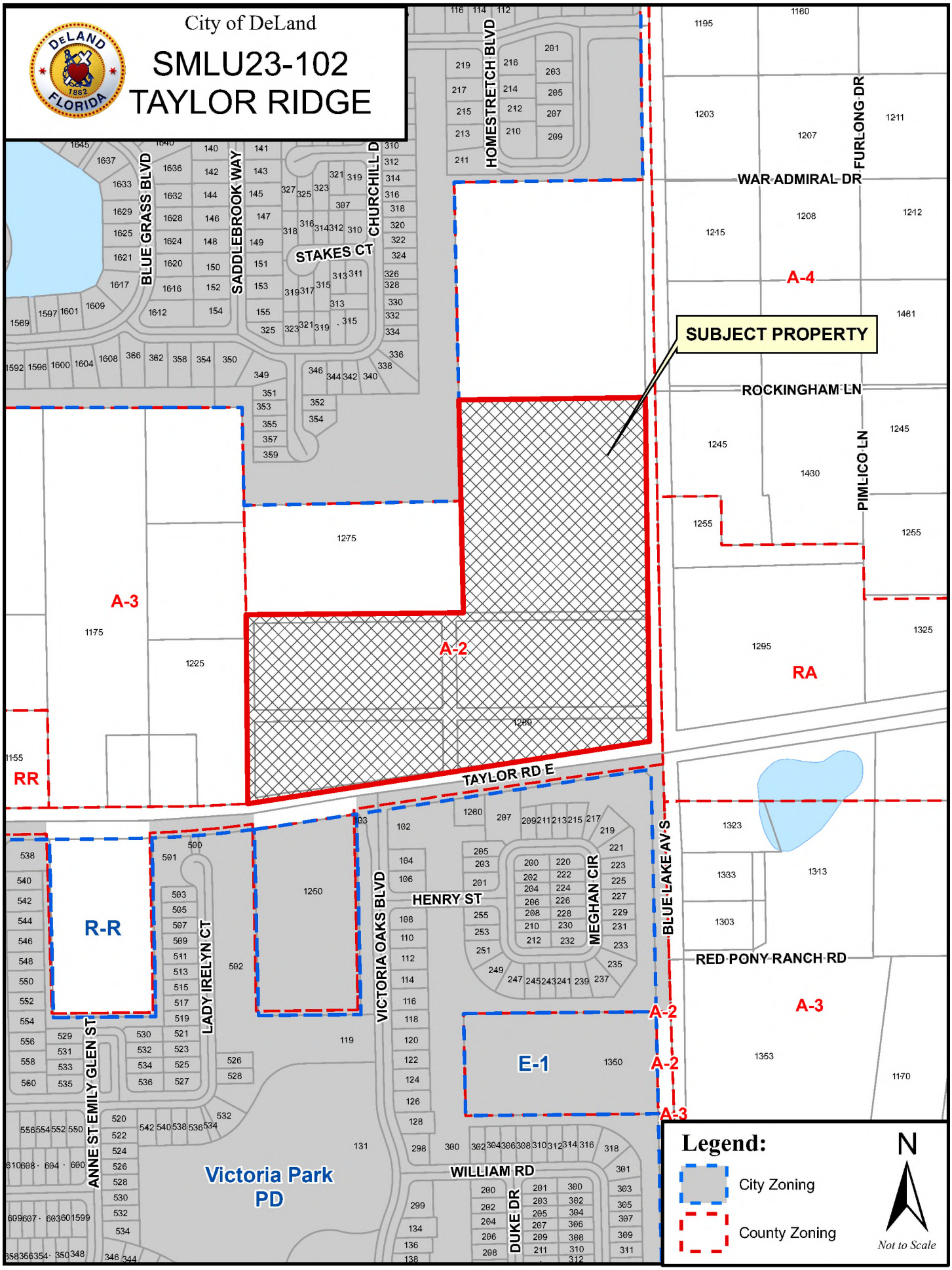
4. Potable Water: *300 GPD per Equivalent Residential Unit; 0.10 GPD per sq. ft. commercial use*

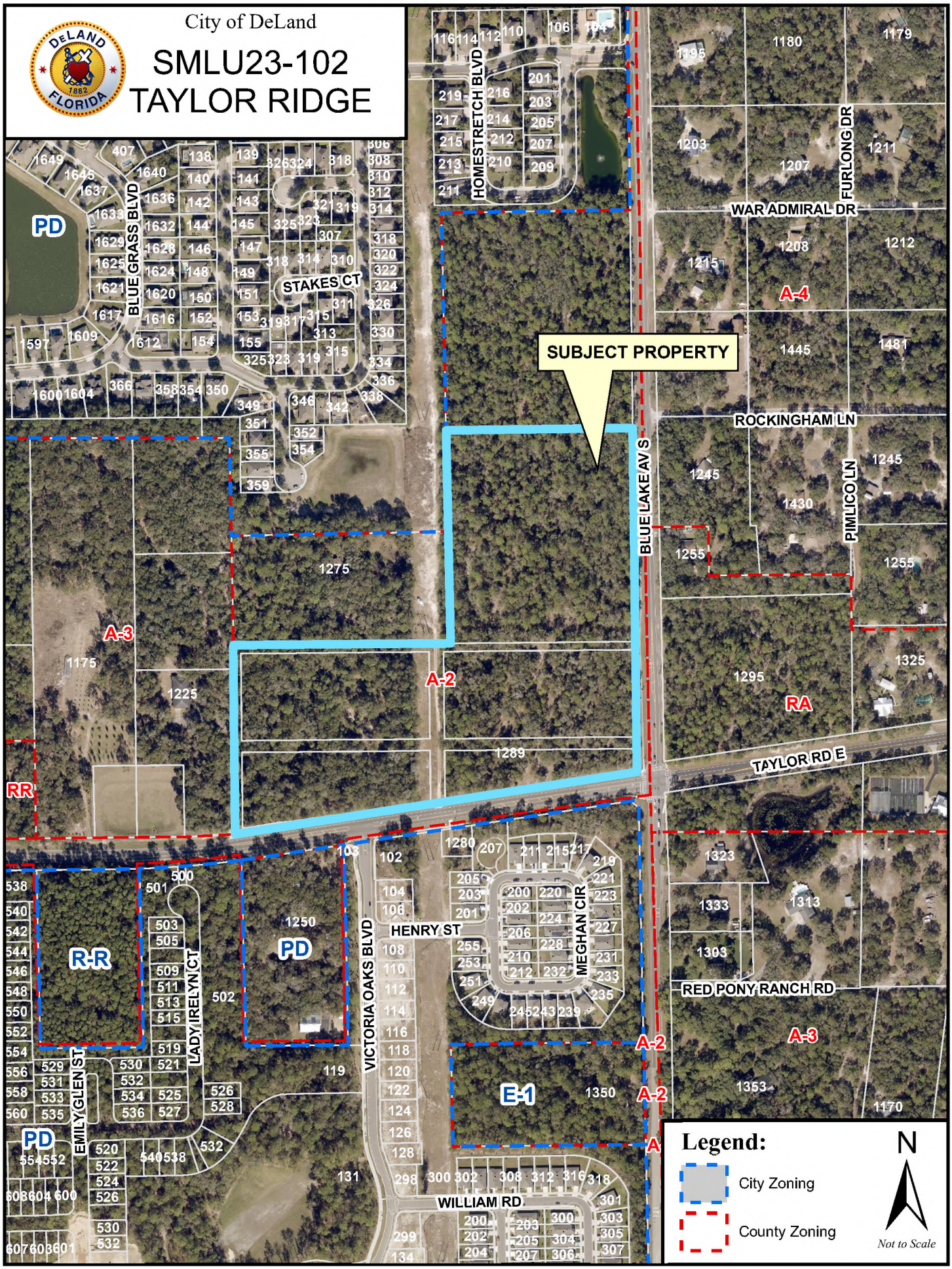
5. Solid Waste *3.21 pounds per person per day; 10 lbs. per 1,000 sq. ft. non-residential development per day*

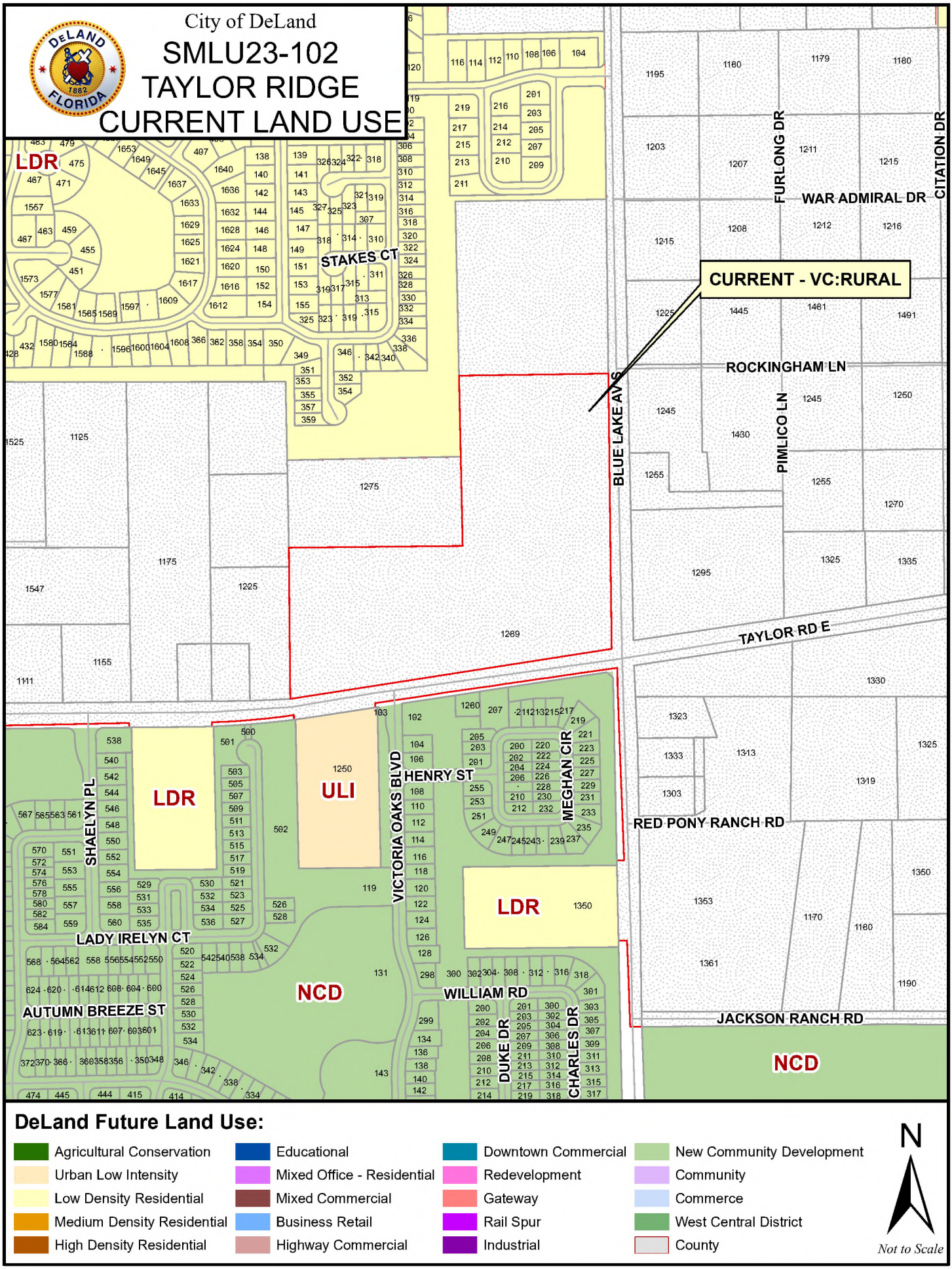
6. Stormwater Drainage: *LOS Standard 25-yr, 24-hr event. Drainage system to be designed to meet the req. of the LDC during subdivision or site plan review.*

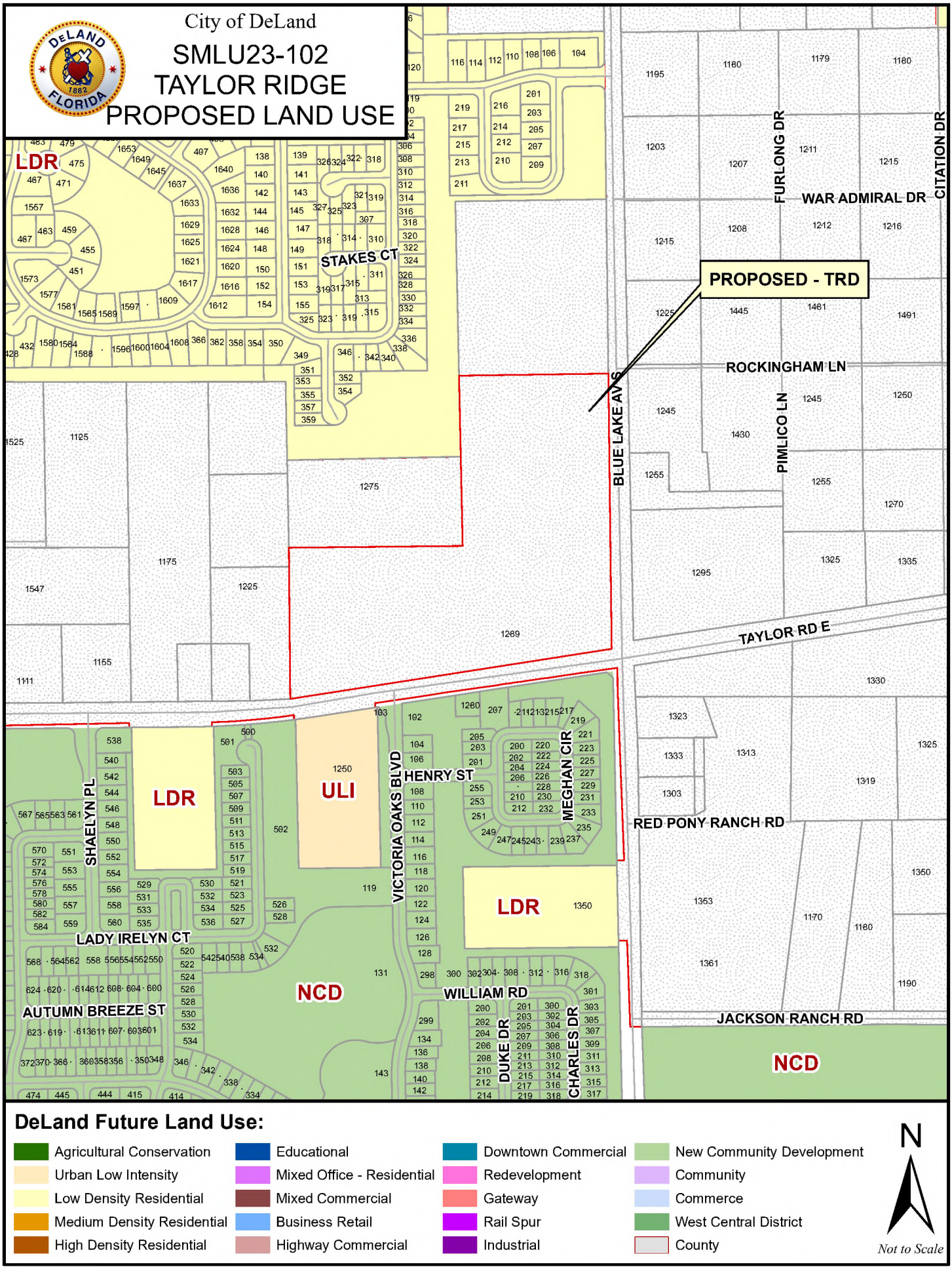
7. Rec. & Open Space: *7 acres/1,000 persons (0.007 acres/person)*

The proposed amendment results in increased impacts to all public infrastructure and services based on the theoretical maximum impact analysis.


City of DeLand
SMLU23-102
TAYLOR RIDGE
SUBJECT PROPERTY
A-4
A-3
A-2
RA
RR
R-R
E-1
Victoria Park
PD
TAYLOR RD E
ROCKINGHAM LN
WAR ADMIRAL DR
FURLONG DR
PIMLICO LN
HOMESTRETCH BLVD
CHURCHILL D
SADDLEBROOK WAY
BLUE GRASS BLVD
STAKES CT
HENRY ST
VICTORIA OAKS BLVD
MEGHAN CIR
BLUE LAKE AV S
RED PONY RANCH RD
LADY IRELYN CT
ANNE ST EMILY GLEN ST
WILLIAM RD
DUKE DR
Legend:
City Zoning
County Zoning
N
Not to Scale


City of DeLand
SMLU23-102
TAYLOR RIDGE
SUBJECT PROPERTY
PD
BLUE GRASS BLVD
STAKES CT
HOMESTRETCH BLVD
WAR ADMIRAL DR
FURLONG DR
A-4
ROCKINGHAM LN
BLUE LAKE AV S
PIMLICO LN
A-3
A-2
RA
RR
TAYLOR RD E
R-R
HENRY ST
MEGHAN CIR
VICTORIA OAKS BLVD
LADY IRELYN CT
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RED PONY RANCH RD
E-1
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Not to Scale

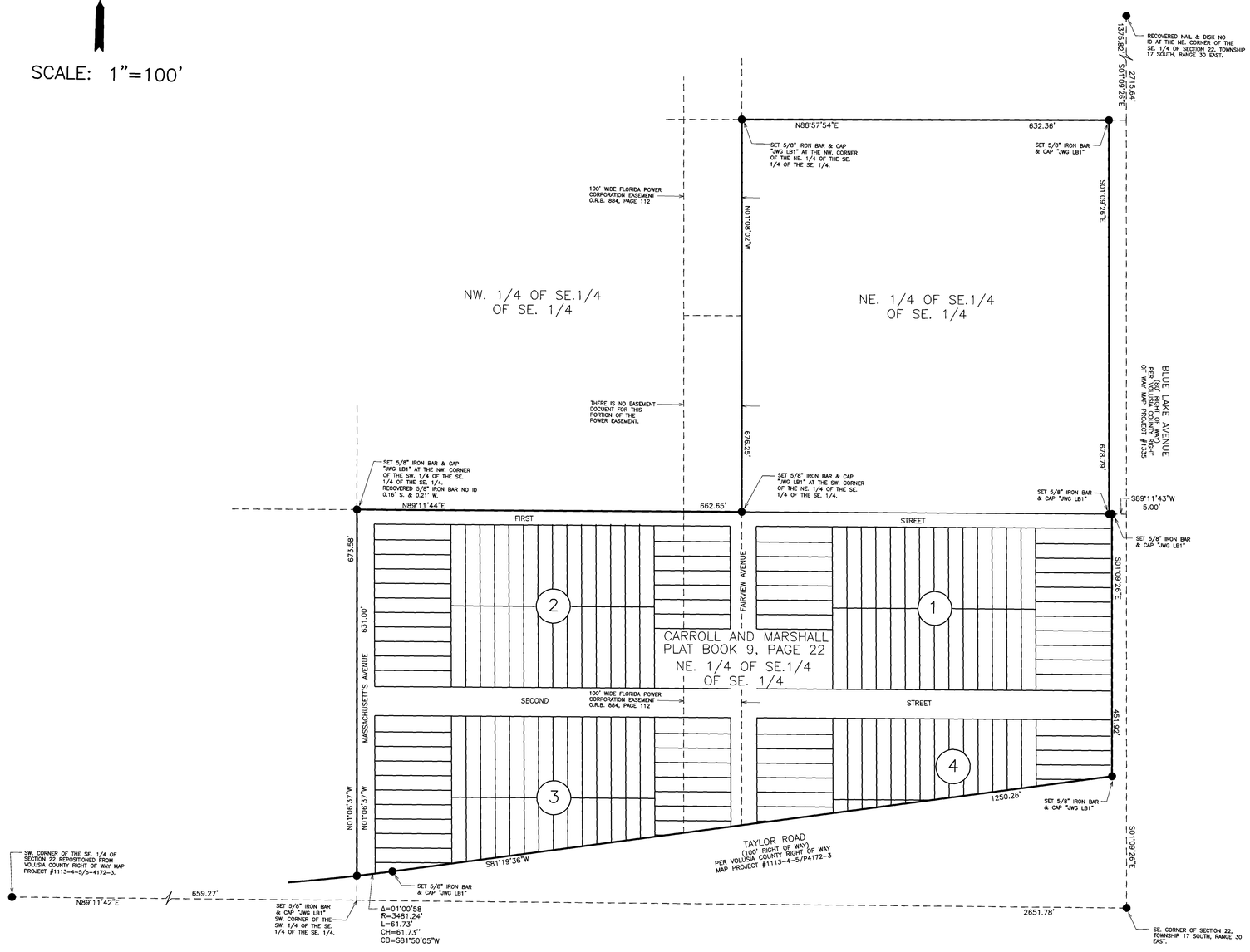

City of DeLand
SMLU23-102
TAYLOR RIDGE
CURRENT LAND USE
CURRENT - VC:RURAL
LDR
ULI
NCD
STAKES CT
FURLONG DR
CITATION DR
WAR ADMIRAL DR
ROCKINGHAM LN
PIMLICO LN
BLUE LAKE AVE
TAYLOR RD E
RED PONY RANCH RD
JACKSON RANCH RD
HENRY ST
MEGHAN CIR
VICTORIA OAKS BLVD
SHAELYN PL
LADY IRELYN CT
AUTUMN BREEZE ST
WILLIAM RD
DUKE DR
CHARLES DR
DeLand Future Land Use:
Agricultural Conservation
Urban Low Intensity
Low Density Residential
Medium Density Residential
High Density Residential
Educational
Mixed Office - Residential
Mixed Commercial
Business Retail
Highway Commercial
Downtown Commercial
Redevelopment
Gateway
Rail Spur
Industrial
New Community Development
Community
Commerce
West Central District
County
N
Not to Scale


City of DeLand
SMLU23-102
TAYLOR RIDGE
PROPOSED LAND USE
PROPOSED - TRD
LDR
ULI
NCD
STAKES CT
BLUE LAKE AVE
ROCKINGHAM LN
PIMLICO LN
FURLONG DR
WAR ADMIRAL DR
CITATION DR
TAYLOR RD E
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VICTORIA OAKS BLVD
MEGHAN CIR
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Business Retail
Highway Commercial
Downtown Commercial
Redevelopment
Gateway
Rail Spur
Industrial
New Community Development
Community
Commerce
West Central District
County
N
Not to Scale

BOUNDARY SURVEY

SECTION 22, TOWNSHIP 17 SOUTH, RANGE 30 EAST
VOLUSIA COUNTY, FLORIDA

SCALE: 1"=100'



DESCRIPTION

Parcel 1:
The South 1/2 of the Southeast 1/4 of the Southeast 1/4, lying North of Taylor Road, Section 22, Township 17 South, Range 30 East, Volusia County, Florida, Less and Except Road Right of Ways.

also described as:

All of Blocks 1 and 2, and that portion of Blocks 3 and 4, lying North of Taylor Road, Carroll and Marshall Addition to Deland, according to the map thereof as recorded in Map Book 9, Page 22, Public Records of Volusia County, Florida, Less and Except Road Right of Ways.

Parcel 2:
The Northeast 1/4 of the Southeast 1/4 of the Southeast 1/4, Section 22, Township 17 South, Range 30 East, Volusia County, Florida, Less Road Right of Way.

CONTAINING: 26.011 acres, more or less.

LEGEND

R = RADIUS
Δ = DELTA
L = LENGTH
CH = CHORD LENGTH
CB = CHORD BEARING
ASPH = ASPHALT
BC = BACK OF CURB
BNDY = BOUNDARY
C&G = CURB & GUTTER
CM = CONCRETE MONUMENT
CONC. = CONCRETE
CSL = CONCRETE SLAB
D = DESCRIPTION
DOC. = DOCUMENT
EL. = ELEVATION
EP = EDGE OF PAVEMENT
F = FIELD
FL = FLOWLINE OF CURB
IBC = IRON BAR & CAP
ID = IDENTIFICATION
INV = PIPE INVERT
MES = MITERED END SECTION
N&D = NAIL & DISK
OHE = OVERHEAD ELECTRIC WIRES
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POC = POINT OF COMMENCEMENT
RCP = REINFORCED CONCRETE PIPE
REC = RECOVERED
TB = TANGENT BEARING
W/ = WITH
= CABLE RISER
= ELECTRIC SERVICE BOX
= GUY ANCHOR
= MAILBOX
= MANHOLE-SANITARY
= PEDESTRIAN CROSSING SIGN
= POWER POLE-CONCRETE
= POWER POLE-METAL
= POWER POLE-WOOD
= SIGN
= TELEPHONE PEDESTAL
= WELL PUMP
= 4"X4" CONCRETE MONUMENT
= 5/8" IRON BAR & CAP, UNLESS NOTED OTHERWISE

NOTES
1. This Plat represents a Boundary Survey of the Description provided by client to Jones, Wood & Gentry, Inc. and does not indicate ownership.

2. Bearings shown hereon are based on the East Boundary of the Southeast 1/4 of Section 22 as bearing S01°09'26"E, per Florida State Plane coordinates Zone East.

3. A Commitment for Title Insurance was prepared by Chicago Title Insurance Company, Commitment No. RTG2121201 with a commitment date of July 12, 2021 at 5:00 P.M. and was provided to Jones, Wood & Gentry, Inc. for use in preparing this survey. Research of the public records was not a part of the Scope of Surveying Services contract. Items listed in Schedule B Section II of the title commitment, to the extent they affect and can be shown graphically on the survey, relative to the subject property, are listed below:
ITEM 6. Restrictions, covenants, conditions, easements and other matters as contained on the Plat of CARROLL AND MARSHALL ADDITION TO DELAND, recorded in Map Book 9, Page 22, of the Public Records of Volusia County, Florida.
ITEM 7. Easement in favor of Florida Power Corporation recorded November 1, 1966 in Official Records Book 884, Page 112; Subordination of Utility Interests recorded March 19, 1991 in Official Records Book 3603, Page 829. O.R.B. 884, Page 112 describes a 100' wide Power easement. But does not describe that part of the property known as "The S. 1/2 of the NW. 1/4 of the SE. 1/4 of the SE. 1/4 of SECTION 22" as shown hereon. O.R.B. 3603, Page 829 does not affect the property. That description described the a portion of the powerline easement where the Taylor Road widening occured and no longer affects the property.

4. Elevations shown hereon are based on Volusia County 1988 datum Vertical Control Points:
BLA#4 X-Cut in Concrete Published Elevation 84.343.

MEMBERS F.S.M.S.
JONES, WOOD & GENTRY, INC.
PROFESSIONAL SURVEYORS AND MAPPERS – LB1
9645 EAST COLONIAL DRIVE
SUITE 114
ORLANDO, FLORIDA 32817
407-898-7780

NOT VALID WITHOUT SIGNATURE AND SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER

DANIEL E. GENTRY JR., Florida Registration Number 5047

STATE OF FLORIDA — DANIEL E. GENTRY JR. — CERTIFICATE NO. 5047 — REGISTERED LAND SURVEYOR

FOR: HANOVER LAND COMPANY, LLC

IT IS CERTIFIED THAT THE SURVEY REPRESENTED HEREON WAS MADE UNDER MY RESPONSIBLE CHARGE AND MEETS THE STANDARDS OF PRACTICE SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN RULE 5J-17, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO CHAPTER 472 FLORIDA STATUTES. UNLESS IT BEARS THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER THIS DRAWING, SKETCH, PLAT OR MAP/REPORT IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT VALID.

BY: DG3
DATE: 10-04-21
DRAWING: 29293-COV.DWG
JOB #: 29293
SHEET: 1 OF

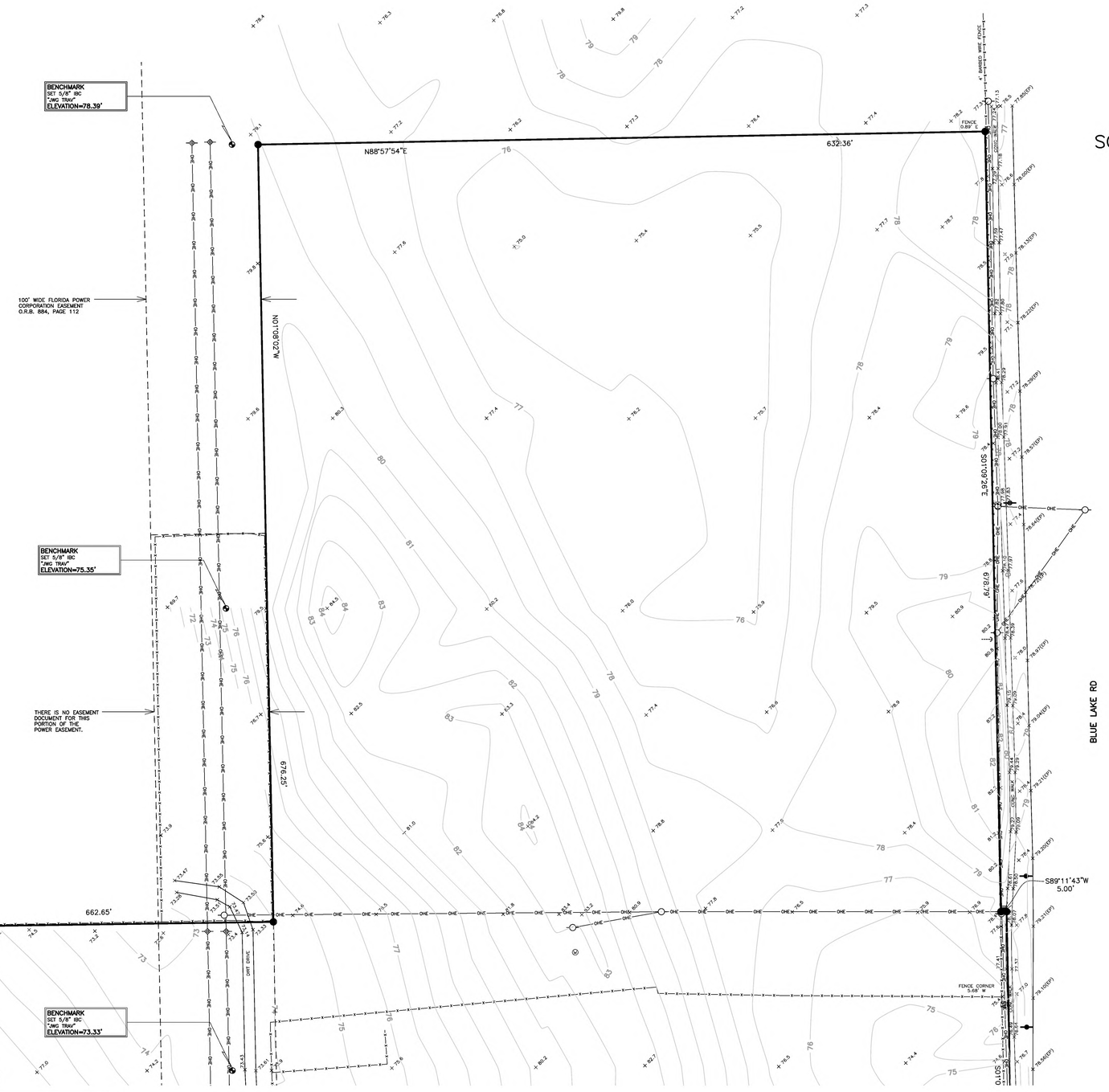
CERTIFIED TO:
Central Florida Investment Company, LLC
CMM Investments, LLC
Stewart Family Properties, LLC
Hanover Land Company, LLC
Reliant Title Group, Inc. d/b/a Volusia Title Services
Chicago Title Insurance Company

BOUNDARY & TOPOGRAPHIC SURVEY

SEE SHEET 1 FOR DESCRIPTION
SECTION 22, TOWNSHIP 17 SOUTH. RANGE 30 EAST
VOLUSIA COUNTY, FLORIDA

LEGEND

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SCALE: 1"=50'

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9645 EAST COLONIAL DRIVE
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ORLANDO, FLORIDA 32817
407–898–7780

FOR: HANOVER LAND COMPANY, LLC

BY: DG3
DATE: 10–04–21
DRAWING: 29293–BDY.dwg
JOB: 29293
SHEET: 2 OF 3

BOUNDARY & TOPOGRAPHIC SURVEY

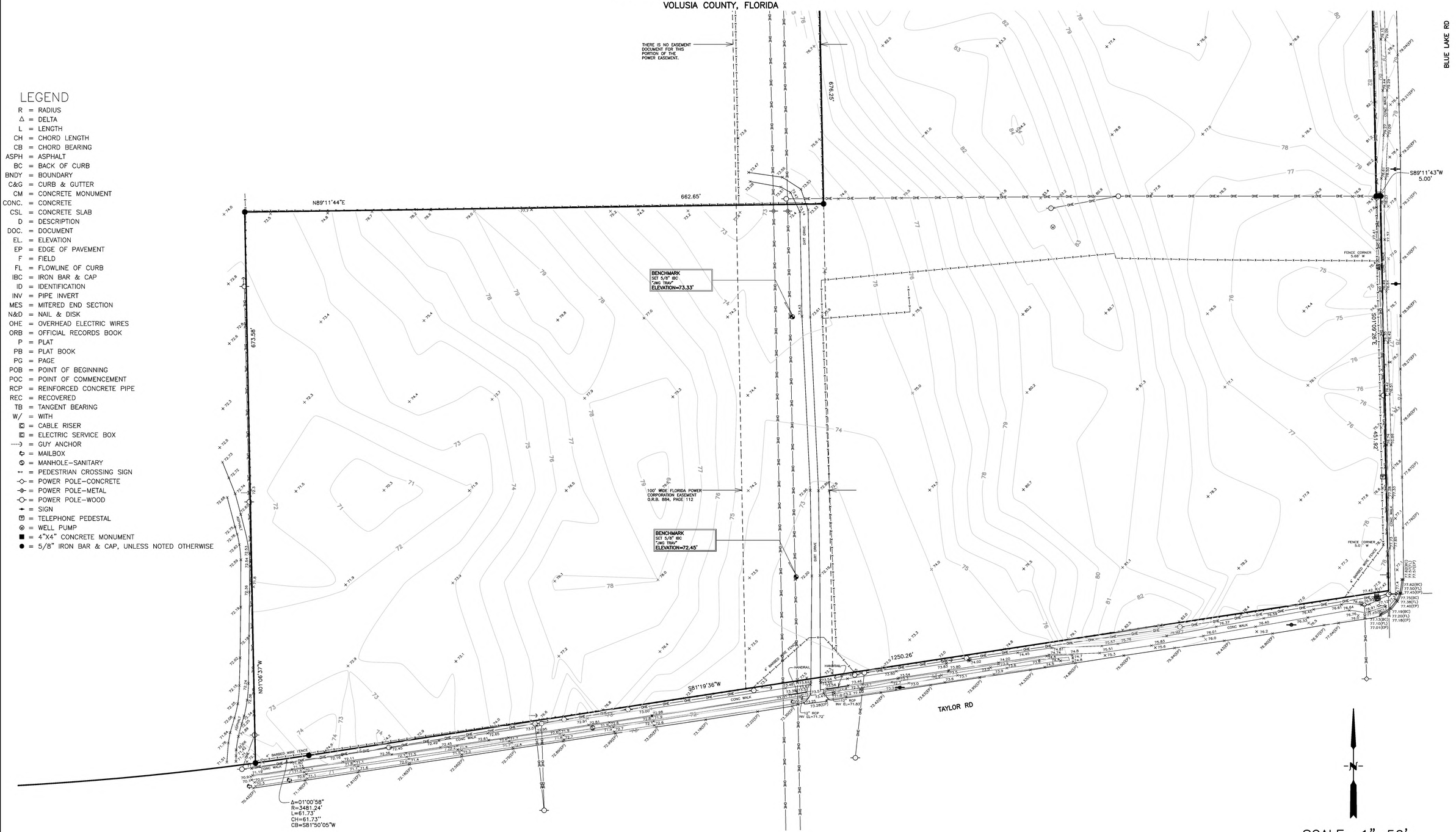
SEE SHEET 1 FOR DESCRIPTION

SECTION 22, TOWNSHIP 17 SOUTH. RANGE 30 EAST

VOLUSIA COUNTY, FLORIDA

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FOR: HANOVER LAND COMPANY, LLC

BY: DG3
DATE: 10–04–21
DRAWING: 29293–BDY.dwg
JOB: 29293
SHEET: 3 OF 3

SUPPORTING STATEMENT

TAYLOR RIDGE - COMPREHENSIVE PLAN AMENDMENT

As we are annexing in property from the County, we are looking to apply the City's new T.R.D. land use designation, in conjunction with the associated PUD application, in order to transition from adjacent Rural properties into the already established, higher intensity residential subdivisions in the immediate area.

LEGAL DESCRIPTION

Parcel 1:
The South ½ of the Southeast ¼ of the Southeast ¼, lying North of Taylor Road, Section 22, Township 17 South, Range 30 East, Volusia County, Florida, Less and Except Road Right of Ways.

also described as:

All of Blocks 1 and 2, and that portion of Blocks 3 and 4, lying North of Taylor Road, Carroll and Marshall Addition to Deland, according to the map thereof as recorded in Map Book 9, Page 22, Public Records of Volusia County, Florida, Less and Except Road Right of Ways.

Parcel 2:
The Northeast ¼ of the Southeast ¼ of the Southeast ¼, Section 22, Township 17 South, Range 30 East, Volusia County, Florida, Less Road Right of Way.

CONTAINING: 26.011 acres, more or less

PLANNING DEPARTMENT STAFF REPORT
TO
PLANNING BOARD

September 13, 2023

APPLICATION NO.: Z23-104

STAFF PLANNER: Kendall Story

APPLICANT: Mr. Michael Woods, Esq., Cobb Cole

REQUEST: Amend the existing zoning designation from Volusia County's A-2 to City of DeLand's Taylor Ridge PD

APPLICABLE REGULATIONS:

Article IV	OVERLAY AND FLOATING ZONES Sec. 33-32 – Planned Development District.
Article XII	ADMINISTRATION AND ENFORCEMENT Sec. 33-135 – Procedure for text amendments & rezoning.

A. SITE FACTORS:

Location:	Northwest corner of S. Blue Lake Ave. & E. Taylor Rd.
Parcel Size:	± 26.011 acres
Land Use:	Transitional Residential Development (TRD)
Existing Zoning:	Volusia County A-2 – Rural Agriculture
Existing Use:	Undeveloped

	SURROUNDING USE:	SURROUNDING ZONING:
North:	VC: Rural; LDR	VC: A-2; Saddlebrook PD
South:	VC: Rural; New Community Development	Bridle Oaks PD; Victoria Park PD
East:	VC: Rural	VC: A-3
West:	VC: Urban Low Intensity	VC: RA; VC: A-4

B. ANALYSIS:

The proposed development consists of ± 26.011 acres of vacant, wooded land, located on the northwest corner of S. Blue Lake Ave. & E. Taylor Rd. The applicant is requesting to rezone the subject property from Volusia County's A-2, Rural Agriculture, to City of DeLand's Taylor Ridge Planned Development. A portion of the subject property was originally platted in 1925 as the Carroll & Marshall Plat, which consisted of 200 residential lots, approximately 25' wide and 140' deep. The Taylor Ridge PD will be a residential planned development, consisting of 65 single-family lots.

The applicant has submitted concurrent applications for an annexation (AN23-103) and for a future land use amendment (SMLU23-102) to change the future land use designation from Volusia County's Rural to City of DeLand's Transitional Residential Development (TRD).

There is a 100' wide power line easement that runs north to south at the center of the property which will remain clear. There is also an access easement for the abutting property to the west which provides the property owner of 1275 E. Taylor Rd. to reach the right-of-way. The applicant will continue to provide access for the abutting property via a 25' wide easement running to the west of the powerline easement. Access to Taylor Ridge will be from S. Blue Lake Ave. and E. Taylor Rd.

The proposed PD Development Agreement allows a maximum of 65 single-family lots. The conceptual plan proposes 65 lots that will be 60-ft wide. Each parcel will be designed to accommodate 4 parking spaces (2 driveway spaces and 2 garage spaces). An additional 32 on-street parking spaces will be provided throughout the development for visitors.

The project will have an overall density of approximately 2.5 units per acre. In general, unless otherwise stated in the PD Agreement, the development standards will mirror the R-1 district regulations from the city's land development regulations.



As required by section 33-57.07(b) of the land development regulations, a minimum of 15% of the subject property will be dedicated as Tree Protection Area (TPA). The development will be required to maintain a minimum setback of 25' from abutting residential properties to the north and west.

Per Ordinance 2019-10, residential buffers along arterial or collector roads shall contain a berm along with the required plant material to screen the view of the roadway. If existing vegetation provides appropriate screening, a berm would not be required. Residential subdivisions along collector roads such as S. Blue Lake Ave., and arterial roads such as E. Taylor Rd., shall be at least 40' wide adjacent to the roadway and follow the Type D buffer standards. Additionally, E. Taylor Rd. is part of the Emerging Gateway Corridor which contains supplemental buffer standards that supersede the general landscape code requirements.

School Concurrency: A school concurrency letter dated November 22, 2021 was provided by the applicant. Although the letter from the school board offers no objections to the development, a more current letter is required.

Stormwater: Stormwater ponds are located to the north and west of the subject property. In addition to these ponds, the Taylor Ridge development includes elements of low impact development (LID) design. Supplemental plantings will enhance the functionality and aesthetics of these ponds using littoral plantings for wet ponds and Florida-Friendly plants for dry ponds.

If the stormwater design provides for surface connectivity between the two proposed ponds at the southeast corner of the project, a bioswale will be provided. Furthermore, if a surface swale is required within the amenity tract, a bioswale will be provided so long as there is no negative impact to existing historic trees on the amenity tract. The swales will act as an amenity with Florida friendly plants that require no fertilizers or irrigation and rocks to help control erosion.

History: On February 21, 2022, a petition for annexation, land use amendment to Low Density Residential and a rezone to the Taylor Ridge PD went before the City Commission. The proposed development did not make it past the annexation phase, receiving a 4-1 vote (Apgar) to deny the annexation. The original plan for Taylor Ridge PD proposed a 71-unit residential development.

Since the original denial in 2022, substantial changes have been made to the design of the Taylor Ridge PD. These changes include a reduction of the proposed density from 2.73 dwelling units per acre, to 2.5 dwelling units per acre; lot widths for all properties will be a minimum of 60' wide, versus 50' wide as originally proposed. The development includes internal sidewalks and bike lanes, enhanced recreational amenities and is within a mile of an arterial roadway in accordance with the TRD requirements.

On June 15, 2023, the Technical Review Committee recommended that the proposed Planned Development Agreement be forwarded on to the Planning Board, subject to addressing remaining Staff comments.

Section 33-135 of the Land Development Regulations provides the following criteria, which the City Commission shall utilize in reviewing a rezoning request:

1. Is the proposed rezoning consistent with the Comprehensive Land Use Plan, the land use, zoning pattern and character of the surrounding area?

The proposed development abuts the Saddlebrook residential Planned Development as well as unincorporated County acreage estates to the west; the Victoria Park residential Planned Development to the south; and residential unincorporated County acreage to the north and east. These nearby plats to the south and west have lot sizes averaging around 50-70 ft. in width, with houses built roughly between the 2000's and 2010's. Proposed lot sizes in the subject development are of a similar range as those found in both Saddlebrook and Victoria Park; and at an overall density of 2.5 dwelling units per acre, it is of a similar intensity to Saddlebrook's 3.10 dwelling units per acre.

Additionally, according to the Comprehensive Plan, a density bonus of up to 25% (2.5 units per acre) is allowed in the TRD land use designation if the following criteria are met:

A. Internal trail and bike lanes with connection to adjacent trails and natural areas are constructed throughout the development area.
B. Sidewalks and bike lanes are provided throughout the development area.
C. The project must be located within a mile of an arterial, interstate or the Sun Rail stations.

D. A least three enhanced on-site amenities such as a recreation center, pool, clubhouse, fitness center, dog park, etc. are constructed to serve the residents. Community enhancements are being provided in the Taylor Ridge PD. These enhancements include:

- Mulched pathways running from a centralized amenity parcel to Taylor Rd.
- An 8' wide multi-use sidewalk that connects natural areas throughout the development
- And 3 enhanced on-site amenities which will include:
  1. A fenced-in dog park
  2. A playground for children in the neighborhood.
  3. A community gathering area with a large pavilion that offers picnic tables, grills for the residents to use and outdoor games such as "horseshoes".

The development is consistent with the Comprehensive Plan, in that the underlying land use of Transitional Residential Development allows up to 2.5 dwelling units per acre when applying the 25% density bonus and meeting the criteria and performance standards of said land use.

2. Will the proposed rezoning have an impact upon the environment or natural resources?

The subject site is heavily wooded and the proposed development would reduce the tree coverage significantly. However, the PD Agreement and associated plan will ensure that tree preservation areas, buffering and other tree requirements meet the minimum requirements of the Land Development Regulations. A density bonus in the TRD land use designation allows for uses such as single-family residential development, cluster development and 2, 3 and 4 family residential development. The development must include additional preservation of open space. The Taylor Ridge PD provides 11.5 acres of open space, totaling 44% of the site. The proposed development should not have any other negative impacts on the environment or natural resources on the site or in the surrounding area. An endangered species report will be required at time of the preliminary subdivision plat.

3. Will the proposed rezoning have an impact upon the economy of the affected area?

The infusion of newer homes in this project should have a positive impact on the general area and potentially raise overall values. Additionally, the subject property's proximity to a major transportation corridor will benefit the new residents of the development.

4. Will the proposed rezoning have an impact upon governmental services?

Governmental services such as potable water, sewer, code enforcement, police, and fire are available for the subject property and will be provided by the City.

The City's Utilities Department has indicated that there is both water and sewer capacity to serve a development of this size.

Volusia County Schools provided a Finding of Adequate Capacity Letter, dated November 22, 2021. Per the letter, the student projections generated by this project **will** increase the existing percentage above 100% permanent capacity at all school levels. Currently, the DeLand planning area (west) for Freedom Elementary, DeLand Middle, and DeLand High is at or over 100% but below 115% for both elementary and middle school levels, and 120% for the high school level, for concurrency. Based on this, the school district has no objections to the proposed development plan. However, this letter was provided at the time of the first application in 2021. Therefore, the applicant must provide an updated concurrency letter from the school board prior to City Commission approval.

Based on information provided in the Trip Generation Memo provided by the applicant and the ITE Trip Generation Manual (10^{th} edition), 71 dwelling units would generate approximately 754 average daily trips; this is an increase of 470 trips based on the current VC A-2 zoning district. A full Traffic Impact Analysis will not be required because the projected average daily trips are less than 1,000 trips.

The subject property is on S. Blue Lake Ave. to the east which is categorized as a major collector road. To the south of the subject property is E. Taylor Rd., which is categorized as a minor arterial road.

The portion of S. Blue Lake Ave. roadway affected by the proposed development currently operates at a Daily LOS of "C", per the latest Volusia County Traffic Counts, with an Allowable LOS of "E". This segment can handle an additional 5,400 daily trips before reaching capacity.

The portion of E. Taylor Rd. roadway affected by the proposed development currently operates at a Daily LOS of "C" per latest Volusia County Traffic Counts, with an Allowable LOS of "E". This segment can handle an additional 6,270 daily trips before failing.

5. Are there changes in the circumstances or conditions affecting the area since the original assignment of zoning that will support the proposed zoning?

The subject property abuts less dense, rural, unincorporated residential/agricultural land as well as incorporated developments that are similar to the proposed Taylor Ridge PD. The proposed development is within the city's Urban Core; according to the DeLand 2050 Land Use guide, this area is the key area to focus development, and maintain a strong job base, taking advantage of existing infrastructure. Locating higher intensity along select corridors or major centers will encourage transit and lessen traffic congestion.

6. Was there a mistake in the original classification?

There was no mistake in the original classification.

7. Will the proposed rezoning have any effect upon the use or value of the affected area?

The proposed development abuts the Saddlebrook residential Planned Development as well as unincorporated County acreage estates to the west; the Victoria Park residential Planned Development to the south; and residential unincorporated County acreage to the north and east. These nearby plats to the south and west have similar lot sizes, with houses built

roughly between the 2000's and 2010's. The infusion of newer homes in this project could have a positive impact on the general area and potentially raise overall values.

8. Will the proposed rezoning have an impact upon public health, safety and welfare?

There is no indication at this time that the new proposal will create additional impacts upon public health, safety or welfare, as all provided public services have the capacity needed to accommodate the proposed development. Impacts, if any, to the surrounding County roadway network will be required to be mitigated proportionally by the developer.

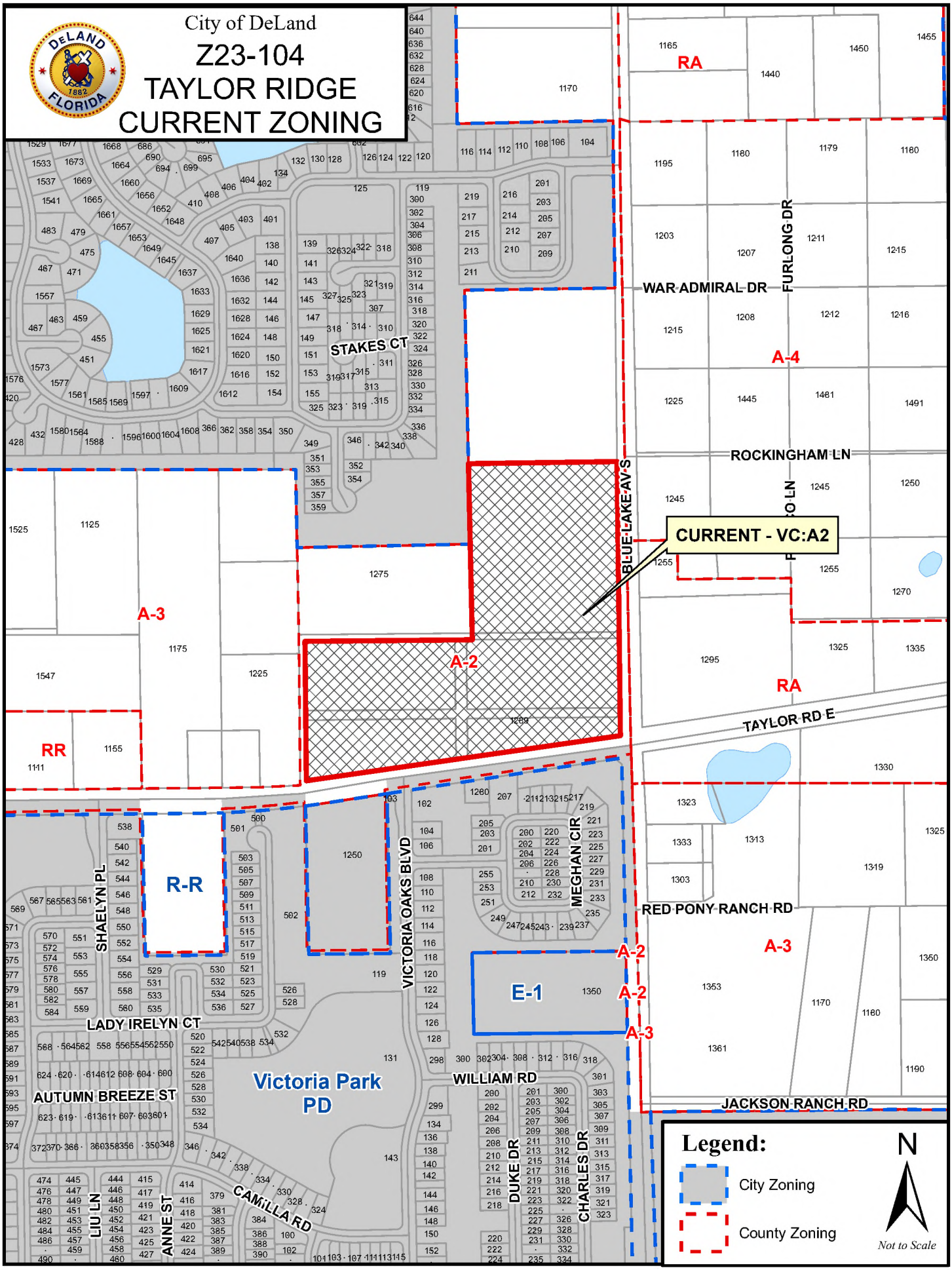
C. CONCLUSION:

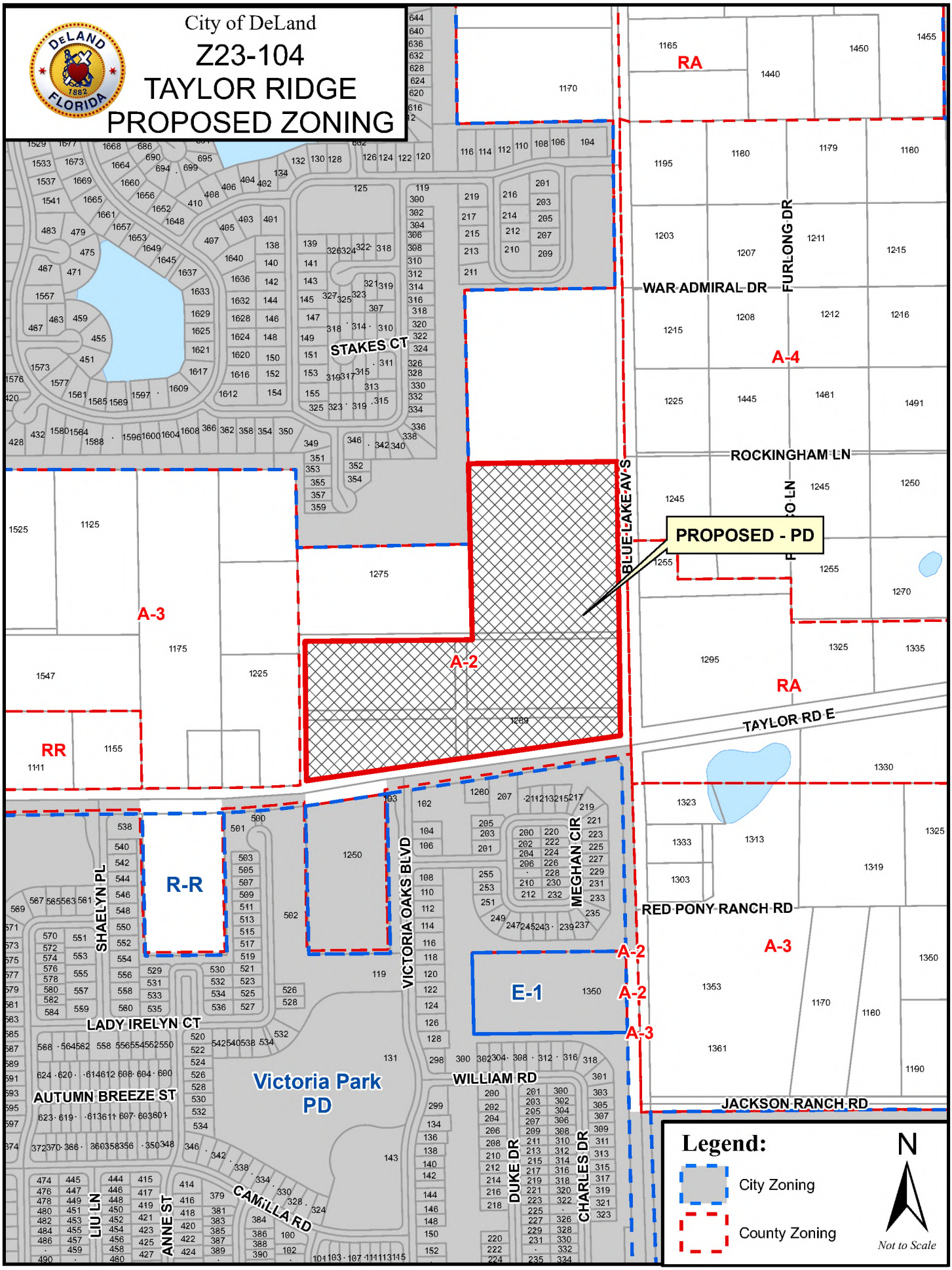
The Applicant is proposing a rezoning from Volusia County's A-2 to a Planned Development in order to develop the subject property for 65 detached, single-family units. Submittal of a preliminary and final plat will be required to ensure the provisions of the Planned Development Agreement are satisfied, as determined by TRC Staff, Planning Board, and City Commission.

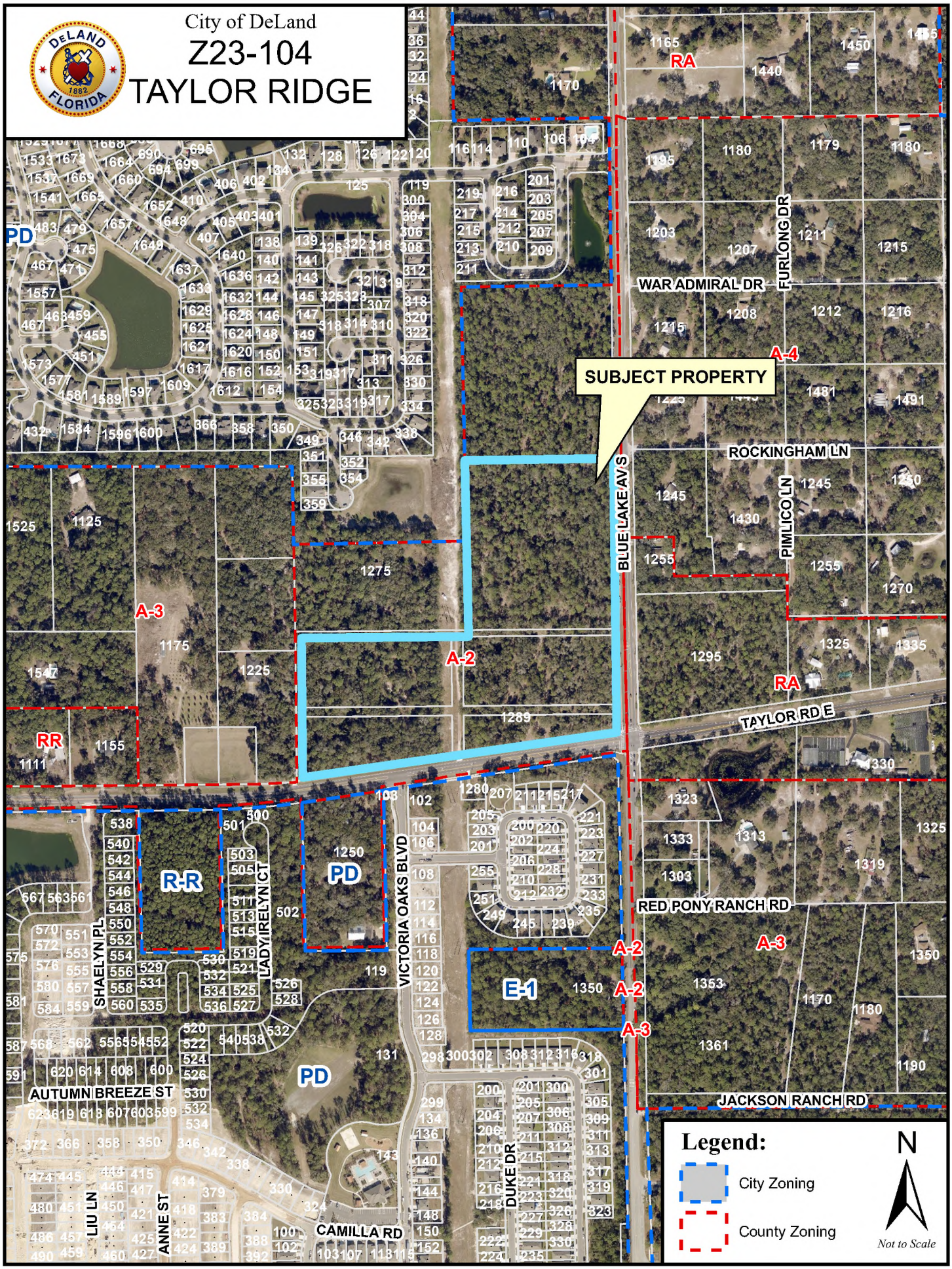
D. STAFF RECOMMENDATION:

Staff recommends that the Planning Board forward the zoning request to the City Commission with a recommendation for approval of this rezoning request from Volusia County's A-2 to "Taylor Ridge PD", subject to addressing all comments from Staff and the Planning Board and subject to the following condition(s):

1. The applicant shall provide an updated school concurrency letter prior City Commission approval.


City of DeLand
Z23-104
TAYLOR RIDGE
CURRENT ZONING
CURRENT - VC:A2
RA
A-4
A-3
A-2
RR
R-R
E-1
Victoria Park
PD
WAR ADMIRAL DR
FURLONG DR
ROCKINGHAM LN
BLUE LAKE AV S
TAYLOR RD E
RED PONY RANCH RD
JACKSON RANCH RD
WILLIAM RD
STAKES CT
LADY IRELYN CT
AUTUMN BREEZE ST
SHAELYN PL
VICTORIA OAKS BLVD
MEGHAN CIR
DUKE DR
CHARLES DR
CAMILLA RD
LIU LN
ANNE ST
Legend:
City Zoning
County Zoning
N
Not to Scale


City of DeLand
Z23-104
TAYLOR RIDGE
PROPOSED ZONING
PROPOSED - PD
A-4
A-3
A-2
RA
RR
R-R
E-1
Victoria Park
PD
STAKES CT
WAR ADMIRAL DR
FURLONG DR
ROCKINGHAM LN
BLUE LAKE AV S
TAYLOR RD E
RED PONY RANCH RD
JACKSON RANCH RD
WILLIAM RD
MEGHAN CIR
VICTORIA OAKS BLVD
SHAELYN PL
LADY IRELYN CT
AUTUMN BREEZE ST
LIU LN
ANNE ST
CAMILLA RD
DUKE DR
CHARLES DR
Legend:
City Zoning
County Zoning
N
Not to Scale


City of DeLand
Z23-104
TAYLOR RIDGE
SUBJECT PROPERTY
A-4
A-3
A-2
RA
RR
R-R
PD
E-1
WAR ADMIRAL DR
FURLONG DR
ROCKINGHAM LN
PIMLICO LN
BLUE LAKE AV S
TAYLOR RD E
RED PONY RANCH RD
JACKSON RANCH RD
VICTORIA OAKS BLVD
LADY IRELYN CT
SHAELYN PL
AUTUMN BREEZE ST
LIU LN
ANNE ST
CAMILLA RD
DUKE DR
Legend:
City Zoning
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Not to Scale

PLANNED DEVELOPMENT AGREEMENT

IN THE CITY COMMISSION OF THE

CITY OF DELAND, FLORIDA

IN RE: Case # Z23-104, Application of

TLC Blue Lake, LLC

ORDINANCE # 20___-____

ORDER AND RESOLUTION

GRANTING A REQUEST FOR CHANGE OF ZONING FROM COUNTY A-2 TO

TAYLOR RIDGE PD

The application of TLC Blue Lake, LLC, hereinafter, "Applicant", for rezoning was heard by and before the City Commission, DeLand Florida, on _____, 20___, Based upon the verified Application and other supporting documents, maps, charts, overlays, other evidence and instruments; the advice, report, and recommendations of the Community Development, and other Departments and agencies of DeLand, Florida; and the testimony adduced and evidence received at the Public Hearing on this Application by the Planning Board on _____, 20____, and otherwise being fully advised, the City Commission does hereby find and determine as follows:

GENERAL FINDINGS

A. That the application of TLC Blue Lake, LLC was duly and properly filed herein on _____, 2023 as required by law.

B. That all fees and costs which are by law, regulation, or Ordinance required to be borne and paid by the applicant have been paid.

C. That the Applicant is the Contract Purchaser of a 26.01 +/- acre parcel of land which is the subject of this application and which land is situated in DeLand, Florida.

D. That the Applicant has complied with the Planned Development Plan provision as required by Land Development Regulations Ordinance No. 2013-11, as amended.

E. That the Applicant has complied with the "Due Public Notice" requirements of the City Commission, Land Development Regulations Ordinance No. 2013-11, as amended.

F. That the owner of the properties, TLC Blue Lake, LLC, agrees with the provisions of the Development Agreement.

FINDINGS REGARDING REZONING

A. That the applicant has applied for a change of zoning from the present zoning classification of the parcels described in Exhibit "A" from County A-2 to Taylor Ridge PD (Planned Development).

B. That the said rezoning to a PD is consistent with both the City of DeLand Comprehensive Plan Ordinance No. 1990-04, as amended, and the intent and purpose of the City of DeLand Development Regulations Ordinance No. 2013-11, as amended, and does promote the public health, safety, morals, general welfare and orderly growth of the area affected by the rezoning request.

NOW, THEREFORE, BE IT RESOLVED AND ORDERED BY THE CITY OF DELAND, FLORIDA, IN OPEN MEETING DULY ASSEMBLED IN THE CITY COMMISSION CHAMBERS, 120 SOUTH FLORIDA AVENUE, DELAND, FLORIDA, THIS _____ DAY OF _____, 20____, AS FOLLOWS:

A. That the Application of TLC Blue Lake, LLC, a Florida limited liability company, for the rezoning of the subject parcels is hereby granted.

B. That the zoning classification of the subject parcels described in Exhibit "A" attached hereto is hereby amended from County A-2 to Taylor Ridge PD as described in Article VII of the City of DeLand, Land Development Regulations Ordinance No. 2013-11, as amended.

C. That the Official Zoning Map of the City of DeLand, is hereby amended to show the rezoning of said parcels to Taylor Ridge PD.

D. That the City of DeLand, Land Development Regulations Ordinance No. 2013-11, as amended, is consistent with the provisions of the "Development Agreement" as hereinafter set forth in this Ordinance and with respect to any conflict between Land Development Regulations Ordinance No. 2013-11, as amended, and the "Development Agreement", the provisions of the "Development Agreement" shall govern. Ordinance No. 2013-11, as amended, shall govern with respect to any matter not covered by the "Development Agreement". The City of DeLand will ensure overall compliance with this Ordinance.

E. Unless otherwise provided for herein the City of DeLand, Land Development Regulations Ordinance No. 2013-11, as amended, shall apply to the PD in the same manner as the R-1 zoning classification.

F. Except as otherwise stated herein, nothing in the Development Agreement is intended to abridge the requirements of Ordinance No. 2013-11, as amended, and any other City Ordinances.

DEVELOPMENT AGREEMENT

A. Development Concept. The properties shall be developed as Taylor Ridge PD, substantially in accordance with the Planned Development Plan. The Planned Development Plan shall govern the development of the property as a PD and shall regulate the future land use of this parcel.

B. Planned Development Plan. The Planned Development Plan shall consist of the Development Plan Map prepared by Kelly, Collins & Gentry, Inc., and dated July 17, 2023 and this Development Agreement. The Planned Development Map is hereby approved and incorporated in this Development Agreement by reference as Exhibit "B". The Planned Development Plan shall be filed and retained for public inspection in the Planning Department and it shall constitute a supplement to the Official Zoning Map of the City of DeLand.

C. Amendments. All amendments of the Planned Development Plan, other than those deemed by the Planning Department to be minor amendments as set out in Land Development Regulations Ordinance No. 2013-11, as amended, shall require the review and recommendation of the Planning Board and action by the City Commission in the same manner as a rezoning of the parcel.

D. Subdivision Approval. After the Planned Development Plan is recorded, and prior to any construction, including clearing and landfill, a final plat of the area to be subdivided, consisting of a single phase, shall be submitted for review and approval in

the manner required by Article 13 of the City of DeLand Land Development Regulations, Ordinance No. 2013-11, as amended.

E. Unified Ownership. The applicant or his successors shall maintain unified ownership of the subject parcels until after issuance of the Final Subdivision Plat Development Order.

F. Phases of Development. Development of the Property shall be accomplished in a single phase.

G. Land Uses Within the PD. The location and size of said land use areas are shown on the Development Plan Map, Exhibit "B". The following land uses shall be allowed as permitted principal uses and structures along with their customary accessory uses and structures:

Permitted Uses within Residential Areas:

1. Single-Family Residences:

Single-family dwellings, except mobile homes, and their customary accessory uses.

Family day care home.

Mini and neighborhood parks.

Community uses including but not limited to passive recreation areas with gazebo.

Accessory structure per Section 33-28.09.

H. Development Standards. All development for the property shall rely upon the standards set forth below as identified on the Planned Development Plan. Where this document is silent, the R-1 Zoning regulations shall apply.

1. Single-Family Residences:

a. Maximum unit count: 65

	60' Lots
1. Minimum lot area:	6,900 sq. ft.
2. Minimum lot width:*+	60 ft.
3. Minimum lot length:	115 ft.
4. Minimum building setbacks:	
a. Front yard to garage face/door:	25 ft.
b. Front yard to structure:	15 ft.
c. Rear yard:	20 ft.
d. Side yard:	5 ft.
e. Side street	15 ft.
5. Min. screen enclosure setbacks:	
f. Rear yard screen enclosure	5 ft.
g. Side yard screen enclosure	5 ft.
Side street screen enclosure:	15 ft.
6. Min. pool and accessory structure setbacks:	
h. Side setback for pools and accessory	5 ft.

structures:	
i. Side street setback for pools and accessory structures:	15 ft.
j. Rear setback for pools and accessory structures:	5 ft.
7. Minimum floor area:	1300 sq. ft.
8. Maximum lot coverage:	65%
9. Maximum building height:	35 ft.
10. Maximum number of lots:	Subject only to total lot limit of 65

* The minimum lot width and area must be 15% greater than the standard for an interior lot.
+ Lots fronting a curve must be at least 50 feet wide at the street line.

2. Accessory Structures. Unless otherwise stated herein, all accessory structures shall meet the development standards of Section 33-28 of the Land Development Regulations Ordinance No. 2013-11, as amended.

3. Parking Standards

1. Off-Street Parking: Each parcel shall be designed to accommodate no less than two (2) parking spaces via use of an on-parcel driveway and two (2) spaces in an internal garage. All driveway parking spaces shall be a minimum of nine (9) feet wide by twenty (20) feet long (per each vehicle).

2. On-Street Parking:

a. On-street parking, as illustrated on Exhibit "B", shall be provided in various locations within the Property.

b. No less than 31 on-street parking spaces shall be provided.

c. On-street parallel parking is 8.5 feet by 22 feet measured to back of drop curb (minimum eight feet (8') of asphalt and up to one half foot (0.5') of drop curb).

d. Perpendicular parking spaces are sized 9 feet by 20 feet.

e. Cross sections of the roadway illustrating typical design for parking on one or both sides of the street are included in Exhibit "B".

4. Sidewalks: Sidewalks shall be provided throughout the subdivision and along its exterior roadways pursuant to the terms and obligations of Section 33-90.04 of the City's Land Development Code and as shown in Exhibit "B".

5. Subdivision Entryways: Entryways into the subdivision shall screen the sides of any proposed single-family dwellings by one of the following methods or combination of methods: 1) Perimeter roadway buffers shall be extended along any roadway entrance into the subdivision, a minimum distance of 100 feet complying with Buffer Standard "B"; 2) Stormwater facilities with fountain and with perimeter landscaping sufficient to obscure the view of adjacent dwellings.

6. Signage: Signage for the subdivision shall be provided per the Land Development Regulations. One monument sign identifying the subdivision shall be placed at the entrance along East Taylor Road and one monument sign identifying the subdivision shall be placed at the entrance along South Blue Lake Avenue. The entrance along East Taylor Road shall be designated as the primary entrance.

7. Open Space. Open Space and Common Area shall meet the requirements of the Land Development Regulations Ordinance No. 2013-11, and are as provided in the Planned Development Map.

8. Design. The homes within the development shall have a mixture of design facades, and the same façade and home design shall not be used on lots within three (3) lots of each other on the same side of the street, nor may the same façade and home design be used directly across the street from each other. The homeowner's association shall ensure that an individual lot owner seeking building permits shall demonstrate compliance with this Section as part of the construction permit submittal for a lot.

9. Model Homes and Temporary Sales Offices. Up to four (4) model homes and one (1) home for a temporary sales office may be constructed. Construction of the model homes and temporary sales office may commence upon approval of a preliminary plat and final construction plans and completion of a stabilized access to the model homes and temporary sales office for emergency vehicles and the provision of acceptable water supply for fire protection during construction However, neither the model homes nor the temporary sales office may be occupied nor otherwise issued a temporary or a final certificate of occupancy until final plat approval for said phase and acceptance of the roadway and all water and sewer infrastructure by the City of DeLand.

10. Exterior Buffer/Landscaping. Notwithstanding the landscape requirements provided for herein along the Subdivision Entryways, the perimeter buffers of the subdivision shall comply with the landscape buffer width and planting requirements provided for in Section 33-92.02 of the City of DeLand Land Development Code. As shown on Exhibit "B", the buffer widths shall be as follows:

Perimeter Buffer-all areas except adjacent to power line easement	40-foot buffer, Type B
Perimeter Buffer, along the eastern edge of the power line easement	15-foot buffer, Type B
S. Blue Lake Ave.- Road Frontage	40-foot buffer, Type D

E. Taylor Rd. - Road Frontage	50-foot buffer, Type D

11. Compliance. In the event that future development cannot comply with the standards set forth herein, then said entitlements shall be processed through an amendment to this Development Agreement which will comply with state law as for the rezoning of property.

I. Environmental Considerations. The development shall comply with the requirements for preservation of environmental resources as set forth in the Land Development Regulations Ordinance No. 2013-11, as amended. This includes compliance with the Land Development Regulations regarding analysis, preservation and mitigation for historic trees. Tree Protection Areas (TPAs) preserving a minimum of 15% of the net developable area, which excludes required right-of-way dedication areas and on-site easements, shall be required and maintained as shown on Exhibit "B". Tree Protection Areas are proposed as shown on Exhibit "B" and may be modified based upon an updated tree survey so long as the minimum 15% of net developable areas is preserved and the ultimate configuration is finalized at final site plan. Nothing shall prevent the grading of Tree Protection Areas prior to creation of said areas, but any portion of the property with grading shall require replanting as provided for in the Land Development Regulations.

The development has been laid out in a manner to best accommodate the existing topography, drainage, and known environmental conditions identified on the property. In addition, all landscaping, including buffers, shall predominantly utilize Florida-Friendly Landscaping, as defined by the University of Florida/Institute of Food and Agricultural

Sciences ("UF/IFAS") Center for Landscape Conservation and Ecology, native, or low-water plant material.

1. The City shall grant mitigation credit for Live Oak trees measuring 2" DBH to 5" DBH and maintained in TPAs. If said provision regarding 2"-5" Live Oak trees within the TPAs is utilized, the City will require an additional conservation easement to prevent the future removal of said trees as the default provisions of the Land Development Code only protects trees 6" DBH or larger. Credit for preservation of these 2"-5" Live Oak trees shall be based on an actual tree survey rather than a statistical analysis.

2. Due to the City's recognition that Laurel Oaks larger than 20" DBH are nearing the end of their lifespan, any Laurel Oak 20" DBH or larger removed from the Property during development will require reduced replacement of one 3" caliper canopy tree for each Laurel Oak removed. Each 3" caliper canopy tree shall receive 2" DBH credit towards tree replacement calculations.

3. Street trees may be planted within the rights of way within the Property and said trees may be included in mitigation calculations. However, if any such trees are planted, the HOA shall be responsible for the maintenance of said trees. Moreover, the HOA shall also be responsible to repair any and all impacts upon the right of way infrastructure created by the presence of said trees, including any road or sidewalk facilities.

4. A tree survey is required as part of the review process for the project. The survey shall be conducted based on the following standards:

a. The Applicant will survey all specimen and historic trees.

b. For non-specimen or non-historic trees, the Applicant will engage an arborist to identify statistically significant sample area(s). Sample areas are

to be identified based upon cover types of species. The sample area for each cover type must have an area that is at least 10 percent of its total area and may not be less than one acre in size. The Applicant's arborist shall provide the City Forester with the proposed sample areas for review, comment and approval. The proportionate area of each statistically significant sample area will be calculated as a percentage of the overall property area.

c. Upon approval of the statistically significant sample areas by the City Forester, the Applicant will cause all trees 6 inches DBH and larger to be identified and surveyed in the selected sample area.

d. The tree density determined by the survey of the sample area(s) will be used to determine tree replacement or mitigation requirements. The tree mitigation requirements will be weighted based on the proportionate area represented by each sample area.

5. Street tree installation, based upon the approved landscape plan, shall be required on a lot-by-lot basis and must be planted prior to the issuance of a certificate of occupancy for that particular lot.

6. Each lot must have at a minimum one front yard tree and one tree for every 2,500 square feet of lot area.

7. Palm trees and understory trees from the City of DeLand List of Approved Tree Replacement Species shall account for no more than 25 percent of trees on individual lots.

J. Sewage Disposal, Potable Water and Reclaimed Water. Provision for

sewage disposal, potable and reclaimed water needs of the PD will be provided in accordance with the Comprehensive Plan, Ordinance No. 1990-04, as amended, the Land Development Regulations Ordinance No. 2013-11, as amended, and State of Florida Administrative Code 64E-6.

K. Stormwater Drainage. Provision for stormwater retention shall be in accordance with the Land Development Regulations Ordinance No. 2013-11, as amended. All stormwater retention systems will be designed to meet all required governmental regulations.

L. Access and Transportation System Improvements. All access and transportation system improvements shall be provided in accordance with the Land Development Regulations, Ordinance No. 2013-11, as amended. The parcel shall be developed in substantial accordance with the following access and transportation system improvements:

1. Access Points. Access to the site will be from East Taylor Road and South Blue Lake Avenue. The Planned Development Plan indicates the anticipated connection locations; however, the final locations may vary due to final engineering design and permitting considerations.

2. Transportation System Improvements. Transportation system improvements will be provided as required by permitting agencies and as needed according to the Traffic Impact Analysis (TIA) for the project.

3. Private Access Easement. A private access easement no less than twenty-five feet (25') in width shall be granted to the adjoining property owner in the

location depicted on the Planned Development Map.

M. Internal Roadways. All rights-of-way will be a minimum of fifty (50) feet wide, and constructed in accordance with the Land Development Regulations, Ordinance No. 2013-11, as amended. All internal roads will be dedicated to the City. The dead-end parking area shown on the Planned Development Map will accommodate fire trucks and garbage trucks, as determined by the City Engineer.

N. Homeowners Association. The Applicant shall create a homeowners association (HOA). The charter and by-laws of said association and any other agreements, covenants, easements or restrictions shall be furnished to the City of DeLand at the time of creation. The Applicant shall be responsible for recording said information in the Public Records of Volusia County, Florida. Also, the applicant shall bear and pay all costs for recording all of the aforementioned documents.

As stated above, the City shall encourage a mixture of design facades within the development, and the Applicant shall avoid a repeating sequence of designs and shall not utilize the same design on lots within 3 single-family lots of each other on the same side of the street. The homeowners' association shall ensure that an individual lot owner seeking building permits shall demonstrate compliance with this Section as part of the construction permit submittal for the lot.

With respect to the enforcement of said agreements, covenants, easements or restrictions entered into between the Applicant and the owners or occupiers of property within the Taylor Ridge PD, the City of DeLand shall only enforce the provisions of the "Development Agreement" and City of DeLand Land Development Regulations

Ordinance No. 2013-11, as amended, whichever is applicable, and not the private agreements entered into between the aforementioned parties.

O. Reverter Provision: The terms of this Development Agreement shall be vested upon issuance of a final development order for the first phase of the development, which shall occur within five (5) years from the effective date of the ordinance which adopts the Planned Development Plan unless the City Commission, for good cause shown, extends the time period indicated in this paragraph. If not vested by said date, the Planned Development Plan shall expire and will be of no further force or effect and no development shall occur on the subject property until it is rezoned. The City Commission may rezone the subject property as may be necessary or appropriate to protect adjoining properties or the public health, safety and welfare, if the Planned Development Plan expires.

P. On-Site Burning of Cleared Vegetation Prohibited: Vegetation and other biomass cleared from the Property during development may not be incinerated on-site.

Q. Community Enhancements:

1. LID – Low Impact Design Elements: The following Low Impact Development elements shall be provided:

a. Stormwater Plantings. All stormwater ponds shall utilize supplemental plantings to enhance the functionality and/or aesthetics of the stormwater system. Littoral plantings shall be utilized if viability is likely – i.e. if a stormwater pond is designed to remain wet. If a pond is designed

to remain dry and littoral plantings are unlikely to survive, the supplemental plantings shall be Florida Friendly plants.

b. Swales. If the stormwater design provides for surface connectivity between the two proposed ponds at the southeast corner of the project, a bioswale will be provided. Furthermore, if a surface swale is required within the amenity tract, a bioswale will be provided so long as there is no negative impact to existing historic trees on the amenity tract. The swales will act as an amenity with Florida friendly plants that require no fertilizers or irrigation and rocks to help control erosion.

c. Maintenance Requirements. Unless specifically dedicated to the City of DeLand, the maintenance of Low Impact Design Elements shall not be the responsibility of the City of DeLand.

2. Community Activity Enhancements:

a. Centralized Amenity Parcel consisting of:

i. an open play field (approximately 150'x80')

ii. 15 ft x 15 ft concrete floor, covered gazebo

iii. One (1) wooden picnic table located within gazebo

iv. Two (2) metal/epoxy picnic tables adjacent to gazebo

v. Two (2) charcoal BBQ grill stations adjacent to gazebo

b. Mulched pathways running from Centralized Amenity Parcel south to Taylor Road and also around SW retention pond.

c. Four Exercise Stations located along mulch trail.

i. One (1) ExoPod

ii. One (1) Pull Up Station

iii. One (1) Stepper

iv. One (1) Air Walker

d. Tot Lot dedicated activity area with the following playground equipment.

i. Swing Set

ii. Slide & Tower

iii. Bench

iv. Shade Sail

e. Fenced dog park approximately 50' x 80' with bench for dog owners.

3. In accordance with the TRD land use category, the allowable density of this project is set at no more than 2.5 du/ac, granted pursuant to the clustering of the subdivision and the enhanced amenities provided for in the paragraph above.

R. Binding Effect of Plans; Recording; and Effective Date. The Planned Development Plan, including any and all amendments shall bind and inure to the benefit of the Applicant and his successor in title or interest. The Taylor Ridge PD zoning, provisions of the "Development Agreement," and all approved plans shall run with the land and shall be administered in a manner consistent with Article XII of the City of DeLand Land Development Regulations Ordinance No. 2013-11, as amended.

This Ordinance and all subsequent amendments shall be filed with the Clerk of the Court and recorded within forty-five (45) days following execution of the document by the City Commission, in the Official Records of Volusia County, Florida. One copy of the document, bearing the book and page number of the Official Record in which the document was recorded, shall be submitted to the Planning Department for placement in

the public file. The date of recording of this document shall constitute the effective date of the Taylor Ridge PD or its subsequent amendments. The applicant shall pay all filing costs for recording documents.

DONE and ORDERED by the City Commission, City of DeLand, Florida, this ____ day of _____, 20____.

[remainder of page left blank]

ATTEST: City Commission of DeLand Florida

Michael P. Pleus
City Manager

Chris Cloudman
Mayor

STATE OF FLORIDA

CITY OF DELAND

The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online notarization this ____ day of _____, 20___, by Michael P. Pleus and Chris Cloudman, as City Manager and Mayor of the City of DeLand, respectively, on behalf of the City of DeLand, and who are personally known to me.

NOTARY PUBLIC, STATE OF FLORIDA

Type or Print Name:

_____

Commission No.:_____

My Commission Expires:_____

WITNESSES:

APPLICANT
TLC Blue Lake, LLC
a Florida limited liability company

_____

By:_____
ANDREW J. OROSZ
Authorized Representative

_____
Printed Name

_____

_____
Printed Name

STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online notarization this ____ day of _____, 20___, by ANDREW J. OROSZ, as an Authorized Representative of TLC Blue Lake, LLC, who is personally known to me or who has produced _____ as identification.

NOTARY PUBLIC, STATE OF FLORIDA

Type or Print Name:

_____

Commission No.:_____

My Commission Expires:_____

EXHIBIT "A"
LEGAL DESCRIPTION

That part of the Southeast 1/4 of the Southeast 1/4 of Section 22, Township 17 South, Range 30 East, Volusia County, Florida being more particularly described as follows:

COMMENCE at the Northeast corner of the Southeast 1/4 of Section 22, Township 17 South, Range 30 East, Volusia County, Florida thence S01°09'26"E 1357.82 feet along the East boundary of said Southeast 1/4 to the Northeast corner of the Southeast 1/4 of said Southeast 1/4; thence S88°57'54"W 30.00 feet to a point on the West right of way line of Blue Lake Avenue as shown on Volusia County right of way map Project #1335 for the POINT OF BEGINNING; thence S01°09'26"E 678.79 feet along said West right of way line; thence N89°11'44"E 5.00 feet along said right of way line; thence S01°09'26"E 451.92 feet along said right of way line to a point on the South right of way line of Taylor Road as shown on Volusia County right of way map Project #1113-4-5/P4172-3; thence S81°19'36"W 1250.26 feet along said right of way line to the beginning of a tangent curve concave Northerly and having a radius of 3481.24 feet and a central angle of 01°00'58"; thence Westerly 61.73 feet along the arc of said curve and said right of way line to a point on the West boundary of the Southwest 1/4 of the Southeast 1/4 of said Southeast 1/4; thence N01°06'37"W 631.00 feet along said West boundary to the Northwest corner of the Southwest 1/4 of the Southeast 1/4 of said Southeast 1/4; thence N89°11'44"E 662.65 feet along the North boundary of the Southwest 1/4 of the Southeast 1/4 of said Southeast 1/4 to the Southwest corner of the Northeast 1/4 of the Southeast 1/4 of said Southeast 1/4; thence N01°08'02"W 676.25 feet along the West boundary of the Northeast 1/4 of the Southeast 1/4 of said Southeast 1/4 to the Northwest corner of the Northeast 1/4 of the Southeast 1/4 of said Southeast 1/4; thence N88°57'54"E 632.36 feet along the North boundary of the Northeast 1/4 of the Southeast 1/4 of said Southeast 1/4 to the Point of Beginning.

CONTAINING: 26.011 acres, more or less.

EXHIBIT "B"

PLANNED DEVELOPMENT PLAN

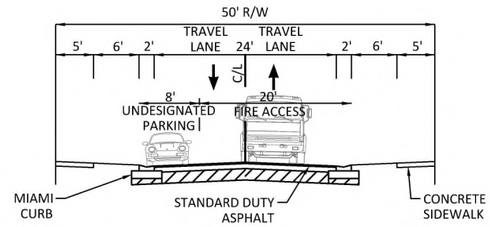


CITY OF DELAND SITE DATA

TOTAL PROJECT AREA:	26.01 AC	
RESIDENTIAL LOT AREA	10.70 AC	**41%**
INTERNAL RIGHT OF WAY	3.66 AC	**14%**
ACCESS EASEMENT	0.19 AC	**0.7%**
OPEN SPACE (INCLUDES TREE PROTECTION AREA & AMENITY TRACT)	11.46 AC	**44%**
STORMWATER TRACTS	3.48 AC	**13%**
AMENITY TRACT	0.87 AC	
TREE PROTECTION (15% MIN)*	4.39 AC*	**17%**
POWERLINE EASEMENT	1.14 AC	
OTHER OPEN SPACE	1.59 AC	
DENSITY ALLOWED	2.50 du/ac	
DENSITY PROVIDED	2.50 du/ac	

*FINAL TREE PRESERVATION AND OPEN SPACE TRACRS WILL BE DETERMINED WITH CONSTRUCTION PLANS, BUT MINIMUMS WILL BE MAINTAINED.

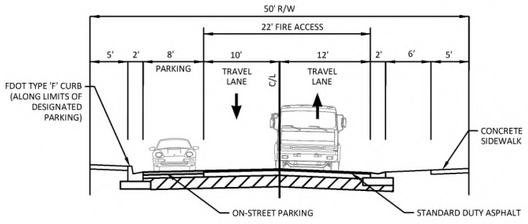
TOTAL AREA	26.01 AC	**100%**



50' ROW SECTION - 24' PAVEMENT

TYPICAL CROSS SECTION

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 10'



50' ROW SECTION - 30' PAVEMENT (DESIGNATED PARKING)

TYPICAL CROSS SECTION

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 10'

LEGEND:	COUNT:	PERCENT:
60' LOT	65	100 %
TOTAL:	65 LOTS/UNITS	
LID SWALE		
TREE PROTECTION		

KELLY, COLLINS & GENTRY, INC.
KCG
1700 NORTH ORANGE AVENUE, SUITE 400
ORLANDO, FLORIDA 32804
(407) 898-7526 FAX (407) 898-1488

NO.	DATE	REVISION
1		
2		
3		
4		
5		
6		

PREPARED FOR:
HANOVER COMPANY

PROJECT:
TAYLOR RIDGE SUBDIVISION

CONCEPT PLAN

DRAWN: DSR
DESIGN: SCF
CHECKED: SCF
JOB NO.: 1512.000
DATE: 08/11/2023
SHEET 1 OF 1

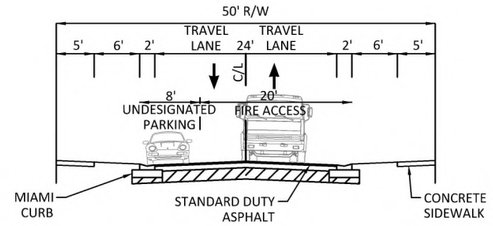


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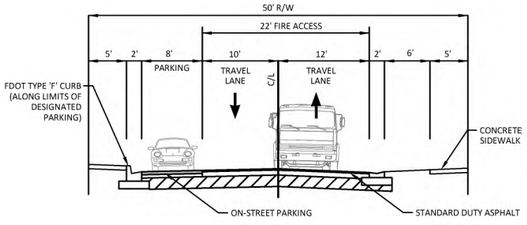
TOTAL AREA	26.01 AC	**100%**



50' ROW SECTION - 24' PAVEMENT

TYPICAL CROSS SECTION

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 10'



50' ROW SECTION - 30' PAVEMENT (DESIGNATED PARKING)

TYPICAL CROSS SECTION

HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 10'

LEGEND:	COUNT:	PERCENT:
60' LOT	65	100 %
TOTAL:	65 LOTS/UNITS	
LID SWALE		
TREE PROTECTION		

KELLY, COLLINS & GENTRY, INC.
KCG
1700 NORTH ORANGE AVENUE, SUITE 400
ORLANDO, FLORIDA 32804
(407) 898-7526 FAX (407) 898-1488

NO.	DATE	REVISION
1		
2		
3		
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5		
6		

PREPARED FOR:
HANOVER COMPANY

PROJECT:
TAYLOR RIDGE SUBDIVISION

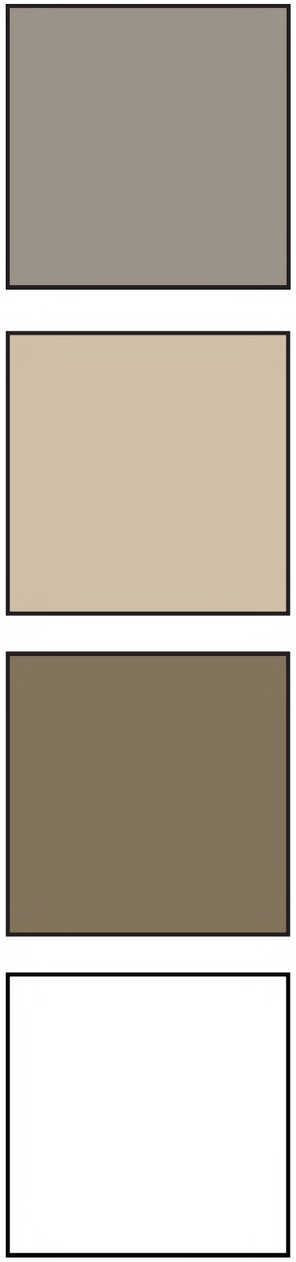
CONCEPT PLAN

DRAWN: DSR
DESIGN: SCF
CHECKED: SCF
JOB NO.: 1512.000
DATE: 08/11/2023

SHEET
1 OF 1

LOGO

COLOR PALETTE



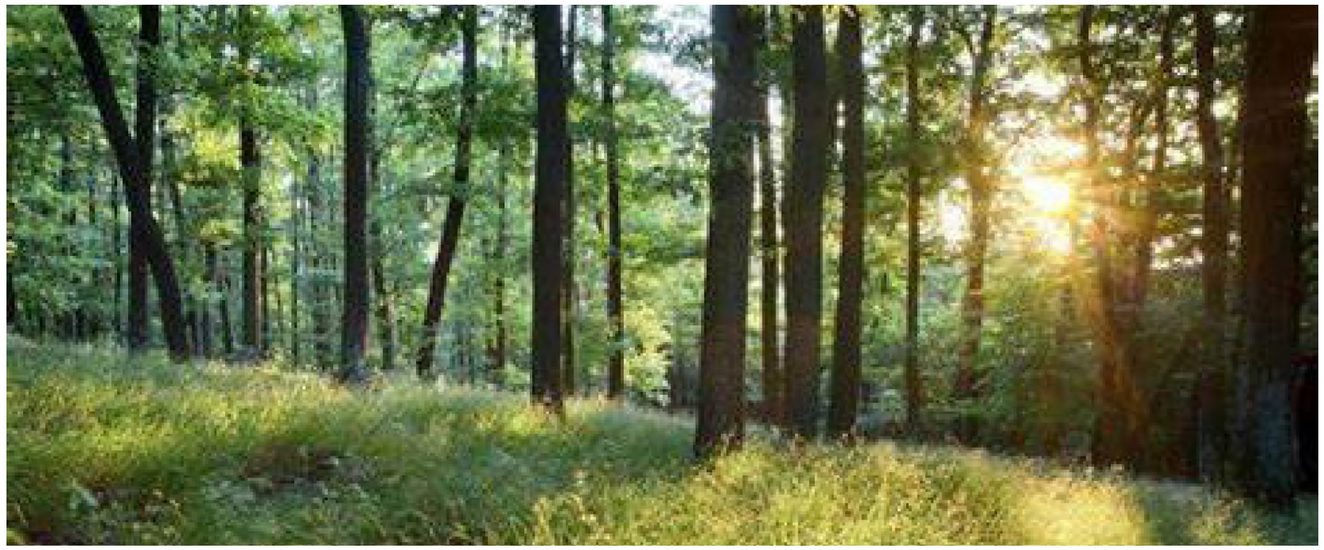
TAYLOR RIDGE, LOCATED IN DELAND, FLORIDA, IS A NEW MASTER PLANNED COMUNITY EMBRACING A LOW IMPACT DEVELOPMENT & PRESERVATION APPROACH.

CORE VALUES OF THE COMMUNITY

ACTIVE LIFESTYLE ENGAGING NATURAL ENVIRONMENT:
Using the preserved areas of the site, the community attempts to embrace the human interaction with nature using a trail network connecting passive and active recreation, a dog walk, and a central gathering space amid a bio-swale with trail heads & boardwalks that weave through the neighborhood and promote walking, biking, and engagement with nature. Interpretive signage is planned in special areas to communicate the benefit of the natural features to cultivate an appreciation and stewardship among the residents and non-resident users.

PRESERVATION:
The community planning has taken a granular approach to work within the natural environment and retain substantial areas of existing trees and open space with access to natural areas.

SUSTAINABILITY:
Low impact development strategies are being incorporated throughout. Mulched trail networks to reduce impervious areas, bioswales to convey stormwater, reduced turf areas, and providing alternatives for automobile use within the community are all strategies being employed within Taylor Ridge.



COMMUNITY VISION
PROJECT #2021.188

2023.08.08



PROJECT #2021.188

2023.08.08

Taylor Ridge

BONNETT design group, llc
landscape architecture . community planning

HANOVER LAND COMPANY, LLC





BUFFER

D

F

C

A

B

D

E



LEGEND:

Ⓐ TOT LOT/SHADE SAIL Ⓑ EXERCISE EQUIPMENT Ⓒ PLAY FIELD Ⓓ LANDSCAPE BUFFER Ⓔ MULCH PATH Ⓕ SHELTER/TABLES/GRILLS

N

AMENITY PARK

PROJECT #2021.188

SITE PLAN **1”=30’**

2023.08.08

BONNETT design group, llc
landscape architecture . community planning

Taylor Ridge

HANOVER LAND COMPANY, LLC



LEGEND:

Ⓐ DOG PARK Ⓑ DOG PLAY EQUIP. Ⓒ OPEN FILED Ⓓ LANDSCAPE BUFFER Ⓔ MULCH PATH

N

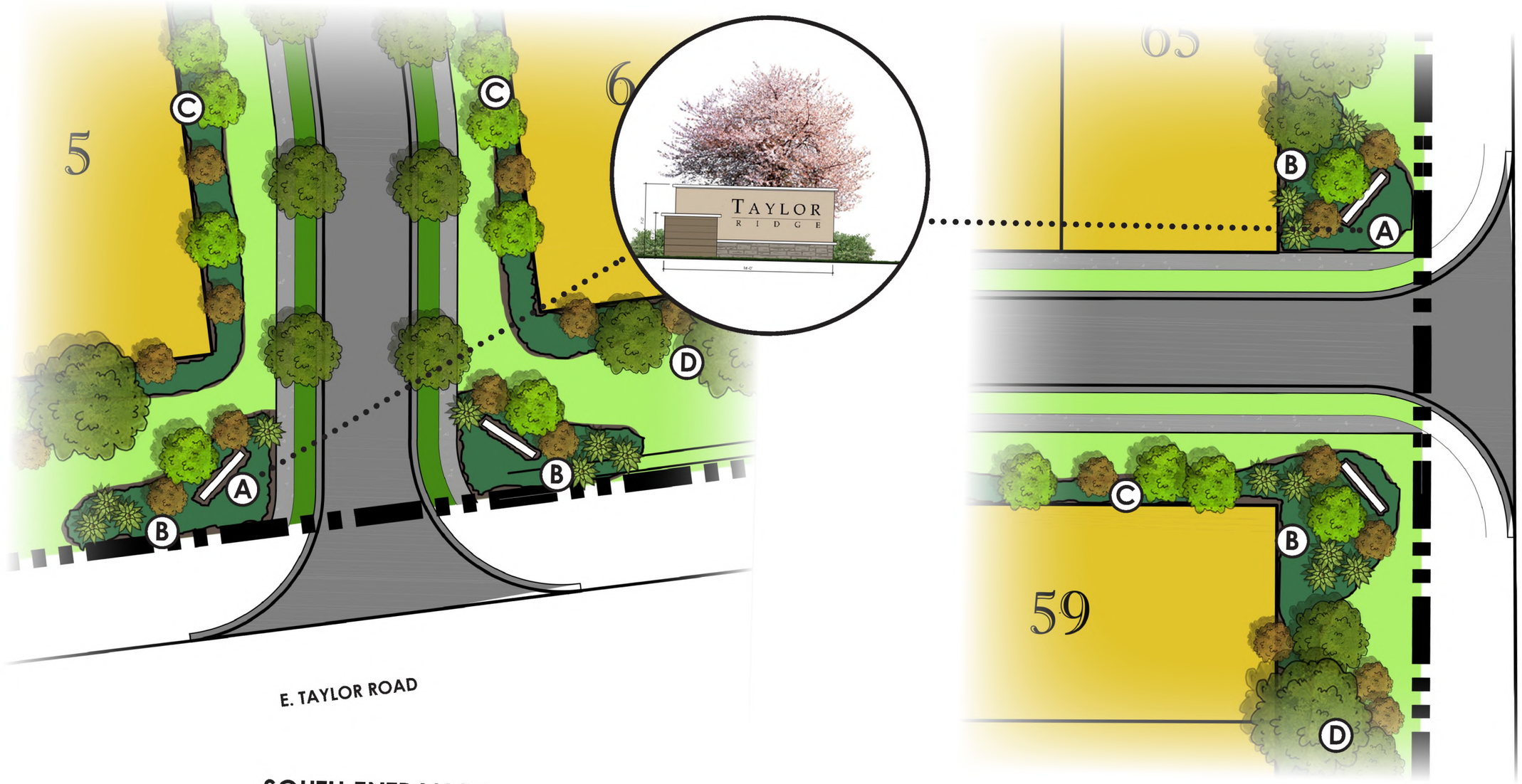
DOG PARK
PROJECT #2021.188

SITE PLAN **1"=30'**
2023.08.08

BONNETT design group, llc
landscape architecture . community planning

Taylor Ridge

HANOVER LAND
COMPANY, LLC



SOUTH ENTRANCE

EAST ENTRANCE

LEGEND:

Ⓐ ENTRY SIGN Ⓑ ENHANCED PLANTING Ⓒ LANDSCAPE BUFFER Ⓓ TREE PROTECTION AREA

N

COMMUNITY ENTRANCE

PROJECT #2021.188

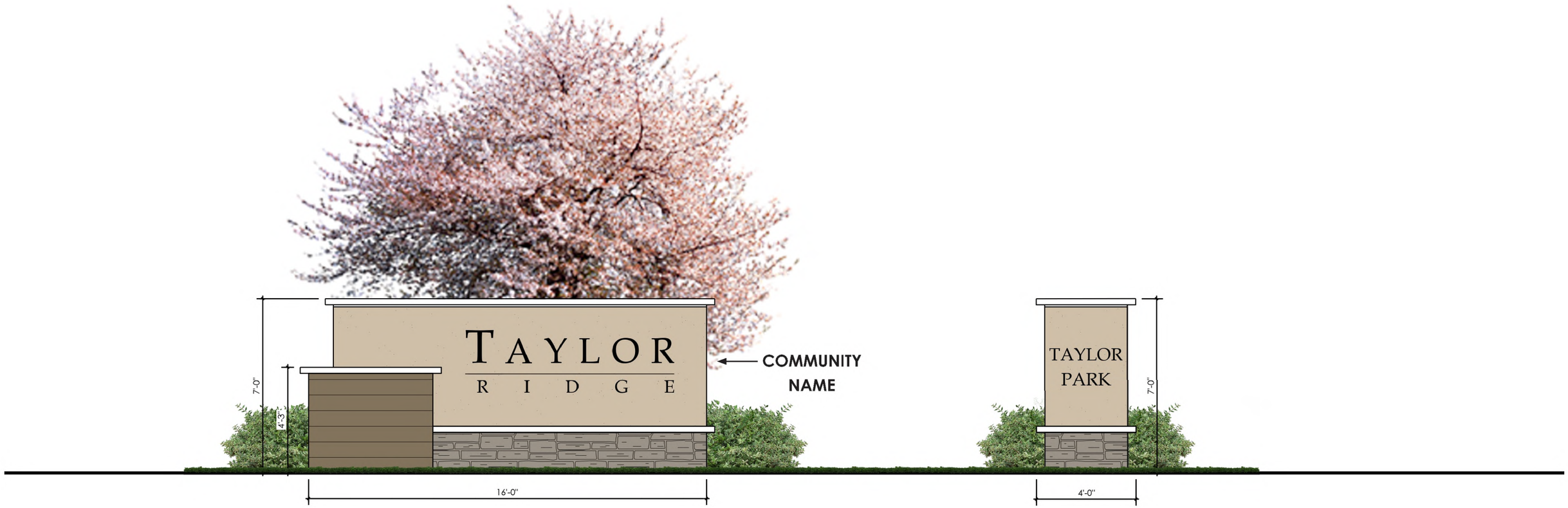
SITE PLAN 1"=30'

2023.08.08

BONNETT design group, llc
landscape architecture . community planning

Taylor Ridge

HANOVER LAND COMPANY, LLC



PRIMARY

SECONDARY

ENTRY SIGNAGE
PROJECT #2021.188

ELEVATION **1/2"=1'**
2023.08.08

BONNETT design group, llc
landscape architecture . community planning

Taylor Ridge

HANOVER LAND
COMPANY, LLC

PLANNING DEPARTMENT STAFF REPORT
TO
PLANNING BOARD

September 13, 2023

APPLICATION NO.: Z23-123

STAFF PLANNER: Kendall Story

APPLICANT: Mark Watts, Esq., Cobb Cole

REQUEST: Amending the Manchester Neighborhood PD

APPLICABLE REGULATIONS:

Article IV	OVERLAY AND FLOATING ZONES Sec. 33-32 – Planned Development District.
Article XII	ADMINISTRATION AND ENFORCEMENT Sec. 33-135 – Procedure for text amendments & rezoning.

A. SITE FACTORS:

Location:	801 Sol y Sombra
Parcel Size:	+/- 38.5 ac.
Land Use:	Low Density Residential/Community Health Overlay
Existing Zoning:	Manchester Neighborhood PD
Existing Use:	Wooded/single-family residential

	SURROUNDING USE:	SURROUNDING ZONING:
North:	VC: Urban Low Intensity/ Community Health Overlay	VC: A-3&M; A-3A (VC)
South:	VC: Commercial/Community Health Overlay	VC: B-1&M
East:	Mixed-Office Residential/ Community Health Overlay	P-1&M
West:	Low Density Res; High Density Residential	Hillpointe PD; Cascades PD; Hillpointe Apartments PD; C-1

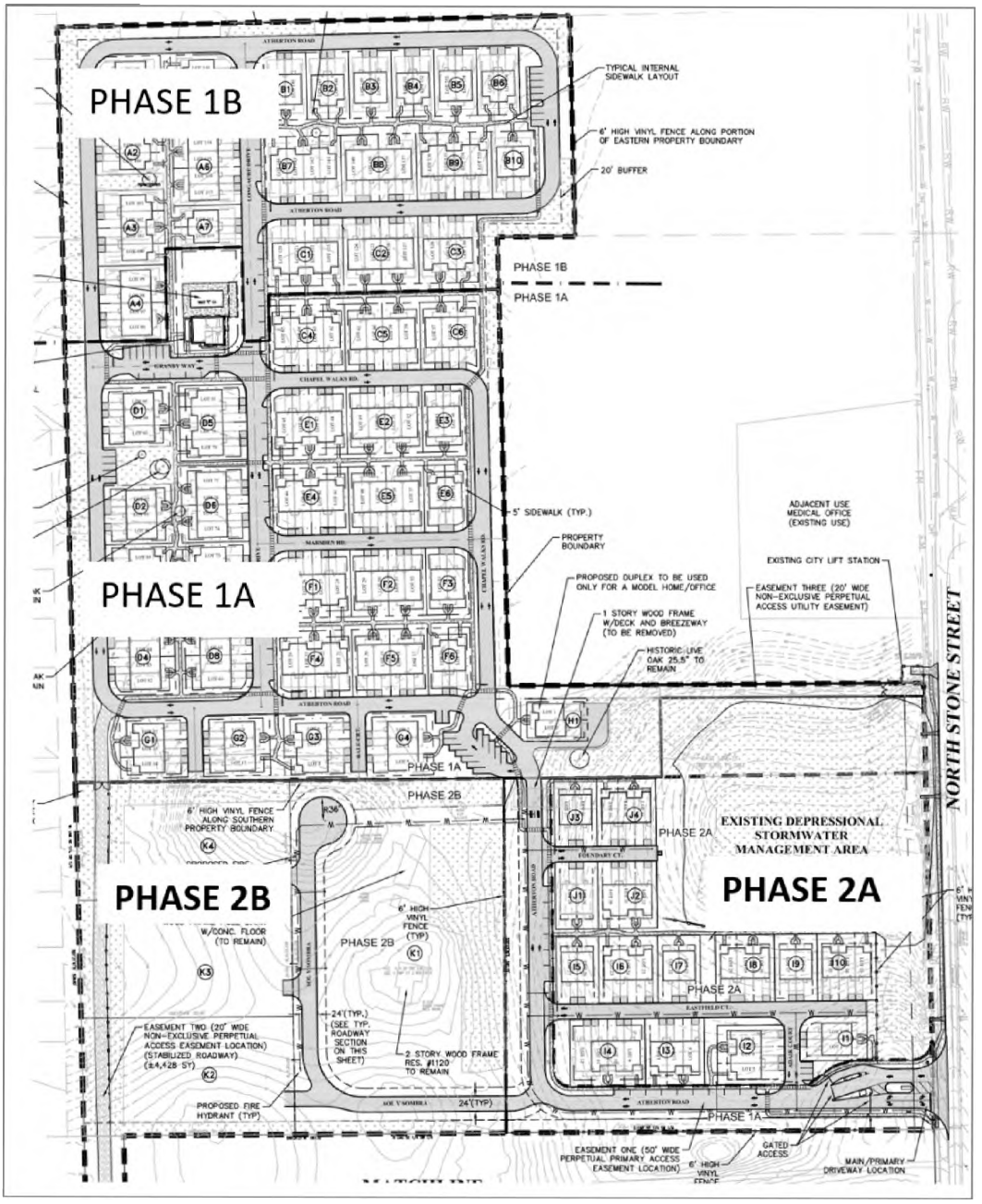
B. ANALYSIS:

The Manchester Neighborhood PD was approved in March of 2021 (Ord.# 2021-11) and consists of four phases, totaling +/-38.5 acres in all, located on the west side of N. Stone St, just north of the Advent Health Hospital DeLand property. It is bordered by The Cascades residential PD and the Hillpointe Apartments PD to the west; transitional agriculture zoning to the north; assisted living & nursing facilities to the east; and medical uses to the south.

The applicant is requesting to amend the PD agreement for the purposes of adding single-family homes as a permitted use, and to establish development standards and entitlements for the *Proposed Future Development Tract* (Phase II). Currently, the PD restricts the number of dwelling units to 156 units allowed for the entire Manchester PD; and single-family homes are not listed as a permitted use. This makes it impossible for Phase II to be developed and will make the existing single-family home in Phase 2B non-conforming.

If approved, the PD agreement will allow for an additional 41 dwelling units and would allow for single-family homes, and also include the existing home in Phase 2B.

At the July 20, 2023, Technical Review Committee meeting, a vote was made to forward the proposed 1st Amendment to the Manchester PD be forwarded on to the Planning Board, subject to



addressing remaining Staff comments. The applicant has since submitted a revised concept plan along with an updated version of the amendment and has addressed the outstanding comments.

Section 33-135 of the Land Development Regulations provides the following criteria, which the City Commission shall utilize in reviewing a rezoning request:

1. **Is the proposed rezoning consistent with the Comprehensive Land Use Plan, the land use, zoning pattern and character of the surrounding area?**

   The subject property has a future land use designation of Low Density Residential which allows up to 5.8 residential units per acre. The PD amendment proposes an additional 41 dwelling units be allowed in Phase II.

   Total of **194** units with approved amendment
   - 156 units (Phase I)
   - 34 units (Phase 2A)
   - 4 units (Phase 2B)

   While the underlying land use of Low Density Residential typically allows up to 5.8 du/ac., the Community Health future land use overlay allows for an increase of up to 12 du/ac. when constructing residential in the form of a Pocket Neighborhood. The proposed PD is not a Pocket Neighborhood development, but townhomes are consistent within the Low Density Residential land use designation and with the previously-approved Scarlett PD. The proximity of senior housing to medical-related uses is also consistent with the general intent of the overlay.

2. **Will the proposed rezoning have an impact upon the environment or natural resources?**

   An Environmental Assessment report was completed on April 10, 2023. According to the report,

   > *There are no wetlands or surface waters present onsite, thus no wetland or surface impacts are proposed. A 100% gopher tortoise survey will be required within 90 days of construction.*

3. **Will the proposed rezoning have an impact upon the economy of the affected area?**

   The applicant intends to provide affordable housing for seniors within close proximity to the hospital; and therefore, is anticipated to have a positive economic impact on the area.

4. **Will the proposed rezoning have an impact upon governmental services?**

   Governmental services such as potable water, sewer, code enforcement, police, and fire are available for the subject property and will be provided by the City.

   Due to the project size and type of development as an age-restricted community, a Traffic Impact Analysis is not required. This segment of Stone St. has a current Daily LOS of "C" per Volusia County Traffic Counts, and an Allowable LOS of "E".

5. Are there changes in the circumstances or conditions affecting the area since the original assignment of zoning that will support the proposed zoning?

The subject property is still part of the Manchester Neighborhood PD. The amendment being proposed is similar to Phase I in that both phases allow for many of the same uses and will be required to follow the similar or same development standards outlined in the PD.

6. Was there a mistake in the original classification?

There was no mistake in the original classification; however, the original agreement did not account for additional residential uses in Phase II, nor did it include the existing single-family residential structure as a permitted use.

7. Will the proposed rezoning have any effect upon the use or value of the affected area?

The availability of different types of housing options for seniors (townhomes instead of single-family, detached houses), convenient to uses often utilized by seniors, should have a positive impact on the general area.

8. Will the proposed rezoning have an impact upon public health, safety and welfare?

The subject property was previously rezoned to allow for single-family townhomes. The Manchester PD, being age-restricted and with a reduced number of units, should create even less impact than the original approval.

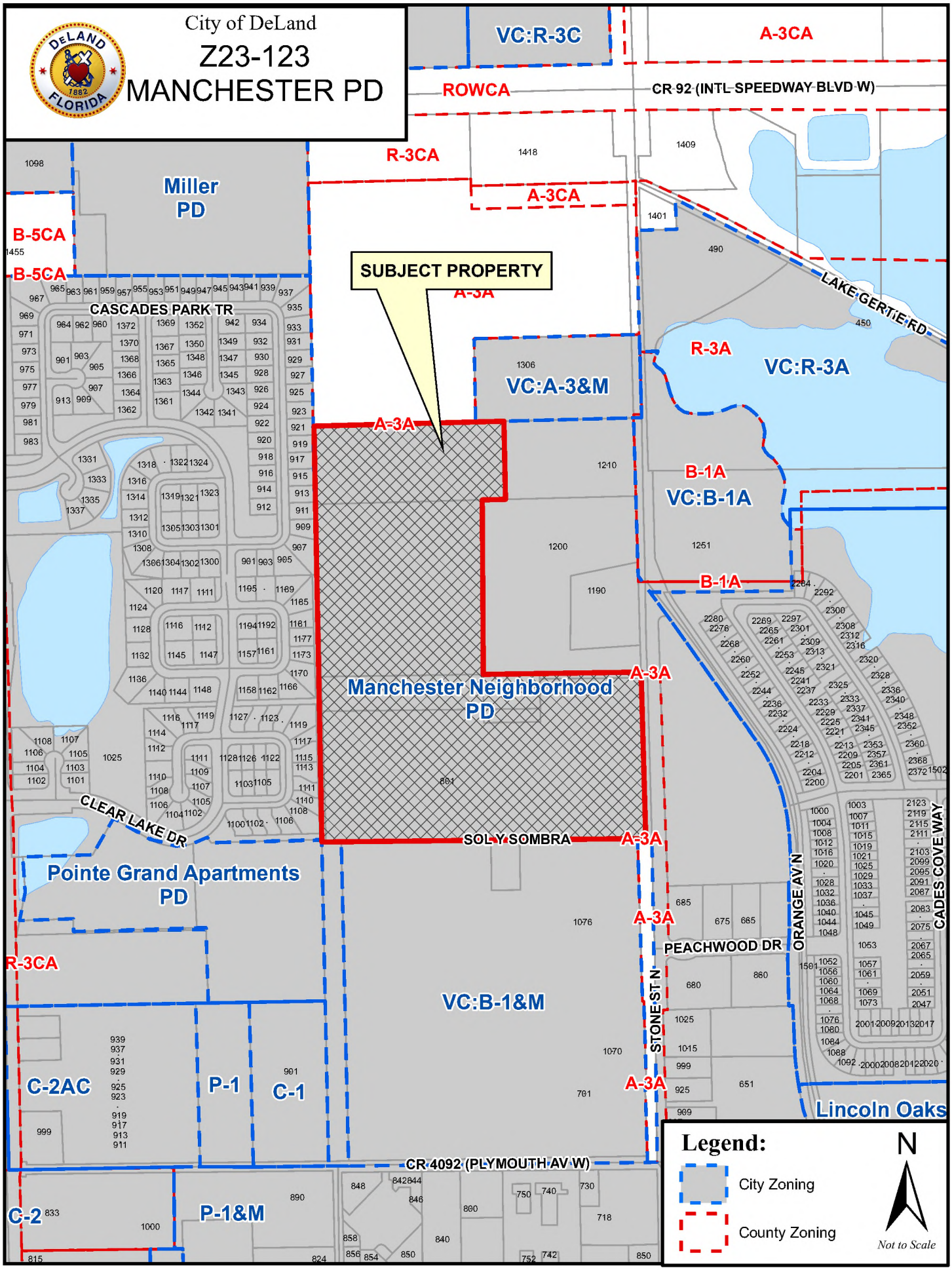
C. CONCLUSION:

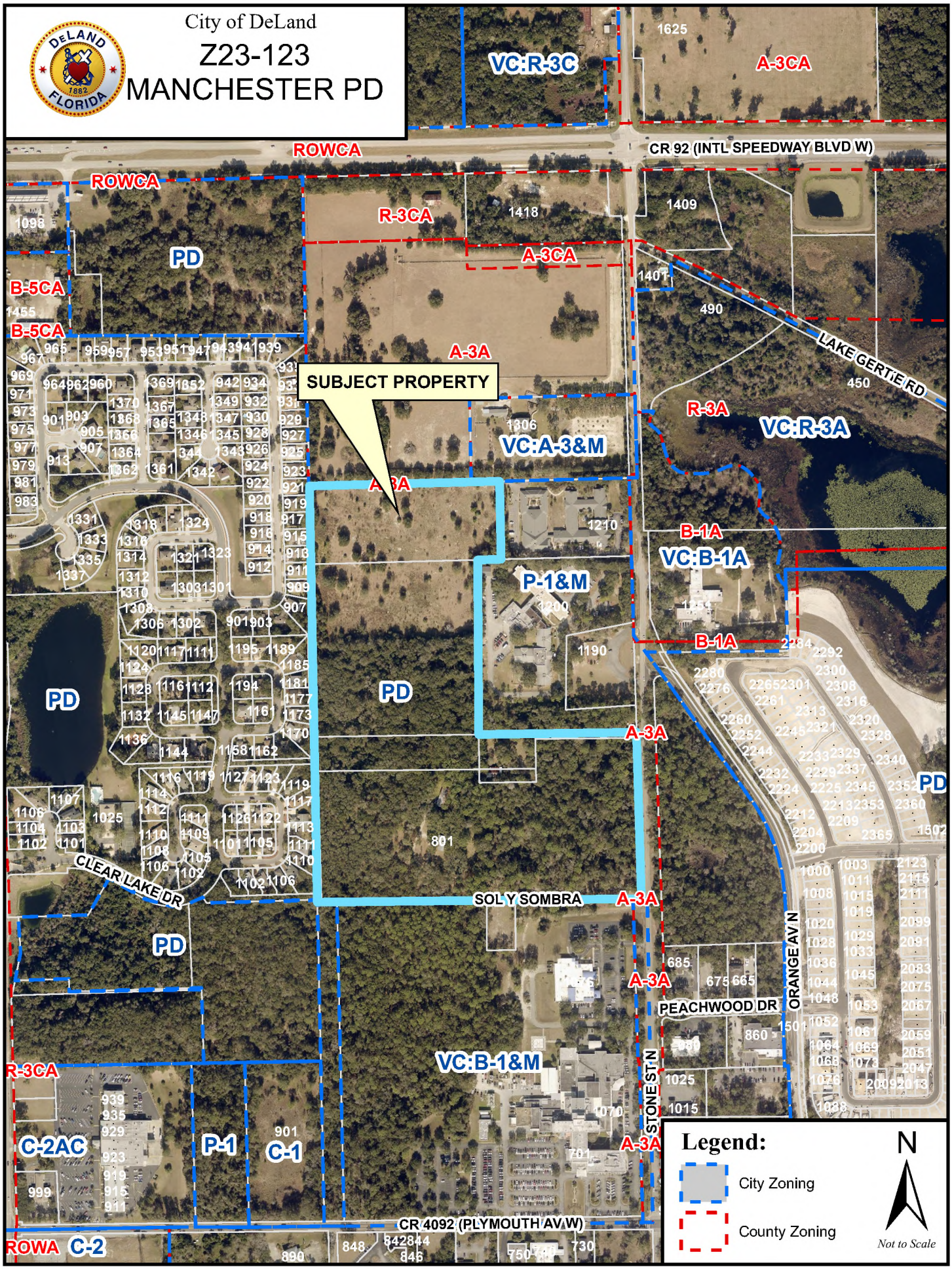
The Applicant is proposing this first Amendment to the Manchester Neighborhood PD to accommodate additional residential units and allow for single-family residential development. The existing PD limits the maximum number of residential units to 156 for all phases of the PD. The existing PD does not allow single-family homes as a permitted use. Phase I used all of the residential entitlements allowed.

The preliminary plat for Phase 2A (PSB23-059) and Phase 2B (PSB23-065) have both been submitted along with a draft final plat. However, these applications cannot move forward unless a PD amendment is approved.

D. STAFF RECOMMENDATION:

Staff recommends that the Planning Board forward the requested 1st Amendment to the Manchester PD on to the City Commission with a recommendation for approval.


City of DeLand
Z23-123
MANCHESTER PD
VC:R-3C
A-3CA
ROWCA
CR 92 (INTL SPEEDWAY BLVD W)
R-3CA
A-3CA
Miller PD
B-5CA
B-5CA
SUBJECT PROPERTY
A-3A
CASCADES PARK TR
LAKE GERTIE RD
R-3A
VC:R-3A
VC:A-3&M
A-3A
B-1A
VC:B-1A
B-1A
A-3A
Manchester Neighborhood PD
SOL Y SOMBRA
A-3A
CLEAR LAKE DR
Pointe Grand Apartments PD
R-3CA
VC:B-1&M
ORANGE AV N
CADES COVE WAY
PEACHWOOD DR
STONE ST N
A-3A
A-3A
Lincoln Oaks
C-2AC
P-1
C-1
CR 4092 (PLYMOUTH AV W)
C-2
P-1&M
Legend:
City Zoning
County Zoning
N
Not to Scale


City of DeLand
Z23-123
MANCHESTER PD
SUBJECT PROPERTY
VC:R-3C
A-3CA
ROWCA
CR 92 (INTL SPEEDWAY BLVD W)
R-3CA
A-3CA
B-5CA
PD
A-3A
VC:A-3&M
R-3A
VC:R-3A
LAKE GERTIE RD
B-1A
VC:B-1A
P-1&M
VC:B-1&M
SOL Y SOMBRA
CLEAR LAKE DR
PEACHWOOD DR
ORANGE AV N
STONE ST N
CR 4092 (PLYMOUTH AV W)
C-2AC
P-1
C-1
C-2
ROWA
Legend:
City Zoning
County Zoning
N
Not to Scale

FIRST AMENDMENT TO MANCHESTER NEIGHBORHOOD

PLANNED DEVELOPMENT AGREEMENT

This First Amendment to the Manchester Neighborhood Planned Development Agreement (the "First Amendment") is made this _____ day of _____, 2023 between the **CITY OF DELAND,** a Florida municipal corporation (hereafter, the "City"), whose mailing address is 120 S. Florida Avenue, DeLand, FL 32720, and **MANCHESTER COMMUNITIES, LLC**, a Florida limited liability company with a mailing address of 300 Interchange Blvd., Suite D, Ormond Beach, FL 32174 (hereafter, "Manchester").

WHEREAS, the City and Manchester previously entered into that certain Planned Development Agreement (the "PD Agreement") dated on or about March 15, 2021 and recorded in Official Records Book 8050, Page 259 of the Public Records of Volusia County, Florida in connection with the rezoning of ±38.5 acres known as the "Manchester Neighborhood" PD; and

WHEREAS, Manchester desires to add a unit count to the Proposed Future Development Tract (also referred to as Phases 2A and 2B) to permit the development of multiple-family dwellings within the Proposed Future Development Tract as well as permit single family dwellings to account for the proposed addition of four (4) single family homes within Phase 2B of the Future Development Tract; and

WHEREAS, the application of Manchester to amend the Manchester Neighborhood PD was duly and properly filed with the City on June 1, 2023 and the application was reviewed by the City's Community Development Department and determined to be consistent with the City's Comprehensive Plan; and

WHEREAS, Public Hearings on this First Amendment to the Manchester Neighborhood PD Agreement were held by the Planning Board on September 13, 2023 and the City Commission

on _____ and _____ after due public notice was provided in accordance with the City's Land Development Regulations Ordinance No. 2013-11, as amended.

NOW THEREFORE, the City and Manchester acknowledge and agree that the Manchester Neighborhood PD is hereby amended to reflect the following changes, revisions and amendments to the Manchester Neighborhood PD Agreement and amended Planned Development Plan:

1. Paragraph D of the Development Agreement for the Manchester Neighborhood PD is amended as follows (changes shown in ~~strikethrough~~/underline format):

Permitted Uses within Proposed Future Development Tract:

General/Professional Offices.

Financial Institutions.

Apothecary shops.

Government and public land uses and buildings.

Private clubs and lodges.

Museums.

Parks, mini and neighborhood.

Adult day care home.

Single-family dwelling units.

Multiple-family dwellings and duplexes.

Independent living support uses.

Community uses including but not limited to clubhouse, cabana, pool, community garden, and sports courts.

Primary medical uses, including hospitals, outpatient clinics, continuing/long-term care services, hospice services, laboratories, medical research facilities, urgent or emergency medical services, offices of doctors, physical therapists, dentists and other health care providers.

Secondary medical uses including medical support facilities and similar uses, including but not limited to administrative offices, social service providers including counseling centers, fitness and rehabilitation centers including sports medicine and training facilities, health care related retail (i.e., pharmacy, medical supplies, medical apparel and equipment, miscellaneous retail trade including gift stores, bookstores, newsstands, florist, jewelry, video sales/rentals, and other retail ancillary to and located within a medical services facility, cafeterias, food and laundry and services located within, dependent on and directly related to a medical services facility.

Medical support uses, including short-term residential uses dependent upon or directly related to medical care, convalescent care facilities, skilled nursing facilities, group homes for the disabled and overnight accommodations, adult care services, including respite care, educational and meeting facilities and staff sleeping quarters.

2. Paragraph E of the Development Agreement for the Manchester Neighborhood PD is amended as follows (changes shown in ~~strikethrough~~/underline format):

Proposed Future Development Tract: The Proposed Future Development Tract (henceforth referred to as "Phases 2A and 2B") may be developed as an additional phase of the Adult Residential Housing Area pursuant to the Residential Structures lot development criteria described above or may be developed pursuant to the site development criteria detailed below, each set of lot development criteria shall include the number of units stated in Number 10. below:

1. Maximum building height 50 ft.; 28ft. (one story) within 200 ft. of western boundary;
2. Maximum FAR 0.50;
3. Minimum lot area: 4,000 square ft.;
4. Minimum lot width: 40 ft.;
5. Minimum lot depth: 100 ft.;
6. Minimum building setbacks:
   a. Front Yard: 25 ft.
   b. Rear Yard: 25 ft.
   c. Side Yard: 15 ft.
7. Minimum building separation of 15 ft.;
8. 20% Minimum open space;
9. 70% Maximum impervious surface area.
10. Number of Units: 41

Or

1. Maximum building height: 35 ft.

3. Minimum lot area: 10,000 square ft.;

4. Minimum lot width: 100 ft.;

5. Minimum building setbacks:

a. Front Yard: 30 ft.

b. Rear Yard: 25 ft.

c. Side Yard: 15 ft.

6. 40% Maximum impervious surface area.

3. Exhibit B is amended to incorporate Attachment A herein as the amended Planned Development Plan for the Manchester Neighborhood PD.

IN WITNESS WHEREOF, the City and Manchester Communities, LLC have caused this First Amendment to the Manchester Neighborhood Planned Development Agreement to be duly executed by their authorized representatives as of the last date entered below.

(Signatures on Following Pages)

ATTEST:

City Commission of DeLand Florida

_____

Michael Pleus
City Manager

_____

Christopher M. Cloudman
Mayor

STATE OF FLORIDA

CITY OF DELAND

The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online notarization this _____ day of _____ (mo/yr), by Michael Pleus and Christopher M. Cloudman, as City Manager and Mayor, City of DeLand, respectively, on behalf of the City of DeLand, and who are personally known to me.

NOTARY PUBLIC, STATE OF FLORIDA

Type or Print Name:

_____

Commission No.: _____

My Commission Expires: _____

WITNESSES

_____
Print Name

_____
Sign Name

_____
Print Name

_____
Sign Name

MANCHESTER COMMUNITIES, LLC,
a Florida limited liability company

By: _____
Print: _____
Title:

Date: _____

STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online notarization this ____ day of _____, 2023, by _____, as _____ for and on behalf of **MANCHESTER COMMUNITIES, LLC**. He/She is personally known to me or has produced _____ as identification.

_____
Notary Public

Seal

Type or Print Name:_____
Commission No. _____
My Commission Expires:_____

Attachment A

Amended Planned Development Plan

EXHIBIT A

LEGAL DESCRIPTION

DESCRIPTION: PHASE I (CREATED BY SURVEYOR)

LOTS 19 AND 20, LESS AND EXCEPT THE EAST 545.00 FEET, ASSESSORS SUBDIVISION OF THE WEST ½ OF THE NORTHWEST ¼ AND THE EAST ½ OF THE NORTHEAST ¼ OF SECTION 5, TOWNSHIP 17 SOUTH, RANGE 30 EAST

AND

THE NORTHWEST ¼ OF THE NORTHEAST ¼ OF THE SOUTHWEST ¼ OF SECTION 5, TOWNSHIP 17 SOUTH, RANGE 30 EAST
ALL IN VOLUSIA COUNTY, FLORIDA AND BEING MO PARTICULARLY DESCRIBED AS FOLLOWS:

BEGIN AT THE NORTHEAST CORNER OF THOSE LANDS RECORDED IN SAID OFFICIAL RECORDS BOOK 2205, PAGE 0034; THENCE RUN S01°29'58"W, ALONG THE EAST LINE OF SAID LANDS, AND THE WEST RIGHT OF WAY OF NORTH STONE STREET, (A 60.00 FOOT RIGHT OF WAY), A DISTANCE OF 20.00 FEET; THENCE RUN S89°27'58"W, ALONG A LINE BEING 20.00 FEET SOUTHERLY OF AND PARALLEL WITH THE NORTH LINE OF THOSE LANDS RECORDED IN SAID OFFICIAL RECORDS BOOK 2205, 0034, A DISTANCE OF 402.64 FEET; THENCE RUN S01°31'58"E, A DISTANCE OF 120.64 FEET; THENCE RUN S89°27'58"W, A DISTANCE OF 894.46 FEET TO A POINT ON THE WEST LINE OF THE WEST ½ OF THE NORTHEAST ¼ OF THE SOUTHWEST ¼ OF SAID SECTION 5; THENCE RUN N01°32'05"W ALONG SAID LINE A DISTANCE OF 1150.51 FEET TO THE NORTHWEST CORNER OF SAID LOT 19; THENCE RUN N88°34'18"E, ALONG THE NORTH LINE OF LOTS 19 AND 18, A DISTANCE OF 782.04 FEET TO THE NORTHEAST CORNER OF THOSE LANDS RECORDED IN OFFICIAL RECORDS BOOK 2179, PAGE 0055; THENCE RUN S01°29'42"E ALONG THE EAST LINE OF SAID LANDS, A DISTANCE OF 336.93 FEET; THENCE RUN S89°24'00"W, ALONG THE SOUTH LINE OF THOSE LANDS RECORDED IN SAID OFFICIAL RECORDS BOOK 2179, PAGE 0055, A DISTANCE OF 118.11 FEET TO THE SOUTHWEST CORNER OF SAID LOT 20; THENCE RUN S01°32'55"E, ALONG THE EAST LINE OF THOSE LANDS RECORDED IN OFFICIAL RECORDS BOOK 4539, PAGE 1570, AND THE EAST LINE OF THE WEST ½ OF THE NORTHEAST ¼ OF THE SOUTHWEST ¼ OF SAID SECTION 5, A DISTANCE OF 685.63 FEET; THENCE RUN N89°27'58"E, ALONG THE SOUTH LINE OF THOSE LANDS RECORDED IN OFFICIAL RECORDS BOOK 5511, PAGE 4784, A DISTANCE OF 633.014 FEET TO THE POINT OF BEGINNING.

SAID PARCEL CONTAINS 19.45 ACRES

AND

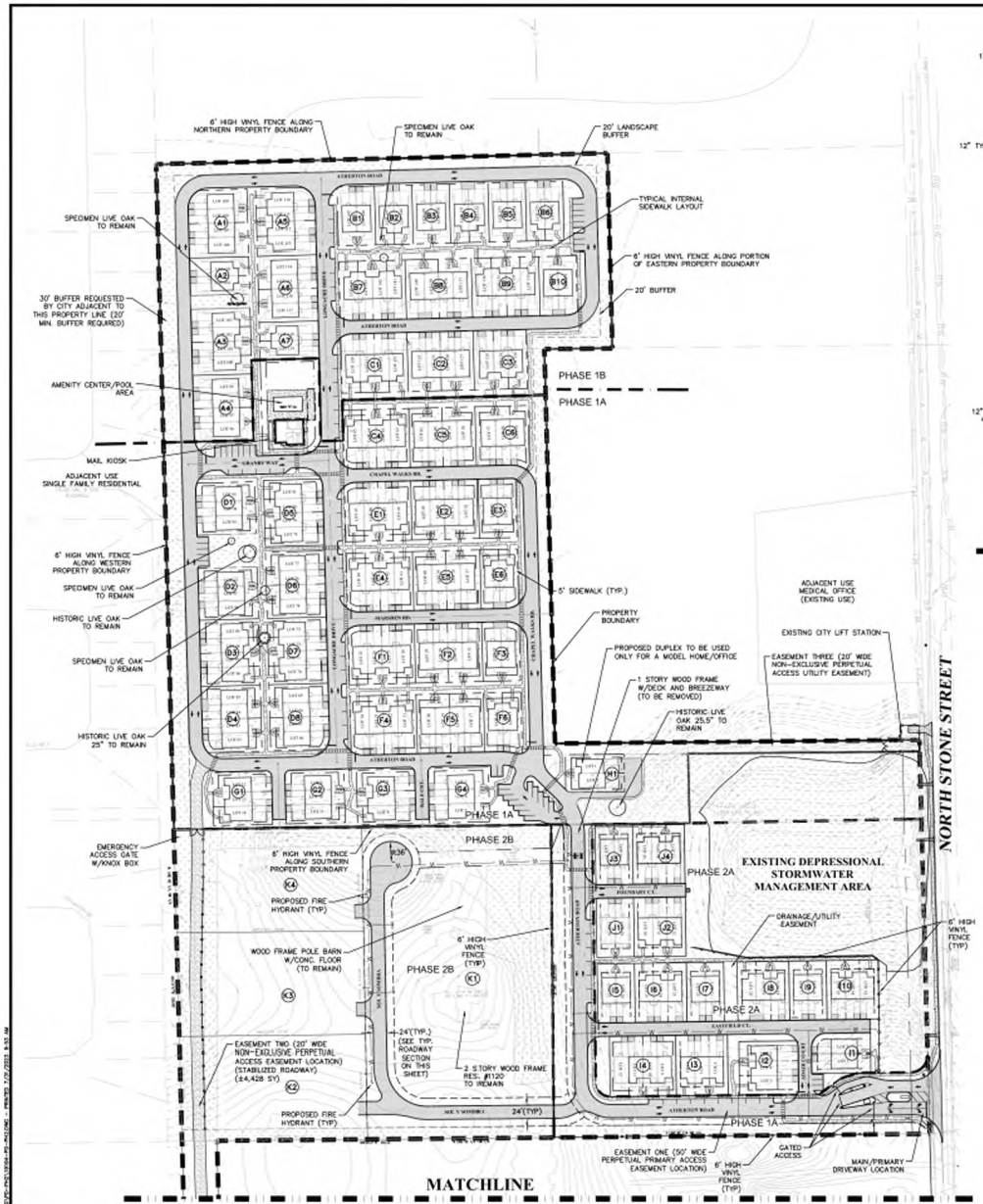
DESCRIPTION: PHASE II (CREATED BY SURVEYOR)

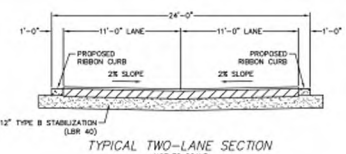
A PORTION OF THE EAST ½ OF THE SOUTHWEST ¼ OF SECTION 5, TOWNSHIP 17 SOUTH, RANGE 30 EAST, VOLUSIA COUNTY, FLORIDA AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE NORTHEAST CORNER OF THOSE LANDS RECORDED IN SAID OFFICIAL RECORDS BOOK 2205, PAGE 0034; THENCE RUN S01°29'58"W, ALONG THE EAST LINE OF SAID LANDS AND THE WEST RIGHT OF WAY OF NORTH STONE STREET, (A 60.00 FOOT RIGHT OF WAY), A DISTANCE OF 20.00 FEET TO THE POINT OF BEGINNING;

THENCE RUN S89°27'58"W, ALONG A LINE BEING 20.00 FEET SOUTHERLY OF AND PARALLEL WITH THE NORTH LINE OF THOSE LANDS RECORDED IN SAID OFFICIAL RECORDS BOOK 2205, PAGE 0034, A DISTANCE OF 402.64 FEET; THENCE RUN S01°31'58"E, A DISTANCE OF 120.64 FEET; THENCE RUN S89°27'58"W, A DISTANCE OF 894.46 FEET TO A POINT ON THE WEST LINE OF THE EAST ½ OF THE SOUTHWEST ¼ OF SAID SECTION 5; THENCE RUN S01°31'18"E, ALONG SAID LINE A DISTANCE OF 543.44 FEET; THENCE CONTINUE S01°30'56"E, ALONG SAID LINE OA DISTANCE OF 1298.09 FEET TO A POINT ON THE NORTH RIGHT OF WAY LINE OF WEST PLYMOUTH AVENUE; THENCE RUN N89°11'32"E, ALONG THE NORTH RIGHT OF WAY LINE OF SAID WEST PLYMOUTH A DISTANCE OF 60.00 FEET; THENCE RUN N01°30'24"W, A DISTANCE OF 1298.94 FEET; THENCE RUN N89°28'45"E, A DISTANCE OF 1236.63 FEET TO A POINT ON THE WEST RIGHT OF WAY LINE OF SAID NORTH STONE STREET; THENCE RUN N01°29'58"W, ALONG THE WEST RIGHT OF WAY LINE OF SAID NORTH STONE STREET, A DISTANCE OF 662.60 FEET TO THE POINT OF BEGINNING.

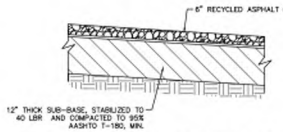
SAID PARCEL CONTAINS 19.05 ACRES.





TYPICAL TWO-LANE SECTION
NOT TO SCALE

NEW CONSTRUCTION
2" TYPE "SP-12.5" STRUCTURAL COURSE W/
8" CRUSHED CONCRETE BASE COURSE (LBR 125)
AND 12" TYPE B STABILIZATION (LBR 40)



TYPICAL STABILIZED ROADWAY SECTION
NOT TO SCALE

SITE DATA (PHASE 1A & 1B)

TOTAL PD AREA	38.5 AC.
CURRENTLY PROPOSED DEVELOPMENT AREA	19.48 AC.
NUMBER OF LOTS PHASE 1A	95
NUMBER OF LOTS PHASE 1B	61
TOTAL NUMBER OF LOTS	156
DENSITY	8.0 DU/AC
REQUIRED TREE PROTECTION AREA (15%)	5.8 AC.
PROPOSED TREE PROTECTION AREA WITHIN PH-1A & PH-1B DEVELOPMENT AREA	3.0 AC.
REMAINING TREE PROTECTION TO BE PROVIDED WITHIN THE PH-2A & PH-B DEVELOPMENT	2.8 AC.
REQUIRED ON-SITE TREES (1/2,500 S.F.)	339
COVERED PARKING	156
ADDITIONAL SURFACE PARKING	70
TOTAL PARKING PROVIDED	226
PROPOSED MAXIMUM BUILDING HEIGHT	35'
MIN. LOT AREA	1,000 SF
MIN. LOT WIDTH	25'
MINIMUM YARD SIZE (BUILDING)	
FRONT YARD	15'
REAR YARD	10'
SIDE YARD	0'
BUILDING SEPARATION SIDE TO SIDE	15'
BUILDING SEPARATION FRONT TO FRONT	40'
MIN. FLOOR AREA	600 SF
MAX. LOT COVERAGE	85%
* MAX ISR (IMPERVIOUS SURFACE RATIO)	70%
OPEN SPACE (EXCLUDING TREE PROTECTION AREA)	4.02 AC

* AS DESIGNATED WITHIN THE MEDICAL OVERLAY DISTRICT

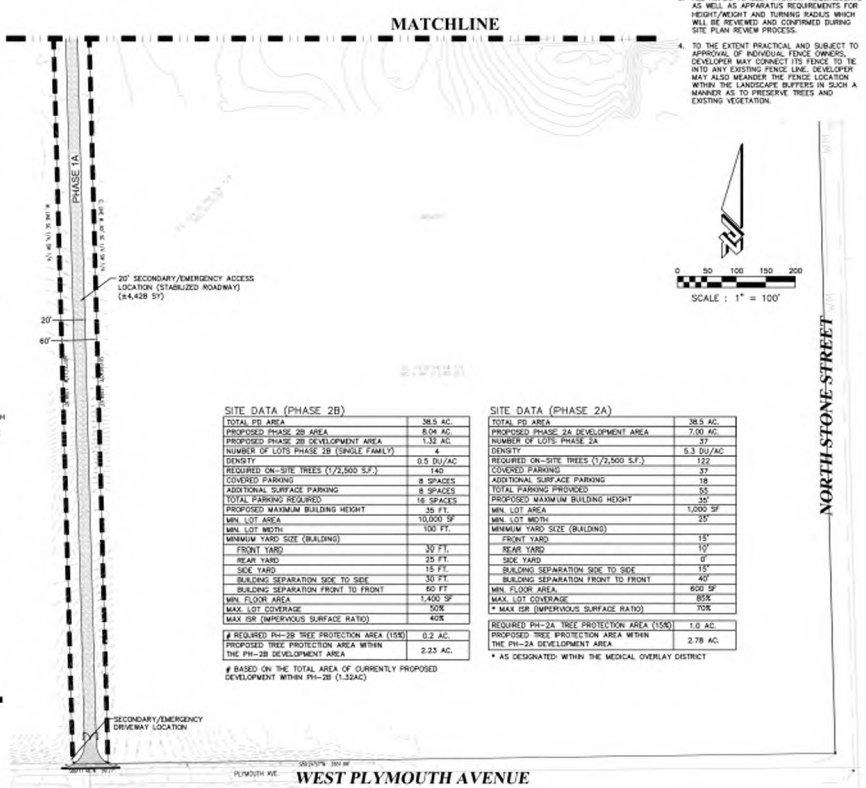
0 50 100 150 200
SCALE : 1" = 100'

LEGEND:

- TREE PRESERVATION AREA
- PROPOSED ASPHALT PAVEMENT
- PROPOSED STABILIZED ROADWAY
- DENOTES HISTORIC OR SPECIMEN TREE
- DENOTES DEVELOPMENT AREA BOUNDARY
- DENOTES TOTAL PD BOUNDARY

PLANNED DEVELOPMENT NOTES:

1. LOCATIONS OF HISTORIC SPECIMEN TREES TO REMAIN TO BE VERIFIED BY THE PROJECT SURVEYOR.
2. STORMWATER RUNOFF TO BE CAPTURED & TREATED WITHIN THE EXISTING DEPRESSIONAL STORMWATER MANAGEMENT AREA.
3. ALL ROADS TO MEET HYDRANT REQUIREMENTS AS WELL AS APPARATUS REQUIREMENTS FOR HEIGHT/WEIGHT AND TURNING RADIUS WHICH WILL BE REVIEWED AND CONFIRMED DURING SITE PLAN REVIEW PROCESS.
4. TO THE EXTENT PRACTICAL AND SUBJECT TO APPROVAL OF INDIVIDUAL FENCE OWNERS, DEVELOPER MAY CONNECT ITS FENCE TO TIE INTO ANY EXISTING FENCE LINE. DEVELOPER MAY ALSO MEANDER THE FENCE LOCATION WITHIN THE LANDSCAPE BUFFERS IN SUCH A MANNER AS TO PRESERVE TREES AND EXISTING VEGETATION.



0 50 100 150 200
SCALE : 1" = 100'

SITE DATA (PHASE 2B)

TOTAL PD AREA	38.5 AC.
PROPOSED PHASE 2B AREA	8.04 AC.
PROPOSED PHASE 2B DEVELOPMENT AREA	1.32 AC.
NUMBER OF LOTS PHASE 2B (SINGLE FAMILY)	4
DENSITY	0.5 DU/AC
REQUIRED ON-SITE TREES (1/2,500 S.F.)	140
COVERED PARKING	8 SPACES
ADDITIONAL SURFACE PARKING	8 SPACES
TOTAL PARKING REQUIRED	16 SPACES
PROPOSED MAXIMUM BUILDING HEIGHT	35 FT.
MIN. LOT AREA	10,000 SF
MIN. LOT WIDTH	100 FT.
MINIMUM YARD SIZE (BUILDING)	
FRONT YARD	30 FT.
REAR YARD	25 FT.
SIDE YARD	15 FT.
BUILDING SEPARATION SIDE TO SIDE	30 FT.
BUILDING SEPARATION FRONT TO FRONT	60 FT
MIN. FLOOR AREA	1,400 SF
MAX. LOT COVERAGE	50%
MAX ISR (IMPERVIOUS SURFACE RATIO)	40%

# REQUIRED PH-2B TREE PROTECTION AREA (15%)	0.2 AC.
PROPOSED TREE PROTECTION AREA WITHIN THE PH-2B DEVELOPMENT AREA	2.23 AC.

BASED ON THE TOTAL AREA OF CURRENTLY PROPOSED DEVELOPMENT WITHIN PH-2B (1.32AC)

SITE DATA (PHASE 2A)

TOTAL PD AREA	38.5 AC.
PROPOSED PHASE 2A DEVELOPMENT AREA	7.00 AC.
NUMBER OF LOTS PHASE 2A	37
DENSITY	5.3 DU/AC
REQUIRED ON-SITE TREES (1/2,500 S.F.)	122
COVERED PARKING	37
ADDITIONAL SURFACE PARKING	18
TOTAL PARKING PROVIDED	55
PROPOSED MAXIMUM BUILDING HEIGHT	35'
MIN. LOT AREA	1,000 SF
MIN. LOT WIDTH	25'
MINIMUM YARD SIZE (BUILDING)	
FRONT YARD	15'
REAR YARD	10'
SIDE YARD	0'
BUILDING SEPARATION SIDE TO SIDE	15'
BUILDING SEPARATION FRONT TO FRONT	40'
MIN. FLOOR AREA	600 SF
MAX. LOT COVERAGE	85%
* MAX ISR (IMPERVIOUS SURFACE RATIO)	70%

REQUIRED PH-2A TREE PROTECTION AREA (15%)	1.0 AC.
PROPOSED TREE PROTECTION AREA WITHIN THE PH-2A DEVELOPMENT AREA	2.78 AC.

* AS DESIGNATED WITHIN THE MEDICAL OVERLAY DISTRICT

ZEV COHEN & ASSOCIATES, INC.
WWW.ZEVCOHEN.COM
CIVIL ENGINEERING
LANDSCAPE ARCHITECTURE
ENVIRONMENTAL
PLANNING
TRANSPORTATION

NO.	DATE	BY:	SUBMITTALS/REVISIONS
1	10/31/25	JLMK	RESUBMITTAL TO CITY OF DELAND

MANCHESTER NEIGHBORHOOD PD

PLANNED DEVELOPMENT PLAN

CITY OF DELAND — VOLUSIA COUNTY, FLORIDA

PROJECT NO: ZC 19194
DESIGNED BY: HK
DRAFTED BY: MM
CHECKED BY: RMH
DRAWING FILE: 19194-PD-Plot
XREFS: 19194_BASE.DWG
XREFS: XXXXX.DWG

VALID ABC, P.E., NO. 69244
NOT VALID WITHOUT SEAL

SHEET: 1 OF 1

PLANNING DEPARTMENT STAFF REPORT
TO
PLANNING BOARD

September 13, 2023

APPLICATION NO.: Z23-167

STAFF PLANNER: Kendall Story

APPLICANT: Nick Everly, Evans Engineering

REQUEST: Request for an amendment to the Pointe Grand Apartments PD Agreement to reduce the required number of parking spaces, specific to the overflow or guest parking, from .5 spaces per unit, to .4 spaces per unit.

APPLICABLE REGULATIONS:

Article IV OVERLAY AND FLOATING ZONES
Sec. 33-32 – Planned Development District.

Article XII ADMINISTRATION AND ENFORCEMENT
Sec. 33-135 – Procedure for text amendments & rezoning.

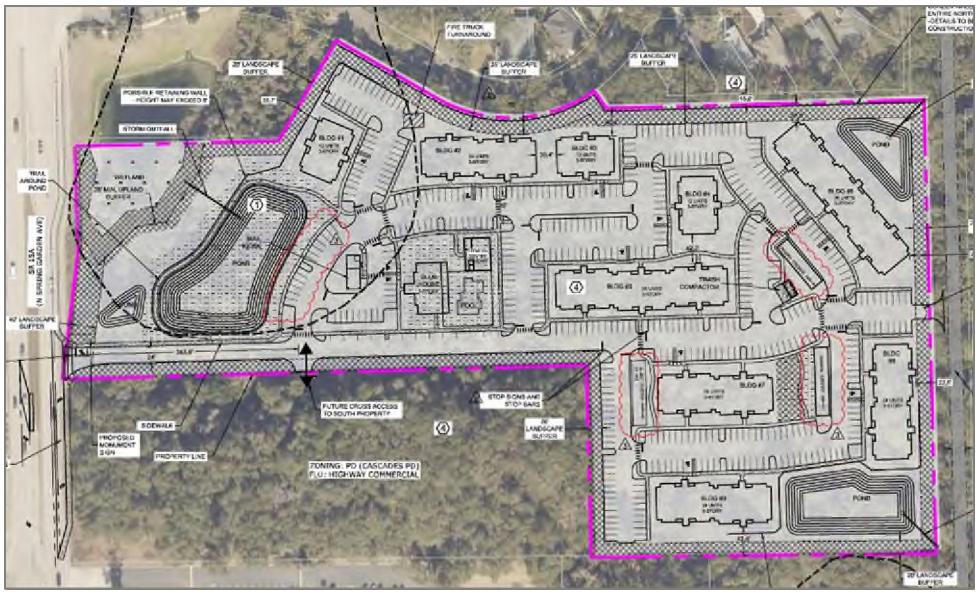
A. SITE FACTORS:

Location: Southeast of the intersection of Clear Lake Rd. and N. Spring Garden Ave.
Parcel Size: ± 14.57 acres
Land Use: High Density Residential
Existing Zoning: Pointe Grand Apartments PD
Existing Use: Residential/undeveloped

	SURROUNDING USE:	SURROUNDING ZONING:
North:	Low Density Residential	Cascades PD
South:	Highway Commercial; Mixed Office - Residential	Cascades PD
East:	Low Density Residential/Community Health Overlay	Manchester PD
West:	ROW (Spring Garden Ave.)/ High Density Residential	R-16; R-1A

B. ANALYSIS:

The subject property consists of ± 14.57 acres of vacant, wooded land, located southeast of the intersection of Clear Lake Rd. and N. Spring Garden Ave. The subject property received zoning approval to change from the Cascades PD, to the Pointe Grand Apartments PD, on December 19, 2022.



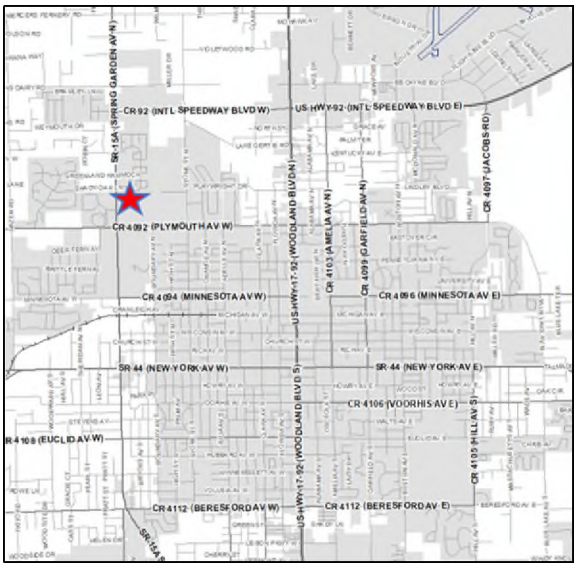
The Pointe Grand Apartments consists of 204 apartment dwelling units, containing 2 or more bedrooms per unit. Per Sec. 33-91.03 of the Land Development Regulations, multi-family residential units, such as the Pointe Grand Apartments, with 2, 3 or more bedrooms, are required to provide 2 parking spaces per unit for resident parking, plus an additional .5 parking spaces per unit for visitor parking.

The proposed PD amendment would reduce the number of total parking spaces from 510 to 490 spaces. The amended PD has also added language in the agreement that allows for parking spaces to be substituted with an equal number of bicycle parking, of up to 2.5% of the total parking spaces, or a reduction of up to 12 vehicle parking spaces. The purpose of the parking reduction is to make space to accommodate 27 covered parking spaces.

A fully engineered site plan must be approved prior to construction. The applicant has already submitted a site plan application (SP23-068) and it was reviewed concurrently with the proposed PD amendment.

Section 33-135 of the Land Development Regulations provides the following criteria, which the City Commission shall utilize in reviewing a rezoning request:

1. **Is the proposed rezoning consistent with the Comprehensive Land Use Plan, the land use, zoning pattern and character of the surrounding area?**



The proposed zoning classification of Planned Development is consistent with the Comprehensive Land Use Plan designated as High Density Residential and is near other residential uses that vary in density.

2. **Will the proposed rezoning have an impact upon the environment or natural resources?**

The site is heavily wooded with some areas of wetlands indicated on the map. However, the developer has confirmed that there are no historic trees found on site, and they will need to obtain a permit from SJRWMD for any wetland mitigation. An environmental study was reviewed as part of the site plan submittal.

3. **Will the proposed rezoning have an impact upon the economy of the affected area?**

The property is currently vacant and contributes only marginally to the tax base. The rezoning action will permit the eventual development of the site which will have a positive impact upon the economy, once the apartments are in operation.

4. **Will the proposed rezoning have an impact upon governmental services?**

The rezoning action will not impact governmental services. The property is located within the urban area and such services are already provided. No new services are anticipated to be required because of the rezoning action itself.

5. **Are there changes in the circumstances or conditions affecting the area since the original assignment of zoning that will support the proposed zoning?**

The subject property received zoning approval to change from the Cascades PD, to the Pointe Grand Apartments PD, on December 19, 2022. As part of the rezoning, the required number of parking spaces is stated in the PD and depicted on the conceptual plan. No changes in circumstances or conditions have affected the area that would specifically support the parking reduction.

However, since the zoning change in 2022, the applicant has researched the standard parking requirements of neighboring communities and created a comparison list for staff to review to support the requested amendment. The list provides a comparison of 4 local communities, none of which require more than 2.2 parking spaces per unit.

6. Was there a mistake in the original classification?

There was no mistake in the original classification.

7. Will the proposed rezoning have any effect upon the use or value of the affected area?

The proposed rezoning will not have a negative effect on the value of the area, as the proposed development is compatible with adjacent uses and provides more choices for housing in the area. Upgraded, covered parking would have a positive affect on the development, as Florida is known to have hot, rainy summers, and covered parking would be a benefit to the residents.

8. Will the proposed rezoning have an impact upon public health, safety and welfare?

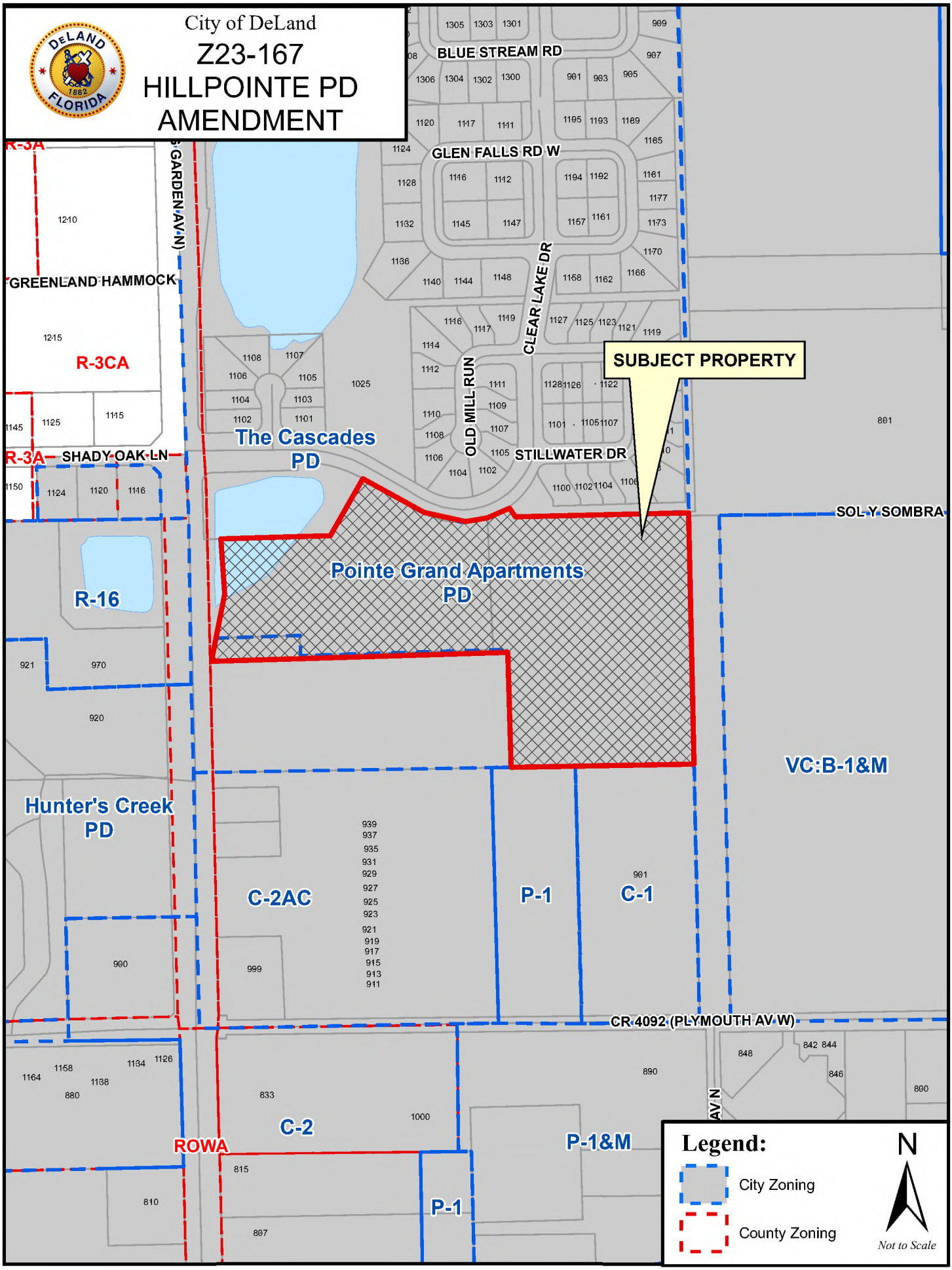
Impacts upon public health, safety and welfare will generally be positive impacts, as the covered parking will provide added shelter for residents of the community.

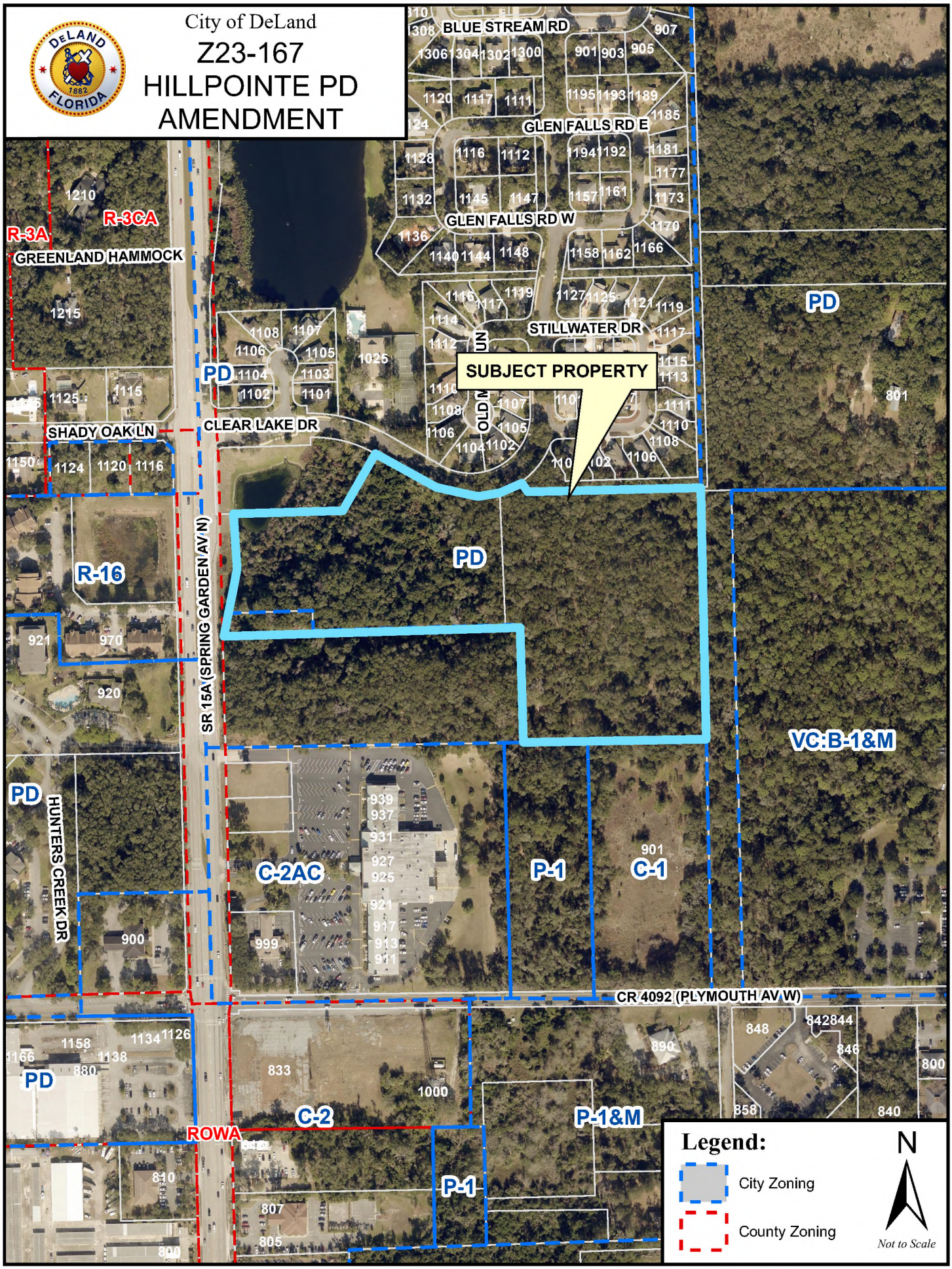
C. CONCLUSION:

The applicant is proposing an amendment to the Pointe Grand Apartments PD for the purpose of reducing the number of guest parking spaces to convert into ±27 covered parking stalls.

D. STAFF RECOMMENDATION:

Staff recommends that the Planning Board forward the request to amend the Pointe Grand Apartments PD Agreement on to the City Commission, recommending approval of the request.


City of DeLand
Z23-167
HILLPOINTE PD
AMENDMENT
SUBJECT PROPERTY
Pointe Grand Apartments
PD
The Cascades
PD
Hunter's Creek
PD
R-16
R-3CA
R-3A
C-2AC
C-2
P-1
C-1
P-1&M
VC:B-1&M
ROWA
BLUE STREAM RD
GLEN FALLS RD W
CLEAR LAKE DR
OLD MILL RUN
STILLWATER DR
SHADY OAK LN
GREENLAND HAMMOCK
GARDEN AV N
SOL Y SOMBRA
CR 4092 (PLYMOUTH AV W)
Legend:
City Zoning
County Zoning
N
Not to Scale


City of DeLand
Z23-167
HILLPOINTE PD
AMENDMENT
SUBJECT PROPERTY
BLUE STREAM RD
GLEN FALLS RD E
GLEN FALLS RD W
STILLWATER DR
OLD N
CLEAR LAKE DR
SHADY OAK LN
GREENLAND HAMMOCK
SR 15A (SPRING GARDEN AV N)
HUNTERS CREEK DR
CR 4092 (PLYMOUTH AV W)
ROWA
R-3A
R-3CA
R-16
PD
C-2AC
C-2
P-1
C-1
P-1&M
VC:B-1&M
Legend:
City Zoning
County Zoning
N
Not to Scale

FIRST AMENDMENT TO POINTE GRAND APARTMENTS

PLANNED DEVELOPMENT AGREEMENT

This First Amendment to the Pointe Grand Apartments Planned Development Agreement (the "First Amendment") is made this _____ day of _____, 2023 between the **CITY OF DELAND,** a Florida municipal corporation (hereafter, the "City"), whose mailing address is 120 S. Florida Avenue, DeLand, FL 32720, and **HP-212017 DeLand, LLC**, a Florida limited liability company with a mailing address of 101 South New York Avenue, Suite 211, Winter Park, FL 32789 (hereafter, "HP DeLand").

WHEREAS, the City and HP DeLand previously entered into that certain Planned Development Agreement (the "PD Agreement") dated on or about February 20, 2023 and recorded in Official Records Book 8372, Page 858 of the Public Records of Volusia County, Florida in connection with the rezoning of ±14.16 acres known as the "Pointe Grand Apartments" PD; and

WHEREAS, HP DeLand desires to modify the parking requirement in order to permit the construction of covered parking areas; and

WHEREAS, the application of HP DeLand to amend the Pointe Grand Apartments PD was duly and properly filed with the City on July 31, 2023 and the application was reviewed by the City's Community Development Department and determined to be consistent with the City's Comprehensive Plan; and

WHEREAS, Public Hearings on this First Amendment to the Pointe Grand Apartments PD Agreement were held by the Planning Board on September 13, 2023 and the City Commission on _____ and _____ after due public notice was provided in accordance with the City's Land Development Regulations Ordinance No. 2013-11, as amended.

NOW THEREFORE, the City and HP DeLand acknowledge and agree that the Pointe Grand Apartments PD is hereby amended to reflect the following changes, revisions and amendments to the Pointe Grand Apartments PD Agreement and amended Planned Development Plan:

1. Paragraph E. 8. of the Development Agreement for the Pointe Grand Apartments PD is amended as follows (changes shown in ~~strikethrough~~/underline format):

E. Development Standards for Multifamily.

8. Off-street parking requirements. ~~510~~ At least 490 parking spaces shall be provided and shall conform to the parking table as depicted on the PD Concept Plan detail. Parking space numbers may be substituted during site plan review with an equal number of bike parking spaces of up to 2.5% of the total parking spaces, or a reduction of up to twelve (12) vehicle parking spaces.

3. Exhibit B is amended to incorporate Attachment A herein as the amended Planned Development Plan for the Pointe Grand Apartments PD.

IN WITNESS WHEREOF, the City and HP DeLand have caused this First Amendment to the Pointe Grand Apartments Planned Development Agreement to be duly executed by their authorized representatives as of the last date entered below.

(Signatures on Following Pages)

ATTEST:

City Commission of DeLand Florida

_____

Michael Pleus
City Manager

_____

Christopher M. Cloudman
Mayor

STATE OF FLORIDA

CITY OF DELAND

The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online notarization this _____ day of _____ (mo/yr), by Michael Pleus and Christopher M. Cloudman, as City Manager and Mayor, City of DeLand, respectively, on behalf of the City of DeLand, and who are personally known to me.

NOTARY PUBLIC, STATE OF FLORIDA

Type or Print Name:

_____

Commission No.: _____

My Commission Expires: _____

WITNESSES

HP-212017 DeLand, LLC, a Florida limited liability company

_____
Print Name

By: _____
Steven Campisi
Authorized Representative

_____
Sign Name

_____
Print Name

Date: _____

_____
Sign Name

STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online notarization this ____ day of _____, 2023, by Steven Campisi, as Authorized Representative for and on behalf of **HP-212017 DeLand, LLC**. He/She is personally known to me or has produced _____ as identification.

_____
Notary Public

Seal

Type or Print Name:_____
Commission No. _____
My Commission Expires:_____

Attachment A

Amended Planned Development Plan

EXHIBIT A

Deland, North Springs Garden Ave,
First American Title Commitment Exhibit A – Legal Description
File No: 2037-5766540

Commitment Date: November 12, 2021 @ 8:00 AM

The land referred to herein below is situated in the County of Volusia, State of Florida, and described as follows:

PARCEL 1: AREA = 6.16 AC.

That part of the SW 1/4 of Section 5, Township 17 South, Range 30 East, Volusia County, Florida, described as follows:

Commence at the SW corner of Section 5, Township 17 South, Range 30 East, thence N 01 Degrees 41'25" W along the West line of said Section 5 a distance of 661.77 feet to the intersection of the West line of said Section 5 and the South line of the North 1/2 of the Southwest 1/4 of the Southwest 1/4 of said Section 5; thence N 89 Degrees 15' 51" E along said South line a distance of 50.01 feet to the intersection of said South line and the Easterly right-of-way line of State Road 15-A as shown on Florida Department of Transportation Right-of-Way Map, Section 79160-2511; thence N 01 Degrees 41' 25" W along said Easterly right-of-way line a distance of 253.71 feet; thence N 06 Degrees 50'26" E continuing along said Easterly right-of-way line a distance of 14.65 feet to the Point of Beginning; thence continue N 06 Degrees 50' 26" E along said Easterly right-of-way line a distance of 187.59 feet; thence N 01 Degrees 41' 25" W along said Easterly right-of-way line a distance of 154.51 feet to a point on the Southerly boundary of "The Cascades-Unit 1", a Subdivision recorded in Map Book 41, Page 166, Public Records of Volusia County, Florida; thence N 88 Degrees 18' 35" E along said boundary a distance of 298.18 feet; thence N 29 Degrees 48' 35" E along said boundary a distance of 170.36 feet; thence S 60 Degrees 11' 25" E along said boundary a distance of 170.00 feet to a point of curvature, said curve being concave to the North having a radius of 215.00 feet, a delta angel of 65 Degrees 00' 00" a chord bearing of N 87 Degrees 18' 35" E and a chord length of 231.04 feet; thence run along said curve and aforesaid Southerly boundary for an arc distance of 243.91 feet; thence S 35 Degrees 11' 25" E along said boundary a distance of 30.84 feet; thence N 88 Degrees 18' 35" E along said boundary a distance of 466.30 feet to the East line of the Northwest 1/4 of the Southwest 1/4 of aforesaid Section 5; thence S 01 Degrees 39' 44" E along the East line of the Northwest 1/4 of the Southwest 1/4 of said Section 5 and along the East line of the Southwest 1/4 of the Southwest 1/4 of said Section 5 a distance of 664.23 feet to the South line of the North 1/2 of said Southwest 1/4 of Southwest 1/4; thence S 89 Degrees 15' 51" W along said South line a distance of 505.56 feet; thence N 01 Degrees 41' 25" W a distance of 281.04 feet; thence S 88 Degrees 18' 35" W a distance of 768.48 feet to the Point of Beginning.

LESS AND EXCEPT THE FOLLOWING DESCRIBED PARCEL:

A parcel of land lying in the Northwest 1/4 of the Southwest 1/4 and the North 1/2 of the Southwest 1/4 of the Southwest 1/4 of Section 5, Township 17 South, Range 30 East, Volusia County, Florida, being more particularly described as follows:

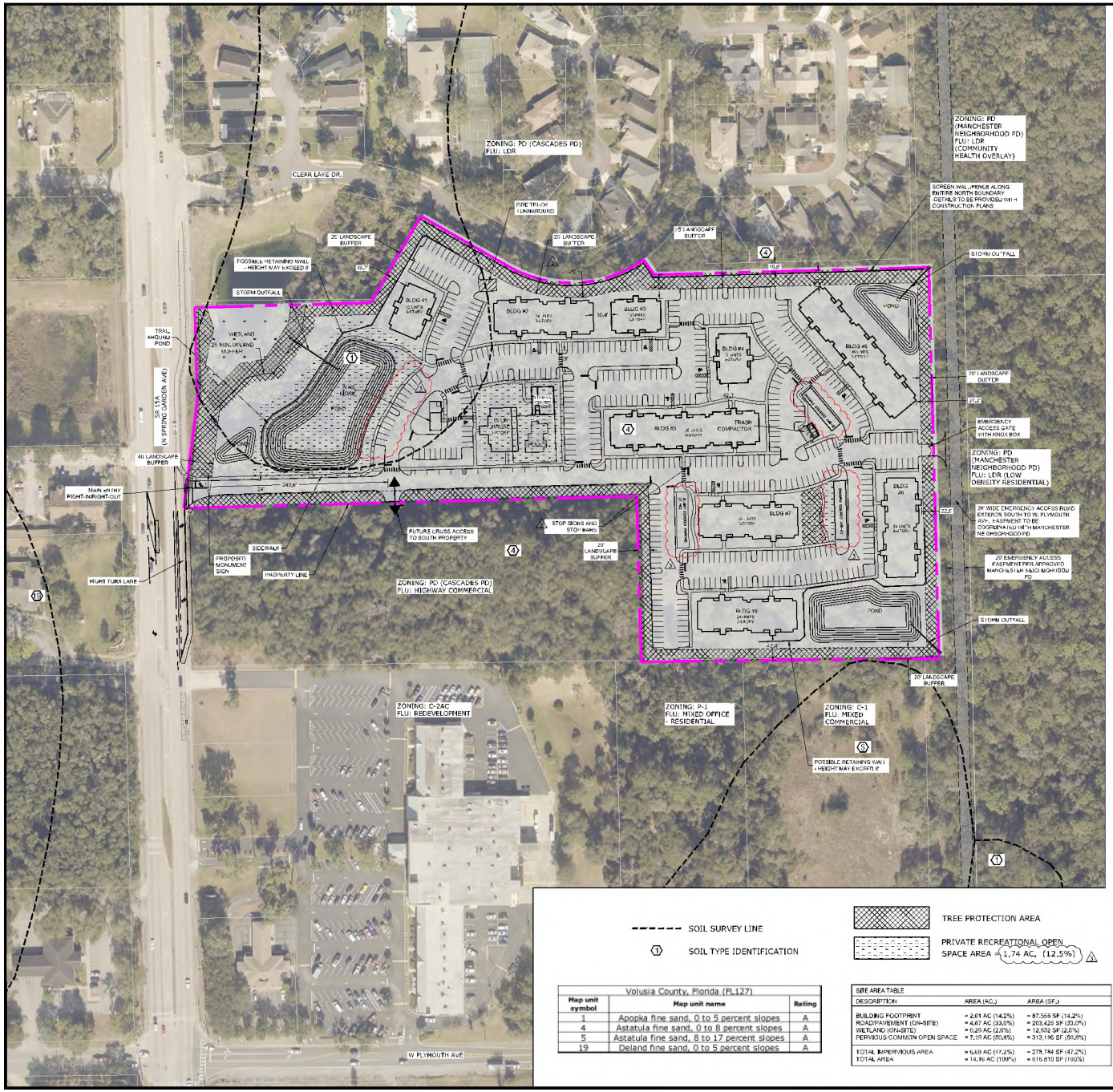
Commencing at the Southwest corner of said Section 5, run thence N 01 Degrees 41' 25" W along the West line of said Section 5 a distance of 661.77 feet to the intersection of the West line of said Section 5, and the South line of the North 1/2 of the Southwest 1/4 of the Southwest 1/4 of said Section 5; run thence N 89 Degrees 15' 51" E along said South line a distance of 820.77 feet to the Point of Beginning, run thence N 01 Degrees 41' 25" W a distance of 281.04 feet; run thence S 88 Degrees 18' 35" W a distance of 37.00 feet; run thence N 01 Degrees 41' 25" W a distance of 373.07 feet to a point on a curve on the Southerly right-of-way of Clear Lake Drive as shown on the Plat of "The Cascades-Unit 1", a Subdivision according to a map in Map Book 41, Page 166, Public Records of Volusia County, Florida, said curve being concave to the Northwest, having a radius of 215.00 feet, a delta of 17 Degrees 31' 31" and a chord bearing and distance of N 63 Degrees 34' 20" E and 65.51 feet, run thence Northeasterly along said curve and road right-of-way an arc distance of 65.76 feet; run thence S 35 Degrees 11' 25" E and along the Southerly boundary of said "The Cascades-Unit 1" a distance of 30.84 feet; run thence N 88 Degrees 18' 35" E and continuing along said boundary a distance of 466.30 feet to the Southeast corner of said "The Cascades-Unit 1", being a point on the East line of the West 1/2 of the Southwest 1/4 of said Section 5; run thence S 01 Degrees 39' 44" E along this East line a distance of 664.23 feet to the Southeast corner of the North 1/2 of the Southwest 1/4 of the Southwest 1/4 of said Section 5; run thence S 89 Degrees 15' 51" W along this South line a distance of 505.56 feet to the Point of Beginning.

PARCEL 2: AREA = 8.00 AC.

A parcel of land lying in the Northwest 1/4 of the Southwest 1/4 and the North 1/2 of the Southwest 1/4 of the Southwest 1/4 of Section 5, Township 17 South, Range 30 East, Volusia County, Florida, being more particularly described as follows:

Commencing at the Southwest corner of said Section 5, run thence North 01° 41' 25" West along the West line of said Section 5 a distance of 661.77 feet to the intersection of the West line of said Section 5, and the South line of the North 1/2 of the Southwest 1/4 of the Southwest 1/4 of said Section 5; run thence North 89° 15' 51" East along said South line a distance of 820.77 feet to the Point of Beginning, run thence North 01° 41' 25" West a distance of 281.04 feet; run thence South 88° 18' 35" West a distance of 37.00 feet; run thence North 01° 41' 25" West a distance of 373.07 feet to a point on a curve on the Southerly right-of-way of Clear Lake Drive as shown on the Plat of "The Cascades-Unit 1", a Subdivision according to a map in Map Book

41, Page 166, Public Records of Volusia County, Florida, said curve being concave to the Northwest, having a radius of 215.00 feet, a delta of 17° 31' 31" and a chord bearing and distance of North 63° 34' 20" East and 65.51 feet, run thence Northeasterly along said curve and road right-of-way an arc distance of 65.76 feet; run thence South 35° 11' 25" East and along the Southerly boundary of said "The Cascades-Unit 1" a distance of 30.84 feet; run thence North 88° 18' 35" East and continuing along said boundary a distance of 466.30 feet to the Southeast corner of said "The Cascades-Unit 1", being a point on the East line of the West 1/2 of the Southwest 1/4 of said Section 5; run thence South 01° 39' 44" East along this East line a distance of 664.23 feet to the Southeast corner of the North 1/2 of the Southwest 1/4 of the Southwest 1/4 of said Section 5; run thence South 89° 15' 51" West along this South line a distance of 505.56 feet to the Point of Beginning.



Volusia County, Florida (FL127)

Map unit symbol	Map unit name	Rating
1	Apopka fine sand, 0 to 5 percent slopes	A
4	Astatula fine sand, 0 to 8 percent slopes	A
5	Astatula fine sand, 8 to 17 percent slopes	A
19	Deland fine sand, 0 to 5 percent slopes	A

SITE AREA TABLE

DESCRIPTION	AREA (AC.)	AREA (SF.)
BUILDING FOOTPRINT	= 2.01 AC (14.2%)	= 87,569 SF (14.2%)
ROADS/PAVEMENT (ON-SITE)	= 4.67 AC (33.0%)	= 203,425 SF (33.0%)
WETLAND (ON-SITE)	= 0.29 AC (2.0%)	= 12,632 SF (2.0%)
PERVIOUS-COMMON OPEN SPACE	= 7.10 AC (50.8%)	= 313,196 SF (50.8%)
TOTAL IMPERVIOUS AREA	= 6.68 AC (47.2%)	= 278,784 SF (47.2%)
TOTAL AREA	= 14.16 AC (100%)	= 616,810 SF (100%)

GRAPHIC SCALE

(IN FEET)
1 inch = 80 ft.

SITE DATA

1. GROSS SITE AREA = 14.16 AC.
2. WETLAND AREA = +/-0.29 AC.
3. NET DEVELOPABLE AREA = 13.87 AC.
4. EXISTING ZONING = PD (CASCADES PD)
5. EXISTING FUTURE LAND USE = MIXED OFFICE - RESIDENTIAL
6. PROPOSED ZONING = PD, EMERGING GATEWAY CORRIDOR OVERLAY
7. PROPOSED FUTURE LAND USE = HDR
8. EXISTING USE = VACANT
9. PROPOSED USE = MULTI-FAMILY APARTMENTS
10. PROPOSED UNITS = 204 UNITS
11. MAXIMUM ALLOWED DENSITY = 16 DU/AC.
12. PROPOSED GROSS DENSITY = 204 UNITS/14.16 AC = 14.41 DU /AC
13. PROPOSED NET DENSITY = 204 UNITS/13.87 AC = 15.07 DU /AC
14. BUILDING SETBACKS:
    -FRONT = 30'
    -SIDE = 20'
    -REAR =20'
15. LANDSCAPE BUFFERS: ⚠2
    -NORTH = 25' (TYPE C)
    -SOUTH = 20' (TYPE C)
    -EAST = 20' (TYPE C)
    -WEST = 40' (TYPE D - EMERGING GATEWAY CORRIDOR OVERLAY)
16. MAXIMUM ALLOWED BUILDING HEIGHT = 45 FT
17. MAXIMUM IMPERVIOUS SURFACE COVERAGE = 50%
18. WATER AND SEWER ARE PROVIDED BY CITY OF DELAND.
19. THIS PROPERTY IS DESIGNATED ZONE "X", AREAS DETERMINED TO BE OUTSIDE OF THE 0.2 % ANNUAL CHANCE FLOODPLAIN PER FEMA FIRM PANELS 12127C0730H (FEBRUARY 19, 2014).
20. MAXIMUM BUILDING LENGTH = 260'
21. REQUIRED TREE PROTECTION (15% OF NET) =
    0.15 X 13.87 AC. = 2.08 AC.
22. PROVIDED TREE PROTECTION = 2.08 AC. (15%)
23. TREES SHALL BE PROTECTED TO THE GREATEST EXTENT POSSIBLE BASED ON SPECIFIC SITE CONDITIONS WITH FINAL TREE PROTECTION AREAS DETERMINED AT FINAL ENGINEERING. WHERE TREE PROTECTION ARE LESS THAN 30' WIDE, NEW PLANTING SHALL BE PROVIDED MEETING CITY REQUIREMENTS.
24. PROJECT TO BE DEVELOPED IN ONE PHASE.
25. PROPOSED STREETS WILL BE PRIVATE
26. NO BURNING IS PERMITTED DURING LAND CLEARING.
27. LOW IMPACT DEVELOPMENT (LID) IS RECOMMENDED FOR THE PD STORMWATER MANAGEMENT MASTER PLAN. LID SUCH AS BIORETENTION SWALES, RAIN GARDENS, STORMWATER RE-USE AND HARVESTING, AND BMP TREATMENT TRAIN TO MINIMIZE RUNOFF POLLUTANT AND INCREASE STORMWATER RECHARGE AND NATURAL INFILTRATION PROCESSES.

ITE TRIP GENERATION

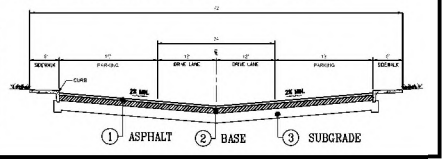
CODE & DESCRIPTION		RATE	UNITS	TRIPS
220 - MULTIFAMILY	AM PEAK HOUR	0.46	204	93.8
	PM PEAK HOUR	0.56	204	114.2
	AVG. DAILY	7.32	204	1,493.3

REQUIRED PARKING

	UNITS	REQUIRED SPACES
STUDIO = 1.0 SP/UNIT	0	0
1 BEDROOM UNITS = 1.5 SP/UNIT	0	0
2+ BEDROOM UNITS = 2.0 SP/UNIT	204	408
VISITOR PARKING = 0.4 SP/UNIT	204	82
TOTAL REQUIRED:		490 SPACES

PROVIDED PARKING ⚠1

	PROVIDED SPACES
STANDARD (9'X19')	452
GARAGE (10' X 20')	26
GARAGE HC (15'X20')	1
HANDICAP (12'X20')	11
⚠1 TOTAL PROVIDED:	490 SPACES



EVANS ENGINEERING, INC.
CIVIL ENGINEERING LAND PLANNING PERMITTING SERVICES
719 IRMA AVENUE
ORLANDO, FLORIDA 32803
(407) 872-1515
www.evansenginc.com
CERTIFICATE OF AUTHORIZATION NO. 00006788

EVANS ENGINEERING, INC.
CERTIFICATE OF AUTHORIZATION NO. 6788

DAVID L. EVANS
FLORIDA P.E. NO. 46586

DATE:

POINTE GRAND APARTMENTS
HILLPOINTE, LLC
DELAND, FLORIDA
CONCEPT PLAN

REVISIONS

DATE	NO.	DETAIL	BY
06/01/22	1	REVISED PER TRC COMMENTS	
08/01/22	2	REVISED PER COMMENTS	
09/01/23	3	REVISED PER FINAL ENGINEERING	

DRAWN BY:	DATE:
-	04/11/22
CHECKED BY:	JOB #:
DE	-

SHEET #:
C-1

EVANS ENGINEERING, INC.

719 Irma Avenue
Orlando, FL 32803
(407) 872-1515
(407) 246-0963 FAX
www.evansenginc.com

July 31, 2023

City of DeLand City Commission
120 South Florida Ave.
DeLand, FL 32720

The proposed development consists of 204 Multi-Family Units on approximately 14.2 acres. The request is to reduce the required parking specific to the overflow or guest requirement. This request reduces the code requirement for guest parking from .5 spaces per unit to .4 spaces per unit which is approximately 20 spaces. The average parking ratio after the reduction in guest parking will be 2.41 spaces per unit.

This type of multi-family development is occurring in many areas surrounding the City of DeLand. As a comparison, a list of the neighboring communities and the required parking for 3-bedroom multi-family units are shown below.

DeBary = 2SP / Unit + 1 SP/5 Units = 2.2 SP / Unit

Deltona = 2 SP / Unit + 1 SP/10 Units = 2.1 SP / Unit

Daytona Beach = 2 SP / Unit

Volusia County = 2 SP / Unit

Based on the development types in the surrounding communities and requirements for parking, this request still provides additional parking for residents and guests. Thank you for your consideration.

Sincerely,
EVANS ENGINEERING, INC.

David L. Evans P. E.

PLANNING DEPARTMENT STAFF REPORT
TO
PLANNING BOARD

September 13, 2023

APPLICATION NO.: SP23-068

STAFF PLANNER: Kendall Story

APPLICANT: Nick Everly, Evans Engineering

REQUEST: Class IV Site Plan – Hillpointe/Pointe Grand Apartments.

APPLICABLE REGULATIONS: Article XII, Section 33-132; Pointe Grand Apartments PD

A. SITE FACTORS:

Location:	Southeast of the intersection of Clear Lake Rd. and N. Spring Garden Ave.
Parcel Size:	± 14.57 acres
Land Use:	High Density Residential
Existing Zoning:	Hillpointe/Pointe Grand Apartments PD
Existing Use:	Residential/undeveloped

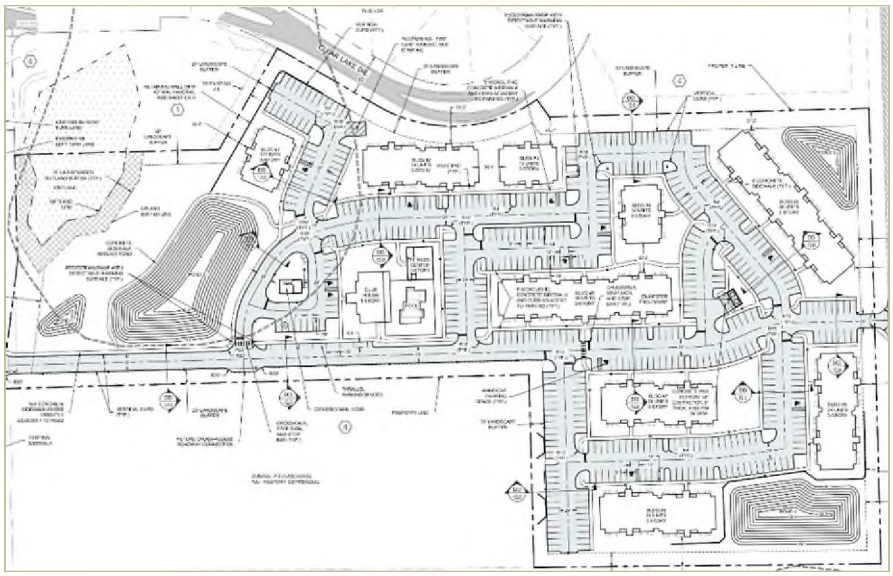
	SURROUNDING USE:	SURROUNDING ZONING:
North:	Low Density Residential	Cascades PD
South:	Highway Commercial; Mixed Office - Residential	Cascades PD
East:	Low Density Residential/Community Health Overlay	Manchester PD
West:	ROW (Spring Garden Ave.)/ High Density Residential	R-16; R-1A

B. HISTORY: The proposed development, originally part of the Cascades PD, consists of ± 14.57 acres of vacant, wooded land, located southeast of the intersection of Clear Lake Rd. and N. Spring Garden Ave. On December 19, 2022, the City Commission approved the rezoning to a PD, creating what is now known as the Pointe Grand Apartments PD (also known as Hillpointe). That approval includes a concept plan and development agreement that outlines the development standards it created specifically for the Pointe Grand Apartments PD.

The applicant recently applied for a PD amendment (Z23-167), which is being reviewed concurrently. The purpose of the amendment is to reduce the required number of parking spaces, for the purpose of constructing 27 covered parking stalls.

C. **ANALYSIS:** The site is located in the northwest quadrant of the City. The applicant requests approval of 204 residential apartments, as permitted by the PD agreement. The subject property is part of the Pointe Grand Apartments PD. According to Sec. 33-132 of the code, if a project generates 80 or more residential units, it is considered a Class IV Site Plan, which requires a recommendation by the Planning Board and approval from the City Commission.

D. **SPECIAL CONDITION:** As stated in part K of the PD agreement, in an effort to provide a benefit to the community, and based on the site location, 20% of the units will be reserved for local medical employees for the first two years following the issuance of a certificate of occupancy. For those that qualify, the application fee and the first month's rent will be waived and the resident will also receive a 50% discount off the security deposit. Additionally, there will be a cap on rate increases of 5%.



E. **ENVIRONMENTAL:** The subject property is mostly wooded and lies outside of the 100-year floodplain. A 15% tree protection area is being provided, as required by code.

In May of 2022, an environmental assessment was done on the subject property. Per the report, no endangered species were observed during the assessment, and the habitat was generally unsupportive of such. The report also analyzed a small wetland area located at the northwest end of the site. The wetland shall remain undisturbed, with a 25' wide buffer around the wetland for protection. However, if any work is done in, on or over a wetland, a permit from SJRWMD will be required.

F. **STORMWATER:** Stormwater retention will be handled on-site, as required by code, utilizing four individual stormwater ponds. Methods following best practices of Low Impact Development (LID) are being applied, as outlined in the PD agreement.

G. **LANDSCAPING:** Landscape buffering for the north, east and south boundaries will be provided in accordance with Sec. 33-92.02 of the City's Land Development Regulations. The western property boundary lies within the Emerging Gateway Overlay District and shall follow Sec. 33-36 of the City's Land Development Regulations. Landscaping will use Florida-Friendly Landscaping as defined by the University of Florida/Institute of Food and Agricultural Sciences (UF/IFAS).

H. **SCHOOL CONCURRENCY:** For all residential projects or map amendments, school capacity for the project must be determined. The first step is to determine if the capacity needed for the project exists (which was done at the land use/zoning change). The VCSB will review a project to make that determination. If capacity does exist, the school board will issue a "Finding of Adequate Capacity" letter.

A concurrency application was submitted to Volusia County Schools for the review of approval of a Reservation Certificate and is pending review. Prior to approval by City Commission, an approved Reservation Certificate must be provided to the city.

I. **ACCESS:** Access to the project will generally follow the PD's concept plan, providing right-in/right-out access parallel to the southern property line, running east/west from N. Spring Garden Rd. However, direct access to the residential development to the north will not be permitted. As originally intended in the Cascades development plan, an access easement will be provided to the southern parcel, known as Phase V of the Cascades PD. If Phase V of the Cascades is ever developed, the easement would allow shared access to the driveway off of N. Spring Garden Rd. Additionally, stabilized emergency access will be provided along the eastern property line, shared between the subject property and the Manchester PD, with the potential to become a full access in the future.

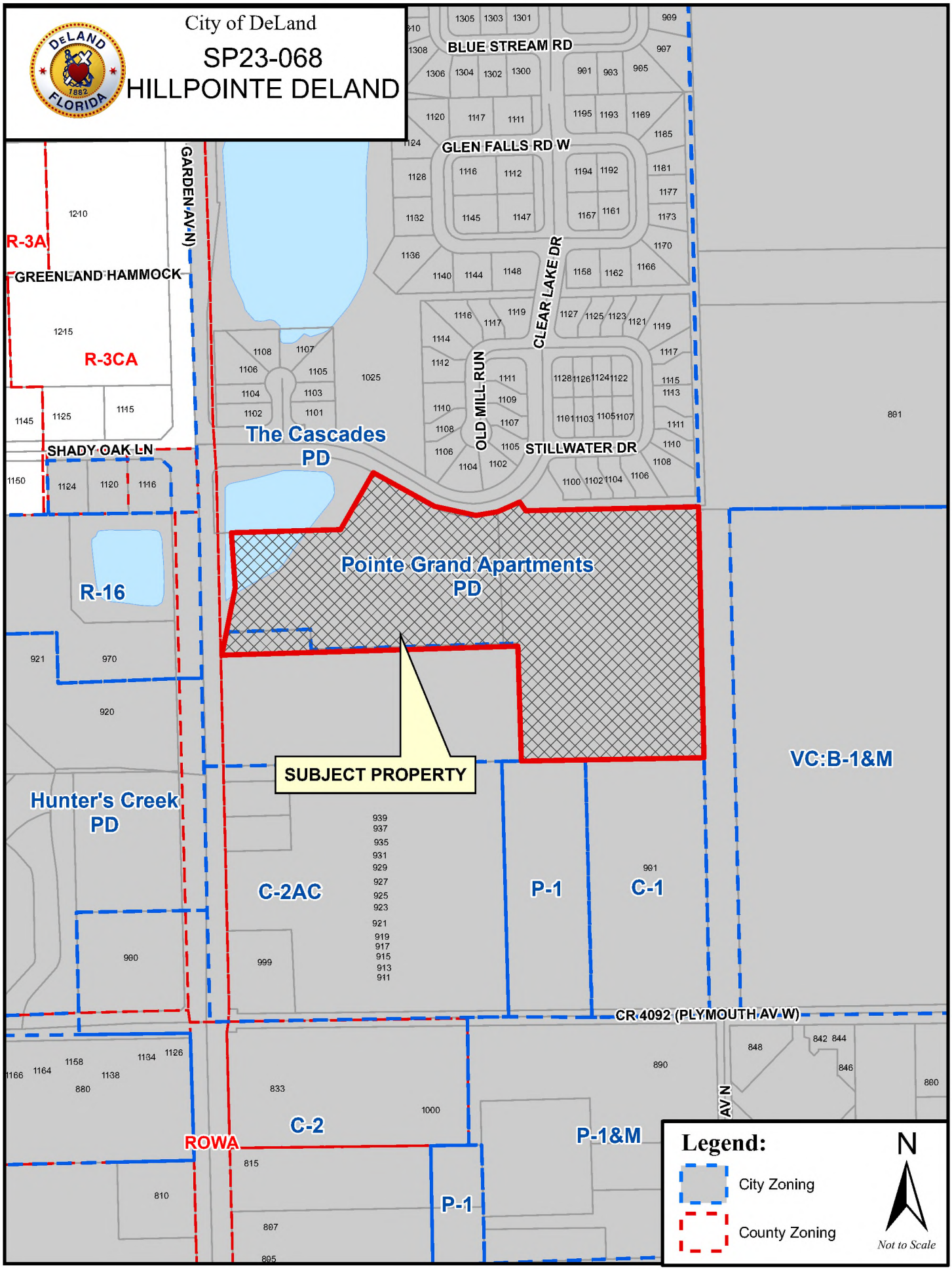
J. **TRAFFIC:** A Traffic Impact Study (TIS) was completed in March of 2023. The analysis determined that the project will generate 927 daily trips, 78 A.M. peak hour trips and 80 P.M. peak hour trips. Per Sec. 33-41.04 of the code, a full Traffic Impact Analysis (TIA) is not required for projects that generate less than 1,000 daily trips.

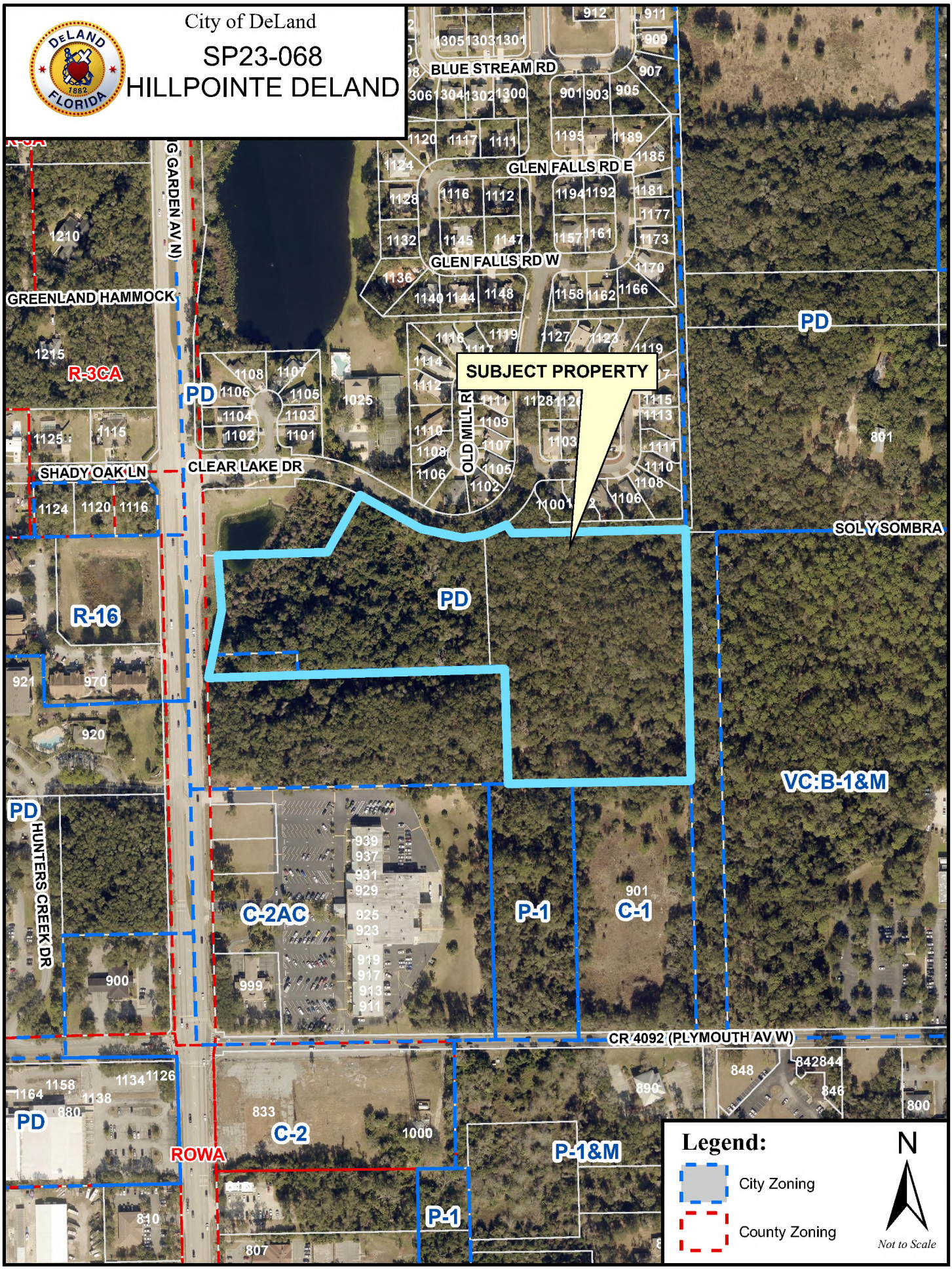


On July 20, 2023, the Technical Review Committee recommended that the proposed Site Plan be forwarded on to the Planning Board, subject to addressing any remaining staff comments.

K. **STAFF RECOMMENDATION**: Staff recommends that the Planning Board forward the Pointe Grand Apartments Site Plan on to the City Commission, recommending approval, subject to the following condition(s):

1. The site plan cannot be approved until the PD Amendment has been reviewed and approved by City Commission.
2. Prior to City Commission approval a completed Volusia County Schools Reservation Certificate must be submitted to the city.


City of DeLand
SP23-068
HILLPOINTE DELAND
BLUE STREAM RD
GLEN FALLS RD W
CLEAR LAKE DR
OLD MILL RUN
STILLWATER DR
GARDEN AV N
GREENLAND HAMMOCK
SHADY OAK LN
R-3A
R-3CA
R-16
The Cascades PD
Pointe Grand Apartments PD
Hunter's Creek PD
SUBJECT PROPERTY
C-2AC
P-1
C-1
VC:B-1&M
CR 4092 (PLYMOUTH AV W)
C-2
ROWA
P-1&M
P-1
Legend:
City Zoning
County Zoning
N
Not to Scale


City of DeLand
SP23-068
HILLPOINTE DELAND
SUBJECT PROPERTY
BLUE STREAM RD
GLEN FALLS RD E
GLEN FALLS RD W
OLD MILL R
G GARDEN AV N
GREENLAND HAMMOCK
SHADY OAK LN
CLEAR LAKE DR
HUNTERS CREEK DR
SOL Y SOMBRA
CR 4092 (PLYMOUTH AV W)
ROWA
PD
R-3CA
R-16
C-2AC
C-2
P-1
C-1
P-1&M
VC:B-1&M
Legend:
City Zoning
County Zoning
N
Not to Scale

SITE CONSTRUCTION PLANS

FOR

POINTE GRAND APARTMENTS

DELAND, FL

PARCEL ID: 70050000012A
70050000012B
700500000124
700500000125

Digitally signed by David Evans
DN: CN=David Evans, dnQualifier=A0141DD00000186DCD9BAA80000C7AF, O=Evans Engineering, C=US
Date: 2023.07.31 16:22:14-04'00'

DAVID L. EVANS LICENSE No. 46586 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been digitally signed and sealed by David L. Evans P.E. on the date adjacent to the seal. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

SHEET INDEX	
C1.0	COVER SHEET
C2.0	GENERAL NOTES
C3.0	EXISTING CONDITIONS AND DEMO PLAN
C4.0	OVERALL SITE PLAN
C4.1	OPEN SPACE PLAN
C5.0 - C5.1	UTILITY PLANS
C6.0 - C6.1	DRAINAGE PLANS
C7.0 - C7.1	GRADING PLANS
C8.0	POND DETAILS
C9.0	OFFSITE IMPROVEMENT PLAN
C9.1	OFFSITE EXISTING CONDITIONS/DEMO PLAN
C10.0 - C10.1	SWPPP PLAN
C11.0 - C11.1	VEHICLE CIRCULATION PLAN
C12.0	ROADWAY SECTIONS
C13.0 - C13.1	PAVING, GRADING, AND DRAINAGE DETAILS
C14.0 - C14.5	UTILITY DETAILS
C15.0 - C15.1	M.O.T. DETAILS
-	LANDSCAPE AND IRRIGATION PLANS
-	LIGHTING PLANS

FDOT PERMITTING NOTE:

ALL FUTURE DEVELOPMENTS ARE REQUIRED TO APPLY FOR AN FDOT PERMIT PRIOR TO CONSTRUCTION.

UTILITY PROVIDERS:

WATER/RECLAIM/SEWER
CITY OF DELAND
1101 S AMELIA AVE
DELAND, FLORIDA 32724
(386) 626-7250

ELECTRIC
DUKE ENERGY
275 PONKAN ROAD
APOPKA, FLORIDA 32712
(407) 938-6690

CABLE / PHONE
SPECTRUM
3767 ALL AMERICAN BLVD.
ORLANDO, FLORIDA 32810
(407) 291-2500

GAS
FLORIDA PUBLIC UTILITIES
450 S HWY 1792
DEBARY, FLORIDA 32713

PROJECT TEAM:

OWNER/APPLICANT
HP-212017 DELAND, LLC
101 S. NEW YORK AVE, SUITE 211
WINTER PARK, FL 32789
(303) 656-8506

CIVIL ENGINEER
EVANS ENGINEERING, INC
719 IRMA AVENUE
ORLANDO, FLORIDA 32803
(407) 872-1515

SURVEYOR
ATWELL, LLC
1800 PARKWAY PLACE, SUITE 700
MARIETTA, GA 30057
(678) 274-8043

GEOTECHNICAL ENGINEER
GEOSERVICES, LLC
2561 WILLOW POINT WAY
KNOXVILLE, TN 37931
(865) 539-8242

LANDSCAPE ARCHITECT
DALY DESIGN GROUP
913 N. PENNSYLVANIA AVE
WINTER PARK, FL 32789
(407) 740-7373

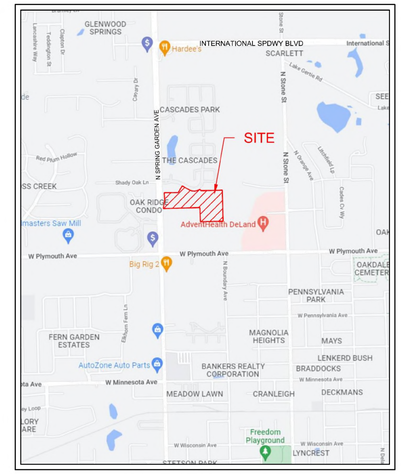
ENVIRONMENTAL ENGINEER
RAYEA, LLC
2781 CARRIE DR.
KENNESAW, GA 30144
(678) 378-7561

PLANNED DEVELOPMENT AGREEMENT SPECIAL CONDITIONS (PAGE 9, PART K):

IN CONNECTION WITH THE LOCATION OF THIS PROJECT AND IN ORDER TO PROMOTE ADDITIONAL BENEFITS TO THE COMMUNITY, FOR A PERIOD OF TWO YEARS FOLLOWING THE ISSUANCE OF THE FINAL CERTIFICATE OF OCCUPANCY FOR THE PROJECT, TWENTY PERCENT (20%) OF THE UNITS WITHIN THIS PROJECT SHALL BE SPECIFICALLY RESERVED AND ALLOCATED TO LOCAL MEDICAL EMPLOYEES. WITHIN SUCH PERIOD OF TIME, LOCAL MEDICAL EMPLOYEES SEEKING TO RESIDE WITHIN THE PROJECT WILL BE PROVIDED WITH: (1) A FIFTY PERCENT (50%) DISCOUNT OFF OF THE REQUIRED INITIAL SECURITY DEPOSIT, (2) A FULL WAIVER OF THE INITIAL APPLICATION FEE, (3) A FULL WAIVER OF THE REQUIRED RENT FOR THE FIRST MONTH OF OCCUPANCY, AND (4) A CAP ON RATE INCREASES OF FIVE PERCENT (5%). THE TERM "LOCAL MEDICAL EMPLOYEE" SHALL BE DEFINED AS INDIVIDUALS EMPLOYED BY A LICENSED MEDICAL FACILITY OR BY A FACILITY THAT OTHERWISE EMPLOYS LICENSED HEALTH CARE PROFESSIONALS, WHICH IS LOCATED WITHIN ONE LINEAR MILE OF THE PROJECT. VERIFICATION OF EMPLOYMENT SHALL OCCUR BY THE MANAGEMENT ASSOCIATION AT THE TIME OF THE INITIAL APPLICATION AND AT ANY SUBSEQUENT LEASE RENEWAL.

* THIS PLAN SHALL NOT BE USED FOR CONSTRUCTION UNLESS APPROVED FOR CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING ALL PERMITS HAVE BEEN OBTAINED PRIOR TO STARTING CONSTRUCTION.

EVANS ENGINEERING, INC.
CIVIL ENGINEERING LAND PLANNING PERMITTING SERVICES
719 IRMA AVENUE
ORLANDO, FLORIDA 32803
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CERTIFICATE OF AUTHORIZATION NO. 00006788



VICINITY MAP
1"=1000'

LEGAL DESCRIPTION:

THE LAND REFERRED TO HEREIN BELOW IS SITUATED IN THE COUNTY OF VOLUSIA, STATE OF FLORIDA, AND DESCRIBED AS FOLLOWS:

PARCEL 1:

THAT PART OF THE SW 1/4 OF SECTION 5, TOWNSHIP 17 SOUTH, RANGE 30 EAST, VOLUSIA COUNTY, FLORIDA, DESCRIBED AS FOLLOWS:

COMMENCE AT THE SW CORNER OF SECTION 5, TOWNSHIP 17 SOUTH, RANGE 30 EAST, THENCE N 01 DEGREES 41'25" W ALONG THE WEST LINE OF SAID SECTION 5 A DISTANCE OF 661.77 FEET TO THE INTERSECTION OF THE WEST LINE OF SAID SECTION 5 AND THE SOUTH LINE OF THE NORTH 1/2 OF THE SOUTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 5; THENCE N 89 DEGREES 15' 51" E ALONG SAID SOUTH LINE A DISTANCE OF 50.01 FEET TO THE INTERSECTION OF SAID SOUTH LINE AND THE EASTERLY RIGHT-OF-WAY LINE OF STATE ROAD 15-A AS SHOWN ON FLORIDA DEPARTMENT OF TRANSPORTATION RIGHT-OF-WAY MAP, SECTION 79160-2511; THENCE N 01 DEGREES 41' 25" W ALONG SAID EASTERLY RIGHT-OF-WAY LINE A DISTANCE OF 253.71 FEET; THENCE N 06 DEGREES 50'26" E CONTINUING ALONG SAID EASTERLY RIGHT-OF-WAY LINE A DISTANCE OF 14.65 FEET TO THE POINT OF BEGINNING; THENCE CONTINUE N 06 DEGREES 50' 26" E ALONG SAID EASTERLY RIGHT-OF-WAY LINE A DISTANCE OF 187.59 FEET; THENCE N 01 DEGREES 41' 25" W ALONG SAID EASTERLY RIGHT-OF-WAY LINE A DISTANCE OF 154.51 FEET TO A POINT ON THE SOUTHERLY BOUNDARY OF "THE CASCADES-UNIT 1", A SUBDIVISION RECORDED IN MAP BOOK 41, PAGE 166, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA; THENCE N 88 DEGREES 18' 35" E ALONG SAID BOUNDARY A DISTANCE OF 298.18 FEET; THENCE N 29 DEGREES 48' 35" E ALONG SAID BOUNDARY A DISTANCE OF 170.36 FEET; THENCE S 60 DEGREES 11' 25" E ALONG SAID BOUNDARY A DISTANCE OF 170.00 FEET TO A POINT OF CURVATURE, SAID CURVE BEING CONCAVE TO THE NORTH HAVING A RADIUS OF 215.00 FEET, A DELTA ANGEL OF 65 DEGREES 00' 00" A CHORD BEARING OF N 87 DEGREES 18' 35" E AND A CHORD LENGTH OF 231.04 FEET; THENCE RUN ALONG SAID CURVE AND AFORESAID SOUTHERLY BOUNDARY FOR AN ARC DISTANCE OF 243.91 FEET; THENCE S 35 DEGREES 11' 25" E ALONG SAID BOUNDARY A DISTANCE OF 30.84 FEET; THENCE N 88 DEGREES 18' 35" E ALONG SAID BOUNDARY A DISTANCE OF 466.30 FEET TO THE EAST LINE OF THE NORTHWEST 1/4 OF THE SOUTHWEST 1/4 OF AFORESAID SECTION 5; THENCE S 01 DEGREES 39' 44" E ALONG THE EAST LINE OF THE NORTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 5 AND ALONG THE EAST LINE OF THE SOUTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 5 A DISTANCE OF 664.23 FEET TO THE SOUTH LINE OF THE NORTH 1/2 OF SAID SOUTHWEST 1/4 OF SOUTHWEST 1/4; THENCE S 89 DEGREES 15' 51" W ALONG SAID SOUTH LINE A DISTANCE OF 505.56 FEET; THENCE N 01 DEGREES 41' 25" W A DISTANCE OF 281.04 FEET; THENCE S 88 DEGREES 18' 35" W A DISTANCE OF 768.48 FEET TO THE POINT OF BEGINNING.

LESS AND EXCEPT THE FOLLOWING DESCRIBED PARCEL:

A PARCEL OF LAND LYING IN THE NORTHWEST 1/4 OF THE SOUTHWEST 1/4 AND THE NORTH 1/2 OF THE SOUTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 5, TOWNSHIP 17 SOUTH, RANGE 30 EAST, VOLUSIA COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

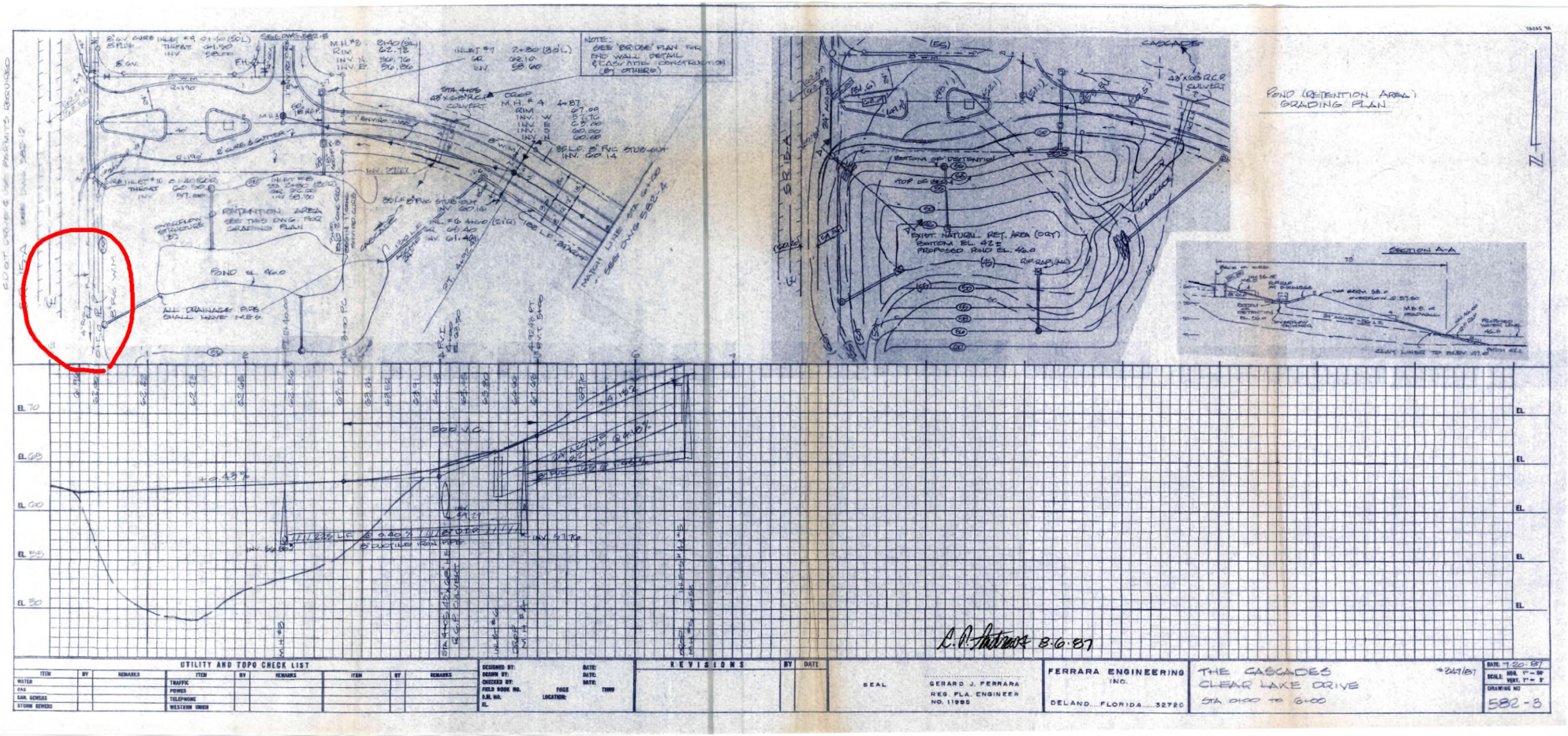
COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 5, RUN THENCE N 01 DEGREES 41' 25" W ALONG THE WEST LINE OF SAID SECTION 5 A DISTANCE OF 661.77 FEET TO THE INTERSECTION OF THE WEST LINE OF SAID SECTION 5, AND THE SOUTH LINE OF THE NORTH 1/2 OF THE SOUTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 5; RUN THENCE N 89 DEGREES 15' 51" E ALONG SAID SOUTH LINE A DISTANCE OF 820.77 FEET TO THE POINT OF BEGINNING, RUN THENCE N 01 DEGREES 41' 25" W A DISTANCE OF 281.04 FEET; RUN THENCE S 88 DEGREES 18' 35" W A DISTANCE OF 37.00 FEET; RUN THENCE N 01 DEGREES 41' 25" W A DISTANCE OF 373.07 FEET TO A POINT ON A CURVE ON THE SOUTHERLY RIGHT-OF-WAY OF CLEAR LAKE DRIVE AS SHOWN ON THE PLAT OF "THE CASCADES-UNIT 1", A SUBDIVISION ACCORDING TO A MAP IN MAP BOOK 41, PAGE 166, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, SAID CURVE BEING CONCAVE TO THE NORTHWEST, HAVING A RADIUS OF 215.00 FEET, A DELTA OF 17 DEGREES 31' 31" AND A CHORD BEARING AND DISTANCE OF N 63 DEGREES 34' 20" E AND 65.51 FEET, RUN THENCE NORTHEASTERLY ALONG SAID CURVE AND ROAD RIGHT-OF-WAY AN ARC DISTANCE OF 65.76 FEET; RUN THENCE S 35 DEGREES 11' 25" E AND ALONG THE SOUTHERLY BOUNDARY OF SAID "THE CASCADES-UNIT 1" A DISTANCE OF 30.84 FEET; RUN THENCE N 88 DEGREES 18' 35" E AND CONTINUING ALONG SAID BOUNDARY A DISTANCE OF 466.30 FEET TO THE SOUTHEAST CORNER OF SAID "THE CASCADES-UNIT 1", BEING A POINT ON THE EAST LINE OF THE WEST 1/2 OF THE SOUTHWEST 1/4 OF SAID SECTION 5; RUN THENCE S 01 DEGREES 39' 44" E ALONG THIS EAST LINE A DISTANCE OF 664.23 FEET TO THE SOUTHEAST CORNER OF THE NORTH 1/2 OF THE SOUTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 5; RUN THENCE S 89 DEGREES 15' 51" W ALONG THIS SOUTH LINE A DISTANCE OF 505.56 FEET TO THE POINT OF BEGINNING.

PARCEL 2:

A PARCEL OF LAND LYING IN THE NORTHWEST 1/4 OF THE SOUTHWEST 1/4 AND THE NORTH 1/2 OF THE SOUTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SECTION 5, TOWNSHIP 17 SOUTH, RANGE 30 EAST, VOLUSIA COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 5, RUN THENCE NORTH 01° 41' 25" WEST ALONG THE WEST LINE OF SAID SECTION 5 A DISTANCE OF 661.77 FEET TO THE INTERSECTION OF THE WEST LINE OF SAID SECTION 5, AND THE SOUTH LINE OF THE NORTH 1/2 OF THE SOUTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 5; RUN THENCE NORTH 89° 15' 51" EAST ALONG SAID SOUTH LINE A DISTANCE OF 820.77 FEET TO THE POINT OF BEGINNING, RUN THENCE NORTH 01° 41' 25" WEST A DISTANCE OF 281.04 FEET; RUN THENCE NORTH 88° 18' 35" WEST A DISTANCE OF 37.00 FEET; RUN THENCE NORTH 01° 41' 25" WEST A DISTANCE OF 373.07 FEET TO A POINT ON A CURVE ON THE SOUTHERLY RIGHT-OF-WAY OF CLEAR LAKE DRIVE AS SHOWN ON THE PLAT OF "THE CASCADES-UNIT 1", A SUBDIVISION ACCORDING TO A MAP IN MAP BOOK 41, PAGE 166, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, SAID CURVE BEING CONCAVE TO THE NORTHWEST, HAVING A RADIUS OF 215.00 FEET, A DELTA OF 17° 31' 31" AND A CHORD BEARING AND DISTANCE OF NORTH 63° 34' 20" EAST AND 65.51 FEET, RUN THENCE NORTHEASTERLY ALONG SAID CURVE AND ROAD RIGHT-OF-WAY AN ARC DISTANCE OF 65.76 FEET; RUN THENCE SOUTH 35° 11' 25" EAST AND ALONG THE SOUTHERLY BOUNDARY OF SAID "THE CASCADES-UNIT 1" A DISTANCE OF 30.84 FEET; RUN THENCE NORTH 88° 18' 35" EAST AND CONTINUING ALONG SAID BOUNDARY A DISTANCE OF 466.30 FEET TO THE SOUTHEAST CORNER OF SAID "THE CASCADES-UNIT 1", BEING A POINT ON THE EAST LINE OF THE WEST 1/2 OF THE SOUTHWEST 1/4 OF SAID SECTION 5; RUN THENCE SOUTH 01° 39' 44" EAST ALONG THIS EAST LINE A DISTANCE OF 664.23 FEET TO THE SOUTHEAST CORNER OF THE NORTH 1/2 OF THE SOUTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 5; RUN THENCE SOUTH 89° 15' 51" WEST ALONG THIS SOUTH LINE A DISTANCE OF 505.56 FEET TO THE POINT OF BEGINNING.

G:\37501 - Hillpointe Deland\37501 01 CIVIL\Dwg\01) Plotted on... Jul 31, 2023 - 3:29pm by tdow


POND (RETENTION AREA) GRADING PLAN
SECTION A-A
RETENTION AREA
POND EL 46.0
ALL DRAINAGE PIPE SHALL HAVE M.E.S.
NOTE: SEE 'BRIDGE' PLAN FOR END WALL DETAIL & CASTING CONSTRUCTION (BY OTHERS)
CASCADE
48"x68"RCP CULVERT
EXIST. NATURAL RET. AREA (DRY) BOTTOM EL. 42± PROPOSED POND EL. 46.0
TOP OF BANK
BOTTOM OF DETENTION
222' V.C.
+0.43%
-0.40%
EL. 70
EL. 65
EL. 60
EL. 55
EL. 50
A. R. Ferrara 8-6-87
UTILITY AND TOPO CHECK LIST
ITEM | BY | REMARKS | ITEM | BY | REMARKS | ITEM | BY | REMARKS
WATER
GAS
SAN. SEWERS
STORM SEWERS
TRAFFIC
POWER
TELEPHONE
WESTERN UNION
DESIGNED BY:
DRAWN BY:
CHECKED BY:
FIELD BOOK NO.
A.B. NO.
EL.
DATE:
PAGE
THRU
LOCATION:
REVISIONS
BY
DATE
SEAL
GERARD J. FERRARA
REG. FLA. ENGINEER
NO. 11995
FERRARA ENGINEERING INC.
DELAND... FLORIDA... 32720
THE CASCADES
CLEAR LAKE DRIVE
STA. 0+00 TO 6+00
#247/87
DATE: 7-30-87
SCALE: HOR. 1"=50' VERT. 1"=5'
DRAWING NO
582-3

GENERAL CONSTRUCTION NOTES:

1. PRIOR TO COMMENCEMENT, CONTRACTOR SHALL PROVIDE EVANS ENGINEERING, INC. WITH CONSTRUCTION SCHEDULE FOR VARIOUS SITE WORK ELEMENTS SO THAT PERIODIC SITE VISITS MAY BE COORDINATED TO INSURE TIMELY CERTIFICATION OF CONSTRUCTION TO AGENCIES AND TO AVOID DELAYS IN ISSUANCE OF CERTIFICATES OF OCCUPANCY.
2. CONTRACTOR SHALL MAINTAIN A SET OF PLANS ACCURATELY MARKED-UP WITH AS-BUILT INFORMATION ON RIM AND INVERT ELEVATIONS. AS-BUILT INFORMATION PREPARED BY A REGISTERED LAND SURVEYOR IN ACCORDANCE WITH CITY OF DELAND LAND DEVELOPMENT REQUIREMENTS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FINAL ACCEPTANCE OF THE WORK.
3. REGULATORY SIGNS SHALL BE IN PLACE PRIOR TO FINAL INSPECTION OF PAVING AND DRAINAGE IMPROVEMENTS.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SURVEY MONUMENTATION. DISTURBED MONUMENTATION SHALL BE RESTORED BY A FLORIDA-LICENSED LAND SURVEYOR SELECTED BY THE OWNER AT CONTRACTOR'S EXPENSE.
5. CONTRACTOR IS RESPONSIBLE FOR GRADING ALL ROADWAYS TO DRAIN POSITIVELY. INTERSECTIONS SHALL BE TRANSITIONED TO PROVIDE SMOOTH DRIVING SURFACE WHILE MAINTAINING POSITIVE DRAINAGE. SHOULD AREAS OF POOR DRAINAGE RESULT FROM THE ADJUSTMENTS DESCRIBED, THE CONTRACTOR SHALL NOTIFY THE SITE SUPERINTENDENT PRIOR TO PLACING BASE SO THAT RECOMMENDATIONS FOR CORRECTION MAYBE MADE.
6. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES FOUND BETWEEN THESE PLANS AND THE FIELD CONDITIONS PRIOR TO CONSTRUCTION.
7. CHAPTER 17-153 OF THE FLORIDA STATUES REQUIRES THAT AN EXCAVATOR NOTIFY ALL GAS UTILITIES A MINIMUM OF TWO WORKING DAYS PRIOR TO EXCAVATING. DRAWINGS SHOW ONLY THE APPROXIMATE LOCATIONS OF GAS MAINS AND DO NOT SHOW SERVICE LINES. THE ONLY SAFE AND PROPER WAY TO LOCATE EITHER MAINS OR SERVICE LINES IS BY ON-SITE INSPECTION BY GAS COMPANY PERSONNEL. THEREFORE, EXCAVATORS ARE INSTRUCTED TO TELEPHONE THE GAS COMPANY TWO WORKING DAYS BEFORE ENTERING A NEW CONSTRUCTION AREA.
8. ALL MEDIANS AND ISLANDS TO BE FILLED WITH CLEAN SOIL AND COMPACTED PER LANDSCAPE REQUIREMENTS.
9. ALL PAVEMENT RETURN RADII SHALL BE MEASURED FROM THE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
10. ALL DISTURBED AREAS SHALL BE RETURNED TO PRECONSTRUCTION CONDITIONS, OR BETTER.
11. ALL PAVEMENT MARKERS, STRIPING, SIGNAGE, AND OTHER TRAFFIC CONTROL DEVICES TO BE INSTALLED BY CONTRACTOR PER F.D.O.T AND CITY OF DELAND STANDARDS.
12. THE FOLLOWING AGENCIES AND COMPANIES SHALL BE NOTIFIED 48 HOURS PRIOR TO BEGINNING CONSTRUCTION:

    A. CITY OF DELAND ENGINEERING DEPARTMENT
    B. CITY OF DELAND UTILITIES
    C. SPECTRUM
    D. DUKE ENERGY
    E. FLORIDA PUBLIC UTILITIES

13. BOUNDARY AND TOPOGRAPHIC DATA WAS PROVIDED TO EVANS ENGINEERING, INC. BY ATWELL, LLC.
14. ALL MARKINGS TO COMPLY WITH F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS, MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
15. ALL TRAFFIC CONTROL SIGNS AND STRIPES SHALL CONFORM TO THE M.U.T.C.D. AND CITY OF DELAND TRAFFIC STANDARDS.
16. SIDEWALKS SHALL BE BUILT TO BE FLORIDA ACCESSIBILITY CODE COMPLIANT, INCLUDING HANDICAPPED RAMPS.
20. THE APPLICANT SHALL COORDINATE AND SCHEDULE A PRE-CONSTRUCTION MEETING PRIOR TO THE START OF CONSTRUCTION.
21. THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEERING DIVISION, IN WRITING, AT LEAST FIVE DAYS PRIOR TO THE START OF CONSTRUCTION.
22. NO PAVING SHALL COMMENCE UNTIL WRITTEN AUTHORIZATION HAS BEEN GIVEN BY THE CITY ENGINEER. THE ASPHALT MIX DESIGN MUST BE APPROVED AND A PRE-PAVING MEETING MUST BE HELD PRIOR TO THE APPROVAL BY THE CITY ENGINEER TO PAVE. ONLY THE APPROVED PLANS STAMPED AND SIGNED BY THE CITY ENGINEER SHALL BE USED ON THE PROJECT. ANY CHANGE(S) TO THE APPROVED PLANS MUST BE SUBMITTED BY THE ENGINEER OF RECORD AND MUST BE APPROVED BY THE CITY ENGINEER BEFORE CONSTRUCTION OF THE CHANGE(S) CAN BE STARTED.
23. THE CONTRACTOR IS A REQUIRED TO OBTAIN A BUILDING PERMIT FROM THE CITY OF DELAND BUILDING DEPARTMENT PRIOR TO CONSTRUCTION OF ANY RETAINING WALLS.

AS-BUILT REQUIREMENTS:

AS-BUILT DRAWINGS WILL BE REQUIRED TO INCLUDE AT A MINIMUM THE INFORMATION LISTED BELOW. ADDITIONAL AS-BUILT INFORMATION SHALL BE PROVIDED AS REQUIRED BY THE CITY OF DELAND REQUIREMENTS.

A. STORM DRAINAGE
   1. TOP ELEVATION OF EACH MANHOLE FRAME AND COVER/GRATE AS WELL AS ALL OTHER STRUCTURES (HEADWALLS, CONTROL STRUCTURES, ETC.).
   2. INVERT ELEVATION OF EACH LINE ENTERING AND LEAVING EACH STRUCTURE. INCLUDING UNDERDRAIN PIPES (IF PROVIDED).
   3. INVERTS OF ALL MITERED END SECTIONS.
   4. ACTUAL GRADE OF PIPE BETWEEN THE STRUCTURES.
   5. INVERT ELEVATION AND TWO HORIZONTAL TIES FROM PERMANENT VISIBLE 5. OBJECTS TO ALL STORM STUB-OUTS.

B. WASTEWATER SYSTEM
   1. INVERT ELEVATION OF EACH LINE ENTERING AND LEAVING EACH STRUCTURE.
   2. ACTUAL GRADE OF PIPE BETWEEN THE STRUCTURES.
   3. LIFT STATION INVERTS AND ELEVATIONS (IF APPLICABLE).
   4. ACTUAL LOCATION AND SIZE OF LINE(S) CONSTRUCTED.

C. POTABLE WATER SYSTEM
   1. SAMPLE POINT LOCATION(S).
   2. ACTUAL LOCATION AND SIZE OF LINE(S) CONSTRUCTED.
   3. ACTUAL LOCATION OF BACKFLOW PREVENTORS, METER AND VALVES.

AS-BUILT DRAWINGS MUST SHOW IN PLAN VIEW EACH AND EVERY WATER, WASTEWATER, AND RECLAIMED WATER SERVICE, TAP, CLEAN-OUT, VALVE, FIRE HYDRANT, BEND, CASING, PIPE AND ALL OTHER APPURTENANCES, REFERENCED FROM AT LEAST TWO FIXED AND EASILY FOUND REFERENCE POINTS (E.G. EDGES OF PAVEMENT, ROADWAY CENTER LINES, MANHOLE LIDS, ETC.). PIPES SHALL BE LONGITUDINALLY REFERENCED FROM THE CENTERLINE AND EDGE OF PAVEMENT. PIPE SIZE, DEPTH AND PIPE MATERIAL SPECIFICATIOE SHALL BE DEPICTED ON THE RECORD DRAWINGS. ELECTRONIC DRAWINGS SHALL BE GEO-REFERENCED TO STATE PLANE WEST COORDINATE SYSTEM, NAD 83/90 HORIZONTAL DATUM AND NGVD 29/83 VERTICAL DATUM.

PAVING & DRAINAGE NOTES:

1. COORDINATION WITH LANDSCAPE CONTRACTOR TO ASSURE PONDS ARE SODDED TO PREVENT SCOURING.
2. SITE GRADING, PAVING, AND DRAINAGE MATERIALS AND CONSTRUCTION SHALL CONFORM TO CITY OF DELAND AND F.D.O.T. DEVELOPMENT STANDARDS AND SPECIFICATIONS.
3. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR(S) TO INSURE THAT ALL REQUIRED PERMITS ARE OBTAINED AND ARE IN HAND PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.
4. THE STORM WATER RETENTION/DETENTION PONDS SHALL BE CONSTRUCTED DURING THE EARLY STAGES OF CONSTRUCTION. SODDED AND/OR SEEDED AREAS SHOULD HAVE VEGETATION ADDED AS SOON AS FEASIBLE.
5. SOILS INFORMATION WAS PROVIDED TO EVANS ENGINEERING, INC. BY UNIVERSAL ENGINEERING SCIENCES AND GEOSERVICES, LLC.
6. THE PROPOSED SILT FENCE SHOWN ON THE PLANS IS THE MINIMUM REQUIRED. ADDITIONAL CONTROLS TO BE UTILIZED AS NEEDED. THE CONTRACTOR SHALL INSTALL THE SILT FENCE PRIOR TO ANY CLEARING OR GRADING ON-SITE. ONCE SILT FENCE HAS BEEN INSTALLED, THE CONTRACTOR SHALL MAINTAIN INTEGRITY THROUGH PERIODIC INSPECTION AND REPAIR.
7. ALL CONCRETE PIPE JOINTS SHALL BE WRAPPED WITH FILTER FABRIC PER FDOT INDEX #280.
8. WITHIN THE RIGHT-OF-WAY, BACKFILL FOR PIPE AND STRUCTURES WILL BE DENSIFIED TO 100% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-99. BASE AND STABILIZED SUBGRADE, WITHIN THE RIGHT-OF-WAY WILL BE DENSIFIED TO 98% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.
9. ALL CURB INLET TOPS ARE PRECAST CONCRETE.
10. THE SUBGRADE SHALL BE LEVELED, COMPACTED AND TESTED FOR A DEPTH OF 2' PRIOR TO THE PLACEMENT OF ANY FILL. COMPACTION SHOULD CONTINUE UNTIL A MINIMUM DENSITY EQUIVALENT TO 95 PERCENT OF THE SOIL'S MAXIMUM MODIFIED PROCTOR DENSITY VALUE (ASTM D-1557) HAS BEEN ACHIEVED. COMPACTION SHOULD BE PERFORMED USING NON-VIBRATORY COMPACTION EQUIPMENT SUCH AS A HEAVY RUBBER TIRED FRONT-END LOADER. THE FRONT-END LOADER SHOULD HAVE A MINIMUM BUCKET SIZE OF 3 CUBIC YARDS, WHICH SHOULD REMAIN FULL DURING COMPACTION OPERATIONS. ALL FILL NECESSARY TO ATTAIN FINAL SITE GRADES SHOULD BE COMPACTED TO THE DENSITY DESCRIBED ABOVE.
11. ALL REINFORCED CONCRETE STORM SEWER PIPES SHALL BE CLASS III (ASTM C-76) UNLESS OTHERWISE NOTED ON THE PLANS. ALL DRAINAGE STRUCTURES SHALL BE IN ACCORDANCE WITH FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS UNLESS OTHERWISE NOTED ON THE PLANS.
12. FOR DRAINAGE STRUCTURES TO BE USED ON SITE REFERENCE FDOT STANDARD PLAN INDEXES 425-001 TO 425-090.
13. STRUCTURAL FILL REQUIRED TO ATTAIN FINAL SITE GRADES SHOULD BE COMPRISED OF CLEAN SAND WITH LESS THAN 7 PERCENT PASSING THE U.S. NO. 200 SIEVE. THE FILL SHOULD BE PLACED IN MAXIMUM 12" THICK LIFTS AND COMPACTED TO THE DENSITY DESCRIBED ABOVE.
14. FINISHED GRADE ELEVATIONS SHALL BE TABLE TOPPED 8-INCHES BELOW STATED FINISHED FLOOR ELEVATIONS.

UTILITY NOTES:

1. CONTRACTOR IS TO VERIFY THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION IN THEIR VICINITY. ANY DAMAGE TO EXISTING UTILITIES SHALL BE REPAIRED BY THE CONTRACTOR AS SOON AS POSSIBLE.
2. WATER MAIN SEPARATION (VERTICAL AND HORIZONTAL) FROM FORCE MAIN, STORM, AND RECLAIMED WATER MUST BE IN COMPLIANCE WITH FDEP GUIDELINES WITH NO STANDARD MITIGATION ALLOWED. THE WATER MAIN SEPARATION FROM FORCE MAIN, STORM, AND RECLAIMED WATER MUST ALSO BE IN COMPLIANCE WITH CITY OF DELAND SPECIFICATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL MINIMUM SEPARATION REQUIREMENTS ARE MAINTAINED.
3. ALL POTABLE WATER, RECLAIMED WATER, AND FORCE MAINS TO MEET CITY OF DELAND SPECIFICATIONS.
4. RESTORE ALL DISTURBED RIGHT-OF-WAY AREAS TO PREVIOUS CONDITION.
5. ALL WORK ON UTILITIES SHALL BE OPEN TO AND SUBJECT TO INSPECTION BY AUTHORIZED PERSONNEL OF THE UTILITY COMPANIES, OWNER, AND PROJECT ENGINEER.
6. HYDROSTATIC TESTING SHALL BE PERFORMED IN ACCORDANCE WITH AWWA C600 OR M23 AS APPLICABLE.
7. DISINFECTION OF THE WATER DISTRIBUTION SYSTEM SHALL BE PERFORMED IN ACCORDANCE WITH AWWA C651.
8. ALL P.V.C. WATER PIPES MUST BEAR THE NSF LOGO FOR POTABLE WATER USE. WATER PIPES WITH DIAMETERS LESS THAN TWO INCHES SHALL BE SCHEDULE POLY. PIPES WITH DIAMTERS GREATER THAN 2: SHALL BE BELL JOINT PRESSURE PIPE.
9. CONTRACTOR SHALL MAINTAIN MINIMUM 3' COVER OVER WATER MAINS, FORCE MAINS, AND RECLAIMED WATER MAINS.
10. ALL DUCTILE IRON PIPES MUST BE IN ACCORDANCE WITH AWWA C151.
11. THE CONTRACTOR SHALL NOTIFY THE CITY OF DELAND UTILITIES CONSTRUCTION DEPARTMENT 48 HOURS PRIOR TO ANY UTILITIES CONSTRUCTION.
12. ALL EXISTING UTILITIES AT POINTS OF CONFLICT SHALL BE FIELD VERIFIED BY THE "CONTRACTOR" PRIOR TO CONSTRUCTION AND MEET MINIMUM SPACING REQUIREMENTS.

EROSION CONTROL GENERAL NOTES:

1. ALL EROSION/SEDIMENT CONTROL MEASURES SHALL COMPLY WITH STATE AND LOCAL SOIL EROSION CONTROL AND CONSERVATION STANDARDS. ADDITIONAL MEASURES TO PREVENT/CONTROL SOIL SEDIMENTATION OR EROSION MAY BE REQUIRED DUE TO SITE CONSIDERATIONS WITHIN THE BOUNDARY LIMITS AND DOWNSTREAM.
2. PRIOR TO DEVELOPMENT, PERIMETER SHALL BE CLEARLY MARKED AND ALL SOIL DISTURBANCE TO BE CONTAINED WITHIN. OFF-SITE WORK MAY BE NECESSARY DUE TO ACTUAL SITE SLOPE OR DRAINAGE REQUIREMENTS. ALL CONTROL MEASURES MUST CONFORM TO SITE STANDARDS.
3. ALL POINTS OF SITE INGRESS AND EGRESS TO BE CONSTRUCTED PRIOR TO ANY OTHER DEVELOPMENT. THEY MUST BE STABILIZED AND INCLUDE SOIL EROSION/ SEDIMENTATION CONTROL MEASURES IN ORDER TO PREVENT TRACKING AND SILTING OF MUD INTO PUBLIC ROADWAYS OR DRAINAGE AREAS TO BE IMMEDIATELY REMOVED.
4. ALL STORM DRAIN AND SANITARY SEWER TRENCHES NOT IN PAVED AREAS ARE TO BE MULCHED AND/OR SEEDED WITHIN 14 DAYS AFTER INITIAL BACKFILL.
5. DURING CONSTRUCTION, ALL SEDIMENT CONTROL STRUCTURES WILL BE INSPECTED AFTER EACH RAINFALL AND REPAIRED IF NECESSARY. SEDIMENT TO BE REMOVED TO A SUITABLE DISPOSAL AREA AND STABILIZED WITH PERMANENT VEGETATIVE COVER.
6. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL SEDIMENT AND EROSION CONTROL MEASURES UNTIL DISTURBED AREAS ARE STABILIZED.
7. AFTER FINE GRADING, ALL DISTURBED AREAS ARE TO BE PERMANENTLY MULCHED AND/OR SODDED.
8. NO SLOPE SHALL BE GREATER THAN 3.5:1.
9. FOLLOWING INITIAL SOIL DISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 4:1; AND FOURTEEN DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE. THIS DOES NOT APPLY TO THOSE AREAS WHICH ARE SHOWN ON THE PLAN AND ARE CURRENTLY BEING PERFORMED. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE THAT STABILIZED AREAS CONTINUOUSLY MEET THE APPROPRIATE REQUIREMENTS OF GOVERNING AUTHORITIES.
10. SILT FENCED TO BE PLACED AROUND PERIMETER OF PROPERTY AS SHOWN.
11. EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. ADDITIONAL EROSION AND SEDIMENTATION CONTROL MEASURES WILL BE INSTALLED IF DEEMED NECESSARY BY ON-SITE INSPECTION.
12. THE INSTALLATION OF EROSION CONTROL MEASURES AND PRACTICES SHALL OCCUR PRIOR TO LAND-DISTURBING ACTIVITIES.

FDEP WATER NOTES:

1. ALL PIPE, PIPE FITTINGS, PIPE JOINT PACKING AND JOINTING MATERIALS, VALVES, FIRE HYDRANTS, AND METERS INSTALLED UNDER THIS PROJECT WILL CONFORM TO APPLICABLE AMERICAN WATER WORKS ASSOCIATION (AWWA) STANDARDS. (FAC 62-555.320)(21)(B), RSWW 8.0, AND AWWA STANDARDS AS INCORPORATED INTO FAC 62-555.330; EXCEPTIONS ALLOWED UNDER FAC 62-555.320(21)(C))
2. ALL PUBLIC WATER SYSTEM COMPONENTS, EXCLUDING FIRE HYDRANTS, THAT WILL BE INSTALLED UNDER THIS PROJECT AND THAT WILL COME INTO CONTACT WITH DRINKING WATER WILL CONFORM TO NSF INTERNATIONAL STANDARD 61 AS ADOPTED IN RULE 62-555.320.(3)(B), F.A.C., OR OTHER APPLICABLE STANDARD, REGULATIONS, OR REQUIREMENTS REFERENCED IN PARAGRAPH 62-555.320(3)(B), F.A.C., (FAC 62-555.320(3)(B); EXCEPTIONS ALLOWED UNDER FAC 62-555.320(3)(D))
3. ALL PIPE AND PIPE FITTINGS INSTALLED UNDER THIS PROJECT WILL CONTAIN NO LEAD, AND ANY SOLDER A FLUX USED IN THIS PROJECT WILL CONTAIN NO LEAD. (FAC 62-555.322)
4. ALL PIPE AND PIPE FITTINGS INSTALLED UNDER THIS PROJECT WILL BE CODED OR MARKED IN ACCORDANCE WITH SUBPARAGRAPHS 62-555.320 (21)(B)3, F.A.C., USING BLUE AS A PREDOMINANT COLOR. (UNDERGROUND PLASTIC PIPE WILL BE SOLID-WALL BLUE PIPE, WILL HAVE A CO-EXTRUDED BLUE EXTERNAL SKIN, OR WILL BE WHITE OR BLACK PIPE WITH BLUE STRIPES INCORPORATED INTO, OR APPLIED TO, THE PIPE WALL; AND UNDERGROUND METAL OR CONCRETE PIPE WILL HAVE BLUE STRIPES APPLIED TO THE PIPE WALL. PIPE STRIPED DURING MANUFACTURING OF THE PIPE WILL HAVE CONTINUOUS STRIPES THAT RUN PARALLEL TO THE AXIS OF THE PIPE, THAT ARE LOCATED AT NO GREATER THAN 90-DEGREE INTERVALS AROUND THE PIPE, AND THAT WILL REMAIN INTACT DURING AND AFTER INSTALLATION OF THE PIPE. IF TAPE OR PAINT IS USED TO STRIP PIPE DURING INSTALLATION OF THE PIPE, THE TAPE OR PAINT WILL BE APPLIED IN A CONTINUOUS LINE THAT RUNS PARALLEL TO THE AXIS OF THE PIPE AND THAT IS LOCATED ALONG THE TOP OF THE PIPE; FOR PIPE WITH AN INTERNAL DIAMETER OF 24 INCHES OR GREATER, TAPE OR PAINT WILL BE APPLIED IN CONTINUOUS LINES ALONG EACH SIDE OF THE PIPE AS WELL AS ALONG THE TOP OF THE PIPE. ABOVEGROUND PIPE WILL BE PAINTED BLUE OR WILL BE COLORED CODED OR MARKED LIKE UNDERGROUND PIPE.) (FAC 62-555.320 (21)(B)3)
5. NEW OR ALTERED WATER MAINS INCLUDED IN THIS PROJECT WILL BE INSTALLED IN ACCORDANCE WITH APPLICABLE AWWA STANDARDS OR IN ACCORDANCE WITH MANUFACTURES' RECOMMENDED PROCEDURES. (FAC 62-555.320(20)(B), RSWW 8.5.1, AND AWWA STANDARDS AS INCORPORATED INTO FAC 62-555.330)
6. A CONTINUOUS AND UNIFORM BEDDING WILL BE PROVIDED IN TRENCHES FOR UNDERGROUND PIPE INSTALLED UNDER THIS PROJECT; BACKFILL MATERIAL WILL BE TAMPED IN LAYERS AROUND UNDERGROUND PIPE INSTALLED UNDER THIS PROJECT AND TO A SUFFICIENT HEIGHT ABOVE THE PIPE TO ADEQUATELY SUPPORT AND PROTECT THE PIPE; AND UNSUITABLY SIZED STONES (AS DESCRIBED IN APPLICABLE AWWA STANDARDS OR MANUFACTURES' RECOMMENDED INSULATION PROCEDURES) FOUND IN TRENCHES WILL BE REMOVED FOR A DEPTH OF AT LEAST SIX INCHES BELOW THE BOTTOM OF UNDERGROUND PIPE INSTALLED UNDER THIS PROJECT. (FAC 62-555.320(21)(B), RSWW 8.5.2)
7. ALL WATER MAIN TEES, BENDS, PLUGS, AND HYDRANTS INSTALLED UNDER THIS PROJECT WILL BE PROVIDED WITH THRUST BLOCKS OR RESTRAINED JOINTS TO PREVENT MOVEMENT. (FAC 62-555.320 (21)(B) AND RSWW 8.5.4)
8. NEW OR ALTERED WATER MAINS, THAT ARE INCLUDE IN THIS PROJECT AND THAT WILL BE CONSTRUCTED OF ASBESTOS-CEMENT OR POLYVINYL CHLORIDE PIPE WILL BE PRESSURE AND LEAKAGE TESTED IN ACCORDANCE WITH AWWA STANDARDS C603 OR C605, RESPECTIVELY, AS INCORPORATED INTO RULE 62-555.330, FAC., AND ALL OTHER NEW OR ALTERED WATER MAINS INCLUDED IN THIS PROJECT WILL BE PRESSURE AND LEAKAGE TESTED IN ACCORDANCE WITH AWWA STANDARD C600 AS INCORPORATED INTO RULE 62-555.330. (FAC 62-555.320 (21)(B) 1 AND AWWA STANDARDS AS INCORPORATED INTO FAC 62-555.330)
9. NEW OR ALTERED WATER MAINS, INCLUDING FIRE HYDRANT LEADS AND INCLUDING SERVICE LINES THAT WILL BE UNDER THE CONTROL OF A PUBLIC WATER SYSTEM AND THAT HAVE AN INSIDE DIAMETER OF THREE INCHES OR GREATER, WILL BE DISINFECTED AND BACTERIOLOGICALLY EVALUATED IN ACCORDANCE WITH RULE 62-555.340, FAC (FAC 62-555.320(21)(B) 2 AND FAC 62-555.340)
10. NEW OR RELOCATED, UNDERGROUND WATER MAINS INCLUDED IN THIS PROJECT WILL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST 3 FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER, STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE COVERING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.; A HORIZONTAL DISTANCE OF AT LEAST 6 FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY-TYPE SANITARY SEWER (OR A HORIZONTAL DISTANCE OF AT LEAST 3 FEET BETWEEN THE OUTSIDE THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY-TYPE SANITARY SEWER IF THE BOTTOM OF THE WATER MAIN WILL BE LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER); A HORIZONTAL DISTANCE OF AT LEAST SIX FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.; AND A HORIZONTAL DISTANCE OF AT LEAST 10 FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND ALL PARTS OF ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM." (FAC 62-555.314(1); EXCEPTIONS ALLOWED UNDER FAC 62-555.314(5))
11. NEW OR RELOCATED, UNDERGROUND WATER MAINS THAT ARE INCLUDED IN THIS PROJECT AND THAT WILL CROSS ANY EXISTING OR PROPOSED GRAVITY- OR VACUUM-TYPE SANITARY SEWER WILL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES ABOVE THE OTHER PIPELINE; AND NEW OR RELOCATED, UNDERGROUND WATER MAINS THAT ARE INCLUDED IN THIS PROJECT AND THAT WILL CROSS ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER WILL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST 12 INCHES ABOVE OR BELOW THE OTHER PIPELINE. (FAC 62-555.314(2); EXCEPTIONS ALLOWED UNDER FAC 62-555.314(5))
12. AT THE UTILITY CROSSING DESCRIBED IN PART II.C.W ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE WILL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE OR THE PIPES WILL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORMSEWERS, STORMWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER 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. (FAC 62-555.314(2); EXCEPTIONS ALLOWED UNDER FAC 62-555.314(5))

⚠1

UTILITY PIPE SCHEDULE

MARK	SERVICE	MATERIAL	CLASS	TEST PRESSURE
WM	WATER MAIN DIA. = 4"–12"	PVC	C150 DR18 AWWA C900	150 PSI
		DIP	C350	150 PSI
WM	WATER MAIN DIA. = 14"–20"	PVC	C235 DR18 AWWA C905	150 PSI
		DIP	C250	150 PSI
RWM	RECLAIMED WATER MAIN = 4"–12"	PVC	C150 DR18 AWWA C900	150 PSI
		DIP	C350	150 PSI
RWM	RECLAIMED WATER MAIN = 14"–20"	PVC	C235 DR18 AWWA C905	150 PSI
		DIP	C250	150 PSI
FM	WASTEWATER FORCEMAIN DIA. ≤ 12"	PVC	C100 DR25 AWWA C900	100 PSI
		DIP	C350	100 PSI
FM	WASTEWATER FORCEMAIN DIA. = 14" – 24"	PVC	C165 DR25 AWWA C905	100 PSI
		DIP	C250	100 PSI
SS	SANITARY SEWER DIA. ≤ 15"	PVC	SDR 35 (ASTM D3034)	N/A

FDEP SANITARY SEWER NOTES:

1. TESTING IS REQUIRED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS TO PERMIT STABILIZATION OF THE SOIL-PIPE SYSTEM. TESTING REQUIREMENTS SPECIFY: 1) NO PIPE SHALL EXCEED A DEFLECTION OF 5%; 2) USING A RIGID BALL OR MANDREL FOR THE DEFLECTION TEST WITH A DIAMETER NO LESS THAN 95% OF THE BASE INSIDE DIAMETER OR AVERAGE INSIDE DIAMETER OF THE PIPE, DEPENDING ON WHICH IS SPECIFIED IN THE ASTM SPECIFICATIONS, INCLUDING THE APPENDIX, TO WHICH THE PIPE MANUFACTURED; AND 3) PERFORMING THE TEST WITHOUT MECHANICAL PULLING DEVICES. [RSWF 33.85]
2. LEAKAGE TESTS ARE SPECIFIED REQUIRING THAT: 1) NO VISIBLE LEAKAGE ALLOWED; 2) EXFILTRATION OR INFILTRATION TESTS BE PERFORMED WITH A MINIMUM POSITIVE HEAD OF 2 FEET; AND 3) AIR TESTS, AS A MINIMUM, CONFORM TO THE TEST PROCEDURE IN ASTM C-828 FOR CLAY PIPE, ASTM C 924 FOR CONCRETE PIPE, ASTM F-1417 FOR PLASTIC PIPE, AND FOR OTHER MATERIALS APPROPRIATE TEST PROCEDURES. [RSWF 33.93, 33.94, AND 33.95]
3. A BENCH SHALL BE PROVIDED ON EACH SIDE OF ANY MANHOLE CHANNEL WHEN THE PIPE DIAMETER(S) ARE LESS THAN THE MANHOLE DIAMETER AND THAT NO LATERAL SEWER, SERVICE CONNECTION, OR DROP MANHOLE PIPE DISCHARGES ONTO THE SURFACE OF THE BENCH.

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EVANS ENGINEERING, INC.

CERTIFICATE OF AUTHORIZATION NO. 6788

DAVID L. EVANS
FLORIDA P.E. NO. 46586

DATE:

POINTE GRAND APARTMENTS

DELAND, FLORIDA

GENERAL NOTES

REVISIONS

NO.	DATE	DETAIL
1	06/16/23	REVISED PER COMMENTS

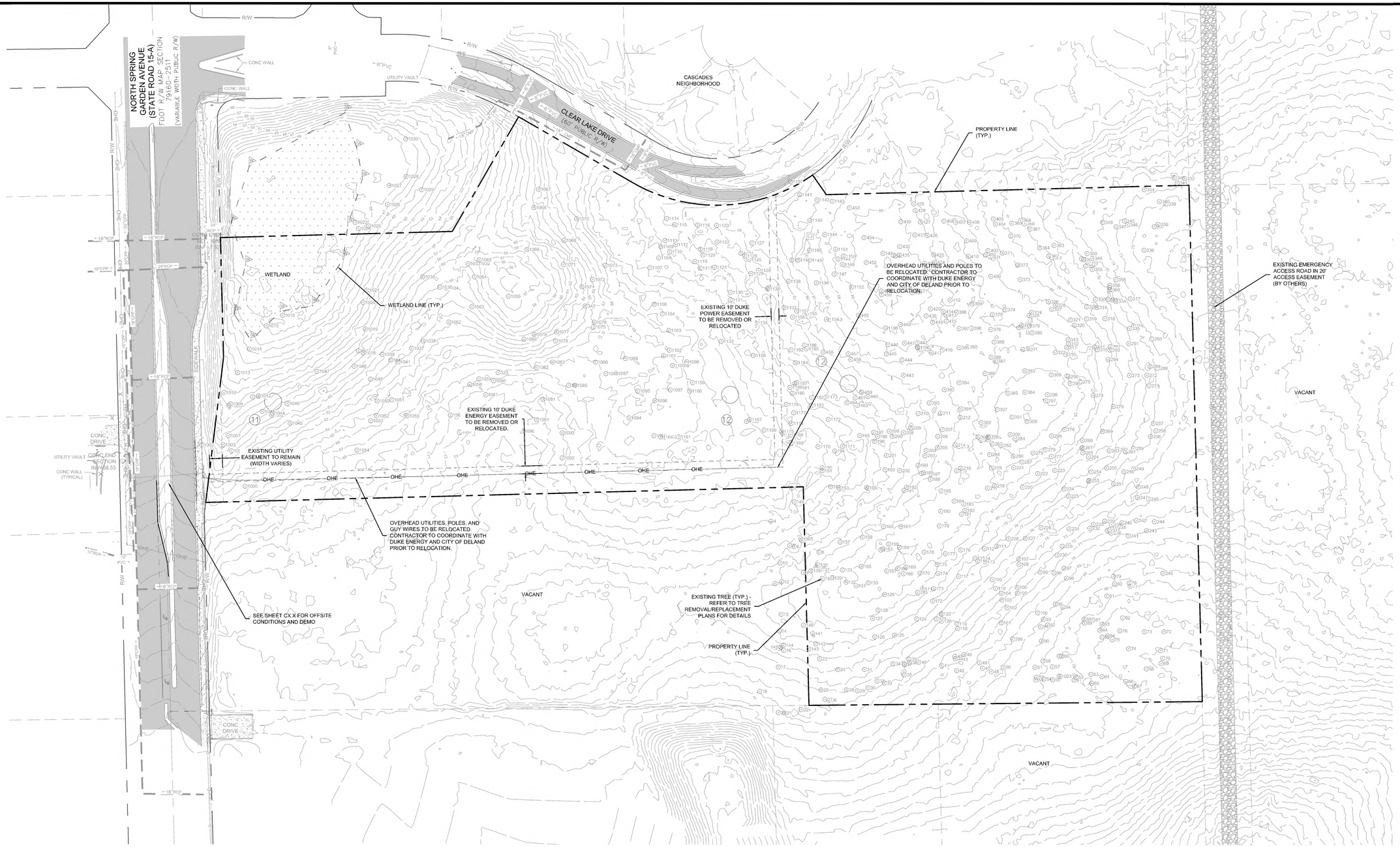
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FE	03/06/23
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DE	37501

SHEET #:

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C:\37501 - Pointe Grand\37501 02 GENERAL NOTES.dwg (02) Plotted on: Jul 31, 2023 - 3:29pm by Fabe



NOTES

1. EXISTING TREES TO BE REMOVED / SAVED ACCORDING TO TREE REMOVAL / PRESERVATION PLAN BY LANDSCAPE ARCHITECT.
2. CONTRACTOR TO REPLACE ALL DISTURBED SOD WITHIN THE RIGHT OF WAY.
3. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO CONSTRUCTION.
4. CONTRACTOR TO COORDINATE THE REMOVAL AND/OR RELOCATION OF EXISTING UTILITIES WITH THE UTILITY PROVIDER AND THE CITY/COUNTY MUNICIPALITY.
5. ELEVATIONS PER PLAN ARE BASED ON NAVD 88 DATUM.

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POINTE GRAND APARTMENTS

DELAND, FLORIDA

EXISTING CONDITIONS AND DEMO PLAN

REVISIONS

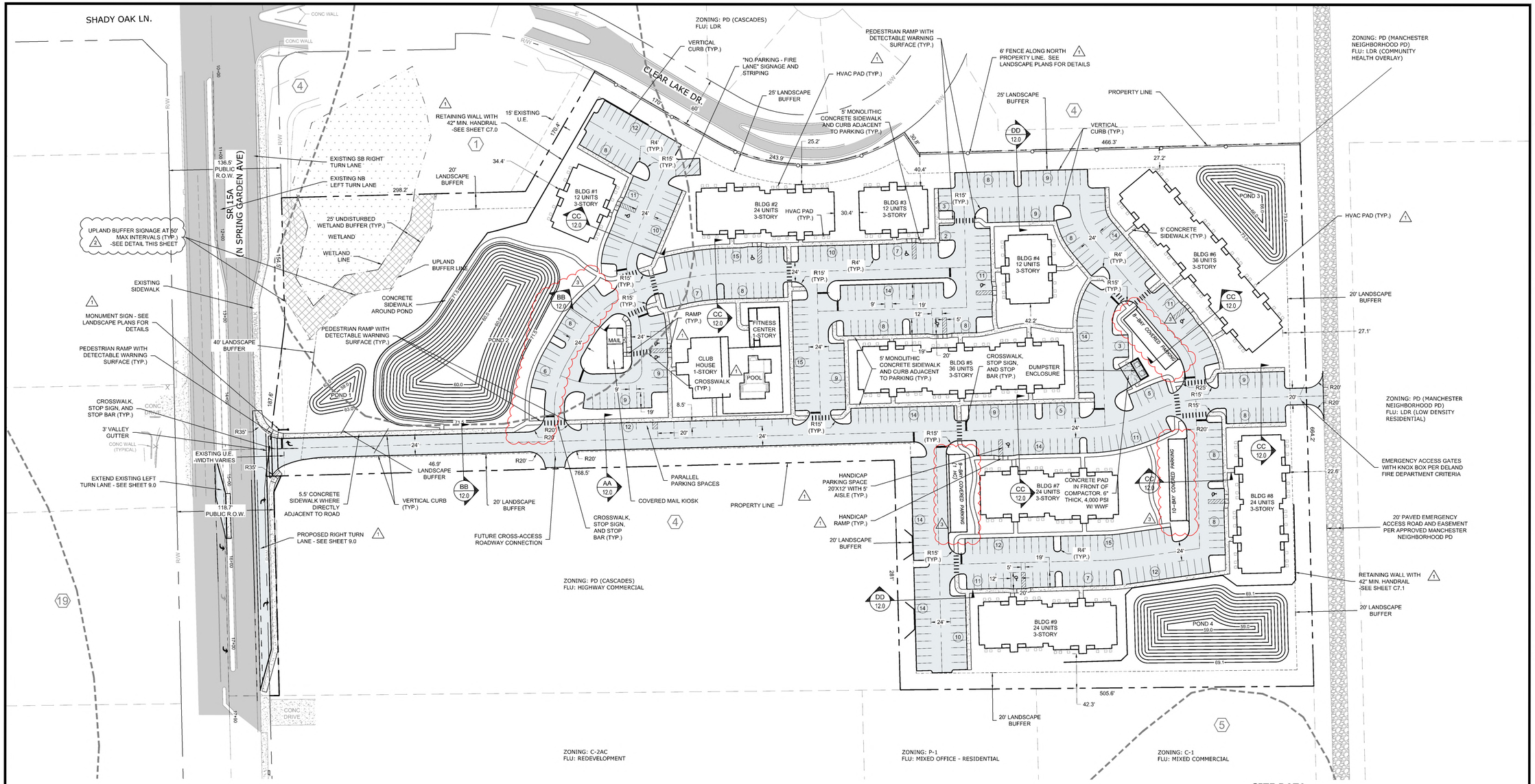
NO.	DETAIL	DATE
1	REVISED PER COMMENTS	06/16/23

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FE	03/06/23
CHECKED BY:	JOB #:
DE	37501

GRAPHIC SCALE
100' 0 50' 100' 200'
FEET
1 Inch = 100 Ft.

SHEET #:
C3.0

G:\37501 - Pointe Deland\37501 C3 EXISTING CONDITIONS AND DEMO PLAN.dwg (01) Tuesday, Jan 31, 2023 - 3:29pm by steve



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DAVID L. EVANS
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DATE:

POINTE GRAND APARTMENTS

DELAND, FLORIDA

OVERALL SITE PLAN

REVISIONS			
NO.	DATE	DETAIL	
1	06/16/23	REVISED PER COMMENTS	
2	07/17/23	REVISED PER COMMENTS	
3	07/31/23	REVISED PER COMMENTS	

DRAWN BY: FE	DATE: 03/06/23
CHECKED BY: DE	JOB #: 37501

GRAPHIC SCALE
60' 0 30' 60' 120'
FEET
1 Inch = 60 Ft.

SHEET #: C4.0

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C:\37501 - Pointe\e Deland\37501 C4-OVERALL SITE PLAN.dwg (01) Plotted on: Jul 31, 2023 - 4:19pm by Jesse

UPLAND BUFFER
DO NOT DISTURB

NO DUMPING,
LAND CLEARING OR OTHER
DISTURBANCE TO SOILS OR
VEGETATION PERMITTED
BEYOND THIS POINT

FOR MORE INFORMATION,
CONTACT THE
ST. JOHNS RIVER WATER
MANAGEMENT DISTRICT
(407) 659-4800

12" x 12"

SEE PLAN FOR LOCATIONS (14 TOTAL)

UPLAND BUFFER DISTURBANCE SIGN 2

NOT TO SCALE

BUILDING DATA			
BUILDING TYPE	GROSS AREA (SF)	NET AREA (SF)	HEIGHT (FT)
12-UNIT	14,310 SF	13,557 SF	43.25 (3-STORY)
24-UNIT	28,683 SF	28,080 SF	43.25 (3-STORY)
36-UNIT	42,993 SF	42,120 SF	43.25 (3-STORY)
CLUBHOUSE	3,786 SF	2,878 SF	19 (1-STORY)
FITNESS CENTER	1,824 SF	1,824 SF	16 (1-STORY)
MAIL KIOSK	800 SF	800 SF	16 (1-STORY)

ITE TRIP GENERATION

CODE & DESCRIPTION		RATE	UNITS	TRIPS
220 - MULTIFAMILY	AM PEAK HOUR	0.46	204	93.8
	PM PEAK HOUR	0.56	204	114.2
	AVG. DAILY	7.32	204	1,493.3

REQUIRED PARKING

	UNITS	REQUIRED SPACES
STUDIO = 1.0 SP/UNIT	0	0
1 BEDROOM UNITS = 1.5 SP/UNIT	0	0
2+ BEDROOM UNITS = 2.0 SP/UNIT	204	408
VISITOR PARKING = 0.4 SP/UNIT	204	82
TOTAL REQUIRED:		490 SPACES

PROVIDED PARKING 3

	PROVIDED SPACES
STANDARD (9'X19')	452
GARAGE (10' X 20')	26
GARAGE HC (15'X20')	1
HANDICAP (12'X20')	11
TOTAL PROVIDED:	490 SPACES

STRIPING NOTE 1

ALL STRIPING IS TO BE PER FDOT STANDARD PLAN INDEX 711-001

STATEMENT OF INTENDED USE AND DEVELOPMENT ACTIVITY 1

PROJECT IS A MULTI-FAMILY APARTMENT COMPLEX WITH PRIVATE ON-SITE AMENITIES INCLUDING A CLUBHOUSE, POOL, AND WALKING TRAIL.

SOIL SURVEY LINE

1 SOIL TYPE IDENTIFICATION

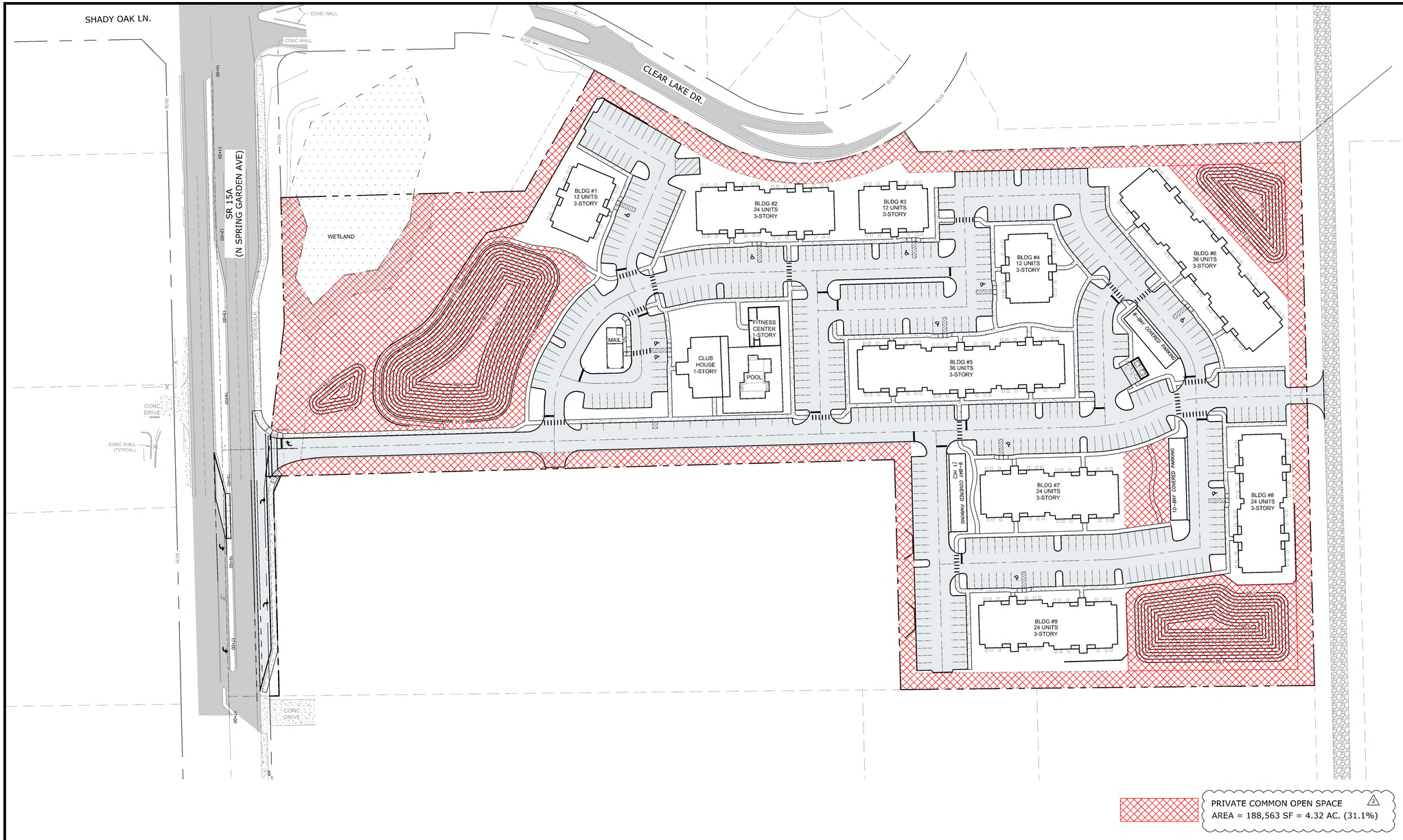
Volusia County, Florida (FL127)		
Map unit symbol	Map unit name	Rating
1	Apopka fine sand, 0 to 5 percent slopes	A
4	Astatula fine sand, 0 to 8 percent slopes	A
5	Astatula fine sand, 8 to 17 percent slopes	A
19	Deland fine sand, 0 to 5 percent slopes	A

1

SITE AREA TABLE		
DESCRIPTION	AREA (AC.)	AREA (SF.)
BUILDING FOOTPRINT	= 2.01 AC (14.2%)	= 87,556 SF (14.2%)
ROAD/PAVEMENT (ON-SITE)	= 4.67 AC (33.0%)	= 203,425 SF (33.0%)
WETLAND (ON-SITE)	= 0.29 AC (2.0%)	= 12,632 SF (2.0%)
PERVIOUS/COMMON OPEN SPACE	= 7.19 AC (50.8%)	= 313,196 SF (50.8%)
TOTAL IMPERVIOUS AREA	= 6.68 AC (47.2%)	= 290,981 SF (47.2%) 1
TOTAL AREA	= 14.16 AC (100%)	= 616,810 SF (100%)

SITE DATA

1. GROSS SITE AREA = 14.16 AC.
2. WETLAND AREA = +/-0.29 AC.
3. NET DEVELOPABLE AREA = 13.87 AC.
4. ZONING = PD, EMERGING GATEWAY CORRIDOR OVERLAY
5. FUTURE LAND USE = HDR
6. EXISTING USE = VACANT
7. PROPOSED USE = MULTI-FAMILY APARTMENTS
8. PROPOSED UNITS = 204 UNITS
9. MAXIMUM ALLOWED DENSITY = 16 DU/AC.
10. PROPOSED GROSS DENSITY = 204 UNITS/14.16 AC = 14.41 DU /AC
11. PROPOSED NET DENSITY = 204 UNITS/13.87 AC = 15.07 DU /AC
12. BUILDING SETBACKS:
    -FRONT = 30'
    -SIDE = 20'
    -REAR =20'
13. LANDSCAPE BUFFERS:
    -NORTH = 25' (TYPE C)
    -SOUTH = 20' (TYPE C)
    -EAST = 20' (TYPE C)
    -WEST = 40' (TYPE D - EMERGING GATEWAY CORRIDOR OVERLAY)
14. MAXIMUM ALLOWED BUILDING HEIGHT = 45 FT
15. MAXIMUM IMPERVIOUS SURFACE COVERAGE = 50%
16. WATER AND SEWER ARE PROVIDED BY CITY OF DELAND.
17. THIS PROPERTY IS DESIGNATED ZONE "X"; AREAS DETERMINED TO BE OUTSIDE OF THE 0.2 % ANNUAL CHANCE FLOODPLAIN PER FEMA FIRM PANELS 12127C0730H (FEBRUARY 19, 2014).
18. MAXIMUM BUILDING LENGTH = 260'
19. REQUIRED TREE PROTECTION AREA (15% OF NET) =
    0.15 X 13.87 AC. = 2.08 AC.
20. PROVIDED TREE PROTECTION AREA = 2.08 AC. (15%)
    -SEE LANDSCAPE PLAN FOR DETAILS
21. PROJECT TO BE DEVELOPED IN ONE PHASE.
22. PROPOSED STREETS WILL BE PRIVATELY OWNED AND MAINTAINED.
23. NO BURNING IS PERMITTED DURING LAND CLEARING.



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DAVID L. EVANS
FLORIDA P.E. NO. 46586

DATE:

POINTE GRAND APARTMENTS

DELAND, FLORIDA

OPEN SPACE PLAN

REVISIONS		
NO.	DATE	DETAIL
1	06/16/23	REVISED PER COMMENTS
2	07/31/23	REVISED PER COMMENTS/QC

DRAWN BY:	DATE:
FE	03/06/23
CHECKED BY:	JOB #:
DE	37501

GRAPHIC SCALE

60' 0 30' 60' 120'

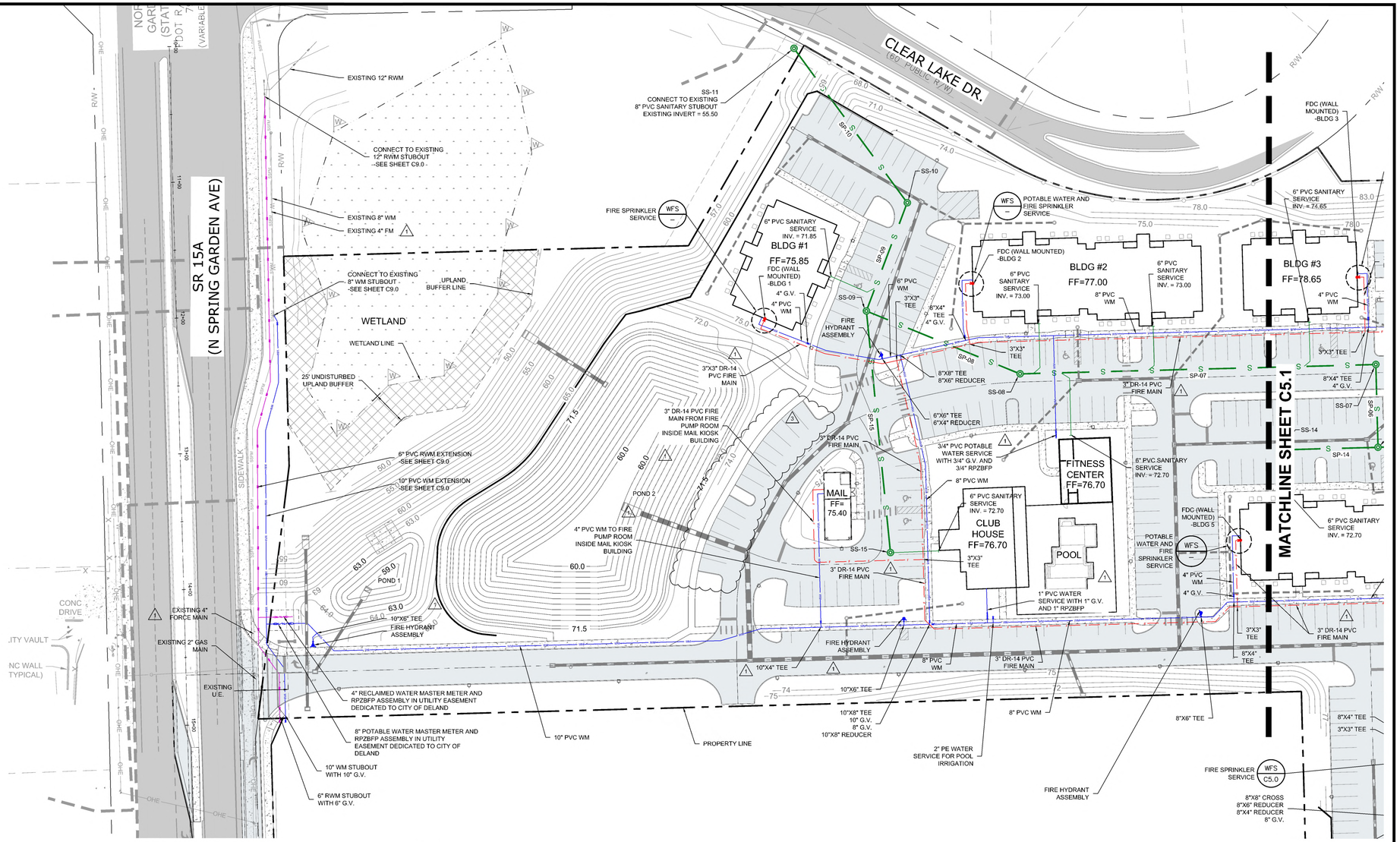
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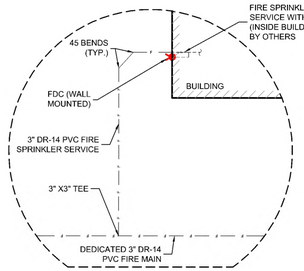
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NOTES:
1. DDCV TO BE LOCATED INSIDE BUILDING
2. FIRE LINE TO BE INSTALLED TO 1' ABOVE SLAB
3. BENDS VARY PER SERVICE. SEE PLAN
4. ALL FIRE LINE PIPING SHALL BE DR-14

⚠1 WFS - FIRE SERVICE DETAIL
N.T.S.

REQUIREMENTS FOR SPRINKLED BUILDING:

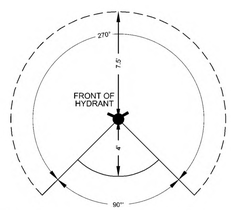
1. AT MINIMUM, A CLASS FIVE CONTRACTOR IS REQUIRED TO INSTALL FIRE FINES. FIRE LINES SHALL BEGIN AT THE POINT IN WHICH THE PIPING IS USED EXCLUSIVELY FOR FIRE PROTECTION AND END AT A POINT 1-FOOT ABOVE THE FINISHED FLOOR.
2. NO OTHER WATER CONNECTION SHALL BE OFF OF THE FIRE LINE.
3. THE FIRE DEPARTMENT CONNECTION SHALL BE WITHIN 100 FEET OF THE FIRE HYDRANT.
4. ANY FIRE LINE CHARGED BY THE FDC SHALL BE DR-14 PIPE.
5. THE ONLY VALVE ALLOWED IN THE FDC LINE IS A CHECK VALVE.
6. ALL FIRE LINES SHALL BE INSPECTED BY THE FIRE DEPT. BEFORE BEING COVERED.

SANITARY STRUCTURE TABLE

NAME	TYPE	RIM	INV. IN:	INV. OUT
SS-08	SANITARY MANHOLE	75.38	64.55 SP-07	64.45 SP-08
SS-09	SANITARY MANHOLE	74.57	63.90 SP-08 63.90 SP-15	63.80 SP-09
SS-10	SANITARY MANHOLE	73.38	63.40 SP-09	61.90 SP-10
SS-11	SANITARY MANHOLE	58.02	55.60 SP-10	55.50 (EXISTING)
SS-15	SANITARY MANHOLE	75.36		69.86 SP-15

SANITARY PIPE TABLE

NAME	LENGTH	SIZE	SLOPE	MATERIAL
SP-07	262'	8"	0.44%	PVC
SP-08	122'	8"	0.45%	PVC
SP-09	85'	8"	0.47%	PVC
SP-10	141'	8"	4.47%	PVC
SP-15	179'	8"	3.33%	PVC



⚠1 WFS1 - FIRE HYDRANT AND FDC CLEARANCE DETAIL
N.T.S.

NOTES:

1. MAINTAIN A MINIMUM OF 3 FEET OF COVER OVER ALL PROPOSED WATER AND WASTEWATER LINES.
2. ELEVATIONS SHOWN ARE BASED ON NAVD88 DATUM.
3. ALL UTILITY MAINS SHALL BE INSTALLED TO MEET THE MINIMUM SEPARATION REQUIREMENTS PER FDEP AND CITY OF DELAND.
4. EXISTING UTILITIES AT POINTS OF CONFLICT SHALL BE FIELD VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. NOTIFY ENGINEER IF EXISTING CONDITIONS DIFFER FROM PLANS.
5. ALL UTILITIES LOCATED OUTSIDE OF PUBLIC RIGHT-OF-WAYS AND PUBLIC EASEMENTS SHALL BE PRIVATELY OWNED AND MAINTAINED.
6. WATER MAINS AND FIRE HYDRANTS SHALL BE INSTALLED, COMPLETED, AND IN SERVICE PRIOR TO COMBUSTIBLE MATERIALS BEING BROUGHT ON TO THE SITE.
7. ALL SANITARY SEWER LATERALS SHALL HAVE A MINIMUM SLOPE OF 1%.
8. ALL FIRE HYDRANT VALVES SHALL BE LOCATED ON THE DOWNSTREAM END OF THE FIRE HYDRANT SUPPLY LINE AT THE TEE.
9. ALL EXISTING OVERHEAD AND UNDERGROUND UTILITIES SHALL BE COORDINATED WITH THE APPROPRIATE PROVIDER AND RELOCATED AS NECESSARY.

FDEP SEPARATION REQUIREMENTS UNDER 62-555.314 EFFECTIVE 8-28-2003

HAZARD	HORIZONTAL SEPARATION	VERTICAL SEPARATION		JOINT SPACING
		WATER ABOVE	WATER BELOW	
STORM SEWER	3FT MIN	12IN PREF, 6IN MIN	12IN MIN	3FT MIN
STORM FORCE MAIN	3FT MIN	12IN MIN	12IN MIN	3FT MIN
RECLAIMED WATER IF REGULATED UNDER 62-610	3FT MIN	12IN MIN	12IN MIN	3FT MIN
RECLAIMED WATER IF NOT REGULATED UNDER 62-610	10FT PREF, 6FT MIN	12IN MIN	12IN MIN	6FT MIN
VACUUM SANITARY SEWER	10FT PREF, 3FT MIN	12IN PREF, 6IN MIN	12IN MIN	3FT MIN
GRAVITY SANITARY SEWER	10FT PREF, 6FT MIN, 3FT MIN IF WATER MAIN IS 6IN ABOVE GRAVITY SANITARY SEWER	12IN PREF, 6IN MIN	12IN MIN	6FT MIN
SANITARY SEWER FORCE MAIN	10FT PREF, 6FT MIN	12IN MIN	12IN MIN	6FT MIN
SEWAGE TREATMENT & DISPOSAL SYSTEM	10FT MIN	NONE	NONE	NONE

EVANS ENGINEERING, INC.
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www.evansenginc.com
CERTIFICATE OF AUTHORIZATION NO. 00006788

EVANS ENGINEERING, INC.
CERTIFICATE OF AUTHORIZATION NO. 6788

DAVID L. EVANS
FLORIDA P.E. NO. 46586

DATE:

POINTE GRAND APARTMENTS
DELAND, FLORIDA

UTILITY PLAN

REVISIONS

NO.	DATE	DETAIL
1	04/14/23	REVISED PER COMMENTS
2	06/23/23	REVISED PER COMMENTS
3	07/31/23	REVISED PER COMMENTS/QC

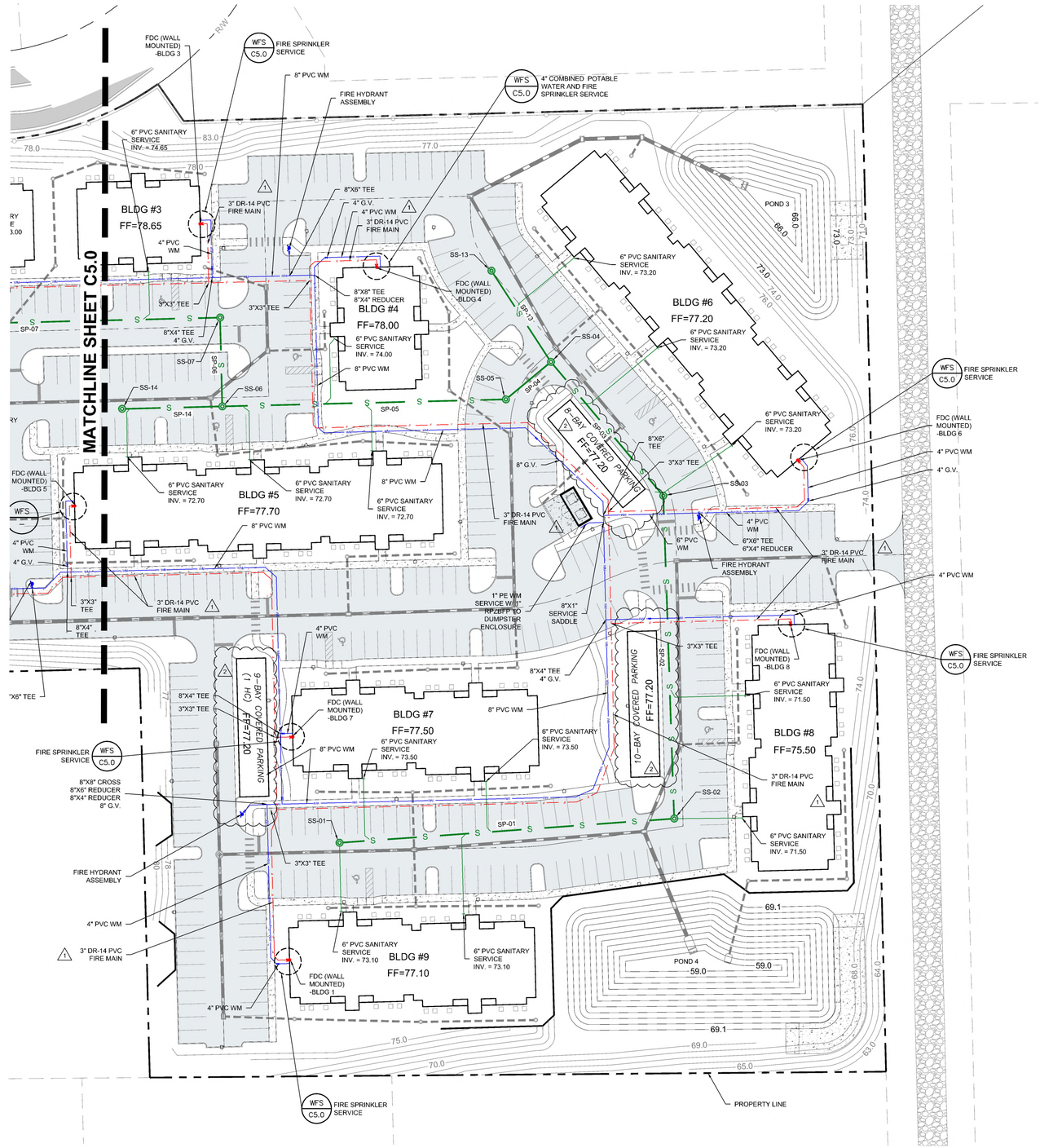
DRAWN BY: FE
DATE: 03/06/23
CHECKED BY: DE
JOB #: 37501

GRAPHIC SCALE
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FEET
1 Inch = 40 Ft.

SHEET #: C5.0

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Jul 31, 2023 - 4:07pm by Blair
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SANITARY STRUCTURE TABLE				
NAME	TYPE	RIM	INV. IN:	INV. OUT
SS-01	SANITARY MANHOLE	75.78		70.78 SP-01
SS-02	SANITARY MANHOLE	74.20	69.20 SP-01	69.10 SP-02
SS-03	SANITARY MANHOLE	74.45	68.10 SP-02	68.00 SP-03
SS-04	SANITARY MANHOLE	75.44	67.45 SP-03 67.45 SP-13	67.35 SP-04
SS-05	SANITARY MANHOLE	75.51	67.15 SP-04	67.05 SP-05
SS-06	SANITARY MANHOLE	76.03	66.20 SP-05 66.20 SP-14	66.10 SP-06
SS-07	SANITARY MANHOLE	76.91	65.80 SP-06	65.70 SP-07
SS-13	SANITARY MANHOLE	75.44		67.80 SP-13
SS-14	SANITARY MANHOLE	76.31		68.31 SP-14

SANITARY PIPE TABLE				
NAME	LENGTH	SIZE	SLOPE	MATERIAL
SP-01	230'	8"	0.69%	PVC
SP-02	222'	8"	0.45%	PVC
SP-03	120'	8"	0.46%	PVC
SP-04	40'	8"	0.50%	PVC
SP-05	195'	8"	0.44%	PVC
SP-06	61'	8"	0.49%	PVC
SP-13	75'	8"	0.47%	PVC
SP-14	69'	8"	3.07%	PVC

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DAVID L. EVANS
FLORIDA P.E. NO. 46586

DATE:

POINTE GRAND APARTMENTS

DELAND, FLORIDA

UTILITY PLAN

REVISIONS

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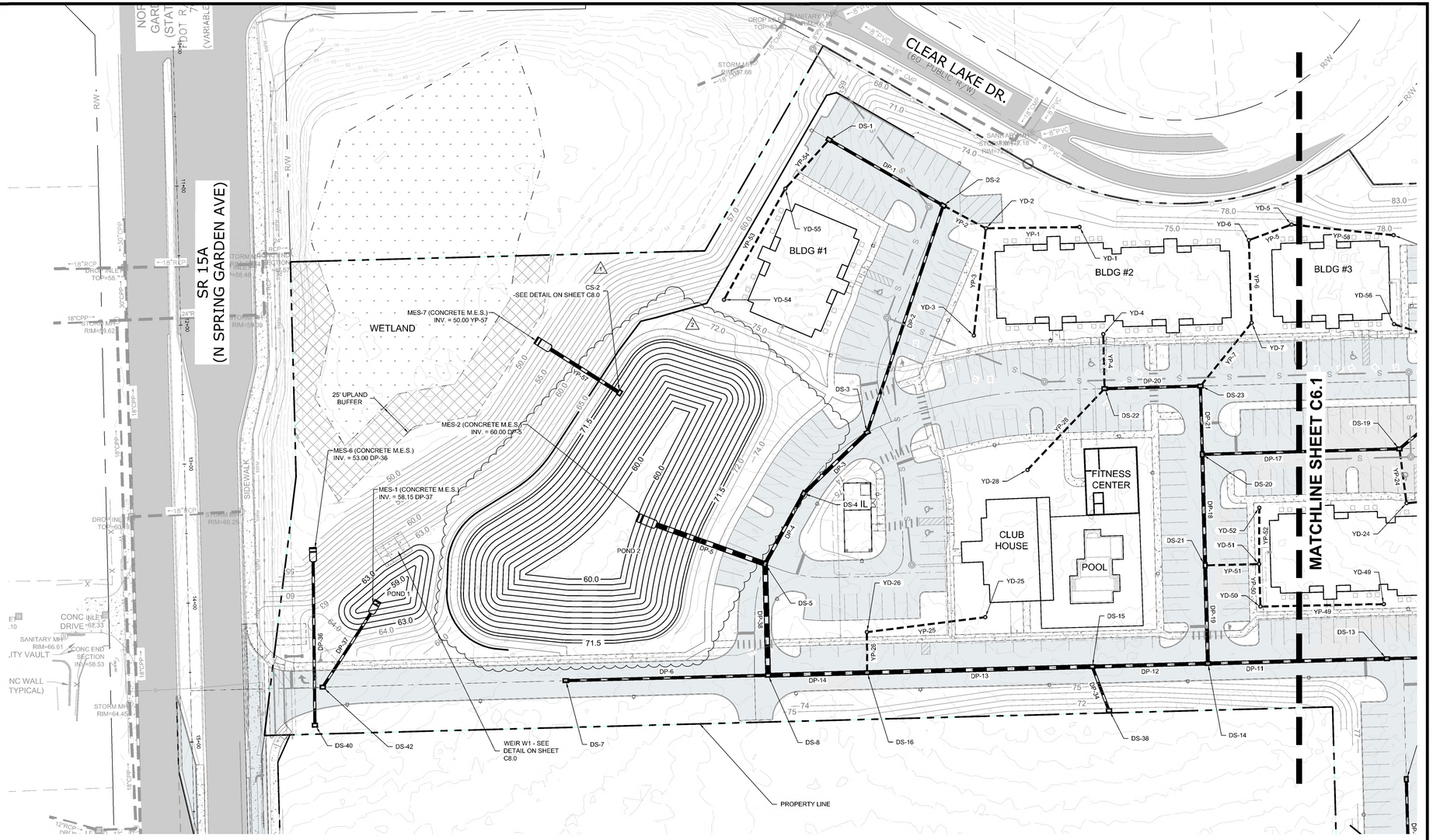
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DE	37501

GRAPHIC SCALE
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YARD DRAIN TABLE				
NAME	SIZE	RIM	INV. IN:	INV. OUT
YD-1	12"	75.00		71.00 YP-1
YD-2	12"	74.50	69.00 YP-1 69.00 YP-3	69.00 YP-2
YD-3	12"	75.25		71.00 YP-3
YD-4	12"	76.00		71.00 YP-4
YD-5	12"	77.50	73.50 YP-58	73.50 YP-5
YD-6	12"	76.00	72.75 YP-5	72.75 YP-6
YD-7	12"	76.00	71.00 YP-6	71.00 YP-7
YD-25	12"	75.25		72.00 YP-25
YD-26	12"	74.25	70.25 YP-25	70.25 YP-26
YD-28	12"	75.00		71.00 YP-28
YD-50	12"	76.50	72.25 YP-49	72.25 YP-50
YD-51	12"	76.25	71.50 YP-50 71.50 YP-52	71.50 YP-51
YD-52	12"	76.50		72.50 YP-52
YD-54	12"	74.00		70.00 YP-53
YD-55	12"	73.60	69.50 YP-53	69.50 YP-54

YARD DRAIN PIPE TABLE				
NAME	LENGTH	SIZE	SLOPE	MATERIAL
YP-1	67'	12"	2.97%	HDPE
YP-2	35'	12"	4.57%	HDPE
YP-3	78'	12"	2.58%	HDPE
YP-4	39'	12"	1.91%	HDPE
YP-5	33'	12"	2.30%	HDPE
YP-6	60'	12"	2.94%	HDPE
YP-7	58'	12"	1.71%	HDPE
YP-25	86'	12"	2.04%	HDPE
YP-26	29'	12"	4.29%	HDPE
YP-28	81'	12"	0.93%	HDPE
YP-49	89'	12"	0.84%	HDPE
YP-50	31'	12"	2.45%	HDPE
YP-51	39'	12"	4.28%	HDPE
YP-52	41'	12"	2.47%	HDPE
YP-53	91'	12"	0.55%	HDPE
YP-54	47'	12"	4.02%	HDPE

STORM STRUCTURE TABLE				
NAME	TYPE	RIM	INV. IN:	INV. OUT
DS-1	FDOT TYPE C INLET	72.45	67.60 YP-54	67.60 DP-1
DS-2	FDOT TYPE C INLET	73.30	67.41 DP-1 67.41 YP-2	67.41 DP-2
DS-3	FDOT TYPE C INLET	73.53	67.07 DP-2	67.07 DP-3
DS-4	FDOT TYPE C INLET	72.85	66.94 DP-3	66.94 DP-4
DS-5	FDOT TYPE C INLET	72.00	64.95 DP-4 64.95 DP-38	63.00 DP-5
DS-7	FDOT TYPE C INLET	70.25		65.40 DP-6
DS-8	FDOT TYPE C INLET	73.52	65.11 DP-6 65.11 DP-14	65.11 DP-38
DS-14	FDOT TYPE C INLET	75.50	69.42 DP-11 69.42 DP-19	69.42 DP-12
DS-15	FDOT TYPE C INLET	74.00	68.00 DP-12 65.59 DP-34	65.59 DP-13
DS-20	FDOT TYPE C INLET	75.35	70.00 DP-17 70.00 DP-21	70.00 DP-18
DS-21	FDOT TYPE C INLET	75.47	69.84 DP-18 69.84 YP-51	69.84 DP-19
DS-22	FDOT TYPE C INLET	75.10	70.25 YP-4 70.25 YP-28	70.25 DP-20
DS-23	FDOT TYPE C INLET	75.25	70.11 DP-20 70.00 YP-7	70.11 DP-21
DS-38	FDOT TYPE C INLET	70.75		65.65 DP-34
DS-40	FDOT TYPE C INLET	63.75		58.75 DP-36
DS-42	FDOT TYPE C INLET	64.22		59.37 DP-37

STORM PIPE TABLE				
NAME	LENGTH	SIZE	SLOPE	MATERIAL
DP-1	95'	18"	0.20%	HDPE
DP-2	172'	18"	0.20%	HDPE
DP-3	64'	24"	0.20%	HDPE
DP-4	58'	24"	3.45%	HDPE
DP-5	86'	36"	3.49%	HDPE
DP-6	146'	18"	0.20%	HDPE
DP-11	129'	24"	0.19%	HDPE
DP-12	83'	24"	1.71%	HDPE
DP-13	162'	30"	0.20%	HDPE
DP-14	71'	30"	0.22%	HDPE
DP-17	142'	18"	0.70%	HDPE
DP-18	80'	24"	0.20%	HDPE
DP-19	71'	24"	0.59%	HDPE
DP-20	69'	18"	0.20%	HDPE
DP-21	49'	18"	0.22%	HDPE
DP-34	34'	18"	0.18%	HDPE
DP-36	120'	18"	4.80%	HDPE
DP-37	66'	18"	1.86%	HDPE
DP-38	80'	36"	0.20%	HDPE

NOTES:

1. ELEVATIONS SHOWN ARE BASED ON NAVD88 DATUM.
2. ALL UTILITY MAINS SHALL BE INSTALLED TO MEET THE MINIMUM SEPARATION REQUIREMENTS PER FDEP.
3. ALL DISTURBED AREAS WITHIN FDOT ROW SHALL BE RESTORED TO PRE-DEVELOPMENT CONDITIONS OR BETTER.
4. CONTRACTOR SHALL FIELD LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION. NOTIFY ENGINEER IF EXISTING CONDITIONS DIFFER FROM PLANS.
5. ALL MITERED END SECTIONS SHALL HAVE RIP RAP PER DETAIL "MES" ON SHEET C13.0

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CERTIFICATE OF AUTHORIZATION NO. 6788

DAVID L. EVANS
FLORIDA P.E. NO. 46586

DATE:

POINTE GRAND APARTMENTS

DELAND, FLORIDA

DRAINAGE PLAN

REVISIONS			
NO.	DATE	DETAIL	
1	06/16/23	REVISED PER COMMENTS	
2	07/31/23	REVISED PER COMMENTS/QC	

DRAWN BY:	DATE:
FE	03/06/23
CHECKED BY:	JOB #:
DE	37501

GRAPHIC SCALE
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STORM STRUCTURE TABLE				
NAME	TYPE	RIM	INV. IN:	INV. OUT
DS-10	FDOT TYPE C INLET	75.20	70.35 YP-10	70.35 DP-8
DS-11	FDOT TYPE C INLET	75.40	70.11 DP-8 70.11 YP-46 70.11 YP-56	70.11 DP-9
DS-12	FDOT TYPE C INLET	75.82	69.88 DP-9 69.88 YP-48	69.88 DP-10
DS-13	FDOT TYPE C INLET	75.75	69.67 DP-10	69.67 DP-11
DS-17	FDOT TYPE C INLET	76.75	71.90 YP-55	71.90 DP-15
DS-18	FDOT TYPE C INLET	76.41	71.56 DP-15 71.56 YP-13	71.56 DP-16
DS-19	FDOT TYPE C INLET	75.85	71.00 DP-16 71.00 YP-24	71.00 DP-17
DS-25	FDOT TYPE C INLET	75.20	69.00 YP-16	69.00 DP-23
DS-26	FDOT TYPE C INLET	75.00	68.60 DP-23	68.60 DP-24
DS-27	FDOT TYPE C INLET	76.00	68.25 DP-24	68.25 DP-25
DS-28	FDOT TYPE C INLET	75.00	68.00 DP-25 -4.34 YP-21	68.00 DP-26
DS-30	FDOT TYPE C INLET	73.00	-4.60 YP-29	68.15 DP-27
DS-31	FDOT TYPE C INLET	73.70	67.95 DP-27	67.95 DP-28
DS-32	FDOT TYPE C INLET	73.80	66.00 DP-28 69.00 YP-31	66.00 DP-29
DS-33	FDOT TYPE C INLET	73.85	65.50 DP-29 66.50 DP-33	63.00 DP-30
DS-35	FDOT TYPE C INLET	72.88	70.08 YP-40	70.25 DP-31
DS-36	FDOT TYPE C INLET	76.50	70.08 DP-31 70.08 DP-39	67.80 DP-32
DS-37	FDOT TYPE C INLET	75.35	67.00 DP-32 67.00 YP-36 -5.43 YP-42	67.00 DP-33
DS-41	FDOT TYPE C INLET	75.88		70.88 DP-39

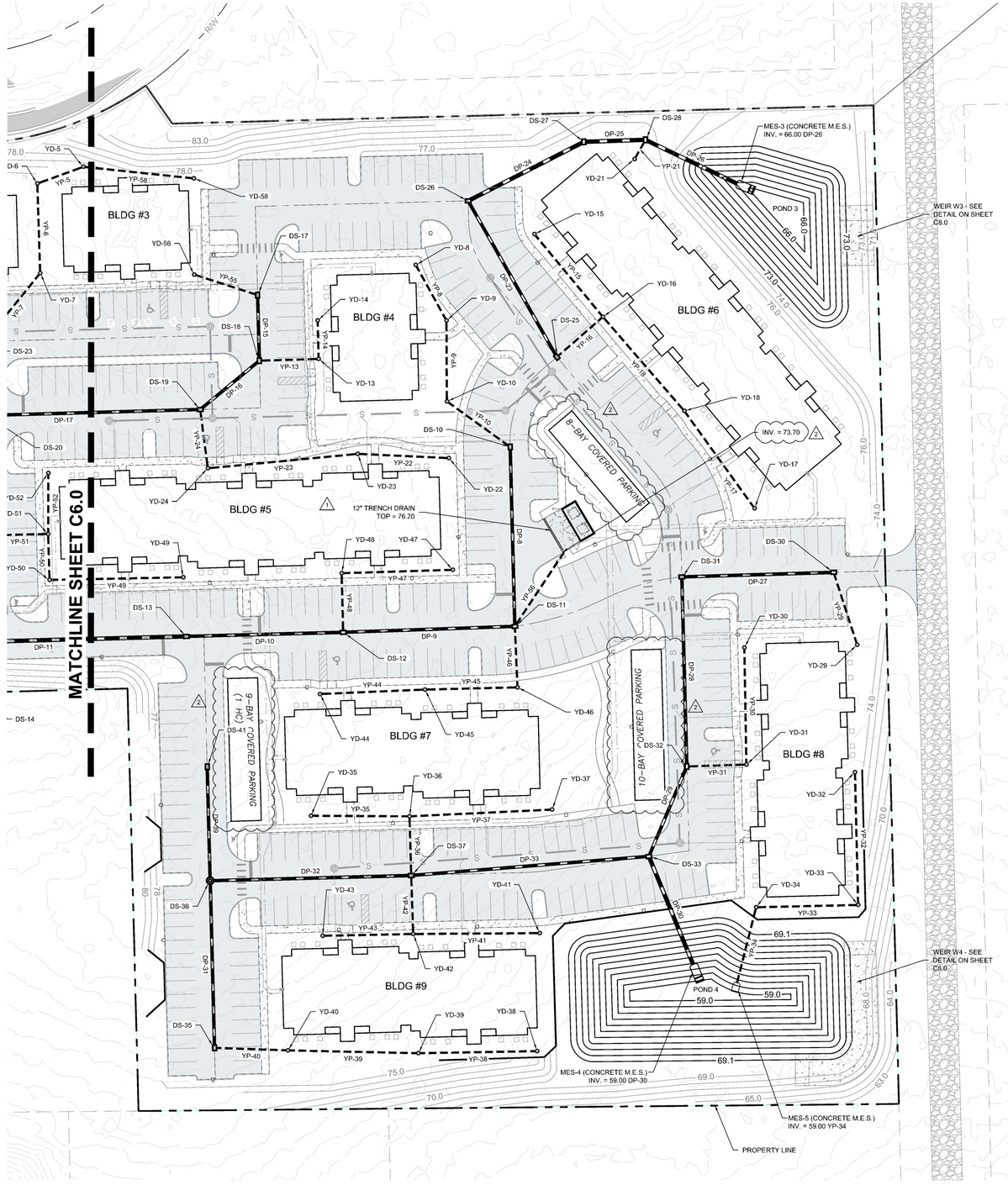
STORM PIPE TABLE				
NAME	LENGTH	SIZE	SLOPE	MATERIAL
DP-8	119'	18"	0.20%	HDPE
DP-9	114'	18"	0.20%	HDPE
DP-10	104'	18"	0.20%	HDPE
DP-15	44'	18"	0.78%	HDPE
DP-16	51'	18"	1.10%	HDPE
DP-23	119'	18"	0.34%	HDPE
DP-24	86'	24"	0.41%	HDPE
DP-25	41'	24"	0.61%	HDPE
DP-26	70'	24"	2.87%	HDPE
DP-27	101'	18"	0.20%	HDPE
DP-28	126'	18"	1.55%	HDPE
DP-29	65'	18"	0.77%	HDPE
DP-30	80'	24"	4.99%	Round Concrete Pipe
DP-31	111'	18"	0.15%	HDPE
DP-32	134'	18"	0.60%	HDPE
DP-33	158'	18"	0.32%	HDPE
DP-39	76'	18"	1.05%	HDPE

YARD DRAIN TABLE				
NAME	SIZE	RIM	INV. IN:	INV. OUT
YD-8	12"	76.25		72.50 YP-8
YD-9	12"	76.25	72.00 YP-8	72.00 YP-9
YD-10	12"	76.00	71.50 YP-9	71.50 YP-10
YD-13	12"	77.10	72.10 YP-14	72.10 YP-13
YD-14	12"	77.10		73.40 YP-14
YD-15	12"	76.00		72.00 YP-15
YD-16	12"	76.00	69.45 YP-15 69.45 YP-18	69.45 YP-16
YD-17	12"	74.90		70.50 YP-17
YD-18	12"	76.10	70.00 YP-17	70.00 YP-18
YD-21	12"	75.50		-4.17 YP-21
YD-22	12"	76.00		72.70 YP-22
YD-23	12"	76.50	72.25 YP-22	72.25 YP-23
YD-24	12"	76.50	71.50 YP-23	71.50 YP-24
YD-29	12"	73.75		-4.17 YP-29
YD-30	12"	74.65		70.65 YP-30
YD-31	12"	74.50	69.50 YP-30	69.50 YP-31
YD-32	12"	74.00		70.50 YP-32
YD-33	12"	74.00	69.60 YP-32	69.60 YP-33
YD-34	12"	74.00	66.50 YP-33	66.50 YP-34
YD-35	12"	76.50		72.00 YP-35

YARD DRAIN TABLE				
NAME	SIZE	RIM	INV. IN:	INV. OUT
YD-36	12"	76.25	70.25 YP-35 70.25 YP-37	70.25 YP-36
YD-37	12"	75.50		72.00 YP-37
YD-38	12"	75.25		71.75 YP-38
YD-39	12"	75.25	71.25 YP-38	71.25 YP-39
YD-40	12"	75.25	70.75 YP-39	70.75 YP-40
YD-41	12"	75.75		71.75 YP-41
YD-42	12"	76.10	71.10 YP-41 71.10 YP-43	-5.02 YP-42
YD-43	12"	76.25		71.50 YP-43
YD-44	12"	76.50		72.50 YP-44
YD-45	12"	76.50	72.00 YP-44	72.00 YP-45
YD-46	12"	76.25	71.50 YP-45	71.50 YP-46
YD-47	12"	76.50		72.75 YP-47
YD-48	12"	76.50	71.75 YP-47	71.75 YP-48
YD-49	12"	76.50		73.00 YP-49
YD-56	12"	0.00		72.50 YP-55

YARD DRAIN PIPE TABLE				
NAME	LENGTH	SIZE	SLOPE	MATERIAL
YP-8	42'	12"	1.19%	HDPE
YP-9	54'	12"	0.93%	HDPE
YP-10	52'	12"	2.22%	HDPE
YP-13	39'	12"	1.37%	HDPE
YP-14	26'	12"	5.07%	HDPE
YP-15	71'	12"	3.57%	HDPE
YP-16	41'	12"	1.11%	HDPE
YP-17	80'	12"	0.63%	HDPE
YP-18	83'	12"	0.67%	HDPE
YP-21	15'	12"	1.16%	HDPE
YP-22	61'	12"	0.74%	HDPE
YP-23	100'	12"	0.75%	HDPE
YP-24	39'	12"	1.27%	HDPE
YP-29	51'	12"	0.85%	HDPE
YP-30	78'	12"	1.48%	HDPE
YP-31	40'	12"	1.26%	HDPE
YP-32	88'	12"	1.02%	HDPE
YP-33	68'	12"	4.57%	HDPE
YP-34	54'	12"	13.89%	HDPE
YP-35	66'	12"	2.67%	HDPE

YARD DRAIN PIPE TABLE				
NAME	LENGTH	SIZE	SLOPE	MATERIAL
YP-36	39'	12"	8.25%	HDPE
YP-37	95'	12"	1.84%	HDPE
YP-38	79'	12"	0.63%	HDPE
YP-39	87'	12"	0.58%	HDPE
YP-40	49'	12"	1.37%	HDPE
YP-41	84'	12"	0.77%	HDPE
YP-42	39'	12"	1.05%	HDPE
YP-43	60'	12"	0.66%	HDPE
YP-44	70'	12"	0.72%	HDPE
YP-45	62'	12"	0.81%	HDPE
YP-46	41'	12"	3.42%	HDPE
YP-47	74'	12"	1.35%	HDPE
YP-48	39'	12"	4.75%	HDPE
YP-54	47'	12"	4.02%	HDPE
YP-55	44'	12"	1.36%	HDPE
YP-56	59'	12"	4.40%	HDPE
YP-58	74'	12"	1.35%	HDPE



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FLORIDA P.E. NO. 46586

DATE:

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DELAND, FLORIDA

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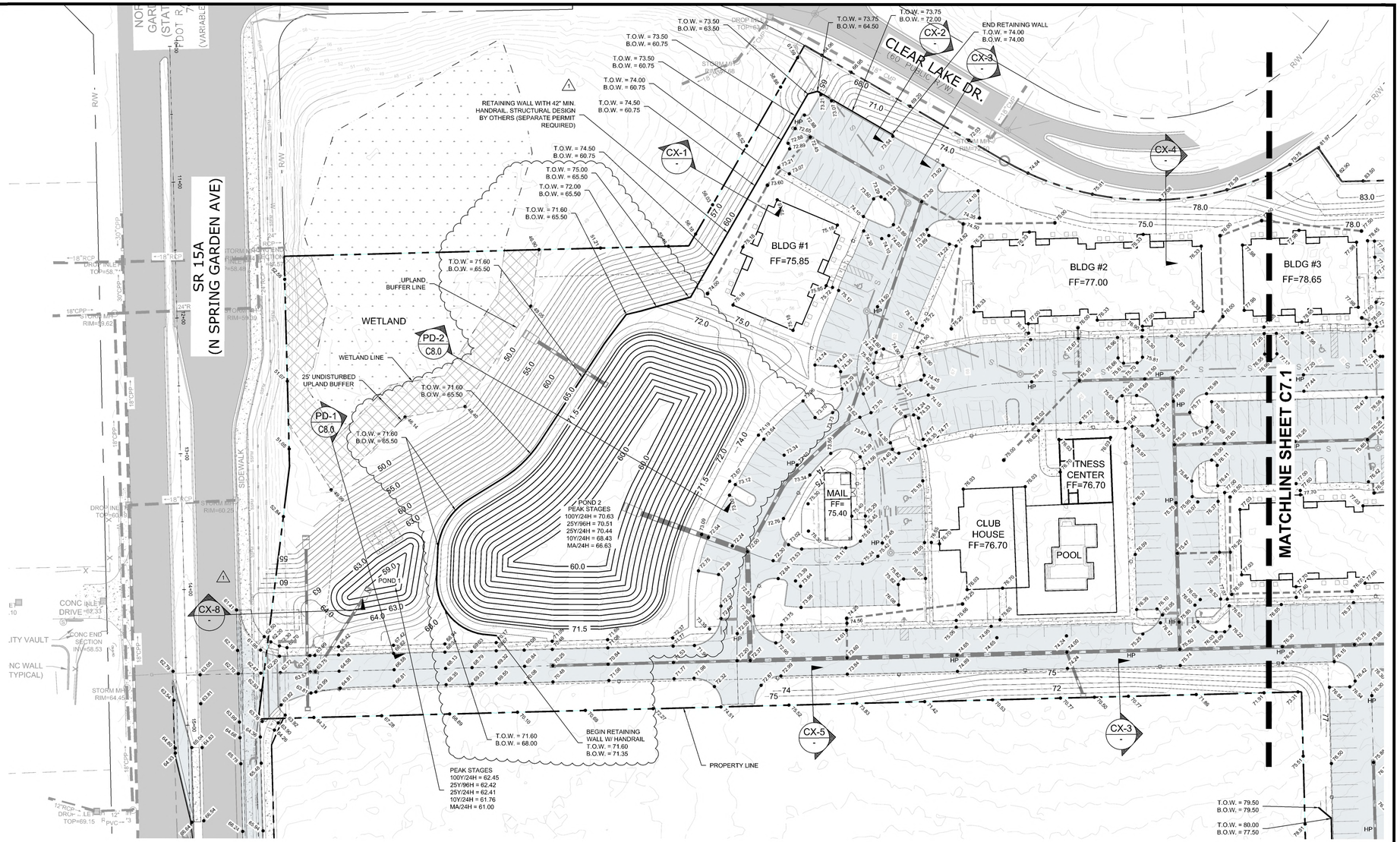
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DE	37501

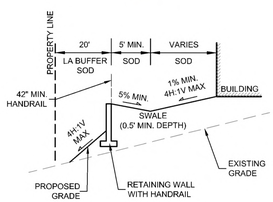
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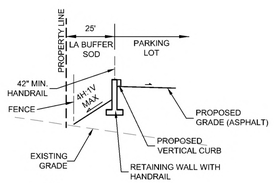
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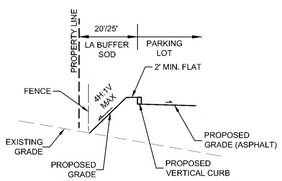




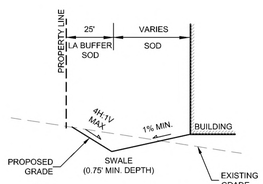
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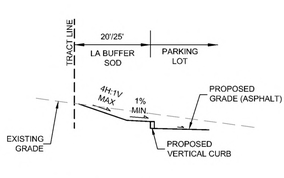
CX-2 — CROSS SECTION — N.T.S.



CX-3 — CROSS SECTION — N.T.S.



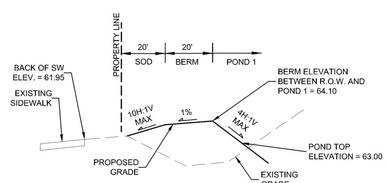
CX-4 — CROSS SECTION — N.T.S.



CX-5 — CROSS SECTION — N.T.S.

ROADWAY SUBGRADE OVER-EXCAVATION NOTE

BASED ON THE RESULTS OF THE GEOTECHNICAL INVESTIGATION PERFORMED ON THIS SITE, IT IS EXPECTED THAT SOME LEVEL OF OVER-EXCAVATION MAY BE REQUIRED IN ROADWAY SUBGRADES. PRIOR TO ANY OVER-EXCAVATION, THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE SHOULD OBSERVE ALL SUBGRADE CONDITIONS AS WELL AS UNDERLYING SOILS TO DETERMINE THE BEST REMEDIATION ACTION, IF NECESSARY.



⚠1 CX-8 — CROSS SECTION — N.T.S.

NOTES:

1. ELEVATIONS SHOWN ARE BASED ON NAVD88 DATUM.
2. ⚠1 PROPOSED CROSSWALKS CROSS SLOPE SHALL NOT EXCEED 2% PER ADA REQUIREMENTS.

EVANS ENGINEERING, INC.
CIVIL ENGINEERING LAND PLANNING PERMITTING SERVICES
719 IRMA AVENUE
ORLANDO, FLORIDA 32803
(407) 872-1515
www.evansenginc.com
CERTIFICATE OF AUTHORIZATION NO. 00006788

EVANS ENGINEERING, INC.
CERTIFICATE OF AUTHORIZATION NO. 6788

DAVID L. EVANS
FLORIDA P.E. NO. 46586

DATE:

POINTE GRAND APARTMENTS

DELAND, FLORIDA

GRADING PLAN

REVISIONS			
NO.	DATE	DETAIL	
1	06/16/23	REVISED PER COMMENTS	
2	07/31/23	REVISED PER COMMENTS/QC	

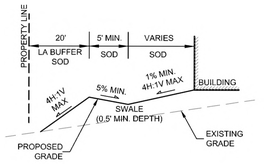
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FE	03/06/23
CHECKED BY:	JOB #:
DE	37501

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FEET
1 Inch = 40 Ft.

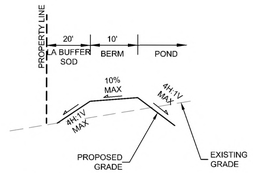
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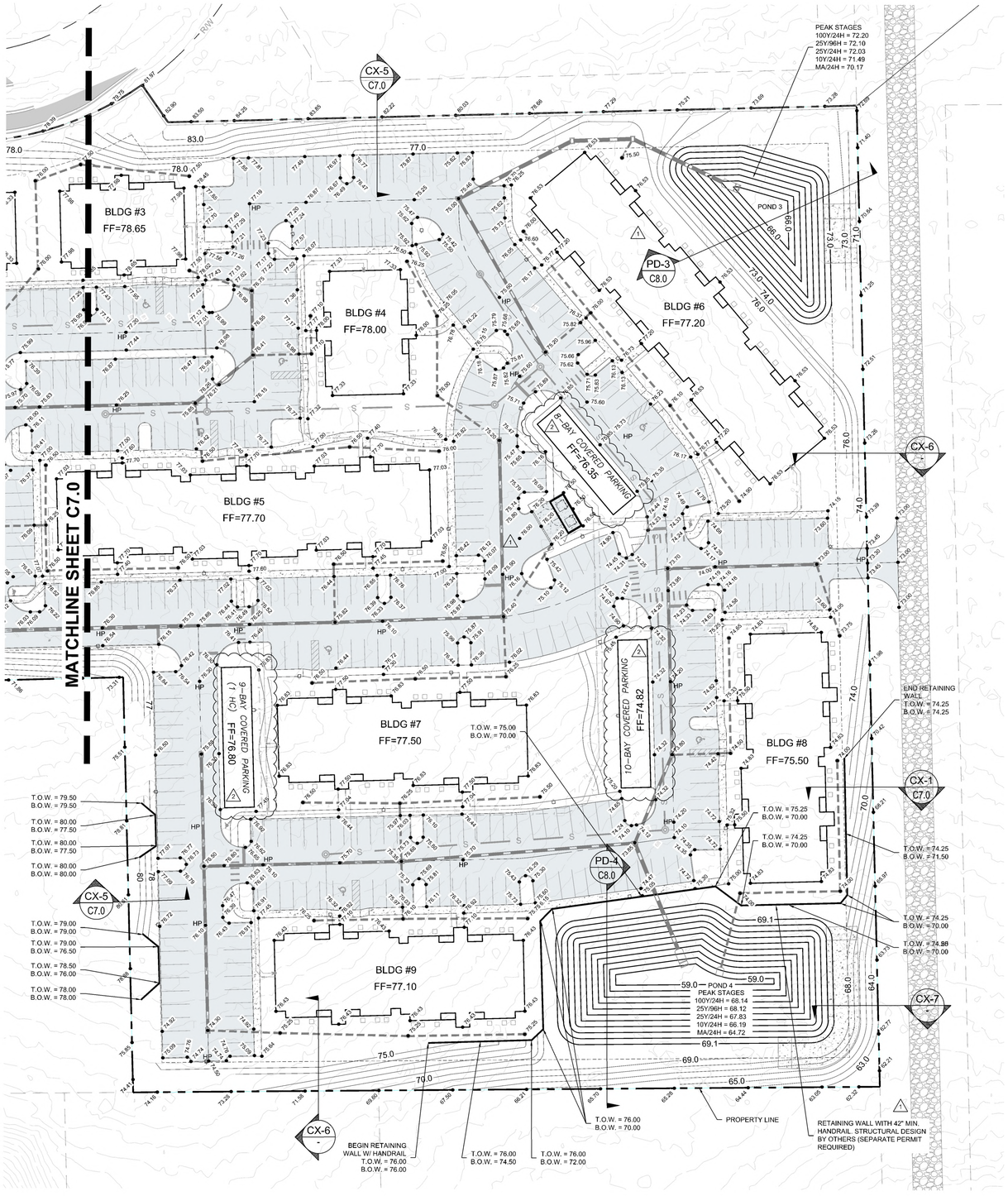
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CX-6 — CROSS SECTION
N.T.S.



CX-7 — CROSS SECTION
N.T.S.



ROADWAY SUBGRADE OVER-EXCAVATION NOTE ⚠1

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CERTIFICATE OF AUTHORIZATION NO. 6788

DAVID L. EVANS
FLORIDA P.E. NO. 46586

DATE:

POINTE GRAND APARTMENTS

DELAND, FLORIDA

GRADING PLAN

REVISIONS			
DATE	NO.	DETAIL	
06/16/23	⚠1	REVISED PER COMMENTS	
07/31/23	⚠2	REVISED PER COMMENTS/QC	

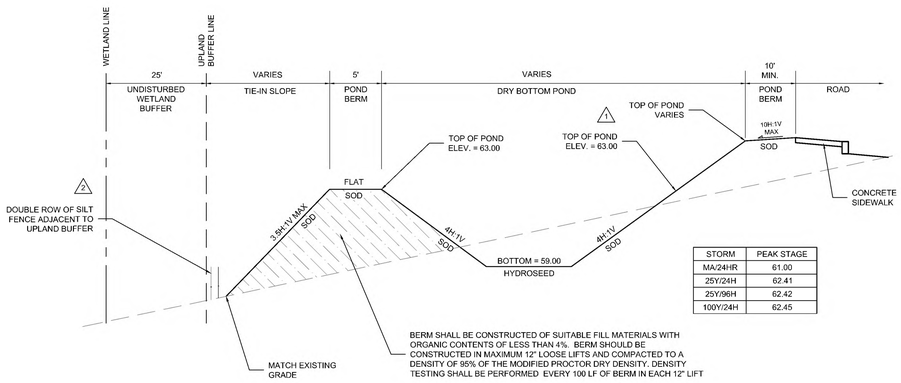
DRAWN BY:	DATE:
FE	03/06/23
CHECKED BY:	JOB #:
DE	37501

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FEET
1 Inch = 40 Ft.

SHEET #:
C7.1

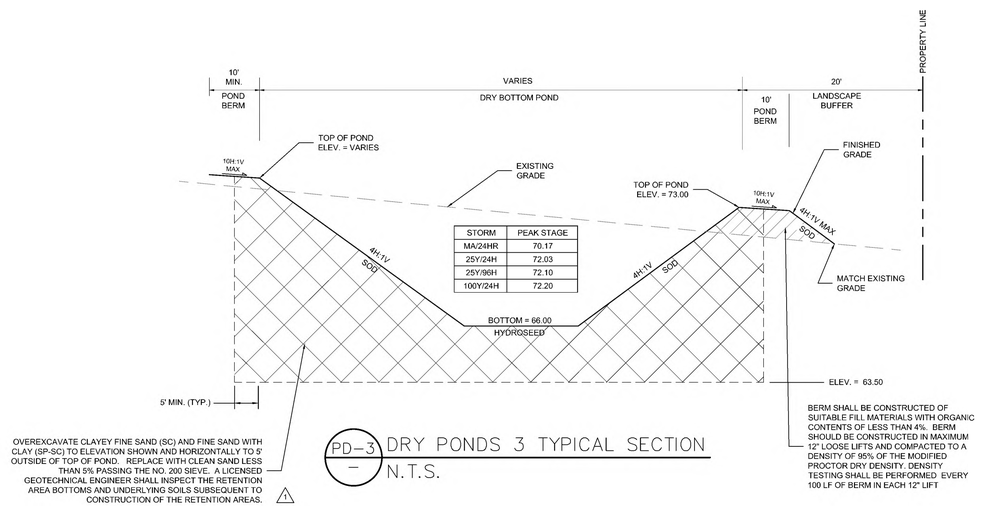
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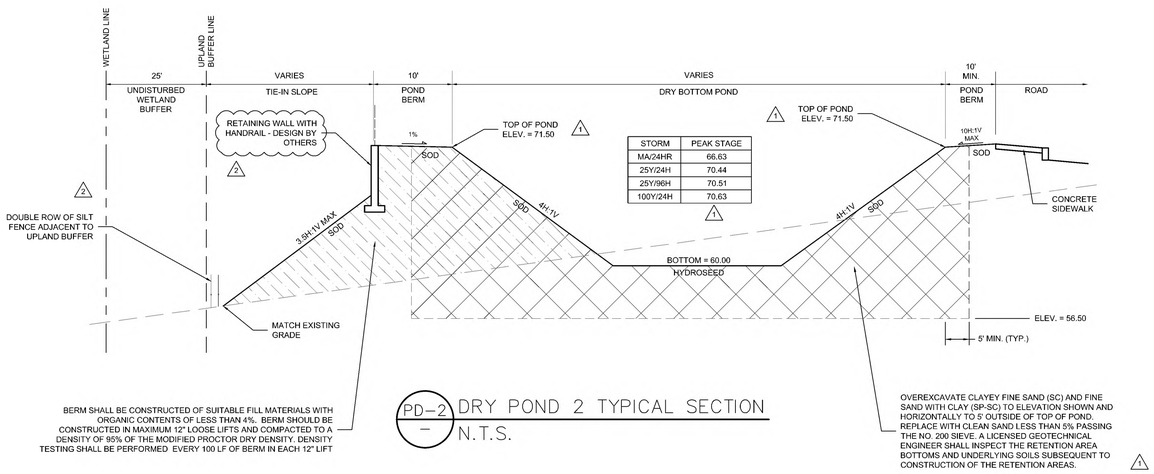
STORM	PEAK STAGE
MA/24HR	61.00
25Y/24H	62.41
25Y/96H	62.42
100Y/24H	62.45

PD-1 — DRY POND 1 TYPICAL SECTION
N.T.S.



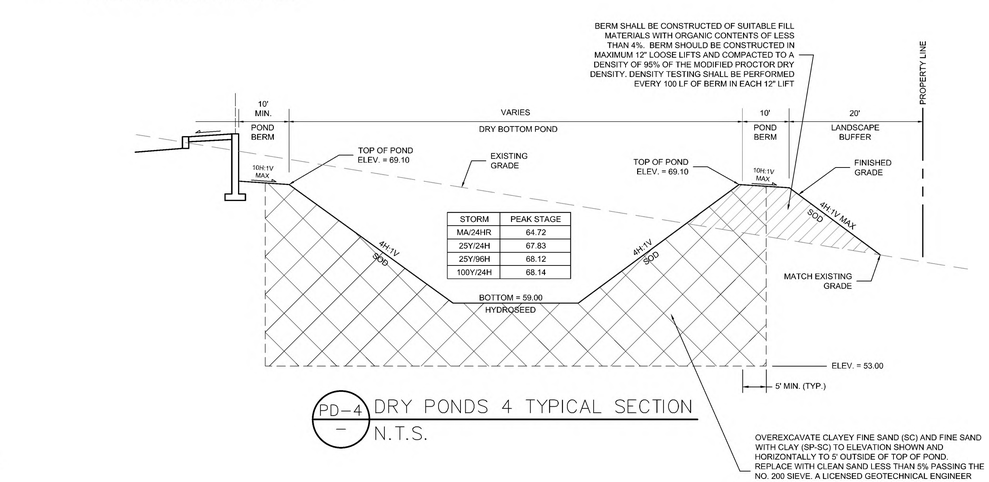
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MA/24HR	70.17
25Y/24H	72.03
25Y/96H	72.10
100Y/24H	72.20

PD-3 — DRY PONDS 3 TYPICAL SECTION
N.T.S.



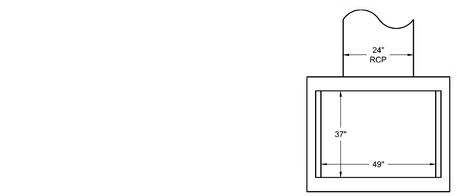
STORM	PEAK STAGE
MA/24HR	66.63
25Y/24H	70.44
25Y/96H	70.51
100Y/24H	70.63

PD-2 — DRY POND 2 TYPICAL SECTION
N.T.S.

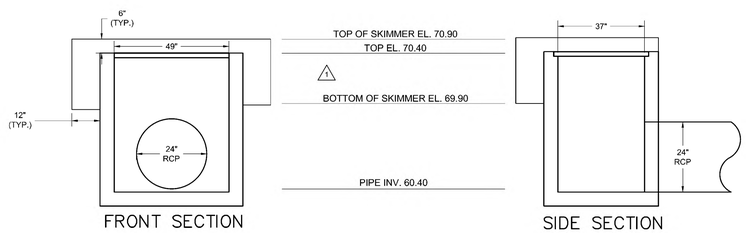


STORM	PEAK STAGE
MA/24HR	64.72
25Y/24H	67.83
25Y/96H	68.12
100Y/24H	68.14

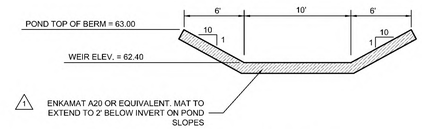
PD-4 — DRY PONDS 4 TYPICAL SECTION
N.T.S.



PLAN

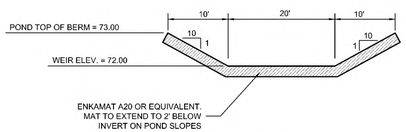


CS2 — FDOT MODIFIED TYPE "D" INLET (POND 2)
N.T.S.



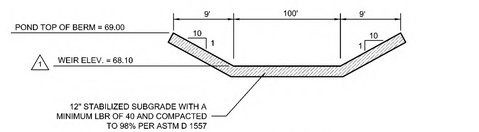
SECTION VIEW

W1 — DRY POND 1 OVERFLOW WEIR
N.T.S.



SECTION VIEW

W3 — DRY POND 3 OVERFLOW WEIR
N.T.S.



SECTION VIEW

W4 — DRY POND 4 OVERFLOW WEIR
N.T.S.

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CERTIFICATE OF AUTHORIZATION NO. 00006788

EVANS ENGINEERING, INC.
CERTIFICATE OF AUTHORIZATION NO. 6788

DAVID L. EVANS
FLORIDA P.E. NO. 46586

DATE:

POINTE GRAND APARTMENTS

DELAND, FLORIDA

POND DETAILS

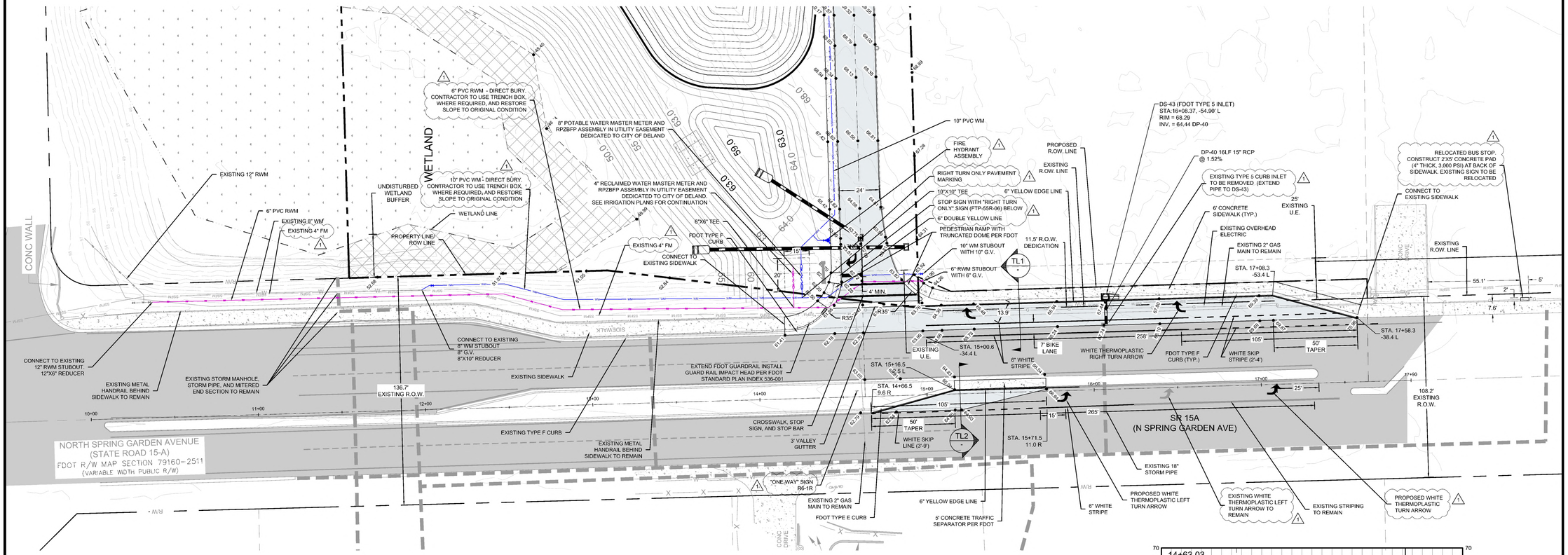
REVISIONS			
NO.	DATE	DETAIL	
1	06/16/23	REVISED PER COMMENTS	
2	07/31/23	REVISED PER COMMENTS/QC	

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FE	03/06/23
CHECKED BY:	JOB #:
DE	37501

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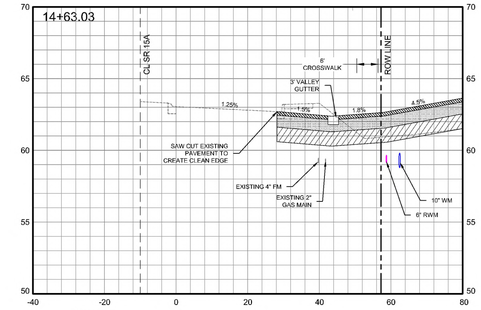
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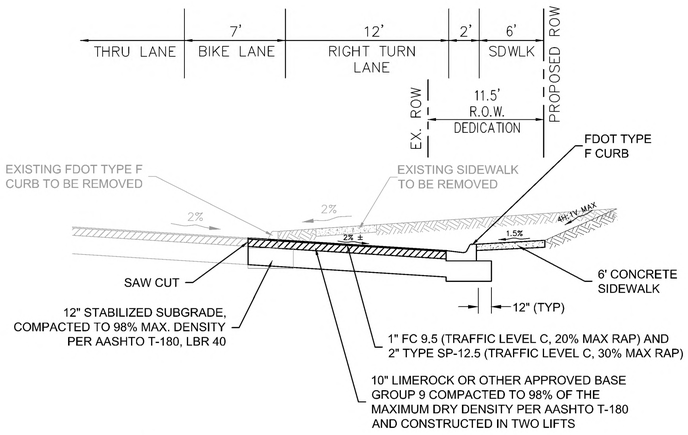


SR 15A

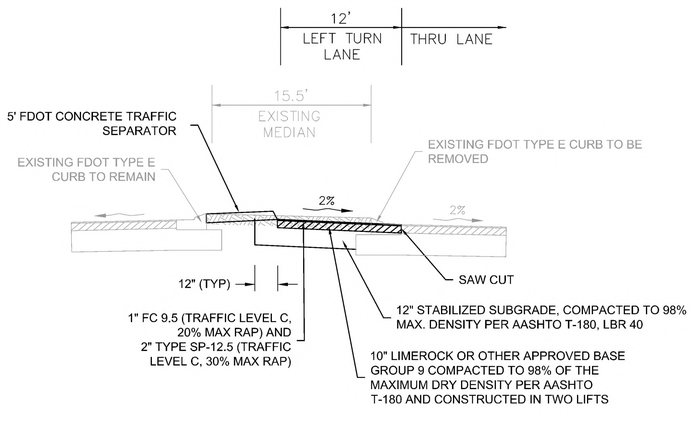
SPEED LIMIT = 50 MPH
DESIGN SPEED = 55 MPH ⚠1



DW1 — DRIVEWAY ENTRY CROSS SECTION
H: 1"=20' V: 1"=5'



TL1 — TYPICAL RIGHT TURN LANE SECTION
N.T.S.



TL2 — TYPICAL LEFT TURN LANE SECTION
N.T.S.

FDEP SEPARATION REQUIREMENTS UNDER 62-555.314 EFFECTIVE 8-28-2003				
HAZARD	HORIZONTAL SEPARATION	VERTICAL SEPARATION		JOINT SPACING
		WATER ABOVE	WATER BELOW	
STORM SEWER	3FT MIN	12IN PREF, 6IN MIN	12IN MIN	3FT MIN
STORM FORCE MAIN	3FT MIN	12IN MIN	12IN MIN	3FT MIN
RECLAIMED WATER IF REGULATED UNDER 62-610	3FT MIN	12IN MIN	12IN MIN	3FT MIN
RECLAIMED WATER IF NOT REGULATED UNDER 62-610	10FT PREF, 6FT MIN	12IN MIN	12IN MIN	6FT MIN
VACUUM SANITARY SEWER	10FT PREF, 3FT MIN	12IN PREF, 6IN MIN	12IN MIN	3FT MIN
GRAVITY SANITARY SEWER	10FT PREF, 6FT MIN, 3FT MIN IF WATER MAIN IS 6IN ABOVE GRAVITY SANITARY SEWER	12IN PREF, 6IN MIN	12IN MIN	6FT MIN
SANITARY SEWER FORCE MAIN	10FT PREF, 6FT MIN	12IN MIN	12IN MIN	6FT MIN
SEWAGE TREATMENT & DISPOSAL SYSTEM	10FT MIN	NONE	NONE	NONE

NOTES:

1. ALL PRESSURE MAINS ARE TO BE LOCATED 3' BELOW GRADE UNLESS OTHERWISE NOTED.
2. ELEVATIONS SHOWN ARE BASED ON NAVD88 DATUM.
3. ALL UTILITY MAINS SHALL BE INSTALLED TO MEET THE MINIMUM SEPARATION REQUIREMENTS PER FDEP.
4. ALL DISTURBED AREAS WITHIN FDOT ROW SHALL BE RESTORED TO PRE-DEVELOPMENT CONDITIONS OR BETTER AND SODDED.
5. CONTRACTOR SHALL FIELD LOCATE EXISTING UTILITIES PRIOR TO CONSTRUCTION. NOTIFY ENGINEER IF EXISTING CONDITIONS DIFFER FROM PLANS.
6. ALL EXISTING OVERHEAD AND UNDERGROUND UTILITIES SHALL BE COORDINATED WITH THE APPROPRIATE PROVIDER AND RELOCATED AS NECESSARY.
7. ⚠1 ALL CONSTRUCTION WITHIN FDOT RIGHT OF WAY SHALL CONFORM TO THE LATEST ADDITION OF THE FDOT STANDARD PLANS, THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AND THE FDOT UTILITY ACCOMMODATION MANUAL.
8. ALL STRIPING AND PAVEMENT MARKERS WITHIN POLK COUNTY AND FDOT RIGHT OF WAY SHALL BE PER FDOT STANDARD PLAN INDEX 706- AND 711-. STRIPING SHALL BE LEAD-FREE THERMOPLASTIC.
9. ALL MAINTENANCE OF TRAFFIC SHALL ADHERE TO THE REQUIREMENTS OF THE FDOT STANDARD PLAN 102- INDEXES.
10. PRIOR TO THE COMMENCEMENT OF WORK IN THE FDOT R.O.W., CONTRACTOR SHALL PROVIDE PROOF OF COVERAGE UNDER AN INSURANCE LIABILITY POLICY IN ACCORDANCE WITH F.A.C. 14-96.007(5).

EVANS ENGINEERING, INC.
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CERTIFICATE OF AUTHORIZATION NO. 00006788

EVANS ENGINEERING, INC.
CERTIFICATE OF AUTHORIZATION NO. 6788

DAVID L. EVANS
FLORIDA P.E. NO. 46586

DATE:

POINTE GRAND APARTMENTS

DELAND, FLORIDA

OFFSITE IMPROVEMENTS PLAN

REVISIONS			
DATE	NO.	DETAIL	
06/16/23	⚠1	REVISED PER COMMENTS	

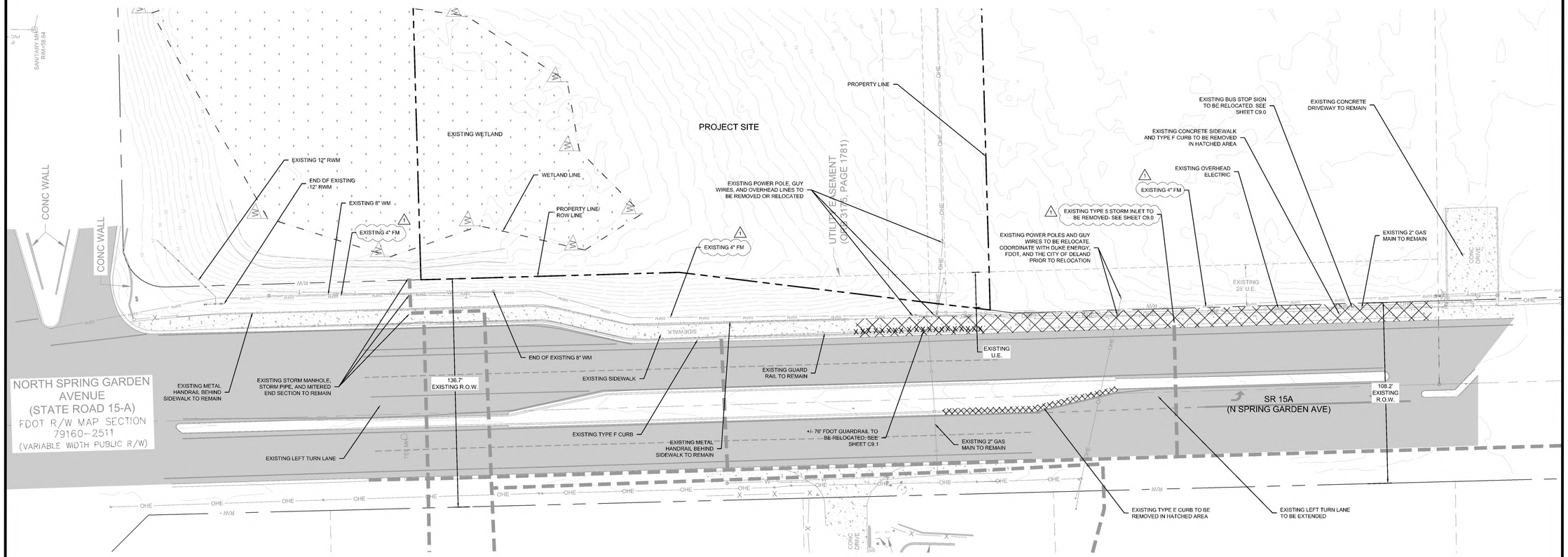
DRAWN BY:	DATE:
FE	03/06/23
CHECKED BY:	JOB #:
DE	37501

GRAPHIC SCALE
30' 0 15' 30' 60'
FEET
1 Inch = 30 Ft.

SHEET #:
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NOTES:

1. ALL PRESSURE MAINS ARE TO BE LOCATED 3' BELOW GRADE UNLESS OTHERWISE NOTED.
2. ELEVATIONS SHOWN ARE BASED ON NAVD88 DATUM.
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EVANS ENGINEERING, INC.

CERTIFICATE OF AUTHORIZATION NO. 6788

DAVID L. EVANS
FLORIDA P.E. NO. 46586

DATE:

POINTE GRAND APARTMENTS

DELAND, FLORIDA

OFFSITE EXISTING CONDITIONS/DEMO PLAN

REVISIONS

NO.	DETAIL	DATE
⚠1	REVISED PER COMMENTS	06/16/23

DRAWN BY: FE	DATE: 03/06/23
CHECKED BY: DE	JOB #: 37501

GRAPHIC SCALE

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FEET

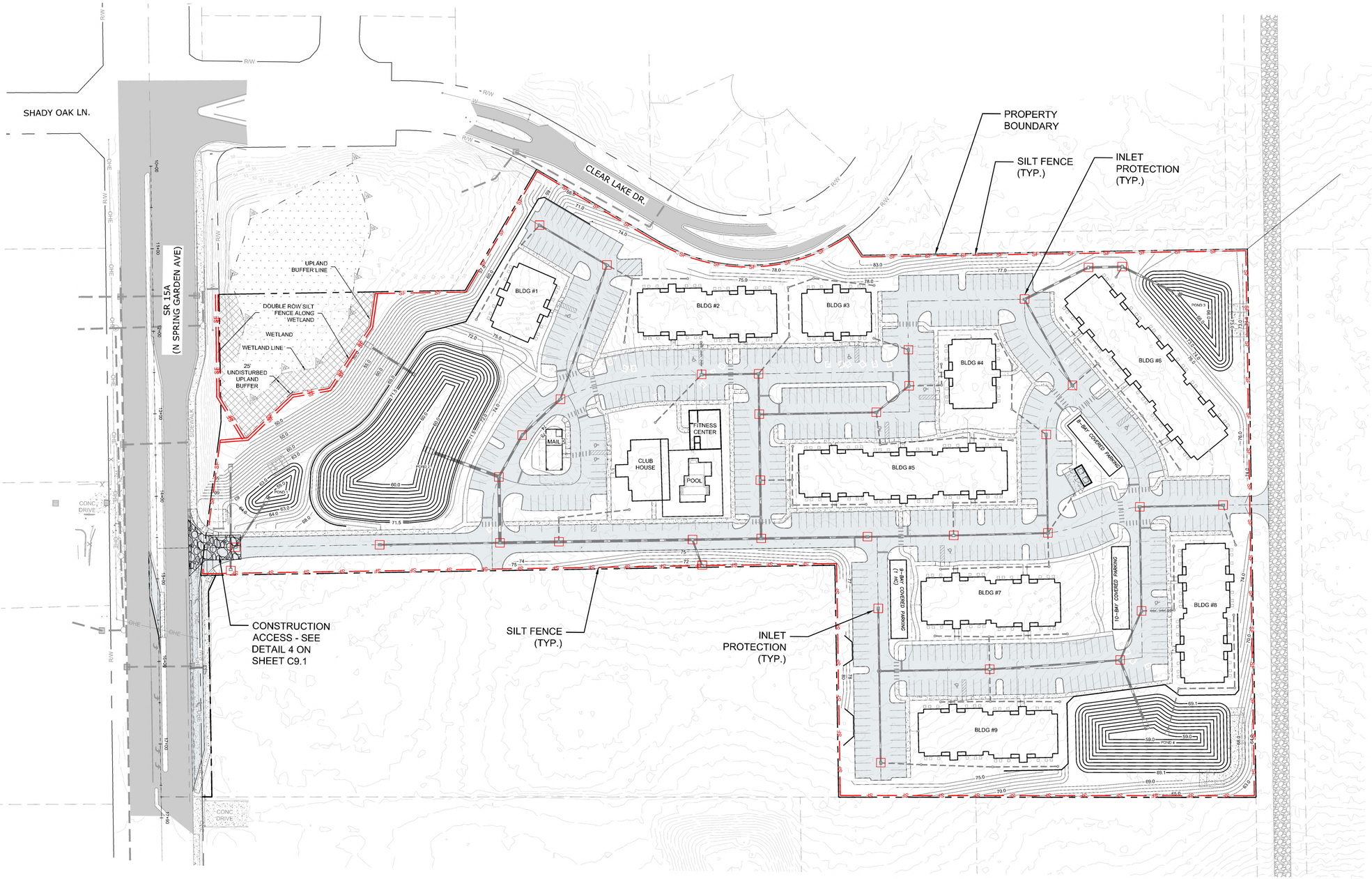
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C9.1

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C:\37501 - Hollander Deland\37501 03 - OFFSITE EXISTING CONDITIONS PLAN.dwg (01) Plotted on: Jul 31, 2023 - 3:31pm by tbake



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DAVID L. EVANS
FLORIDA P.E. NO. 46586

DATE:

POINTE GRAND APARTMENTS

DELAND, FLORIDA

SWPPP PLAN

REVISIONS			
DATE	NO.		DETAIL
06/16/23	1		REVISED PER COMMENTS

DRAWN BY:	DATE:
FE	03/06/23
CHECKED BY:	JOB #:
DE	37501

GRAPHIC SCALE
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FEET
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GENERAL

THE CONTRACTORS SHALL IMPLEMENT THE REQUIREMENTS OUTLINED BELOW AND THOSE MEASURES SHOWN ON THE CIVIL DRAWINGS. IT IS THE RESPONSIBILITY OF THE CONTRACTORS TO UNDERTAKE ADDITIONAL MEASURES AS REQUIRED TO BE IN COMPLIANCE WITH APPLICABLE PERMIT CONDITIONS AND STATE WATER QUALITY STANDARDS.

CONSTRUCTION SEQUENCE:

1. FLAG ALL WORK LIMITS.
2. NOTIFY SEDIMENT CONTROL INSPECTOR 24 HOURS PRIOR TO START OF CONSTRUCTION.
3. IDENTIFY ALL EXISTING VEGETATION TO BE SAVED.
4. INSTALL CONSTRUCTION ENTRANCE TO PREVENT TRACKING AND SILTING OF MUD INTO PUBLIC ROADWAYS.
5. INSTALL STORM DRAINAGE INLET PROTECTION ON EXISTING INLETS.
6. INSTALL PERIMETER RUNOFF CONTROLS; NOTIFY SEDIMENT INSPECTOR AND OBTAIN APPROVAL BEFORE PROCEEDING FURTHER.
7. PERFORM CLEARING AND GRADING REQUIRED.
8. COMPLETE ALL NECESSARY STOCKPILING, SITE CLEARING/REMOVALS, AND GRADING.
9. COMPLETE PARKING BASE, BUILDING FOUNDATION, AND REMOVE, RELOCATE, INSTALL SITE UTILITIES.
10. INSTALL STORM DRAINAGE INLET PROTECTION ON NEW INLETS.
11. WEATHER IN BUILDING.
12. COMPLETE PARKING LOT CONSTRUCTION.
13. COMPLETE FINAL GRADING, STABILIZATION, AND LANDSCAPING.
14. NOTIFY SEDIMENT CONTROL INSPECTOR AND OBTAIN APPROVAL TO REMOVE SEDIMENT AND EROSION CONTROL.

CONTROLS

THIS PLAN UTILIZES BEST MANAGEMENT PRACTICES TO CONTROL EROSION AND TURBIDITY CAUSED BY STORM WATER RUN OFF. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IMPLEMENT THE EROSION AND TURBIDITY CONTROL MEASURES AND TO ENSURE THAT 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 CONTROLS 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.

EROSION AND SEDIMENT CONTROLS STABILIZATION PRACTICES

1. FILTER FABRIC BARRIERS: FILTER FABRIC BARRIERS CAN BE USED BELOW DISTURBED AREAS SUBJECT TO SHEET EROSION WITH THE FOLLOWING LIMITATIONS:
   A. WHERE THE MAXIMUM SLOPE BEHIND THE BARRIER IS 3:1.
   B. IN MINOR SWALES WHERE THE MAXIMUM CONTRIBUTION DRAINAGE AREA IS LESS THAN 2 ACRES.
2. STOCKPILING MATERIAL: NO EXCAVATED MATERIAL SHALL BE STOCKPILED IN SUCH A MANNER AS TO DIRECT RUN-OFF DIRECTLY OFF THE PROJECT SITE INTO ANY ADJACENT WATER BODY OR STORM WATER SYSTEM.
3. INLET PROTECTION: INLETS AND CATCH BASINS WHICH DISCHARGE DIRECTLY OFF-SITE SHALL BE PROTECTED FROM SEDIMENT-LADEN STORM RUN-OFF UNTIL THE COMPLETION OF ALL CONSTRUCTION ACTIVITIES THAT MAY CONTRIBUTE SEDIMENT TO THE INLET.
4. UNLESS SPECIFIED, SILT FENCES MAY BE USED IN LIEU OF SYNTHETIC BARRIERS.
5. TEMPORARY SEEDING: AREAS OPENED BY CONSTRUCTION OPERATIONS AND THAT ARE NOT ANTICIPATED TO BE REWORKED AND RECEIVE FINAL GRASSING TREATMENT WITHIN 30 DAYS SHALL BE SEEDED WITH A QUICK GROWING GRASS SPECIES WHICH WILL NOT LATER COMPETE WITH THE PERMANENT GRASSING.
6. TEMPORARY SEEDING AND MULCHING: SLOPES STEEPER THAN 6:1 SHALL ADDITIONALLY RECEIVE MULCHING OF APPROXIMATELY 2 INCHES OF MULCH MATERIAL CUT INTO THE SOIL OF THE SEEDED AREA ADEQUATE TO PREVENT MOVEMENT OF SEED AND MULCH.
7. TEMPORARY GRASSING: THE SEEDED OR SEEDED AND MULCHED AREA(S) SHALL BE ROLLED AND WATERED TO ASSURE OPTIMUM GROWING CONDITIONS.
8. TEMPORARY RE-GRASSING: IF, AFTER 14 DAYS FROM SEEDING, THE TEMPORARY GRASSED AREAS HAVE NOT OBTAINED A MINIMUM OF 75 PERCENT GOOD GRASS GRASS COVER, THE AREA WILL BE REWORKED AND ADDITIONAL SEEDS APPLIED SUFFICIENT TO ESTABLISH THE DESIRED VEGETATIVE COVER.
9. 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.
10. PERMANENT EROSION CONTROL: THE EROSION CONTROL FACILITIES OF THE PROJECT SHOULD BE DESIGNED TO MINIMIZE THE IMPACT ON THE OFF-SITE FACILITIES.
11. PERMANENT SEEDING: ALL AREAS WHICH HAVE BEEN DISTURBED BY CONSTRUCTION WILL, AS A MINIMUM, BE SEEDED. SLOPES STEEPER THAN 4:1 SHALL BE SEEDED AND MULCHED OR SODDED.
12. AIR POLLUTION: THE BURNING OF BRUSH OR SLASH SHALL ADHERE TO STATE AND LOCAL REGULATIONS. FIRE PREVENTION MEASURES SHALL BE TAKEN TO PREVENT THE START OR SPREADING OF WILDFIRES THAT MAY RESULT FROM PROJECT ACTIVITIES. ALL DUST CONTROL METHODS SHALL ENSURE SAFE CONSTRUCTION OPERATIONS AT ALL TIMES.

STRUCTURAL CONTROLS

1. TEMPORARY DIVERSION DIKE: TEMPORARY DIVERSION DIKES MAY BE USED TO DIVERT RUNOFF THROUGH A SEDIMENT TRAPPING FACILITY.
2. TEMPORARY SEDIMENT TRAP: A SEDIMENT TRAP IS USUALLY INSTALLED IN A DRAINAGE WAY AT A STORM DRAIN INLET OR AT OTHER POINTS OF DISCHARGE FROM A DISTURBED AREA.
3. 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 AREA PER ACRE OF DISTURBED AREA. ANY TEMPORARY SEDIMENT BASINS CONSTRUCTED MUST BE BACK-FILLED 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 MATERIALS - DISPOSAL

ALL WASTE MATERIALS EXCEPT LAND CLEARANCE DEBRIS SHALL BE COLLECTED AND STORED IN A SECURE LIDDED METAL DUMPSTER. 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.

HAZARDOUS WASTE - DISPOSAL

ALL HAZARDOUS WASTE MATERIALS WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATIONS OR BY THE MANUFACTURER. SITE PERSONNEL WILL BE INSTRUCTED IN THESE PRACTICES AND THE SITE SUPERINTENDENT WILL BE RESPONSIBLE FOR SEEING THAT THESE PROCEDURES ARE FOLLOWED.

SANITARY WASTE - DISPOSAL

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

OFF-SITE 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 TRACKED MUD, DIRT, OR ROCK TRACKED FROM THE SITE. DUMP TRUCKS HAULING MATERIAL FROM THE CONSTRUCTION SITE WILL BE COVERED WITH A TARPAULIN.

EQUIPMENT PLACEMENT

THE CONTRACTOR WILL USE BEST MANAGEMENT PRACTICES TO DETERMINE THE LOCATIONS OF EQUIPMENT TO BE LEFT ON-SITE.

SPILL PREVENTION

THE FOLLOWING PRACTICES WILL BE FOLLOWED BY THE CONTRACTOR TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF SUBSTANCES TO STORM WATER RUN-OFF.

THE FOLLOWING PRACTICES WILL BE FOLLOWED ON-SITE DURING THE CONSTRUCTION PROJECT.

1. AN EFFORT WILL BE MADE TO STORE ONLY ENOUGH PRODUCT REQUIRED TO DO THE JOB.
2. ALL MATERIALS STORED ON-SITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR ORIGINAL CONTAINERS.
3. SUBSTANCES WILL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
4. MANUFACTURER'S RECOMMENDATION FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED.
5. THE SITE SUPERINTENDENT WILL INSPECT DAILY TO ENSURE MATERIALS ON-SITE RECEIVE PROPER USE AND DISPOSAL.
6. ORIGINAL LABELS AND MATERIAL SAFETY DATA WILL BE RETAINED.
7. IF SURPLUS PRODUCT MUST BE DISPOSED OF. MANUFACTURER OR LOCAL AND STATE RECOMMENDED METHODS FOR PROPER DISPOSAL WILL BE FOLLOWED.

IN ADDITION TO THE SPILL PREVENTION PRACTICES LISTED THE FOLLOWING WILL BE FOLLOWED FOR SPILL CONTROL:

1. MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEAN-UP WILL BE CLEARLY POSTED ON-SITE AND SITE PERSONNEL WILL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE CLEAN-UP SUPPLIES.
2. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEAN-UP WILL BE KEPT IN THE MATERIAL STORAGE AREA ON-SITE. EQUIPMENT AND MATERIALS WILL INCLUDE BUT NOT BE LIMITED TO: BROOMS, DUST PANS, MOPS, RAGS, CLOVES, GOGGLES, LIQUID ABSORBENT, SAND, SAWDUST, AND PLASTIC AND METAL TRASH CONTAINERS SPECIFICALLY FOR THIS PURPOSE.
3. ALL SPILLS WILL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY.
4. THE SPILL AREA WILL BE KEPT WELL VENTILATED AND PERSONNEL WILL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
5. SPILL OF TOXIC OR HAZARDOUS MATERIAL WILL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE OF THE SPILL.
6. THE SITE SUPERINTENDENT WILL BE THE SPILL PREVENTION AND CLEAN-UP COORDINATOR. AT LEAST ONE OTHER SITE PERSONNEL WILL RECEIVE SPILL PREVENTION AND CLEAN-UP TRAINING. THESE INDIVIDUALS WILL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE AND PREVENTION OF CLEAN-UP. THE NAMES OF THE RESPONSIBLE SPILL PERSONNEL WILL BE POSTED IN THE MATERIAL STORAGE AREA IN THE OFFICE TRAILER ON-SITE.

PRODUCT SPECIFIC PRACTICES

THE FOLLOWING PRODUCT SPECIFIC PRACTICES WILL BE FOLLOWED ON-SITE:

1. PETROLEUM PRODUCTS

   ALL ON-SITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED. ANY SUBSTANCES USED ON-SITE WILL BE APPLIED ACCORDING TO THE MANUFACTURE'S RECOMMENDATIONS.
2. FERTILIZERS

   FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER. FERTILIZERS 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.
3. 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 STATE AND LOCAL REGULATIONS.
4. CONCRETE TRUCKS

   CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING AREA FOR CONCRETE TRUCK WASH OUT. CONCRETE TRUCKS THAT WASH OUT ON-SITE MUST WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER INTO A DESIGNATED SEDIMENT BASIN ON SITE PRIOR TO DISCHARGE INTO STORM WATER MANAGEMENT AREAS. CONTRACTOR WILL BE RESPONSIBLE FOR MEETING STATE AND LOCAL REQUIREMENTS.

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:

1. ALL CONTROL MEASURES WILL BE INSPECTED BY THE SUPERINTENDENT AT LEAST ONCE A WEEK AND FOLLOWING ANY STORM EVENT OF 0.5 INCH OR GREATER.
2. 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.
3. BUILT UP SEDIMENT WILL BE REMOVED FROM SILT FENCE WHEN IT HAD REACHED ONE-THIRD THE HEIGHT OF THE FENCE.
4. SILT FENCE WILL BE INSPECTED FOR DEPTH OF SEDIMENT AND 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.
5. THE SEDIMENT BASINS WILL BE INSPECTED FOR THE DEPTH OF SEDIMENT, AND BUILT UP SEDIMENT WILL BE REMOVED.
6. DIKES AND SWALES WILL BE INSPECTED AND ANY BREACHES PROMPTLY REPAIRED.
7. TEMPORARY AND PERMANENT SEEDING AND PLANTING WILL BE INSPECTED FOR BARE SPOTS.
8. A MAINTENANCE INSPECTION REPORT WILL BE MADE AFTER EACH INSPECTION. A COPY OF THE REPORT FORM SHALL BE COMPLETED BY THE INSPECTOR. 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 EROSION 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.
9. THE SITE SUPERINTENDENT WILL BE RESPONSIBLE FOR MANAGING THE INSPECTIONS, MAINTENANCE AND REPAIR ACTIVITIES, AND FILLING OUT THE INSPECTION AND MAINTENANCE REPORT.

NON-STORM WATER

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

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

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

STORM WATER POLLUTION PREVENTION PLAN
INSPECTION AND MAINTENANCE REPORT FORM
STRUCTURAL CONTROLS

INSPECTOR:_____ 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 CLOGGING/WASHOUT OR BYPASSING?	ARE TURBIDITY CONTROLS IN NEED OF REPLACING?	DOES SILT NEED TO BE REMOVED FROM AROUND CONTROLS?

MAINTENANCE REQUIRED FOR CATCH BASIN / CURB INLET / OUTFALL TURBIDITY CONTROLS:

TO BE PERFORMED BY:_____ ON OR BEFORE:_____

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 EMBARMUENTY (YES/NO)	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 THROUGH ON TO THE ROAD?	IS THE GRAVEL CLEAN OR BURIED WITH SEDIMENT?	DOES ALL TRAFFIC USE THE STABILIZED ENTRACE TO LEAVE THIS SITE?	IS THE CULVERT BENEATH THE ENTRANCE WORKING? (IF APPLICABLE)

MAINTENANCE REQUIRED FOR STABILIZED CONSTRUCTION ENTRANCE:

TO BE PERFORMED BY:_____ ON OR BEFORE:_____

STORM WATER POLLUTION PREVENTION PLAN
INSPECTION AND MAINTENANCE REPORT FORM
TO BE COMPLETED EVERY 7 DAYS AND WITHIN 24 HOURS OF A RAIN/ ALL EVENT OF 0.5 INCHES OR GREATER

INSPECTOR:_____ DATE:_____

INSPECTOR'S QUALIFICATIONS:

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

STABILIZATION MEASURES

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

STABILIZATION REQUIRED:

TO BE PERFORMED BY:_____ ON OR BEFORE:_____

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 DESIGN 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.

NAME (OPERATOR AND/OR RESPONSIBLE AUTHORITY) DATE

CONTRACTOR CERTIFICATION

"I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND AND SHALL COMPLY WITH THE, TERMS AND CONDITIONS OF THE STATE OF FLORIDA GENERIC PERMIT FOR STORM WATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES AND THIS STORM WATER POLLUTION PREVENTION PLAN THEREUNDER."

NAME AND TITLE	COMPANY NAME, ADDRESS AND PHONE NUMBER	DATE
GENERAL CONTRACTOR		
SUBCONTRACTOR		
SUBCONTRACTOR		
SUBCONTRACTOR		

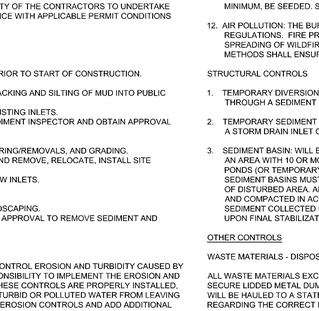
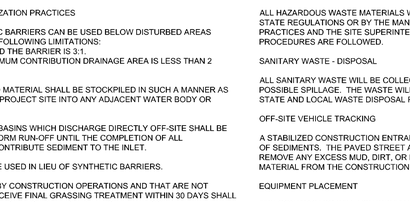


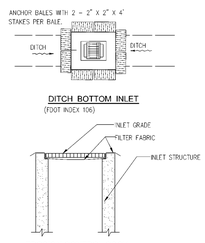
CHART I
RECOMMENDED SPACING FOR TYPE III SILT FENCES



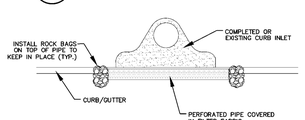
SILT FENCE APPLICATIONS

NOTE:
1. DO NOT DEPLOY IN A MANNER THAT SILT FENCES WILL ACT AS A DAM ACROSS PERMANENT FLOWING WATERCOURSES. SILT FENCES ARE TO BE USED AT UPLAND LOCATIONS AND TURBIDITY BARRIERS USED AT PERMANENT BODIES OF WATER.
2. SPACING FOR TYPE III FENCE TO BE IN ACCORDANCE WITH CHART I ABOVE AND DITCH INSTALLATIONS AT DRAINAGE STRUCTURES.
3. SILT FENCE TO BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR STAKED SILT FENCE (LF).

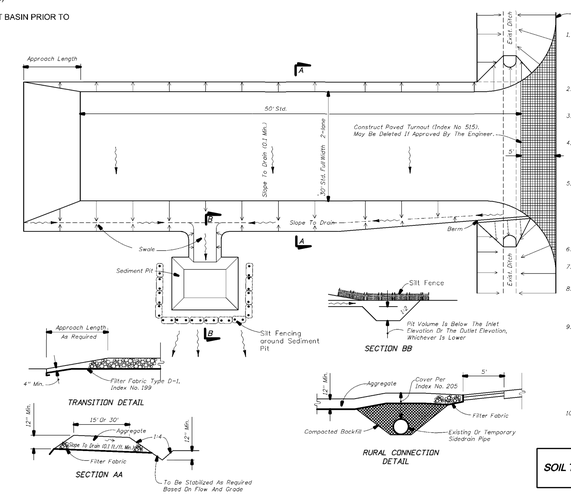
1 TYPE III SILT FENCE
NOT TO SCALE



2 INLET PROTECTION
NOT TO SCALE



3 POLLUTION PREVENTION BARRIER FOR STORM CURB INLETS
NOT TO SCALE



GENERAL NOTES

1. A Soil Tracking Prevention Device (STPD) shall be constructed at locations designated by the engineer for points of egress from unstabilized areas of the project to public roads where ofr-site tracking of mud could occur. Traffic from unstabilized areas of the construction project shall be directed thru a STPD. Barriers, flagging, or other positive means shall be used as required to limit and direct vehicular egress across the STPD.
2. The Contractor may propose an alternative technique to minimize off-site tracking of sediment. The alternative must be reviewed and approved by the Engineer prior to its use.
3. All materials spilled, dropped, or tracked onto public roads (including the STPD aggregate and construction mud) shall be removed daily, or more frequently if so directed by the Engineer.
4. Aggregates shall be as described in Section 901 excluding 901-2.3. Aggregates shall be FDOT size #1. If this size is not available, the next available smaller size aggregate may be substituted with the approval of the Engineer. Sizes containing excessive small aggregate will track off the project and are unsuitable.
5. The sediment pit should provide a retention volume of 3600 cubic feet/acre of surface area draining to the pit. When the STPD is located in urban drainage areas, the following pit volumes may satisfy this requirement:
   As an option to the sediment pit, the width of the swale bottom can be increased to obtain the volume. When the sediment pit or swale volume has been reduced to one half, it shall be cleaned. When a swale is used, synthetic bales or silt fence shall be placed along the entire length.
6. The swale ditch draining the STPD shall have a 0.02ft/ minimum and a 1.0ft/ maximum grade along the STPD and to the sediment pit.
7. Mitered end sections are not required when the sidedrain pipe satisfies the clear zone requirements.
8. The STPD shall be maintained in a condition that will allow it to perform its function. To prevent off-site tracking, the STPD shall be rinsed (daily when in use) to move accumulated mud downward thru the stone. Additional stabilization of the vehicular route leading to the STPD may be required to limit the mud tracked.
9. A STPD shall be paid for under the contract unit price for Soil Tracking Prevention Device, EA. The unit price shall constitute full compensation for construction, maintenance, replacement of materials, removal, and restoration of the area utilized for the STPD including but not limited to excavation, grading, temporary pipe (including MES when required), filter fabric, aggregate, paved turnout (including asphalt and base construction), ditch stabilization, approach route stabilization, sediment removal and disposal, water, rinsing and cleaning of the STPD and cleaning of public roads, grassing and sod. Synthetic Bale or Bale Type Barrier shall be paid for under the contract unit price for Synthetic Bales, LF.. Silt fence shall be paid for under the contract unit price for Staked Silt Fence, LF..
10. The nominal size of a standard STPD is 15' x 50' unless otherwise shown in the plans. If the volume of entering and existing vehicles warrant, a 30' width STPD may be used if approved by the Engineer. When a double width (30') STPD is used, the pay quantity shall be 2 for each location.

SOIL TRACKING PREVENTION DEVICE TYPE A	Last Revision 07/01/07	Sheet No. 1 of 1
	Index No. 106	

4 ROCK CONSTRUCTION ENTRANCE
NOT TO SCALE

EVANS ENGINEERING, INC.
CIVIL ENGINEERING LAND PLANNING PERMITTING SERVICES
719 IRMA AVENUE
ORLANDO, FLORIDA 32803
(407) 872-1515
www.evansenginc.com
CERTIFICATE OF AUTHORIZATION NO. 00006788

EVANS ENGINEERING, INC.

CERTIFICATE OF AUTHORIZATION NO. 6788

DAVID L. EVANS
FLORIDA P.E. NO. 46586

DATE:_____

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POINTE GRAND APARTMENTS

DELAND, FLORIDA

SWPPP NOTES AND DETAILS

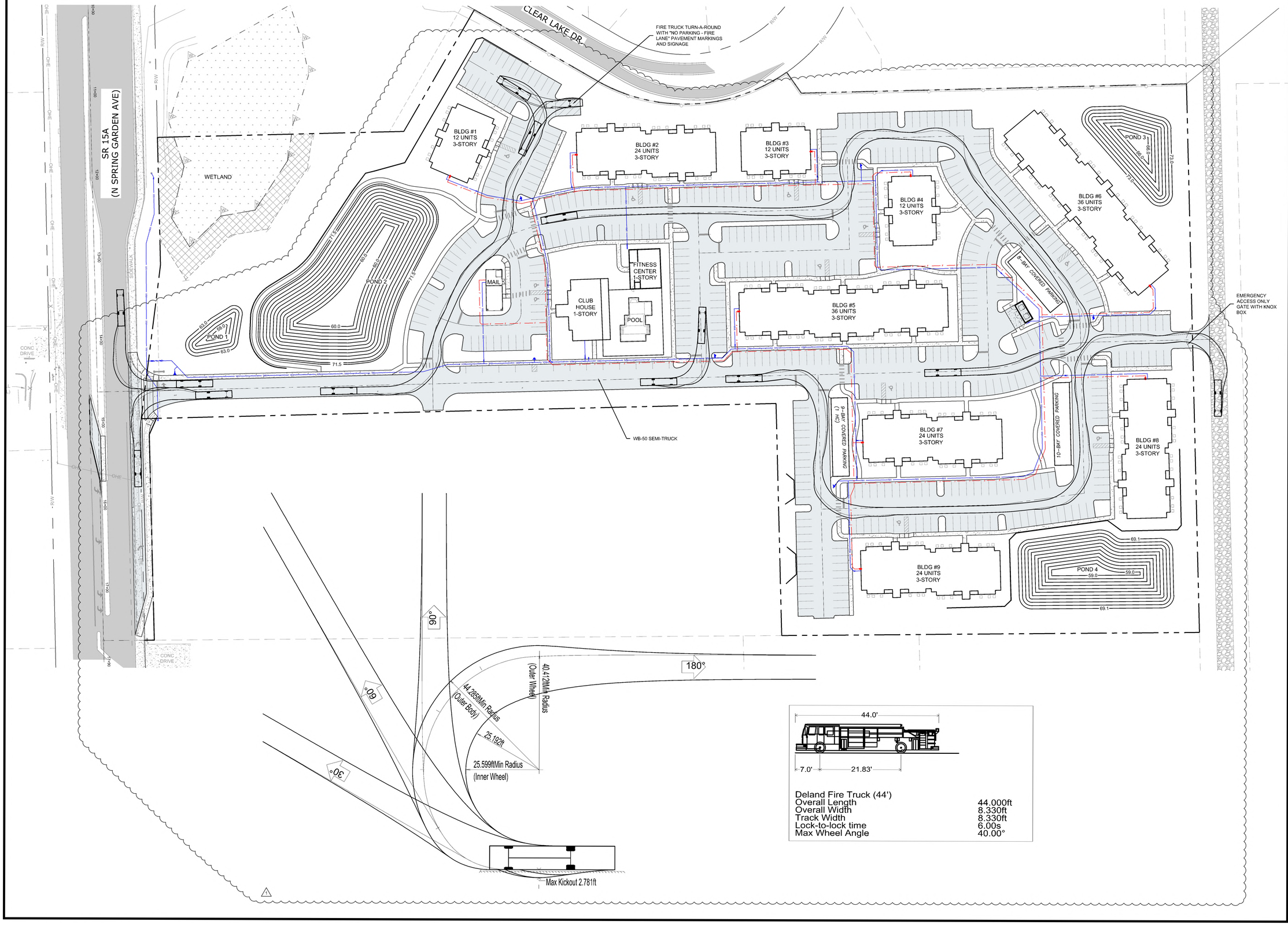
REVISIONS			
DATE	NO.	DETAIL	
06/16/23	1	REVISED PER COMMENTS	

DRAWN BY:	DATE:
FE	03/06/23
CHECKED BY:	JOB #:
DE	37501

GRAPHIC SCALE
40' 0 20' 40' 80'
FEET
1 Inch = 40 Ft.

SHEET #:
C10.1

C:\L37501 - Hillsdale (Deland)\37501 - 10.0-10.1-Garden PLAN.dwg (C2) Plotted on: Jul 31, 2023 - 3:31pm by Drake



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CERTIFICATE OF AUTHORIZATION NO. 6788

DAVID L. EVANS
FLORIDA P.E. NO. 46586

DATE:

POINTE GRAND APARTMENTS

DELAND, FLORIDA

VEHICULAR CIRCULATION PLAN

REVISIONS

NO.	DATE	DETAIL
1	06/16/23	REVISED PER COMMENTS

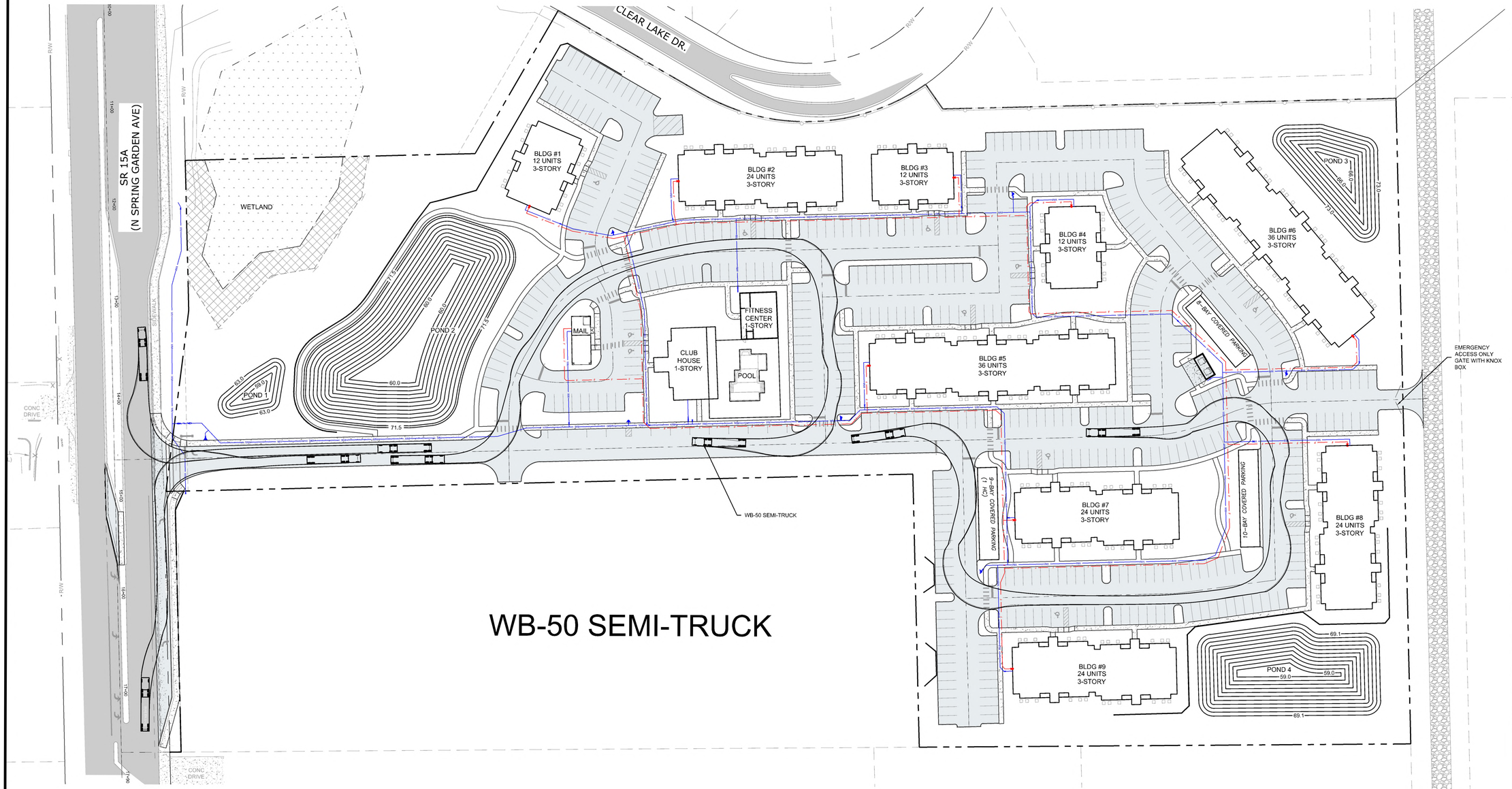
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FE	03/06/23
CHECKED BY:	JOB #:
DE	37501

GRAPHIC SCALE
50' 0 25' 50' 100'
FEET
1 Inch = 50 Ft.

SHEET #:
C11.0

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G:\37501 - Hillpointe Deland\37501 11.0-VEHICULAR CIRCULATION PLAN.dwg (01) Plotted on Jul 31, 2023 - 3:32pm by tlabe



WB-50 SEMI-TRUCK

EVANS
ENGINEERING, INC.
CIVIL ENGINEERING LAND PLANNING PERMITTING SERVICES
719 IRMA AVENUE
ORLANDO, FLORIDA 32803
(407) 872-1515
www.evansenginc.com
CERTIFICATE OF AUTHORIZATION NO. 00006788

EVANS ENGINEERING, INC.

CERTIFICATE OF
AUTHORIZATION NO. 6788

DAVID L. EVANS
FLORIDA P.E. NO. 46586

DATE:

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POINTE GRAND APARTMENTS

DELAND, FLORIDA

VEHICULAR CIRCULATION PLAN

REVISIONS			
NO.	DATE	DETAIL	
1	06/16/23	REVISED PER COMMENTS	

DRAWN BY:	DATE:
FE	03/06/23
CHECKED BY:	JOB #:
DE	37501

GRAPHIC SCALE

50' 0 25' 50' 100'

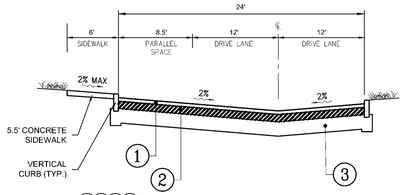
FEET

1 Inch = 50 Ft.

SHEET #:

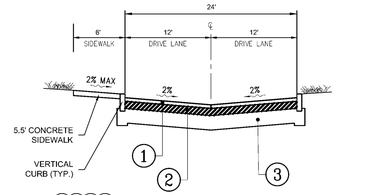
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G:\37501 - Hillsboro Debra\37501 11.0-VEHICULAR CIRCULATION PLAN.dwg (02) Plotted on: Jul 31, 2023 - 3:33pm by Nisha



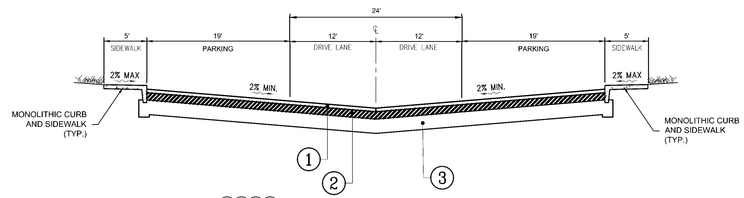
AA — PARALLEL PARKING ROADWAY SECTION

N.T.S.



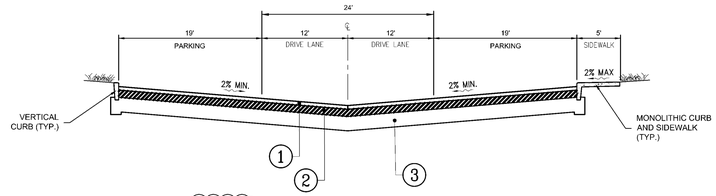
BB — ROADWAY SECTION

N.T.S.



CC — PERPENDICULAR PARKING, BOTH SIDES

N.T.S.



DD — PERPENDICULAR PARKING, BOTH SIDES

N.T.S.

PAVEMENT SPECIFICATIONS

(1) 2" TYPE SP-9.5 ASPHALT IN TWO 1" MIN. LIFTS.

(2) 6" RECYCLED CONCRETE AGGREGATE (RCA) SOURCED FROM AN FDOT APPROVED SUPPLIER AND COMPACTED TO 98% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D 1557) VALUE. MINIMUM LBR VALUE OF 150.

OR

6" LIMEROCK COMPLYING WITH THE LATEST EDITION OF THE FDOT ROAD AND BRIDGE CONSTRUCTION SPECIFICATIONS AND COMPACTED TO 98% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D 1557) VALUE. MINIMUM LBR VALUE OF 100.

(3) 12" STABILIZED SUBGRADE WITH A MINIMUM LBR OF 40 AND COMPACTED TO 98% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D 1557) VALUE.

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DAVID L. EVANS
FLORIDA P.E. NO. 46586

DATE:

POINTE GRAND APARTMENTS

DELAND, FLORIDA

ROADWAY SECTIONS

REVISIONS		
DATE	NO.	DETAIL
06/16/23	1	REVISED PER COMMENTS

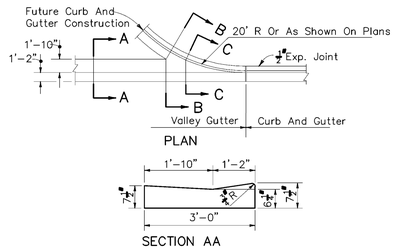
DRAWN BY:	DATE:
FE	03/06/23
CHECKED BY:	JOB #:
DE	37501

SHEET #:

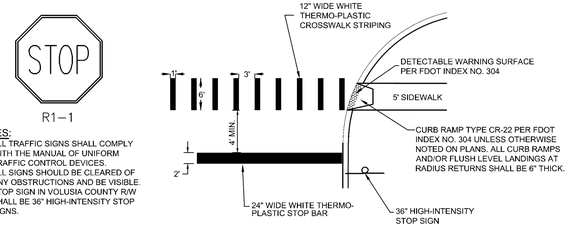
C12.0

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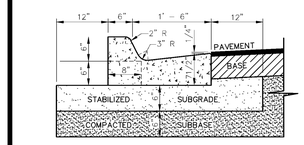
G:\37501 - Pointe\Drawn\37501 12.0 ROADWAY SECTIONS.dwg (01) Plotted on: Jul 31, 2023 - 3:32pm By: Evan



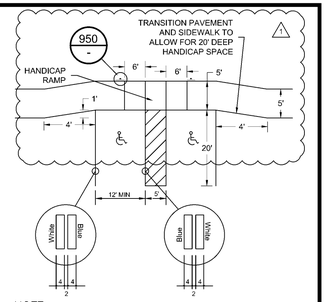
VG — VALLEY GUTTER DETAIL
N.T.S.



ST — CROSSWALK, STOP SIGN, AND STOP BAR DETAIL
N.T.S.

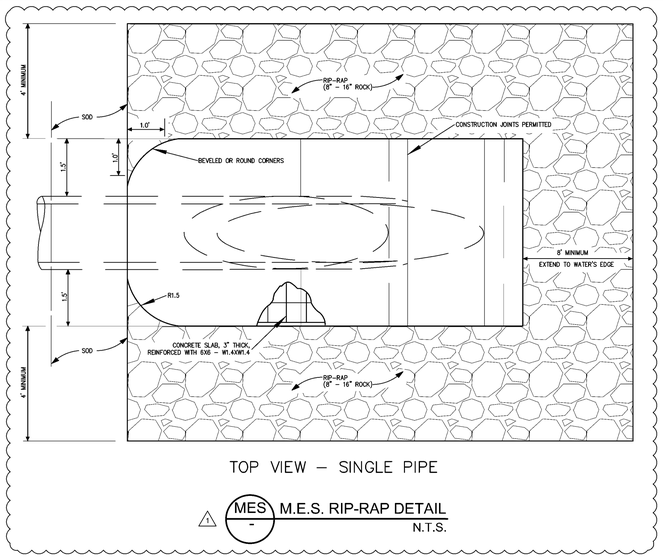


FC — TYPE "F" CURB AND GUTTER
N.T.S.



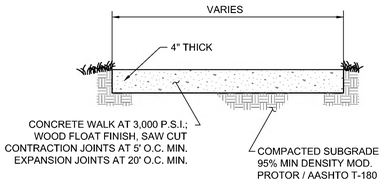
NOTE:
RAMPS RUNS SHALL HAVE A TACTILE SURFACE.

916 — HANDICAP PARKING SPACE
N.T.S.

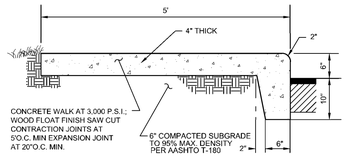


TOP VIEW – SINGLE PIPE

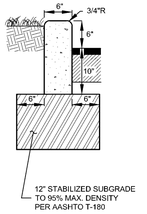
⚠1 MES — M.E.S. RIP-RAP DETAIL
N.T.S.



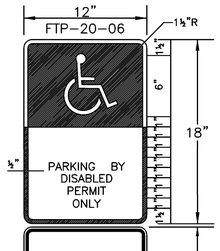
SW1 — CONCRETE SIDEWALK
N.T.S.



SW2 — MONOLITHIC SIDEWALK AND CURB
N.T.S.

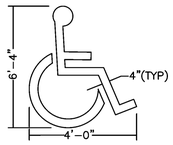


VC — VERITCAL CURB
N.T.S.



NOTE: (HANDICAP SIGN ONLY)

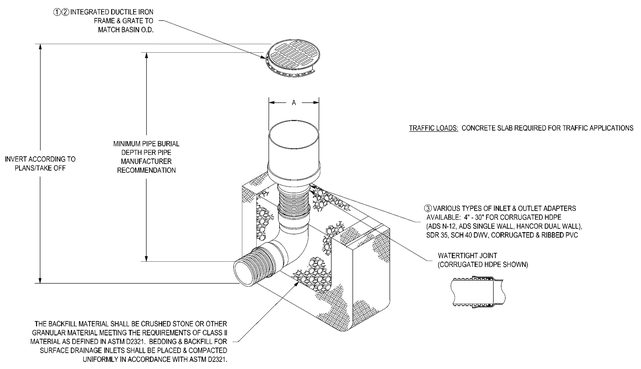
1. TOP PORTION SHALL HAVE A REFLECTIVE SYMBOL AND BORDER.
2. BOTTOM PORTION SHALL HAVE A REFLECTIVE WHITE BACKGROUND WITH BLACK OPAQUE LEGEND AND BORDER.
3. FTP 20-06 & R7-8b MAY BE FABRICATED ON ONE PANEL OR TWO.
4. SIGNS ARE TO BE MOUNTED AT STANDARD HEIGHT. (7' FROM PAVEMENT TO BOTTOM OF SIGN).



NOTE: PAINT SYMBOL ONTO PAVED SURFACE W/2 COATS OF TRAFFIC BLUE PAINT, MANUF. PER FLA. DEPT. OF TRANSPORTATION SPECS.

950 — HANDICAP STRIPING DETAILS
N.T.S.

NYLOPLAST INLINE DRAIN



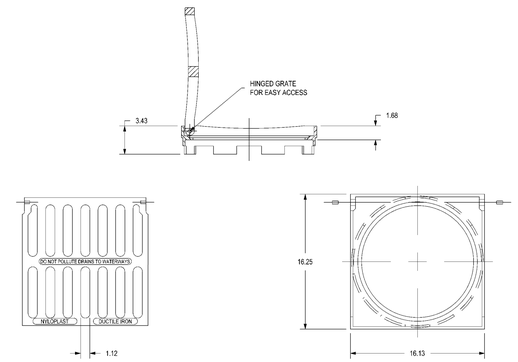
TRAFFIC LOADS: CONCRETE SLAB REQUIRED FOR TRAFFIC APPLICATIONS

1. - 8" - 30" GRATES/SOLID COVERS SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05, WITH THE EXCEPTION OF THE 8" - 15" BRONZE GRATES.
2 - 12" - 30" FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05
3 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS & HANCOR DUAL WALL) & SDR 35 PVC
4 - GRATES SHALL MEET H-10 LOAD RATING FOR 12" - 24" PED
5 - GRATES SHALL MEET H-20 LOAD RATING FOR 30" PED & 12" - 30" STD & SOLID
6 - ALL BRONZE GRATES, DROP IN GRATES, & 8" & 15" PEDISTD GRATES & SOLID COVERS ARE RATED FOR LIGHT DUTY APPLICATIONS ONLY
7 - DOME GRATES HAVE NO LOAD RATING

DRAWN BY EBC	MATERIAL	Nyloplast 3130 VERONA AVE BUFORD, GA 30518 PH# (770) 932-2443 FAX (770) 932-2490 www.nyloplast-us.com	
DATE 1-23-06			
APPD BY CJA	PROJECT NO./NAME	TITLE INLINE DRAIN WITH STANDARD GRATE QUICK SPEC INSTALLATION DETAIL	
DATE 1-23-06			
DWG SIZE A	SCALE 1:40 SHEET 1 OF 1	DWG NO. 7003-110-022	REV D

1599CGS

APPROX. DRAIN AREA = 92.70 SQ IN
APPROX. WEIGHT WITH FRAME = 59.62 LBS



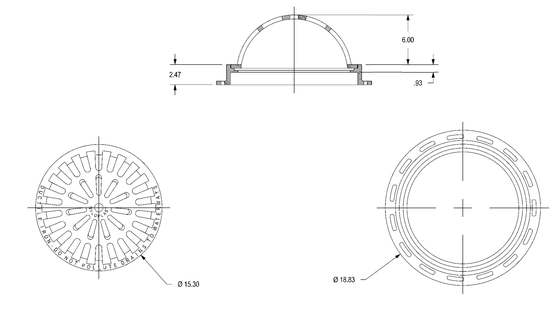
ALL DIMENSIONS IN INCHES UNLESS NOTED OTHERWISE
GRATE MEETS H-20 LOAD RATING
QUALITY: MATERIALS SHALL CONFORM TO ASTM A536 GRADE 70-50-05
PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT
LOCKING DEVICE AVAILABLE UPON REQUEST SEE DRAWING NO. 7001-110-032

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DRAWN BY EBC	MATERIAL	Nyloplast 3130 VERONA AVE BUFORD, GA 30518 PH# (770) 932-2443 FAX (770) 932-2490 www.nyloplast-us.com	
DATE 3-7-06	DUCTILE IRON		
APPD BY CJA	PROJECT NO./NAME	TITLE 15 IN STANDARD GRATE ASSEMBLY	
DATE 3-7-06			
DWG SIZE A	SCALE 1:8 SHEET 1 OF 1	DWG NO. 7001-110-208	REV B

1599CGD

APPROX. DRAIN AREA = 115.49 SQ IN
APPROX. WEIGHT WITH FRAME = 47.30 LBS



ALL DIMENSIONS IN INCHES UNLESS NOTED OTHERWISE
QUALITY: MATERIAL SHALL CONFORM TO ASTM A536 GRADE 70-50-05
PAINT: CASTINGS ARE FURNISHED WITH A BLACK PAINT
LOCKING DEVICE AVAILABLE UPON REQUEST SEE DRAWING NO. 7001-110-230

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DRAWN BY EBC	MATERIAL	Nyloplast 3130 VERONA AVE BUFORD, GA 30518 PH# (770) 932-2443 FAX (770) 932-2490 www.nyloplast-us.com	
DATE 3-7-06	DUCTILE IRON		
APPD BY CJA	PROJECT NO./NAME	TITLE 15 IN DOME GRATE ASSEMBLY	
DATE 3-7-06			
DWG SIZE A	SCALE 1:8 SHEET 1 OF 1	DWG NO. 7001-110-211	REV B

NOTE: STANDARD GRADE FOR PAVED AND GRASSED AREAS ONLY, DOME GRATE TO BE USED FOR ALL OTHER APPLICATIONS.

YD — YARD DRAIN DETAILS
N.T.S.

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DAVID L. EVANS
FLORIDA P.E. NO. 46586

DATE: _____

POINTE GRAND APARTMENTS

DELAND, FLORIDA

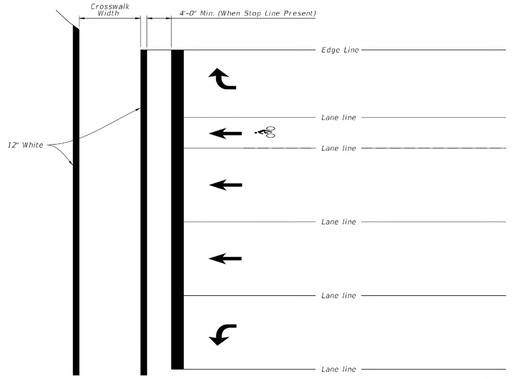
PAVING, GRADING, AND DRAINAGE DETAILS

REVISIONS			
DATE	NO.	DETAIL	
06/16/23	1	REVISED PER COMMENTS	

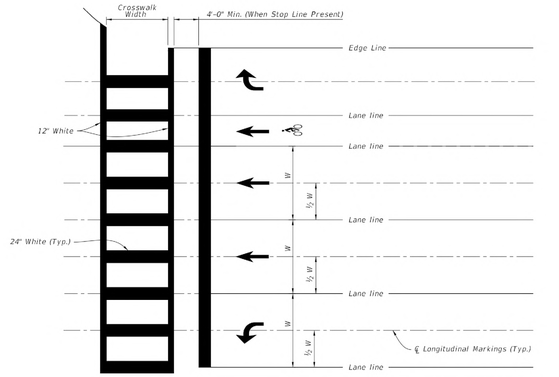
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CHECKED BY: DE	JOB #: 37501

SHEET #: C13.0

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STANDARD CROSSWALK DETAILS

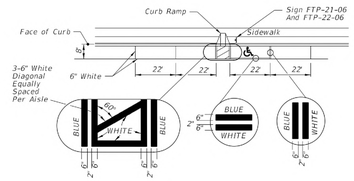


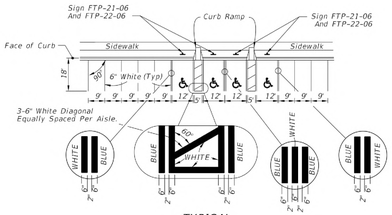
SPECIAL EMPHASIS CROSSWALK DETAILS

NOTES:

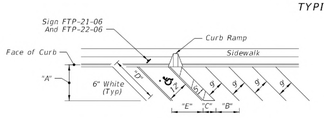
1. For crosswalk width, exceed width of the adjacent sidewalk, but do not make width less than 6' for intersection crosswalks and 10' for midblock crosswalks. Measure width from the inside of the transverse crosswalk markings.
2. When the Special Emphasis Crosswalk is not perpendicular to the lane lines, make the longitudinal markings parallel to the lane lines.
3. Refer to Index 522-002 when Curb Ramps are present.

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2023-24 STANDARD PLANS	PAVEMENT MARKINGS	INDEX	SHEET
11/01/21					711-001	9 of 13

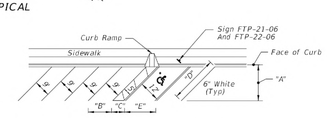




TYPICAL



FORWARD-IN PARKING



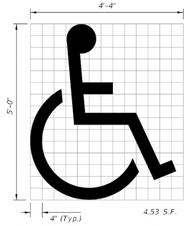
REVERSE-IN PARKING

* FOR ACCESSIBLE MARKINGS – SEE ABOVE

DIMENSIONS					
∠ θ	"A"	"B"	"C"	"D"	"E"
45°	17'-0"	12'-9"	7'-0"	24'-0"	17'-0"

PAVEMENT MARKING FOR PARKING





(See Note 5)

UNIVERSAL SYMBOL OF ACCESSIBILITY

NOTES:

1. Dimensions are to the centerline of markings.
2. An Access Aisle is required for each accessible space when angle parking is used.
3. Criteria for pavement markings only, not public sidewalk curb ramp locations. For ramp locations refer to plans.
4. Mount FTP-22-06 sign below the FTP-21-06 sign.
5. Use of the pavement symbol in accessible parking spaces is optional. When pavement symbol is used, the symbol is either 3'-0" or 5'-0" high and white in color.

LAST REVISION	REVISION	DESCRIPTION:	FDOT FY 2023-24 STANDARD PLANS	PAVEMENT MARKINGS	INDEX	SHEET
11/01/21					711-001	11 of 13

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CERTIFICATE OF AUTHORIZATION NO. 6788

DAVID L. EVANS
FLORIDA P.E. NO. 46586

DATE:

POINTE GRAND APARTMENTS

DELAND, FLORIDA

PAVING, GRADING, AND DRAINAGE DETAILS

REVISIONS			
DATE	NO.	DETAIL	
06/16/23	△	REVISED PER COMMENTS	

DRAWN BY:	DATE:
FE	03/06/23
CHECKED BY:	JOB #:
DE	37501

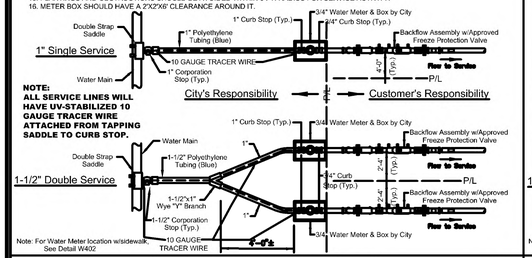
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G:\37501 - Pointe Grand\37501 13.0 PAVING GRADING DRAINAGE DETAILS.dwg (00) Plotted on: Jul 31, 2023 - 3:33pm by tdale

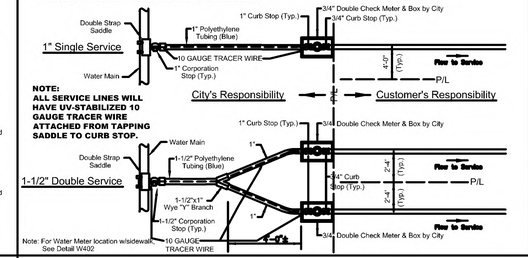
NOTES:
1. WATER MAINS TO BE ON NORTH or EAST SIDE OF R.O.W., APPROX. 4 FT. BACK OF CURB UNLESS OTHERWISE AUTHORIZED BY CITY ENGINEER.
2. SERVICE CONNECTIONS TO BE 4 FT. FROM SIDE LOT LINE ON EITHER SIDE OF LOT. THESE SERVICES TO BE CONSISTENT WITHIN THE SUBDIVISION. DRIVEWAYS SHALL NOT BE BUILT OVER METERS.
3. ALL LINES SHALL BE CHLORINATED and PRESSURE TESTED (TEST FOR TWO HOURS @ 150 P.S.I.) UNDER THE DIRECTION OF THE UTILITIES DEPARTMENT. AFTER SUCCESSFUL COMPLETION OF THE TESTING and CHLORINATION, THE PRESSURE SHALL REMAIN ON THE SYSTEM AT ALL TIMES.
4. TEN FT. SEPARATION REQUIRED BETWEEN PARALLEL WATER & SANITARY SEWER LINES.
5. SADDLE IS REQUIRED FOR ALL SERVICE CONNECTIONS TO 4" PVC MAINS. SADDLE IS REQUIRED FOR 2" SERVICE CONNECTIONS TO 6" and LARGER PVC MAINS. LARGEST SERVICE CONNECTION TO A 4" MAIN IS MIN. 1-1/2" and LARGEST TO ANY MAIN IS 2".
6. MINIMUM DISTANCE BETWEEN SERVICE TAPS TO BE NOT LESS THAN 36".
7. SINGLE SERVICE TAP SHALL BE 1".
8. DOUBLE SERVICE TAP SHALL BE 1-1/ 2".
9. ALL FITTINGS SHALL BE BRASS ONLY.
10. ALL CORPORATION STOPS, SHALL BE "FORD" OR "MUELLER" ONLY.
11. FREEZE PROTECTION VALVE, SHALL BE "CONBRACO" 40LF000FPV2F.
12. ALL 3/4", 1", 1-1/2", & 2" W.M., SHALL BE SDR 9, 200 psi, ASTMD 2737, (BLUE) POLYETHYLENE TUBING.
13. ALL BRASS FITTINGS SHALL BE LEAD FREE.
14. NO GALVANIZED FITTINGS CONNECTED TO BRASS FITTINGS.
15. PLANTINGS AND OBSTRUCTIONS SHOULD BE AVOIDED WITHIN 3 FT. RADIUS FOR SERVICE ACTIVITY.
16. METER BOX SHOULD HAVE A 2'X2'X6' CLEARANCE AROUND IT.



NOTE:
ALL SERVICE LINES WILL HAVE UV-STABILIZED 10 GAUGE TRACER WIRE ATTACHED FROM TAPPING SADDLE TO CURB STOP.

DATE: 11/07/2022 **WATER MAIN SERVICE CONNECTION (BACKFLOW)** W401
City of DeLand - Standard Details

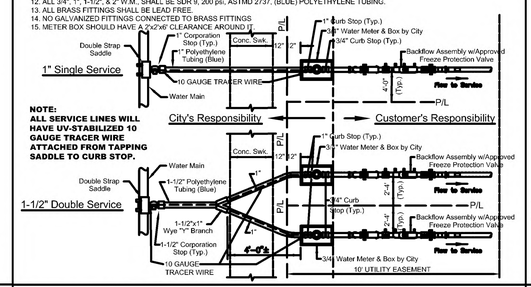
NOTES:
1. WATER MAINS TO BE ON NORTH or EAST SIDE OF R.O.W., APPROX. 4 FT. BACK OF CURB UNLESS OTHERWISE AUTHORIZED BY CITY ENGINEER.
2. SERVICE CONNECTIONS TO BE 4 FT. FROM SIDE LOT LINE ON EITHER SIDE OF LOT. THESE SERVICES TO BE CONSISTENT WITHIN THE SUBDIVISION. DRIVEWAYS SHALL NOT BE BUILT OVER METERS.
3. ALL LINES SHALL BE CHLORINATED and PRESSURE TESTED (TEST FOR TWO HOURS @ 150 P.S.I.) UNDER THE DIRECTION OF THE UTILITIES DEPARTMENT. AFTER SUCCESSFUL COMPLETION OF THE TESTING and CHLORINATION, THE PRESSURE SHALL REMAIN ON THE SYSTEM AT ALL TIMES.
4. TEN FT. SEPARATION REQUIRED BETWEEN PARALLEL WATER & SANITARY SEWER LINES.
5. SADDLE IS REQUIRED FOR ALL SERVICE CONNECTIONS TO 4" PVC MAINS. SADDLE IS REQUIRED FOR 2" SERVICE CONNECTIONS TO 6" and LARGER PVC MAINS. LARGEST SERVICE CONNECTION TO A 4" MAIN IS MIN. 1-1/2" and LARGEST TO ANY MAIN IS 2".
6. MINIMUM DISTANCE BETWEEN SERVICE TAPS TO BE NOT LESS THAN 36".
7. SINGLE SERVICE TAP SHALL BE 1".
8. DOUBLE SERVICE TAP SHALL BE 1-1/ 2".
9. ALL FITTINGS SHALL BE BRASS ONLY.
10. ALL CORPORATION STOPS, SHALL BE "FORD" OR "MUELLER" ONLY.
11. FREEZE PROTECTION VALVE, SHALL BE "CONBRACO" 40LF000FPV2F.
12. ALL 3/4", 1", 1-1/2", & 2" W.M., SHALL BE SDR 9, 200 psi, ASTMD 2737, (BLUE) POLYETHYLENE TUBING.
13. ALL BRASS FITTINGS SHALL BE LEAD FREE.
14. NO GALVANIZED FITTINGS CONNECTED TO BRASS FITTINGS.
15. PLANTINGS AND OBSTRUCTIONS SHOULD BE AVOIDED WITHIN 3 FT. RADIUS FOR SERVICE ACTIVITY.
16. METER BOX SHOULD HAVE A 2'X2'X6' CLEARANCE AROUND IT.



NOTE:
ALL SERVICE LINES WILL HAVE UV-STABILIZED 10 GAUGE TRACER WIRE ATTACHED FROM TAPPING SADDLE TO CURB STOP.

DATE: 11/07/2022 **WATER MAIN SERVICE CONNECTION (DOUBLE CHECK METER)** W401A
City of DeLand - Standard Details

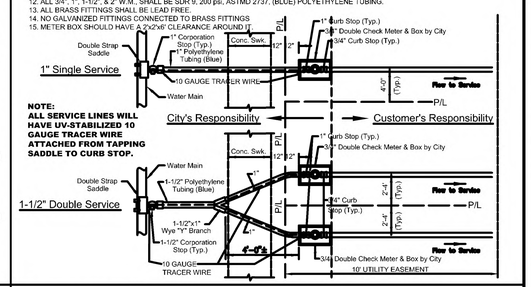
NOTES:
1. WATER MAINS TO BE ON NORTH or EAST SIDE OF R.O.W., APPROX. 4 FT. BACK OF CURB UNLESS OTHERWISE AUTHORIZED BY CITY ENGINEER.
2. SERVICE CONNECTIONS TO BE 4 FT. FROM SIDE LOT LINE ON EITHER SIDE OF LOT. THESE SERVICES TO BE CONSISTENT WITHIN THE SUBDIVISION. DRIVEWAYS SHALL NOT BE BUILT OVER METERS.
3. ALL LINES SHALL BE CHLORINATED and PRESSURE TESTED (TEST FOR TWO HOURS @ 150 P.S.I.) UNDER THE DIRECTION OF THE UTILITIES DEPARTMENT. AFTER SUCCESSFUL COMPLETION OF THE TESTING and CHLORINATION, THE PRESSURE SHALL REMAIN ON THE SYSTEM AT ALL TIMES.
4. TEN FT. SEPARATION REQUIRED BETWEEN PARALLEL WATER & SANITARY SEWER LINES.
5. SADDLE IS REQUIRED FOR ALL SERVICE CONNECTIONS TO 4" PVC MAINS. SADDLE IS REQUIRED FOR 2" SERVICE CONNECTIONS TO 6" and LARGER PVC MAINS. LARGEST SERVICE CONNECTION TO A 4" MAIN IS MIN. 1-1/2" and LARGEST TO ANY MAIN IS 2".
6. MINIMUM DISTANCE BETWEEN SERVICE TAPS TO BE NOT LESS THAN 36".
7. SINGLE SERVICE TAP SHALL BE 1".
8. DOUBLE SERVICE TAP SHALL BE 1-1/ 2".
9. ALL FITTINGS SHALL BE BRASS ONLY.
10. ALL CORPORATION STOPS, SHALL BE "FORD" OR "MUELLER" ONLY.
11. FREEZE PROTECTION VALVE, SHALL BE "CONBRACO" 40LF000FPV2F.
12. ALL 3/4", 1", 1-1/2", & 2" W.M., SHALL BE SDR 9, 200 psi, ASTMD 2737, (BLUE) POLYETHYLENE TUBING.
13. ALL BRASS FITTINGS SHALL BE LEAD FREE.
14. NO GALVANIZED FITTINGS CONNECTED TO BRASS FITTINGS.
15. METER BOX SHOULD HAVE A 2'X2'X6' CLEARANCE AROUND IT.



NOTE:
ALL SERVICE LINES WILL HAVE UV-STABILIZED 10 GAUGE TRACER WIRE ATTACHED FROM TAPPING SADDLE TO CURB STOP.

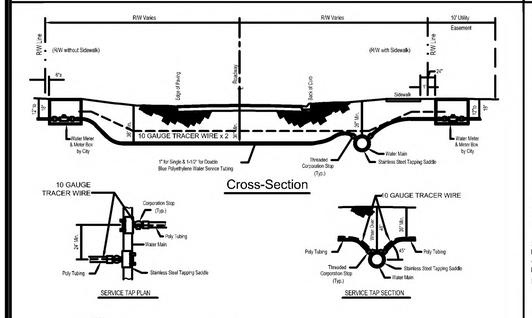
DATE: 11/07/2022 **WATER MAIN SERVICE CONNECTION WITH SIDEWALK (BACKFLOW)** W402
City of DeLand - Standard Details

NOTES:
1. WATER MAINS TO BE ON NORTH or EAST SIDE OF R.O.W., APPROX. 4 FT. BACK OF CURB UNLESS OTHERWISE AUTHORIZED BY CITY ENGINEER.
2. SERVICE CONNECTIONS TO BE 4 FT. FROM SIDE LOT LINE ON EITHER SIDE OF LOT. THESE SERVICES TO BE CONSISTENT WITHIN THE SUBDIVISION. DRIVEWAYS SHALL NOT BE BUILT OVER METERS.
3. ALL LINES SHALL BE CHLORINATED and PRESSURE TESTED (TEST FOR TWO HOURS @ 150 P.S.I.) UNDER THE DIRECTION OF THE UTILITIES DEPARTMENT. AFTER SUCCESSFUL COMPLETION OF THE TESTING and CHLORINATION, THE PRESSURE SHALL REMAIN ON THE SYSTEM AT ALL TIMES.
4. TEN FT. SEPARATION REQUIRED BETWEEN PARALLEL WATER & SANITARY SEWER LINES.
5. SADDLE IS REQUIRED FOR ALL SERVICE CONNECTIONS TO 4" PVC MAINS. SADDLE IS REQUIRED FOR 2" SERVICE CONNECTIONS TO 6" and LARGER PVC MAINS. LARGEST SERVICE CONNECTION TO A 4" MAIN IS MIN. 1-1/2" and LARGEST TO ANY MAIN IS 2".
6. MINIMUM DISTANCE BETWEEN SERVICE TAPS TO BE NOT LESS THAN 36".
7. SINGLE SERVICE TAP SHALL BE 1".
8. DOUBLE SERVICE TAP SHALL BE 1-1/ 2".
9. ALL FITTINGS SHALL BE BRASS ONLY.
10. ALL CORPORATION STOPS, SHALL BE "FORD" OR "MUELLER" ONLY.
11. FREEZE PROTECTION VALVE, SHALL BE "CONBRACO" 40LF000FPV2F.
12. ALL 3/4", 1", 1-1/2", & 2" W.M., SHALL BE SDR 9, 200 psi, ASTMD 2737, (BLUE) POLYETHYLENE TUBING.
13. ALL BRASS FITTINGS SHALL BE LEAD FREE.
14. NO GALVANIZED FITTINGS CONNECTED TO BRASS FITTINGS.
15. METER BOX SHOULD HAVE A 2'X2'X6' CLEARANCE AROUND IT.



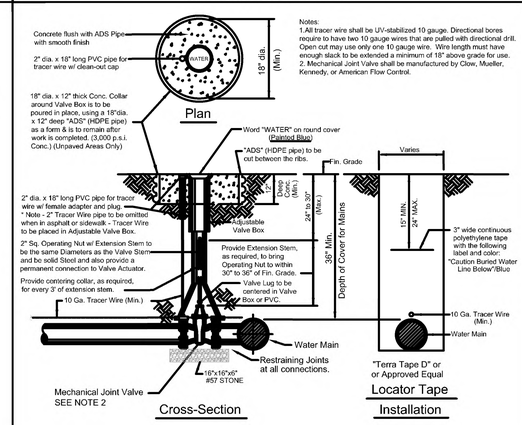
NOTE:
ALL SERVICE LINES WILL HAVE UV-STABILIZED 10 GAUGE TRACER WIRE ATTACHED FROM TAPPING SADDLE TO CURB STOP.

DATE: 11/07/2022 **WATER MAIN SERVICE CONN. WITH SIDEWALK (DBL. CHECK METER)** W402A
City of DeLand - Standard Details

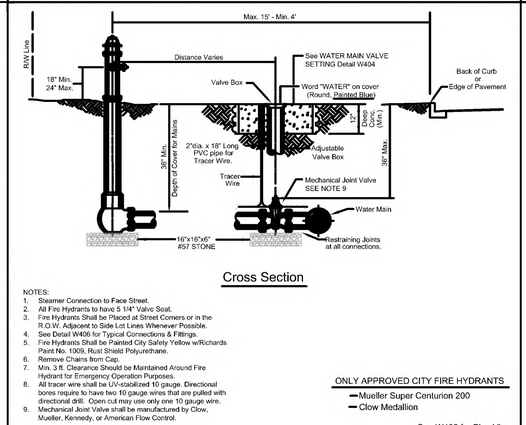


NOTES:
1. SINGLE WATER SERVICE SHALL BE, 1" POLYETHYLENE TUBING (BLUE).
2. DOUBLE WATER SERVICE SHALL BE, 1-1/2" POLYETHYLENE TUBING (BLUE).
3. WATER MAINS TO BE MIN. 36" BELOW GRADE and APPROX. 4' BACK OF CURB.
4. CURB STOP TO BE LOCATED APPROX. 2 FOOT BACK OF RIGHT-OF-WAY AND MUST HAVE LOCK WING.
5. SERVICE LINE TO BE MIN. 36" BELOW GRADE IN RIGHT-OF-WAY.
6. ALL 3/4", 1", 1-1/2" & 2" W.M., SHALL BE SDR 9, 200 psi, ASTMD 2737, (BLUE) POLYETHYLENE TUBING.
7. ALL TRACER WIRE SHALL BE (BLUE) UV-STABILIZED 10 GAUGE, DIRECTIONAL BORES REQUIRED TO HAVE TWO 10 GAUGE WIRES THAT ARE PULLED WITH DIRECTIONAL DRILL. OPEN CUT MAY USE ONLY ONE 10 GAUGE WIRE.
8. ALL SERVICE TAPS TO MEET AWWA STANDARD 45° FROM HORIZONTAL UNLESS PRIOR AUTHORIZATION RECEIVED FROM CITY.
9. ALL SERVICE LINES WILL HAVE TRACER WIRE ATTACHED FROM TAPPING SADDLE TO CURB STOP.

DATE: 11/07/2022 **WATER MAIN SERVICE LINES** W403
City of DeLand - Standard Details



DATE: 11/07/2022 **WATER MAIN VALVE SETTING** W404
City of Deland - Standard Details

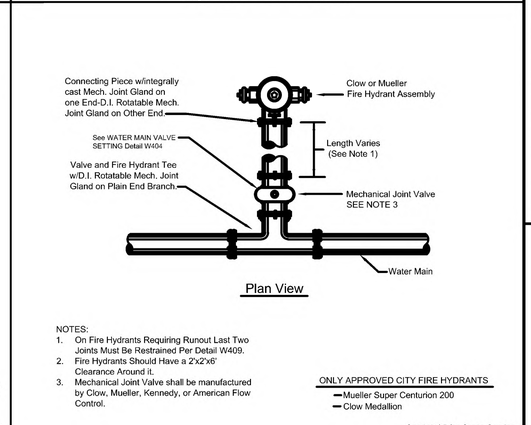


NOTES:
1. Steamer Connection to Face Street.
2. All Fire Hydrants to have 5 1/4" Valve Seat.
3. Fire Hydrants Shall be Placed at Street Corners or in the R.O.W. Adjacent to Side Lot Lines Wherever Possible.
4. See Detail W406 for Typical Connections & Fittings.
5. Fire Hydrants Shall be Painted City Safety Yellow w/Richards Paint No. 1009, Rust Shield Polyurethane.
6. Remove Chains from Cap.
7. Min. 3 ft. Clearance Should be Maintained Around Fire Hydrant for Emergency Operation Purposes.
8. All tracer wire shall be UV-stabilized 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire.
9. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.

ONLY APPROVED CITY FIRE HYDRANTS
- Mueller Super Centurion 200
- Clow Medallion

See W406 for Plan View

DATE: 11/07/2022 **FIRE HYDRANT SETTING SECTION** W405
City of DeLand -Standard Details



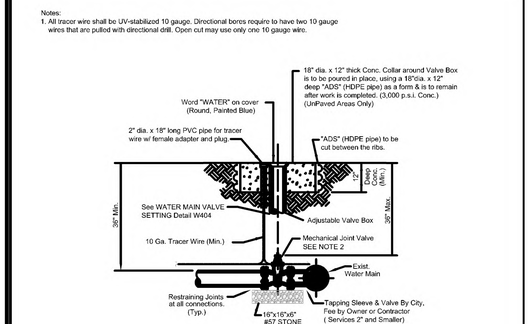
NOTES:
1. On Fire Hydrants Requiring Runout Last Two Joints Must Be Restrained Per Detail W409.
2. Fire Hydrants Should Have a 2'x2'x6' Clearance Around it.
3. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.

ONLY APPROVED CITY FIRE HYDRANTS
- Mueller Super Centurion 200
- Clow Medallion

See W405 for Cross Section

DATE: 11/07/2022 **FIRE HYDRANT SETTING PLAN** W406
City of DeLand - Standard Details

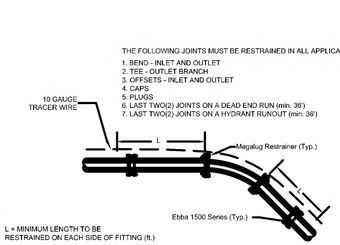
Notes:
1. All tracer wire shall be UV-stabilized 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire.



Notes:
1. For Wet Taps larger than 2", Sleeves & Valves will be furnished and installed by the contractor in the presence of the city inspector. Tapping sleeve shall be Ford, Romac, or JCM stainless steel only.
2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.

DATE: 11/07/2022 **TAPPING SLEEVE & VALVE** W407
City of DeLand - Standard Details

THE FOLLOWING JOINTS MUST BE RESTRAINED IN ALL APPLICATIONS:
1. BEND - INLET AND OUTLET
2. TEE - OUTLET BRANCH
3. OFFSETS - INLET AND OUTLET
4. CAPS
5. PLUGS
6. LAST TWO(2) JOINTS ON A DEAD END RUN (min. 36')
7. LAST TWO(2) JOINTS ON A HYDRANT RUNOUT (min. 36')



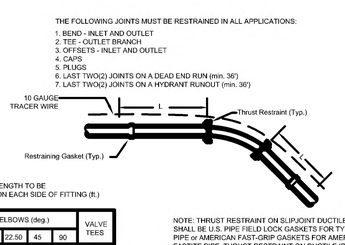
L = MINIMUM LENGTH TO BE RESTRAINED ON EACH SIDE OF FITTING (ft.)

NOM. PIPE SIZE	ELBOWS (deg.) 11.25	22.50	45	90	VALVE TEES
4	3	5	8	12	9
6	4	6	10	15	11
8	4	7	13	20	14
10	5	9	15	25	18
12	6	10	17	29	21
14	6	13	26	61	30
16	7	14	28	67	49
18	8	15	31	73	68
20	8	16	33	80	85

NOTE: THRUST RESTRAINT AT FITTINGS AND VALVES SHALL BE BY USE OF EBBA IRON MEGALUG RESTRAINERS. THRUST RESTRAINT BETWEEN PIPE JOINTS SHALL BE BY EBBA IRON SERIES 1500 RESTRAINERS.

DATE: 11/07/2022 **THRUST RESTRAINING DETAIL FOR PVC PIPE** W408
City of DeLand - Standard Details

THE FOLLOWING JOINTS MUST BE RESTRAINED IN ALL APPLICATIONS:
1. BEND - INLET AND OUTLET
2. TEE - OUTLET BRANCH
3. OFFSETS - INLET AND OUTLET
4. CAPS
5. PLUGS
6. LAST TWO(2) JOINTS ON A DEAD END RUN (min. 36')
7. LAST TWO(2) JOINTS ON A HYDRANT RUNOUT (min. 36')

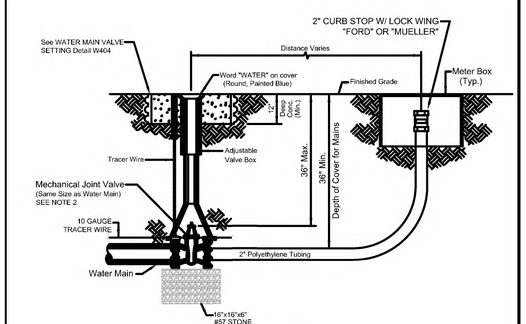


L = MINIMUM LENGTH TO BE RESTRAINED ON EACH SIDE OF FITTING (ft.)

NOM. PIPE SIZE	ELBOWS (deg.) 11.25	22.50	45	90	VALVE TEES
4	3	5	8	12	9
6	4	6	10	15	11
8	4	7	13	20	14
10	5	9	15	25	18
12	6	10	17	29	21
16	6	13	26	63	70
18	9	17	36	88	88
20	10	19	39	94	108
24	11	22	45	109	145

NOTE: THRUST RESTRAINT ON SLIPJOINT DUCTILE IRON PIPE SHALL BE U.S. PIPE FIELD LOCK GASKETS FOR TYTON JOINT PIPE or AMERICAN FAST-GRIP GASKETS FOR AMERICAN FASTITE PIPE. THRUST RESTRAINT ON DUCTILE IRON FITTINGS SHALL BE PROVIDED BY THE USE OF MEGALUG RETAINERS AND MECHANICAL JOINT FITTINGS.

DATE: 11/07/2022 **THRUST RESTRAINING DETAIL FOR DUCTILE IRON PIPE** W409
City of DeLand - Standard Details



Notes:
1. All tracer wire shall be UV-stabilized 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire.
2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.

DATE: 11/07/2022 **WATER MAIN BLOWOFF DETAIL** W410
City of DeLand - Standard Details

EVANS ENGINEERING, INC.
CIVIL ENGINEERING LAND PLANNING PERMITTING SERVICES
719 IRMA AVENUE
ORLANDO, FLORIDA 32803
(407) 872-1515
www.evansenginc.com
CERTIFICATE OF AUTHORIZATION NO. 00006788

EVANS ENGINEERING, INC.
CERTIFICATE OF AUTHORIZATION NO. 6788

DAVID L. EVANS
FLORIDA P.E. NO. 46586
DATE:

CITY OF DELAND, FLORIDA
1102 S. GARFIELD AVENUE, DELAND, FLORIDA 32724

DATE: 11/07/2022 CHECKED BY: NAME

NOT TO SCALE
ERIC SAMPSON

POINTE GRAND APARTMENTS
DELAND, FLORIDA

UTILITY DETAILS

TITLE: WATER SYSTEM DETAILS (Sheet 1)

FILE: drive letter/details locations

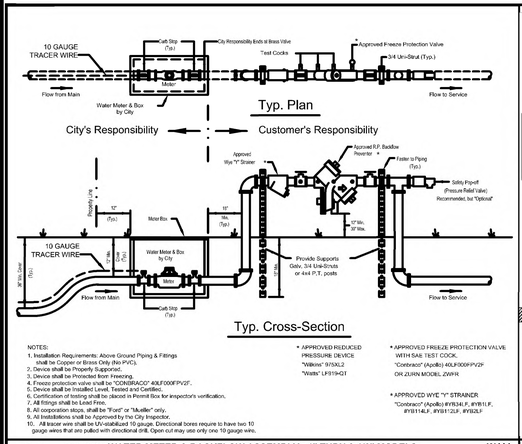
REVISIONS			
NO.	DATE	DETAIL	
1	06/16/23	REVISED PER COMMENTS	

DRAWN BY:	DATE:
FE	03/06/23
CHECKED BY:	JOB #:
DE	37501

SHEET #: C14.0

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NOTES:
1. Installation Requirements: Above Ground Piping & Fittings shall be Copper or Brass Only (No PVC).
2. Device shall be Properly Supported.
3. Device shall be Protected from Freezing.
4. Freeze protection valve shall be "CONBRACO" 40LF009PV2", 5. Device shall be Installed Level, Tested and Certified.
6. Certification of testing shall be placed in Permit Box for inspector's verification.
7. All fittings shall be Lead Free.
8. All corporation stops, shall be "Ford" or "Mueller" only.
9. All Installations shall be Approved by the City Inspector.
10. All tracer wire shall be UV-stabilized 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire.

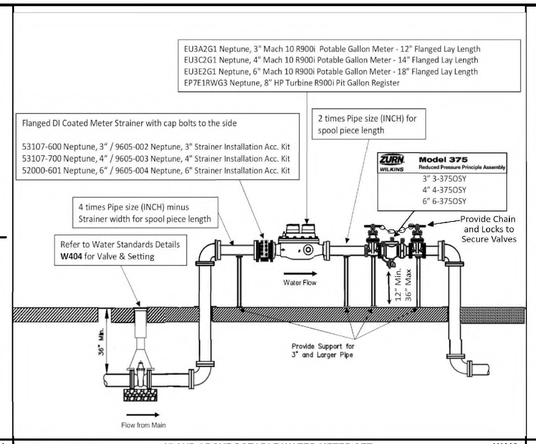
* APPROVED REDUCED PRESSURE DEVICE
"Wilkins" 975XL2
"Watts" LF511HQ1

* APPROVED FREEZE PROTECTION VALVE WITH SAE TEST COCK.
"Conbraco" (Apollo) 40LF009PV2F
OR ZURN MODEL ZWFR

* APPROVED WYE "Y" STRAINER
"Conbraco" (Apollo) #YR34LF, #YB51LF, #YB114LF, #YB112LF, #Y62LF

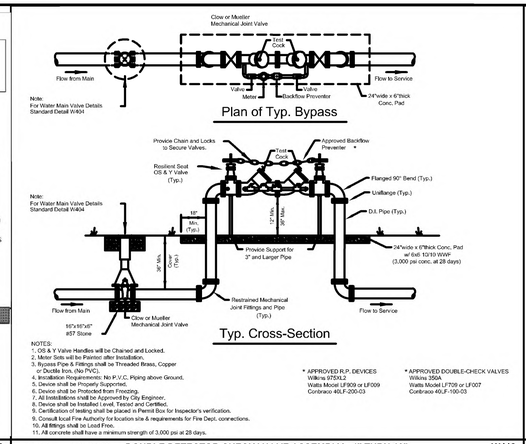
DATE: 11/07/2022 **WATER METER & BACKFLOW ASSEMBLY - 1" THRU 2-1/2" MODELS** W411

City of DeLand - Standard Details



DATE: 11/07/2022 **3" AND ABOVE POTABLE WATER METER SET** W412

City of DeLand - Standard Details



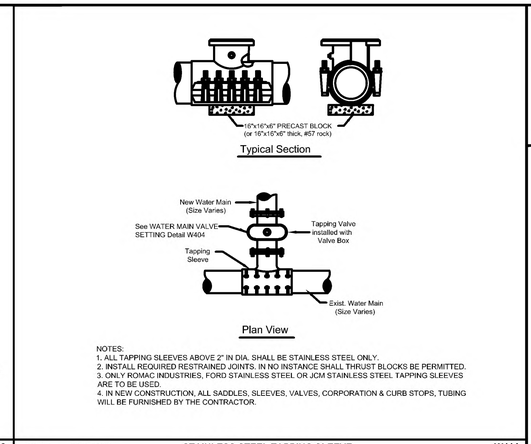
NOTES:
1. OS & Y Valve Handles will be Chained and Locked.
2. Meter Sets will be Painted after Installation.
3. Bypass Pipe & Fittings shall be Threaded Brass, Copper or Ductile Iron, (No PVC).
4. Installation Requirements: No P.V.C. Piping above Ground.
5. Device shall be Properly Supported.
6. Device shall be Protected from Freezing.
7. All Installations shall be Approved by the City Engineer.
8. Device shall be Installed Level, Tested and Certified.
9. Certification of testing shall be placed in Permit Box for Inspector's verification.
9. Consult local Fire Authority for location size & requirements for Fire Dept. connections.
10. All fittings shall be Lead Free.
11. All concrete shall have a minimum strength of 3,000 psi at 28 days.

* APPROVED R.P. DEVICES
Wilkins 975XL2
Watts Model LF909 or LF009
Conbraco 40LF-200-03

* APPROVED DOUBLE-CHECK VALVES
Wilkins 350A
Watts Model LF709 or LF007
Conbraco 40LF-100-03

DATE: 11/07/2022 **DOUBLE DETECTOR CHECK VALVE ASSEMBLY - 4" THRU 12"** W413

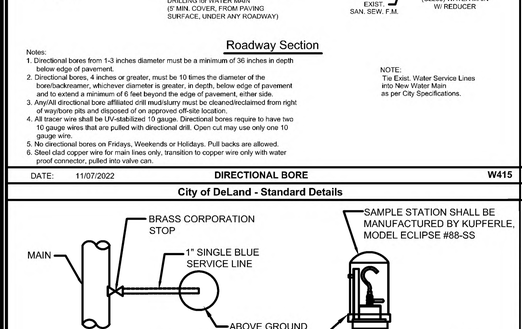
City of DeLand - Standard Details



NOTES:
1. ALL TAPPING SLEEVES ABOVE 2" IN DIA. SHALL BE STAINLESS STEEL ONLY.
2. INSTALL REQUIRED RESTRAINED JOINTS. IN NO INSTANCE SHALL THRUST BLOCKS BE PERMITTED.
3. ONLY ROMAC INDUSTRIES, FORD STAINLESS STEEL OR JCM STAINLESS STEEL TAPPING SLEEVES ARE TO BE USED.
4. IN NEW CONSTRUCTION, ALL SADDLES, SLEEVES, VALVES, CORPORATION & CURB STOPS, TUBING WILL BE FURNISHED BY THE CONTRACTOR.

DATE: 11/07/2022 **STAINLESS STEEL TAPPING SLEEVE** W414

City of DeLand - Standard Details

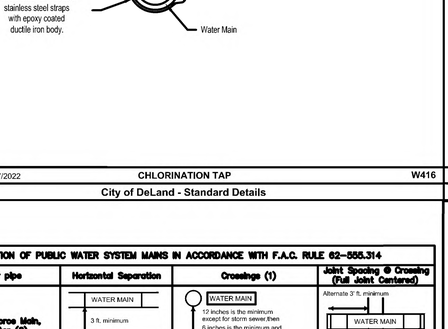


Notes:
1. Directional bores from 1-3 inches diameter must be a minimum of 36 inches in depth below edge of pavement.
2. Directional bores, 4 inches or greater, must be 10 times the diameter of the bore/backreamer, whichever diameter is greater, in depth, below edge of pavement and to extend a minimum of 6 feet beyond the edge of pavement, either side.
3. Any/All directional bore affiliated drill mud/slurry must be cleaned/reclaimed from right of way/bore pits and disposed of on approved off-site location.
4. All tracer wire shall be UV-stabilized 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire.
5. No directional bores on Fridays, Weekends or Holidays. Pull backs are allowed.
6. Steel clad copper wire for main lines only, transition to copper wire only with water proof connector, pulled into valve can.

NOTE:
Tie Exist. Water Service Lines into New Water Main as per City Specifications.

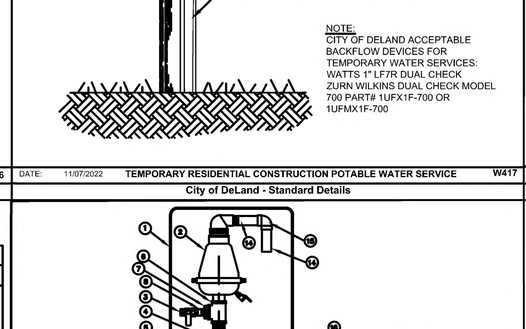
DATE: 11/07/2022 **DIRECTIONAL BORE** W415

City of DeLand - Standard Details



DATE: 11/07/2022 **CHLORINATION TAP** W416

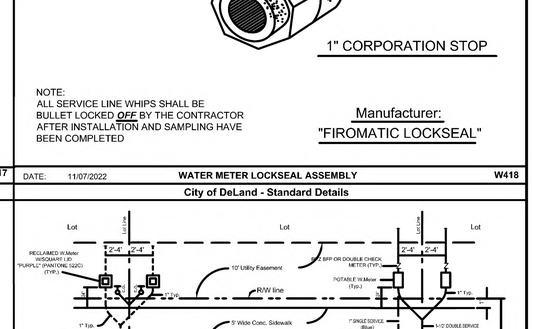
City of DeLand - Standard Details



NOTE:
CITY OF DELAND ACCEPTABLE BACKFLOW DEVICES FOR TEMPORARY WATER SERVICES: WATTS 1" LF7R DUAL CHECK ZURN WILKINS DUAL CHECK MODEL 700 PART# 1UFX1F-700 OR 1UFMX1F-700

DATE: 11/07/2022 **TEMPORARY RESIDENTIAL CONSTRUCTION POTABLE WATER SERVICE** W417

City of DeLand - Standard Details

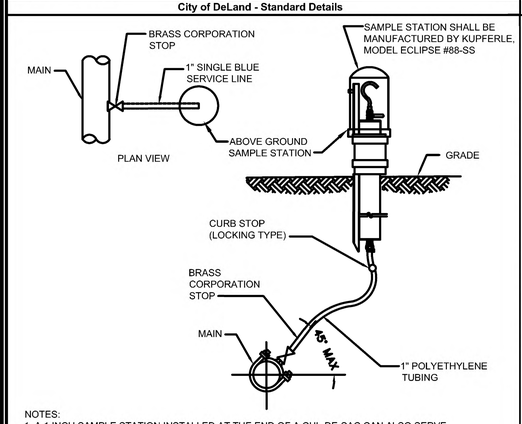


NOTE:
ALL SERVICE LINE WHIPS SHALL BE BULLET LOCKED ***OFF*** BY THE CONTRACTOR AFTER INSTALLATION AND SAMPLING HAVE BEEN COMPLETED

Manufacturer:
"FIROMATIC LOCKSEAL"

DATE: 11/07/2022 **WATER METER LOCKSEAL ASSEMBLY** W418

City of DeLand - Standard Details



NOTES:
1. A 1 INCH SAMPLE STATION INSTALLED AT THE END OF A CUL-DE-SAC CAN ALSO SERVE AS A BLOW -OFF VALVE WHEN BOTH ARE REQUIRED.

DATE: 11/07/2022 **WATER SAMPLE STATION** W419

City of DeLand - Standard Details

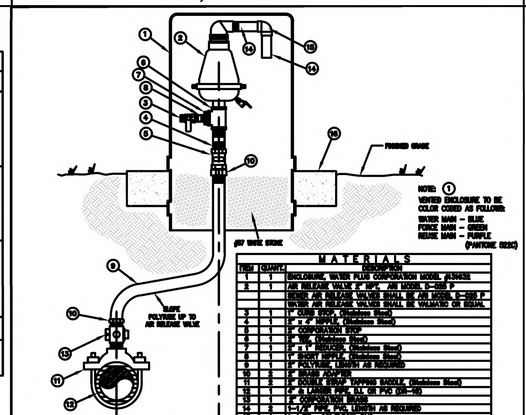
LOCATION OF PUBLIC WATER SYSTEM MAINS IN ACCORDANCE WITH F.A.C. RULE 62-555.314

Other pipe	Horizontal Separation	Crossings (1)	Joint Spacing @ Crossing (Full Joint Centered)
Storm Sewer Stormwater Force Main, Reclaimed Water (2)	WATER MAIN 3 ft. minimum	WATER MAIN 12 inches is the minimum except for storm sewer then 6 inches is the minimum and 12 inches is preferred	Alternate 3' ft. minimum WATER MAIN
Vacuum Sanitary Sewer	WATER MAIN 10 ft. preferred 3 ft. minimum	WATER MAIN 12 inches preferred 6 inches minimum	Alternate 3' ft. minimum WATER MAIN
Gravity Sewer Sanitary Sewer, Sanitary Sewer Force Main, Reclaimed Water (4)	WATER MAIN 10 ft. preferred 6 ft. minimum (3)	WATER MAIN 12 inches is the minimum except for gravity sewer,then 6 inches is the minimum and 12 inches is preferred	Alternate 6' ft. minimum WATER MAIN
On-Site Sewage Treatment & Disposal System(4)	10 ft minimum	---	---

(1) Water Main Should Cross Above other pipe, When Water Main Must Be Below Other Pipe,the Minimum Separation is 12" Inches.
(2) Reclaimed Water Regulated Under Part III of chapter 62-610, F.A.C.
(3) 3 ft. for Gravity Sanitary sewer where the Bottom of the Water Main is laid at least 6 inches above the top of gravity sanitary sewer.
(4) Reclaimed water not regulated under Part III of Chapter 62-160, F.A.C.

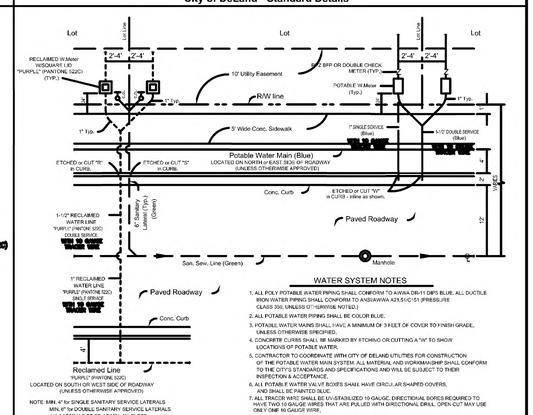
DATE: 11/07/2022 **WATER PIPE SEPERATION REQUIREMENTS** W420

City of DeLand - Standard Details



DATE: 11/07/2022 **OFFSET AIR RELEASE VALVE** W421

City of DeLand - Standard Details



WATER SYSTEM NOTES
1. ALL POLY POTABLE WATER PIPING SHALL CONFORM TO AWWA DR-11 DIPS BLUE, ALL DUCTILE IRON WATER PIPING SHALL CONFORM TO ANSI/AWWA A21.51/C151 (PRESS.)RE CLASS 200, UNLESS 0/T/ (SERVICE NOTED.)
2. ALL POTABLE WATER PIPE SHALL BE COLOR BLUE.
3. POTABLE WATER MAINS SHALL HAVE A MINIMUM OF 3 FEET OF COVER TO FINISH GRADE, UNLESS OTHERWISE SPECIFIED.
4. CONCRETE CURBS SHALL BE MARKED BY ETCHING OR CUTTING A "W" TO SHOW LOCATIONS OF POTABLE WATER.
5. CONTRACTOR TO COORDINATE WITH CITY OF DELAND UTILITIES FOR CONSTRUCTION OF THE POTABLE WATER MAIN SYSTEM. ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO THE CITY'S STANDARDS AND SPECIFICATIONS AND WILL BE SUBJECT TO THEIR INSPECTION & ACCEPTANCE.
6. ALL POTABLE WATER VALVE BOXES SHALL HAVE CIRCULAR SHAPED COVERS, AND SHALL BE PAINTED BLUE.
7. ALL TRACER WIRE SHALL BE UV-STABILIZED 10 GAUGE. DIRECTIONAL BORES REQUIRED TO HAVE TWO 10 GAUGE WIRES THAT ARE PULLED WITH DIRECTIONAL DRILL. OPEN CUT MAY USE ONLY ONE 10 GAUGE WIRE.

DATE: 11/07/2022 **RESIDENTIAL UTILITY LAYOUT** W422

City of DeLand - Standard Details

EVANS ENGINEERING, INC.
CIVIL ENGINEERING LAND PLANNING PERMITTING SERVICES
719 IRMA AVENUE
ORLANDO, FLORIDA 32803
(407) 872-1515
www.evansenginc.com
CERTIFICATE OF AUTHORIZATION NO. 00006788

EVANS ENGINEERING, INC.
CERTIFICATE OF AUTHORIZATION NO. 6788

DAVID L. EVANS
FLORIDA P.E. NO. 46586

DATE:

CITY OF DELAND, FLORIDA
1102 S. GARFIELD AVENUE, DELAND, FLORIDA 32724

DATE: 11/07/2022 CHECKED BY: NAME
SCALE: NOT TO SCALE DRAWN BY: ERIC SAMPSON

TITLE: WATER SYSTEM DETAILS (Sheet 2)

FILE: drive letter/details locations

POINTE GRAND APARTMENTS
DELAND, FLORIDA

UTILITY DETAILS

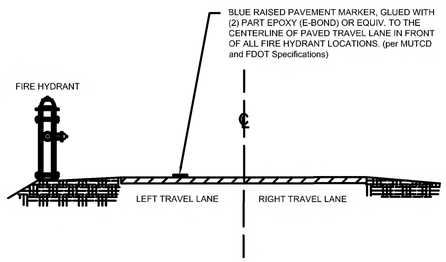
REVISIONS		
DATE	NO.	DETAIL
06/16/23	1	REVISED PER COMMENTS

DRAWN BY:	DATE:
FE	03/06/23
CHECKED BY:	JOB #:
DE	37501

SHEET #:
C14.1

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C:\37501 - Pointe Grand\37501 14.0-14.5 UTILITY DETAILS.dwg (02) Plotted on: Jul 31, 2023 - 3:52pm by Mike



DATE: 11/07/2022 **REFLECTIVE PAVEMENT MARKER FOR FIRE HYDRANT LOCATION** W423

City of DeLand - Standard Details

Approved Ford Valve for Service Lines

1" SERVICE



Pack Joint for Copper or Plastic Tubing (CTS) Inlet by Meter Swivel Nut

Catalog Number	Description: Valve Size	Serv. Line Size	Meter Size	Approx. Wt. Lbs.
B43-211W-NL	5/8"	1/2"	5/8"	1.4
B43-212W-NL	5/8"	1/2"	5/8"x3/4" & 3/4"	1.5
▶♦ B43-231W-NL	5/8"	3/4"	5/8"	1.6
▶♦ B43-232W-NL	5/8"	3/4"	5/8"x3/4" & 3/4"	1.7
▶ B43-331W-NL	3/4"	3/4"	5/8"	2.1
▶♦ B43-332W-NL	3/4"	3/4"	5/8"x3/4" & 3/4"	2.4
▶♦ B43-334W-NL	3/4"	3/4"	1"	2.3
▶ B43-341W-NL	3/4"	1"	5/8"	2.7
▶♦ B43-342W-NL	3/4"	1"	5/8"x3/4" & 3/4"	2.4
▶♦ B43-344W-NL	3/4"	1"	1"	2.7
▶♦ B43-444W-NL	1"	1"	1"	3.2
B43-454W-NL	1"	1-1/4"	1"	3.4

2" SERVICE



Pack Joint for Copper or Plastic Tubing (CTS) by Female Iron Pipe Thread

Catalog Number	Valve Size	CTS End	FIP End	Approx. Wt. Lbs.
▶♦ * B41-333-NL	3/4"	3/4"	3/4"	2.0
▶♦ B41-334-NL	3/4"	3/4"	1"	2.1
▶♦ B41-343-NL	3/4"	1"	3/4"	2.2
▶♦ B41-344-NL	3/4"	1"	1"	2.4
♦ BL41-344-4-875-NL	3/4"	1"	1"	3.1
▶♦ * B41-444-NL	1"	1"	1"	2.8
♦ B41-454-NL	1"	1-1/4"	1"	3.2
♦ B41-455-NL	1"	1-1/4"	1-1/4"	3.7
♦ B41-555-NL	1-1/4"	1-1/4"	1-1/4"	5.6
♦ **B41-666-NL	1-1/2"	1-1/2"	1-1/2"	7.0
B41-677-NL	1-1/2"	2"	2"	9.6
♦ **B41-777-NL	2"	2"	2"	11.1

DATE: 11/07/2022 **VALVE FOR WATER AND RECLAIM SERVICE LINE** W424

City of DeLand - Standard Details

Approved Muller Valve for Service Lines

1" SERVICE



P-24350N

Mueller 300 Ball Straight Meter Valve
Mueller Pack Joint Connection for CTS O.D.* tubing x meter swivel nut**.
Quarter turn check - lock wing. 360° turn option available by adding -3 suffix to catalog number.
Example: P-24350-3

Catalog size	3/4"x5/8" R †	3/4" R †	3/4"	5/8"x3/4"x1"	1" R †	1"
Meter size	5/8"	5/8"x3/4", 3/4"	5/8"x3/4", 3/4"	5/8"x3/4", 3/4"	1"	1"
Tubing size	3/4"	3/4"	3/4"	1"	1"	1"

2" SERVICE



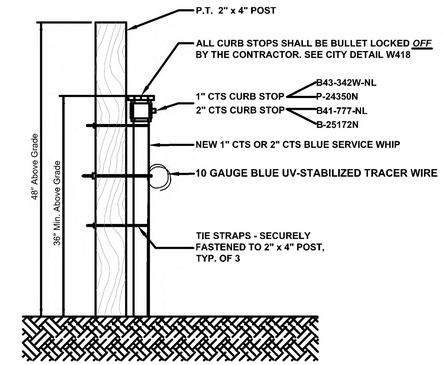
P-25172N

Mueller 300 Ball Curb Valve
Inlet: Mueller Pack Joint Connection for CTS O.D.* tubing
Outlet: F.I.P. thread
Quarter turn check-this valve may be ordered with 360° turn option by adding -3 to end of catalog number (P-25172-3)

3/4"R	3/4"	1"R	1"	1-1/2"	2"

DATE: 11/07/2022 **VALVE FOR WATER AND RECLAIM SERVICE LINE** W425

City of DeLand - Standard Details



DATE: 11/07/2022 **NEW POTABLE SERVICE WHIP** W426

City of DeLand - Standard Details

CITY OF DELAND, FLORIDA
1102 S. GARFIELD AVENUE, DELAND, FLORIDA 32724

DATE: 11/07/2022 CHECKED BY: NAME
SCALE: NOT TO SCALE DRAWN BY: ERIC SAMPSON

TITLE: *WATER SYSTEM DETAILS (Sheet 3)*

FILE: *drive letter/details locations*

EVANS ENGINEERING, INC.
CIVIL ENGINEERING LAND PLANNING PERMITTING SERVICES
719 IRMA AVENUE
ORLANDO, FLORIDA 32803
(407) 872-1515
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CERTIFICATE OF AUTHORIZATION NO. 00006788

EVANS ENGINEERING, INC.
CERTIFICATE OF AUTHORIZATION NO. 6788

DAVID L. EVANS
FLORIDA P.E. NO. 46586

DATE: _____

POINTE GRAND APARTMENTS
DELAND, FLORIDA

UTILITY DETAILS

REVISIONS			
DATE	NO.	DETAIL	
06/16/23	1		REVISED PER COMMENTS

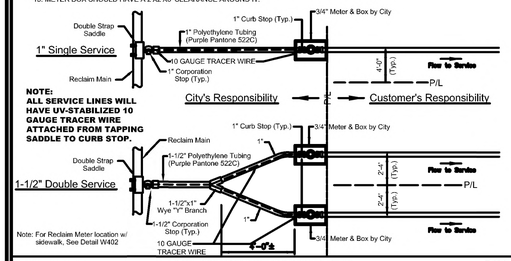
DRAWN BY:	DATE:
FE	03/06/23
CHECKED BY:	JOB #:
DE	37501

SHEET #: C14.2

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G:\37501 - Pointe DeLand\37501 14.0-14.5 UTLITY DETAILS.dwg (03) Plotted on: Jul 27, 2023 - 3:32pm by Mike

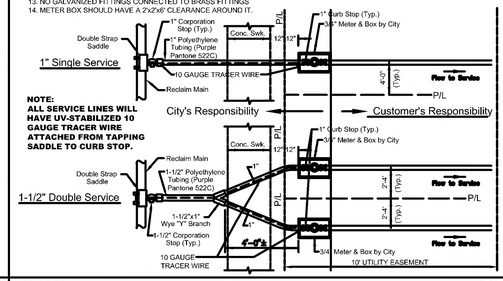
NOTES:
1. RECLAIM MAINS TO BE ON SOUTH or WEST SIDE OF R.O.W., APPROX. 4 FT. BACK OF CURB UNLESS OTHERWISE AUTHORIZED BY CITY ENGINEER.
2. SERVICE CONNECTIONS TO BE 4 FT. FROM SIDE LOT LINE ON EITHER SIDE OF LOT. THESE SERVICES TO BE CONSISTENT WITHIN THE SUBDIVISION. DRIVEWAYS SHALL NOT BE BUILT OVER METERS.
3. ALL LINES SHALL BE PRESSURE TESTED (TEST FOR TWO HOURS @ 150 P.S.I.) UNDER THE DIRECTION OF THE UTILITIES DEPARTMENT. AFTER SUCCESSFUL COMPLETION OF THE TESTING, THE PRESSURE SHALL REMAIN ON THE SYSTEM AT ALL TIMES.
4. TEN FT. SEPARATION REQUIRED BETWEEN PARALLEL WATER & SANITARY SEWER LINES.
5. SADDLE IS REQUIRED FOR ALL SERVICE CONNECTIONS TO 4" PVC MAINS. SADDLE IS REQUIRED FOR 2" SERVICE CONNECTIONS TO 6" and LARGER PVC MAINS. LARGEST SERVICE CONNECTION TO A 4" MAIN IS MIN. 1-1/2" and LARGEST TO ANY MAIN IS 2".
6. MINIMUM DISTANCE BETWEEN SERVICE TAPS TO BE NOT LESS THAN 36".
7. SINGLE SERVICE TAP SHALL BE 1".
8. DOUBLE SERVICE TAP SHALL BE 1-1/ 2".
9. ALL FITTINGS SHALL BE BRASS ONLY.
10. ALL CORPORATION STOPS, SHALL BE "FORD" OR "MUELLER" ONLY.
11. ALL 3/4", 1", 1-1/2", & 2" W.M., SHALL BE SDR 9, 200 psi, ASTMD 2737, (PURPLE) POLYETHYLENE TUBING.
12. ALL BRASS FITTINGS SHALL BE LEAD FREE.
13. NO GALVANIZED FITTINGS CONNECTED TO BRASS FITTINGS.
14. PLANTINGS AND OBSTRUCTIONS SHOULD BE AVOIDED WITHIN 3 FT. RADIUS FOR SERVICE ACTIVITY.
15. METER BOX SHOULD HAVE A 2'X2'X6" CLEARANCE AROUND IT.



DATE: 11/07/2022 **RECLAIM MAIN SERVICE CONNECTION** R401

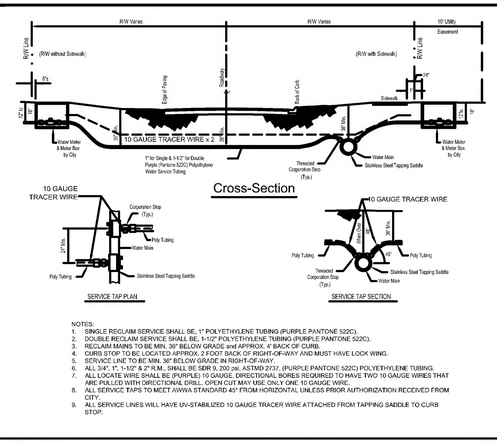
City of DeLand - Standard Details

NOTES:
1. RECLAIM MAINS TO BE ON SOUTH or WEST SIDE OF R.O.W., APPROX. 4 FT. BACK OF CURB UNLESS OTHERWISE AUTHORIZED BY CITY ENGINEER.
2. SERVICE CONNECTIONS TO BE 4 FT. FROM SIDE LOT LINE ON EITHER SIDE OF LOT. THESE SERVICES TO BE CONSISTENT WITHIN THE SUBDIVISION. DRIVEWAYS SHALL NOT BE BUILT OVER METERS.
3. ALL LINES SHALL BE PRESSURE TESTED (TEST FOR TWO HOURS @ 150 P.S.I.) UNDER THE DIRECTION OF THE UTILITIES DEPARTMENT. AFTER SUCCESSFUL COMPLETION OF THE TESTING, THE PRESSURE SHALL REMAIN ON THE SYSTEM AT ALL TIMES.
4. TEN FT. SEPARATION REQUIRED BETWEEN PARALLEL WATER & SANITARY SEWER LINES.
5. SADDLE IS REQUIRED FOR ALL SERVICE CONNECTIONS TO 4" PVC MAINS. SADDLE IS REQUIRED FOR 2" SERVICE CONNECTIONS TO 6" and LARGER PVC MAINS. LARGEST SERVICE CONNECTION TO A 4" MAIN IS MIN. 1-1/2" and LARGEST TO ANY MAIN IS 2".
6. MINIMUM DISTANCE BETWEEN SERVICE TAPS TO BE NOT LESS THAN 36".
7. SINGLE SERVICE TAP SHALL BE 1".
8. DOUBLE SERVICE TAP SHALL BE 1-1/ 2".
9. ALL FITTINGS SHALL BE BRASS ONLY.
10. ALL CORPORATION STOPS, SHALL BE "FORD" OR "MUELLER" ONLY.
11. ALL 3/4", 1", 1-1/2", & 2" W.M., SHALL BE SDR 9, 200 psi, ASTMD 2737, (PURPLE) POLYETHYLENE TUBING.
12. ALL BRASS FITTINGS SHALL BE LEAD FREE.
13. NO GALVANIZED FITTINGS CONNECTED TO BRASS FITTINGS
14. METER BOX SHOULD HAVE A 2'x2'x6" CLEARANCE AROUND IT.



DATE: 11/07/2022 **RECLAIM MAIN SERVICE CONN. WITH SIDEWALK** R402

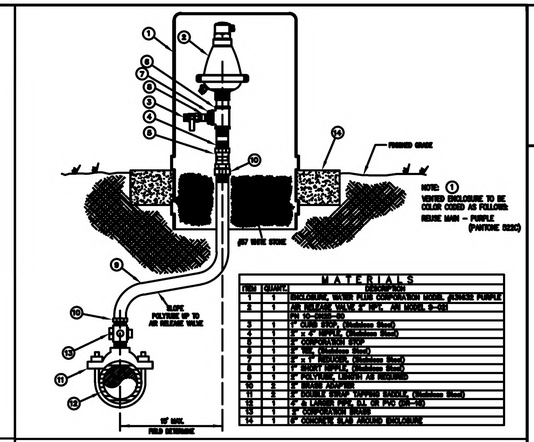
City of DeLand - Standard Details



NOTES:
1. SINGLE RECLAIM SERVICE SHALL BE, 1" POLYETHYLENE TUBING (PURPLE PANTONE 522C).
2. DOUBLE RECLAIM SERVICE SHALL BE, 1-1/2" POLYETHYLENE TUBING (PURPLE PANTONE 522C).
3. RECLAIM MAINS TO BE MIN. 36" BELOW GRADE and APPROX. 4' BACK OF CURB.
4. CURB STOP TO BE LOCATED APPROX. 2 FOOT BACK OF RIGHT-OF-WAY AND MUST HAVE LOCK WING.
5. SERVICE LINE TO BE MIN. 36" BELOW GRADE IN RIGHT-OF-WAY.
6. ALL 3/4", 1", 1-1/2" & 2" R.W., SHALL BE SDR 9, 200 psi, ASTMD 2737, (PURPLE PANTONE 522C) POLYETHYLENE TUBING.
7. ALL LOCATE WIRE SHALL BE (PURPLE) 10 GAUGE, DIRECTIONAL BORES REQUIRED TO HAVE TWO 10 GAUGE WIRES THAT ARE PULLED WITH DIRECTIONAL DRILL, OPEN CUT MAY USE ONLY ONE 10 GAUGE WIRE.
8. ALL SERVICE TAPS TO MEET AWWA STANDARD 45° FROM HORIZONTAL UNLESS PRIOR AUTHORIZATION RECEIVED FROM CITY.
9. ALL SERVICE LINES WILL HAVE UV-STABILIZED 10 GAUGE TRACER WIRE ATTACHED FROM TAPPING SADDLE TO CURB STOP.

DATE: 11/07/2022 **RECLAIM MAIN SERVICE LINES** R403

City of DeLand - Standard Details

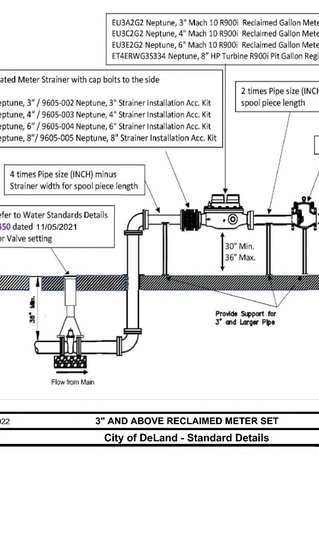


MATERIALS

ITEM	QUANT.	
1	1	ENCLOSURE, WATER FLOW CORPORATION MODEL ALMAZE PURPLE
2	1	AIR RELEASE VALVE 2" SPT. AIR MODEL D-025
3	1	2" NIPPLE (Stainless Steel)
4	1	2" CURB STOP (Stainless Steel)
5	1	2" x 2" ELBOW (Stainless Steel)
6	1	2" CORPORATION STOP
7	1	2" DOUBLE STRAP SADDLE
8	1	2" x 1" REDUCER, (Stainless Steel)
9	1	2" POLYTUBE, LENGTH AS REQUIRED
10	1	2" SWING JOINT
11	1	2" DOUBLE STRAP TAPPING SADDLE, (Stainless Steel)
12	1	2" x 1" METER BOX, ALL OF PVC (SR-26)
13	1	2" CORPORATION STOP
14	1	2" CONCRETE EVA AROUND ENCLOSURE

DATE: 11/07/2022 **OFFSET AIR RELEASE VALVE** R421

City of DeLand - Standard Details

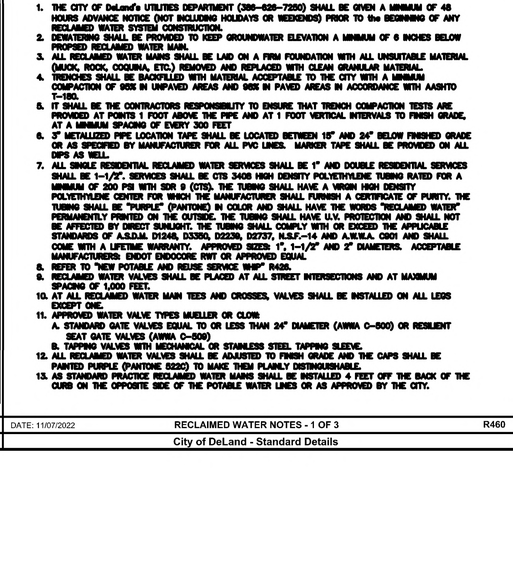


DATE: 11/07/2022 **NEW REUSE SERVICE WHIP** R426

City of DeLand - Standard Details

DATE: 11/07/2022 **3" AND ABOVE RECLAIMED METER SET** R453

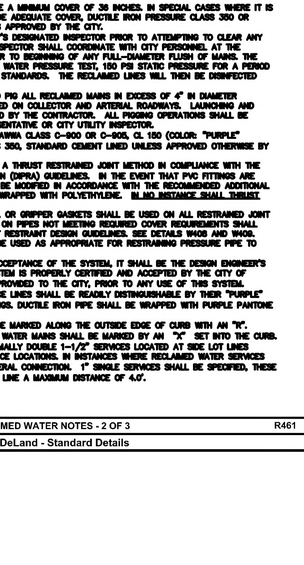
City of DeLand - Standard Details



Notes:
1.All tracer wire shall be UV-stabilized 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use.
2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.

DATE: 11/07/2022 **RECLAIMED WATER VALVE SETTING** R450

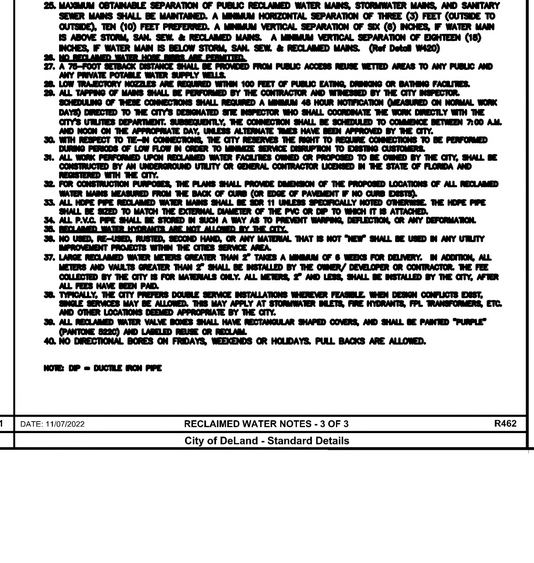
City of DeLand - Standard Details



NOTES:
1. Sign background shall be white, letters shall be black (Helivetica, Swiss 721, corel, or acceptable equal) and border shall be Pantone Purple 522C.
2. Height of sign will depend on location and surrounding landscape plant types. In all cases, the sign shall visable to the public.
3. Engineering grade refective materials shall be used for sign.
4. Sign materials shall be of 0.040 gauge metal.
5. Sign post shall be 2-3/8" OD steel pipe, hot dip galvanized per ASTM A-123, post to be provided by customer.
6. Mounting hardware shall be stainless steel.
7. Signs shall be place by the contractor in accordance with the City approved plans and/ or as approved by the City. (e.g.) Sign should be posted by entrance to subdivision, storage ponds, irrigation pumps, gate entrances to school facility or game fields, and first and ninth Tees at Golf courses.
8. Public notification should occur in HOA document and City Reclaimed Water Brochure with meter application.

DATE: 11/07/2022 **RECLAIMED WATER SIGNAGE** R451

City of DeLand - Standard Details



NOTE: MIN. 6" for SINGLE SANITARY SERVICE LATERALS
MIN. 8" for DOUBLE SANITARY SERVICE LATERALS
ALL LATERALS TO BE AT MIN. 4% SLOPE.
WIRE IN ENGINE TRACER WIRE

RECLAIMED WATER SYSTEM NOTES

1. ALL PVC RECLAIMED PIPING SHALL CONFORM TO AWWA C900, DR-18, ALL DUCTILE IRON RECLAIMED PIPING SHALL CONFORM TO ANSI/AWWA A21.51/C151 (PRESSURE CLASS 350, UNLESS OTHERWISE NOTED.)
2. ALL RECLAIMED PIPING SHALL BE COLOR CODED: PURPLE (PANTONE 522C)
3. FOR ALL SYSTEMS, THERE SHALL BE READILY IDENTIFIABLE "RECLAIMED WATER" OR "DO NOT DRINK" NOTICE MARKING ON COVERS ON DISTRIBUTION FACILITIES AND APPURTENANCES. (SEE APPLICABLE DETAIL) Index No. 4510 thru 4514.
4. RECLAIMED MAINS SHALL HAVE A MINIMUM OF 3 FEET OF COVER TO FINISH GRADE, UNLESS OTHERWISE SPECIFIED.
5. CONCRETE CURBS SHALL BE MARKED BY ETCHING OR CUTTING AN "R" TO SHOW LOCATIONS OF RECLAIMED WATER.
6. CONTRACTOR TO COORDINATE WITH CITY OF DELAND UTILITIES FOR CONSTRUCTION OF THE RECLAIMED MAIN SYSTEM. ALL MATERIAL AND WORKMANSHIP SHALL CONFORM TO THE CITY'S STANDARDS AND SPECIFICATIONS AND WILL BE SUBJECT TO THEIR INSPECTION & ACCEPTANCE.
7. ALL RECLAIMED WATER VALVE BOXES SHALL HAVE RECTANGULAR SHAPED COVERS, AND SHALL BE PAINTED PURPLE (PANTONE 522C).
8. ALL TRACER WIRE SHALL BE UV-STABILIZED 10 GAUGE, DIRECTIONAL BORES REQUIRED TO HAVE TWO 10 GAUGE WIRES THAT ARE PULLED WITH DIRECTIONAL DRILL, OPEN CUT MAY USE ONLY ONE 10 GAUGE WIRE.

DATE: 11/07/2022 **RECLAIMED WATER SYSTEM LAYOUT** R452

City of DeLand - Standard Details

1. **THE CITY OF DeLand's UTILITIES DEPARTMENT (386–626–7250) SHALL BE GIVEN A MINIMUM OF 48 HOURS ADVANCE NOTICE (NOT INCLUDING HOLIDAYS OR WEEKENDS) PRIOR TO the BEGINNING OF ANY RECLAIMED WATER SYSTEM CONSTRUCTION.**
2. **DEWATERING SHALL BE PROVIDED TO KEEP GROUNDWATER ELEVATION A MINIMUM OF 6 INCHES BELOW PROPSED RECLAIMED WATER MAIN.**
3. **ALL RECLAIMED WATER MAIN SHALL BE LAID ON A FIRM FOUNDATION WITH ALL UNSUITABLE MATERIAL (MUCK, ROCK, COQUINA, ETC.) REMOVED and REPLACED WITH CLEAN GRANULAR MATERIAL.**
4. **TRENCHES SHALL BE BACKFILLED WITH MATERIAL ACCEPTABLE TO THE CITY WITH A MINIMUM COMPACTION OF 95% IN UNPAVED AREAS AND 98% IN PAVED AREAS IN ACCORDANCE WITH AASHTO T–180.**
5. **IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO ENSURE THAT TRENCH COMPACTION TESTS ARE PROVIDED AT POINTS 1 FOOT ABOVE THE PIPE AND AT 1 FOOT VERTICAL INTERVALS TO FINISH GRADE, AT A MINIMUM SPACING OF EVERY 300 FEET**
6. **3" METALLIZED PIPE LOCATION TAPE SHALL BE LOCATED BETWEEN 18" AND 24" BELOW FINISHED GRADE OR AS SPECIFIED BY MANUFACTURER FOR ALL PVC LINES. MARKER TAPE SHALL BE PROVIDED ON ALL DIPS AS WELL.**
7. **ALL SINGLE RESIDENTIAL RECLAIMED WATER SERVICES SHALL BE 1" AND DOUBLE RESIDENTIAL SERVICES SHALL BE 1–1/2". SERVICES SHALL BE CTS 3408 HIGH DENSITY POLYETHYLENE TUBING RATED FOR A MINIMUM OF 200 PSI WITH SDR 9 (CTS). THE TUBING SHALL HAVE A VIRGIN HIGH DENSITY POLYETHYLENE CENTER FOR MAXIMUM STRENGTH. THE MANUFACTURER SHALL FURNISH A CERTIFICATE OF PURITY. THE TUBING SHALL BE "PURPLE (PANTONE) IN COLOR and SHALL HAVE THE WORDS "RECLAIMED WATER" PERMANENTLY PRINTED ON THE OUTSIDE. THE TUBING SHALL HAVE U.V. PROTECTION and SHALL NOT BE AFFECTED BY DIRECT SUNLIGHT. THE TUBING SHALL COMPLY WITH OR EXCEED THE APPLICABLE STANDARDS OF A.S.D.M. D1248, D3350, D2239, D2737, N.S.F.–14 AND A.W.W.A. C901 AND SHALL COME WITH A LIFETIME WARRANTY. APPROVED SIZES: 1", 1–1/2" AND 2" DIAMETERS. ACCEPTABLE MANUFACTURERS: ENDOT ENDOCORE RWT OR APPROVED EQUAL.**
8. **REFER TO "NEW POTABLE AND REUSE SERVICE WHIP" R426.**
9. **RECLAIMED WATER VALVES SHALL BE PLACED AT ALL STREET INTERSECTIONS AND AT MAXIMUM SPACING OF 1,000 FEET.**
10. **AT ALL RECLAIMED WATER MAIN TEES AND CROSSES, VALVES SHALL BE INSTALLED ON ALL LEGS EXCEPT ONE.**
11. **APPROVED WATER VALVE TYPES MUELLER OR CLOW:**
    A. **STANDARD GATE VALVES EQUAL TO OR LESS THAN 24" DIAMETER (AWWA C–500) OR RESILIENT SEAT GATE VALVES (AWWA C–509)**
    B. **TAPPING VALVES WITH MECHANICAL OR STAINLESS STEEL TAPPING SLEEVE.**
12. **ALL RECLAIMED WATER VALVES SHALL BE ADJUSTED TO FINISH GRADE and THE CAPS SHALL BE PAINTED PURPLE (PANTONE 522C) TO MAKE THEM PLAINLY DISTINGUISHABLE.**
13. **AS STANDARD PRACTICE RECLAIMED WATER MAINS SHALL BE INSTALLED 4 FEET OFF THE BACK OF THE CURB ON THE OPPOSITE SIDE OF THE POTABLE WATER LINES OR AS APPROVED BY THE CITY.**

DATE: 11/07/2022 **RECLAIMED WATER NOTES - 1 OF 3** R460

City of DeLand - Standard Details

14. **ALL RECLAIMED WATER MAINS SHALL HAVE A MINIMUM COVER OF 36 INCHES. IN SPECIAL CASES WHERE IT IS IMPOSSIBLE OR INAPPROPRIATE TO PROVIDE ADEQUATE COVER, DUCTILE IRON PRESSURE CLASS 350 OR CONCRETE ENCASEMENT MAY BE USED AS APPROVED BY THE CITY.**
15. **THE CONTRACTOR SHALL NOTIFY THE CITY'S DESIGNATED INSPECTOR PRIOR TO ATTEMPTING TO CLEAR ANY RECLAIMED WATER MAIN FOR USE. THE INSPECTOR SHALL COORDINATE WITH CITY PERSONNEL AT THE RECLAIMED WATER PLANT 48 HOURS PRIOR TO BEGINNING OF ANY FULL–DIAMETER FLUSH OF MAINS. THE CONTRACTOR WILL CONDUCT A STANDARD WATER PRESSURE TEST, 150 PSI STATIC PRESSURE FOR A PERIOD OF 2 HOURS PER AWWA POTABLE WATER STANDARDS. THE RECLAIMED LINES WILL THEN BE DISINFECTED WITH CHLORINE, FLUSHED CLEAR AGAIN.**
16. **THE CONTRACTOR SHALL BE REQUIRED TO PIG ALL RECLAIMED MAINS IN EXCESS OF 4" IN DIAMETER AND PRIMARY DISTRIBUTION MAINS LOCATED ON COLLECTOR and ARTERIAL ROADWAYS. LAUNCHING AND EXTRACTION POINTS SHALL BE DETERMINED BY THE CONTRACTOR. ALL PIGGING OPERATIONS SHALL BE WITNESSED BY A PUBLIC UTILITIES REPRESENTATIVE OR CITY UTILITY INSPECTOR.**
17. **RECLAIMED WATER MAINS SHALL BE PVC AWWA CLASS C–900 OR C–905, CL 150 (COLOR: "PURPLE" PANTONE 522C) OR DIP PRESSURE CLASS 350, STANDARD CEMENT LINED UNLESS APPROVED OTHERWISE BY THE CITY.**
18. **ALL RECLAIMED WATER MAINS SHALL USE A THRUST RESTRAINED JOINT METHOD IN COMPLIANCE WITH THE DUCTILE IRON PIPE RESEARCH ASSOCIATION (DIPRA) GUIDELINES. IN THE EVENT THAT PVC FITTINGS ARE SPECIFIED, THE RESTRAINED JOINT SHALL BE MODIFIED IN ACCORDANCE WITH THE RECOMMENDED ADDITIONAL RESTRAINED LENGTH REQUIRED FOR PIPE WRAPPED WITH POLYETHYLENE. IN NO INSTANCE SHALL THRUST BLOCKS BE PERMITTED.**
19. **MEGALUGS, BOLTLESS RESTRAINED JOINTS, OR GRIPPER GASKETS SHALL BE USED ON ALL RESTRAINED JOINT INSTALLATIONS. MINIMUM DEPTH OF BURY ON PIPES NOT MEETING REQUIRED COVER REQUIREMENTS SHALL FOLLOW THE MOST RECENT DIPRA THRUST RESTRAINT DESIGN GUIDELINES. SEE DETAILS W408 AND W409.**
20. **GRIPPER RING GASKETS BY ROMAC MAY BE USED AS APPROPRIATE FOR RESTRAINING PRESSURE PIPE TO FITTINGS, VALVES, ETC.**
21. **UPON CONSTRUCTION COMPLETION AND ACCEPTANCE OF THE SYSTEM, IT SHALL BE THE DESIGN ENGINEER'S RESPONSIBILITY TO INSURE THAT THE SYSTEM IS PROPERLY CERTIFIED AND ACCEPTED BY THE CITY OF DeLand UTILITIES AND "AS–BUILTS" ARE PROVIDED TO THE CITY, PRIOR TO ANY USE OF THIS SYSTEM.**
22. **ALL RECLAIMED WATER MAINS AND SERVICE LINES SHALL BE READILY DISTINGUISHABLE BY THEIR "PURPLE" (PANTONE 522C) COLOR OR TAPE MARKINGS. DUCTILE IRON PIPE SHALL BE WRAPPED WITH PURPLE PANTONE 522C POLYETHYLENE.**
23. **ALL RECLAIMED WATER SERVICES SHALL BE MARKED ALONG THE OUTSIDE EDGE OF CURB WITH AN "R".**
    VALVES AND BLOW–OFFS FOR RECLAIMED WATER MAINS SHALL BE MARKED BY AN "X" SET INTO THE CURB.
24. **RECLAIM WATER SERVICES SHALL BE NORMALLY DOUBLE 1–1/2" SERVICES LOCATED AT SIDE LOT LINES ALTERNATING WITH POTABLE WATER SERVICE LOCATIONS. IN INSTANCES WHERE RECLAIMED WATER SERVICES NEED TO BE OFFSET, DUE TO SEWER LATERAL CONNECTION. 1" SINGLE SERVICES SHALL BE SPECIFIED, THESE SERVICES MAY BE OFFSET FROM THE LOT LINE A MAXIMUM DISTANCE OF 4.0'.**

DATE: 11/07/2022 **RECLAIMED WATER NOTES - 2 OF 3** R461

City of DeLand - Standard Details

25. **MAXIMUM OBTAINABLE SEPARATION OF PUBLIC RECLAIMED WATER MAINS, STORMWATER MAINS, AND SANITARY SEWER MAINS SHALL BE MAINTAINED. A MINIMUM HORIZONTAL SEPARATION OF THREE (3) FEET (OUTSIDE TO OUTSIDE), TEN (10) FEET PREFERRED. A MINIMUM VERTICAL SEPARATION OF SIX (6) INCHES, IF WATER MAIN IS ABOVE STORM, SAN. SEW. & RECLAIMED MAINS. A MINIMUM VERTICAL SEPARATION OF EIGHTEEN (18) INCHES, IF WATER MAIN IS BELOW STORM, SAN. SEW. & RECLAIMED MAINS. (Ref Detail W420)**
26. **NO RECLAIMED WATER HOSE BIBS ARE PERMITTED.**
27. **A 75–FOOT SETBACK DISTANCE SHALL BE PROVIDED FROM PUBLIC ACCESS REUSE WETTED AREAS TO ANY PUBLIC AND ANY PRIVATE POTABLE WATER SUPPLY WELLS.**
28. **LOW TRAJECTORY NOZZLES ARE REQUIRED WITHIN 100 FEET OF PUBLIC EATING, DRINKING OR BATHING FACILITIES.**
29. **ALL TAPPING OF MAINS SHALL BE PERFORMED BY THE CONTRACTOR AND WITNESSED BY THE CITY INSPECTOR. SCHEDULING OF THESE CONNECTIONS SHALL REQUIRED A MINIMUM 48 HOUR NOTIFICATION (MEASURED ON NORMAL WORK DAYS) DIRECTED TO THE CITY'S DESIGNATED SITE INSPECTOR WHO SHALL COORDINATE THE WORK DIRECTLY WITH THE CITY'S UTILITIES DEPARTMENT. SUBSEQUENTLY, THE CONNECTION SHALL BE SCHEDULED TO COMMENCE BETWEEN 7:00 A.M. AND NOON ON THE APPROPRIATE DAY, UNLESS ALTERNATE TIMES HAVE BEEN APPROVED BY THE CITY.**
30. **WITH RESPECT TO TIE–IN CONNECTIONS, THE CITY RESERVES THE RIGHT TO REQUIRE CONNECTIONS TO BE PERFORMED DURING PERIODS OF LOW FLOW IN ORDER TO MINIMIZE SERVICE DISRUPTION TO EXISTING CUSTOMERS.**
31. **ALL WORK PERFORMED UPON RECLAIMED WATER FACILITIES OWNED OR PROPOSED TO BE OWNED BY THE CITY, SHALL BE CONSTRUCTED BY AN UNDERGROUND UTILITY OR GENERAL CONTRACTOR LICENSED IN THE STATE OF FLORIDA AND REGISTERED WITH THE CITY.**
32. **FOR CONSTRUCTION PURPOSES, THE PLANS SHALL PROVIDE DIMENSION OF THE PROPOSED LOCATIONS OF ALL RECLAIMED WATER MAINS MEASURED FROM THE FACE OF CURB (OR EDGE OF PAVEMENT IF NO CURB EXISTS).**
33. **ALL HDPE PIPE RECLAIMED WATER MAINS SHALL BE SDR 11 UNLESS SPECIFICALLY NOTED OTHERWISE. THE HDPE PIPE SHALL BE SIZED TO MATCH THE EXTERNAL DIAMETER OF THE PVC OR DIP TO WHICH IT IS ATTACHED.**
34. **ALL P.V.C. PIPE SHALL BE STORED IN SUCH A WAY AS TO PREVENT WARPING, DEFLECTION, OR ANY DEFORMATION.**
35. **RECLAIMED WATER HYDRANTS ARE NOT ALLOWED BY THE CITY.**
36. **NO USED, RE–USED, RUSTED, RECOED HAND, OR ANY MATERIAL THAT IS NOT "NEW" SHALL BE USED IN ANY UTILITY IMPROVEMENT PROJECTS WITHIN THE CITIES SERVICE AREA.**
37. **LARGE RECLAIMED WATER METERS GREATER THAN 2" TAKES A MINIMUM OF 6 WEEKS FOR DELIVERY. IN ADDITION, ALL METERS AND VAULTS GREATER THAN 2" SHALL BE INSTALLED BY THE OWNER/ DEVELOPER OR CONTRACTOR. THE FEE COLLECTED BY THE CITY IS FOR MATERIALS ONLY. ALL METERS, 2" AND LESS, SHALL BE INSTALLED BY THE CITY, AFTER ALL FEES HAVE BEEN PAID.**
38. **TYPICALLY, THE CITY PREFERS DOUBLE SERVICE INSTALLATIONS WHENEVER FEASIBLE. WHEN DESIGN CONFLICTS EXIST, SINGLE SERVICES MAY BE ALLOWED. THIS MAY APPLY AT STORMWATER INLETS, FIRE HYDRANTS, FPL TRANSFORMERS, ETC. AND OTHER LOCATIONS DEEMED APPROPRIATE BY THE CITY.**
39. **ALL RECLAIMED WATER VALVE BOXES SHALL HAVE RECTANGULAR SHAPED COVERS, AND SHALL BE PAINTED "PURPLE" (PANTONE 522C) AND LABELED REUSE OR RECLAIM.**
40. **NO DIRECTIONAL BORES ON FRIDAYS, WEEKENDS OR HOLIDAYS. FULL BACKS ARE ALLOWED.**

NOTE: DIP = DUCTILE IRON PIPE

DATE: 11/07/2022 **RECLAIMED WATER NOTES - 3 OF 3** R462

City of DeLand - Standard Details

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EVANS ENGINEERING, INC.
CERTIFICATE OF AUTHORIZATION NO. 6788

DAVID L. EVANS
FLORIDA P.E. NO. 46586

DATE:

DELAND FLORIDA

CITY OF DELAND, FLORIDA
1102 S. GARFIELD AVENUE, DELAND, FLORIDA 32724

DATE: 11/07/2022
CHECKED BY: NAME
SCALE: NOT TO SCALE
DRAWN BY: ERIC SAMPSON

POINTE GRAND APARTMENTS
DELAND, FLORIDA

UTILITY DETAILS

RECLAIMED WATER DETAILS

TITLE:
FILE: drive letter/details locations

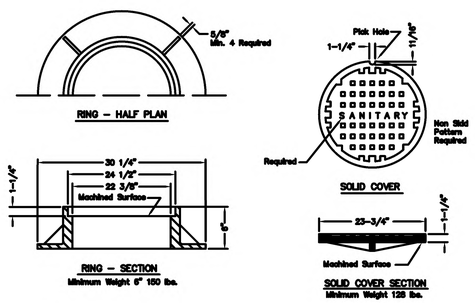
REVISIONS

DATE	NO.	DETAIL
06/16/23	1	REVISED PER COMMENTS

DRAWN BY: FE
DATE: 03/06/23
CHECKED BY: DE
JOB #: 37501

SHEET #: C14.3

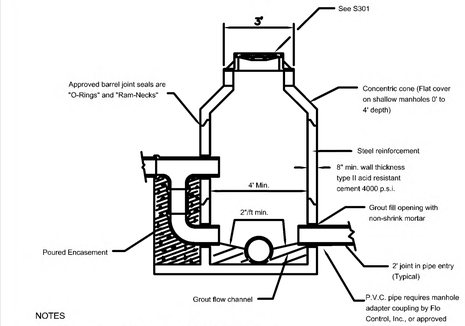
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NOTE:
Manufacturers model of storm ring and cover to be approved by City Engineer.

DATE: 11/07/2022 **SANITARY MANHOLE COVER - USF 170-E** S301

City of DeLand - Standard Details



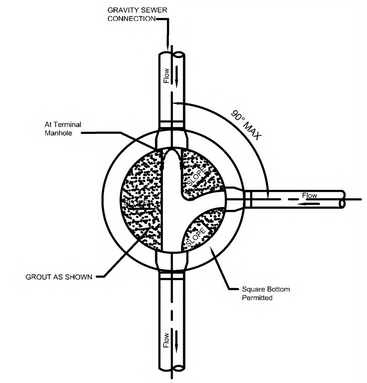
NOTES

1. Precast manhole drop may be approved by City Engineer. Shop drawing submittal required.
2. Drop required when 2' or over.
3. Manholes shall have an interior and exterior coating of at least 15 mils dry thickness PROLO EP214-351 Epoxi-Mastic approval by the City of DeLand Engineering Dept.

SEE S303 FOR PLAN VIEW

DATE: 11/07/2022 **SANITARY MANHOLE** S302

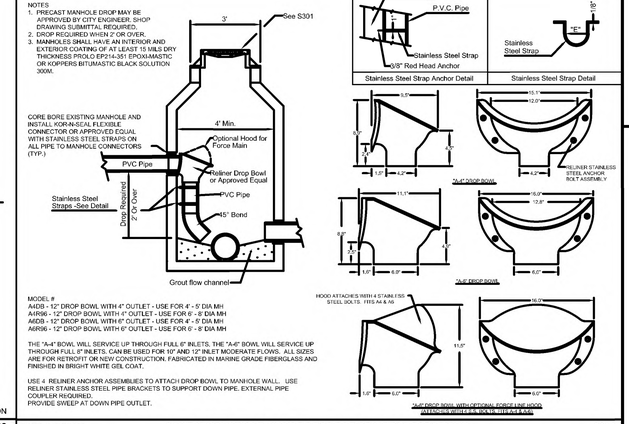
City of DeLand - Standard Details



SEE S302 FOR SECTION

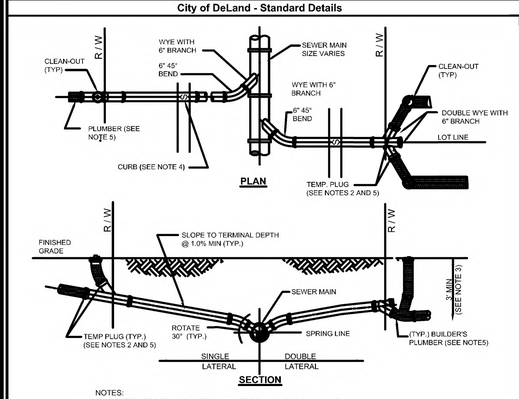
DATE: 11/07/2022 **SANITARY MANHOLE** S303

City of DeLand - Standard Details



DATE: 11/07/2022 **SANITARY MANHOLE - INSIDE DROP FOR GRAVITY & FORCEMAIN** S304

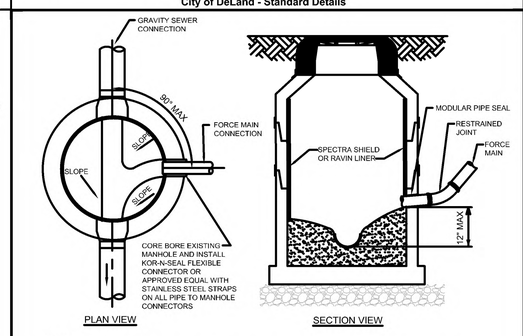
City of DeLand - Standard Details



NOTES:
1. INVERT OF SERVICE LATERAL MUST BE ABOVE SPRING LINE.
2. SERVICE LATERAL SHALL BE CAPPED BY THE CONTRACTOR.
3. WYE SHALL BE NO SHALLOWER THAN 3-FEET AND NO DEEPER THAN 5-FEET.
4. CUT OR CAST "S" IN CONCRETE CURB AT SEWER LATERAL LOCATION AND PAINT GREEN.
5. PLUMBER SHALL REMOVE PLUG, INSTALL CLEAN-OUT, AND CONNECT SERVICE LATERAL TO HOUSE.

DATE: 11/07/2022 **SANITARY SERVICE LATERIALS** S305

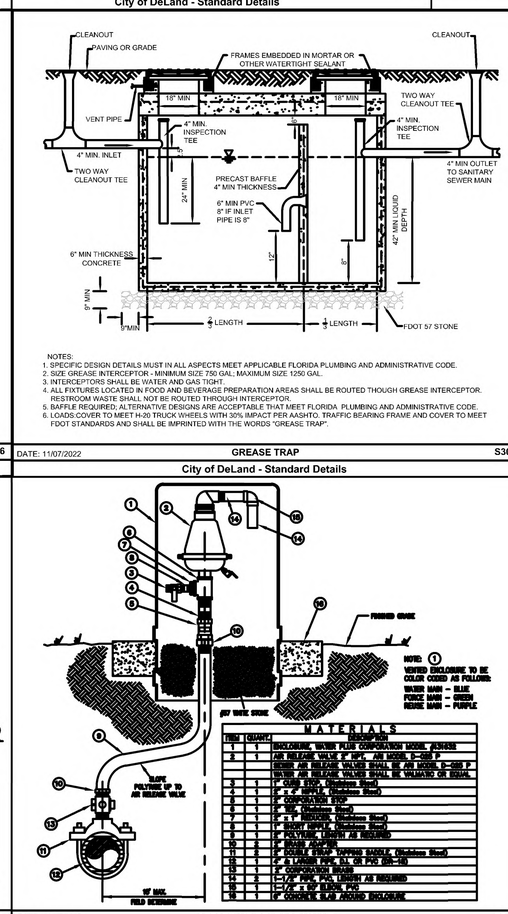
City of DeLand - Standard Details



NOTES:
1. FORCE MAIN ORIENTED TO FACILITATE FLOW AND SHALL ENTER MANHOLE WITHIN 1' ABOVE INVERT OF THE EFFLUENT PIPE.
2. BENCH AS REQUIRED FOR NEW FORCE MAIN.
3. MANHOLE RECEIVING FORCE MAIN AND NEXT MANHOLE SHALL BE LINED. EXISTING MANHOLES RECEIVING FORCE MAIN SHALL BE LINED WITH SPECTRA SHIELD OR RAVIN.
4. CONTRACTOR TO COORDINATE THE PRESENCE OF UTILITIES INSPECTOR DURING CORING AND CONNECTIONS TO EXISTING MANHOLES.

DATE: 11/07/2022 **FORCE MAIN TO GRAVITY SEWER CONNECTION** S306

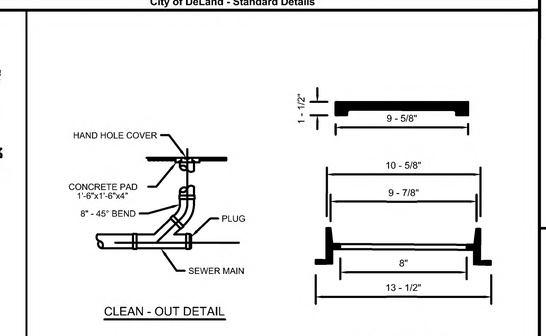
City of DeLand - Standard Details



NOTES:
1. SPECIFIC DESIGN DETAILS MUST IN ALL ASPECTS MEET APPLICABLE FLORIDA PLUMBING AND ADMINISTRATIVE CODE.
2. SIZE GREASE INTERCEPTOR - MINIMUM SIZE 750 GAL; MAXIMUM SIZE 1250 GAL.
3. INTERCEPTORS SHALL BE WATER AND GAS TIGHT.
4. ALL FIXTURES LOCATED IN FOOD AND BEVERAGE PREPARATION AREAS SHALL BE ROUTED THOUGH GREASE INTERCEPTOR. RESTROOM WASTE SHALL NOT BE ROUTED THROUGH INTERCEPTOR.
5. BAFFLE REQUIRED; ALTERNATIVE DESIGNS ARE ACCEPTABLE THAT MEET FLORIDA PLUMBING AND ADMINISTRATIVE CODE.
6. LOADS:COVER TO MEET H-20 TRUCK WHEELS WITH 30% IMPACT PER AASHTO. TRAFFIC BEARING FRAME AND COVER TO MEET FDOT STANDARDS AND SHALL BE IMPRINTED WITH THE WORDS "GREASE TRAP".

DATE: 11/07/2022 **GREASE TRAP** S307

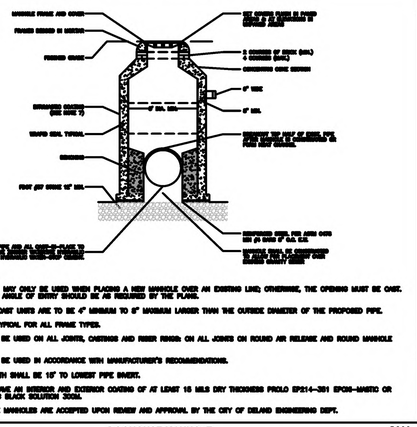
City of DeLand - Standard Details



NOTE: HAND HOLE COVER TO BE U.S. FOUNDRY 7621 OR EQUAL

DATE: 11/07/2022 **CLEAN - OUT** S308

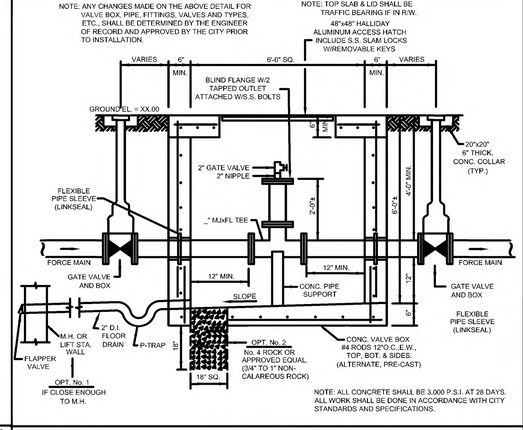
City of DeLand - Standard Details



NOTES:
1. DOGHOUSE OPENING MAY ONLY BE USED WHEN PLACING A NEW MANHOLE OVER AN EXISTING LINE; OTHERWISE, THE OPENING MUST BE CORE BORE. SIZE, LOCATION AND ANGLE OF ENTRY SHOULD BE AS REQUIRED BY THE PLANS.
2. OPENINGS IN PRE-CAST UNITS ARE TO BE 4" MINIMUM TO 8" MAXIMUM LARGER THAN THE OUTSIDE DIAMETER OF THE PROPOSED PIPE.
3. MANHOLE COVERS TYPICAL FOR ALL PIPE TYPES.
4. WRAPED SEAL MUST BE USED ON ALL JOINTS, CASINGS AND RISER RINGS; ON ALL JOINTS ON ROUND AIR RELEASE AND ROUND MANHOLE STRUCTURES.
5. WRAPED SEAL MUST BE USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
6. MAX. MANHOLE DEPTH SHALL BE 15' TO LOWEST PIPE INVERT.
7. MANHOLES SHALL HAVE AN INTERIOR AND EXTERIOR COATING OF AT LEAST 15 MILS DRY THICKNESS PROLO EP214-351 EPOXI-MASTIC OR KOPPERS BITUMASTIC BLACK SOLUTION 300M.
8. POLYMER CONCRETE MANHOLES ARE ACCEPTED UPON REVIEW AND APPROVAL BY THE CITY OF DELAND ENGINEERING DEPT.

DATE: 11/07/2022 **DOGHOUSE MANHOLE** S309

City of DeLand - Standard Details

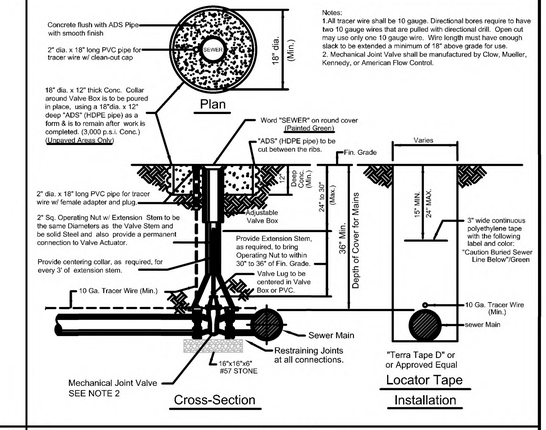


DATE: 11/07/2022 **POLY PIG LAUNCHER** S310

City of DeLand - Standard Details

DATE: 11/07/2022 **OFFSET AIR RELEASE VALVE** S311

City of DeLand - Standard Details



DATE: 11/07/2022 **FORCE MAIN VALVE SETTING** S315

City of Deland - Standard Details

EVANS ENGINEERING, INC.
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EVANS ENGINEERING, INC.
CERTIFICATE OF AUTHORIZATION NO. 6788

DAVID L. EVANS
FLORIDA P.E. NO. 46586

DATE: _____

CITY OF DELAND, FLORIDA
1102 S. GARFIELD AVENUE, DELAND, FLORIDA 32724

DATE: 11/07/2022 CHECKED BY: NAME
SCALE: NOT TO SCALE DRAWN BY: ERIC SAMPSON

POINTE GRAND APARTMENTS
DELAND, FLORIDA

UTILITY DETAILS

REVISIONS

NO.	DETAIL	DATE
1	REVISED PER COMMENTS	06/16/23

DRAWN BY: FE | DATE: 03/06/23
CHECKED BY: DE | JOB #: 37501

SHEET #: C14.4

TITLE: SANITARY DETAILS

FILE: drive letter/details locations

PAGE 2 OF 5

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G:\37501 – Allapattah Variant\37501 14.0–14.5 UTILITY DETAILS.dwg (05) Plotted on: Jul 31, 2023 – 3:53pm by Rice

3M LOCATING MARKER BALLS PROGRAMMABLE AND NON-PROGRAMMABLE NOTES:

- Programmable and Non-Programmable Marking Balls will be used on all Sewer, Potable and Reclaim projects
- For information on the Programmable and Non-Programmable Balls that the City requires see spec sheet for details
- Programmable Balls will be placed at all fittings ie. Tees, Couplings, 90, 45, and 22.
- Information will be recorded on a spread sheet. For information that needs to be recorded see spec sheet for an example template for the 3M Marker Balls
- Non-Programmable Marking Balls will used as follow:

- Potable: End of Service Line when buried
- Wastewater: Ball will be placed at the curb line to mark lateral location prior to end of service.
- Reclaim: End of Service Line when buried

- Desired bury depth is 1.5 feet to 3 feet. Five foot is the maximum depth for these devices

1420-LOCATER FOR MARKER BALLS

3M™ Dynatel™ Electronic Marker System (EMS) Marker Locators 1420 series is microprocessor-based systems that quickly and efficiently locate underground markers—years after construction or maintenance. -

The 3M™ Dynatel™ 1420 Marker Locators are designed to be accurate, fast and integrated allowing you to accurately and easily:

• Locate, read and write to 3M iD markers

• Pinpoint the depth and location of all existing models of properly installed underground passive EMS markers

• Conduct direct depth reading of markers

• Locate two different marker frequencies simultaneously

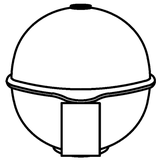
Specifications

2200RB Rechargeable Battery	Not Included
Cable/Pipe Locate	No
Carrying Bag Included	No
Coupler Size	No Coupler
Direct Connect Cable	N/A
EMS Caution Tape Finding Capability	No
Family	1420 Series
Fault Finding Capability	No

2200RB Rechargeable Battery	Not Included
Cable/Pipe Locate	No
Carrying Bag Included	No
Coupler Size	No Coupler
Direct Connect Cable	N/A
EMS Caution Tape Finding Capability	No
Family	1420 Series
Fault Finding Capability	No
Locator Type	Marker

3M DYNATEL LOCATING AND MARKING ELECTRONIC MARKER SYSTEM:

1423-XR/ID-POTABLE



The 3M™ EMS Extended-Range Ball Markers have a self-leveling design providing accurate, horizontal position regardless of how it is placed in the ground, making the job of precisely locating underground facilities easier.

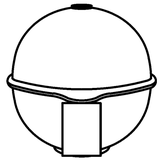
Featured Benefits

- Positive identification of underground water facilities
- iD Marker allows for programming of customer specific information
- Unique self leveling design simplifies installation
- No external power source needed
- Resistant to elements
- 5 foot (1.5 meter) detection distance
- Color conforms to APWA standards

SPECIFICATIONS:

COLOR:	BLUE
DIAMETER (METRIC):	10.4 CM
EMS CAUTION TAPE FINDING CAPABILITY:	N/A
MARKER DEPTH:	5 FEET (1.5M)
MARKER DIMENSION (INCH):	4 INCH DIAMETER
MARKER TYPE:	BALL
PROGRAMMABLE/PASSIVE:	PROGRAMMABLE
RANGE:	0 TO 5 LINEAR FOOT
RoHS 2011/65/EU Compliant:	UNDETERMINED
RoHS EU Comments:	CONTACT 3M FOR INFORMATION
Solution for:	ACCESS NETWORK: FTTH/FTTB/CATV
	ACCESS NETWORK: xDSL, LONG-HAUL/METRO
	LOOP NETWORK: OUTDOOR
	WIRELESS NETWORK: BACKHAUL

1424-XR/ID-SEWER



The 3M™ EMS Extended-Range Ball Markers have a self-leveling design providing accurate, horizontal position regardless of how it is placed in the ground, making the job of precisely locating underground facilities easier.

Featured Benefits

- Positive identification of underground wastewater facilities
- iD Marker allows for programming of customer specific information
- Unique self leveling design simplifies installation
- No external power source needed
- Resistant to elements
- 5 foot (1.5 meter) detection distance
- Color conforms to APWA standards

SPECIFICATIONS:

COLOR:	GREEN
DIAMETER (METRIC):	10.4 CM
EMS CAUTION TAPE FINDING CAPABILITY:	N/A
MARKER DEPTH:	5 FEET (1.5M)
MARKER DIMENSION (INCH):	4 INCH DIAMETER
MARKER TYPE:	BALL
NUMBER OF FREQUENCIES:	N/A
PROGRAMMABLE/PASSIVE:	PROGRAMMABLE
RANGE:	0 TO 5 LINEAR FOOT
RoHS 2011/65/EU Compliant:	UNDETERMINED
RoHS EU Comments:	CONTACT 3M FOR INFORMATION
Solution for:	ACCESS NETWORK: FTTH/FTTB/CATV
	ACCESS NETWORK: xDSL, LONG-HAUL/METRO
	LOOP NETWORK: OUTDOOR
	WIRELESS NETWORK: BACKHAUL

1428-XR/ID-RECLAIMED



The 3M™ EMS Extended-Range Ball Markers have a self-leveling design providing accurate, horizontal position regardless of how it is placed in the ground, making the job of precisely locating underground facilities easier.

Featured Benefits

- Positive identification of underground general purpose / reclaimed water facilities
- iD Marker allows for programming of customer specific information
- Unique self leveling design simplifies installation
- No external power source needed
- Resistant to elements
- 5 foot (1.5 meter) detection distance
- Color conforms to APWA standards

SPECIFICATIONS:

COLOR:	PURPLE
DIAMETER (METRIC):	10.4 CM
EMS CAUTION TAPE FINDING CAPABILITY:	N/A
MARKER DEPTH:	5 FEET (1.5M)
MARKER DIMENSION (INCH):	4 INCH DIAMETER
MARKER TYPE:	BALL
NUMBER OF FREQUENCIES:	N/A
PROGRAMMABLE/PASSIVE:	PROGRAMMABLE
RANGE:	0 TO 5 LINEAR FOOT
RoHS 2011/65/EU Compliant:	UNDETERMINED
RoHS EU Comments:	CONTACT 3M FOR INFORMATION
Solution for:	ACCESS NETWORK: FTTH/FTTB/CATV
	ACCESS NETWORK: xDSL, LONG-HAUL/METRO
	LOOP NETWORK: OUTDOOR
	WIRELESS NETWORK: BACKHAUL

1403-XR-POTABLE



The 3M™ EMS Extended-Range Ball Markers have a self-leveling design providing accurate, horizontal position regardless of how it is placed in the ground, making the job of precisely locating underground facilities easier.

Featured Benefits

- Positive identification of underground water facilities
- Unique self leveling design simplifies installation
- No external power source needed
- Resistant to elements
- 5 foot (1.5 meter) detection distance
- Color conforms to APWA standards

SPECIFICATIONS:

COLOR:	BLUE
DIAMETER (METRIC):	10.4 CM
EMS CAUTION TAPE FINDING CAPABILITY:	N/A
MARKER DEPTH:	5 FEET (1.5M)
MARKER DIMENSION (INCH):	4 INCH DIAMETER
MARKER TYPE:	BALL
NUMBER OF FREQUENCIES:	N/A
PROGRAMMABLE/PASSIVE:	PASSIVE
RANGE:	0 TO 5 LINEAR FOOT
RoHS 2011/65/EU Compliant:	UNDETERMINED
RoHS EU Comments:	CONTACT 3M FOR INFORMATION
Solution for:	ACCESS NETWORK: FTTH/FTTB/CATV
	ACCESS NETWORK: xDSL, LONG-HAUL/METRO
	LOOP NETWORK: OUTDOOR
	WIRELESS NETWORK: BACKHAUL

1404-XR-SEWER



The 3M™ EMS Extended-Range Ball Markers have a self-leveling design providing accurate, horizontal position regardless of how it is placed in the ground, making the job of precisely locating underground facilities easier.

Featured Benefits

- Positive identification of underground wastewater facilities
- Unique self leveling design simplifies installation
- No external power source needed
- Resistant to elements
- 5 foot (1.5 meter) detection distance
- Color conforms to APWA standards

SPECIFICATIONS:

COLOR:	GREEN
DIAMETER (METRIC):	10.4 CM
EMS CAUTION TAPE FINDING CAPABILITY:	N/A
MARKER DEPTH:	5 FEET (1.5M)
MARKER DIMENSION (INCH):	4 INCH DIAMETER
MARKER TYPE:	BALL
NUMBER OF FREQUENCIES:	N/A
PROGRAMMABLE/PASSIVE:	PASSIVE
RANGE:	0 TO 5 LINEAR FOOT
RoHS 2011/65/EU Compliant:	UNDETERMINED
RoHS EU Comments:	CONTACT 3M FOR INFORMATION
Solution for:	ACCESS NETWORK: FTTH/FTTB/CATV
	ACCESS NETWORK: xDSL, LONG-HAUL/METRO
	LOOP NETWORK: OUTDOOR
	WIRELESS NETWORK: BACKHAUL

1408-XR-RECLAIMED



The 3M™ EMS Extended-Range Ball Markers have a self-leveling design providing accurate, horizontal position regardless of how it is placed in the ground, making the job of precisely locating underground facilities easier.

Featured Benefits

- Positive identification of underground general purpose facilities
- Unique self leveling design simplifies installation
- No external power source needed
- Resistant to elements
- 5 foot (1.5 meter) detection distance
- Color conforms to APWA standards

SPECIFICATIONS:

COLOR:	PURPLE
DIAMETER (METRIC):	10.4 CM
EMS CAUTION TAPE FINDING CAPABILITY:	N/A
MARKER DEPTH:	5 FEET (1.5M)
MARKER DIMENSION (INCH):	4 INCH DIAMETER
MARKER TYPE:	BALL
NUMBER OF FREQUENCIES:	N/A
PROGRAMMABLE/PASSIVE:	PASSIVE
RANGE:	0 TO 5 LINEAR FOOT
RoHS 2011/65/EU Compliant:	UNDETERMINED
RoHS EU Comments:	CONTACT 3M FOR INFORMATION
Solution for:	ACCESS NETWORK: FTTH/FTTB/CATV
	ACCESS NETWORK: xDSL, LONG-HAUL/METRO
	LOOP NETWORK: OUTDOOR
	WIRELESS NETWORK: BACKHAUL

CITY OF DELAND, FLORIDA
1102 S. GARFIELD AVENUE, DELAND, FLORIDA 32724

DATE: 11/07/2022
CHECKED BY: ERIC M. SAMPSON
SCALE: NOT TO SCALE
DRAWN BY: MARK LA GRECA

TITLE: UTILITY MARKER BALL LOCATERS

FILE: drive letter/details locations

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EVANS ENGINEERING, INC.
CERTIFICATE OF AUTHORIZATION NO. 6788

DAVID L. EVANS
FLORIDA P.E. NO. 46586

DATE:

POINTE GRAND APARTMENTS
DELAND, FLORIDA

UTILITY DETAILS

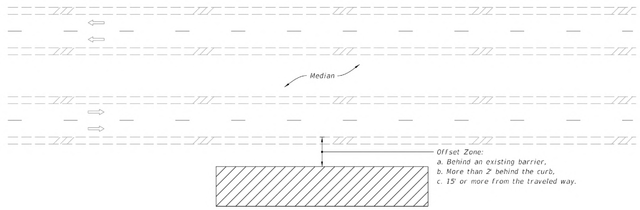
REVISIONS		
NO.	DETAIL	DATE
1	REVISED PER COMMENTS	06/16/23

DRAWN BY:	DATE:
FE	03/06/23
CHECKED BY:	JOB #:
DE	37501

SHEET #:
C14.5

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C:\37501 - Pointe Deland\37501 14.0-14.5 UTILITY DETAILS.dwg (DE) Plotted on: Jul 31, 2023 - 3:32pm by Mike



MULTILANE ROADWAY SHOWN, TWO-LANE ROADWAY SIMILAR

NOTES:

1. This Index applies to Two-Lane, Two-Way and Multilane Roadways, including Medians of divided roadways, with work beyond the shoulder.
2. Use Index 102-602 when the work operation (excluding establishing and terminating the work area) requires that two or more work vehicles cross the Offset Zone in any one hour period.
3. Use Index 102-660 when Work Area encroaches a Sidewalk.

SYMBOLS:

- Work Area
- Lane Identification and Direction of Traffic

LAST REVISION 11/01/20	REVISION	DESCRIPTION:	FDOT	FY 2023-24 STANDARD PLANS	TWO-LANE AND MULTILANE ROADWAY, WORK BEYOND THE SHOULDER	INDEX 102-601	SHEET 1 of 1

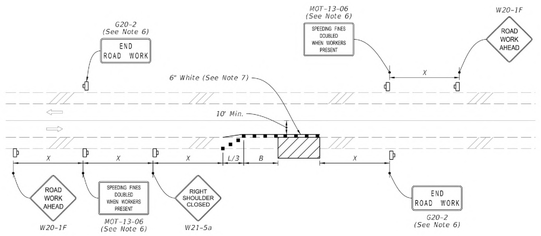
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NOTE:

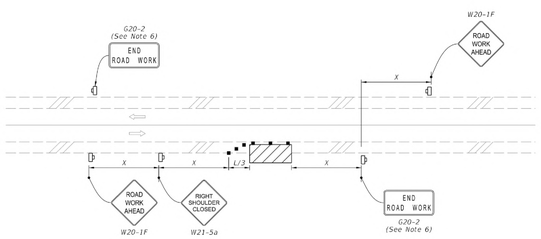
1. This Index applies to Two-Lane, Two-Way and Multilane Roadways, including Medians of divided roadways, with work on the shoulder.
2. L = Taper Length
   X = Work Zone Sign Spacing
   B = Buffer Length
   See Index 102-600 for "L", "X", "B", and channelizing device spacing values.
3. Where work activities are between 2' and 15' from the edge of traveled way, the Engineer may omit signs and channelizing devices for work operations 60 minutes or less.
4. When four or more work vehicles enter the through traffic lanes in a one hour period (excluding establishing and terminating the work area), use a flagger or lane closure to accommodate work vehicle ingress and egress.
5. For work less than 2' from the traveled way and work zone speed is greater than 45 MPH, use a lane closure.
6. The "Speeding Fines Doubled When Workers Present" signs (MOT-13-06) and "End Road Work" Signs (G20-2) along with the associated work zone sign spacing distances may be omitted when the work operation is in place for 24 hours or less.
7. Temporary pavement markings may be omitted when the work operation is in place for 3 days or less.
8. Omit "Shoulder Closed" signs (W21-5a) along with associated work zone sign spacing distances for work on the median.
9. When there is no paved shoulder, the "Worker" sign (W21-1) may be used instead of the "Shoulder Closed" sign (W21-5a).

SYMBOLS:

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



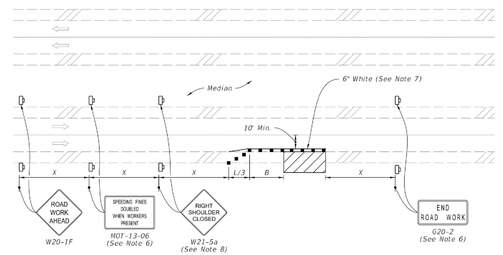
TWO-LANE ROADWAY
SHOULDER WORK LESS THAN 2' FROM THE TRAVELED WAY
WITH WORK ZONE SPEED OF 45 MPH OR LESS



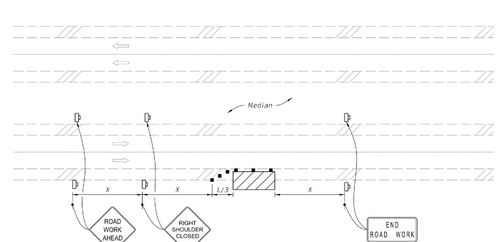
TWO-LANE ROADWAY
SHOULDER WORK BETWEEN 2' AND 15' FROM THE TRAVELED WAY

LAST REVISION 11/01/21	REVISION	DESCRIPTION:	FDOT	FY 2023-24 STANDARD PLANS	TWO-LANE AND MULTILANE, WORK ON SHOULDER	INDEX 102-602	SHEET 1 of 2

10/19/2022 10:12:18 AM



MULTILANE ROADWAY
SHOULDER WORK LESS THAN 2' FROM THE TRAVELED WAY
WITH WORK ZONE SPEED OF 45 MPH OR LESS



MULTILANE ROADWAY
SHOULDER WORK BETWEEN 2' AND 15' FROM THE TRAVELED WAY

LAST REVISION 11/01/20	REVISION	DESCRIPTION:	FDOT	FY 2023-24 STANDARD PLANS	TWO-LANE AND MULTILANE, WORK ON SHOULDER	INDEX 102-602	SHEET 2 of 2

10/19/2022 10:12:18 AM

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CERTIFICATE OF AUTHORIZATION NO. 00006788

EVANS ENGINEERING, INC.

CERTIFICATE OF AUTHORIZATION NO. 6788

DAVID L. EVANS
FLORIDA P.E. NO. 46586

DATE:

POINTE GRAND APARTMENTS

DELAND, FLORIDA

M.O.T. DETAILS

REVISIONS		
DATE	NO.	DETAIL
06/16/23	1	REVISED PER COMMENTS

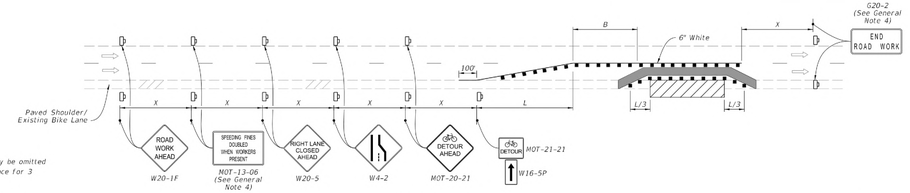
DRAWN BY:	DATE:
FE	03/06/23
CHECKED BY:	JOB #:
DE	37501

SHEET #:

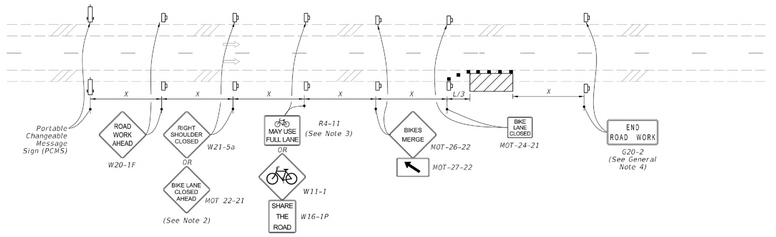
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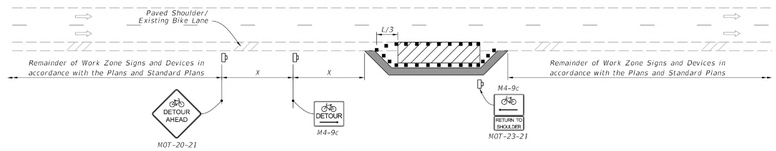
G:\37501 - Pointe Grand\37501 M.O.T. DETAILS.dwg (01) Plotted on: Jul 31, 2023 - 3:32pm by Dale



BICYCLE FACILITY SHIFT
(With Lane Closure)



BICYCLE FACILITY SHIFT
(Work Zone Speed of 35 mph or Less)



BICYCLE SPECIAL DETOUR

NOTES:

1. Temporary pavement markings may be omitted when the work operation is in place for 3 days or less.
2. If the Closed Bicycle Facility is a marked bicycle lane, use sign MOT 22-21 instead of sign W21-5a.
3. If the travel lane is less than 14' wide, use sign R4-11.

SYMBOLS:

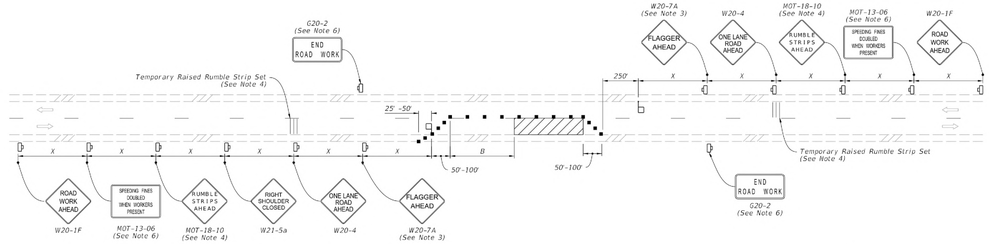
- Work Area
- Temporary Bicycle Way
- Channelizing Device (See Index 102-600)
- Work Zone Sign
- Arrow Board
- Lane Identification and Direction of Traffic
- (I) PCMS=Portable Changeable (Variable) Message Sign

TYPICAL PCMS DISPLAY:

Message 1: BIKE FACILITY CLOSED

Message 2: BICYCLES ON ROAD

LAST REVISION 11/01/21	REVISION	DESCRIPTION:	FDOT FY 2023-24 STANDARD PLANS	BICYCLE FACILITY CLOSURES	INDEX 102-661	SHEET 2 of 2



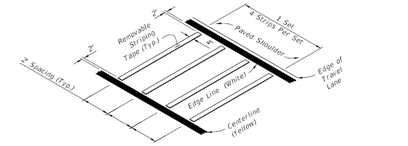
NOTES:

1. This Index applies to Two-Lane, Two-Way Roadways with work within the traveled way.
2. L = Taper Length
   B = Buffer Length
   X = Work Zone Sign Spacing
   See Index 102-600 for "L", "B", "X" and channelizing device spacing values.
3. Optionally, use "Flagger Ahead" sign with symbol (W20-7) instead of "Flagger Ahead" sign with text (W20-7A).
4. Use temporary raised rumble strips when the existing posted speed is 55 mph or greater and the work duration is greater than 60 minutes. If temporary raised rumble strips are not used, omit "Rumble Strips Ahead" signs (MOT-18-10) and associated work zone sign spacing.
5. Additional one-way control may be provided by the following means:
   a. Flag-carrying vehicle
   b. Official vehicle
   c. Pilot vehicles
   d. Traffic signals

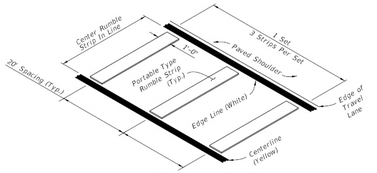
   When flaggers are the sole means of one-way control, the flaggers must be in sight of each other or in direct communication at all times.
6. The "Speeding Fines Doubled When Workers Present" signs (MOT-13-06) and "End Road Work" signs (G20-2), along with associated work zone sign spacing, may be omitted when the work operation will be in place for 24 hours or less.
7. Automated Flagger Assistance Devices (AFADs) may be used in accordance with Specification Sections 102, 990 and the APL vendor drawings.
8. 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 2.
   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.

SYMBOLS:

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



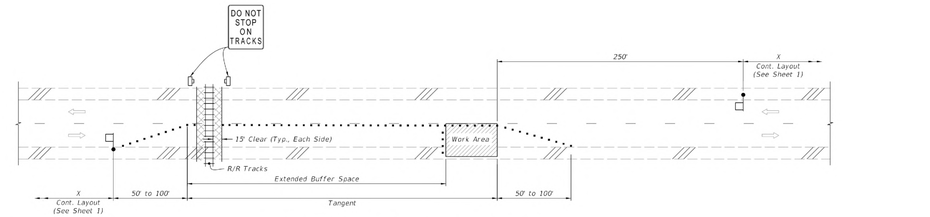
OPTION - 1
REMOVABLE STRIPING TYPE



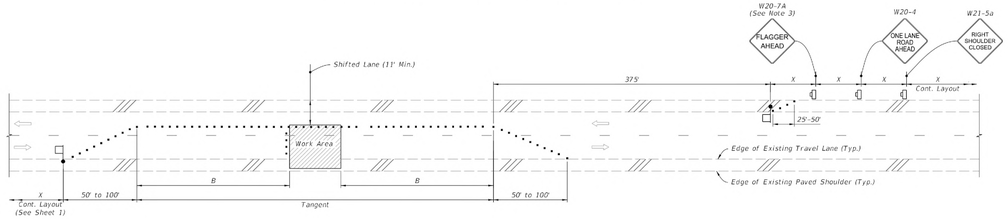
OPTION - 2
PORTABLE TYPE

RUMBLE STRIP SETS

LAST REVISION 11/01/21	REVISION	DESCRIPTION:	FDOT FY 2023-24 STANDARD PLANS	TWO-LANE, TWO-WAY WORK WITHIN THE TRAVEL WAY	INDEX 102-603	SHEET 1 of 2



TEMPORARY RAILROAD CROSSING BUFFER SPACE EXTENSION



TEMPORARY LANE SHIFT TO SHOULDER WHEN WORK AREA ENCROACHES ON THE CENTERLINE
(For Work Operations In place 24 Hours or Less)

SYMBOLS:

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

SPECIAL CONDITIONS

LAST REVISION 11/01/21	REVISION	DESCRIPTION:	FDOT FY 2023-24 STANDARD PLANS	TWO-LANE, TWO-WAY WORK WITHIN THE TRAVEL WAY	INDEX 102-603	SHEET 2 of 2

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CERTIFICATE OF AUTHORIZATION NO. 00006788

EVANS ENGINEERING, INC.

CERTIFICATE OF AUTHORIZATION NO. 6788

DAVID L. EVANS
FLORIDA P.E. NO. 46586

DATE:

POINTE GRAND APARTMENTS

DELAND, FLORIDA

M.O.T. DETAILS

REVISIONS			
DETAIL	NO.	DATE	
REVISED PER COMMENTS	1	06/16/23	

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FE	03/06/23
CHECKED BY:	JOB #:
DE	37501

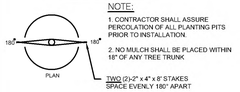
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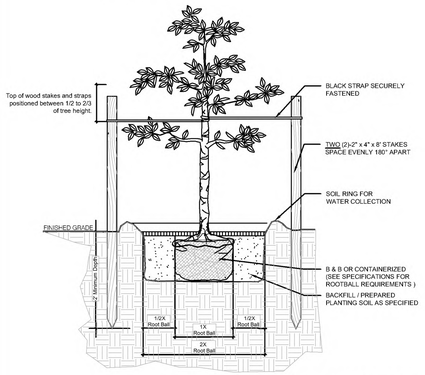
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Details





SMALL TREE GUYING DETAIL

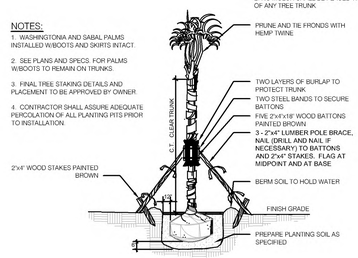
Detail for trees between 1" and 2.5" cal.

NOT TO SCALE

BURLAP SHALL BE REMOVED FROM THE TOP THIRD OF THE ROOT BALL.

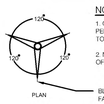
NOTE:
1. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION
2. NO MULCH SHALL BE PLACED WITHIN 18" OF ANY TREE TRUNK

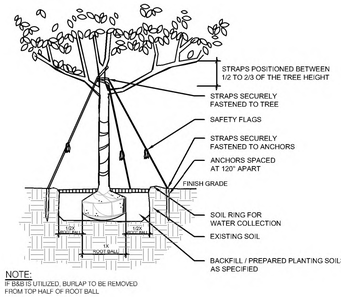
NOTES:
1. WASHINGTONIA AND SABAL PALMS INSTALLED W/BOOTS AND SKIRTS INTACT.
2. SEE PLANS AND SPECS. FOR PALMS W/BOOTS TO REMAIN ON TRUNKS.
3. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.
4. CONTRACTOR SHALL ASSURE ADEQUATE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION



PALM TREE GUYING DETAIL

NOT TO SCALE



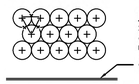


NOTE:
IF BAG IS UTILIZED, BURLAP TO BE REMOVED FROM TOP HALF OF ROOT BALL

LARGE TREE GUYING DETAIL

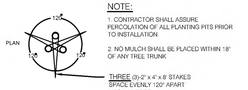
Detail for trees greater than 3" cal.

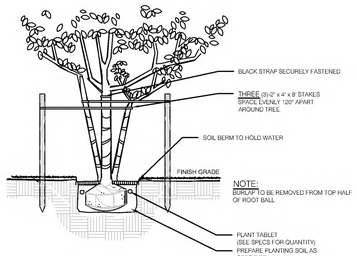
NOT TO SCALE



TYPICAL PLANT SPACING

NOT TO SCALE

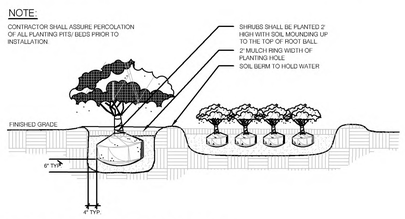




MULTI-TRUNK TREE GUYING DETAIL

Detail for trees with more than 1 trunk

NOT TO SCALE



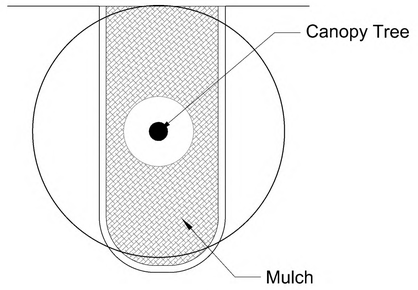
SHRUB AND GROUND COVER DETAIL

NOT TO SCALE

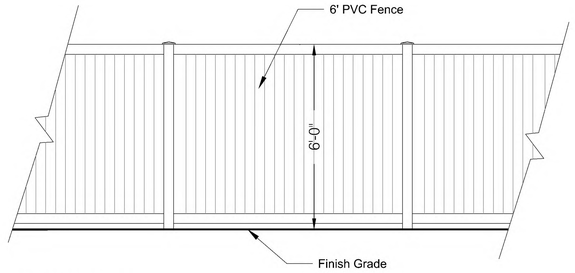
General Plant Schedule

PLANT SCHEDULE

TREES	CODE	BOTANICAL NAME	COMMON NAME	QTY	REMARKS	EQUIVALENT DBH	TOTAL DBH
	IV	Ilex vomitoria	Yaupon Holly	74	Min. 100 gal., 9` ht.x 5' spd, 4" cal. To measured with the 3 largest trunks.	3"	222
	JV	Juniperus virginiana `silicicola`	Southern Red Cedar	8	Min., 200 gal., 17` ht. x 6' spd., 6" cal.	5"	40
	LIN	Lagerstroemia indica `Natche`	Crape Myrtle, White	6	Min., 45 gal., 7` ht x 3.5' spd.,3" cal. multi-trunk. To be measured with the 3 largest trunks.	2"	12
	PE	Pinus elliotti	Slash Pine	136	Min .100 gal., 10' ht. x 3' spd., 4" cal	3"	408
	PE1	Pinus elliotti	Slash Pine	60	Min. 100 gal., 10` ht. x 3' spd., 4"cal	3"	180
	QV	Quercus virginiana	Southern Live Oak	92	Min., 100 gal., 10' ht. x 6' spd., 4" cal.	3"	273
	QV1	Quercus virginiana	Southern Live Oak	9	Min., 200 gal., 17' ht. x 10' spd., 6" cal.	5"	45
SHRUBS	CODE	BOTANICAL NAME	COMMON NAME	QTY	REMARKS		
	VO	Viburnum odoratissimum	Sweet Viburnum	48	Min., 3 gal., 30" ht. x 24" spd., 36" o.c.		
SHRUB AREAS	CODE	BOTANICAL NAME	COMMON NAME	QTY	REMARKS		
	ICB	Ilex cornuta 'Dwarf Burford'	Dwarf Burford Holly	2,264	Min., 3 gal., 18" ht. x 18" spd., 24" o.c.		
	VO1	Viburnum odoratissimum	Sweet Viburnum	1,090	Min. 3 gal., 30" ht. X 24" spd., 36" o.c.		
	VS1	Viburnum suspensum	Sandankwa Viburnum	174	Min. gal., 30" ht. x 24 spd., 36" o.c.		
SOD AREA	CODE	BOTANICAL NAME	COMMON NAME	QTY	REMARKS		
	SOD	Tiftuf Bermuda Sod	Bermuda Sod	130,053 sf	Solid Sod		



Typical Landscape Island Detail



A L-001 6' PVC Fence Elevation

SCALE: n.t.s



B L-001 5 Bike Rack Elevation

SCALE: n.t.s



C L-001 6 Bike Rack Elevation

SCALE: n.t.s

General Landscape Notes

1. Landscape Contractor shall be responsible for all materials and plants as called for on the Landscape Plans. The list of plant quantities accompanying the plans shall be used as a guide only. Contractor shall verify all quantities and report any discrepancies at time of bidding.
2. All plant material shall be graded Florida No. 1 of better, as outlined by "Grades and Standards for Nursery Plants", Florida Department of Agriculture and consumer services, Division of Plant Industry.
3. All planting shall be top dressed with a minimum 2" Pine bark mini nuggets.
4. The Landscape Contractor shall be wholly responsible for the stability and plumb condition of all trees and shrubs and shall be legally liable for any damage caused by instability of plant material. The staking method, if not shown by detail on this plan, shall be approved by the owner or his/her authorized representative.
5. Every possible safeguard shall be taken to protect existing trees that are shown on the Landscape Plan to be preserved.
6. The Landscape Contractor is responsible for cleaning all debris associated with their work.
7. Height and spread specifications refer to the overall plant form. Singular branches may not be used to meet minimum requirements. Tree caliper size to be measured 12" above grade.
8. All landscaping shall be installed according to accepted commercial planting procedures. Soil, shall be free of limerock, pebbles, or other constructions debris.
9. All landscaping shall conform to the standards set forth in the City of Deland LDC .
10. Landscaping shall not interfere with power lines, sewer or water pipes or any other existing or proposed utilities.
11. Prior to the issuance of any permits or the removal of any trees, protective tree barriers shall be installed around those trees that will remain on site and shall be inspected by the Governing Municipality.
12. Ball & Burlap material shall be acceptable alternative to container grown trees.
13. Occasionally there is the potential for site modification due to revised field grading, clearing of existing tree canopy or other unforeseen conditions. The Landscape contractor shall be responsible for informing the owner and Landscape Architect of site conditions adverse to the healthy establishment of any plant material prior to planting so that a resolution may be achieved.
14. The Landscape Contractor shall be responsible for arranging a Pre-constructions meeting with the owner and Landscape Architect in order to address and clarify any questions, concerns and/or conditions related to these drawings or the existing site.
15. Landscape Contractor shall use appropriate container size to meet minimum plant height and caliper inches, if minimum plant height or caliper, can not be met with specified container size.

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REV	DATE	DESCRIPTION	BY
1	06.15.23	Revision per City Comments 05.15.23	mb
2	07.25.23	Revision per City Comments 07.13.23	mb
3	08.17.23	Revision per City Comments 08.15.23	mb

Landscape Schedule & Details
Landscape Plan
Hillpointe Deland
City of Deland, Florida

Date:

PROJECT NO. 23203
SCALE NTS
DATE March 23
SHEET L-001

25' North Landscape Buffer (Type C) 1,159 LF
60 Canopy Trees Required/60 Canopy Required Provided
25 Understory Trees Required/25 Understory Provided
255 Shrubs Required/ 321 Shrubs Provided

40' West Landscape Buffer (Type D) 147 LF
Emerging Gateway Corridor Overlay
11 Canopy Trees Required/10 Canopy Trees Provided
6 Understory Trees Required/6 Undestory Trees Provided
44 Shrubs Required/48 Shrubs Provided

20' South Landscape Buffer (Type C) 1,464 LF
82 Canopy Trees Required/82 Canopy Trees Provided
35 Understory Trees Required/35 Understory Trees Provided
351 Shrubs Required/ 351 Shrubs Provided

WETLAND
Existing trees to be preserved
1016
1014
1013
Tree Protection Area
Pond
Sod
Sod by Site Contractor
Sod by Site Contractor
Sod by Site Contractor
Sod
Sod
Property Boundary
Sign
Entrance
Sight Lines
SR 15A
N Spring Garden Ave.
Match Sheet L-101
Match Sheet L-102
Match Sheet L-101
Match Sheet L-103

PLANT SCHEDULE					
TREES	CODE	BOTANICAL NAME	COMMON NAME	QTY	REMARKS
	IV	Ilex vomitoria	Yaupon Holly	74	Min. 100 gal., 9` ht.x 5` spd; 4" cal. To measured with the 3 largest trunks.
	JV	Juniperus virginiana `silicicola`	Southern Red Cedar	8	Min., 200 gal., 17` ht. x 6' spd., 6" cal.
	LIN	Lagerstroemia indica `Natchez`	Crape Myrtle, White	6	Min., 45 gal., 7` ht.x 3.5' spd.,3" cal. multi-trunk. To be measured with the 3 largest trunks.
	PE	Pinus elliotti	Slash Pine	136	Min .100 gal., 10' ht. x 3' spd., 4" cal
	PE1	Pinus elliotti	Slash Pine	60	Min. 100 gal., 10` ht. x 3' spd., 4"cal
	QV	Quercus virginiana	Southern Live Oak	92	Min., 100 gal., 10' ht. x 6' spd., 4" cal.
	QV1	Quercus virginiana	Southern Live Oak	9	Min., 200 gal., 17' ht. x 10' spd., 6" cal.
SHRUBS	CODE	BOTANICAL NAME	COMMON NAME	QTY	REMARKS
	VO	Viburnum odoratissimum	Sweet Viburnum	48	Min., 3 gal., 30" ht. x 24" spd., 36" o.c.
SHRUB AREAS	CODE	BOTANICAL NAME	COMMON NAME	QTY	REMARKS
	ICB	Ilex cornuta 'Dwarf Burford'	Dwarf Burford Holly	2,264	Min., 3 gal., 18" ht. x 18" spd., 24" o.c.
	VO1	Viburnum odoratissimum	Sweet Viburnum	1,090	Min. 3 gal., 30" ht. X 24" spd., 36" o.c.
	VS1	Viburnum suspensum	Sandankwa Viburnum	174	Min. gal., 30" ht. x 24 spd., 36" o.c.
SOD AREA	CODE	BOTANICAL NAME	COMMON NAME	QTY	REMARKS
	SOD	`Tifturf Bermuda Sod	Bermuda Sod	130,053 sf	Solid Sod

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REV.	DATE	BY
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	Revision per City Comments 08.15.23	mb
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1	06.15.23	mb
	Revision per City Comments 05.15.23	mb

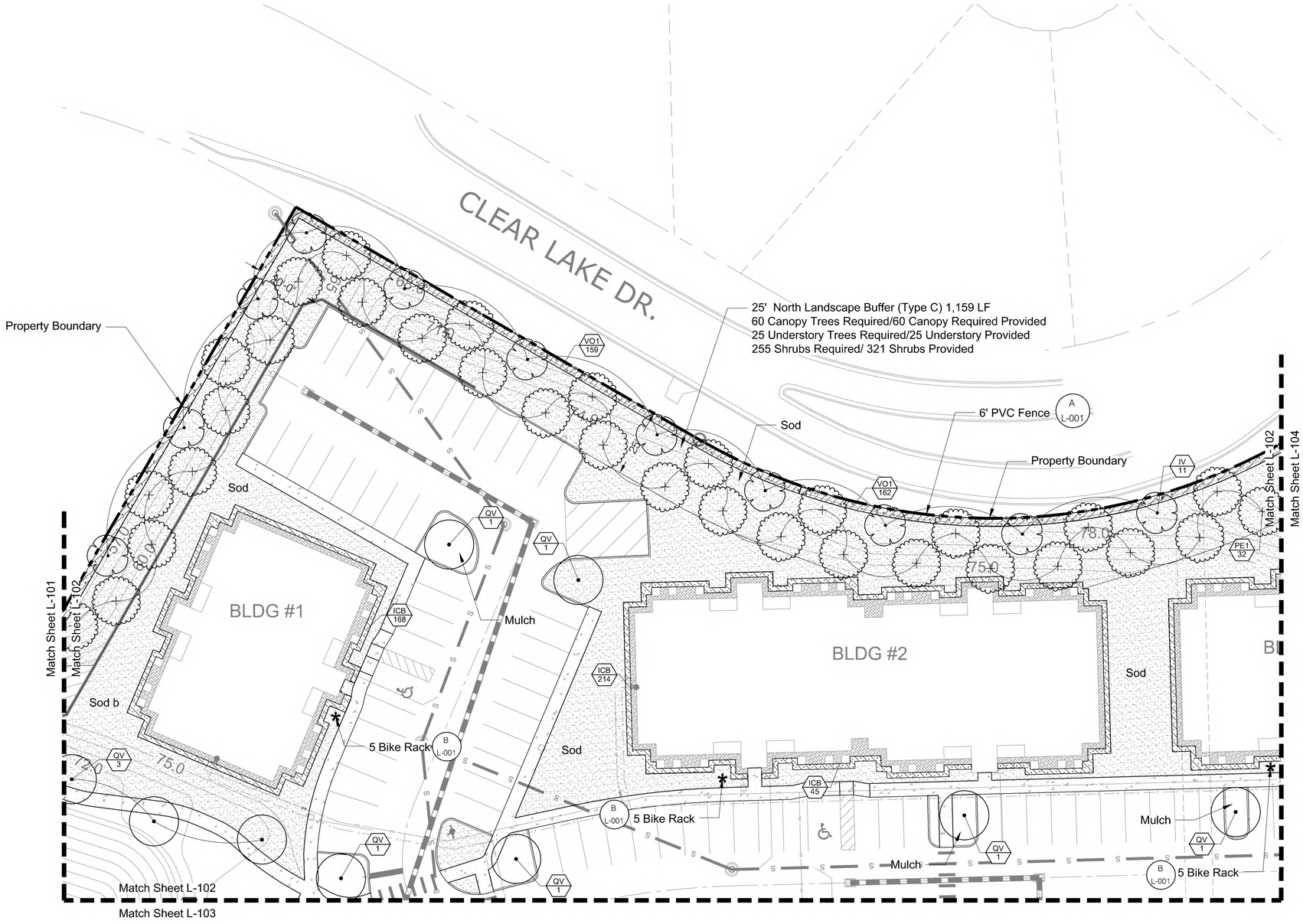
Landcape Plan
Landscape Plans
Hillpointe Deland
City of Deland, Florida

20' 0' 20' 40'

Date:

PROJECT NO. 23203
SCALE 1" = 20'
DATE March 23
SHEET L-101

PLANT SCHEDULE					
TREES	CODE	BOTANICAL NAME	COMMON NAME	QTY	REMARKS
	IV	Ilex vomitoria	Yaupon Holly	74	Min. 100 gal., 9` ht.x 5' spd., 4" cal. To measured with the 3 largest trunks.
	JV	Juniperus virginiana `silicicola`	Southern Red Cedar	8	Min., 200 gal., 17` ht. x 6' spd., 6" cal.
	LIN	Lagerstroemia indica `Natche`	Crape Myrtle, White	6	Min., 45 gal., 7` ht x 3.5' spd.,3" cal .multi-trunk. To be measured with the 3 largest trunks.
	PE	Pinus elliotti	Slash Pine	136	Min .100 gal., 10' ht. x 3' spd., 4" cal
	PE1	Pinus elliotti	Slash Pine	60	Min. 100 gal., 10` ht. x 3' spd., 4"cal
	QV	Quercus virginiana	Southern Live Oak	92	Min., 100 gal., 10' ht. x 6' spd., 4" cal.
	QV1	Quercus virginiana	Southern Live Oak	9	Min., 200 gal., 17' ht. x 10' spd., 6" cal.
SHRUBS	CODE	BOTANICAL NAME	COMMON NAME	QTY	REMARKS
	VO	Viburnum odoratissimum	Sweet Viburnum	48	Min., 3 gal., 30" ht. x 24" spd., 36" o.c.
SHRUB AREAS	CODE	BOTANICAL NAME	COMMON NAME	QTY	REMARKS
	ICB	Ilex cornuta 'Dwarf Burford'	Dwarf Burford Holly	2,264	Min., 3 gal., 18" ht. x 18" spd., 24" o.c.
	VO1	Viburnum odoratissimum	Sweet Viburnum	1,090	Min. 3 gal., 30" ht. X 24" spd., 36" o.c.
	VS1	Viburnum suspensum	Sandankwa Viburnum	174	Min. gal., 30" ht. x 24 spd., 36" o.c.
SOD AREA	CODE	BOTANICAL NAME	COMMON NAME	QTY	REMARKS
	SOD	Tiftuf Bermuda Sod	Bermuda Sod	130,053 sf	Solid Sod



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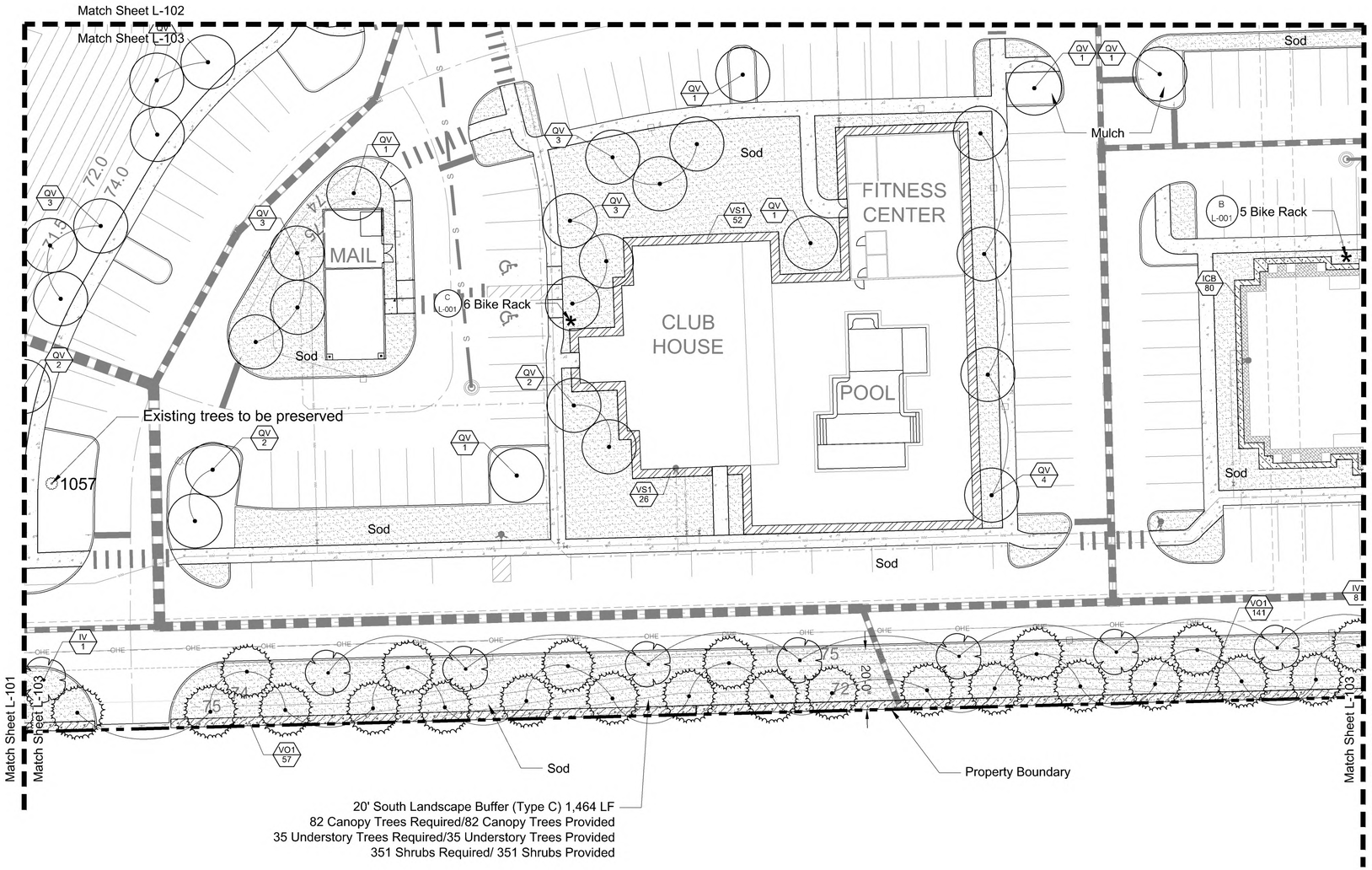
REV.	DATE	DESCRIPTION	BY
3	08.17.23	Revision per City Comments 08.15.23	mb
2	07.25.23	Revision per City Comments 07.13.23	mb
1	06.15.23	Revision per City Comments 05.15.23	mb

Landcape Plan
Landscape Plans
Hillpointe Deland
City of Deland, Florida

20' 0' 20' 40'

Date:

PROJECT NO. 23203
SCALE 1" = 20'
DATE March 23
SHEET L-102



PLANT SCHEDULE

TREES	CODE	BOTANICAL NAME	COMMON NAME	QTY	REMARKS
	IV	Ilex vomitoria	Yaupon Holly	74	Min. 100 gal., 9` ht.x 5' spd, 4" cal. To measured with the 3 largest trunks.
	JV	Juniperus virginiana `silicicola`	Southern Red Cedar	8	Min., 200 gal., 17` ht. x 6' spd., 6" cal.
	LIN	Lagerstroemia indica `Natchez`	Crape Myrtle, White	6	Min., 45 gal., 7` ht.x 3.5' spd, 3" cal. multi-trunk. To be measured with the 3 largest trunks.
	PE	Pinus elliotti	Slash Pine	136	Min .100 gal., 10' ht. x 3' spd., 4" cal
	PE1	Pinus elliotti	Slash Pine	60	Min. 100 gal., 10` ht. x 3' spd., 4"cal
	QV	Quercus virginiana	Southern Live Oak	92	Min., 100 gal., 10' ht. x 6' spd., 4" cal.
	QV1	Quercus virginiana	Southern Live Oak	9	Min., 200 gal., 17' ht. x 10' spd., 6" cal.
SHRUBS	CODE	BOTANICAL NAME	COMMON NAME	QTY	REMARKS
	VO	Viburnum odoratissimum	Sweet Viburnum	48	Min., 3 gal., 30" ht. x 24" spd., 36" o.c
SHRUB AREAS	CODE	BOTANICAL NAME	COMMON NAME	QTY	REMARKS
	ICB	Ilex cornuta 'Dwarf Burford'	Dwarf Burford Holly	2,264	Min., 3 gal., 18" ht. x 18" spd., 24" o.c.
	VO1	Viburnum odoratissimum	Sweet Viburnum	1,090	Min. 3 gal., 30" ht. X 24" spd., 36" o.c.
	VS1	Sandankwa Viburnum	Sandankwa Viburnum	174	Min. gal., 30" ht. x 24 spd., 36" o.c
SOD AREA	CODE	BOTANICAL NAME	COMMON NAME	QTY	REMARKS
	SOD	`Tifturf Bermuda Sod	Bermuda Sod	130,053 sf	Solid Sod

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REV.	DATE	DESCRIPTION	BY
3	08.17.23	Revision per City Comments 08.15.23	nrb
2	07.25.23	Revision per City Comments 07.13.23	nrb
1	05.15.23	Revision per City Comments 05.15.23	nrb

Landcape Plan
Landscape Plans
Hillpointe Deland
City of Deland, Florida

Date:

PROJECT NO. 23203
SCALE 1" = 20'
DATE March 23
SHEET L-103

25' North Landscape Buffer (Type C) 1,159 LF
60 Canopy Trees Required/60 Canopy Required Provided
25 Understory Trees Required/25 Understory Provided
255 Shrubs Required/ 321 Shrubs Provided

6' PVC Fence (A L-001)

Property Boundary

Sod

1141 1142 1143 429 340 339

78.0 77.0 66.0

DG #3

BLDG #4

BLDG #5

BLDG #6

Pond

Existing trees to be preserved

Mulch

5 Bike Rack (B L-001)

Match Sheet L-102
Match Sheet L-103
Match Sheet L-104
Match Sheet L-104
Match Sheet L-105

20' East Landscape Buffer (Type C) 643 LF
36 Canopy Trees Required/38 Canopy Trees Provided
15 Understory Trees Required/15 Understory Trees
154 Shrubs Required/454 Shrubs Provided

20'-0"

Property Boundary

Sod

20' East Landscape Buffer (Type C) 643 LF
36 Canopy Trees Required/38 Canopy Trees Provided
15 Understory Trees Required/15 Understory Trees
154 Shrubs Required/454 Shrubs Provided

Sod

Mulch

Match Sheet L-104
Match Sheet L-105

20' 0' 20' 40'

PLANT SCHEDULE					
TREES	CODE	BOTANICAL NAME	COMMON NAME	QTY	REMARKS
	IV	Ilex vomitoria	Yaupon Holly	74	Min. 100 gal., 9' Ht.x 5' spd., 4" cal. To measured with the 3 largest trunks.
	JV	Juniperus virginiana `silicicola`	Southern Red Cedar	8	Min., 200 gal., 17` Ht. x 6' spd., 8" cal.
	LIN	Lagerstroemia indica `Natchez`	Crape Myrtle, White	6	Min., 65 gal., 7` Ht x 3.5' spd.,3" cal. multi trunk. measured with the 3 largest trunks.
	PE	Pinus elliotti	Slash Pine	136	Min. 100 gal., 10' Ht. x 3' spd., 4" cal.
	PE1	Pinus elliotti	Slash Pine	60	Min. 100 gal., 10` Ht. x 3' spd., 4"cal
	QV	Quercus virginiana	Southern Live Oak	92	Min., 100 gal., 10 Ht. x 6 spd., 8" cal.
	QV1	Quercus virginiana	Southern Live Oak	9	Min., 200 gal., 17 Ht. x 10' spd., 8" cal.
SHRUBS	CODE	BOTANICAL NAME	COMMON NAME	QTY	REMARKS
	VO	Viburnum odoratissimum	Sweet Viburnum	48	Min., 3 gal., 30" Ht. x 24" spd., 36" o.c.
SHRUB AREAS	CODE	BOTANICAL NAME	COMMON NAME	QTY	REMARKS
	ICB	Ilex cornuta 'Dwarf Burford'	Dwarf Burford Holly	2,264	Min., 3 gal., 18" Ht. x 18" spd., 24" o.c.
	VO1	Viburnum odoratissimum	Sweet Viburnum	1,090	Min. 3 gal., 30" Ht. X 24" spd., 36" o.c.
	VS1	Viburnum suspensum	Sandankwa Viburnum	174	Min., gal., 30" Ht. x 24 spd., 36" o.c.
SOD AREA	CODE	BOTANICAL NAME	COMMON NAME	QTY	REMARKS
	SOD	Tifturf Bermuda Sod	Bermuda Sod	30,053 sf	Solid Sod

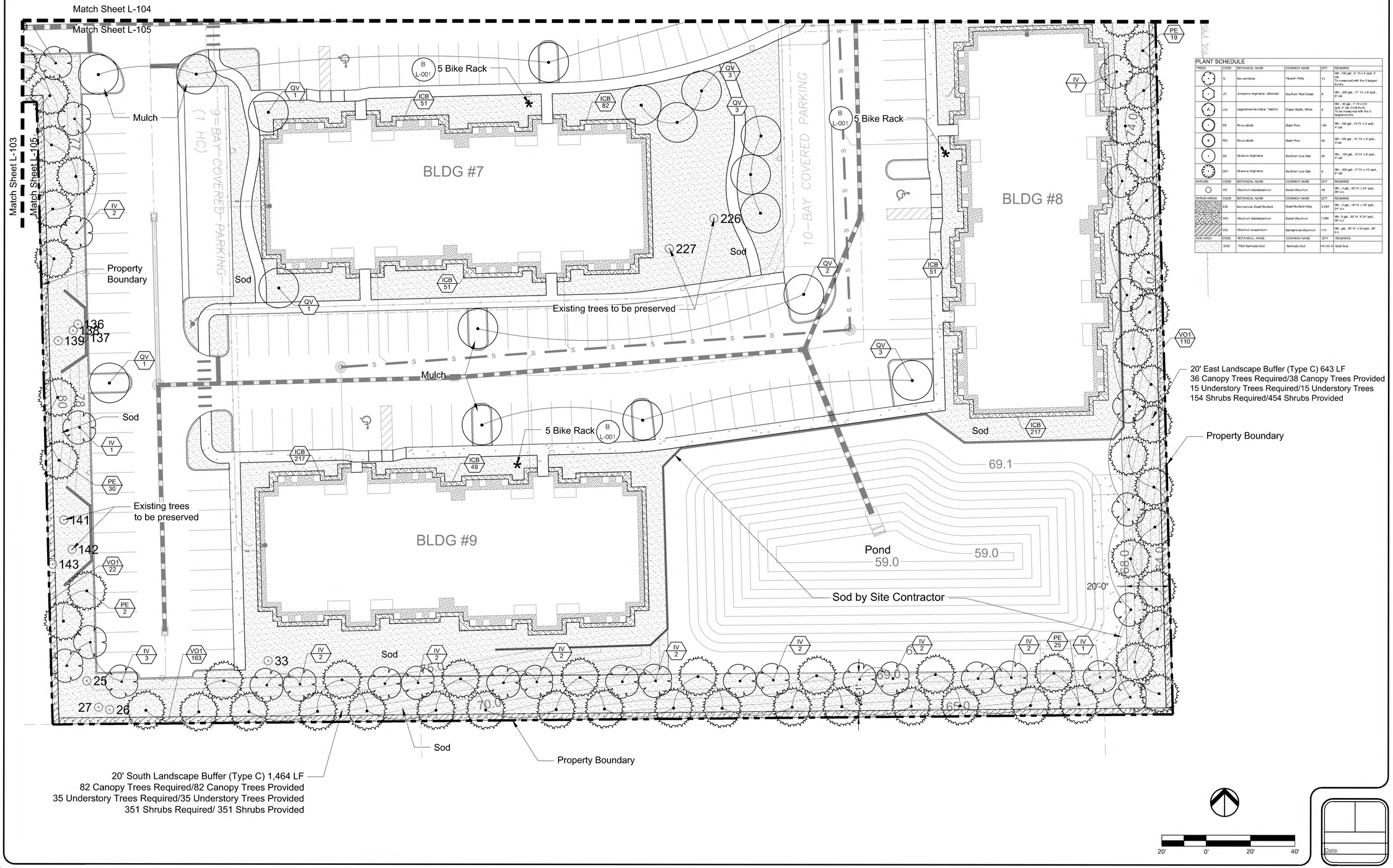
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REV.	DATE	DESCRIPTION	BY
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2	07.25.23	Revision per City Comments 07.13.23	mb
1	06.15.23	Revision per City Comments 05.15.23	mb

Landcape Plan
Landscape Plans
Hillpointe Deland
City of Deland, Florida

Date:

PROJECT NO. 23203
SCALE 1" = 40'
DATE March 23
SHEET L-104



PLANT SCHEDULE

TREES	CODE	BOTANICAL NAME	COMMON NAME	QTY	REMARKS
	IV	Ilex vomitoria	Yaupon Holly	74	Min. 100 gal., 9' Ht.x 5' spd., 4" cal. *To measured with the 3 largest trunks.
	JV	Juniperus virginiana 'silicicola'	Southern Red Cedar	6	Min., 200 gal., 17' Ht. x 6' spd., 8" cal.
	LIN	Lagerstroemia indica 'Natchz'	Crape Myrtle, White	6	Min., 45 gal., 7' Ht x 3.5' spd.,2" cal.,multi trunk. *To measured with the 3 largest trunks.
	PE	Pinus elliottii	Slash Pine	136	Min. 100 gal., 10' Ht. x 5' spd., 4" cal
	PE1	Pinus elliottii	Slash Pine	60	Min. 100 gal., 10' Ht. x 5' spd., 4"cal
	QV	Quercus virginiana	Southern Live Oak	82	Min., 100 gal., 10' Ht. x 6' spd., 4" cal.
	QV1	Quercus virginiana	Southern Live Oak	9	Min., 200 gal., 17' Ht. x 10' spd., 8" cal.
SHRUBS	CODE	BOTANICAL NAME	COMMON NAME	QTY	REMARKS
	VO	Viburnum odoratissimum	Sweet Viburnum	48	Min., 3 gal., 30" Ht. x 24" spd., 36" o.c.
SHRUB AREAS	CODE	BOTANICAL NAME	COMMON NAME	QTY	REMARKS
	ICB	Ilex cornuta 'Dwarf Burford'	Dwarf Burford Holly	2,264	Min., 3 gal., 18" Ht. x 18" spd., 24" o.c.
	VO1	Viburnum odoratissimum	Sweet Viburnum	1,090	Min. 3 gal., 30" Ht. X 24" spd., 36" o.c.
	VS1	Viburnum suspensum	Sandankwa Viburnum	174	Min. gal., 30" Ht. x 24 spd., 36" o.c.
SOD AREA	CODE	BOTANICAL NAME	COMMON NAME	QTY	REMARKS
	SOD	Tifturf Bermuda Sod	Bermuda Sod	130,053 sf	Solid Sod

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REV.	DATE	DESCRIPTION	BY
3	08.17.23	Revision per City Comments 08.15.23	nrb
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1	06.15.23	Revision per City Comments 05.15.23	nrb

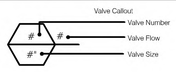
Landcape Plan
Landscape Plans
Hillpointe Deland
City of Deland, Florida

Date:

PROJECT NO. 23203
SCALE 1" = 20'
DATE March 23
SHEET L-105

IRRIGATION SCHEDULE

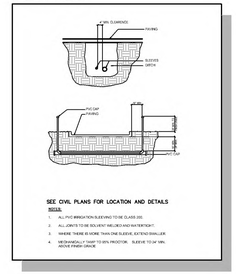
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI			
EST LCS RCS CST SST	Rain Bird 1806 (MPR) 15 Strip Series Turf Spray 6.0" Pop-Up Sprinkler with Co-Molded Wiper Seal. Side and Bottom Inlet. 1/2" NPT Female Threaded Inlet.	144	30			
Q H F	Rain Bird 1806 (MPR) 5 Series MPR Turf Spray 6.0" Pop-Up Sprinkler with Co-Molded Wiper Seal. Side and Bottom Inlet. 1/2" NPT Female Threaded Inlet.	8	30			
Q T H F	Rain Bird 1806 (MPR) 8 Series MPR Turf Spray 6.0" Pop-Up Sprinkler with Co-Molded Wiper Seal. Side and Bottom Inlet. 1/2" NPT Female Threaded Inlet.	341	30			
Q T H F	Rain Bird 1806 (MPR) 10 Series MPR Turf Spray 6.0" Pop-Up Sprinkler with Co-Molded Wiper Seal. Side and Bottom Inlet. 1/2" NPT Female Threaded Inlet.	132	30			
Q T H TQ F	Rain Bird 1806 (MPR) 12 Series MPR Turf Spray 6.0" Pop-Up Sprinkler with Co-Molded Wiper Seal. Side and Bottom Inlet. 1/2" NPT Female Threaded Inlet.	99	30			
Q T H TQ F	Rain Bird 1806 (MPR) 15 Series MPR Turf Spray 6.0" Pop-Up Sprinkler with Co-Molded Wiper Seal. Side and Bottom Inlet. 1/2" NPT Female Threaded Inlet.	165	30			
EST LCS RCS CST SST	Rain Bird 1800-PA-8S-NP 15 Strip Series Shrub Spray on fixed riser with the PA-8S Purple Shrub Adapter. Use with 1/2" MPT threaded risers.	467	30			
1401 1402 1404 1408	Rain Bird 1804-1400 Flood Tree Bubbler 1401 Flood Bubbler 4.0" popup	384	20			
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY	PSI	GPM	RADIUS	
25	Rain Bird 5006-R-NP-PC,FC-MPR 25 Turf Rotor, 6.0" Pop-Up, Plastic Riser, Matched Precipitation Rotor (MPR nozzle). Arc and Radius as per Symbol. 25 ft=red, 30 ft=green, 35ft=beige. With Non-Potable Purple Cover. Pressure Regulating.	210	35		24'	
30	Rain Bird 5006-R-NP-PC,FC-MPR 30 Turf Rotor, 6.0" Pop-Up, Plastic Riser, Matched Precipitation Rotor (MPR nozzle). Arc and Radius as per Symbol. 25 ft=red, 30 ft=green, 35ft=beige. With Non-Potable Purple Cover. Pressure Regulating.	12	35		30'	
35	Rain Bird 5006-R-NP-PC,FC-MPR 35 Turf Rotor, 6.0" Pop-Up, Plastic Riser, Matched Precipitation Rotor (MPR nozzle). Arc and Radius as per Symbol. 25 ft=red, 30 ft=green, 35ft=beige. With Non-Potable Purple Cover. Pressure Regulating.	45	35		34'	
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY				DETAIL
	Area to Receive Dripline Rain Bird XFCV-06-18 XFCV On-Surface Landscape Dripline with a Heavy-Duty 3.5 psi Check Valve. 0.6 GPH emitters at 18" O.C. Dripline laterals spaced at 18" apart, with emitters offset for triangular pattern. Great for elevation change. Specify XF insert fittings.	10,860 s.f.				
SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY				
	Rain Bird PESBR 1", 1-1/2", and 2" Durable Chlorine-Resistant Valves for Reclaimed Water Applications. With Scrubber Mechanism Technology, and Purple Flow Control Handle.	52				
	Rain Bird PESBR-PRS-D (2) 1", 1-1/2", and 2" Durable Chlorine-Resistant Valves for Reclaimed Water Applications. With Scrubber Mechanism Technology, Purple Flow Control Handle, and Pressure Regulator Module.	38				
BF	Febco 825YA 1" Reduced Pressure Backflow Preventer	1				
C1	Rain Bird ESP-LXD with (1) ESPLXD-SM75 Two-Wire Decoder Commercial Controller. 125 Stations. UV-Resistant, Outdoor-Rated, Plastic Locking Wall-Mountable Case. Available in the US market, International, European, or Australian Markets.	1				
C2	Rain Bird ESP8LXMEF 8 Station Capable Commercial Controller. Mounted on a Plastic Wall Mount. Flow Sensing and Water Management Capabilities	1				
RS	Rain Bird RSD-BEx Rain Sensor, with metal latching bracket, extension wire.	2				
M1	Water Meter 2" 2" Reclaim Water Meter	1				
M2	Water Meter 2" 2" Reclaim Water Meter	1				
	Irrigation Lateral Line: PVC Class 200 SDR 21	31,084 l.f.				
	Irrigation Mainline: PVC Class 200 SDR 21	8,997 l.f.				

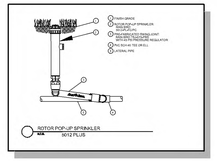


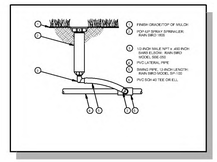
WATERING SCHEDULE

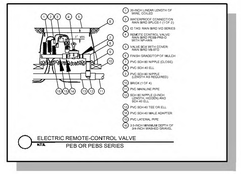
NUMBER	MODEL	TYPE	PRECIP	IN./WEEK	MIN./WEEK	GAL./WEEK	GAL./DAY
1	Rain Bird PESBR-PRS-D (2)	Bubbler	3.4 in/h	0.85	15	210	105
2	Rain Bird PESBR	Shrub Spray	2.79 in/h	1	22	426.1	213.1
3	Rain Bird PESBR-PRS-D (2)	Turf Rotor	0.62 in/h	1	98	3,295	1,647
4	Rain Bird PESBR-PRS-D (2)	Bubbler	3.4 in/h	0.85	15	345	172.5
5	Rain Bird PESBR	Shrub Spray	2.81 in/h	1	22	1,118	559.2
6	Rain Bird PESBR	Turf Rotor	0.75 in/h	1	80	2,162	1,081
7	Rain Bird PESBR-PRS-D (2)	Bubbler	3.4 in/h	0.85	15	300	150
8	Rain Bird PESBR	Shrub Spray	2.85 in/h	1	22	1,105	552.4
9	Rain Bird PESBR	Turf Rotor	0.67 in/h	1	90	2,805	1,403
10	Rain Bird PESBR-PRS-D (2)	Bubbler	3.4 in/h	0.85	15	270	135
11	Rain Bird PESBR	Shrub Spray	2.78 in/h	1	22	1,065	532.5
12	Rain Bird PESBR	Turf Rotor	0.81 in/h	1	75	1,302	651
13	Rain Bird PESBR-PRS-D (2)	Bubbler	3.4 in/h	0.85	15	270	135
14	Rain Bird PESBR-PRS-D (2)	Shrub Spray	2.77 in/h	1	22	1,038	519.2
15	Rain Bird PESBR	Turf Rotor	0.77 in/h	1	79	3,091	1,546
16	Rain Bird PESBR-PRS-D (2)	Bubbler	3.4 in/h	0.85	15	270	135
17	Rain Bird PESBR	Shrub Spray	2.8 in/h	1	22	971.7	485.9
18	Rain Bird PESBR-PRS-D (2)	Bubbler	3.4 in/h	0.85	15	300	150
19	Rain Bird PESBR	Turf Rotor	0.78 in/h	1	78	3,172	1,586
20	Rain Bird PESBR	Shrub Spray	2.84 in/h	1	22	958.3	479.2
21	Rain Bird PESBR-PRS-D (2)	Bubbler	3.4 in/h	0.85	15	330	165
22	Rain Bird PESBR	Shrub Spray	2.77 in/h	1	22	1,038	519.2
23	Rain Bird PESBR-PRS-D (2)	Bubbler	3.4 in/h	0.85	15	360	180
24	Rain Bird PESBR	Turf Spray	0.62 in/h	1	98	3,847	1,923
25	Rain Bird PESBR-PRS-D (2)	Bubbler	3.4 in/h	0.85	15	165	82.5
26	Rain Bird PESBR	Turf Spray	0.66 in/h	1	91	1,975	987.4
27	Rain Bird PESBR	Turf Rotor	0.74 in/h	1	82	2,950	1,475
28	Rain Bird PESBR	Shrub Spray	2.79 in/h	1	22	945.1	472.6
29	Rain Bird PESBR-PRS-D (2)	Bubbler	3.4 in/h	0.85	15	300	150
30	Rain Bird PESBR	Shrub Spray	3.08 in/h	1	20	871.2	435.6
31	Rain Bird PESBR-PRS-D (2)	Bubbler	3.4 in/h	0.85	15	225	112.5
32	Rain Bird PESBR	Turf Rotor	0.74 in/h	1	81	3,085	1,543
33	Rain Bird PESBR	Shrub Spray	2.78 in/h	1	22	891.9	445.9
34	Rain Bird PESBR-PRS-D (2)	Bubbler	3.4 in/h	0.85	15	300	150
35	Rain Bird PESBR	Turf Rotor	0.69 in/h	1	88	2,614	1,307
36	Rain Bird PESBR	Turf Rotor	0.74 in/h	1	81	1,733	866.7
37	Rain Bird PESBR	Shrub Spray	3.01 in/h	1	20	605	302.5
38	Rain Bird PESBR-PRS-D (2)	Bubbler	3.4 in/h	0.85	15	195	97.5
39	Rain Bird PESBR	Shrub Spray	2.92 in/h	1	21	965.8	482.9
40	Rain Bird PESBR-PRS-D (2)	Bubbler	3.4 in/h	0.85	15	300	150
41	Rain Bird PESBR	Turf Rotor	0.73 in/h	1	83	1,653	826.3
42	Rain Bird PESBR-PRS-D (2)	Bubbler	3.4 in/h	0.85	15	165	82.5
43	Rain Bird PESBR-PRS-D (2)	Bubbler	3.4 in/h	0.85	15	315	157.5
44	Rain Bird PESBR-PRS-D (2)	Bubbler	3.4 in/h	0.85	15	195	97.5
45	Rain Bird PESBR-PRS-D (2)	Bubbler	3.4 in/h	0.85	15	60	30
46	Rain Bird PESBR	Turf Rotor	0.66 in/h	1	91	2,903	1,451
47	Rain Bird PESBR	Turf Rotor	0.69 in/h	1	88	3,674	1,837
48	Rain Bird PESBR-PRS-D (2)	Area for Dripline	0.43 in/h	0.85	120	364.8	182.4
49	Rain Bird PESBR	Turf Spray	1.59 in/h	1	38	1,511	755.3
50	Rain Bird PESBR	Turf Rotor	0.63 in/h	1	96	3,339	1,669
51	Rain Bird PESBR-PRS-D (2)	Bubbler	3.4 in/h	0.85	15	255	127.5
52	Rain Bird PESBR-PRS-D (2)	Area for Dripline	0.43 in/h	0.85	120	834	417
53	Rain Bird PESBR	Turf Rotor	0.7 in/h	1	86	2,411	1,206
54	Rain Bird PESBR	Turf Spray	0.55 in/h	1	110	4,392	2,196
55	Rain Bird PESBR-PRS-D (2)	Area for Dripline	0.43 in/h	0.85	120	559.2	279.6
56	Rain Bird PESBR-PRS-D (2)	Bubbler	3.4 in/h	0.85	15	120	60
57	Rain Bird PESBR	Turf Rotor	0.67 in/h	1	90	1,382	691.2
58	Rain Bird PESBR	Turf Spray	1.74 in/h	1	35	685.3	342.7
59	Rain Bird PESBR	Turf Spray	1.94 in/h	1	31	792.4	396.2
60	Rain Bird PESBR-PRS-D (2)	Bubbler	3.4 in/h	0.85	15	75	37.5
61	Rain Bird PESBR	Turf Spray	1.62 in/h	1	37	961.6	480.8
62	Rain Bird PESBR-PRS-D (2)	Area for Dripline	0.43 in/h	0.85	120	757.2	378.6
63	Rain Bird PESBR	Turf Spray	1.62 in/h	1	37	1,000	500.2
64	Rain Bird PESBR-PRS-D (2)	Area for Dripline	0.43 in/h	0.85	120	337.2	168.6
65	Rain Bird PESBR	Turf Spray	2.31 in/h	1	26	650.8	325.4
66	Rain Bird PESBR-PRS-D (2)	Area for Dripline	0.43 in/h	0.85	120	333.6	166.8
67	Rain Bird PESBR	Turf Spray	0.81 in/h	1	75	2,237	1,118
68	Rain Bird PESBR	Turf Rotor	0.67 in/h	1	89	3,106	1,553
69	Rain Bird PESBR	Turf Spray	0.61 in/h	1	99	4,157	2,079
70	Rain Bird PESBR-PRS-D (2)	Bubbler	3.4 in/h	0.85	15	90	45
71	Rain Bird PESBR	Turf Spray	1.71 in/h	1	36	886.0	443.0
72	Rain Bird PESBR-PRS-D (2)	Area for Dripline	0.43 in/h	0.85	120	76.8	38.4
73	Rain Bird PESBR-PRS-D (2)	Area for Dripline	0.43 in/h	0.85	120	804	402
74	Rain Bird PESBR	Turf Spray	0.76 in/h	1	80	3,972	1,986
75	Rain Bird PESBR-PRS-D (2)	Bubbler	3.4 in/h	0.85	15	105	52.5
76	Rain Bird PESBR	Turf Spray	1.44 in/h	1	42	1,079	539.3
77	Rain Bird PESBR	Turf Spray	1.96 in/h	1	31	811.9	405.9
78	Rain Bird PESBR	Turf Spray	1.57 in/h	1	39	1,254	627.1
79	Rain Bird PESBR	Turf Rotor	0.78 in/h	1	78	2,117	1,058
80	Rain Bird PESBR	Turf Rotor	0.71 in/h	1	85	2,036	1,018
81	Rain Bird PESBR-PRS-D (2)	Bubbler	3.4 in/h	0.85	15	240	120
82	Rain Bird PESBR-PRS-D (2)	Area for Dripline	0.43 in/h	0.85	120	571.2	285.6
83	Rain Bird PESBR	Turf Spray	1.52 in/h	1	40	1,673	836.4
84	Rain Bird PESBR	Turf Spray	2,547 in/h	1	1	26.5	13.2
85	Rain Bird PESBR	Turf Spray	1.49 in/h	1	41	1,324	661.9
86	Rain Bird PESBR-PRS-D (2)	Area for Dripline	0.43 in/h	0.85	119	573.6	286.8
87	Rain Bird PESBR	Turf Spray	1.49 in/h	1	41	1,533	766.7
88	Rain Bird PESBR	Turf Spray	1.4 in/h	1	43	1,438	719.0
89	Rain Bird PESBR-PRS-D (2)	Area for Dripline	0.43 in/h	0.85	119	570.0	285.0
90	Rain Bird PESBR	Turf Spray	1.61 in/h	1	38	1,316	658.0
		TOTALS:			4,701	109,895	54,947

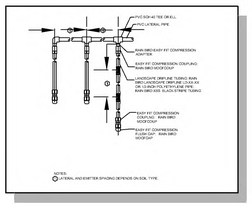
DETAILS











IRRIGATION SYSTEM PERFORMANCE NOTES

1) IRRIGATION SYSTEM AS SHOWN IS DESIGNED TO OPERATE OFF A RECLAIM WATER SOURCE WITH A PROVIDING A MINIMUM PSI OF 45 AT THE SOURCE

2) HEAD LAYOUT BASED ON BASE INFORMATION PROVIDED. HEADS SHALL BE ADJUSTED TO ACCOMMODATE FIELD VARIATIONS WHILE MAINTAINING 100% COVERAGE AND MINIMIZING OVER SPRAY ONTO PAVED AREAS AND BUILDINGS.

3) LATERAL PIPE SHALL BE SIZED SO THAT WATER VELOCITY DOES NOT EXCEED 5 FEET PER SECOND. MAXIMUM GPM PER PIPE SIZE AS FOLLOWS:

3/4 PIPE	8 GPM
1" PIPE	14 GPM
1 1/4" PIPE	24 GPM
1 1/2" PIPE	36 GPM
2" PIPE	50 GPM
2 /2" PIPE	80 GPM
3" PIPE	120 GPM
4" PIPE	200 GPM
6" PIPE	450 GPM

NOTE:

1. LAND F/X IRRIGATION WAS UTILIZED TO DESIGN THE IRRIGATION SYSTEM.

2. MAINLINE, LATERAL PIPE & CONTROL VALVES SHOWN IN HARDSCAPE/BUILDINGS AREA'S OR OUTSIDE OF PROPERTY LINES IS FOR CLARITY ONLY. INSTALL PIPE AND EQUIPMENT IN GREEN SPACE AND WITHIN PROPERTY LINES.

GENERAL NOTES

1. REFER TO THE LANDSCAPE PLANS WHEN TRENCHING TO AVOID TREE AND SHRUB LOCATIONS.
2. ALL MAINLINE PIPING SHALL BE BURIED TO A MINIMUM DEPTH OF 18" OF COVER AND ALL LATERAL PIPING SHALL BE BURIED TO A MINIMUM DEPTH OF 12" OF COVER.
3. ALL POP-UP ROTOR AND SPRAY HEADS SHALL BE INSTALLED USING AN 18" PVC FLEX PIPE CONNECTION. CONTRACTOR SHALL NOT USE FUNNY PIPE.
4. PIPE SIZES SHALL CONFORM TO THOSE SHOWN ON THE DRAWINGS, THE SMALLEST LATERAL, PIPE SIZE TO A SINGLE SPRAY OR ROTOR HEAD SHALL BE $\frac{3}{4}$".
5. ALL RISERS SHALL BE STAKED WITH A 1" METAL DOWEL AND SECURED WITH UV RESISTANT PLASTIC CABLE TIES. RISERS AND DOWEL SHALL BE PAINTED FLAT BLACK.
6. ALL REMOTE CONTROL VALVES, GATE VALVES AND QUICK COUPLERS SHALL BE INSTALLED IN VALVE BOXES.
7. THE EXACT HEIGHT OF ANY 12" POP-UP THAT IS SHOWN IN A SHRUB BED SHALL BE DETERMINED BY THE LANDSCAPE ARCHITECT IN THE FIELD.
8. CONTROL WIRE SHALL BE 14-1 UF DIRECT BURIAL COLORED RED FOR CONTROL WIRES AND WHITE FOR COMMON WIRE. NO CROSS CONNECTION BETWEEN CONTROLLERS SHALL BE ALLOWED. WIRE SPLICES SHALL BE MADE ONLY IN VALVE BOXES USING RAINBIRD "SNAP-TITE" CONNECTORS.
9. ANY PIPING OR VALVES SHOWN OUTSIDE THE PROPERTY LINE OR OUTSIDE OF A LANDSCAPE AREA IN SHOWN THERE FOR DESIGN CLARITY ONLY. ALL PIPING AND VALVES SHALL BE INSTALLED ON THE PROPERTY AND WITHIN LANDSCAPE AREAS.
10. IT IS THE RESPONSIBILITY OF THE IRRIGATION CONTRACTOR TO FAMILIARIZE HIMSELF WITH, AND EXERCISE CARE SO AS TO NOT DAMAGE ANY EXISTING BERMS, WALLS, STRUCTURES, PLANT MATERIALS AND UTILITIES. THE IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR THE IMMEDIATE REPAIR OR REPLACEMENT OF ALL ITEMS DAMAGE BY HIS WORK. HE SHALL COORDINATE HIS WORK WITH OTHER CONTRACTORS FOR THE LOCATION AND INSTALLATION OF SLEEVES AND PIPING THROUGH WALLS, UNDER ROADWAYS AND PAVING, ETC.
11. DO NOT WILLFULLY INSTALL THE SPRINKLER SYSTEM AS SHOWN ON THE DRAWINGS WHEN IT IS OBVIOUS IN THE FIELD THAT UNKNOWN OBSTRUCTIONS, GRADE DIFFERENCES OR DIFFERENCES IN ARE DIMENSIONS EXIST THAT MIGHT NOT HAVE BEEN CONSIDERED IN THE ENGINEERING. SUCH OBSTRUCTIONS OR DIFFERENCES SHOULD BE BROUGHT TO THE ATTENTION OF THE OWNER'S AUTHORIZED REPRESENTATIVE. IN THE EVENT THIS NOTIFICATIONS IS NOT PERFORMED, THE IRRIGATION CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY REVISIONS.
12. FINAL LOCATION OF THE AUTOMATIC CONTROLLER(S) SHALL BE APPROVED BY THE OWNER'S AUTHORIZED REPRESENTATIVE PRIOR TO INSTALLATION.
13. ELECTRICAL SERVICE TO ALL EQUIPMENT SHALL BE PROVIDED TO A JUNCTION BOX AT THE EQUIPMENT LOCATION, (BY OTHERS, NOT A PART OF THIS CONTRACT) THE IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE FOR THE FINAL CONNECTION FROM THE JUNCTION BOX TO ALL EQUIPMENT.
14. THE IRRIGATION CONTRACTOR SHALL FLUSH AND ADJUST ALL SPRINKLER HEADS AND VALVES TO PROVIDE OPTIMUM COVERAGE WITH MINIMAL OVERSPRAY ONTO WALKS, STREETS, WALLS, ETC. IN ORDER TO ACCOMPLISH THIS, THE CONTRACTOR MAY SUBSTITUTE VARIABLE ARC NOZZLES IN PLACE OF THE SPECIFIED FIXED ARC NOZZLES WHERE NECESSARY. PRESSURE COMPENSATING SCREENS MAY ALSO BE USED TO REDUCE SPRAY DISTANCE.
15. THE CONTRACTOR SHALL COMPLETE ALL WORK IN ACCORDANCE WITH ALL PREVAILING LAWNS, CODES AND REGULATIONS.
16. ALL SPRINKLER EQUIPMENT NOT OTHERWISE DETAILED OR SPECIFIED SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS.
17. THE CONTRACTOR SHALL PREPARE AN AS-BUILT DRAWING SHOWING ALL IRRIGATION INSTALLATION. A COPY OF THE ORIGINAL PLAN MAY BE OBTAINED FROM THE LANDSCAPE ARCHITECT FOR A FEE. THE AS-BUILT DRAWING SHALL LOCATE ALL MAINLINE AND VALVES BY SHOWING EXACT MEASUREMENTS FROM HARD SURFACES.
18. ALL WORK SHALL BE GUARANTEED FOR ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE AGAINST ALL DEFECTS IN EQUIPMENT AND WORKMANSHIP.
19. SLEEVES SHALL BE PLACE UNDER PAVEMENT AS SHOWN ON PLANS AND SHALL BE A MINIMUM OF 2X THE SIZE OF THE IRRIGATION PIPE.
20. CONTRACTOR SHALL PERFORM PRESSURE AND VOLUME TEST ON IRRIGATION WATER SOURCE OVER A CONTINUOUS 24 HOUR PERIOD PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION WORK, SHOULD THE AVAILABLE SUPPLY NOT BE ADEQUATE TO MEET THE DEMANDS OF THE IRRIGATION SYSTEM AS DESIGNED THE CONTRACTOR SHALL CONTACT THE LANDSCAPE ARCHITECT PRIOR TO CONSTRUCTION FOR DESIGN MODIFICATIONS.
21. ALL IRRIGATION PIPES, SPRINKLER CAPS AND VALVE BOX COVERS SHALL BE PURPLE TO DENOTE REUSE WATER. CONTRACTOR TO PROVIDE SIGNAGE AT ALL PROJECT ENTRANCES DENOTING REUSE IRRIGATION WATER. SEE CIVIL PLAN FOR LOCATION AND DETAIL.

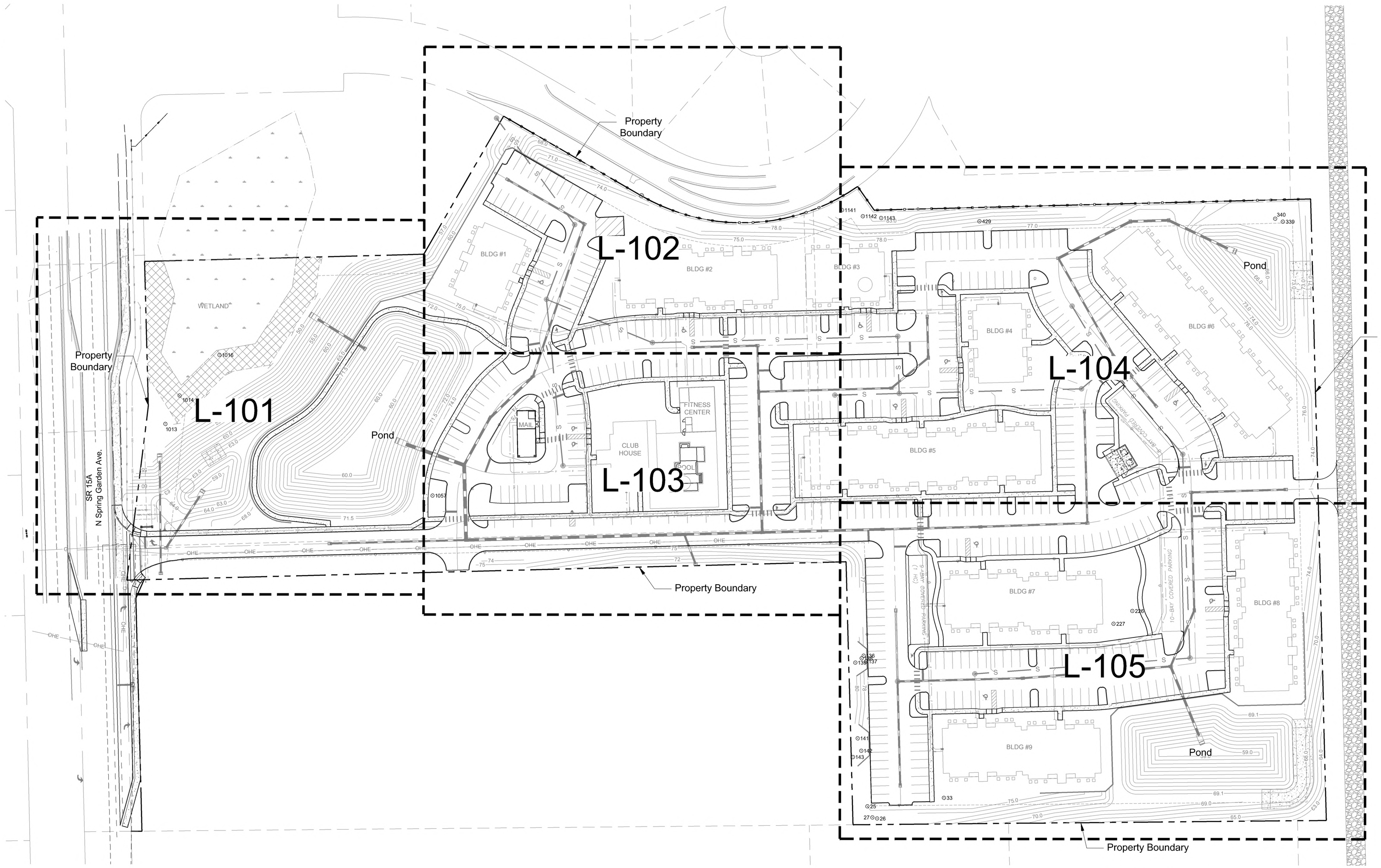
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REV	DATE	DESCRIPTION	BY
1	07.25.23	Revision per City Comments 07.13.23	nrb

Irrigation Schedule & Detail
Irrigation Plan
Hillpointe Deland
City of Deland, Florida

Date:

PROJECT NO. 23203
SCALE NTS
DATE May 2023
SHEET I-001



thomas E Daly

Digitally signed by thomas E Daly
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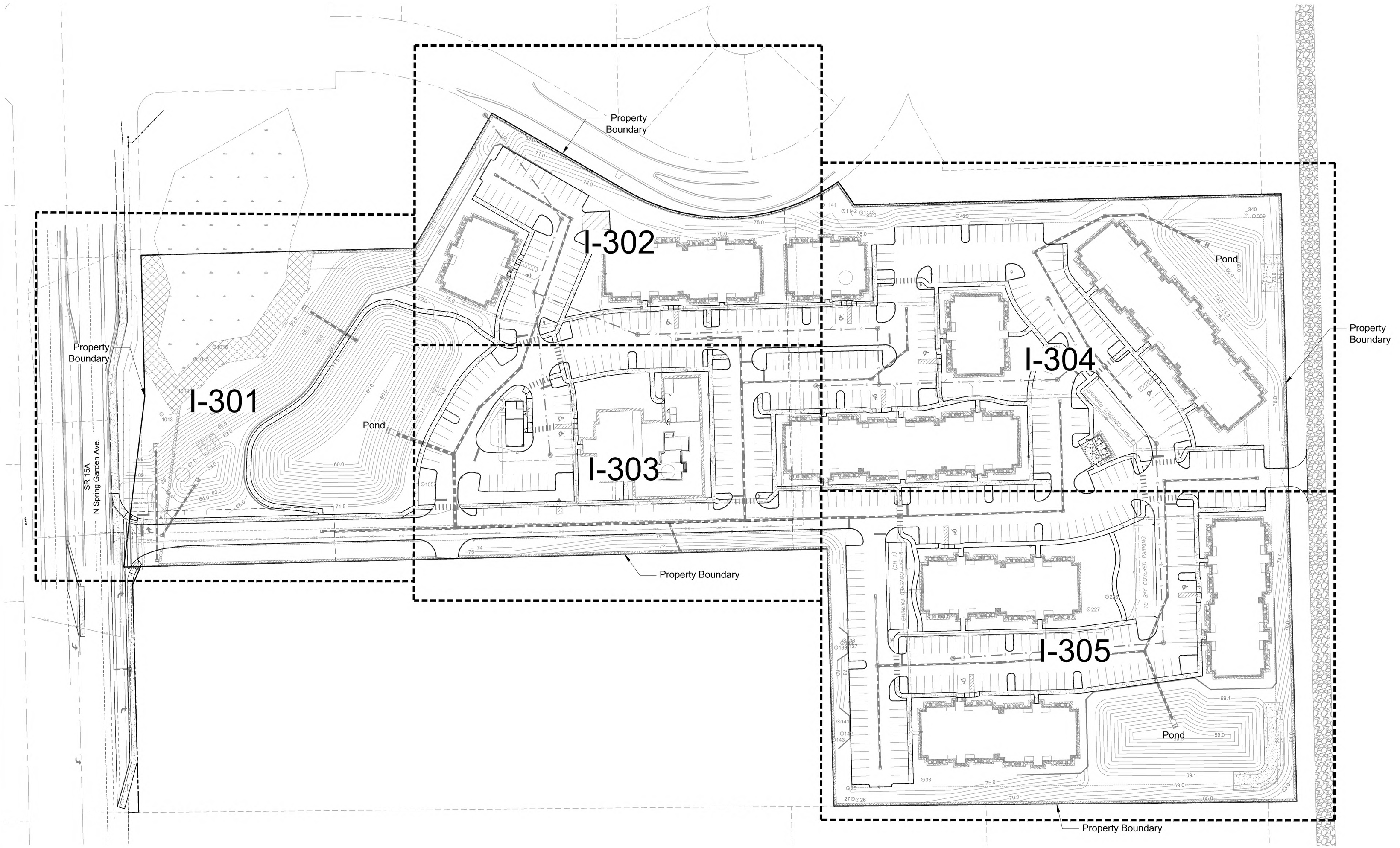
Date:

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REV.	DATE	DESCRIPTION	BY
3	08.17.23	Revision per City Comments 08.15.23	mb
2	07.29.23	Revision per City Comments 07.13.23	mb
1	06.15.23	Revision per City Comments 05.15.23	mb

Landcape Key Sheet
Landscape Plans
Hillpointe Deland
City of Deland, Florida

PROJECT NO. 23203
SCALE 1" = 50'
DATE March 23
SHEET K-100



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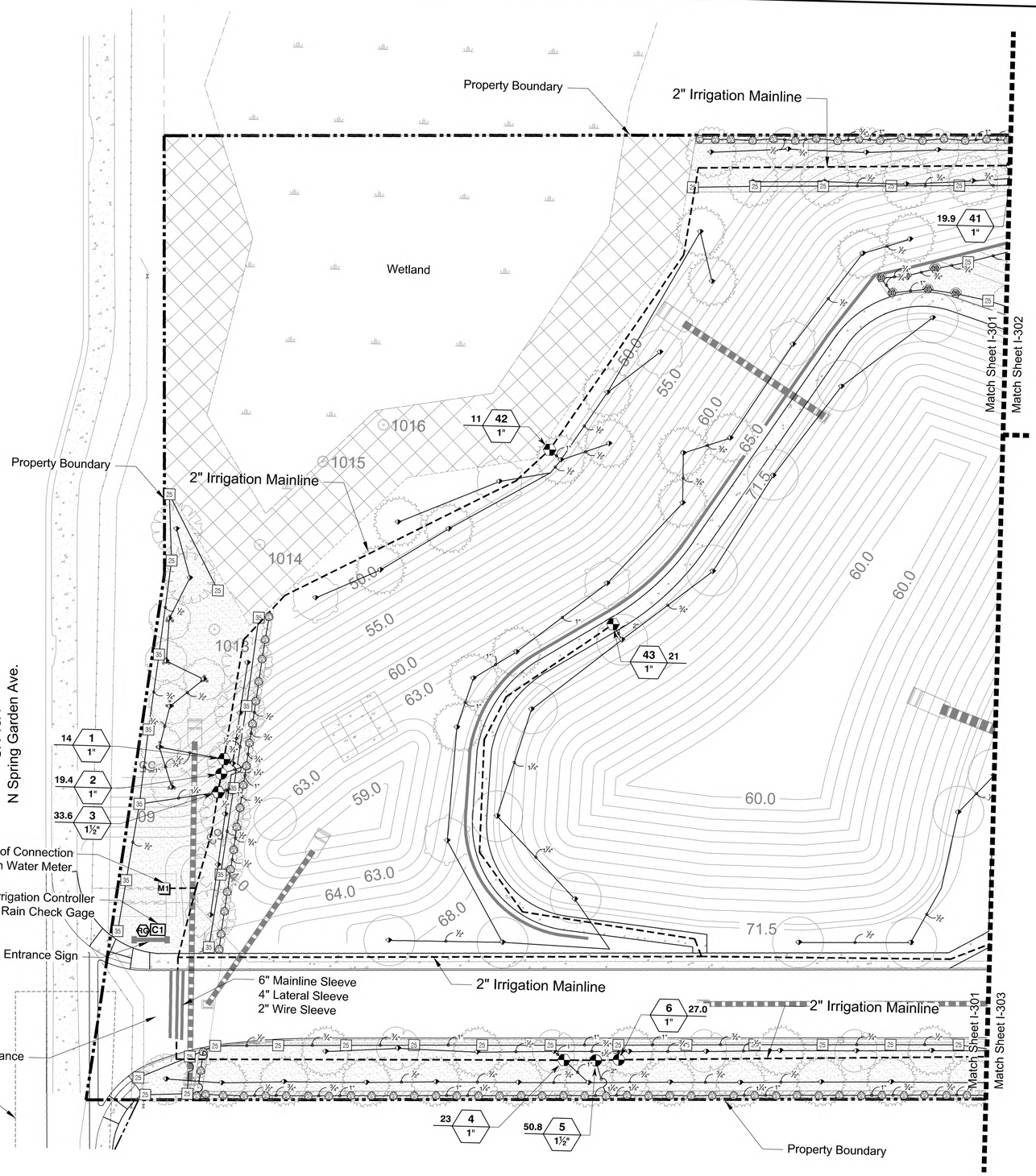
REV	DATE	DESCRIPTION	BY
1	07.25.23	Revision per City Comments 07.13.23	mb

Irrigation Key Sheet
Landscape Plans
Hillpointe Deland
City of Deland, Florida

50' 0' 50' 100'

Date:

PROJECT NO. 23203
SCALE 1" = 50'
DATE May 2023
SHEET K-300



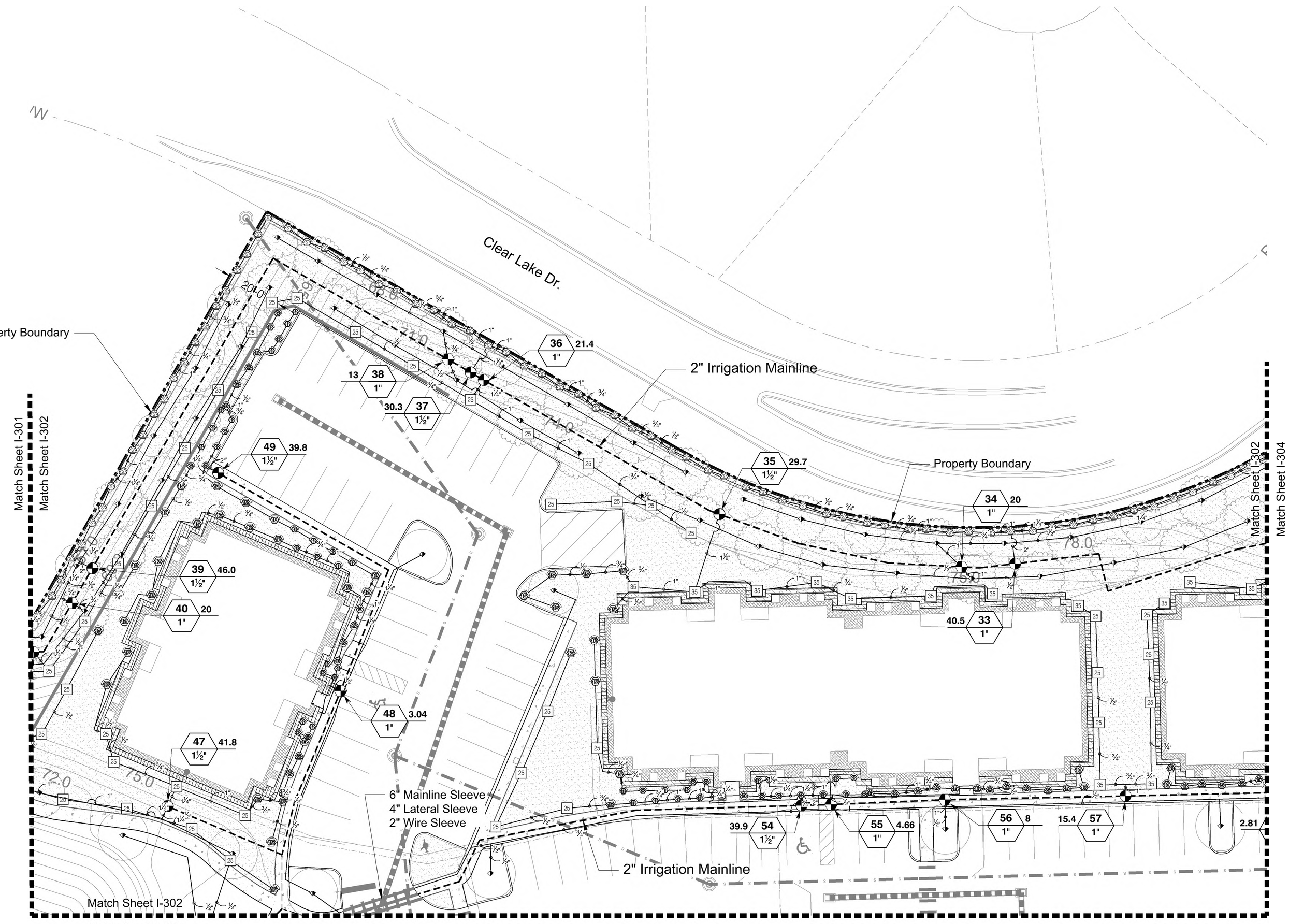
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REV.	DATE	DESCRIPTION	BY
1	07.25.23	Revision per City Comments 07.13.23	mb

Irrigation Plan
Irrigation Plans
Hillpointe Deland
City of Deland, Florida

Date:

PROJECT NO. 23203
SCALE 1" = 20'
DATE May 2023
SHEET I-301



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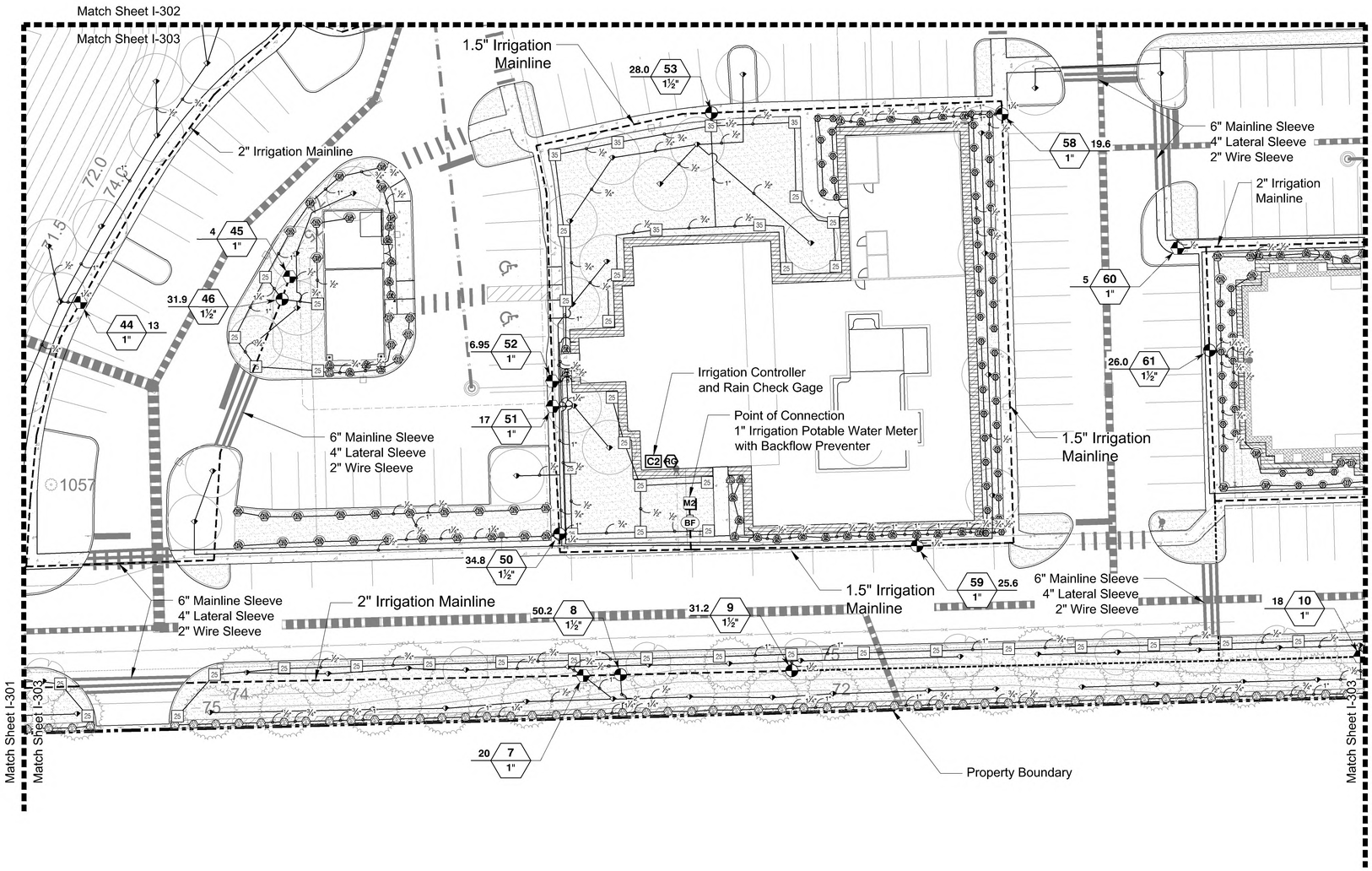
REV	DATE	DESCRIPTION	BY
1	07.25.23	Revision per City Comments 07.13.23	mb

Irrigation Plan
Irrigation Plans
Hillpointe Deland
City of Deland, Florida

20' 0' 20' 40'

Date:

PROJECT NO. 23203
SCALE 1" = 20'
DATE May 2023
SHEET I-302



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REV.	DATE	DESCRIPTION	BY
1	07.25.23	Revision per City Comments 07.13.23	HTD

Irrigation Plan
Irrigations Plan
Hillpointe Deland
City of Deland, Florida

20' 0' 20' 40'

Date:

PROJECT NO. 23203
SCALE 1" = 20'
DATE May 2023
SHEET I-303

2" Irrigation Mainline
Property Boundary
32 38.1 1½"
20 29 1½"
1141
1142
1143
830
429
77
78 0
340
15 31 1"
30 43.6 1½"
43.0 28 1½"
36.0 27 1½"
6" Mainline Sleeve
4" Lateral Sleeve
2" Wire Sleeve
2" Irrigation Mainline
Pond
66.0
66.0
73.0
73.0
74.0
67 29.8 1½"
21.7 26 1"
2" Irrigation Mainline
42.0 69 1½"
11 25 1"
24 23 1½"
Property Boundary
Match Sheet I-302
Match Sheet I-304
25.0 65 1½"
Mulch
39.3 24 1½"
2.78 66 1"
6" Mainline Sleeve
4" Lateral Sleeve
2" Wire Sleeve
6.7 73 1"
Match Sheet I-303
Match Sheet I-304
2" Irrigation Mainline
68 34.9 1½"
22 47.2 1½"
6.31 62 1"
63 27.0 1½"
70 6 1"
71 24.6 1"
72 0.64 1"
49.7 74 1½"
75 7 1"
76 25.7 1½"
6" Mainline Sleeve
4" Lateral Sleeve
2" Wire Sleeve
26.2 77 1½"
2" Irrigation Mainline
Match Sheet I-304
Match Sheet I-305
20' 0' 20' 40'

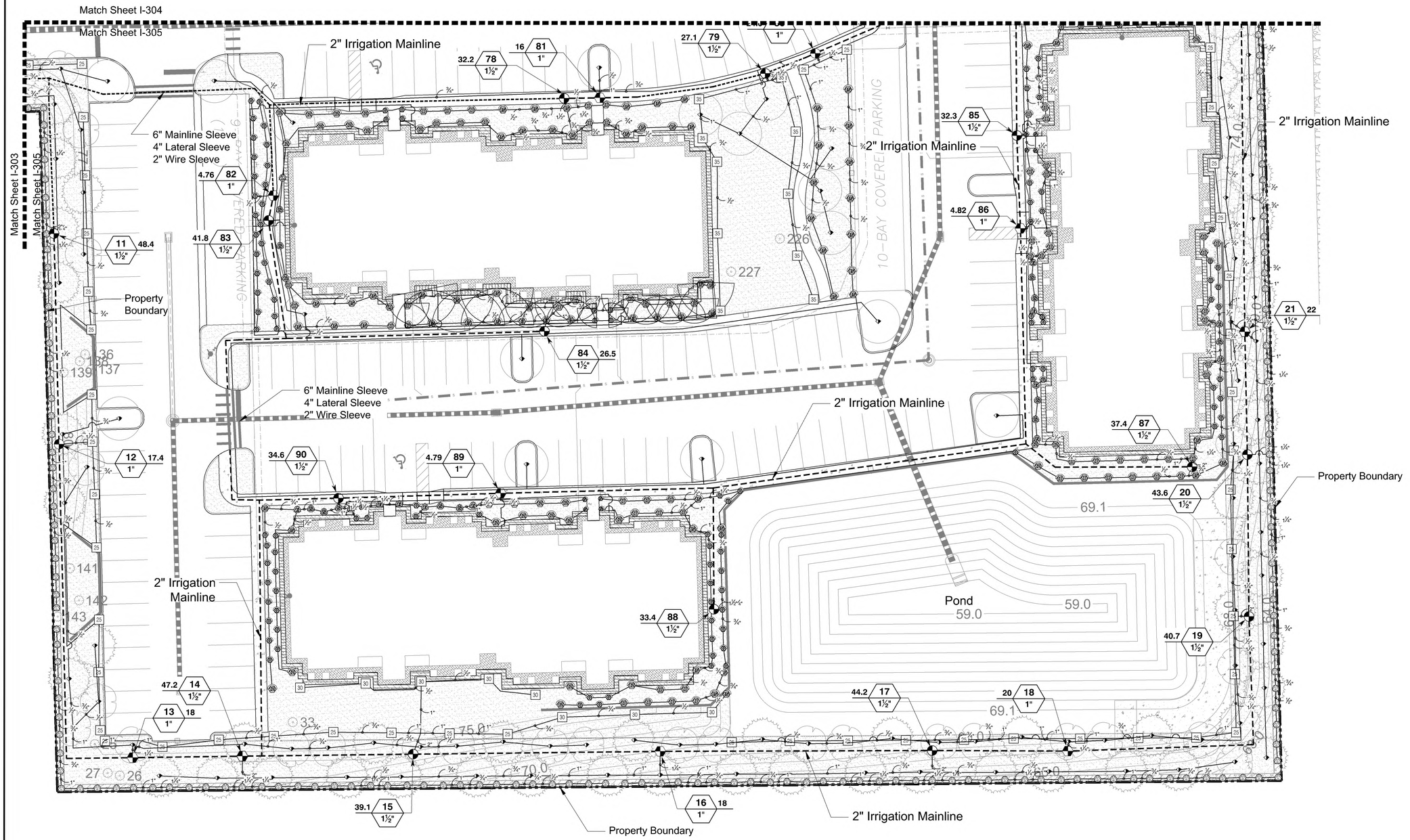
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Irrigation Plan
Irrigtion Plans
Hillpointe Deland
City of Deland, Florida

Date:

PROJECT NO.
23203
SCALE
1" = 20'
DATE
May 2023
SHEET
I-304



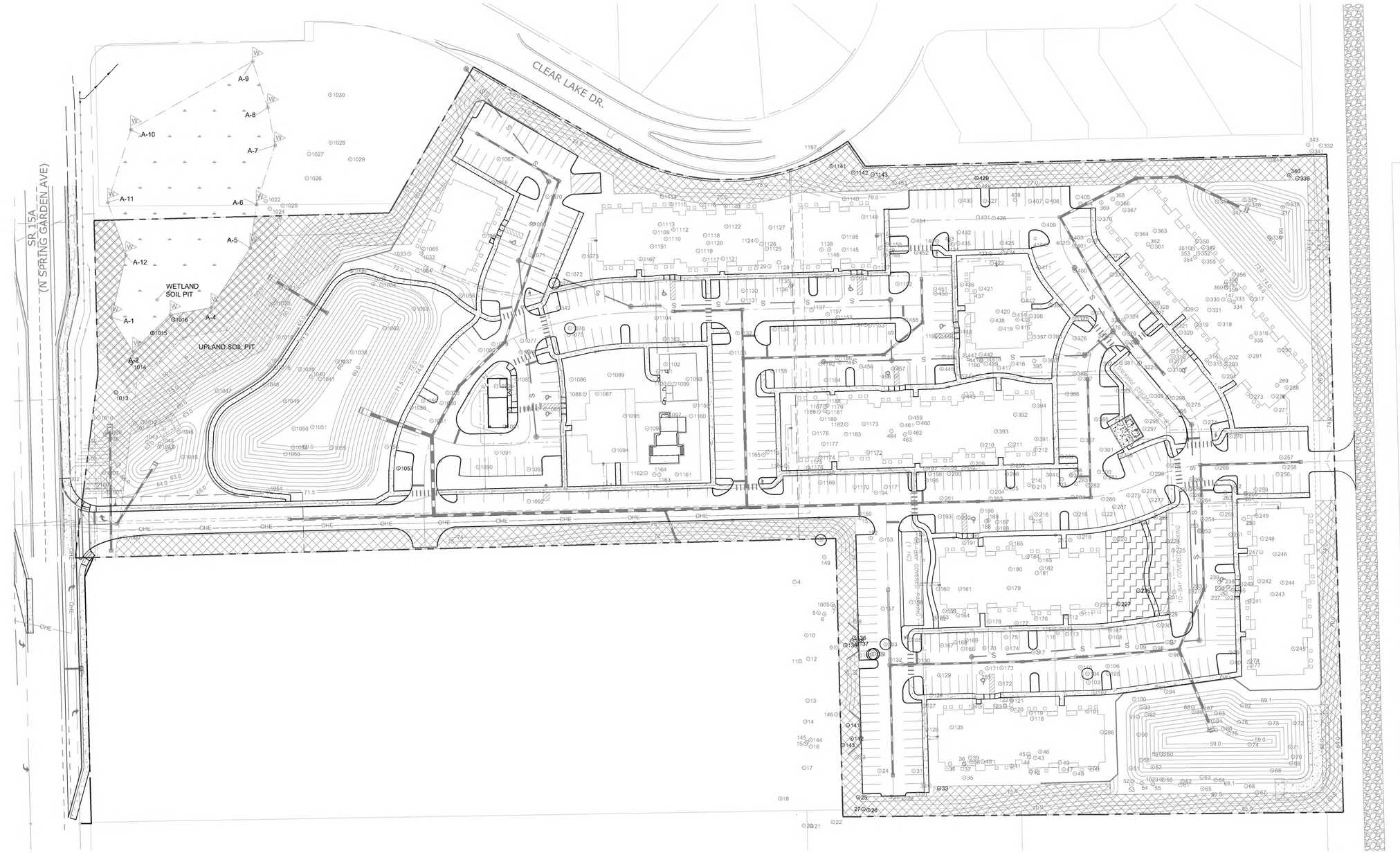
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REV.	DATE	DESCRIPTION	BY
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Irrigation Plan
Irrigation Plans
Hillpointe Deland
City of Deland, Florida

Date:

PROJECT NO. 23203
SCALE 1" = 20'
DATE May 2023
SHEET I-305



Tree Protection Areas

Specimen Trees

Trees Save Area

50' 0' 50' 100'

Date:

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REV.	DATE	DESCRIPTION	BY
3	08.17.23	Revision per City Comments 08.15.23	mb
2	07.25.23	Revision per City Comments 07.13.23	mb
1	06.15.23	Revision per City Comments 05.15.23	mb

Arbor Plan
Arbor Permit Plans
Hillpointe Deland
City of Deland, Florida

PROJECT NO.
23203
SCALE
1" = 50'
DATE
February 23
SHEET
A-201

Overall Project Tree Calculations

Planned Development Notes:

F. Environmental Considerations. The development shall comply with the requirements for preservation of environmental resources as set forth in the Land Development Regulations Ordinance No. 2013-11, as amended. Tree Protection Areas preserving a minimum of 15% of the net developable area, which excludes required right-of-way dedication areas and on-site easements, shall be required and maintained as shown on Exhibit "B". Tree Protection Areas are proposed as shown on Exhibit "B", and said locations shall be finalized at final site plan. Nothing shall prevent the grading of Tree Protection Areas prior to creation of said areas, but any portion of the property with grading shall require replanting as provided for in the Land Development Code. Due to the presence of pre-existing utility easements running through the property, the proposed Tree Protection Areas are segmented so that typical widths cannot be accommodated. To that end, a Tree Protection Area's minimum width may be reduced to 20 feet which the total areas of said TPA is at least 4,600 square feet and replacement trees, as necessary, may be planted with said TPA. Moreover, portions of Tree Protection Areas may be less than 30 feet in width when connected to larger Tree Protection Areas that are 30 feet in width or greater. Additional Provisions regarding tree mitigation are as follows:

1. The City shall grant mitigation credit for Live Oak trees measuring 2" DBH to 5" DBH and maintained in TPAs. If said provision regarding 2"-5" Live Oak trees within the TPAs is utilized, the City will require an additional conservation easement to prevent the future removal of said trees as the default provisions of the Land Development Code only protects trees 6" DBH or larger. Credit for preservation of these 2"-5" live oak trees shall be based on an actual tree survey rather than a statistical analysis.
2. Due to the City's recognition that Laurel Oaks larger than 20" DBH are nearing the end of their lifespan, any Laurel Oak 20" DBH or greater removed from the Property during development are eligible for reduced replacement of one 3" caliper canopy tree for each Laurel Oak 20" or greater removed.
3. Street trees may be planted within the rights of way within the Property and said trees may be included in mitigation calculations. However, if any such trees are planted, the HOA shall be responsible for the maintenance of said trees. Moreover, the HOA shall also be responsible to repair any and all impacts upon the right of way infrastructure created by the presence of said trees, including any road or sidewalk facility.
4. A tree survey is required as part of the review process for the project. The survey shall be conducted based on the following standards:
   a. The Applicant will survey all protected trees, including specimen and historic trees.
   b. For non-specimen or historic trees, the Applicant has the option, but no obligation, to engage an arborist to identify each distinct biome present on the property. The land area of each distinct biome will be calculated and submitted to the City Arborist for review and approval. The proportionate area of each biome will be calculated as a percentage of the overall property area.
   c. Upon approval of the identified biomes and land area calculations for each, the Applicant will identify a 1-acre sample area in each biome, subject to the approval of the City Arborist. Upon approval of the sample area, the Applicant will cause all trees in excess of 6 inches DBH to be identified and surveyed in the selected sample area.
   d. The tree density determined by the survey of the sample area for each biome will be used to determine tree replacement or mitigation requirements. The tree mitigation requirements will be weighted based on the proportionate area represented by each respective biome.
   e. If the Applicant utilizes a tree survey for the entirety of the property area rather than utilizing the biome estimate as provided for herein, the preservation requirements for specimen trees on site shall be satisfied so long as no less than 18.5% of all specimen trees on the property are preserved. Mitigation shall still be required for the balance of the specimen trees.
5. Tree replacement and tree mitigation may be provided on a phase basis so long as there is no clearing in any phase for which tree replacement and mitigation is not being contemporaneously provided. All tree mitigation required for any particular phase shall be determined and approved by the City Forester based upon landscape plans submitted by the Applicant and approved by the City Forester. With the exception of required street trees, all tree mitigation required for any particular phase, based upon the approved landscape plan, shall be installed prior to the issuance of any certificate of occupancy for a home in that phase. Street tree installation, based upon the approved landscape plan, shall be required on a lot by lot basis and must be planted prior to issuance of a certificate of occupancy for that particular lot.

General Notes:

1. Tree Barricades are required around all trees which have been designated on the Site Plan to be retained and protected. Prior to any clearing or construction activity occurring on the site, Tree Barricades shall be constructed by the contractor and approved by the city.
2. For Historic Trees that will be preserved, Tree protection fence must be installed by the contractor and inspected by the City Forester prior to any land disturbing activity. Unless the applicant proposes a method of root protection which is acceptable to the city, no construction activity shall take place within an area equal to one and one half times the area of the drip line.
3. All Trees within the areas identified as Tree Protection Areas will be saved with a conservation easement placed over these areas in accordance with the City Land Development Code.
4. All Protected Trees within areas identified as Tree Save / Open Space / Recreation Areas will be saved without a conservation easement placed over these areas.

Tree Protection Table (Per Civil Plans)		
Gross Land Area	14.16	AC
Wetland Area	0.29	AC
Net Developable Area	13.87	AC
Minimum Tree Protection Area	2.08	AC
Tree Protection Area Provided	2.08	AC

Tree Coverage Table		
Net Developable Area	13.87	AC
Minimum Coverage Trees (604,177/ 2,500)	242	Trees
Minimum DBH Coverage (242x 6")	1,450	DBH
Specimen Inches Retained	0	Inches
Non Specimen Inches Retained	275	Inches
Total Inches Retained on site	275	Inches
Total Inches Planted on Site	1,180	Inches
Deficiency / Overage Inches	5	Inches

Specimen Tree		
Total Specimen Trees on Site	6	Trees
Specimen Trees per Acre (Total Trees /13.87)	0.43	Trees
Per Code Specimen Trees to be retained per Acre	6	Trees
Minimum Number of Specimen Trees to be Retained	6	Trees
Total Specimen Trees to be Protected / Retained	0	Trees

Total Trees On Site				
Total Trees on site	580	Trees	11,586	Inches
Deteriorated Trees	122	Trees	5,526	Inches
Adjusted Gross	458	Trees	6,060	Inches
Trees To Be Save	26	Trees	275	Inches
Net Trees Required for Mitigation	432	Trees	5,785	Inches

Tree Replacement Table		
Trees Required for Mitigation	5,785	Inches
Historic Trees to be Removed	0	Inches
Specimen Trees to be Removed	72	Inches
Required Mitigation for Specimen Removal	36	Inches
Required Mitigation for Deteriorated Laurel Trees	419	Inches
Required Mitigation for all Other Trees	1,912	Inches
Total Number of Tree Replacement Required	2,367	Inches
Total Trees to be Planted on site	1,180	Inches
Net Mitigation Required	1,187	Inches
Mitigation Deficit	7	Inches

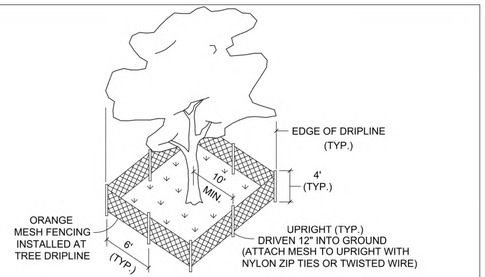
Note: The developer shall make a contribution into the city tree replacement reserve account in the amount of $525.00 ($75.00 per inch) for the mitigation deficit.

Protected Trees To Be Saved

Tree Id	Common Name	Condition	DBH	Save
25	Laurel oak		6	6
26	Laurel oak		9	9
27	Laurel oak		6	6
28	Laurel oak		8	8
29	Laurel oak		6	6
33	Laurel oak		6	6
136	Live oak		8	8
137	Laurel oak		6	6
138	Laurel oak		14	14
139	Laurel oak		8	8
141	Laurel oak		15	15
142	Laurel oak		7	7
143	Laurel oak		6	6
226	Laurel oak		15	15
227	Laurel oak		10	10
339	Laurel oak		9	9
340	Laurel oak		8	8
429	Laurel Oak		13	13
1013	Carolina laurelcherry		11	11
1014	Hog Plum		8	8
1015	Sabal Palmetto		15	15
1016	Laurel Oak		17	17
1057	Laurel Oak		25	25
1141	Laurel Oak		15	15
1142	Laurel Oak		14	14
1143	Laurel Oak		10	10
		Total	275	275

Specimen Trees

Tree Id	Common Name	Condition	DBH	Save	Remove	Mitigation	Save Trees	Remove Trees
104	Live oak		10		10	5		1
133	Live oak	Good	10		10	5		1
134	Live oak	Good	10		10	5		1
135	Live oak	Good	11		11	5.5		1
1074	Southern magnolia		15		15	7.5		1
1076	Southern magnolia		16		16	8		1
		Total	72		72	36		6



TYP. CITY TREE BARRICADE DETAIL

N.T.S.

TREE BARRICADES ARE REQUIRED AROUND ALL TREES WHICH HAVE BEEN DESIGNATED ON THE SITE PLAN TO BE RETAINED AND PROTECTED. PRIOR TO ANY CLEARING OR CONSTRUCTION ACTIVITY OCCURRING ON THE SITE, TREE BARRICADES SHALL BE CONSTRUCTED BY THE CONTRACTOR AND APPROVED BY THE CITY. TREE BARRICADES SHALL BE PLACED AT THE EDGE OF THE DRIPLINE OR A MINIMUM OF 10' FROM THE TRUNK OF THE TREE, WHICH EVER IS GREATER.

FOR THE BARRIER THE CITY RECOMMENDS SAFETY BARRICADE FENCING.

NOTE: EXISTING TREES IN LANDSCAPE BUFFER SHALL ALSO BE PROTECTED.

DATE: JANUARY 31, 2023 | **TREE BARRICADE DETAIL** | **M112**

City of DeLand - Standard Details

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4	08.23.23	Revision per City Comments 08.23.23	mb
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1	06.15.23	Revision per City Comments 05.15.23	mb

Arbor Schedule & Details
Arbor Permit Plans
Hillpointe Deland
City of Deland, Florida

Date:

PROJECT NO. 23203
SCALE NTS
DATE February 23
SHEET A-202

Trees To Be Removed

Tree Id	Common Name	DBH	Mitigation
8	Laurel oak	15	5
13	Laurel oak	16	5
15	Laurel oak	13	4
16	Laurel oak	14	5
17	Laurel oak	17	6
18	Laurel oak	17	6
19	Laurel oak	11	4
24	Laurel oak	6	2
31	Laurel oak	7	2
32	Laurel oak	8	3
34	Carolina laurelcherry	6	2
35	Laurel oak	12	4
36	Laurel oak	11	4
37	Laurel oak	6	2
38	Laurel oak	12	4
39	Laurel oak	8	3
40	Laurel oak	22	7
41	Laurel oak	8	3
42	Laurel oak	7	2
43	Laurel oak	8	3
44	Laurel oak	7	2
45	Laurel oak	18	6
46	Laurel oak	25	8
47	Laurel oak	6	2
47	Laurel oak	6	2
48	Laurel oak	6	2
49	Carolina laurelcherry	10	3
50	Laurel oak	7	2
51	Laurel oak	10	3
52	Laurel oak	13	4
54	Laurel oak	15	5
55	Laurel oak	6	2
57	Laurel oak	11	4
58	Laurel oak	6	2
60	Laurel oak	9	3
61	Laurel oak	20	7
62	Laurel oak	10	3
63	Laurel oak	13	4
64	Laurel oak	12	4
66	Laurel oak	30	10
68	Laurel oak	14	5
69	Laurel oak	10	3
70	Laurel oak	9	3
71	Laurel oak	13	4
72	Laurel oak	26	9
73	Laurel oak	12	4
74	Laurel oak	9	3
76	Laurel oak	17	6
78	Laurel oak	30	10
79	Carolina laurelcherry	7	2
80	Laurel oak	7	2
81	Laurel oak	6	2
82	Laurel oak	16	5
83	Laurel oak	12	4
84	Laurel oak	6	2
85	Laurel oak	8	3
86	Black cherry	11	4
87	Laurel oak	9	3
88	Laurel oak	11	4

Tree Id	Common Name	DBH	Mitigation
89	Laurel oak	6	2
91	Laurel oak	15	5
92	Laurel oak	6	2
93	Laurel oak	8	3
94	Laurel oak	20	7
95	Laurel oak	9	3
96	Laurel oak	17	6
97	Laurel oak	18	6
98	Laurel oak	7	2
99	Laurel oak	10	3
100	Laurel oak	10	3
101	Laurel oak	12	4
102	Laurel oak	15	5
103	Laurel oak	6	2
105	Laurel oak	31	10
106	Laurel oak	9	3
107	Laurel oak	10	3
109	Laurel oak	17	6
110	Laurel oak	12	4
112	Laurel oak	6	2
113	Laurel oak	7	2
114	Laurel oak	16	5
115	Laurel oak	9	3
116	Laurel oak	7	2
117	Laurel oak	6	2
118	Laurel oak	7	2
119	Laurel oak	9	3
120	Laurel oak	10	3
122	Laurel oak	9	3
122	Laurel oak	19	6
125	Laurel oak	19	6
126	Laurel oak	9	3
127	Laurel oak	7	2
128	Laurel oak	12	4
129	Laurel oak	16	5
130	Laurel oak	8	3
131	Laurel oak	9	3
132	Laurel oak	15	5
144	Laurel oak	14	5
145	Laurel oak	14	5
150	Laurel oak	21	7
150	Laurel oak	10	3
151	Laurel oak	15	5
152	Laurel oak	17	6
153	Laurel oak	13	4
157	Laurel oak	8	3
158	Laurel oak	6	2
159	Laurel oak	15	5
160	Laurel oak	15	5
161	Laurel oak	12	4
162	Laurel oak	23	8
163	Laurel oak	7	2
164	Laurel oak	25	8
165	Laurel oak	11	4
167	Laurel oak	13	4
168	Laurel oak	8	3
169	Black cherry	8	3
170	Laurel oak	17	6
171	Laurel oak	6	2

Tree Id	Common Name	DBH	Mitigation
172	Laurel oak	10	3
173	Laurel oak	6	2
174	Laurel oak	12	4
175	Laurel oak	26	9
176	Laurel oak	24	8
179	Laurel oak	14	5
180	Laurel oak	11	4
181	Carolina laurelcherry	16	5
182	Laurel oak	7	2
183	Laurel oak	7	2
184	Laurel oak	15	5
185	Laurel oak	13	4
186	Laurel oak	6	2
187	Laurel oak	10	3
188	Laurel oak	14	5
189	Laurel oak	11	4
190	Laurel oak	24	8
191	Laurel oak	12	4
192	Laurel oak	13	4
193	Laurel oak	26	9
194	Laurel oak	27	9
195	Laurel oak	32	11
196	Laurel oak	15	5
197	Laurel oak	20	7
198	Laurel oak	12	4
199	Laurel oak	27	9
200	Laurel oak	9	3
201	Laurel oak	7	2
202	Laurel oak	7	2
203	Laurel oak	13	4
204	Laurel oak	13	4
205	Laurel oak	9	3
206	Laurel Oak	11	4
207	Laurel oak	7	2
208	Laurel oak	20	7
209	Laurel oak	16	5
210	Laurel oak	12	4
211	Laurel oak	20	7
212	Laurel oak	17	6
213	Laurel oak	7	2
214	Laurel oak	15	5
215	Laurel oak	8	3
216	Laurel oak	28	9
217	Laurel oak	19	6
218	Laurel oak	17	6
219	Laurel oak	9	3
220	Laurel oak	43	14
221	Laurel oak	15	5
222	Laurel oak	9	3
223	Laurel oak	20	7
224	Laurel oak	16	5
225	Laurel oak	11	4
228	Laurel oak	9	3
229	Laurel oak	12	4
230	Laurel oak	14	5
231	Laurel oak	26	9
232	Laurel oak	12	4
233	Laurel oak	12	4
234	Laurel oak	13	4

Tree Id	Common Name	DBH	Mitigation
235	Black cherry	13	4
236	Laurel oak	7	2
237	Laurel oak	7	2
238	Laurel oak	11	4
239	Laurel oak	14	5
240	Laurel oak	6	2
241	Laurel oak	13	4
243	Carolina laurelcherry	4	1
244	Laurel oak	7	2
245	Sand pine	16	5
246	Laurel oak	8	3
247	Laurel oak	7	2
249	Laurel oak	7	2
250	Laurel oak	8	3
251	Laurel oak	7	2
252	Laurel oak	8	3
253	Laurel oak	9	3
254	Laurel oak	6	2
255	Laurel oak	7	2
256	Laurel oak	28	9
257	Laurel oak	6	2
258	Laurel oak	18	6
259	Laurel oak	14	5
260	Black cherry	9	3
261	Laurel oak	13	4
262	Laurel oak	15	5
264	Laurel oak	29	10
265	Laurel oak	8	3
266	Laurel oak	8	3
267	Laurel oak	18	6
268	Laurel oak	9	3
269	Laurel oak	16	5
270	Laurel oak	18	6
271	Laurel oak	9	3
272	Laurel oak	8	3
273	Laurel oak	31	10
274	Laurel oak	29	10
275	Laurel oak	12	4
277	Laurel oak	6	2
278	Laurel oak	21	7
279	Laurel oak	16	5
280	Laurel oak	9	3
281	Laurel oak	10	3
282	Laurel oak	12	4
283	Laurel oak	14	5
288	Laurel oak	17	6
289	Species?	14	5
293	Laurel oak	15	5
294	Laurel oak	16	5
295	Laurel oak	9	3
301	Laurel oak	20	7
302	Laurel oak	14	5
303	Laurel oak	13	4
305	Laurel oak	13	4
306	Laurel oak	12	4
308	Laurel oak	18	6
309	Laurel oak	13	4
311	Laurel oak	13	4
312	Laurel oak	9	3

Tree Id	Common Name	DBH	Mitigation
315	Laurel oak	13	4
316	Laurel oak	27	9
319	Laurel oak	7	2
322	Laurel oak	13	4
325	Laurel oak	6	2
327	Laurel oak	9	3
329	Laurel oak	9	3
331	Laurel oak	14	5
332	Laurel oak	15	5
335	Laurel oak	29	10
337	Sand pine	13	4
338	Sand pine	7	2
345	Laurel oak	12	4
346	Laurel oak	13	4
347	Laurel oak	8	3
348	Laurel oak	11	4
349	Laurel oak	20	7
350	Laurel oak	6	2
351	Laurel oak	6	2
352	Laurel oak	14	5
353	Laurel oak	9	3
356	Laurel oak	9	3
358	Laurel oak	16	5
359	Laurel oak	7	2
360	Laurel oak	6	2
361	Black cherry	7	2
362	Laurel oak	12	4
364	Laurel oak	6	2
367	Laurel oak	10	3
368	Laurel oak	13	4
369	Laurel oak	29	10
374	Laurel Oak	15	5
376	Laurel oak	9	3
377	Black cherry	10	3
378	Laurel oak	6	2
379	Laurel oak	12	4
381	Laurel Oak	28	9
383	Laurel oak	20	7
384	Laurel oak	6	2
394	Laurel Oak	16	5
395	Laurel Oak	13	4
398	Laurel Oak	12	4
402	Laurel Oak	12	4
403	Laurel Oak	15	5
405	Laurel Oak	24	8
406	Laurel Oak	14	5
410	Laurel Oak	14	5
413	Laurel Oak	7	2
414	Laurel Oak	13	4
415	Laurel Oak	7	2
416	Laurel Oak	16	5
419	Laurel Oak	14	5
420	Laurel oak	6	2
421	Laurel Oak	14	5
422	Laurel Oak	21	7
424	Laurel Oak	13	4
427	Laurel Oak	27	9
431	Laurel Oak	16	5
433	Laurel Oak	11	4

daly design group inc.
Urban Planning, Landscape Architecture, Project Management, Development Consulting
913 N Pennsylvania Ave, Winter Park, FL 32789 (407) 740-7373 www.dalydesign.com

REV.	DATE	DESCRIPTION	BY
3	08.17.23	Revision per City Comments 08.15.23	nrb
2	07.25.23	Revision per City Comments 07.13.23	nrb
1	06.15.23	Revision per City Comments 05.15.23	nrb

Trees To be Removed
Arbor Permit Plans
Hillpointe Deland
City of Deland, Florida

Date:

PROJECT NO.
23203
SCALE
NTS
DATE
February 23
SHEET
A-203

Trees To Be Removed

Tree Id	Common Name	DBH	Mitigation
434	Laurel Oak	13	4
437	Laurel Oak	6	2
438	Laurel Oak	12	4
439	Cabbage palmetto	13	4
441	Laurel Oak	9	3
442	Laurel Oak	13	4
443	Laurel Oak	24	8
444	Laurel Oak	21	7
447	Laurel Oak	17	6
449	Laurel Oak	29	10
450	Laurel Oak	28	9
451	Black cherry	8	3
453	Laurel Oak	17	6
455	Laurel Oak	10	3
456	Laurel Oak	20	7
457	Laurel Oak	17	6
461	Laurel Oak	12	4
462	Laurel Oak	11	4
464	Laurel Oak	9	3
1000	Carolina laurelcherry	11	4
1001	Black cherry	10	3
1002	Live oak	13	7
1003	Carolina laurelcherry	7	2
1009	Carolina laurelcherry	9	3
1012	Sugarberry	8	3
1021	Hog Plum	7	2
1023	Carolina laurelcherry	9	3
1032	Laurel Oak	33	11
1033	Laurel Oak	23	8
1034	Laurel Oak	26	9
1035	Laurel Oak	23	8
1036	Laurel Oak	33	11
1038	Hog Plum	7	2
1039	Laurel Oak	32	11
1046	Laurel Oak	24	8
1051	Laurel Oak	29	10
1055	Laurel Oak	34	11
1056	Laurel Oak	33	11
1059	Laurel Oak	40	13
1062	Black cherry	9	3
1063	Black cherry	12	4
1064	Southern magnolia	9	3
1065	Hog Plum	8	3
1066	Hog Plum	8	3
1069	Hog Plum	10	3
1070	Hog Plum	7	2
1071	Carolina laurelcherry	8	3
1072	Carolina laurelcherry	8	3
1073	Carolina laurelcherry	12	4
1074	Southern magnolia	15	5
1075	Southern magnolia	11	4
1078	Carolina laurelcherry	7	2
1081	Carolina laurelcherry	8	3
1083	Carolina laurelcherry	8	3
1085	Laurel Oak	20	7
1086	Southern magnolia	8	3
1087	Carolina laurelcherry	10	3
1089	Carolina laurelcherry	9	3
1091	Carolina laurelcherry	12	4

Tree Id	Common Name	DBH	Mitigation
1092	Southern magnolia	6	2
1100	Carolina laurelcherry	7	2
1103	Carolina laurelcherry	8	3
1106	Laurel oak	12	4
1107	Laurel oak	13	4
1108	Laurel Oak	8	3
1109	Laurel oak	11	4
1110	Laurel oak	14	5
1113	Carolina laurelcherry	13	4
1114	Laurel Oak	16	5
1115	Laurel Oak	20	7
1116	Laurel Oak	16	5
1117	Laurel Oak	8	3
1118	Carolina laurelcherry	9	3
1119	Laurel Oak	20	7
1120	Laurel Oak	16	5
1122	Laurel Oak	17	6
1124	Laurel Oak	17	6
1127	Laurel Oak	7	2
1128	Laurel Oak	18	6
1129	Laurel Oak	19	6
1130	Laurel Oak	14	5
1131	Laurel Oak	20	7
1132	Laurel Oak	8	3
1133	Laurel Oak	8	3
1134	Laurel Oak	8	3
1135	Black cherry	6	2
1136	Laurel Oak	18	6
1138	Laurel Oak	13	4
1139	Laurel Oak	16	5
1140	Laurel Oak	9	3
1144	Laurel Oak	14	5
1145	Laurel Oak	20	7
1146	Laurel Oak	15	5
1147	Laurel Oak	20	7
1150	Laurel Oak	23	8
1152	Carolina laurelcherry	12	4
1153	Laurel Oak	10	3
1155	Laurel Oak	17	6
1156	Laurel Oak	26	9
1157	Laurel Oak	15	5
1158	Carolina laurelcherry	12	4
1161	Carolina laurelcherry	7	2
1162	Carolina laurelcherry	7	2
1163	Laurel Oak	19	6
1164	Laurel Oak	20	7
1165	Laurel Oak	36	12
1166	Laurel Oak	9	3
1167	Laurel Oak	14	5
1168	Laurel Oak	9	3
1169	Laurel Oak	8	3
1170	Laurel Oak	8	3
1171	Laurel Oak	11	4
1172	Laurel Oak	16	5
1173	Laurel Oak	16	5
1174	Laurel Oak	10	3
1175	Laurel Oak	10	3
1176	Laurel Oak	9	3
1177	Laurel Oak	9	3

Tree Id	Common Name	DBH	Mitigation
1178	Laurel Oak	13	4
1179	Laurel Oak	18	6
1180	Laurel Oak	15	5
1181	Laurel Oak	14	5
1182	Laurel oak	12	4
1183	Laurel oak	10	3
1184	Laurel oak	14	5
1185	Laurel Oak	14	5
1186	Laurel oak	14	5
1187	Laurel oak	15	5
1188	Laurel oak	22	7
1191	Laurel oak	16	5
1192	Laurel oak	7	2
1194	Laurel oak	22	7
1195	Laurel oak	13	4
	Total	5,728	1,912

Deteriorated Trees

Tree Id	Common Name	Condition	DBH	Mitigation
14	Laurel oak	Poor	22	2
23	Laurel oak	Poor	25	2
30	Laurel oak	Poor	10	3
53	Laurel oak	Poor	15	5
56	Laurel oak	Poor	7	2
65	Laurel oak	Poor	25	2
67	Laurel oak	Poor	12	4
75	Laurel oak	Poor	14	5
77	Laurel oak	Poor	26	2
90	Laurel oak	Poor	12	4
108	Laurel oak	Poor	16	5
111	Laurel oak	Poor	30	2
123	Laurel oak	Poor	15	5
124	Laurel oak	Poor	20	2
154	Laurel oak	Poor	42	2
155	Laurel oak	Poor	16	5
166	Laurel oak	Poor	20	2
177	Laurel oak	Poor	21	2
178	Laurel oak	Poor	32	2
242	Laurel oak	Poor	17	6
248	Laurel oak	Poor	40	2
263	Laurel oak	Poor	27	2
276	Laurel oak	Poor	35	2
284	Laurel oak	Poor	17	6
290	Laurel oak	Poor	8	3
291	Laurel oak	Poor	25	2
292	Laurel oak	Poor	21	2
296	Laurel oak	Poor	27	2
297	Laurel oak	Poor	12	4
298	Laurel oak	Poor	24	2
299	Laurel oak	Poor	16	5
300	Laurel oak	Poor	17	6
304	Laurel oak	Poor	11	4
307	Laurel oak	Poor	34	2
310	Laurel oak	Poor	11	4
313	Laurel oak	Poor	16	5
314	Laurel oak	Poor	24	2
317	Laurel oak	Poor	15	5
318	Laurel oak	Poor	15	5
320	Laurel oak	Poor	10	3
321	Laurel oak	Poor	6	2
324	Laurel oak	Poor	15	5
326	Laurel oak	Poor	18	6
328	Laurel oak	Poor	8	3
330	Laurel oak	Poor	16	5
333	Laurel oak	Poor	14	5
334	Laurel oak	Poor	15	5
336	Laurel oak	Poor	6	2
344	Laurel oak	Poor	9	3
354	Laurel oak	Poor	14	5
355	Black cherry	Poor	10	3
357	Laurel oak	Poor	11	4
363	Laurel oak	Poor	14	5
366	Laurel oak	Poor	26	2
370	Laurel oak	Poor	11	4
371	Laurel oak	Poor	27	2
372	Laurel Oak	Poor	31	2
373	Laurel Oak	Poor	15	5
375	Laurel Oak	Poor	19	6
380	Laurel oak	Poor	10	3
382	Laurel Oak	Poor	9	3

Tree Id	Common Name	Condition	DBH	Mitigation
385	Laurel Oak	Poor	22	2
386	Laurel Oak	Poor	13	4
387	Laurel Oak	Poor	12	4
388	Laurel Oak	Poor	13	4
389	Laurel Oak	Poor	12	4
390	Laurel Oak	Poor	23	2
391	Laurel Oak	Poor	23	2
392	Laurel Oak	Poor	26	2
393	Laurel Oak	Poor	16	5
396	Laurel Oak	Poor	19	6
397	Laurel Oak	Poor	7	2
399	Laurel Oak	Poor	17	6
400	Laurel Oak	Poor	13	4
401	Laurel Oak	Poor	17	6
404	Laurel Oak	Poor	13	4
407	Laurel Oak	Poor	6	2
408	Laurel Oak	Poor	25	2
409	Laurel Oak	Poor	28	2
411	Laurel Oak	Poor	18	6
412	Laurel Oak	Poor	28	2
417	Laurel Oak	Poor	18	6
418	Laurel Oak	Poor	24	2
423	Laurel Oak	Poor	16	5
425	Laurel Oak	Poor	12	4
426	Laurel Oak	Poor	19	6
428	Laurel Oak	Poor	24	2
430	Laurel Oak	Poor	31	2
432	Laurel Oak	Poor	31	2
435	Laurel Oak	Poor	17	6
436	Laurel Oak	Poor	26	2
445	Laurel Oak	Poor	25	2
446	Laurel Oak	Poor	24	2
448	Laurel Oak	Poor	18	6
452	Laurel Oak	Poor	14	5
453	Laurel Oak	Poor	32	2
454	Laurel Oak	Poor	25	2
458	Laurel Oak	Poor	33	2
459	Laurel Oak	Poor	11	4
460	Laurel Oak	Poor	19	6
463	Laurel Oak	Poor	15	5
1040	Laurel Oak	Poor	41	2
1047	Water oak	Poor	26	2
1048	Water oak	Poor	32	2
1052	Hog Plum	Poor	9	3
1053	Water oak	Poor	40	2
1061	Laurel Oak	Poor	29	2
1088	Laurel Oak	Poor	34	2
1095	Laurel Oak	Poor	50	2
1104	Longleaf pine	Dead	18	0
1112	Laurel Oak	Poor	30	2
1121	Laurel Oak	Poor	21	2
1123	Laurel Oak	Poor	17	6
1125	Laurel Oak	Poor	16	5
1126	Laurel Oak	Poor	29	2
1137	Laurel Oak	Poor	37	2
1148	Laurel Oak	Poor	13	4
1151	Laurel Oak	Poor	32	2
1154	Laurel Oak	Poor	16	5
1189	Laurel oak	Poor	15	5
1190	Laurel oak	Poor	18	6
1196	Laurel oak	Poor	12	4
		Total	2,426	419

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Trees to be Removed & Deteriorated Trees
Arbor Permit Plans
Hillpointe Deland
City of Deland, Florida

Date:

PROJECT NO. 23203
SCALE NTS
DATE February 23
SHEET A-204

Luminaire Schedule									
Symbol	Qty	Label	Arrangement	Description	Tag	LLF	Luminaire Lumens	Luminaire Watts	Total Watts
	16	ecf-s-48l-ia-nw-g2-3-his	Single	ECF-S-48L-IA-NW-G2-3-HIS	SM3H	0.800	15899	158.7	3539.2
	2	ecf-s-48l-ia-nw-g2-5	Single	ECF-S-48L-IA-NW-G2-5	SM5	0.800	21464	158.7	337.4
	34	ecf-s-48l-ia-nw-g2-3	Single	ECF-S-48L-IA-NW-G2-3	SM3	0.800	19958	158.7	5395.8

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
Parking Area	Illuminance	Fc	2.44	4.0	0.3	8.13	13.33
Property Line	Illuminance	Fc	0.11	0.5	0.0	N.A.	N.A.

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STATUS: CONSTRUCTION PLANS

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SITE LIGHTING PHOTOMETRIC CALCULATION

POINT GRAND, SPRING GARDEN

CAUTION

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RICHARD R. CREAVALLE
LICENSE
No. 59885
STATE OF FLORIDA
PROFESSIONAL ENGINEER

Digitally signed by Richard R Creavalle
Date: 2023.05.31 15:12:22 -04'00'

RICHARD ROBIN CREAVALLE
FLA P.E. #59885

JOB NO:	
DESIGN: RLL	
DRAWN: RLL	
APPROVED: RRC	
SHEET NO: PH100	REV:

30A9RT250DB

Round Tapered Direct Burial Aluminum Light Pole 30 Foot Above Grade, 9 Inch Diameter, 0.250 Inch Wall Thickness

PRODUCT DESCRIPTION

Pole Top Options: Poles are provided with either a removable top cap or a welded aluminum tenon. A 2-3/8 inch outside diameter tenon with 4 inches in length is the most common; however, other tenon options are available. Customers should confirm the appropriate tenon size required by their project prior to ordering. Poles with a top cap can also be drilled during fabrication. The drill pattern and orientation need to be provided by the customer unless Energy Light fixtures are being used for the project.

Pole Shaft: The pole shaft will be constructed of seamless extruded tube of 6063 aluminum alloy per the requirements of ASTM B221. The shaft assembly shall be full-length heat treated to produce a T6 temper.

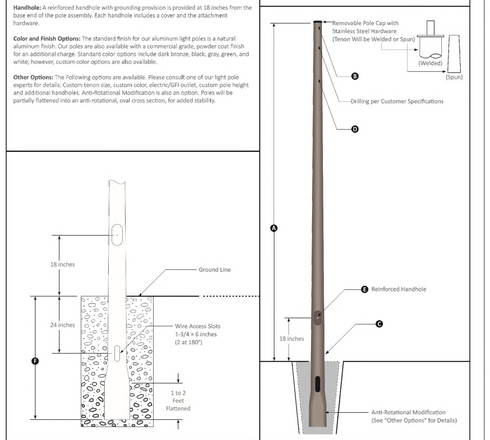
Handhole: A reinforced handhole with grounding provision is provided at 18 inches from the base end of the pole assembly. Each handhole includes a cover and the attachment hardware.

Color and Finish Options: The standard finish for our aluminum light poles is a natural aluminum finish. Our poles are also available with a commercial grade, powder coat finish for an additional charge. Standard color options include dark bronze, black, gray, green, and white; however, custom color options are also available.

Other Options: The following options are available. Please consult one of our light pole experts for details: Custom tenon size, custom color, electric/GFI outlet, custom pole height and additional handholes. Anti-Rotational Modification is also an option. Poles will be partially flattened into an anti-rotational, oval cross section, for added stability.

Specification Table		
Mounting Height (ft.)	A	30
Top Diameter (in.)	B	4.5
Butt Diameter (in.)	C	9
Wall Thickness (in.)	D	0.250
Handhole (in.)	E	4 x 6
Embedment (ft.)	F	6

Maximum EPA with 1.3 Gust Factor:	
90 mph:	16.8 Square Feet
100 mph:	10.6 Square Feet
120 mph:	23.6 Square Feet
130 mph:	19.8 Square Feet



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GARDCO by Signify

Site & Area

EcoForm

ECF-S small area light



Gardco EcoForm Gen-2 combines economy with performance in an LED area luminaire. Capable of delivering up to 27,800 lumens or more in a compact, low profile LED luminaire, EcoForm offers a new level of customer value. EcoForm features an innovative retrofit arm kit, simplifying site conversions to LED by eliminating the need to drill additional holes in most existing poles. Integral control systems available for further energy savings. Includes Service Tag, our innovative way to provide assistance throughout the life of the product.

Project:
Location:
Cat.No.
Type: GMO
Lamps: Qty:
Notes:

Ordering guide

example: ECF-S-64L-900-NW-G2-AR-S-120-HIS-MGY

Prefix	Number of LEDs	Drive Current	LED Color – Generation	Mounting	Distribution	Voltage
ECF-S	**48L**	**1A**	**NW-G2**	**SF**	**3-BLC**	**UNV**
ECF-S EcoForm site and area, small	32L 32 LEDs (2 modules)	365 365mA 530 530mA 700 700mA 1A 1,000mA 1.2A 1200mA	WW-G2 Warm White 3000K, TCRI Generation 2 NW-G2 Neutral White 4000K, TCRI Generation 2 CW-G2 Cool White 5000K, TCRI Generation 2	AR[1] Arm Mount (standard 6) The following mounting kits must be ordered separately (See accessories): SF[2] Slip Fitter Mount (Fits to 2-1/2" O.D. tenon) WS Wall mount with surface conduit rear entry service cover RAM[3] Retrofit arm mount kit	Type 2 1 Type 2 2-90 Rotated left 90° 2-270 Rotated right 270° Type 3 3 Type 3 3-90 Rotated left 90° 3-270 Rotated right 270° Type 4 4 Type 4 4-90 Rotated left 90° 4-270 Rotated right 270° Type 5 5 Type 5 SW Type SW	AFR Auto Front Row AFR-90 Auto Front Row, Rotated left 90° AFR-270 Auto Front Row, Rotated right 270° BLC Back Light Control BLC-90 Back Light Control rotated at 90° BLC-270 Back Light Control rotated at 270° LCL[4] Left Corner Optic Left RCL[4] LEED Corner Optic Right	120 120V 208 208V 240 240V 277 277V 347 347V 480 480V UNV 120-277V (50/60Hz) HVU 347-480V (50/60Hz)

Options					
Dimming controls	**Motion sensing lens**	**Photo-sensing**	**Electrical**	**Luminaire**	**Finish**
DD[5,6] 0-10V External dimming (for controls by others) DCC[5,6,9] Dual Circuit Control FWDG[5,6,9] FWAS Wireless Lighting Savance® Integral sensor module, bi-level functionality BL[5,7,9] SRDR[5,6,8,9] SR driver connected to Zhaga socket **DynaDimmer:** Automatic Profile Dimming CS50[5,6] Safety 50% Dimming, 7 hours CM50[5,6] Medium 50% Dimming, 8 hours CS30[5,6] Safety 30% Dimming, 7 hours CM30[5,6] Medium 30% Dimming, 8 hours	IMR2[5] Integral with #2 lens IMR3[5] Integral with #3 lens	PCB[5,6] Photocontrol Button TLRDB[5,6] Twist Lock Receptacle 5 Pin TLRD[5,6,10] Twist Lock Receptacle 7 Pin TLRPC[5,6,10] Twist Lock Receptacle w/ Photocell **Surge Protection** (10kA standard) SP2 Increased 20kA	**Fusing** FP Single (120, 277, 347VAC) FP2 Double (208, 240, 480VAC) **Pole Mount Fusing** FPP Single (120, 277, 347VAC) FPP2 Double (208, 240, 480VAC) FPP Canadian Double Pull (208, 240, 480VAC)	Square Pole Adapter Included in standard product TB[11] Terminal Block RPA[11] Round Pole Adapter (Fits to 3.5" O.D. tenon) HIS[12] Internal House Side Shield	**Textured** BK Black WH White BZ Bronze DGY Dark Gray MGY Medium Gray **Customer specified** KAL Specify optional color or RAL: (ex: RAL7024) CC Custom color: Specify specialty color chip for required factory quote)

1. BL-IMR/SF/equipped with out-boarded sensor housing when voltage is HVU (347-480V)
2. Mounts to a 4" round pole with adapter included for square poles.
3. Limited to a maximum of 45 degrees aiming above horizontal.
4. Not available with bi-level dimming control options.
5. Not available with motion sensing.
6. Not available with photocontrol.
7. Must specify a motion sensor lens.
8. Not available in 347 or 480V
9. Must specify input voltage.
10. TLRDB, TLRDT and TLRPC receptacle pins 4 & 6 are capped off when ordered with any of the Dimming controls DD or FAWS or LLC.
11. Not available in 480V. Order photocell separately with TLRDB/7.
12. Not available with DCC.
13. Not available with SF and IMS. RPAs provided with black finish standard.
14. HIS not available with Type 5, SW, BLC, BLC-90, BLC-270, LCL or RCL optics.
15. Not available with DD, DCC, and FAWS dimming control options.
16. Not available with DD, DCC, FAWS and LLC dimming control options.
17. When ordering SRDR, controller (by others) to be used on socket must be DR compatible (See specifications for more details). Consult factory for lead time. All 7 pins in NEMA configuration are connected to DR driver. SRDR not available with TLRDB or TLRPC.
18. 0-10V dimming driver standard.
19. LCL and RCL not available with 48L-1.2A or 64L-1A.

ECF-S_EcoForm_area_small 01/22 page 1 of 9

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SITE LIGHTING FIXTURE INFORMATION

POINT GRAND, SPRING GARDEN

CAUTION

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Digitally signed by Richard R Creavalle
Date: 2023.06.02 15:17:01-04'00'

RICHARD ROBIN CREAVALLE
FLA P.E. # 59885

JOB NO:	
DESIGN: RLL	
DRAWN: RLL	
APPROVED: RRC	
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