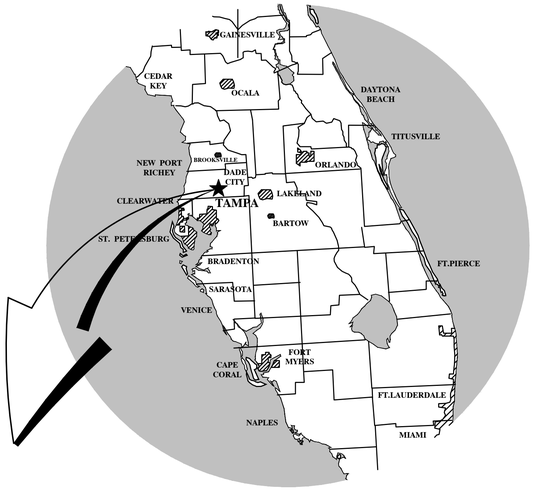
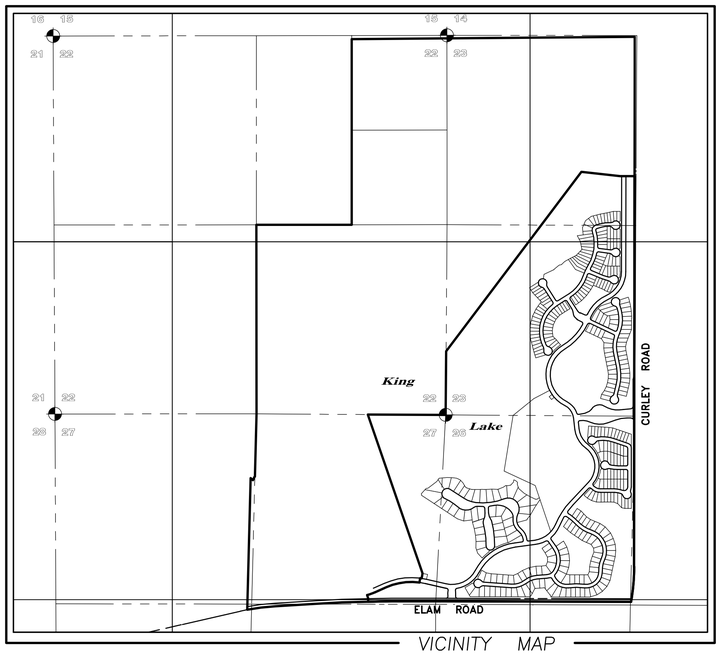


EPCO RANCH NORTH
PARCEL A PHASE 1

PRELIMINARY DEVELOPMENT PLAN
CONSTRUCTION & STORMWATER MANAGEMENT PLAN
SIMULTANEOUS SUBMITTAL (PDPCPSW - RESIDENTIAL)



VICINITY MAP
PASCO COUNTY, FLORIDA
SECTIONS 22, 23, 26, & 27, TOWNSHIP 25 SOUTH, RANGE 20 EAST

INDEX OF CONSTRUCTION PLANS

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	GENERAL NOTES
3	AERIAL SITE PLAN
4–10	PRELIMINARY DEVELOPMENT PLAN
11–12	TYPICAL ROADWAY SECTIONS
13	MASTER DRAINAGE PLAN
14–29	NEIGHBORHOOD GRADING PLAN
30–32	STORM STRUCTURE DATA
33–35	CROSS–SECTIONS
36	WATER & SEWER KEY MAP
37–70	ROADWAY & UTILITY PLAN & PROFILE
71	CONTROL STRUCTURE DETAILS
72–73	DRAINAGE DETAILS
74–76	WATER & RECLAIMED SYSTEM DETAILS
77	SANITARY SEWER SYSTEM DETAILS
78–81	PUMP STATION DETAILS
82–92	SIDEWALK, SIGNING & PAVEMENT MARKING PLAN
93–95	SIDEWALK & SIGNING DETAILS
96	CONSTRUCTION SURFACE WATER MANAGEMENT PLAN
97	PRE–DEVELOPMENT DRAINAGE AREA MAP
98	POST–DEVELOPMENT DRAINAGE AREA MAP
1 OF 1	ADDRESS PLAN
1–5 OF 5	INTERSECTIONS IMPROVEMENT PLANS
LS–1 to LS–**	LANDSCAPE PLANS BY ELM
1 OF 1	TEMPORARY STOCKPILE PLAN

PREPARED FOR:
STANDARD PACIFIC OF FLORIDA
405 N. Reo Street
Suite 330
Tampa, Florida 33609
Phone: (813) 288–7735

PREPARED BY:
CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813–223–3919 Fax: 813–223–3975

PERMIT / FILE NOS.	
PASCO PDD PROJECT NO.	
PASCO COUNTY UTILITIES PROJECT NO.	
SWFWMD	
WATER DEP	
SEWER DEP	
RECLAIMED WATER DEP	
PARCEL ID NO.	

THESE PLANS HAVE BEEN PREPARED IN ACCORDANCE WITH THE MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION AND MAINTENANCE FOR STREETS AND HIGHWAYS, STATE OF FLORIDA IN EFFECT AT THE TIME OF PASCO COUNTY APPROVAL, AND ARE IN COMPLIANCE WITH THE STANDARDS THEREIN EXCEPT AS NOTED ON THE PLANS. ANY DEVIATIONS NOTED ON THE PLANS SUBSTANTIALLY COMPLY WITH THE INTENT OF THE STANDARDS.

CALL 48 HOURS BEFORE YOU DIG
IT'S THE LAW! DIAL 811
811 Know what's below. Call before you dig.
SUNSHINE STATE ONE CALL OF FLORIDA, INC.

DATE	SHEET NO.	BY

REVISIONS

EPCO RANCH NORTH
PARCEL A PHASE 1

DATE: W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

DATE: 11/14/2014 JOB NO. SPH–EP–009

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = –0.84 Feet

STREET & DRAINAGE	WATER & SANITARY SEWER
DESIGNED BY: NAME	DESIGNED BY: NAME
DRAWN BY: NAME	DRAWN BY: NAME

FILE: CV

P:\EPPERSON RANCH\PHASE 1\DRAWING\CONDOC\CV.DWG–COVER SHEET 2015/01/21 4:13 PM JAMES FINNEY

STORM WATER POLLUTION PREVENTION PLAN

Contained on these plans and within the following notes is a Storm Water Pollution Prevention Plan (SWPPP) which has been developed by Clearview Land Design 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 following entities are identified as team members of "SWPPP": Clearview Land Design, 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, 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:

CLEARVIEW LAND DESIGN, P.L.

A. Develop SWPPP 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.

E. Complete and submit a Notice of Termination and certification for developer. The NOT's shall be submitted no more than 30 days after
(a) completion of the project and final stabilization of the site or
(b) 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 Clearview Land Design when one of these criteria has been met.

Contractor

A. Sign and return to Clearview 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.

B. During construction, assure compliance with the designed Storm Water Pollution Prevention Plans prepared by Clearview Land Design and the NPDES Generic Permit for Storm Water Discharges from Large and Small Construction Activities.

C. 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.

D. 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.

E. Notify Clearview Land Design 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.

F. Develop a maintenance and inspection plan which includes, but is not limited to the following:

A. The specific areas to be inspected and maintained that includes all the disturbed areas and material storage areas of the site.

B. The erosion and sediment controls identified in the SWPPP to be maintained and inspected and those additional controls that the contractor deems necessary.

C. Maintenance procedures.

D. The procedure to follow if additional work is required or whom to call.

E. Inspections and maintenance forms.

F. 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.

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 Clearview Land Design, P.L. 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.

Retain inspection reports and certifications for at least three years.

G. 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.

H. 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:

   a. 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;

   b. 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

   c. 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.

2. This permit does not authorize the discharge of hazardous substances or oil resulting from an on-site spill.

Developer

A. Notify Clearview 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 Clearview Land Design, P.L.

B. Sign a Certification of Storm Water Pollution Prevention Plan and return to Clearview Land Design, P.L.

C. Notify Clearview when it is time to submit a Notice of Termination as defined under Part E of the Clearview Land Design section of the SWPPP. Sign and return to Clearview Land Design, P.L. for submittal to FDEP a Notice of Termination form and certification.

PRE-DEVELOPED SITE INFORMATION:

1. Total site acreage: 350.2 Ac.±
2. Land use: VACANT PASTURE
3. Vegetation: PASTURE, WETLANDS
4. Receiving waters or municipal separate storm water system: CYPRESS CREEK
5. 2 Year/24 Hour rainfall depth: 4.5"
6. Soil types: POMONA, SPARR, KENDRICK, LOCHLOOSA, NEWMAN, NOBLETON FINE SANDS

PROJECT INFORMATION:

1. Project type: Residential
2. Anticipated construction sequence is as follows:
   1. Complete erosion control installation
   2. Clearing and grubbing
   3. Earthwork activities
   4. Storm water system construction
   5. Utility construction
   6. Base and pavement construction
   7. 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: 3/15/2015
4. Anticipated completion date: 3/15/2020
5. Total acres disturbed: 204.0 Ac. ± (SILT FENCE LIMITS)
6. Pre-developed "C" factor: 0.20
7. Post-developed "C" factor: 0.60
8. The storm water management system, upon completion of construction and appropriate certification and as-built submittals will be operated and maintained by CDD (UNLESS OTHERWISE NOTED) .
9. The potential source of pollution from this project is on-site development and construction activity.

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.

Pond/Lake Excavation Note:
No excavation shall extend below the permitted design depths/elevations shown on the drawings, unless additional testing supports otherwise; and 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 shall be notified immediately.

NOTE: CONTRACTOR SHALL INSPECT EROSION CONTROL DAILY (INCLUDING BUT NOT LIMITED TO TYPICAL OUTFALLS). CORRECTIVE ACTION SHALL BE TAKEN IMMEDIATELY TO REPAIR OR REPLACE AS NEEDED.

LEGAL DESCRIPTION: SEE PRELIMINARY DEVELOPMENT PLAN

GENERAL EROSION AND TURBIDITY CONTROL NOTES

1. The Site Subcontractor shall be responsible for installation and maintenance of all erosion and turbidity controls and the quality and quantity of offsite or wetland discharges.
2. Prior to construction, the Site Subcontractor is responsible for having his 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 Site Subcontractor 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.
4. The Site Subcontractor will be responsible for obtaining any and all necessary permits for such activity; several factors to consider are listed below:
   - 4.1. Clay content in excavated materials and/or permeabilities rates
   - 4.2. Depth of cut in ponds, trenches, or utility lines
   - 4.3. Ambient ground water levels
   - 4.4. Actual rainfall amounts and time of year relative to normal rainy season
   - 4.5. Proximity to wetlands, water bodies or offsite properties
   - 4.6. 'Class' designation of receiving water bodies (i.e., Outstanding Florida Waters, shellfish harvesting areas, etc.)
   - 4.7. Density, type, and proximity of upland vegetation to be retained during construction (for use as possible filtration areas)
   - 4.8. Fill height relative to natural grade and length and steepness of the proposed slopes
   - 4.9. Existing topography and directions of surface flow
   - 4.10. Type of equipment used
   - 4.11. Project type
   - 4.12. Duration of construction activities
   - 4.13. Separation distance of onsite ponds
   - 4.14. Ambient quality of surface and groundwater
   - 4.15. Temporary stockpile locations and heights
5. At the onset of construction, the Site Subcontractor, 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.
6. The construction sequencing should be thought out in advance of initiation to provide adequate protection of water quality.
7. Any offsite disturbance shall be restored to the Pre or better condition.
   - 7.1. Discharges of water quantities which affect offsite properties or may damage wetlands are also prohibited by regulating agencies.
   - 7.2. Discharges which exceed 29 N.T.U.'s over the background levels are in violation of state water quality standards.
8. 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 Site Subcontractor'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.
9. Hay bales or silt screens 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.
10. Floating turbidity barriers shall be in place in flowing systems or in open water lake edges prior to initiation of earthwork and maintained for the duration of the project until all soil is stabilized.
11. No clay material shall be left exposed in any stormwater storage facility.
    - 11.1. If clay or sandy-clays are encountered during stormwater storage excavation, the Site Subcontractor shall notify the Engineer immediately before proceeding with further excavation.
    - 11.2. 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.
    - 11.3. 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 twenty-four (24") inches and backfill with clean sands to help prevent suspension of fine particles in the water column.
12. 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.
13. 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 hay 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.
14. 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, or confined by an appropriate enclosure such as turbidity barriers or low berms, and kept confined until turbidity levels meet State Water Quality Standards.
15. 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.
16. Water derived from various dewatering methods should be passed through sufficiently wide areas of existing upland vegetation 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.
17. Water can be transported around the site by the use of internal swales or by pumps and pipes.
18. 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.
19. Exposed soils shall be stabilized as soon as possible, especially slopes leading to wetlands. Stabilization methods include solid sod, seeding and mulching or hydromulching to provide a temporary or permanent grass cover mulch blankets, filter fabrics, etc., can be employed to provide vegetative cover.
20. Energy dissipaters (such as rip rap, a gravel bed, hay bales, etc.) shall be installed at the discharge point of pipes or swales if scouring is observed.
21. Attempt to install roadway curb and gutters as soon as possible to reduce the surface area for erosion to occur.
22. Implement storm drain inlet protection (hay 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.
23. Water discharge velocities from impounded areas and temporary sedimentation basins shall be restricted to avoid scouring in receiving areas.
24. 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.
25. Hay 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.
26. All fuel storage areas or other hazardous storage areas shall conform to accepted state or federal criteria for such containment areas.
27. Vehicle or equipment washdown areas will be sufficiently removed from wetlands or offsite areas.
28. Fugitive dust controls (primarily by using water spray trucks) shall be employed as needed to control windborn emissions.
29. 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 which may already be clear enough to allow for direct discharge to wetlands.
30. Ongoing inspections and periodic maintenance by the Site Subcontractor shall occur daily (at a minimum) to insure the above methods are working suitably. Corrective action must be taken immediately to repair or replace any damaged BMP's to ensure the above methods are working properly.
31. Site Subcontractors are required 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. A copy of this document is available for review at Clearview Land Design, P.L.

GENERAL 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. Contractor is also responsible for having his dewatering plan approved by SWFWMD.
2. All construction, materials and workmanship are to be in accordance with Pasco County Land Development Code and DOT Specifications, latest editions.
3. Grass and mulch, or solid sod, all areas in existing rights- of-way disturbed by construction. In the proposed rights-of- way a 16" wide area behind the back of curb shall be solid sodded. The remainder of the proposed rights-of-way shall be stabilized with Sod or Seed & Mulch in accordance with applicable County standards. On slopes 4:1 and flatter, seed & mulch may be used. On slopes steeper than 4:1, sod shall be used. Sod slopes steeper than 4:1 shall be installed with sod pegs per County standards.
4. Contractor is to coordinate all work within, but not limited to Pasco County rights-of-way with utility companies in order to prevent damage to utility lines and making of adjustments to same, if required.
5. Suitable fill obtained through excavation of streets and detention ponds shall be placed on lots and adjacent land in accordance with the Master Drainage and Grading Plan as directed by the Engineer.
6. Sod/Seed & Mulch shall be placed in accordance with applicable City/County standards as well as in accordance with standard and specific conditions in the SWFWMD permit, if applicable. At a minimum this shall include sodding of all pond embankments of a slope 4:1 or greater to the NW (SHWL) line, as well as seeding and mulching of the balance of the pond tracts (including pond berms, excluding the area below NW (SHWL)), sodding a minimum of 16" from the back of curb, and stabilizing all other areas within the project using sod or seed & mulch per County standards. On slopes 4:1 and flatter, seed & mulch may be used. On slopes steeper than 4:1, sod shall be used. Sod slopes steeper than 4:1 shall be installed with sod pegs per County standards.
7. Site clearing shall be performed per the approved construction plans and in accordance with Pasco County Land Development Code. Installation and maintenance of the required barricading and erosion control shall be the responsibility ofthe site development contractor unless otherwise designated.
8. Prior to beginning construction, Contractor shall expose all existing utility inverts to which a tie-in is proposed and have Engineer verify the elevation and adequacy of these inverts.
9. 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.
10. Siltation accumulations greater than the lesser of 12 inches or one-half the depth of the siltation barrier shall be immediately removed and placed in upland areas.
11. During land alteration and construction activities, it shall be unlawful to remove vegetation by grubbing or to place soil deposits, debris, solvents, construction material, machinery or other equipment of any kind within the dripline of a tree to remain on the site unless otherwise approved by the County.
12. All erosion control installation and installation coordination shall be the responsibility of the Contractor. Clearview Land Design, if contracted by the Owner, will stake the alignment of the proposed erosion control and shall limit its responsibility and coordination at that point. Be advised that the construction approval and maintenance of the erosion control shall be the sole responsibility of the Site Contractor.
13. Building downspouts to be directed to the on-site storm drainage system.
14. Future expansion areas, if disturbed, to be seeded and mulched or sodded to prevent erosion to existing pavement surfaces.
15. Should any noticeable soil slumping or sinkhole formation become evident, the applicant/developer shall immediately notify the County, Tampa Bay Water (TBW), and SWFWMD, and adopt one or more of the following procedures as determined to be appropriate by the County and SWFWMD:
    - 15.1. If the slumping or sinkhole formation becomes evident before or during construction activities, stop all work (except for mitigation activities) in the affected area and remain stopped until the County and SWFWMD approve resuming construction activities.
    - 15.2. Take immediate measures to ensure no surface water drains into the affected areas.
    - 15.3. Visually inspect the affected area.
    - 15.4. Excavate and backfill or grout as required to fill the affected area and prevent further subsidence.
    - 15.5. Use soil reinforcement materials in the backfilling operation,when appropriate.
    - 15.6. If the affected area is in the vicinity of a water-retention area,maintain a minimum distance of two feet from the bottom of the retention pond to the surface of the lime-rock or karst connection.
    - 15.7. If the affected area is in the vicinity of a water-retention area and the above methods do not Stabilize the collapse, relocate the retention area.
    - 15.8. Discharge of storm-water into depressions with direct or demonstrated hydrologic connection to the Floridan Aquifer shall be prohibited.
16. The site shall be graded to within 12 inches of the final grade. Where fill is proposed it shall be placed in compliance with the geotechnical/geological engineering report recommendations (including any lift depths recommended) and compacted to a minimum density of 95% of the modified Proctor maximum dry density. Density tests to confirm compaction shall be required within the building pad area, before the next lift is placed. Upon completion of the land development construction, a professional engineer shall provide a certification to Pasco County that the project, including each pad area, complies with the recommendations of the geotechnical/geological engineering report.
17. The engineer responsible for the project shall certify to the County Engineering Services Director (thru PC Engineering Inspections) that the select material below the stabilized subgrade meets these standards prior to installation of the Base. Certification shall strictly comply with the subgrade certification form available in "Engineering Services Department: A Procedural Guide for the Preparation of Assurances of Completion and Maintenance.
18. The engineer responsible for the project shall certify to County Engineering Services Director that the underdrains have been properly installed prior to the installation of any asphalt. Certification shall strictly comply with the underdrain certification form available in Engineering Services Department: A procedural Guide for the Preparation of Assurance of Completion and Maintenance.
19. If during construction activities any evidence of the presence of State and Federally protected plant and/or animal species is discovered, work shall come to an immediate stop and Pasco County shall be notified within two working days of the plant and/or animal species found on the site.
20. If during construction activities any evidence of historic resources, including but not limited to aboriginal or historic pottery, prehistoric stone tools, bone or shell tools, historic trash pits, or historic building foundation, are discovered, work shall come to an immediate stop and the Florida Department of Historic Resources (State Historic Preservation Officer) and Pasco County shall be notified within two working days of the resources found on the site.
21. Prior to construction, a Building Permit shall be obtained for all structures that have a footer, regardless of size, through the Central Permitting Division; i.e.,including, but not inclusive of, buildings, accessories, dumpster walls, and retaining walls.
22. All first floor elevations (FF) shall be a minimum of one (1) foot above the base flood elevation (and meet the requirements of Pasco County LDC 1104) and be at least sixteen (16) inches above the highest crown line of the street lying between the projection of the side-building lines, unless otherwise approved by the County Administrator (per LDC 902).

ESTIMATED EARTHWORK QUANTITIES (UNADJUSTED)*:

VOLUME:
CUT = * CY
FILL = * CY

NET = * CY

* PROVIDED AS AN ESTIMATE PER PASCO COUNTY REQUIREMENTS – NOT INTENDED AS A BID QUANTITY

GEOTECHNICAL REPORT
THESE PLANS REFERENCE THE REPORT OF GEOTECHNICAL INVESTIGATION, DATED NOV 18, 2014, PREPARED BY FAULKNER ES, INC.

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, orbe 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:
   - 2.1.1. 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;
   - 2.1.2. 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;
   - 2.1.3. 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;
   - 2.1.4. 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.
   - 2.2. In all instances, the minimum pond depth (including floodplain and wetland mitigation areas) shall be no less than required by the Engineer.
   - 2.3. 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:
   - 3.0.1. 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;
   - 3.0.2. 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;
   - 3.0.3. 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;
   - 3.0.4. 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.
   - 3.1. 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.
   - 3.2. 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.)
   - 4.1. 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:
   - 4.1.1. 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;
   - 4.1.2. 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;
   - 4.1.3. placed along the bottom of selected floodplain mitigation ponds (not in side banks), not below the permitted excavation depth of the pond;
   - 4.1.4. placed along the bottom of selected deeper stormwater ponds (not in side banks), not below the permitted design depth.
   - 4.2. 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.
   - 4.3. 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 debris.

5. Non-Structural Clayey Sand/Clay Materials (Typically generated from pond/lake excavations or from utility pipeline/manhole excavations; such clayey sand/clay materials, with typically 40% fines or more passing the No. 200 sieve, designated either SC, CL, CH or A-4 to A-7, per the Unified and AASHTO Soil Classification Systems, respectively; such clayey sand/clay materials being unsuitable or unacceptable for reuse by the Contractor as building pad fill, structural fill, roadway embankment fill, and pipeline or manhole excavation backfill.)
   - 5.1. If acceptable to the governing environmental agency, all such clayey sand/clay materials, if approved in writing first by the Owner/Geotechnical Consultant/Engineer, could be:
   - 5.1.1. placed as fill in new (larger) landscape/grass common areas or landscape berm areas (with compaction), provide some surface drainage relief, use where infiltration and drainage is not an important issue, provide some surface sandy soils (min. of 18-inches) as directed by the Landscape Consultant for planting; stockpiling of such "clayey sand/clay materials" (amounts/locations), if acceptable, will be directed by the Owner/Landscape Consultant;
   - 5.1.2. 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 clayey sand/clay 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, and the top 2 feet (min.) being sand materials (not clayey materials) for turbidity control and planting;
   - 5.1.3. 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.
   - 5.1.4. 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 for turbidity control.
   - 5.2. 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 littoral shelf area, created wetland area, park/grassed area, or landscape berm will occur.
   - 5.3. 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 clayey sand/clay disposal, and what approximate elevations will be the top and bottom of the clayey materials.

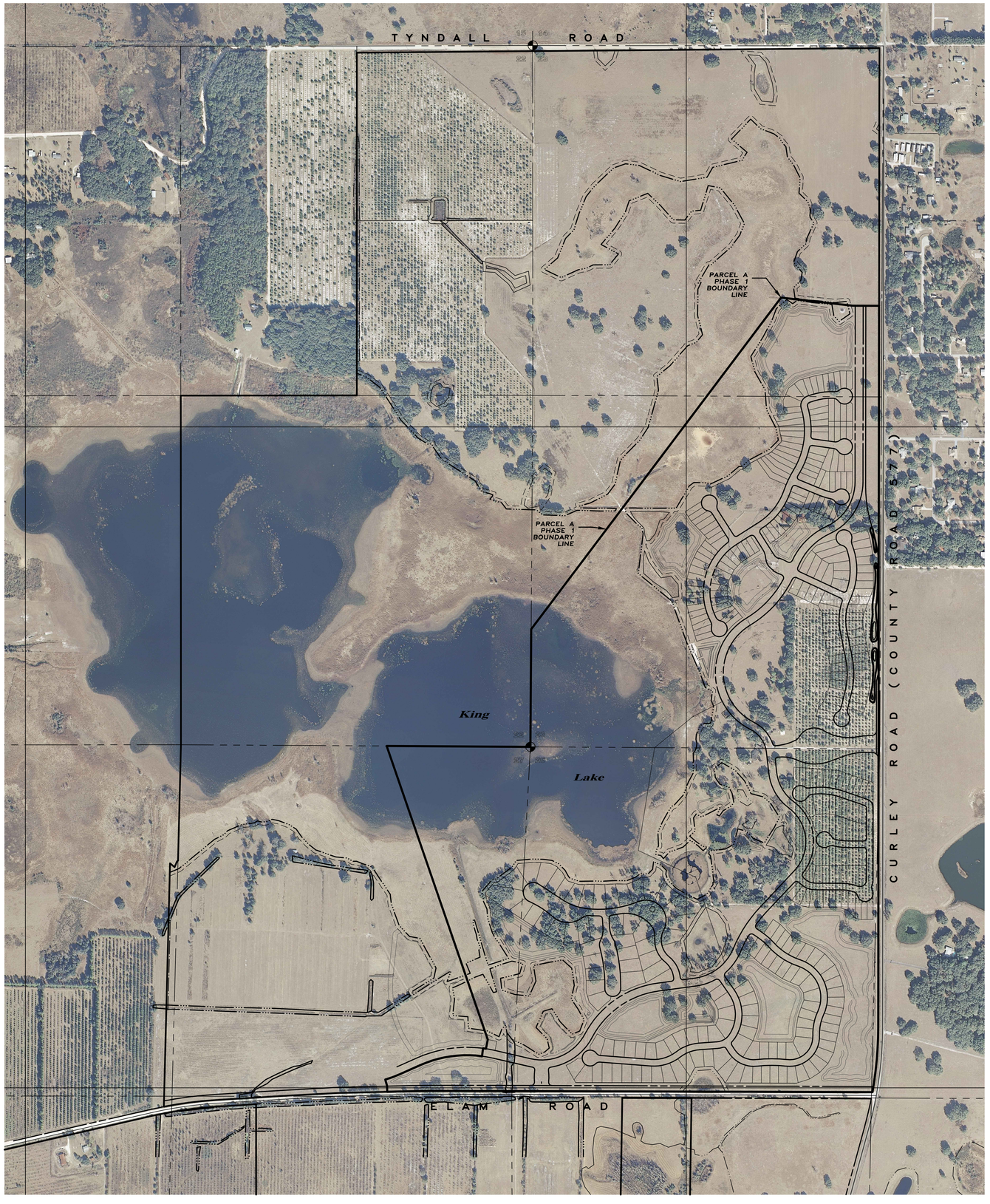
6. Structural Sand Fill Materials (Typically generated from pond/lake excavations, cut from higher elevation areas, or from utility pipeline/manhole excavations; such sand materials, with typically 35% fines or less passing the No. 200 sieve, designated either SP, SP-SM, SM or A-2-4, A-2-6 or A-3, per the Unified and AASHTO Soil Classification Systems, respectively; such sand materials being suitable or acceptable for reuse by the Contractor as building pad fill, structural fill, roadway embankment fill, and pipeline or manhole excavation backfill.)
   - 6.1. All such sand materials shall be reused onsite by the Contractor, per the Geotechnical reports, as building pad fill, structural fill, roadway embankment fill, and pipeline or manhole excavation backfill; placed by the Contractor in loose lifts not exceeding 12-inches, compacted to at least 95% or 98% modified Proctor (per ASTM D-1557 or AASHTO T-180), whichever is applicable depending upon the future use of the filled area (see Geotechnical reports); with density testing of each fill lift for acceptance by the Geotechnical Consultant, upon Contractor request, prior to the next fill lift being placed.

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975
DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

GENERAL NOTES

JOB NO. SPH-EP-009	EPCO RANCH NORTH
DESIGN LAWTON	PARCEL A PHASE 1
DRAWN MIDDLETON	PREPARED FOR: STANDARD PACIFIC OF FLORIDA
DATE 11/14/2014	Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 = −0.84 Feet
FILE GN	SHEET 2 OF 98 SHEETS



N

800 400 0 400 800

SCALE: 1" = 400'

THIS EXHIBIT WAS PREPARED FOR ILLUSTRATIVE PURPOSES ONLY. THE LATEST SUITABLE DIGITAL AERIAL IMAGES 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.

DATE OF PHOTOGRAPH: 2011

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

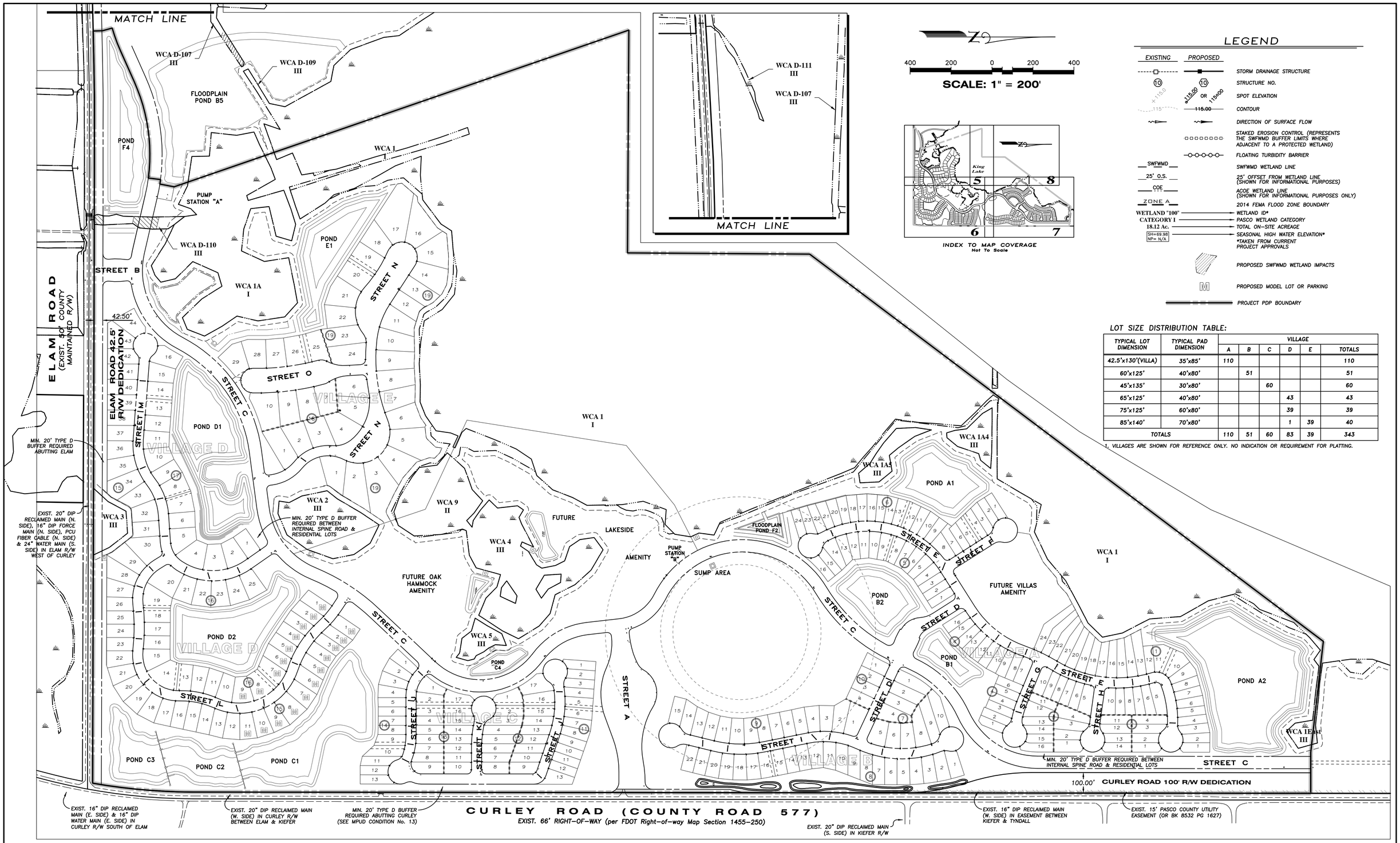
AERIAL SITE PLAN

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE ASP

EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: **STANDARD PACIFIC OF FLORIDA**

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet



LEGEND

EXISTING	PROPOSED	
		STORM DRAINAGE STRUCTURE
10	10	STRUCTURE NO.
+115.0	115.00	SPOT ELEVATION
115	115.00	CONTOUR
		DIRECTION OF SURFACE FLOW
		STAKED EROSION CONTROL (REPRESENTS THE SWFWMD BUFFER LIMITS WHERE ADJACENT TO A PROTECTED WETLAND)
		FLOATING TURBIDITY BARRIER
SWFWMD		SWFWMD WETLAND LINE
25' O.S.		25' OFFSET FROM WETLAND LINE (SHOWN FOR INFORMATIONAL PURPOSES)
COE		ACOE WETLAND LINE (SHOWN FOR INFORMATIONAL PURPOSES ONLY)
ZONE A		2014 FEMA FLOOD ZONE BOUNDARY
WETLAND "100"		WETLAND ID*
CATEGORY 1		PASCO WETLAND CATEGORY
18.12 Ac.		TOTAL ON-SITE ACREAGE
SH=69.98 NP= N/A		SEASONAL HIGH WATER ELEVATION*
		*TAKEN FROM CURRENT PROJECT APPROVALS
		PROPOSED SWFWMD WETLAND IMPACTS
	M	PROPOSED MODEL LOT OR PARKING
		PROJECT PDP BOUNDARY

LOT SIZE DISTRIBUTION TABLE:

TYPICAL LOT DIMENSION	TYPICAL PAD DIMENSION	VILLAGE					
		A	B	C	D	E	TOTALS
42.5'x130'(VILLA)	35'x85'	110					110
60'x125'	40'x80'		51				51
45'x135'	30'x80'			60			60
65'x125'	40'x80'				43		43
75'x125'	60'x80'				39		39
85'x140'	70'x80'				1	39	40
TOTALS		110	51	60	83	39	343

1. VILLAGES ARE SHOWN FOR REFERENCE ONLY. NO INDICATION OR REQUIREMENT FOR PLATTING.

SITE DATA TABLE

UPLANDS (INCLUDING SWFWMD BUFFER)	SWFWMD WETLANDS & SURFACE WATERS	TOTAL ACRES	RESIDENTIAL LOTS	GROSS RESIDENTIAL DENSITY	NET RESIDENTIAL DENSITY
228.9 Ac.±	121.3 Ac.±	350.2 Ac.±	343	0.98 DU/Ac	1.5 DU/Ac

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975
DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

PRELIMINARY DEVELOPMENT KEY MAP

EPCO RANCH NORTH
PARCEL A PHASE 1

JOB NO.	SPH-EP-009
DESIGN	LAWTON
DRAWN	MIDDLETON
DATE	11/14/2014
FILE	PDPKEY
PREPARED FOR:	STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

MATCH LINE (SEE SHEET 7)

SCALE: 1" = 100'

200 100 0 100 200

ZONE AE

ZONE X

FLOODPLAIN POND B5

POND F4

TRACT B-3
LANDSCAPE AREA
DRAINAGE AREA
OPEN SPACE

ELAM ROAD
(EXIST. 50' MAINTAINED COUNTY R/W)

ELAM ROAD 42.5' R/W DEDICATION

Name: EPPERSON RANCH LLC
Folio: 202527000000200004O
Zoning: MPUD
FLU: RES-3

Name: EPPERSON RANCH LLC
Folio: 202527000000200003O
Zoning: MPUD
FLU: RES-3

Name: EPPERSON RANCH LLC
Folio: 202526000000200004O
Zoning: MPUD
FLU: RES-3

EPCO RANCH, INC.

D-107
Category III

IMPACT D-107
0.110 Ac.±

D-109
Category III

25' O.S.
SWFWMD COE

SWFWMD

TRACT B-4
WETLAND CONSERVATION AREA

WETLAND 1
Category I

COE

King Lake

1A
SH=102.5±
NP=

TRACT Z-1
PUMP STATION SITE

TRACT B-3
WETLAND CONS. AREA

IMPACT D-110B
0.149 Ac.±

WETLAND D-110
Category III

IMPACT D-11DA
0.053 Ac.±

TRACT B-3
LANDSCAPE AREA
OPEN SPACE

STREET B
TYPE 1B
TRACT A-1
(CDD) RIGHT-OF-WAY

TRACT B-1
LANDSCAPE AREA
OPEN SPACE

TRACT B-4
LANDSCAPE AREA
DRAINAGE AREA
OPEN SPACE
PED. ACCESS AREA

TRACT B-4
WETLAND CONSERVATION AREA

WETLAND 1A
Category I

POND E1
TRACT B-4
LANDSCAPE AREA
DRAINAGE AREA
OPEN SPACE

STREET N
TRACT A-3
(CDD) RIGHT-OF-WAY
TYPE 4

STREET O
TRACT A-3
(CDD) RIGHT-OF-WAY
TYPE 4

STREET C

STREET M
TRACT A-1
(CDD) RIGHT-OF-WAY
TYPE 4

30' DRAINAGE EASEMENT

POND D1
TRACT B-1
LANDSCAPE AREA
DRAINAGE AREA
OPEN SPACE

50.00'
42.50'

INDEX TO MAP COVERAGE
Not To Scale

LEGEND

EXISTING	PROPOSED	
		STORM DRAINAGE STRUCTURE
10	10	STRUCTURE NO.
+115.0	115.00 OR 15+00	SPOT ELEVATION
115	115.00	CONTOUR
		DIRECTION OF SURFACE FLOW
		STAKED EROSION CONTROL (REPRESENTS THE SWFWMD BUFFER LIMITS WHERE ADJACENT TO A PROTECTED WETLAND)
		FLOATING TURBIDITY BARRIER
SWFWMD		SWFWMD WETLAND LINE
25' O.S.		25' OFFSET FROM WETLAND LINE (SHOWN FOR INFORMATIONAL PURPOSES)
COE		ACOE WETLAND LINE (SHOWN FOR INFORMATIONAL PURPOSES ONLY)
ZONE A		2014 FEMA FLOOD ZONE BOUNDARY
WETLAND "100"		WETLAND ID*
CATEGORY I		PASCO WETLAND CATEGORY
18.12 Ac.		TOTAL ON-SITE ACREAGE
SH=69.98 NP= N/A		SEASONAL HIGH WATER ELEVATION* *TAKEN FROM CURRENT PROJECT APPROVALS
		PROPOSED SWFWMD WETLAND IMPACTS
	M	PROPOSED MODEL LOT OR PARKING
		PROJECT PDP BOUNDARY

SEE MASTER DRAINAGE PLAN FOR WETLAND SUMMARY TABLE

REFER TO NEIGHBORHOOD GRADING PLAN (SHEETS ??? FOR EASEMENTS)

THERE ARE NO KNOWN WELLHEAD PROTECTION AREAS WITHIN 1,000 FEET OF THE DEVELOPMENT

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

PRELIMINARY DEVELOPMENT PLAN

JOB NO. SPH-EP-009

DESIGN LAWTON

DRAWN MIDDLETON

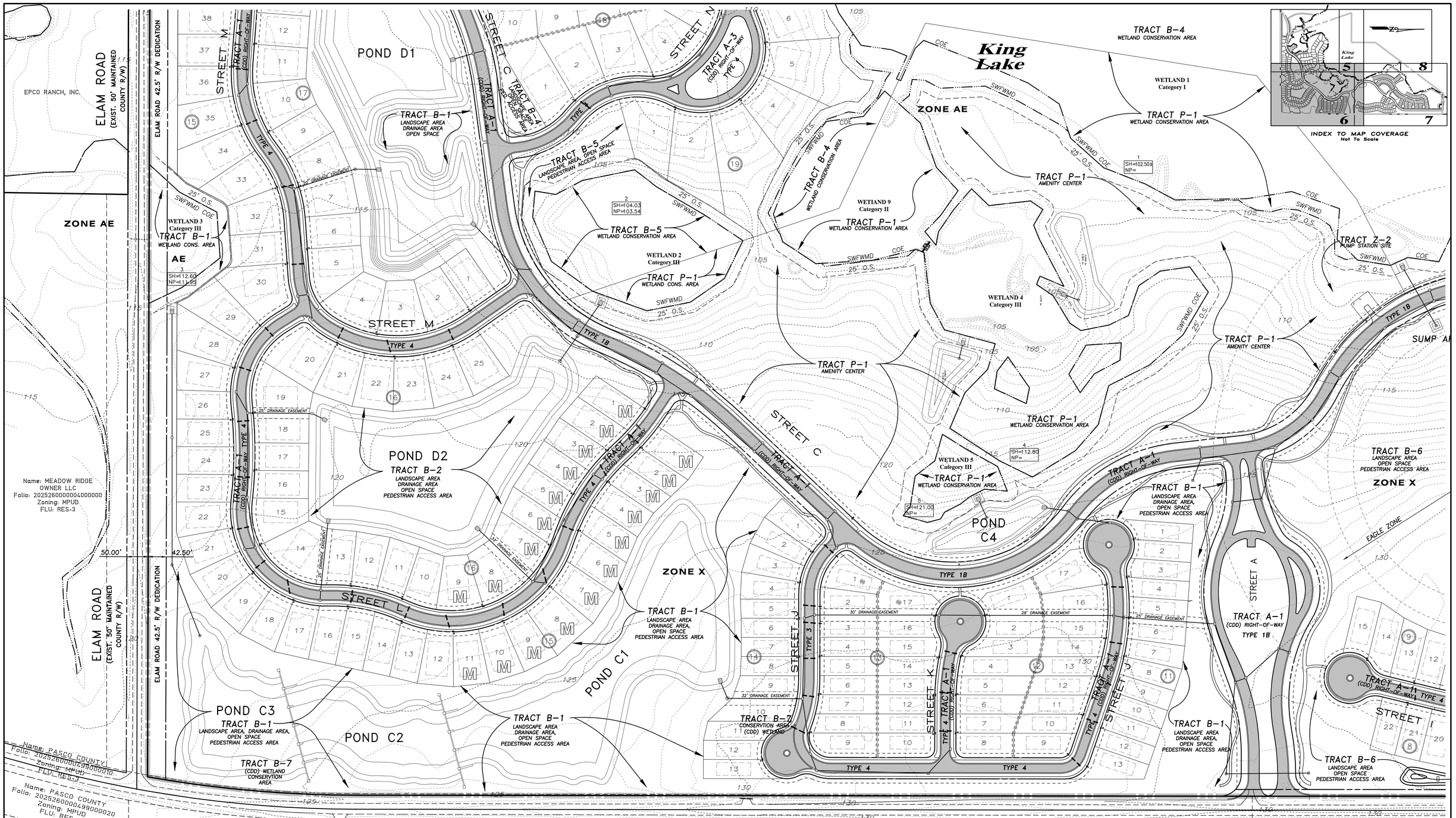
DATE 11/14/2014

FILE PDP1

EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 =-0.84Feet



LEGEND

EXISTING	PROPOSED	
		PROPOSED SWFWMD WETLAND IMPACTS
	M	PROPOSED MODEL LOT OR PARKING
		PROJECT PDP BOUNDARY
		STORM DRAINAGE STRUCTURE
52.0	52.00 OR 52x00	SPOT ELEVATION
52		CONTOUR

EXISTING	PROPOSED	
		STAKED EROSION CONTROL (REPRESENTS THE SWFWMD BUFFER LIMITS WHERE ADJACENT TO A PROTECTED WETLAND)
COEWL		ACOE WETLAND LINE (SHOWN FOR INFORMATIONAL PURPOSES ONLY)
SWFWMD		SWFWMD WETLAND LINE
25' O.S.		25' OFFSET FROM SWFWMD WETLAND LINE (SHOWN FOR INFORMATIONAL PURPOSES ONLY)
ZONE A		2014 FEMA FLOOD ZONE BOUNDARY
WETLAND "100"		WETLAND ID*
CATEGORY I		PASCO WETLAND CATEGORY
18.12 Ac.		TOTAL ON-SITE ACREAGE
SH=69.98 NP= N/A		SEASONAL HIGH WATER ELEVATION*

*TAKEN FROM CURRENT PROJECT APPROVALS

SEE MASTER DRAINAGE PLAN FOR WETLAND SUMMARY TABLE

REFER TO GRADING & DRAINAGE PLAN SHEETS FOR EASEMENTS

THERE ARE NO KNOWN WELLHEAD PROTECTION AREAS WITHIN 1,000 FEET OF THE DEVELOPMENT

200 100 0 100 200

SCALE: 1" = 100'

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
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1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

PRELIMINARY DEVELOPMENT PLAN

JOB NO. SPH-EP-009

EPCO RANCH NORTH
PARCEL A PHASE 1

DESIGN LAWTON

DRAWN MIDDLETON

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

DATE 11/14/2014

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

FILE PDP2

SCALE: 1" = 100'

200 100 0 100 200

King Lake

TRACT "B-4" WETLAND CONSERVATION AREA

TRACT B-4 WETLAND CONS. AREA WETLAND 1A4 Category III

TRACT B-4 WETLAND CONSERVATION AREA

WETLAND 1A5 Category III

POND A1

TRACT B-4 LANDSCAPE AREA DRAINAGE AREA OPEN SPACE PEDESTRIAN ACCESS AREA

FLOODPLAIN POND F2

TRACT Z-2 PUMP STATION SITE

TRACT B-4 LANDSCAPE AREA DRAINAGE AREA OPEN SPACE PED. ACCESS AREA

SUMP AREA

POND B2

TRACT "B-4" LANDSCAPE AREA DRAINAGE AREA OPEN SPACE PEDESTRIAN ACCESS AREA

TRACT B-6 LANDSCAPE AREA OPEN SPACE PEDESTRIAN ACCESS AREA

POND B1

TRACT B-4 LANDSCAPE AREA DRAINAGE AREA OPEN SPACE PED. ACCESS AREA

TRACT B-6 LANDSCAPE AREA OPEN SPACE PEDESTRIAN ACCESS AREA

TRACT B-6 LANDSCAPE AREA OPEN SPACE PED. ACCESS AREA

TRACT B-6 LANDSCAPE AREA OPEN SPACE PED. ACCESS AREA

TRACT P-2 (HOA) AMENITY CENTER

TRACT B-4 WETLAND CONSERVATION AREA

WETLAND 1 Category I

TRACT B-4 WETLAND CONSERVATION AREA

EPCO RANCH, INC.

EPCO RANCH, INC.

POND A2

TRACT B-4 LANDSCAPE AREA DRAINAGE AREA OPEN SPACE

TRACT B-4 WETLAND CONSERVATION AREA

WETLAND 1East Category III

1 EAST SH=103.5 NP=

1 SH=102.50± NP=

TRACT A-1 (CDD) RIGHT-OF-WAY

TRACT A-2 (CDD) RIGHT-OF-WAY

TRACT A-3 (CDD) RIGHT-OF-WAY

TRACT A-4 (CDD) RIGHT-OF-WAY

TRACT A-5 (CDD) RIGHT-OF-WAY

TRACT A-6 (CDD) RIGHT-OF-WAY

TRACT A-7 (CDD) RIGHT-OF-WAY

STREET C

STREET D

STREET E

STREET F

STREET G

STREET H

STREET I

TYPE 1B

TYPE 2

TYPE 3

TYPE 4

SWFWMD

SWFWMD COE

25' O.S.

COE

30' DRAINAGE EASEMENT

100.00'

CURLEY ROAD 100' R/W DEDICATION

CURLEY ROAD (COUNTY ROAD 577)

66' RIGHT-OF-WAY (PER FDOT RIGHT-OF-WAY MAP SECTION 1455-250)

Name: KIRKLAND RANCH INC
Folio: 20252300000100000000
Zoning: AC
FLU: RES-1

KNOLLWOOD ACRES
PB 12 PGS 139
Zoning: AR
FLU: RES-1

KNOLLWOOD ACRES
PB 12 PGS 139
Zoning: AR
FLU: RES-1

INDEX TO MAP COVERAGE
Not To Scale

5 6 7 8

LEGEND

EXISTING	PROPOSED	
		PROPOSED SWFWMD WETLAND IMPACTS
		PROPOSED ACOE WETLAND IMPACTS (SHOWN FOR INFORMATIONAL PURPOSES ONLY)
	M	PROPOSED MODEL LOT OR PARKING
		PROJECT PDP BOUNDARY
		STORM DRAINAGE STRUCTURE
+ 52.0	52.00 OR 52+00	SPOT ELEVATION
52	52	CONTOUR
		STAKED EROSION CONTROL (REPRESENTS THE SWFWMD BUFFER LIMITS WHERE ADJACENT TO A PROTECTED WETLAND)
COEWL		ACOE WETLAND LINE (SHOWN FOR INFORMATIONAL PURPOSES ONLY)
SWFWMD		SWFWMD WETLAND LINE
25' O.S.		25' OFFSET FROM SWFWMD WETLAND LINE (SHOWN FOR INFORMATIONAL PURPOSES ONLY)
ZONE A		2014 FEMA FLOOD ZONE BOUNDARY

WETLAND "100" → WETLAND ID*
CATEGORY I → PASCO WETLAND CATEGORY
18.12 AC. → TOTAL ON-SITE ACREAGE
SH=69.98 NP=N/A → SEASONAL HIGH WATER ELEVATION*
*TAKEN FROM CURRENT PROJECT APPROVALS

SEE MASTER DRAINAGE PLAN FOR WETLAND SUMMARY TABLE

REFER TO GRADING & DRAINAGE PLAN SHEETS FOR EASEMENTS

THERE ARE NO KNOWN WELLHEAD PROTECTION AREAS WITHIN 1,000 FEET OF THE DEVELOPMENT

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

PRELIMINARY DEVELOPMENT PLAN

JOB NO. SPH-EP-009

DESIGN LAWTON

DRAWN MIDDLETON

DATE 11/14/2014

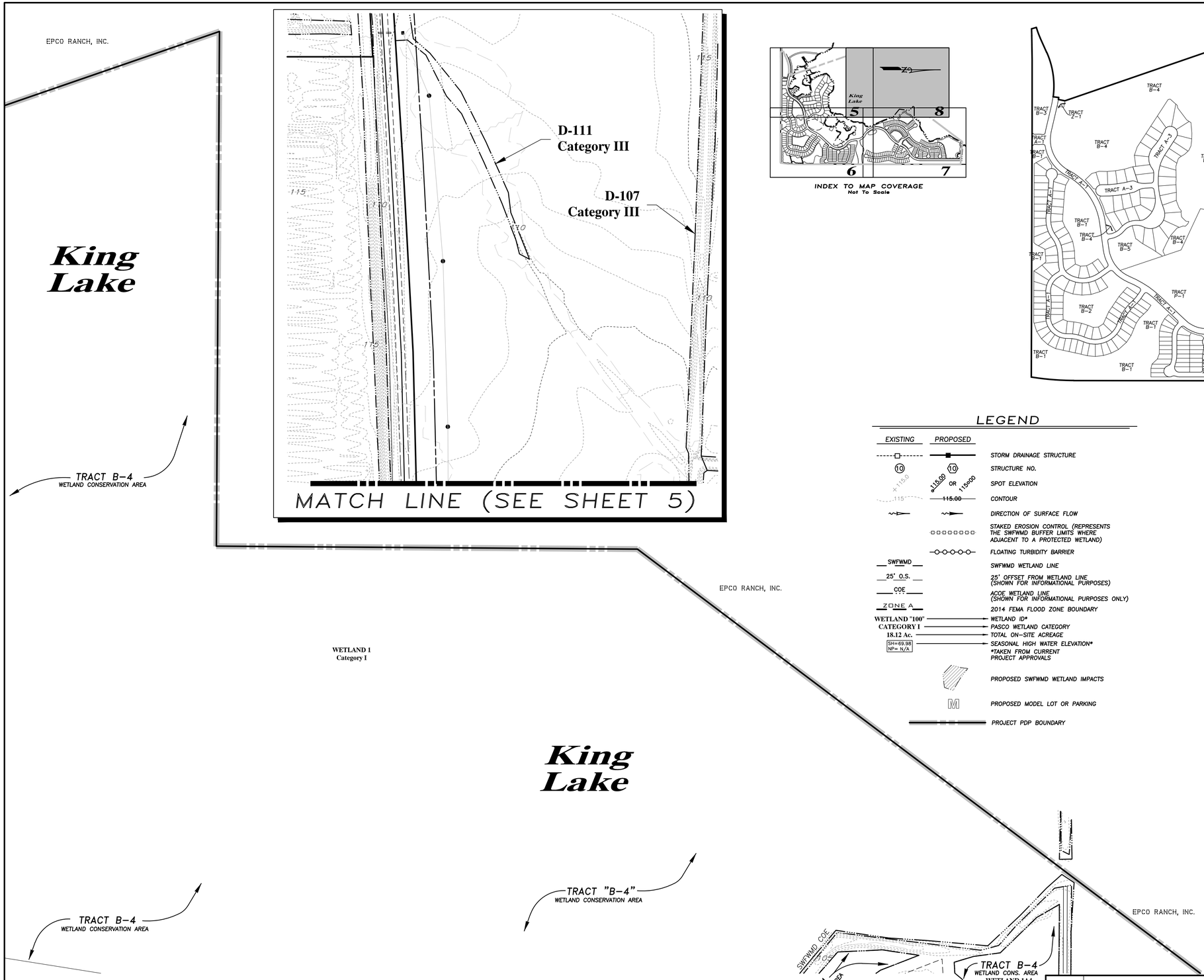
FILE PDP3

EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: **STANDARD PACIFIC OF FLORIDA**

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

SHEET 7 OF 98 SHEETS



INDEX TO MAP COVERAGE
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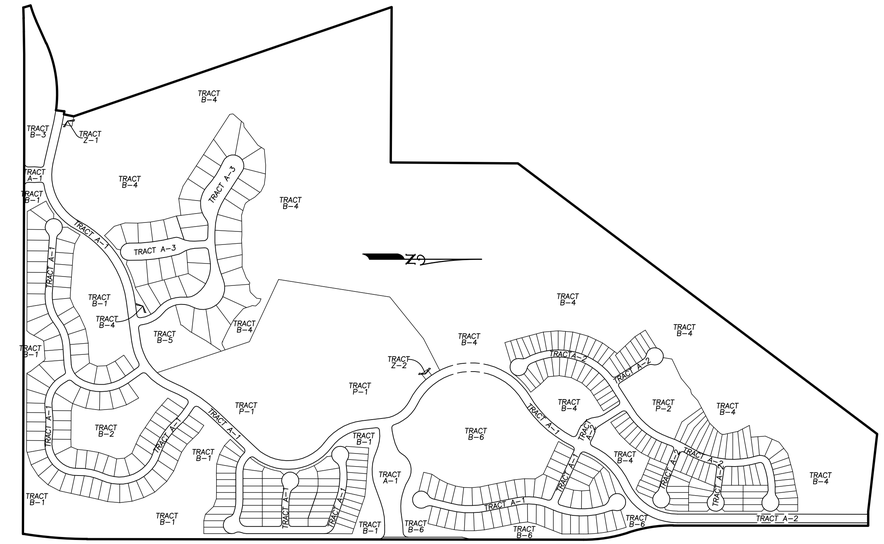


THE FOLLOWING LEGAL DESCRIPTION REPRESENTS THE ENTIRE STANDARD PACIFIC PURCHASE PARCEL UNDER CONTRACT WITH EPCO RANCH, INC. REFER TO BOUNDARY SURVEY BY GEOPOINT SURVEYING, INC. INCREMENTAL PHASE LEGAL DESCRIPTION(S) WILL BE DETERMINED AT THE TIME OF FINAL PLAT.

PARCEL 1

THE WEST 1/2 OF SECTION 23, TOWNSHIP 25 SOUTH, RANGE 20 EAST, PASCO COUNTY, FLORIDA, LESS AND EXCEPT RIGHT-OF-WAY FOR CURLEY ROAD (COUNTY ROAD 577) AND LESS AND EXCEPT RIGHT-OF-WAY FOR TYNDALL ROAD.

AND LESS AND EXCEPT THE FOLLOWING DESCRIBED PARCEL:

BEGIN 672.8 FEET WEST OF THE SE CORNER OF THE SW 1/4 OF SECTION 23, TWP. 25 SOUTH, RANGE 20 EAST, THENCE RUN NORTH 279.4 FEET; THENCE WEST 1095 FEET; THENCE SOUTH 279.4 FEET; THENCE EAST 1095 FEET TO THE POINT OF BEGINNING, BEING IN THE S 1/2 OF THE SW 1/4 OF SECTION 23, TWP. 25 S., RANGE 20 E.

PARCEL 2

THE NORTHEAST 1/4 OF THE NORTHEAST 1/4 OF SECTION 22, TOWNSHIP 25 SOUTH, RANGE 20 EAST, PASCO COUNTY, FLORIDA, LESS AND EXCEPT ROAD RIGHT OF WAY FOR TYNDALL ROAD.

PARCEL 3

THE SOUTHEAST 1/4 AND THE SOUTHEAST 1/4 OF THE NORTHEAST 1/4 OF SECTION 22, TOWNSHIP 25 SOUTH, RANGE 20 EAST, PASCO COUNTY, FLORIDA.

PARCEL 4

BEGIN 672.8 FEET WEST OF THE SE CORNER OF THE SW 1/4 OF SECTION 23, TWP. 25 SOUTH, RANGE 20 EAST, THENCE RUN NORTH 279.4 FEET; THENCE WEST 1095 FEET; THENCE SOUTH 279.4 FEET; THENCE EAST 1095 FEET TO THE POINT OF BEGINNING, BEING IN THE S 1/2 OF THE SW 1/4 OF SECTION 23, TWP. 25 S., RANGE 20 E.

PARCEL 5

ALL THAT PORTION OF SECTION 27, TOWNSHIP 25 SOUTH, RANGE 20 EAST, PASCO COUNTY, FLORIDA, LYING NORTH OF ELAM ROAD

LESS AND EXCEPT (PER O.R. 71, PAGE 426)

THE WEST 1/2 OF SECTION 27, LYING NORTH OF DIRT ROAD RUNNING EAST AND WEST EXCEPT THE EAST 60.00 FEET THEREOF LYING SOUTH OF KING LAKE.

AND LESS AND EXCEPT

COMMENCE AT THE NE CORNER OF THE NW 1/4 OF SECTION 26, TOWNSHIP 25 SOUTH, RANGE 20 EAST, PASCO COUNTY, FLORIDA AND RUN S.00°47'39"E. A DISTANCE OF 2106.39 FEET TO A POINT IN THE CENTERLINE OF STATE ROAD #577, SAID POINT MARKING THE P.T. STATION 292+43.78 OF A CURVE AS SHOWN ON DOT RIGHT-OF-WAY MAP; THENCE S.78°39'28"W., 2679.62 FEET; THENCE N.06°04'30"E., 1478.96 FEET FOR A POINT OF BEGINNING; THENCE RUN N.89°24'38"W., 618.82 FEET; THENCE N.00°35'22"E., 351.96 FEET; THENCE S.89°24'38"E., 618.82 FEET; THENCE S.00°35'22"W., 351.96 FEET TO THE POINT OF BEGINNING.

PARCEL 6

THE NORTHWEST 1/4 AND THAT PORTION OF THE NORTHEAST 1/4 LYING WEST OF CURLEY ROAD (COUNTY ROAD 577) SECTION 26, TOWNSHIP 25 SOUTH, RANGE 20 EAST, PASCO COUNTY, FLORIDA.

LESS AND EXCEPT

COMMENCE AT THE NE CORNER OF THE NW 1/4 OF SECTION 26, TOWNSHIP 25 SOUTH, RANGE 20 EAST, PASCO COUNTY, FLORIDA AND RUN S.00°47'39"E. A DISTANCE OF 2106.39 FEET TO A POINT IN THE CENTERLINE OF STATE ROAD #577, SAID POINT MARKING THE P.T. STATION 292+43.78 OF A CURVE AS SHOWN ON DOT RIGHT-OF-WAY MAP; THENCE S.78°39'28"W., 2679.62 FEET; THENCE N.06°04'30"E., 1478.96 FEET FOR A POINT OF BEGINNING; THENCE RUN N.89°24'38"W., 618.82 FEET; THENCE N.00°35'22"E., 351.96 FEET; THENCE S.89°24'38"E., 618.82 FEET; THENCE S.00°35'22"W., 351.96 FEET TO THE POINT OF BEGINNING.

AND LESS AND EXCEPT

COMMENCE AT THE NE CORNER OF THE NW 1/4 OF SECTION 26, TOWNSHIP 25 SOUTH, RANGE 20 EAST. THENCE RUN SOUTH 1,168.50 FEET, THENCE RUN WEST 784 FEET FOR A POINT OF BEGINNING; THENCE RUN WEST 272 FEET; THENCE RUN NORTH 292 FEET, THENCE RUN EAST 272 FEET, THENCE RUN SOUTH 292 FEET TO THE POINT OF BEGINNING, PASCO COUNTY, FLORIDA.

AND LESS AND EXCEPT

BEGIN 672.8 FEET WEST OF THE NE CORNER OF THE NW 1/4 OF SECTION 26, TOWNSHIP 25 SOUTH, RANGE 20 EAST, RUN SOUTH 370 FEET; THENCE WEST 1095 FEET; THENCE NORTH 370 FEET; THENCE EAST 1095 FEET TO THE POINT OF BEGINNING, BEING IN THE N 1/2 OF THE NW 1/4 OF SECTION 26, TWP. 25 S., RANGE 20 E., PASCO COUNTY, FLORIDA.

PARCEL 7

BEGIN 672.8 FEET WEST OF THE NE CORNER OF THE NW 1/4 OF SECTION 26, TOWNSHIP 25 SOUTH, RANGE 20 EAST, RUN SOUTH 370 FEET; THENCE WEST 1095 FEET; THENCE NORTH 370 FEET; THENCE EAST 1095 FEET TO THE POINT OF BEGINNING, BEING IN THE N 1/2 OF THE NW 1/4 OF SECTION 26, TWP. 25 S., RANGE 20 E., PASCO COUNTY, FLORIDA.

PARCEL 8

THE WEST 1/2 OF THE SOUTHWEST 1/4 OF SECTION 26, TOWNSHIP 25 SOUTH, RANGE 20 EAST, PASCO COUNTY, FLORIDA.

LESS AND EXCEPT THAT PROPERTY DEEDED TO EPPERSON RANCH LLC AS RECORDED IN OFFICIAL RECORDS BOOK 8274, PAGE 1702, PUBLIC RECORDS OF PASCO COUNTY, FLORIDA.

PARCEL 9

THAT PORTION OF SECTION 27, TOWNSHIP 25 SOUTH, RANGE 20 EAST, LYING SOUTH OF ELAM ROAD, AND LYING IN PASCO COUNTY, FLORIDA.

LESS AND EXCEPT THAT PROPERTY DEEDED TO LENNAR HOMES, INC. AS RECORDED IN OFFICIAL RECORDS BOOK 6673, PAGE 881, PUBLIC RECORDS OF PASCO COUNTY, FLORIDA.

AND LESS AND EXCEPT THAT PROPERTY DEEDED TO EPPERSON RANCH LLC AS RECORDED IN OFFICIAL RECORDS BOOK 7767, PAGE 1465, PUBLIC RECORDS OF PASCO COUNTY, FLORIDA.

AND LESS AND EXCEPT THAT PROPERTY DEEDED TO EPPERSON RANCH LLC AS RECORDED IN OFFICIAL RECORDS BOOK 8274, PAGE 1702, PUBLIC RECORDS OF PASCO COUNTY, FLORIDA.

AND LESS AND EXCEPT THAT PROPERTY DEEDED TO EPPERSON RANCH LLC AS RECORDED IN OFFICIAL RECORDS BOOK 8518, PAGE 927, PUBLIC RECORDS OF PASCO COUNTY, FLORIDA.

PARCEL 10

THE EAST 1/8 OF THE SOUTH 1/2 OF SECTION 28, TOWNSHIP 25 SOUTH, RANGE 20 EAST, PASCO COUNTY, FLORIDA, LYING SOUTH OF ELAM ROAD.

LESS AND EXCEPT THAT PROPERTY DEEDED TO EPPERSON RANCH LLC AS RECORDED IN OFFICIAL RECORDS BOOK 7767, PAGE 1465, PUBLIC RECORDS OF PASCO COUNTY, FLORIDA.

PARCEL 11

COMMENCE AT THE NE CORNER OF THE NW 1/4 OF SECTION 26, TOWNSHIP 25 SOUTH, RANGE 20 EAST, PASCO COUNTY, FLORIDA AND RUN S.00°47'39"E. A DISTANCE OF 2106.39 FEET TO A POINT IN THE CENTERLINE OF STATE ROAD #577, SAID POINT MARKING THE P.T. STATION 292+43.78 OF A CURVE AS SHOWN ON DOT RIGHT-OF-WAY MAP; THENCE S.78°39'28"W., 2679.62 FEET; THENCE N.06°04'30"E., 1478.96 FEET FOR A POINT OF BEGINNING; THENCE RUN N.89°24'38"W., 618.82 FEET; THENCE N.00°35'22"E., 351.96 FEET; THENCE S.89°24'38"E., 618.82 FEET; THENCE S.00°35'22"W., 351.96 FEET TO THE POINT OF BEGINNING.

PARCEL 12

COMMENCE AT THE NE CORNER OF THE NW 1/4 OF SECTION 26, TOWNSHIP 25 SOUTH, RANGE 20 EAST. THENCE RUN SOUTH 1,168.50 FEET, THENCE RUN WEST 784 FEET FOR A POINT OF BEGINNING; THENCE RUN WEST 272 FEET; THENCE RUN NORTH 292 FEET, THENCE RUN EAST 272 FEET, THENCE RUN SOUTH 292 FEET TO THE POINT OF BEGINNING, PASCO

*NEIGHBORHOOD PARK REQUIREMENTS:

1. TOTAL AREA REQUIRED:
   - 1.1. REQUIRED: 1.0 Ac. + (1/100) X 343 LOTS = 3.43 Ac.
   - 1.2. PROVIDED: ±16.0 Ac. (±6.0 Ac. OAK HAMMOCK AMENITY, ±6.0 AC. LAKESIDE AMENITY, ±4.0 Ac. VILLAGE A AMENITY & MULTIPLE OPEN SPACE LOCATIONS)
2. CLEAR OPEN PLAY AREA:
   - 2.1. REQUIRED: 0.25 X 3.43 AC. = 0.82 Ac.
   - 2.2. PROVIDED: >1.0 Ac.

*THIS PROJECT PROVIDES NEIGHBORHOOD PARK ACREAGE AND OPEN PLAY AREA IN EXCESS OF CODE REQUIREMENTS. THE FUTURE LAKESIDE AMENITY, OAK HAMMOCK AMENITY AND VILLAGE A AMENITY WILL REQUIRE FUTURE SITE PLAN PERMITTING. NEIGHBORHOOD PARK ACREAGE AND OPEN PLAY AREA WILL BE REVIEWED DURING FINAL SITE PLAN REVIEW TO ENSURE THE AREAS PROVIDED ARE NOT LESS THAN REQUIRED ABOVE. IN THE MEANTIME, THE OAK HAMMOCK AREA, LAKESIDE AREA AND VILLAGE A AMENITY AREA WILL PROVIDE NEIGHBORHOOD PARK AND OPEN PLAY AREA IN EXCESS OF CODE REQUIREMENTS.

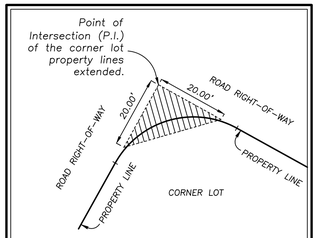
RESIDENT & VISITOR PARKING REQUIREMENTS:

1. REQUIRED:
   - 1.1. RESIDENT REQUIRED = 3 SPACES x 343 UNITS = 1,029 SPACES
   - 1.2. VISITOR REQUIRED = 0.25 SPACES X 343 UNITS = 86 SPACES
   - 1.3. TOTAL REQUIRED = 1,115 SPACES REQUIRED
2. PROVIDED:
   - 2.1. (2-CAR GARAGE PLUS 2-CAR DRIVEWAY) X 343 UNITS = 1,372 SPACES

**THESE CALCULATIONS REPRESENT A CONSERVATIVE SCENARIO WHERE ALL HOUSES ARE 4 BEDROOM OR GREATER WITH ONLY A 2-CAR GARAGE. HOWEVER, 2 AND 3 BEDROOM HOUSES WILL BE OFFERED IN THIS COMMUNITY. ALL HOUSES IN THIS COMMUNITY WILL HAVE AT LEAST A 2-CAR GARAGE.

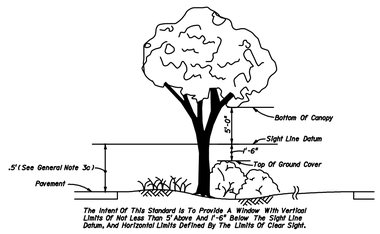
INTERSECTION CLEAR SIGHT REQUIREMENTS:

1. LOCAL INTERSECTIONS SHALL REMAIN UNOBSTRUCTED PER "TYPICAL CLEAR SIGHT TRIANGLE DETAIL" AND FDOT INDEX 546 "WINDOW DETAIL" SHOWN BELOW.



NOTE: Nothing above three and one half (3-1/2) feet in height shall be erected, placed, or planted within the Clear Sight Triangle on all corner lots.

PASCO COUNTY
TYPICAL CLEAR SIGHT TRIANGLE
Scale 1" = 20'



PRELIMINARY PLAN NOTES:

Owner: EPCO Ranch, Inc.
c/o Mr. George Epperson
P.O. Box 231
San Antonio, Florida 33576
Tampa, FL. 33602
(813) 424-2009

1. Developer: Standard Pacific of Florida
   405 N. Reo Street, Suite 330
   Tampa, Florida 33609
   (813) 288-7735
2. Engineer: Clearview Land Design, P.L.
   1213 E. 6th Ave.
   Tampa, Florida 33605
   (813) 223-3919
3. Surveyor: GeoPoint Surveying, Inc.
   1403 E. 5th Ave.
   Tampa, Florida 33605
   (813) 248-8888
4. Existing Zoning: EPCO Ranch North MPUD Petition No. 7104
5. Existing Land Use: Vacant/Agricultural
6. Future Land Use Classification: RES-3 & CON
7. Water service to be provided by Pasco County Utilities.
8. Sewage disposal service to be provided by Pasco County Utilities.
9. Electrical power to be provided by WREC.
10. Telephone service to be provided by Verizon & Brighthouse.
11. Street lighting to be provided by WREC.
12. Fire protection to be provided by the existing Pasco County Fire Station No. 27. located on Curley Road approximately 3.5 miles from the project entrance. Fire Hydrants will be provided on-site.
13. The uplands are pasture. The wetlands are grass marshes and King Lake.
14. Predominant soil types on-site consist of Pomona, Sparr, Kendrick, Lochloosa, Newman, Nobleton and Kanapaha Fine Sands.
15. Recreation areas, conservation areas, and detention ponds will be owned and maintained by the CDD unless otherwise noted.
16. Detention ponds to be within tracts dedicated to the Community Development District for maintenance unless otherwise noted.
17. Contours shown are based on National Geodetic Vertical Datum (NGVD29).
18. Proposed rights-of-way for local streets shall be a minimum of fifty (50) feet.
19. All roadway standards to comply with the Manual of Uniform Minimum Standards, State of Florida.
20. All water and wastewater facilities to be installed in compliance with Pasco County Standards for design and construction of water and wastewater facilities.
21. All utility lines shall be installed underground.
2. This site appears to lie within Flood Zones "AE", "A" & "X" according to Federal Emergency Management Agency (FEMA) - Flood Insurance Rate Map (FIRM) Community-Panel Nos. 12101C0266F, 12101C0267F, 12101C0268F, 12101C0269F each with an effective date of September 26, 2014. Flood Zone determination based on data provided by FEMA.
3. A minimum of 16" of sod strip will be provided along all roadways per Pasco County requirements.
4. Setbacks from post-developed wetlands shall be as follows: 25-foot minimum around all Category I Wetlands; Buffers around Category II and Category III Wetlands shall be as required by SWFWMD. Allowable uses and restrictions for buffers shall be in accordance with Section 805 of the Pasco County Land Development Code.
5. Sidewalks will be provided on both sides of all roads including non-lot areas. Unless otherwise shown, all sidewalks shall be five (5) feet wide, 4" thick concrete, and 3000 p.s.i., fiber-reinforced. Sidewalks shall be constructed on a compacted non-yielding subgrade, and 6" in thickness is required where sidewalk is crossed by a driveway.
6. Buffering for all retention/detention areas along road right-of-ways to have trees selected from tree list at the rate of one tree per 50 L.F.
7. All landscape and sodded areas along collector road will be irrigated and maintained by the CDD or an entity other than Pasco County.
8. This project will comply with the Pasco County Tree Protection and Restoration Ordinance.
9. All construction work, including road, drainage and utilities, shall be constructed in accordance with Pasco County design standards and tested in compliance with the Pasco County Engineering Service Department Testing Specifications for construction of roads, storm drainage and utilities.
10. If prehistoric artifacts such as pottery or ceramics, stone tools or metal implements, or any other physical remains that could be associated with Native American cultures, or early colonial or American settlement are encountered at any time, the project should cease all activities involving subsurface disturbance in the immediate vicinity of such discoveries. The applicant, or designee, should contact the Florida Department of State, Division of Historical Resources, Compliance and Review Section at 850.245.6333, as well as the appropriate funding agency office. Project activities should not resume without verbal and/or written authorization from the Division of Historical Resources.
11. In the event that unmarked human remains are encountered during permitted activities, all work must stop immediately and the proper authorities notified in accordance with Section 872.05, Florida Statue.
12. All proposed signs must be applied for, approved, and permitted on an individual basis apart from any ultimately-approved site plan. Approval of this site plan does not constitute approval of any signage.
13. All clear-site areas shall be kept free of any signage plantings, trees, etc. in excess of three-and-a-half (3-1/2) feet in height.
14. No irrigation system or landscaping shall be installed in any County or State right-of-way without issuance of appropriate Right-of-way Use Permit.
15. Fugitive dust emissions shall be controlled by sprinkling as necessary.
16. On-site burning shall not be employed without approval from the Fire Marshall.
17. The soil erosion and sediment control devices shall be installed prior to construction, maintained throughout construction and until the site is permanently stabilized.
18. All driveway cuts shall be installed to local streets.
19. The CDD will be responsible for maintenance of the underdrain system.
20. Maintenance of sidewalk shall be the responsibility of the CDD or an entity other than Pasco County.
21. Drainage tracts/easements shall be conveyed to the CDD by plat. The easements will be required to be given to Pasco County, for the right but not the obligation to maintain. Maintenance responsibility will be that of the CDD.
22. In consideration of Pasco County's agreement to provide potable water and/or reclaimed water to the subject property, Developer/Owner, and its successors and assigns, agree to the following:
    (a) In the event of Production Failure or Shortfall by Tampa Bay Water, as set forth in section 3.19 of the Interlocal Agreement creating Tampa Bay Water, Developer/Owner shall transfer to Pasco County any and all water use permits or water use rights the Developer/Owner may have to use or consume surface or ground water within Pasco County.
    (b) Prior to Developer/Owner selling water or water use permits or water use rights, Developer/Owner shall notify Pasco County, and Pasco County shall have a right of first refusal to purchase such water or water use permits or water use rights.
23. The Developer will grant, convey, warrant and dedicate to the County via plat a Non-Exclusive Flow through Easement and reasonable right of access to ensure the free flow of water for general public drainage purposes over, through and under all drainage easements/areas or commonly owned property shown on this plat. In the event the Owner, the District or the Association fails to properly maintain any public or private drainage easements/areas preventing the free flow of water, the County shall have the reasonable right, but not the obligation, to access and enter upon any public or private drainage easement/area for the purpose of performing maintenance to ensure the free flow of water.
24. As applicable, the Owner/Developer will provide copies of the required permits from the respective agencies prior to the issuance of the SDP.
25. All work within the County ROW will require a ROW Use Permit.
26. Standard Fire Protection Notes:
    a. All projects must comply with Pasco County Fire Hydrant Ordinance No. 46-51.
    b. Fire hydrants shall be installed and in service prior to the accumulation of combustibles.
    c. Per the National Fire Protection Association, NFPA-1, 16.4.3.1.3: Where underground water mains and hydrants are to be provided, they shall be installed, completed, and in service prior to construction work.
    d. Per NFPA-1, 18.3.4.1: Clearances of 7 1/2 feet in front of and to the sides of the fire hydrant with a 4-foot clearance to the rear must be maintained at all times.
    e. Gated entries require a Siren Operating System or a 3M Opticom system for emergency access.

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

PRELIMINARY DEVELOPMENT PLAN

JOB NO. SPH-EP-009	EPCO RANCH NORTH
DESIGN LAWTON	PARCEL A PHASE 1
DRAWN MIDDLETON	PREPARED FOR: STANDARD PACIFIC OF FLORIDA
DATE 11/14/2014	Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 = -0.84 Feet
FILE PDP4	SHEET 9 OF 98 SHEETS

EPCO RANCH NORTH DESIGN STANDARDS (TAKEN FROM MPUD 7104):

SINGLE FAMILY DETACHED:

Typical Single–Family Building Arrangement in MPUD Parcels A, B & C.

Minimum 60% of Units in Parcel A Shall Be Single Family Detached.

Maximum of 450 40' width SF detached lots in Parcels A, B & C.

Minimum Width	40'
Minimum Depth	110'
Minimum Front Yard Setbacks	
Primary Structure	20' (1)
Front Load Garage	25' (4)
Side Load Garage	20' (4)
Minimum Side Yard Setback	5' (6)
Minimum Rear Setback	15' (3)
Maximum Lot Coverage	65%(2)
Maximum Building Height	35'

SINGLE FAMILY ATTACHED VILLAS:

Minimum Width Parcel A	35'
Minimum Depth	110'
Minimum Front Yard Setbacks	
Primary Structure	20' (1)
Front Load Garage	25' (4)
Side Load Garage	20' (4)
Minimum Side Yard Setback	5' (6)
Minimum Rear Setback	15' (3)
Maximum Lot Coverage	75%(2)
Maximum Building Height	35'

(1) SINGLE FAMILY DETACHED AND ATTACHED VILLAS FRONT YARD SETBACK – ON CORNER LOTS WHERE THERE IS MORE THAN ONE FRONT YARD, ONE FRONT–YARD SETBACK MAY BE REDUCED TO 15 FEET.

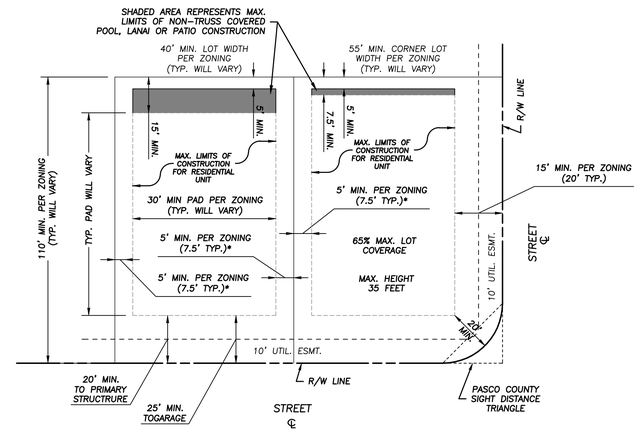
(2) MAXIMUM LOT COVERAGE – INCLUDES PRINCIPAL AND ACCESSORY STRUCTURE.

(3) ACCESSORY STRUCTURES INCLUDING, BUT NOT LIMITED TO, SWIMMING POOLS, POOL DECKS, UTILITY SHEDS, DETACHED GARAGES, AND SCREENED ROOMS, SHALL BE SET BACK A MINIMUM OF 5 FEET FROM ANY REAR OR SIDE LOT LINE AND SHALL NOT ENCROACH INTO ANY EASEMENTS.

(4) FRONT SETBACK – FOR ALL NON TND RESIDENTIAL PRODUCT, FRONT LOADED GARAGES SHALL BE SET BACK A MINIMUM OF 25'. SINGLE FAMILY DETACHED SIDE LOADED GARAGES SHALL BE SET BACK A MINIMUM OF 20'. TOWNHOME GARAGE SETBACKS SHALL BE MEASURED FROM BACK OF CURB OR SIDEWALK.
FOR TOWNHOMES WITH ON–STREET PARKING, THE BUILDING SHALL BE SETBACK A MINIMUM OF 10' FROM ROW.

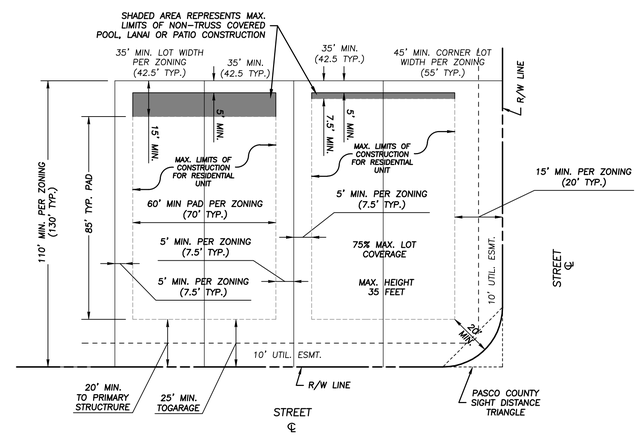
(5) RECREATION CENTER DEVELOPMENT STANDARDS SHALL BE IN ACCORDANCE WITH THE C–1 NEIGHBORHOOD COMMERCIAL DISTRICT.

(6) SIDE YARD SETBACKS MAY BE REDUCED TO 5' WITH ADDITIONAL CRITERIA IDENTIFIED IN LDC SECTION 902.2.K.2.B. SHOULD THE CONDITIONS NOT BE MET, THE MINIMUM SIDE SETBACK SHALL BE 7.5'.



TYPICAL SINGLE FAMILY DETACHED LOT DETAIL
– NOT TO SCALE –

*THESE PLANS ARE PREPARED WITH TYPICAL 7.5' SIDE YARD SETBACKS.
VILLAGE B IS PLANNED WITH 10' SIDE YARD SETBACKS TO AVOID STEM WALL.



TYPICAL SINGLE FAMILY ATTACHED VILLA LOT DETAIL
– NOT TO SCALE –

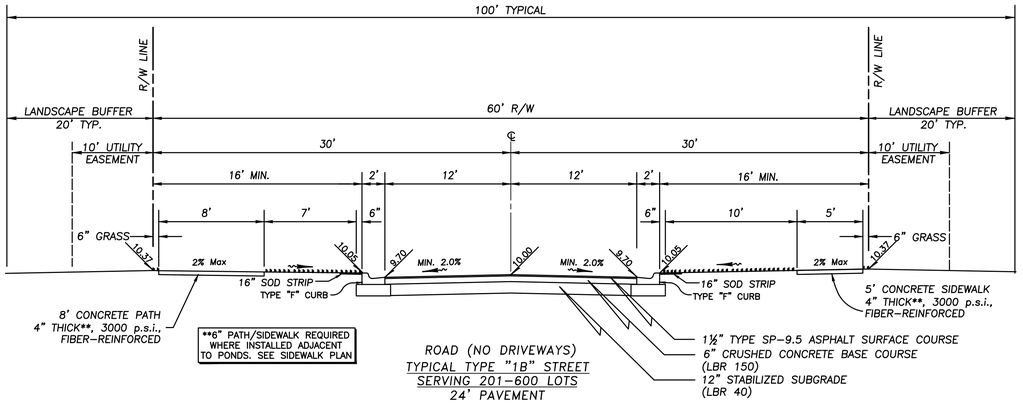
DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813–223–3919 Fax: 813–223–3975

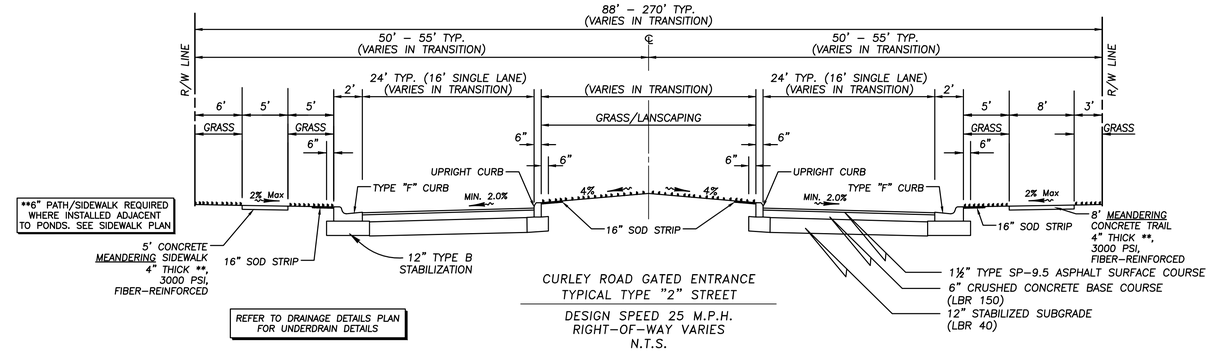
DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

PRELIMINARY DEVELOPMENT PLAN

JOB NO. SPH–EP–009	EPCO RANCH NORTH PARCEL A PHASE 1
DESIGN LAWTON	
DRAWN MIDDLETON	PREPARED FOR: STANDARD PACIFIC OF FLORIDA
DATE 11/14/2014	Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 =–0.84Feet
FILE PDP4	SHEET 10 OF 98 SHEETS



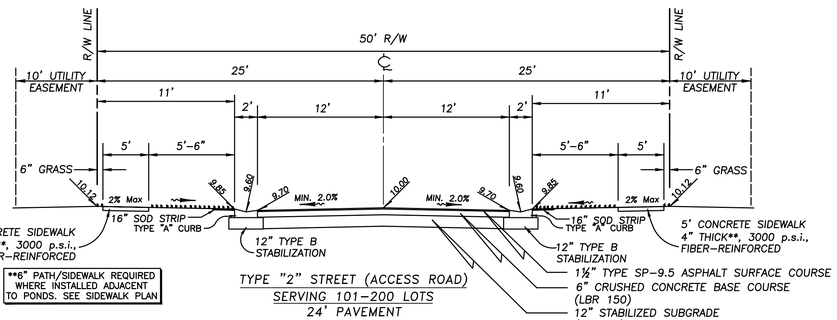
ROAD (NO DRIVEWAYS)
TYPICAL TYPE "1B" STREET
SERVING 201-600 LOTS
24' PAVEMENT
N.T.S.



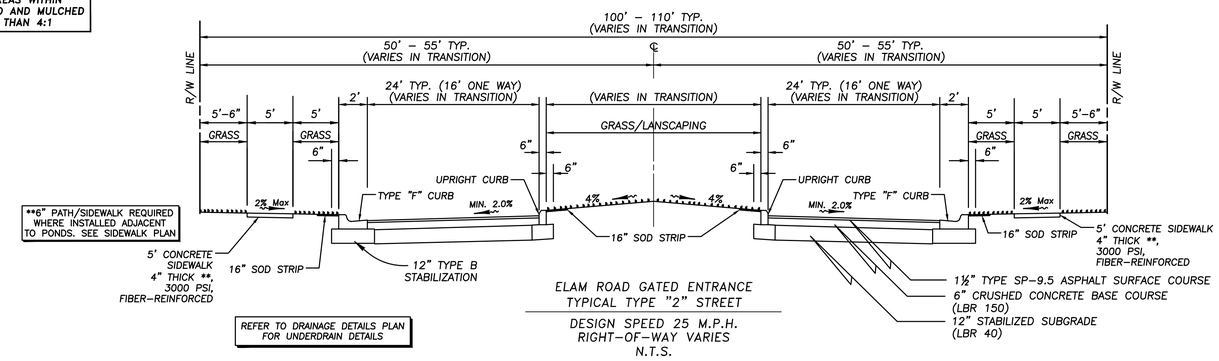
CURLEY ROAD GATED ENTRANCE
TYPICAL TYPE "2" STREET
DESIGN SPEED 25 M.P.H.
RIGHT-OF-WAY VARIES
N.T.S.

GRASSING NOTES:

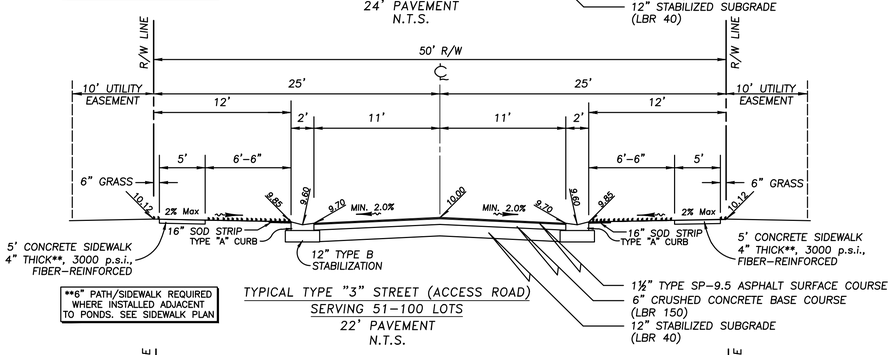
- **16" STRIP OF SOD REQUIRED ON ALL BACK OF CURBS;**
- **REMAINING GRASS AREAS WITHIN ROW MAY BE SEEDED AND MULCHED ON SLOPES FLATTER THAN 4:1**



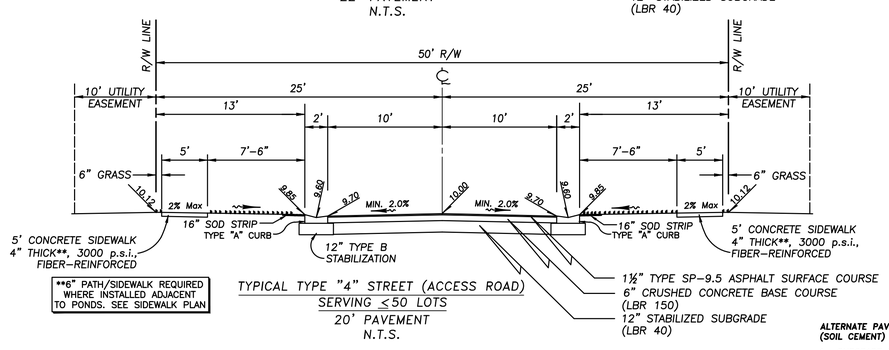
TYPE "2" STREET (ACCESS ROAD)
SERVING 101-200 LOTS
24' PAVEMENT
N.T.S.



ELAM ROAD GATED ENTRANCE
TYPICAL TYPE "2" STREET
DESIGN SPEED 25 M.P.H.
RIGHT-OF-WAY VARIES
N.T.S.



TYPICAL TYPE "3" STREET (ACCESS ROAD)
SERVING 51-100 LOTS
22' PAVEMENT
N.T.S.



TYPICAL TYPE "4" STREET (ACCESS ROAD)
SERVING ≤50 LOTS
20' PAVEMENT
N.T.S.

Contractor may propose alternate pavement designs. Contractor shall submit any pavement alternatives to Engineer for approval prior to final subgrade preparations.

ALTERNATE PAVEMENT CONSTRUCTION NOTES (SOIL CEMENT)

1. *SUBGRADE UNDER A SOIL-CEMENT BASE SHALL BE PROOF-ROLLED TO GRADE, AS DIRECTED BY THE ENGINEER AND APPROVED BY THE ENGINEER WITH SUITABLE COMPACTION EQUIPMENT TO ACHIEVE A DENSITY OF NINETY-EIGHT (98%) PERCENT MODIFIED PROCTOR FOR A DEPTH OF TWELVE (12) INCHES PRIOR TO PLACING SOIL-CEMENT BASE.*
2. *SOIL-CEMENT MIX DESIGN SHALL BE PROVIDED A MINIMUM 30 DAYS IN ADVANCE OF PLACEMENT OF BASE MATERIAL FOR APPROVAL BY THE ENGINEER. THE SOIL-CEMENT PRODUCT SHALL BE IN ACCORDANCE WITH PCA STANDARDS. 300 P.S.I. MINIMUM.*
3. *SOIL-CEMENT SURFACE SHALL BE INSPECTED AND APPROVED BY THE ENGINEER PRIOR TO ANY PAVING OPERATION.*

PASCO COUNTY
PAVEMENT DESIGN CRITERIA

MINIMUM SN*	ROADWAY CLASSIFICATION
2.34	LOCAL
3.50	TYPE 1
3.50	SUBDIVISION COLLECTOR

* FROM PASCO COUNTY LDC SECTION 901

Proposed Pavement Structure (All Local Roads – Type 2, 3 & 4):

Layer Coefficients	*Thickness*
0.44 – Type SP-9.5 Asphalt Surface	*1 1/2"*
0.15 – Crushed Concrete Base (LBR 150 min.)	*6"*
0.08 – Stabilized Subgrade (LBR 40 min.)	*12"*

SN = (0.44) (1.50) + (0.15) (6) + (0.08) (12) = 2.52

Use: 6" Crushed Concrete Base with 1 1/2" Type SP-9.5 Asphalt Surface and 12" Stabilized Subgrade (LBR 40 Min)

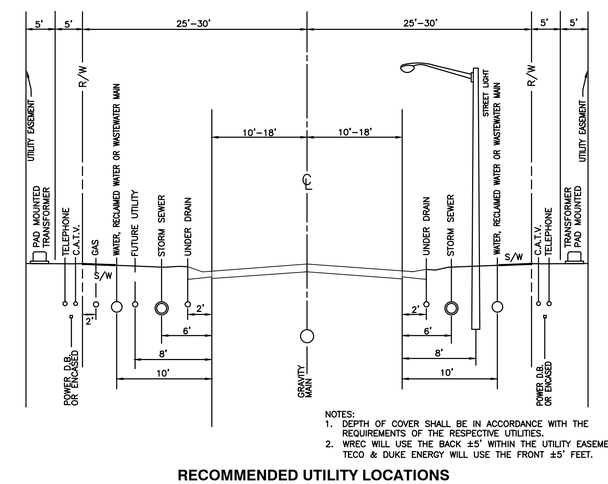
Alternate Pavement Structure (All Local Roads – Type 2, 3 & 4):

Layer Coefficients	*Thickness*
0.44 – Type SP-9.5 Asphalt Surface	*1 3/4"*
0.15 – Soil Cement Base (300 p.s.i. min.)	*8"*
0.04 – Stabilized Subgrade (LBR 20)	*12"*

SN = (0.44) (1.75) + (0.15) (8) + (0.04) (12) = 2.45

Use: 8" Soil Cement Base with 1 3/4" Type SP-9.5 Asphalt Surface and 12" Stabilized Subgrade (LBR 20)

CONTRACTOR MAY PROPOSE ALTERNATE PAVEMENT DESIGNS. CONTRACTOR SHALL SUBMIT ANY PAVEMENT ALTERNATIVES TO ENGINEER FOR APPROVAL PRIOR TO FINAL SUBGRADE PREPARATIONS.



NOTES:
1. DEPTH OF COVER SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE RESPECTIVE UTILITIES.
2. WREC WILL USE THE BACK ±5' WITHIN THE UTILITY EASEMENT. TECO & DUKE ENERGY WILL USE THE FRONT ±5' FEET.

RECOMMENDED UTILITY LOCATIONS
SCALE: N.T.S.

DATE	DESCRIPTION	BY
	REVISIONS	

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1213 E. 6th Avenue, Tampa, Florida 33605
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DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

TYPICAL ROADWAY SECTIONS

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN FINNEY
DATE 11/14/2014
FILE RS1

EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: **STANDARD PACIFIC OF FLORIDA** ----

Elevations based on North American Vertical Datum 1988 (NAVD 88)
Conversion from NAVD 88 to NGVD 29 = -0.84 Feet

PASCO COUNTY SUBDIVISION
PAVEMENT CONSTRUCTION NOTES (CRUSHED CONCRETE)

1. PAVEMENT WEARING SURFACE SHALL BE ASPHALTIC CONCRETE OF TYPE AND THICKNESS SHOWN IN DETAIL AND SHALL MEET CURRENT FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) SPECIFICATIONS.
2. PAVEMENT BASE SHALL BE CRUSHED CONCRETE, AS DESIGNATED IN PLANS, AND SHALL BE COMPACTED TO A MINIMUM THICKNESS AS SHOWN.
3. CRUSHED CONCRETE ROAD BASE MATERIAL SHALL MEET THE FOLLOWING CONDITIONS:

   THE WORK SPECIFIED UNDER THIS SECTION CONSISTS OF THE CONSTRUCTION OF ROADWAY BASE UTILIZING CRUSHED CONCRETE (RECLAIMED CONCRETE AGGREGATE BASE MATERIAL) ON A PREPARED STABILIZED SUBGRADE OF LBR 40 WITH A DENSITY OF 98% OF THE MODIFIED PROCTOR MAXIMUM DENSITY AS DETERMINED BY FM1-T 180, METHOD D, IN CONFORMITY WITH THE LINES, GRADES NOTES AND TYPICAL CROSS SECTIONS SHOWN IN THE PLANS, AND AS DIRECTED BY THE COUNTY ENGINEER.

   THE CONSTRUCTION OF CRUSHED CONCRETE BASE SHALL CONFORM TO THE REQUIREMENTS OF THIS SECTION, OR, IN LIEU THEREOF, SUCH REQUIREMENTS AS MAY BE ESTABLISHED BY THE COUNTY ENGINEER DURING CONSTRUCTION. THE COUNTY ENGINEER SHALL HAVE FULL AUTHORITY TO MODIFY THE PROVISIONS OF THIS SECTION AS DEEMED NECESSARY, IN HIS OPINION, TO MEET FIELD CONDITIONS AND REQUIREMENTS.

3.1. MATERIALS

3.1.1. CRUSHED CONCRETE MUST BE PRODUCED FROM A SOURCE APPROVED BY FLORIDA DEPARTMENT OF TRANSPORTATION OR THE COUNTY ENGINEER. THE SUPPLIER SHALL HAVE DEPARTMENT OF ENVIRONMENTAL PROTECTION (DEP) PERMIT REQUIREMENTS SECTION 62-701.730 OR BE QUALIFIED AS A CLEAN DEBRIS SOURCE UNDER DEP RULES. THE RECLAIMED CONCRETE AGGREGATE BASE SHALL CONSIST OF CRUSHED CONCRETE MATERIAL DERIVED FROM THE CRUSHING OF HARD PORTLAND CEMENT CONCRETE.

3.2. COMPOSITION

3.2.1. BASE MATERIAL SHALL CONFORM TO THE FOLLOWING GRADATION REQUIREMENTS:

SIEVE SIZE	% BY WEIGHT PASSING
2 INCH	100
3/4 INCH	65 TO 95
3/8 INCH	40 TO 85
NO. 4	25 TO 65
NO. 10	20 TO 50
NO. 50	5 TO 25
NO. 200	0 TO 10

3.2.2. CRUSHED CONCRETE BASE SHALL NOT CONTAIN PLASTIC SOILS SUCH THAT THE NO. 40 SIEVE MATERIAL SHALL BE NON-PLASTIC.

3.2.3. LIQUID LIMIT (AS DETERMINED BY AASHTO T80) (LESS THAN 25) PER MATERIAL TYPE

3.2.4. THE FINISHED IN-PLACE CRUSHED CONCRETE BASE LIMEROCK BEARING RATIO SHALL HAVE A MINIMUM (LBR) OF 150.

3.2.5. CRUSHED CONCRETE BASE SHALL BE FREE OF ALL MATERIALS THAT FALL UNDER THE CATEGORY OF SOLID WASTE OR HAZARD MATERIALS AS DEFINED BY THE STATE OR LOCAL JURISDICTION AND SHALL MEET ALL DEP PERMIT REQUIREMENTS WHICH PERTAIN TO CONSTRUCTION, DEMOLITION AND RECYCLING OF THESE MATERIALS. CRUSHED CONCRETE BASE SHALL BE ASBESTOS FREE. THE FOLLOWING LIMITS SHALL NOT BE EXCEEDED:

BITUMINOUS CONCRETE	1.0% BY WEIGHT
BRICKS	1.0% BY WEIGHT
WOOD & OTHER ORGANIC SUBSTANCES	0.5% BY WEIGHT
HEAVY METALS (EXCEPT LEAD)	0.1% BY WEIGHT
LEAD	5 PARTS PER MILLION
REINFORCED STEEL AND WELDED FABRIC	0.1% BY WEIGHT
PLASTER AND GYPSUM BOARD	0.1% BY WEIGHT

3.2.6. THE MATERIAL FOR CRUSHED CONCRETE BASE SHALL CONSIST ONLY OF CRUSHED CONCRETE PAVEMENT AND SUCH ADDITIVE MATERIAL AS MAY BE APPROVED BY THE COUNTY ENGINEER FOR THE PURPOSE OF FACILITATING CONSTRUCTION AND ACHIEVING THE DESIRED CHARACTERISTICS OF THE FINISHED IN-PLACED PRODUCT. APPROVAL FROM THE COUNTY ENGINEER IS REQUIRED BEFORE PLACING MATERIAL FROM MORE THAN ONE SOURCE. ONCE APPROVED, A CHANGE IN THE SOURCE OF BASE MATERIAL SHALL REQUIRE ADDITIONAL ACCEPTANCE TESTING. THE MATERIAL SHALL NOT CONTAIN LUMPS, BALLS OR POCKETS OF SAND OR CLAY MATERIAL IN SIZE OR QUANTITY SUFFICIENT TO BE DETRIMENTAL TO THE PROPER BONDING, FINISHING, STRENGTH OF THE CONCRETE BASE. EXISTING BASE IS TO BE REMOVED TO CONSTRUCT THE NEW BASE.

3.3. EQUIPMENT, PLACEMENT AND SPREADING OF MATERIAL

3.3.1. USE MECHANICAL ROCK SPREADERS, EQUIPPED WITH A DEVICE THAT STRIKES OFF THE ROCK UNIFORMLY TO LAYING THICKNESS AND CAPABLE OF PRODUCING EVEN DISTRIBUTION. FOR ROADWAY WIDTHS OF 20 FEET OR LESS, CROSSOVERS, INTERSECTIONS, RAMP AREAS OR WHERE THE USE OF A MECHANICAL SPREADER IS NOT PRACTICABLE; THE CONTRACTOR MAY SPREAD THE CRUSHED CONCRETE BASE USING BULLDOZERS OR BLADE GRADERS.

3.3.2. TRANSPORT CRUSHED CONCRETE TO THE POINT OF USE, OVER THE BASE PREVIOUSLY PLACED, AND DUMP IT ON THE END OF THE PRECEDING SPREAD. HAULING ON SUBGRADE TO DUMP CRUSHED CONCRETE BASE WILL BE PERMITTED ONLY WHEN, IN THE ENGINEER'S OPINION, THESE OPERATIONS WILL NOT BE DETRIMENTAL TO THE BASE AND SUBGRADE.

3.3.3. CRUSHED CONCRETE SHALL BE SPREAD UNIFORMLY WITHOUT SEGREGATION OF FINE OR COURSE MATERIALS. SEGREGATED AREAS SHALL BE REPLACED WITH PROPERLY GRADED CRUSHED CONCRETE AFTER REMOVAL.

3.3.4. THE MINIMUM THICKNESS OF THE CRUSHED CONCRETE BASE SHALL BE INDICATED ON THE PLANS. WHEN THE SPECIFIED COMPACTED THICKNESS OF THE CRUSHED CONCRETE BASE IS GREATER THAN SIX INCHES, CONSTRUCT THE BASE IN MULTIPLE COURSES OF EQUAL THICKNESS. INDIVIDUAL COURSES SHALL NOT BE LESS THAN THREE INCHES. PLACE CRUSHED CONCRETE MATERIAL TO ENSURE THE TOTAL THICKNESS SINGLE SOURCE INTEGRITY AT ANY STATION LOCATION OF THE BASE.

3.4. COMPACTING, FINISHING AND TESTING REQUIREMENTS

3.4.1. AFTER SPREADING IS COMPLETED THE CRUSHED CONCRETE SHALL BE UNIFORMLY COMPACTED, WITH WATER BEING ADDED AS REQUIRED TO A DENSITY OF NOT LESS THAN ONE HUNDRED PERCENT (100%) OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180. DURING FINAL COMPACTION OPERATIONS, IF THE BLADING OF ANY AREAS IS NECESSARY TO OBTAIN THE TRUE GRADE AND CROSS SECTION, FREE OF SCABS AND LAMINATIONS, THE COMPACTING OPERATIONS FOR SUCH AREAS SHALL BE COMPLETED PRIOR TO THE PERFORMANCE OF DENSITY TESTS ON THE FINISHED BASE.

3.4.2. MULTIPLE COURSE BASE: CLEAN THE FIRST COURSE OF FOREIGN MATERIAL, THEN BLADE AND BRING IT TO A SURFACE CROSS-SECTION APPROXIMATELY PARALLEL TO THE FINISHED BASE. BEFORE SPREADING ANY MATERIAL FOR THE UPPER COURSES, OBTAIN DENSITY TESTS FOR THE LOWER COURSES TO DETERMINE THAT THE REQUIRED COMPACTION [NOT LESS THAN ONE HUNDRED PERCENT (100%) OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180 HAS BEEN OBTAINED. AFTER SPREADING THE CRUSHED CONCRETE FOR THE TOP COURSE, FINISH AND SHAPE ITS SURFACE TO PRODUCE THE REQUIRED GRADE AND CROSS-SECTION, FREE OF SCABS AND LAMINATIONS, AFTER COMPACTION.

3.4.3. THE MINIMUM DENSITY THAT WILL BE ACCEPTED AT ANY LOCATION OUTSIDE THE TRAVELED ROADWAY (SUCH AS INTERSECTIONS, CROSSOVERS, TURNOUTS, ETC.) SHALL BE 98% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.

3.5. TESTING OF BASE COURSE

3.5.1. THE MINIMUM FREQUENCY OF SAMPLING AND TESTING OF CRUSHED CONCRETE MATERIAL, LAB DENSITY, FIELD DENSITY AND THICKNESS SHALL ADHERE TO THE FREQUENCY OF TESTING FOR LIMEROCK BASE IN THE MOST CURRENT EDITION OF "PASCO COUNTY ENGINEERING SERVICES DEPARTMENT TESTING SPECIFICATIONS FOR CONSTRUCTION OF ROADS, STORM DRAINAGE AND UTILITIES". ONE PLANT MIX DESIGN, ONE PLANT GRADATION TEST FOR SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES (AASHTO T-27) (FM1-T027) INCLUDING A PLASTICITY INDEX (FM-T090) (AASHTO T-90) FROM THE APPROVED SOURCE SHALL BE SUBMITTED AT ONE PER DAY OR CHANGE OF MATERIAL. ONE ROADWAY FIELD TEST FOR SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES (ASTM C-136) SHALL BE SUBMITTED PER 500 FEET OF ROAD PER DAY PER MIX DESIGN; MINIMUM ONE PER ROAD.

3.5.2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TESTING PERFORMED IN CONNECTION WITH CONSTRUCTION OF THE BASE.

3.6. CORRECTION OF DEFECTS

3.6.1. ALL SEGREGATED AREAS OF FINE OR COURSE CRUSHED CONCRETE SHALL BE REMOVED AND REPLACED WITH PROPERLY GRADED RECLAIMED CONCRETE AGGREGATE BASE MATERIAL. ALL DEFECTS IN MATERIALS AND CONSTRUCTION SHALL BE CORRECTED BY THE CONTRACTOR, AT HIS EXPENSE, AND TO THE SATISFACTION OF THE COUNTY ENGINEER.

3.7. PRIMING AND MAINTENANCE

3.7.1. APPLY THE PRIME COAT ONLY WHEN THE BASE MEETS THE SPECIFIED DENSITY REQUIREMENTS AND WHEN THE MOISTURE CONTENT. AT THE TIME OF PRIMING, ENSURE THAT THE BASE IS FIRM, UNYIELDING AND IN SUCH CONDITION THAT NO UNDUE DISTORTION WILL OCCUR. MAINTAIN THE TRUE CROWN AND TEMPLATE, WITH NO RUTTING OR DISTORTION, WHILE APPLYING THE SURFACE COURSE.

3.8. PASCO COUNTY TESTING SPECIFICATIONS ON CRUSHED CONCRETE BASE

3.8.1. TESTS FOR BASE THICKNESS, AND DENSITY SHALL BE LOCATED NO MORE THAN THREE HUNDRED (300) FEET APART AND SHALL BE STAGGERED TO THE LEFT, RIGHT, AND ON THE CENTERLINE OF ROADWAY. THERE SHALL BE NO LESS THAN ONE (1) TEST PER STREET. BEARING VALUE, GRADATION AND FIELD TEST FOR SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES (ASTM C-136) SHALL BE NO MORE THAN FIVE HUNDRED (500) FEET.

3.8.2. EXAMPLE: A SEVEN HUNDRED FEET ROAD WOULD REQUIRE TWO FIELD LBR AND GRADATION TESTS, THREE FIELD DENSITY AND THICKNESS TESTS ALONG WITH THE APPROPRIATE LAB TESTING.

4. SUBGRADE SHALL BE PREPARED IN ACCORDANCE WITH FDOT INDEX NO. 505, LATEST EDITION. EMBANKMENT FILLS OR NATURAL SANDS TO 24-INCHES BELOW THE BOTTOM OF THE PAVEMENT BASE (IF NO STABILIZED SUBGRADE), OR TO 24-INCHES BELOW THE BOTTOM OF STABILIZED SUBGRADE, SHALL BE SANDY SOILS (A-3 OR SP/SP-SM) WITH TYPICALLY 15% FINES OR LESS PASSING THE NO. 200 SIEVE.
5. A TYPE "B" STABILIZED SUBGRADE WITH A MINIMUM LBR OF 40 AND TESTED AT A FREQUENCY REQUIRED BY FDOT IS REQUIRED BENEATH CRUSHED CONCRETE BASE COURSES.
6. SUBGRADE UNDER A CRUSHED CONCRETE BASE SHALL BE PROOF-ROLLED TO GRADE, AS DIRECTED AND APPROVED BY THE ENGINEER WITH SUITABLE COMPACTION EQUIPMENT TO ACHIEVE A MINIMUM DENSITY OF NINETY-EIGHT (98) PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY AASHTO T-180 FOR A MINIMUM DEPTH OF TWELVE (12) INCHES.
7. THE SUBGRADE SHALL BE INSPECTED AND APPROVED BY THE ENGINEER PRIOR TO PLACEMENT OF ANY BASE MATERIAL.
8. THE BASE COURSE SHALL BE INSPECTED AND APPROVED BY THE ENGINEER PRIOR TO PLACEMENT OF ANY ASPHALT MATERIAL.
9. CRUSHED CONCRETE SURFACE SHALL BE INSPECTED AND APPROVED BY THE ENGINEER PRIOR TO ANY PAVING OPERATION.
10. ALL CURBS AND GUTTERS SHALL BE PLACED ON A FOUNDATION OF TYPE "B" STABILIZED SUBGRADE WITH A MINIMUM LBR OF 40 AND WHICH HAS BEEN COMPACTED TO A MINIMUM DENSITY OF NINETY-EIGHT (98) PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY AASHTO T 180 FOR A MINIMUM DEPTH OF TWELVE (12) INCHES.
11. ROADWAY UNDERDRAIN HAS BEEN LOCATED ON THESE PLANS TO MEET THE MINIMUM STANDARDS OF PASCO COUNTY.PRIOR TO CURB CONSTRUCTION, THE GEOTECHNICAL ENGINEER SHALL REVIEW THE PREDESIGN BORINGS AND, ALONG WITH THEIR FIELD INSPECTION, MAKE A RECOMMENDATION REGARDING ADDITIONAL UNDERDRAIN REQUIREMENTS.
12. SHOULD NO UNDERDRAIN BE SPECIFIED ON THE PLANS THE CONTRACTOR IS TO INCLUDE 1,000 LINEAR FEET OF UNDERDRAIN AT UNIT PRICES FOR BID PURPOSES.
13. ALL PORTLAND CEMENT CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 P.S.I. UNLESS OTHERWISE SPECIFIED.

STREET TYPE	CLEAR ZONES MIN. WIDTHS: FDOT TYPE F & D CURB	CLEAR ZONES MIN. WIDTHS: FDOT TYPE A, E, & MIAMI CURB	SPEEDS (MPH): MIN.	SPEEDS (MPH): MAX.	LOTS SERVED	PAVEMENT WIDTH/LANES (WITHOUT PKG)	MIN. ROW WIDTH (WITHOUT PKG)	THRU-LANES
1A	4'	10'	30	40	>600	48'/4	100'(142')	4
1B	4'	10'	30	40	201-600	24'/2	60'	2
2	4'	6'	25	35	101-200	24'/2	50'	2
3	4'	6'	20	30	51-100	22'/2	50'	2
4	1½'	6'	15	30	≤50	20'/2	50'	2

- FOR PRIVATE STREETS, ENTRANCE AND EXIT GATE EQUIPMENT, GUARDHOUSE, OR OTHER LIKE STRUCTURE MAY BE SET BACK 1½ FEET FROM THE FDOT TYPE F AND D CURB.
- WIDTHS IN ABOVE CHART ARE MEASURED FROM FACE OF BARRIER CURB OR EDGE OF PAVEMENT IF NO BARRIER CURB PROVIDED.
- TYPE 1A ROW MIN – COUNTY IS SPECIFYING 142'

PASCO COUNTY SUBDIVISION
SOIL CEMENT BASE SPECIFICATIONS

DESCRIPTION
CONSTRUCT A BASE COURSE COMPOSED OF A COMBINATION OF SOIL, PORTLAND CEMENT, AND WATER.

MATERIALS
MEET THE FOLLOWING REQUIREMENTS:
- CEMENT: PORTLAND CEMENT, TYPE I, II, III, OR TYPE I-P OR TYPE I-S [SECTION 921]
- WATER: USE WATER THAT IS FREE FROM SUBSTANCES DELETERIOUS TO HARDENING OF THE SOIL-CEMENT MIXTURE.
- CURING MATERIAL: [SECTION 916-4]
- USE EMULSIFIED ASPHALT GRADE SS, RS, OR MS AS APPROVED BY THE ENGINEER, DILUTE THESE AS RECOMMENDED BY MANUFACTURER.
- SOIL: FOR BASE COURSE CONSTRUCTION, USE EITHER THE MATERIAL EXISTING IN THE LOCATION TO OCCUPIED BY BASE, A SUITABLY FRIABLE MATERIAL FURNISHED BY THE CONTRACTOR, OR A COMBINATION OF THESE. IF THE MATERIAL EXISTING IN THE LOCATION TO BE OCCUPIED BY THE BASE DOES NOT MEET THE REQUIREMENTS SPECIFIED BELOW, REMOVE AND REPLACE WITH SUITABLE SOIL.
- OBTAIN APPROVAL OF THE MATERIAL PITS PRIOR TO USE. EXCAVATE MATERIAL PITS TO ACHIEVE A UNIFORMLY MIXED MATERIAL WITH REASONABLY CONSISTENT CHARACTERISTICS. BLEND STRATA OR BUFFERING MATERIALS IN ACCORDANCE WITH A PROCEDURE APPROVED BY THE ENGINEER. THE COUNTY WILL CONSIDER PROPOSED RECYCLED MATERIALS ON A CASE BY CASE BASIS.

- SPECIFIC REQUIREMENTS FOR SOIL:
- ORGANIC MATERIAL (AS PER FM 1-T267) MAXIMUM 5%
- TOTAL CLAY AND SILT CONTENT (MINUS NO. 200 [75 µO SIEVE] (AS PER FM 1-T088, NO HYDROMETER TEST) MAXIMUM 25%
- PLASTIC INDEX (AS PER FM 1-T090) MAXIMUM 10%
- LIQUID LIMIT (AS PER FM 1-T089) MAXIMUM 25%
- GRADATION:
  - PASSING 2 INCH [50MM] SIEVE MINIMUM 100%
  - PASSING NO. 4 [4.75 MM] SIEVE MINIMUM 55%
  - PASSING NO. 10 [2.00 MM] SIEVE MINIMUM 37%

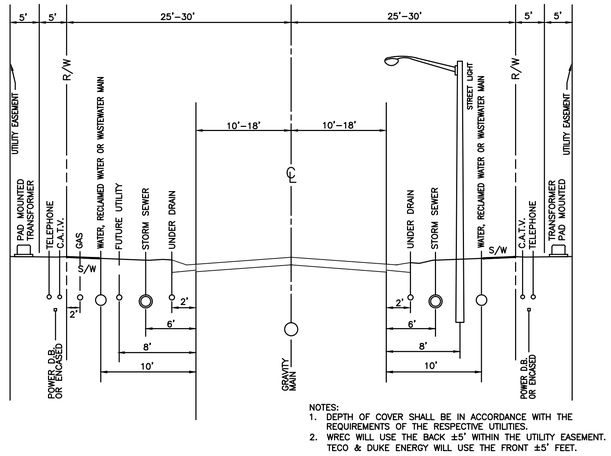
  (AS PER FM 1-T088)

AS AN EXCEPTION TO THE ABOVE REQUIREMENTS, THE CONTRACTOR MAY USE ANY MATERIAL MEETING THE REQUIREMENTS FOR LIMEROCK.

NOTE:
THE ABOVE SOIL CEMENT BASE SPECIFICATIONS WERE TAKEN FROM FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION 2002 MANUAL – SECTION 270, AS SUCH, THE REFERENCED MATERIALS FOR SOIL CEMENT BASE SHALL CONFORM TO THE RQUIREMENTS SPECIFIED IN DIVISION III (MATERIALS) OF THE FDOT MANUAL AS WELL.

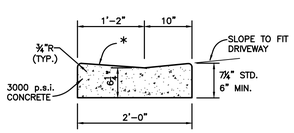
SOIL CEMENT SHALL BE PLANT MIXED. DESIGN MIX SHALL BE 300 PSI AND CONSTRUCTED BASE SHALL NOT EXCEED 350 PSI.

NOTE:
NO DEVIATIONS TO THIS DETAIL WILL BE PERMITTED UNLESS APPROVED BY THE COUNTY ENGINEER. ANY PROPOSED ALTERATIONS SHALL BE CLEARLY IDENTIFIED AND HIGHLIGHTED ON DETAIL.

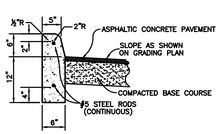


NOTES:
1. DEPTH OF COVER SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE RESPECTIVE UTILITIES.
2. WREC WILL USE THE BACK ±5' WITHIN THE UTILITY EASEMENT. TECO & DUKE ENERGY WILL USE THE FRONT ±5' FEET.

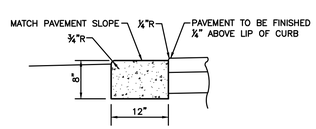
RECOMMENDED UTILITY LOCATIONS
SCALE: N.T.S.



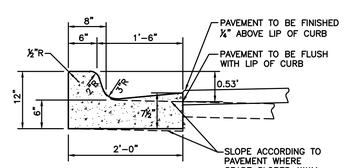
DROP CURB



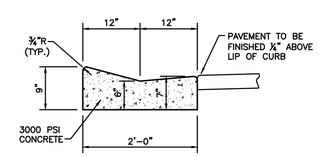
6" UPRIGHT CURB



CONCRETE FLUSH CURB



TYPE "F" CURB AND GUTTER



TYPE "A" CURB AND GUTTER

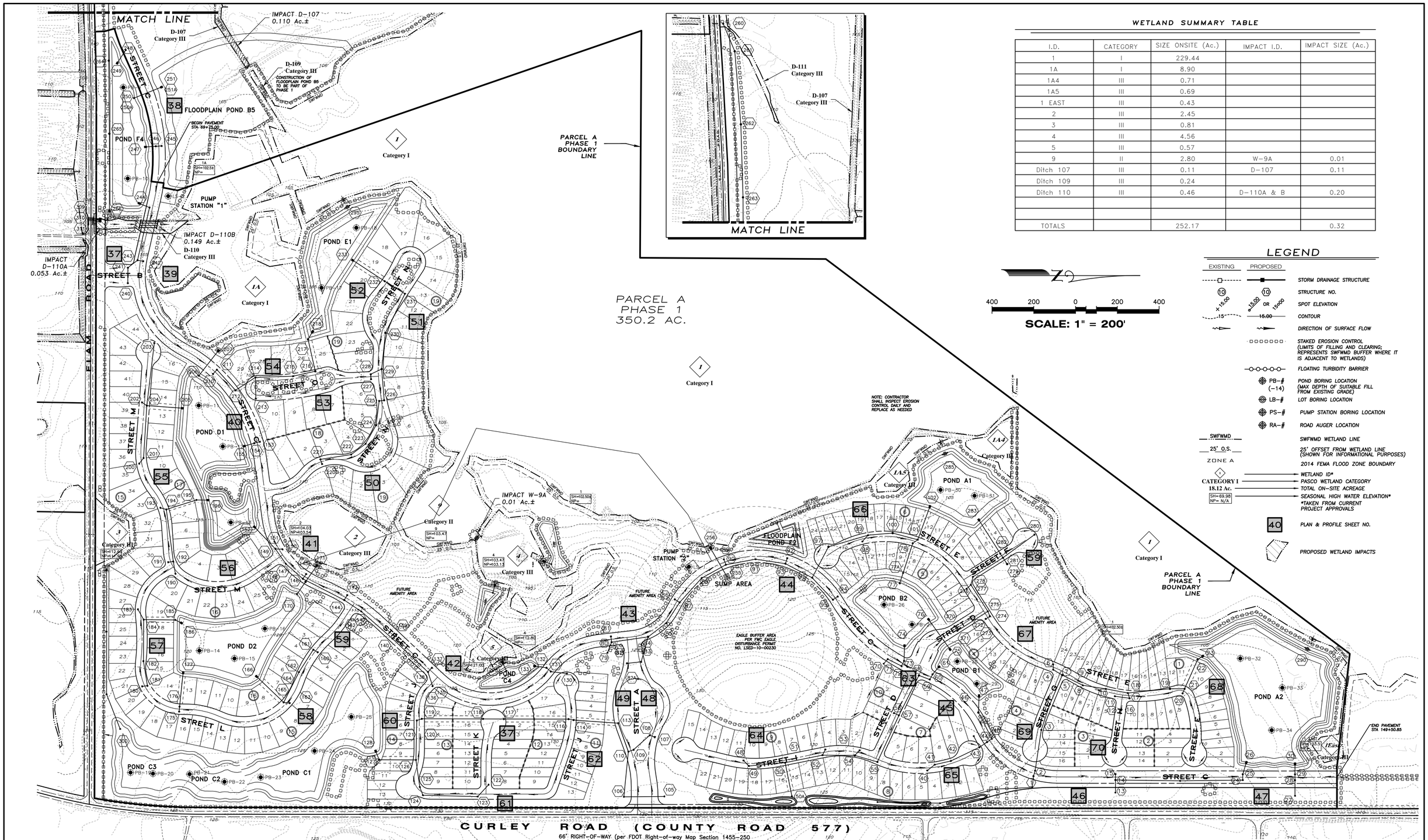
DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

TYPICAL ROADWAY SECTIONS

JOB NO. SPH-EP-009	EPCO RANCH NORTH PARCEL A PHASE 1
DESIGN LAWTON	
DRAWN FINNEY	PREPARED FOR: STANDARD PACIFIC OF FLORIDA ---
DATE 11/14/2014	Elevations based on North American Vertical Datum 1988 (NAVD 88) Conversion from NAVD 88 to NGVD 29 = -0.84 Feet
FILE RS2	SHEET 12 OF 98 SHEETS



WETLAND SUMMARY TABLE

I.D.	CATEGORY	SIZE ONSITE (Ac.)	IMPACT I.D.	IMPACT SIZE (Ac.)
1	I	229.44		
1A	I	8.90		
1A4	III	0.71		
1A5	III	0.69		
1 EAST	III	0.43		
2	III	2.45		
3	III	0.81		
4	III	4.56		
5	III	0.57		
9	II	2.80	W-9A	0.01
Ditch 107	III	0.11	D-107	0.11
Ditch 109	III	0.24		
Ditch 110	III	0.46	D-110A & B	0.20
TOTALS		252.17		0.32

SCALE: 1" = 200'

LEGEND

EXISTING	PROPOSED	
		STORM DRAINAGE STRUCTURE
10	10	STRUCTURE NO.
+15.00	15.00 OR 15.00	SPOT ELEVATION
15	15.00	CONTOUR
		DIRECTION OF SURFACE FLOW
		STAKED EROSION CONTROL (LIMITS OF FILLING AND CLEARING; REPRESENTS SWFWMD BUFFER WHERE IT IS ADJACENT TO WETLANDS)
		FLOATING TURBIDITY BARRIER
	PB-# (-14)	POND BORING LOCATION (MAX DEPTH OF SUITABLE FILL FROM EXISTING GRADE)
	LB-#	LOT BORING LOCATION
	PS-#	PUMP STATION BORING LOCATION
	RA-#	ROAD AUGER LOCATION
SWFWMD		SWFWMD WETLAND LINE
25' O.S.		25' OFFSET FROM WETLAND LINE (SHOWN FOR INFORMATIONAL PURPOSES)
ZONE A		2014 FEMA FLOOD ZONE BOUNDARY
1		WETLAND ID*
CATEGORY I		PASCO WETLAND CATEGORY
18.12 Ac.		TOTAL ON-SITE ACREAGE
SH=69.98 NP= N/A		SEASONAL HIGH WATER ELEVATION*
		*TAKEN FROM CURRENT PROJECT APPROVALS
40		PLAN & PROFILE SHEET NO.
		PROPOSED WETLAND IMPACTS

NOTES:

1. Elevations Refer to the National Geodetic Vertical Datum 1929 (NGVD 29).
2. This site appears to lie within Flood Zones "AE", "A" & "X" according to Federal Emergency Management Agency (FEMA) – Flood Insurance Rate Map (FIRM) Community–Panel Nos. 12101C0266F, 12101C0267F, 12101C0269F each with an effective date of September 26, 2014. Flood Zone determination based on data provided by FEMA. This data can be found at http://msc.fema.gov/portal.
3. The Developer will grant, convey, warrant and dedicate to the County via plat a Non–Exclusive Flow through Easement and reasonable right of access to ensure the free flow of water for general public drainage purposes over, through and under all drainage easements or commonly owned property shown on this plat. In the event the Owner, the District or the Association fails to properly maintain any public or private drainage easements/facilities preventing the free flow of water, the County shall have the reasonable right, but not the obligation, to access and enter upon any public or private drainage easement for the purpose of performing maintenance to ensure the free flow of water.
4. If prehistoric artifacts such as pottery or ceramics, stone tools or metal implements, or any other physical remains that could be associated with Native American cultures, or early colonial or American settlement are encountered at any time, the project should cease all activities involving subsurface disturbance in the immediate vicinity of such discoveries. The applicant, or designee, should contact the Florida Department of State, Division of Historical Resources, Compliance and Review Section at 850.245.6333, as well as the appropriate funding agency office. Project activities should not resume without verbal and/or written authorization from the Division of Historical Resources.

CALL 48 HOURS BEFORE YOU DIG
IT'S THE LAW! DIAL 811
811 Know what's below. Call before you dig.
SUNSHINE STATE ONE CALL OF FLORIDA, INC.

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975
DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

MASTER DRAINAGE PLAN

EPCO RANCH NORTH
PARCEL A PHASE 1

JOB NO.	SPH-EP-009
DESIGN	LAWTON
DRAWN	MIDDLETON
DATE	11/14/2014
FILE	MDKEY
PREPARED FOR:	STANDARD PACIFIC OF FLORIDA
	Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

ZONE X

ZONE AE

FEMA LINE

PB-4 (-8.0)

PB-5 (-8.0)

PB-7 (-8.0)

PB-8 (-8.0)

B5A

FLOODPLAIN POND B5
DNW=102.5

RB-53

POND F4
DHW100=108.8
DHW25=108.5
DLW=107.4
DNW=107.0

NOTE: CONTRACTOR SHALL INSPECT EROSION CONTROL DAILY AND REPLACE AS NEEDED

D-111
Category III

SWFWMD

ELAM ROAD R/W DEDICATION (42.5')

EXISTING ELAM ROAD (50' MAINTAINED R/W)

ELAM ROAD

PROPERTY LINE

30"

261 262 263 264 248 249 260

N

100 50 0 50 100

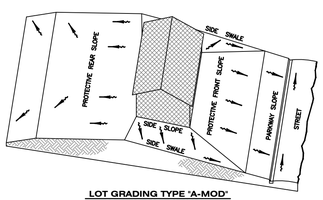
SCALE: 1" = 50'

LEGEND

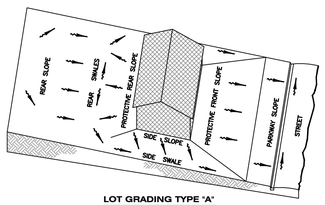
EXISTING	PROPOSED	
		STORM DRAINAGE STRUCTURE
10	10	STRUCTURE NO.
+15.00	15.00 OR 15.00	SPOT ELEVATION
15	15.00	CONTOUR
		DIRECTION OF SURFACE FLOW
		STAKED EROSION CONTROL (LIMITS OF FILLING AND CLEARING; REPRESENTS SWFWMD BUFFER WHERE IT IS ADJACENT TO WETLANDS)
		FLOATING TURBIDITY BARRIER
	PB-# (-14)	POND BORING LOCATION (MAX DEPTH OF SUITABLE FILL FROM EXISTING GRADE)
	LB-#	LOT BORING LOCATION
	RA-#	ROAD AUGER LOCATION
SWFWMD		SWFWMD WETLAND LINE
25' O.S.		25' OFFSET FROM WETLAND LINE (SHOWN FOR INFORMATIONAL PURPOSES)
ZONE A		2014 FEMA FLOOD ZONE BOUNDARY

WETLAND "100" — WETLAND ID*
CATEGORY I — PASCO WETLAND CATEGORY
18.12 Ac. — TOTAL ON-SITE ACREAGE
SH=69.98 NP= N/A — SEASONAL HIGH WATER ELEVATION* *TAKEN FROM CURRENT PROJECT APPROVALS
FF=67.50 LOT 4 PAD=66.80 TYPE A — FINISH FLOOR ELEVATION; LOT NUMBER; PAD ELEVATION; LOT GRADING TYPE

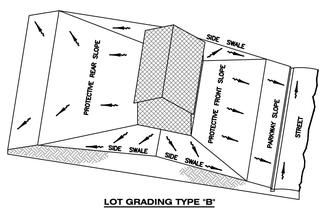
PROPOSED WETLAND IMPACTS



LOT GRADING TYPE "A-MOD"
DRAINAGE BOTH TO STREET AND REAR YARD TO REAR LOT LINE



LOT GRADING TYPE "A"
ALL DRAINAGE TO STREET



LOT GRADING TYPE "B"
DRAINAGE BOTH TO STREET AND TO REAR LOT LINE

GRADING & DRAINAGE 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 conditions exist.
2. For all lots abutting wetlands no grading shall take place beyond the erosion control line unless specifically shown on the approved construction plans.
3. Side yard swales shall be constructed simultaneously with house construction. During the site grading activities, the contractor shall grade the side yards to an elevation no lower than 0.2 ft. below the adjoining house pad grades.
4. For Type "A" lot grading receiving runoff from abutting Type "B" lots, all runoff shall be directed to side yard swales.
5. For Type "B" lot grading not abutting detention facilities, the builder shall make every practical effort to direct roof runoff to the side yard swales unless otherwise directed by the Engineer of Record.
6. For Type 'A' lot grading, the builder shall make every practical effort to direct roof runoff to the side-yard swales unless directed otherwise by the Engineer of Record.
7. Minimum side yard swale slopes shall be 1.0%.
8. This site appears to lie within Flood Zones "AE", "A" & "X" according to Federal Emergency Management Agency (FEMA) – Flood Insurance Rate Map (FIRM) Community-Panel Nos. 12101C0266F, 12101C0267F, 12101C0268F, 12101C0269F each with an effective date of September 26, 2014. Flood Zone determination based on data provided by FEMA. This data can be found at http://msc.fema.gov/portal.
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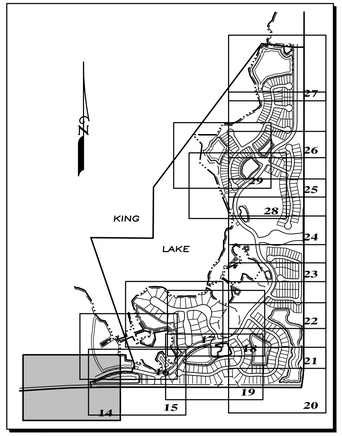
10. In the event that unmarked human remains are encountered during permitted activities, all work must stop immediately and the proper authorities notified in accordance with Section 872.05, Florida Statue.



INDEX TO MAP COVERAGE
Not To Scale

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

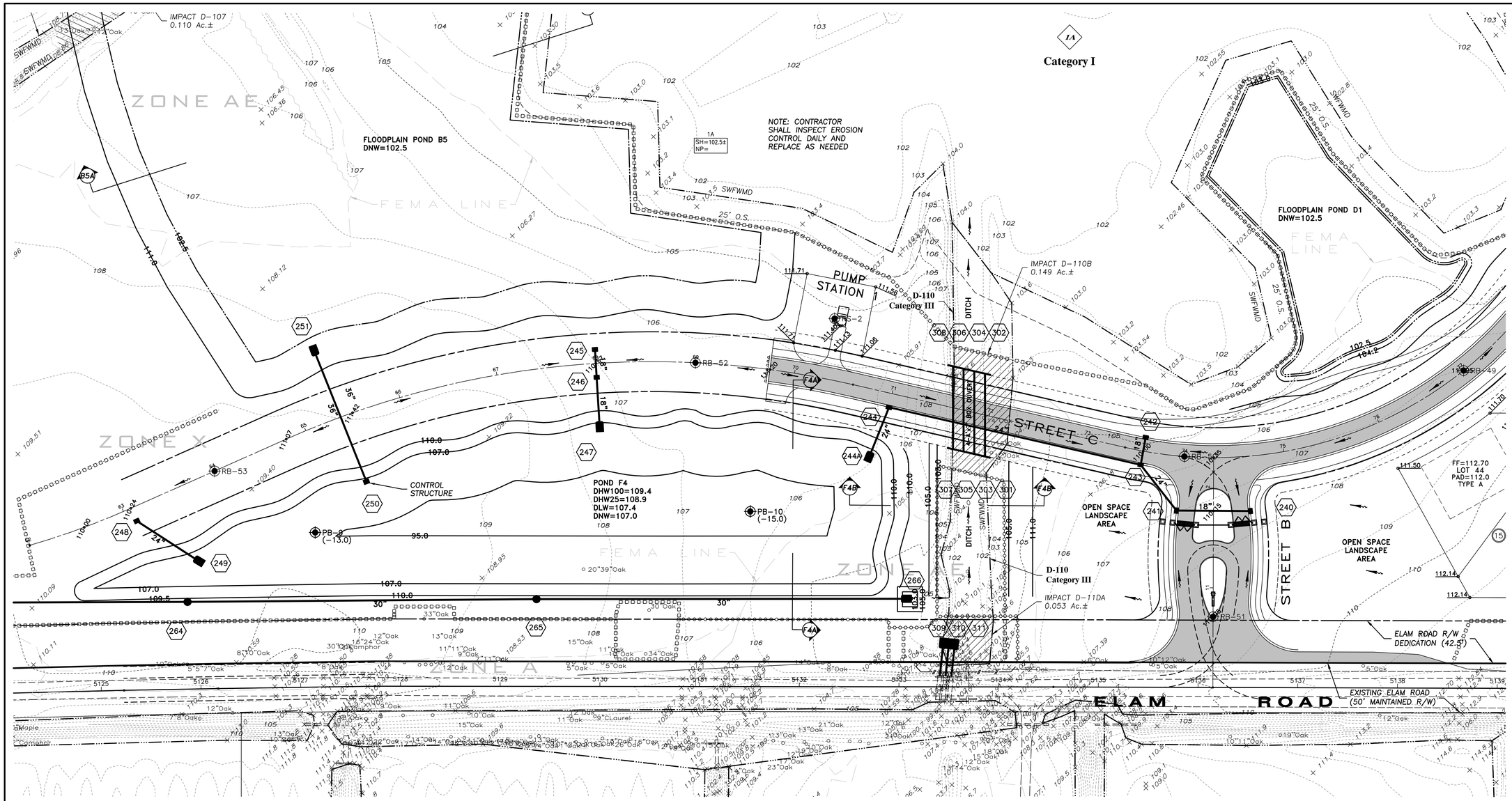
NEIGHBORHOOD GRADING PLAN

EPCO RANCH NORTH
PARCEL A PHASE 1

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE MD01

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 = -0.84 Feet



GRADING & DRAINAGE 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 conditions exist.
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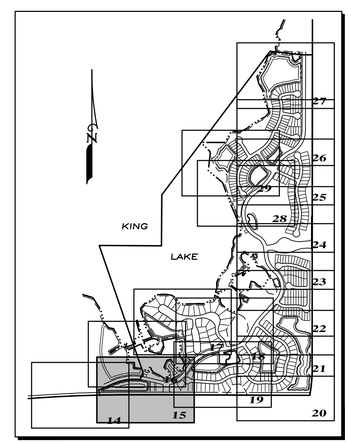
10. In the event that unmarked human remains are encountered during permitted activities, all work must stop immediately and the proper authorities notified in accordance with Section 872.05, Florida Statue.

LEGEND

EXISTING	PROPOSED	
		STORM DRAINAGE STRUCTURE
10	10	STRUCTURE NO.
+15.00	15.00 OR 15.00	SPOT ELEVATION
15	15.00	CONTOUR
		DIRECTION OF SURFACE FLOW
		STAKED EROSION CONTROL (LIMITS OF FILLING AND CLEARING; REPRESENTS SWFWMD BUFFER WHERE IT IS ADJACENT TO WETLANDS)
		FLOATING TURBIDITY BARRIER
	PB-# (-14)	POND BORING LOCATION (MAX DEPTH OF SUITABLE FILL FROM EXISTING GRADE)
	LB-#	LOT BORING LOCATION
	PS-#	PUMP STATION BORING LOCATION
	RA-#	ROAD AUGER LOCATION
SWFWMD		SWFWMD WETLAND LINE
25' O.S.		25' OFFSET FROM WETLAND LINE (SHOWN FOR INFORMATIONAL PURPOSES)
ZONE A		2014 FEMA FLOOD ZONE BOUNDARY
WETLAND "100"		WETLAND ID*
CATEGORY I		PASCO WETLAND CATEGORY
18.12 Ac.		TOTAL ON-SITE ACREAGE
SH=69.98 NP= N/A		SEASONAL HIGH WATER ELEVATION*
		*TAKEN FROM CURRENT PROJECT APPROVALS



INDEX TO MAP COVERAGE
Not To Scale

100 50 0 50 100

SCALE: 1" = 50'

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

NEIGHBORHOOD GRADING PLAN

EPCO RANCH NORTH
PARCEL A PHASE 1

JOB NO. SPH-EP-009	
DESIGN LAWTON	
DRAWN MIDDLETON	PREPARED FOR: STANDARD PACIFIC OF FLORIDA
DATE 11/14/2014	Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 =-0.84Feet
FILE MD02	SHEET 15 OF 98 SHEETS

Category I

D-109
Category III

D-107
Category III

IMPACT D-107
0.110 Ac.±

UPLAND

ZONE AE

ZONE AE

ZONE X

FLOODPLAIN POND B5
DNW=102.5

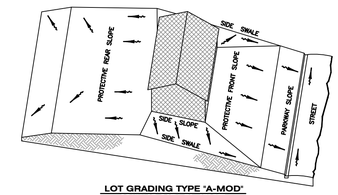
NOTE: CONTRACTOR SHALL INSPECT EROSION CONTROL DAILY AND REPLACE AS NEEDED

1A
SH=102.5±
NP=

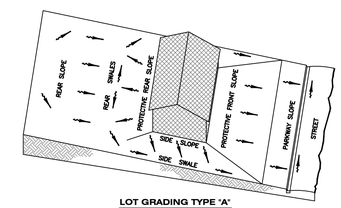
PUMP STATION "C"

CONTROL STRUCTURE

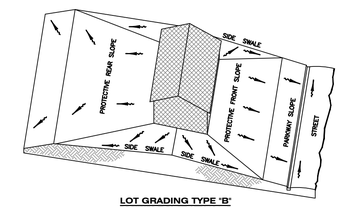
POND F4
DHW100=109.4
DHW25=108.9
DLW=107.4
DNW=107.0



LOT GRADING TYPE "A-MOD"
DRAINAGE BOTH TO STREET
AND REAR YARD TO REAR LOT LINE



LOT GRADING TYPE "A"
ALL DRAINAGE TO STREET



LOT GRADING TYPE "B"
DRAINAGE BOTH TO STREET
AND TO REAR LOT LINE

N

100 50 0 50 100

SCALE: 1" = 50'

LEGEND

EXISTING	PROPOSED	
		STORM DRAINAGE STRUCTURE
(10)	(10)	STRUCTURE NO.
+15.00	15.00 OR 15.00	SPOT ELEVATION
15	15.00	CONTOUR
		DIRECTION OF SURFACE FLOW
		STAKED EROSION CONTROL (LIMITS OF FILLING AND CLEARING; REPRESENTS SWFWMD BUFFER WHERE IT IS ADJACENT TO WETLANDS)
		FLOATING TURBIDITY BARRIER
	PB–# (–14)	POND BORING LOCATION (MAX DEPTH OF SUITABLE FILL FROM EXISTING GRADE)
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ZONE A		2014 FEMA FLOOD ZONE BOUNDARY
WETLAND "100"		WETLAND ID*
CATEGORY I		PASCO WETLAND CATEGORY
18.12 Ac.		TOTAL ON-SITE ACREAGE
SH=69.98 NP= N/A		SEASONAL HIGH WATER ELEVATION* *TAKEN FROM CURRENT PROJECT APPROVALS
FF=67.50 LOT 4 PAD=66.80 TYPE A		FINISH FLOOR ELEVATION / LOT NUMBER / PAD ELEVATION / LOT GRADING TYPE
		PROPOSED WETLAND IMPACTS

GRADING & DRAINAGE 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 conditions exist.
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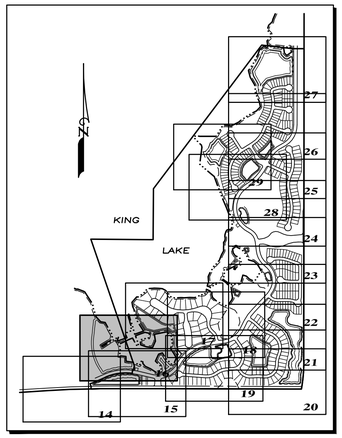


INDEX TO MAP COVERAGE
Not To Scale

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813–223–3919 Fax: 813–223–3975

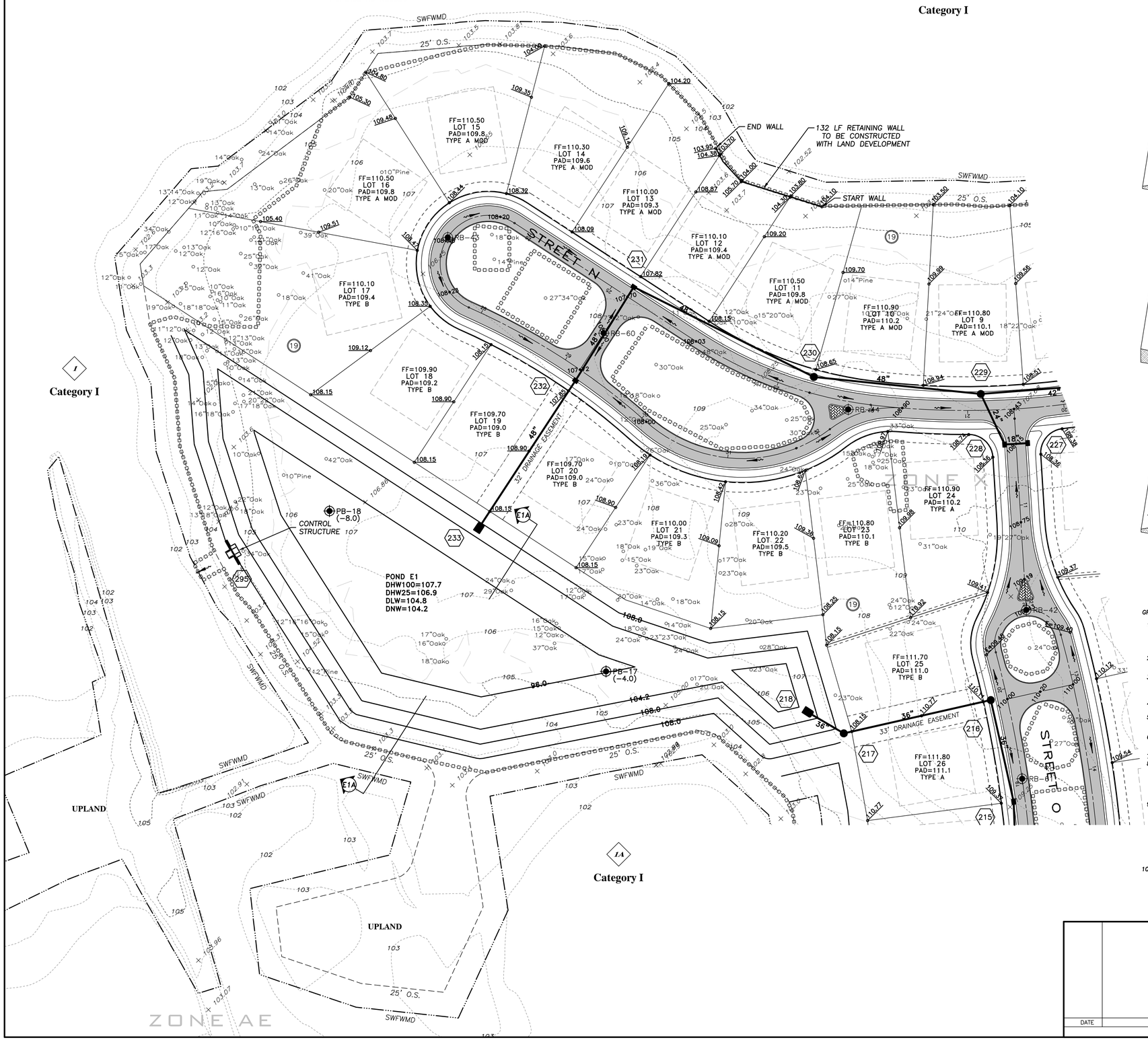
DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

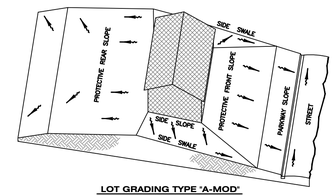
NEIGHBORHOOD GRADING PLAN

EPCO RANCH NORTH
PARCEL A PHASE 1

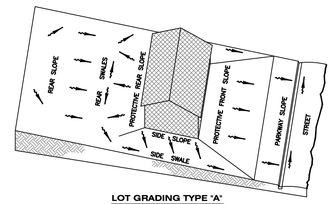
JOB NO. SPH–EP–009	
DESIGN LAWTON	
DRAWN MIDDLETON	PREPARED FOR: STANDARD PACIFIC OF FLORIDA
DATE 11/14/2014	Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 =–0.84 Feet
FILE MD03	SHEET 16 OF 98 SHEETS

NOTE: CONTRACTOR SHALL INSPECT EROSION CONTROL DAILY AND REPLACE AS NEEDED

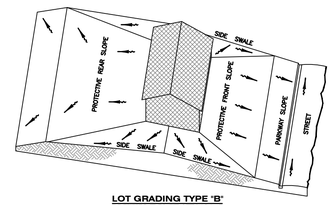




LOT GRADING TYPE 'A-MOD'
DRAINAGE BOTH TO STREET AND REAR YARD TO REAR LOT LINE



LOT GRADING TYPE 'A'
ALL DRAINAGE TO STREET



LOT GRADING TYPE 'B'
DRAINAGE BOTH TO STREET AND TO REAR LOT LINE

N

100 50 0 50 100

SCALE: 1" = 50'

LEGEND

EXISTING	PROPOSED	
		STORM DRAINAGE STRUCTURE
10	10	STRUCTURE NO.
+15.00	15.00 OR 15+00	SPOT ELEVATION
15	15.00	CONTOUR
		DIRECTION OF SURFACE FLOW
		STAKED EROSION CONTROL (LIMITS OF FILLING AND CLEARING; REPRESENTS SWFWMD BUFFER WHERE IT IS ADJACENT TO WETLANDS)
		FLOATING TURBIDITY BARRIER
	PB-# (-14)	POND BORING LOCATION (MAX DEPTH OF SUITABLE FILL FROM EXISTING GRADE)
	LB-#	LOT BORING LOCATION
	PS-#	PUMP STATION BORING LOCATION
	RA-#	ROAD AUGER LOCATION
SWFWMD		SWFWMD WETLAND LINE
25' O.S.		25' OFFSET FROM WETLAND LINE (SHOWN FOR INFORMATIONAL PURPOSES)
ZONE A		2014 FEMA FLOOD ZONE BOUNDARY
WETLAND "100"		WETLAND ID*
CATEGORY I		PASCO WETLAND CATEGORY
18.12 Ac.		TOTAL ON-SITE ACREAGE
SH=69.98 NP= N/A		SEASONAL HIGH WATER ELEVATION* *TAKEN FROM CURRENT PROJECT APPROVALS
FF=67.50 LOT 4 PAD=66.80 TYPE A		FINISH FLOOR ELEVATION; LOT NUMBER; PAD ELEVATION; LOT GRADING TYPE
		PROPOSED WETLAND IMPACTS

GRADING & DRAINAGE 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 conditions exist.
2. For all lots abutting wetlands no grading shall take place beyond the erosion control line unless specifically shown on the approved construction plans.
3. Side yard swales shall be constructed simultaneously with house construction. During the site grading activities, the contractor shall grade the side yards to an elevation no lower than 0.2 ft. below the adjoining house pad grades.
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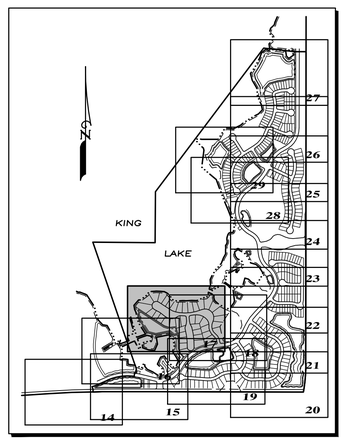

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CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

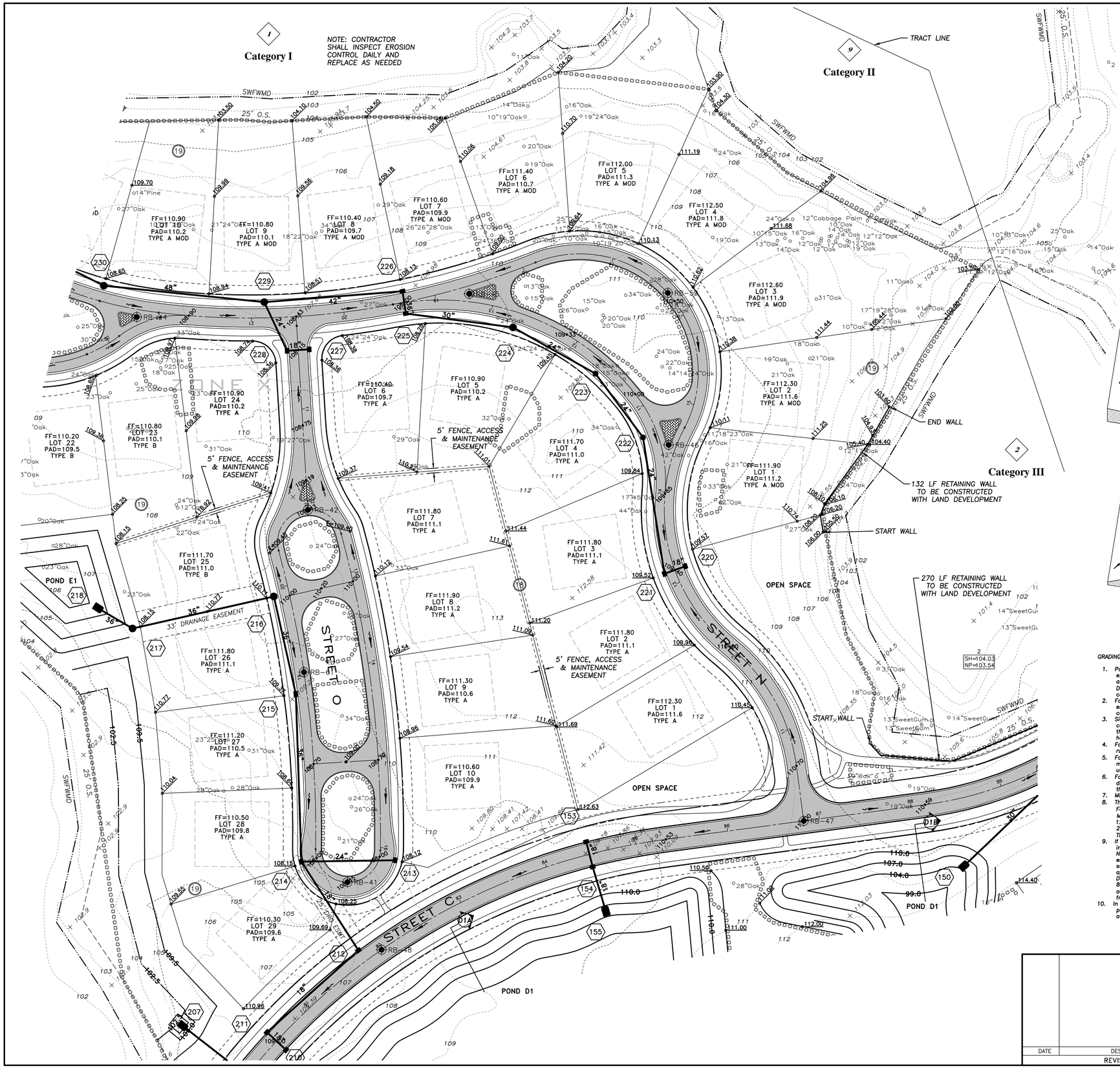
DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

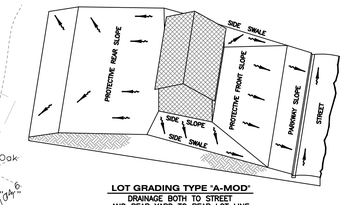
NEIGHBORHOOD GRADING PLAN

EPCO RANCH NORTH
PARCEL A PHASE 1

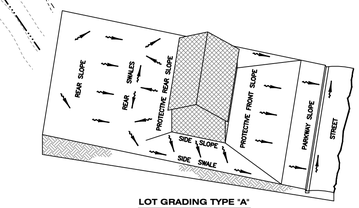
JOB NO.	SPH-EP-009
DESIGN	LAWTON
DRAWN	MIDDLETON
DATE	11/14/2014
FILE	MD04
PREPARED FOR:	STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

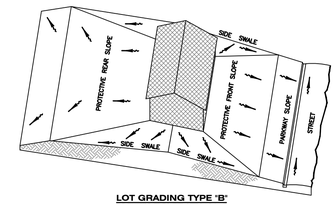




LOT GRADING TYPE 'A-MOD'
DRAINAGE BOTH TO STREET AND REAR YARD TO REAR LOT LINE



LOT GRADING TYPE 'A'
ALL DRAINAGE TO STREET



LOT GRADING TYPE 'B'
DRAINAGE BOTH TO STREET AND TO REAR LOT LINE

N

100 50 0 50 100

SCALE: 1" = 50'

LEGEND

EXISTING	PROPOSED	
		STORM DRAINAGE STRUCTURE
(10)	(10)	STRUCTURE NO.
+15.00	+15.00 OR 15.00	SPOT ELEVATION
15	15.00	CONTOUR
		DIRECTION OF SURFACE FLOW
		STAKED EROSION CONTROL (LIMITS OF FILLING AND CLEARING; REPRESENTS SWFWMD BUFFER WHERE IT IS ADJACENT TO WETLANDS)
		FLOATING TURBIDITY BARRIER
	PB–# (–14)	POND BORING LOCATION (MAX DEPTH OF SUITABLE FILL FROM EXISTING GRADE)
	LB–#	LOT BORING LOCATION
	PS–#	PUMP STATION BORING LOCATION
	RA–#	ROAD AUGER LOCATION
SWFWMD		SWFWMD WETLAND LINE
25' O.S.		25' OFFSET FROM WETLAND LINE (SHOWN FOR INFORMATIONAL PURPOSES)
ZONE A		2014 FEMA FLOOD ZONE BOUNDARY
WETLAND "100"		WETLAND ID*
CATEGORY I		PASCO WETLAND CATEGORY
18.12 Ac.		TOTAL ON–SITE ACREAGE
SH=69.98 NP=N/A		SEASONAL HIGH WATER ELEVATION* *TAKEN FROM CURRENT PROJECT APPROVALS
FF=67.50 LOT 4 PAD=66.80 TYPE A		FINISH FLOOR ELEVATION; LOT NUMBER; PAD ELEVATION; LOT GRADING TYPE
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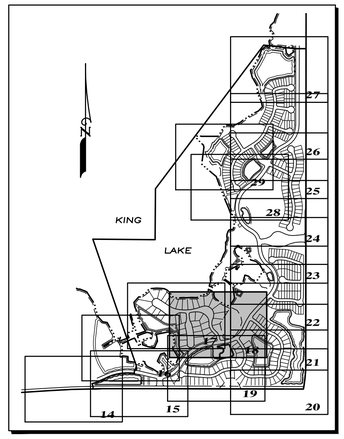

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	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813–223–3919 Fax: 813–223–3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

NEIGHBORHOOD GRADING PLAN

EPCO RANCH NORTH
PARCEL A PHASE 1

JOB NO.	SPH–EP–009
DESIGN	LAWTON
DRAWN	MIDDLETON
DATE	11/14/2014
FILE	MD05
PREPARED FOR:	STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = –0.84 Feet

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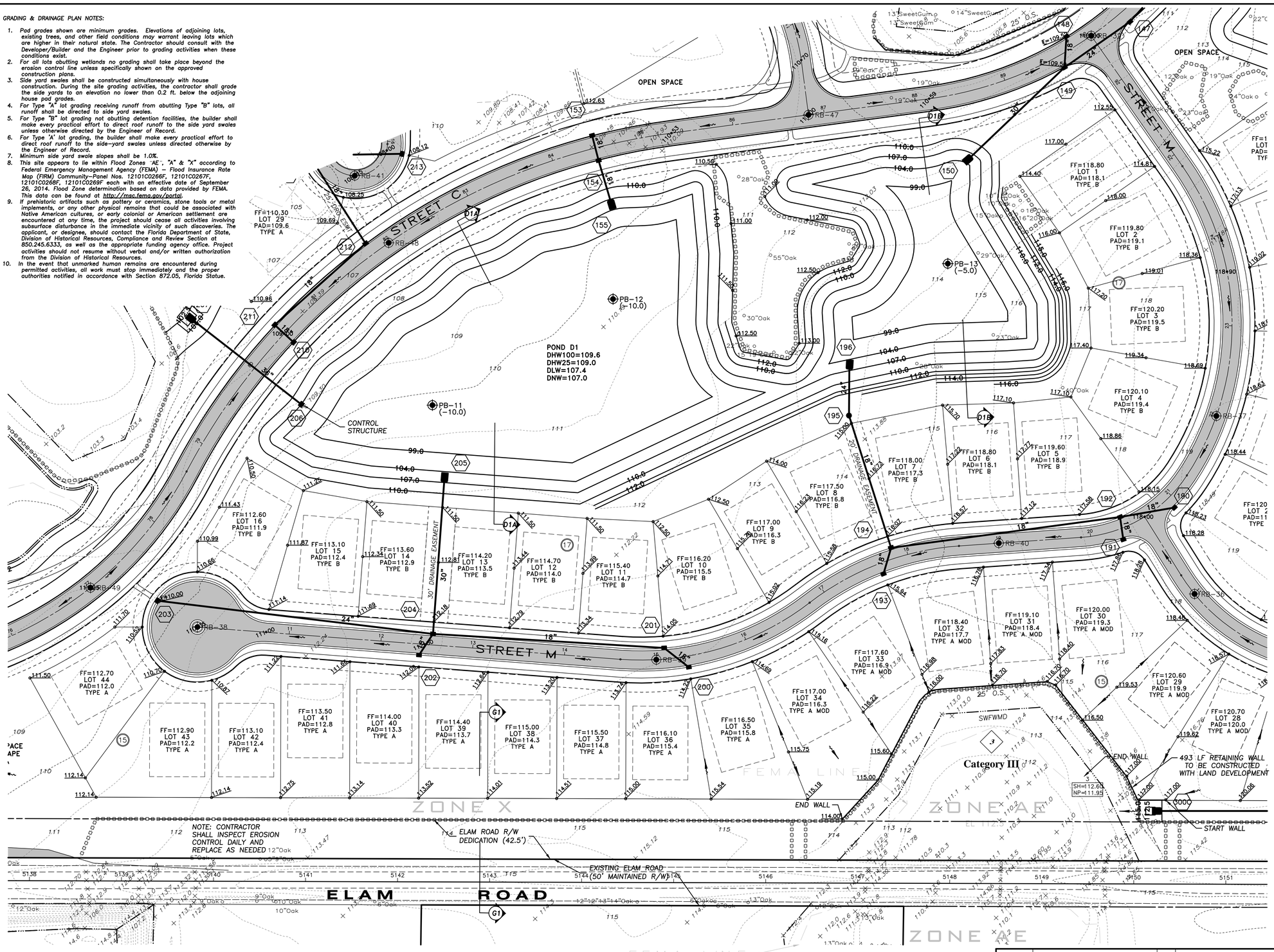
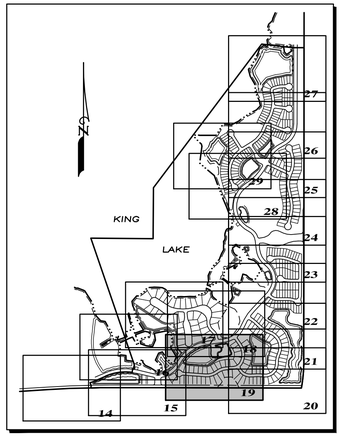


SCALE: 1" = 50'

LEGEND

EXISTING	PROPOSED	
		STORM DRAINAGE STRUCTURE
(10)	(10)	STRUCTURE NO.
+15.00	15.00 OR 15+00	SPOT ELEVATION
15	15.00	CONTOUR
		DIRECTION OF SURFACE FLOW
		STAKED EROSION CONTROL (LIMITS OF FILLING AND CLEARING; REPRESENTS SWFWMD BUFFER WHERE IT IS ADJACENT TO WETLANDS)
		FLOATING TURBIDITY BARRIER
	PB-# (-14)	POND BORING LOCATION (MAX DEPTH OF SUITABLE FILL FROM EXISTING GRADE)
	LB-#	LOT BORING LOCATION
	PS-#	PUMP STATION BORING LOCATION
	RA-#	ROAD AUGER LOCATION
SWFWMD		SWFWMD WETLAND LINE
25' O.S.		25' OFFSET FROM WETLAND LINE (SHOWN FOR INFORMATIONAL PURPOSES)
ZONE A		2014 FEMA FLOOD ZONE BOUNDARY
WETLAND "100"		WETLAND ID*
CATEGORY I		PASCO WETLAND CATEGORY
18.12 Ac.		TOTAL ON-SITE ACREAGE
SH=69.38 NP= N/A		SEASONAL HIGH WATER ELEVATION* *TAKEN FROM CURRENT PROJECT APPROVALS
FF=67.50 LOT 4 PAD=66.80 TYPE A		FINISH FLOOR ELEVATION; LOT NUMBER; PAD ELEVATION; LOT GRADING TYPE
		PROPOSED WETLAND IMPACTS



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CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

NEIGHBORHOOD GRADING PLAN

EPCO RANCH NORTH
PARCEL A PHASE 1

JOB NO.	SPH-EP-009
DESIGN	LAWTON
DRAWN	MIDDLETON
DATE	11/14/2014
FILE	MD06
PREPARED FOR:	STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

POND D2
DHW100=117.6
DHW25=117.3
DLW=116.2
DNW=116.0

POND C2
DHW100=123.0
DHW25=122.8
DLW=120.7
DNW=120.7

POND C3
DHW100=121.4
DHW25=119.3
DLW=118.7
DNW=117.8

STREET L

25' DRAINAGE EASEMENT

156LF SPILL WEIRS
(ELEV. 122.7)

CONTROL STRUCTURE

NOTE: CONTRACTOR SHALL INSPECT EROSION CONTROL DAILY AND REPLACE AS NEEDED

ELAM ROAD

FEMA LINE

SCALE: 1" = 50'

LEGEND

EXISTING	PROPOSED	
		STORM DRAINAGE STRUCTURE
(10)	(10)	STRUCTURE NO.
+15.00	15.00 OR 15+00	SPOT ELEVATION
15	15.00	CONTOUR
		DIRECTION OF SURFACE FLOW
		STAKED EROSION CONTROL (LIMITS OF FILLING AND CLEARING; REPRESENTS SWFWMD BUFFER WHERE IT IS ADJACENT TO WETLANDS)
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	PB-# (-14)	POND BORING LOCATION (MAX DEPTH OF SUITABLE FILL FROM EXISTING GRADE)
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	PS-#	PUMP STATION BORING LOCATION
	RA-#	ROAD AUGER LOCATION
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18.12 Ac.		TOTAL ON-SITE ACREAGE
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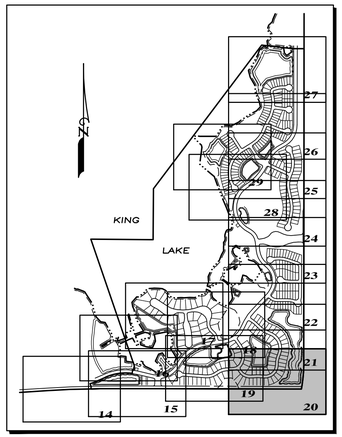

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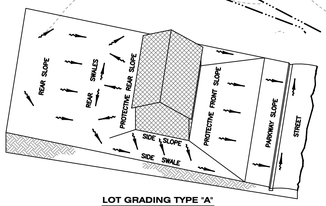
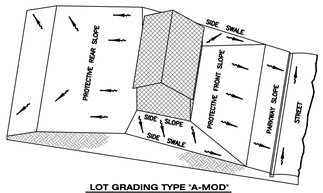
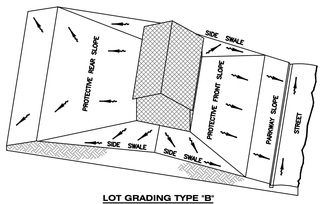


LOT GRADING TYPE "A"
ALL DRAINAGE TO STREET



LOT GRADING TYPE "A-MOD"
DRAINAGE BOTH TO STREET
AND REAR YARD TO REAR LOT LINE



LOT GRADING TYPE "B"
DRAINAGE BOTH TO STREET
AND TO REAR LOT LINE

GRADING & DRAINAGE PLAN NOTES:

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NEIGHBORHOOD GRADING PLAN

EPCO RANCH NORTH
PARCEL A PHASE 1

JOB NO. SPH-EP-009	
DESIGN LAWTON	
DRAWN MIDDLETON	PREPARED FOR: STANDARD PACIFIC OF FLORIDA
DATE 11/14/2014	Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 = -0.84 Feet
FILE MD07	SHEET 20 OF 98 SHEETS

Category III

270 LF RETAINING WALL TO BE CONSTRUCTED WITH LAND DEVELOPMENT

NOTE: CONTRACTOR SHALL INSPECT EROSION CONTROL DAILY AND REPLACE AS NEEDED

POND C1
DHW100=124.1
DHW25=123.9
DLW=122.0
DNW=122.0

POND D2
DHW100=117.6
DHW25=117.3
DLW=116.2
DNW=116.0

POND C2
DHW100=123.0
DHW25=122.8
DLW=120.7
DNW=120.7

117LF SPILL WEIRS (ELEV. 123.7)

CONTROL STRUCTURE

STREET M

STREET L

CURLEY ROAD

ZONE X

FEMA LINE

OPEN SPACE

SWFWMD

25' O.S.

33' DRAINAGE EASEMENT

25' DRAINAGE EASEMENT

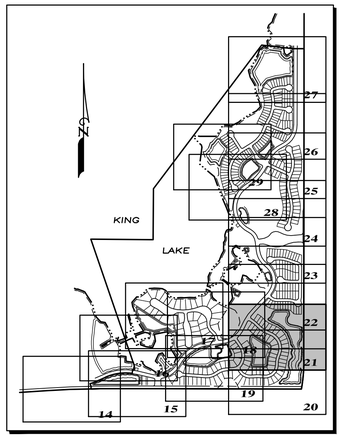
32' DRAINAGE EASEMENT

END WALL

SCALE: 1" = 50'

LEGEND

EXISTING	PROPOSED	
		STORM DRAINAGE STRUCTURE
(10)	(10)	STRUCTURE NO.
+15.00	15.00 OR 15+00	SPOT ELEVATION
15	15.00	CONTOUR
		DIRECTION OF SURFACE FLOW
		STAKED EROSION CONTROL (LIMITS OF FILLING AND CLEARING; REPRESENTS SWFWMD BUFFER WHERE IT IS ADJACENT TO WETLANDS)
		FLOATING TURBIDITY BARRIER
	PB–# (–14)	POND BORING LOCATION (MAX DEPTH OF SUITABLE FILL FROM EXISTING GRADE)
	LB–#	LOT BORING LOCATION
	PS–#	PUMP STATION BORING LOCATION
	RA–#	ROAD AUGER LOCATION
SWFWMD		SWFWMD WETLAND LINE
25' O.S.		25' OFFSET FROM WETLAND LINE (SHOWN FOR INFORMATIONAL PURPOSES)
ZONE A		2014 FEMA FLOOD ZONE BOUNDARY
WETLAND "100"		WETLAND ID*
CATEGORY I		PASCO WETLAND CATEGORY
18.12 Ac.		TOTAL ON–SITE ACREAGE
SH=69.98 NP= N/A		SEASONAL HIGH WATER ELEVATION* *TAKEN FROM CURRENT PROJECT APPROVALS
FF=67.50 LOT 4 PAD=66.80 TYPE A		FINISH FLOOR ELEVATION; LOT NUMBER; PAD ELEVATION; LOT GRADING TYPE
		PROPOSED WETLAND IMPACTS



INDEX TO MAP COVERAGE
Not To Scale

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813–223–3919 Fax: 813–223–3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

NEIGHBORHOOD GRADING PLAN

EPCO RANCH NORTH
PARCEL A PHASE 1

JOB NO.	SPH–EP–009
DESIGN	LAWTON
DRAWN	MIDDLETON
DATE	11/14/2014
FILE	MD08
PREPARED FOR:	STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = –0.84 Feet

SHEET 21 OF 98 SHEETS

NOTE: CONTRACTOR SHALL INSPECT EROSION CONTROL DAILY AND REPLACE AS NEEDED

SCALE: 1" = 50'

LEGEND

EXISTING	PROPOSED	
		STORM DRAINAGE STRUCTURE
(10)	(10)	STRUCTURE NO.
+15.00	15.00 OR 15+00	SPOT ELEVATION
15	15.00	CONTOUR
		DIRECTION OF SURFACE FLOW
		STAKED EROSION CONTROL (LIMITS OF FILLING AND CLEARING; REPRESENTS SWFWMD BUFFER WHERE IT IS ADJACENT TO WETLANDS)
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SH=69.98 NP= N/A		SEASONAL HIGH WATER ELEVATION*
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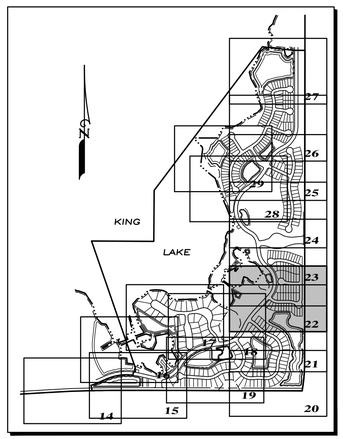
FF=67.50 LOT 4 PAD=66.80 TYPE A		FINISH FLOOR ELEVATION / LOT NUMBER / PAD ELEVATION / LOT GRADING TYPE
		PROPOSED WETLAND IMPACTS



INDEX TO MAP COVERAGE
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GRADING & DRAINAGE 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 conditions exist.
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9. If prehistoric artifacts such as pottery or ceramics, stone tools or metal implements, or any other physical remains that could be associated with Native American cultures, or early colonial or American settlement are encountered at any time, the project should cease all activities involving subsurface disturbance in the immediate vicinity of such discoveries. The applicant, or designee, should contact the Florida Department of State, Division of Historical Resources, Compliance and Review Section at 850.245.6333, as well as the appropriate funding agency office. Project activities should not resume without verbal and/or written authorization from the Division of Historical Resources.
10. In the event that unmarked human remains are encountered during permitted activities, all work must stop immediately and the proper authorities notified in accordance with Section 872.05, Florida Statue.

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813–223–3919 Fax: 813–223–3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

NEIGHBORHOOD GRADING PLAN

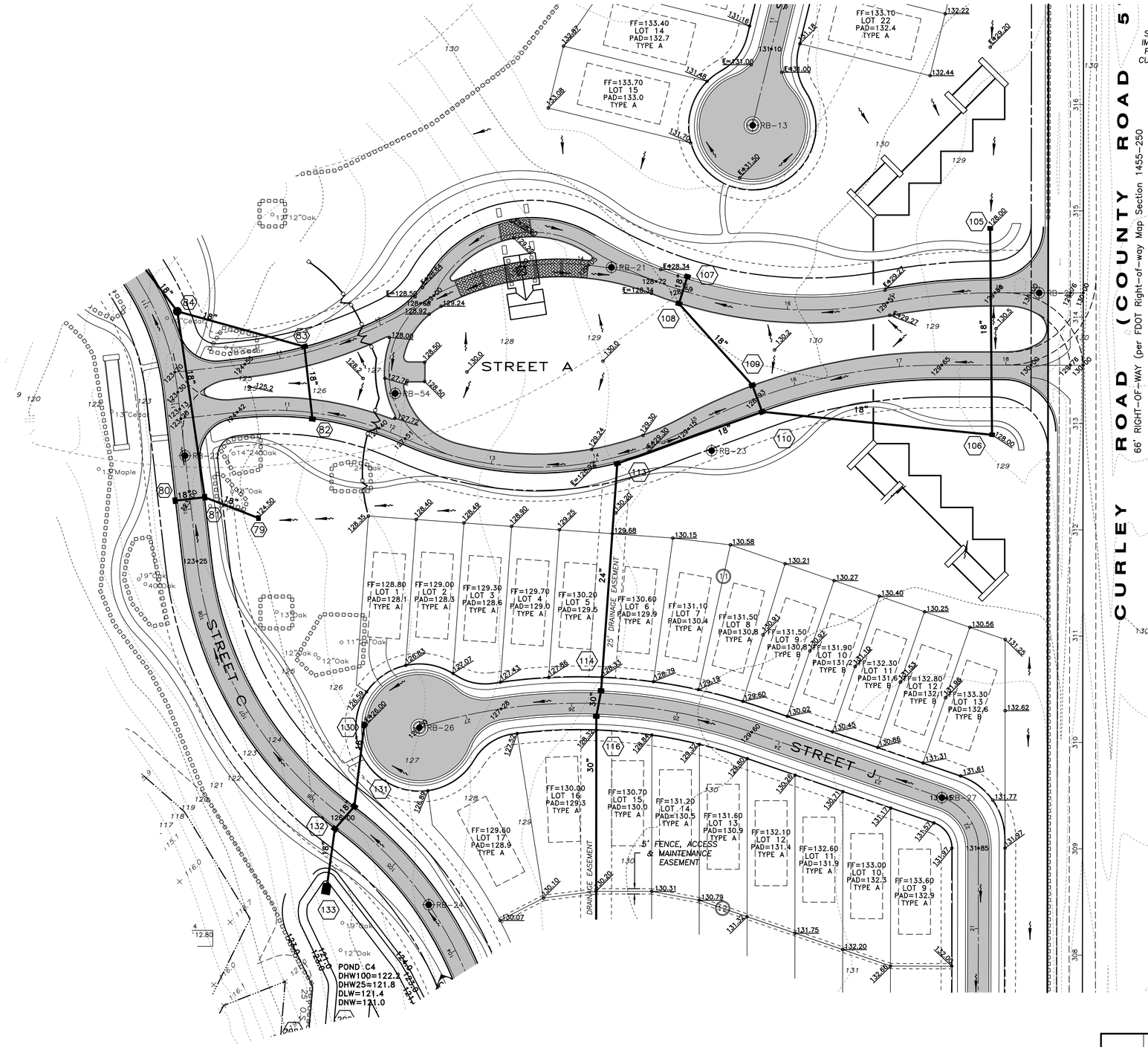
EPCO RANCH NORTH
PARCEL A PHASE 1

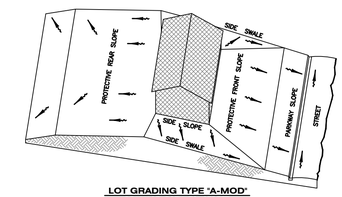
JOB NO.	SPH–EP–009
DESIGN	LAWTON
DRAWN	MIDDLETON
DATE	11/14/2014
FILE	MD09
PREPARED FOR:	STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 =–0.84 Feet

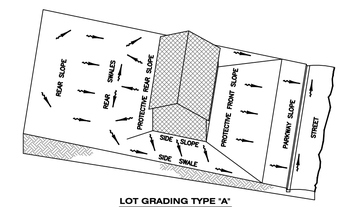
NOTE: CONTRACTOR SHALL INSPECT EROSION CONTROL DAILY AND REPLACE AS NEEDED

SEE INTERSECTION IMPROVEMENT PLAN FOR WORK WITHIN CURLEY ROAD R.O.W.

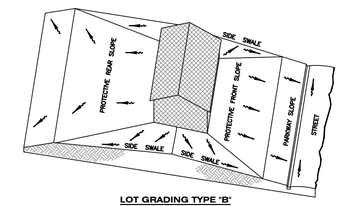




LOT GRADING TYPE 'A-MOD'
DRAINAGE BOTH TO STREET AND REAR YARD TO REAR LOT LINE



LOT GRADING TYPE 'A'
ALL DRAINAGE TO STREET



LOT GRADING TYPE 'B'
DRAINAGE BOTH TO STREET AND TO REAR LOT LINE

N

100 50 0 50 100

SCALE: 1" = 50'

LEGEND

EXISTING	PROPOSED	
		STORM DRAINAGE STRUCTURE
(10)	(10)	STRUCTURE NO.
+15.00	15.00 OR 15+00	SPOT ELEVATION
15	15.00	CONTOUR
		DIRECTION OF SURFACE FLOW
		STAKED EROSION CONTROL (LIMITS OF FILLING AND CLEARING; REPRESENTS SWFWMD BUFFER WHERE IT IS ADJACENT TO WETLANDS)
		FLOATING TURBIDITY BARRIER
	PB-# (-14)	POND BORING LOCATION (MAX DEPTH OF SUITABLE FILL FROM EXISTING GRADE)
	LB-#	LOT BORING LOCATION
	PS-#	PUMP STATION BORING LOCATION
	RA-#	ROAD AUGER LOCATION
SWFWMD		SWFWMD WETLAND LINE
25' O.S.		25' OFFSET FROM WETLAND LINE (SHOWN FOR INFORMATIONAL PURPOSES)
ZONE A		2014 FEMA FLOOD ZONE BOUNDARY
WETLAND "100"		WETLAND ID*
CATEGORY 1		PASCO WETLAND CATEGORY
18.12 Ac.		TOTAL ON-SITE ACREAGE
SH=69.98 NP=N/A		SEASONAL HIGH WATER ELEVATION* *TAKEN FROM CURRENT PROJECT APPROVALS
FF=67.50 LOT 4 PAD=66.80 TYPE A		FINISH FLOOR ELEVATION; LOT NUMBER; PAD ELEVATION; LOT GRADING TYPE
		PROPOSED WETLAND IMPACTS

GRADING & DRAINAGE PLAN NOTES:

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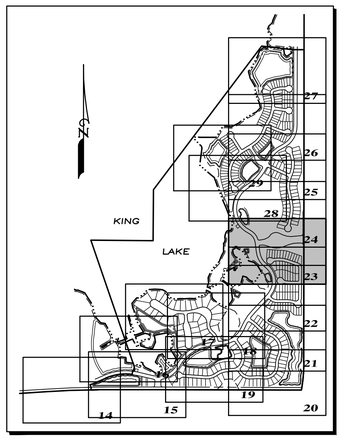

INDEX TO MAP COVERAGE
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DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

NEIGHBORHOOD GRADING PLAN

EPCO RANCH NORTH
PARCEL A PHASE 1

JOB NO. SPH-EP-009	
DESIGN LAWTON	
DRAWN MIDDLETON	PREPARED FOR: STANDARD PACIFIC OF FLORIDA
DATE 11/14/2014	Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 =-0.84Feet
FILE MD10	SHEET 23 OF 98 SHEETS

NOTE: CONTRACTOR SHALL INSPECT EROSION CONTROL DAILY AND REPLACE AS NEEDED

N

100 50 0 50 100

SCALE: 1" = 50'

LEGEND

EXISTING	PROPOSED	
		STORM DRAINAGE STRUCTURE
(10)	(10)	STRUCTURE NO.
+15.00	+15.00 OR 15+00	SPOT ELEVATION
15	15.00	CONTOUR
		DIRECTION OF SURFACE FLOW
		STAKED EROSION CONTROL (LIMITS OF FILLING AND CLEARING; REPRESENTS SWFWMD BUFFER WHERE IT IS ADJACENT TO WETLANDS)
		FLOATING TURBIDITY BARRIER
	PB-# (-14)	POND BORING LOCATION (MAX DEPTH OF SUITABLE FILL FROM EXISTING GRADE)
	LB-#	LOT BORING LOCATION
	PS-#	PUMP STATION BORING LOCATION
	RA-#	ROAD AUGER LOCATION
SWFWMD		SWFWMD WETLAND LINE
25' O.S.		25' OFFSET FROM WETLAND LINE (SHOWN FOR INFORMATIONAL PURPOSES)
ZONE A		2014 FEMA FLOOD ZONE BOUNDARY
WETLAND "100"		WETLAND ID*
CATEGORY I		PASCO WETLAND CATEGORY
18.12 Ac.		TOTAL ON-SITE ACREAGE
SH=69.98 NP= N/A		SEASONAL HIGH WATER ELEVATION* *TAKEN FROM CURRENT PROJECT APPROVALS
FF=67.50 LOT 4 PAD=66.80 TYPE A		FINISH FLOOR ELEVATION; LOT NUMBER; PAD ELEVATION; LOT GRADING TYPE
		PROPOSED WETLAND IMPACTS

NOTE: CONTRACTOR SHALL REMOVE ALL EXISTING ONSITE RECLAIMED METER ASSEMBLIES, SPRAY FIELD LINES AND HEADS

(COUNTY ROAD 577) CURLEY ROAD

FDOT Right-of-way Map Section 1455-250

STREET 1

STREET A

ZONE X

25' DRAINAGE EASEMENT

330' RADIUS EAGLE BUFFER PER FWC EAGLE DISTURBANCE PERMIT NO. LSED-10-00230

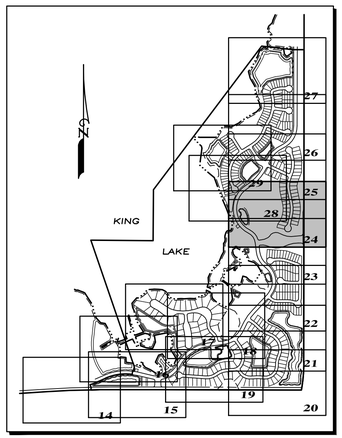
660' RADIUS EAGLE BUFFER PER FWC EAGLE DISTURBANCE PERMIT NO. LSED-10-00230

330' RADIUS EAGLE BUFFER AREA PER PERMITTING AGENCY

PUMP STATION 2

SWFWMD 25' O.S.

NOTE: CONTRACTOR SHALL INSPECT EROSION CONTROL DAILY AND REPLACE AS NEEDED



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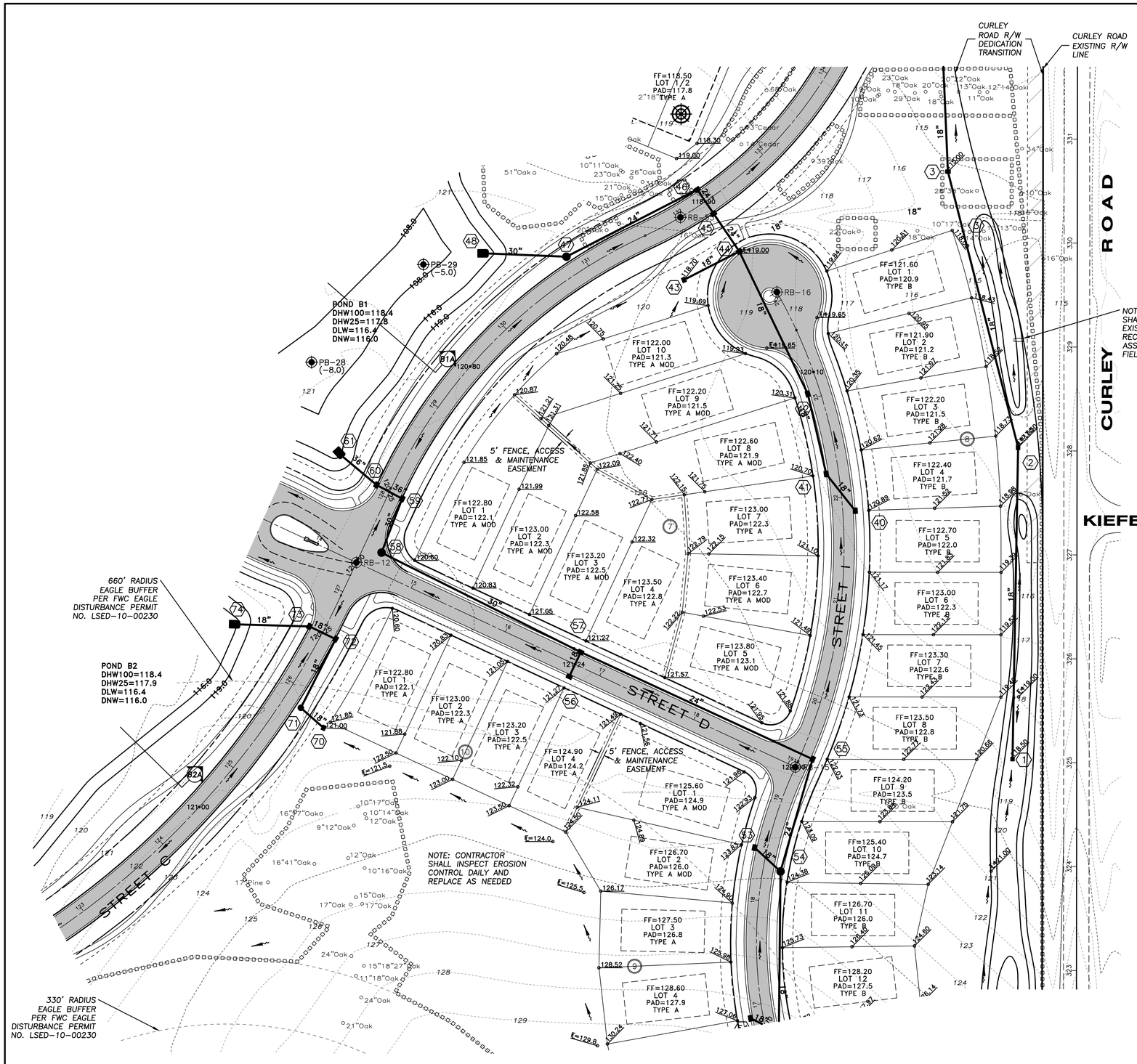
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

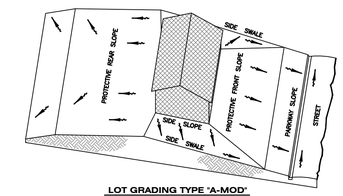
DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

NEIGHBORHOOD GRADING PLAN

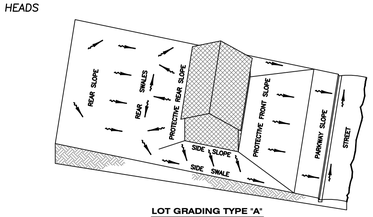
EPCO RANCH NORTH
PARCEL A PHASE 1

JOB NO.	SPH-EP-009
DESIGN	LAWTON
DRAWN	MIDDLETON
PREPARED FOR:	STANDARD PACIFIC OF FLORIDA
DATE	11/14/2014
	Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 = -0.84 Feet
FILE	MD11

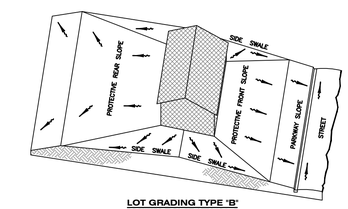




LOT GRADING TYPE 'A-MOD'
DRAINAGE BOTH TO STREET AND REAR YARD TO REAR LOT LINE



LOT GRADING TYPE 'A'
ALL DRAINAGE TO STREET



LOT GRADING TYPE 'B'
DRAINAGE BOTH TO STREET AND TO REAR LOT LINE

N

100 50 0 50 100

SCALE: 1" = 50'

LEGEND

EXISTING	PROPOSED	
		STORM DRAINAGE STRUCTURE
(10)	(10)	STRUCTURE NO.
+15.00	15.00 OR 15+00	SPOT ELEVATION
15	15.00	CONTOUR
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SH=69.98 NP= N/A		SEASONAL HIGH WATER ELEVATION*

*TAKEN FROM CURRENT PROJECT APPROVALS

FF=67.50	FINISH FLOOR ELEVATION
LOT 4	LOT NUMBER
PAD=66.80	PAD ELEVATION
TYPE A	LOT GRADING TYPE

PROPOSED WETLAND IMPACTS

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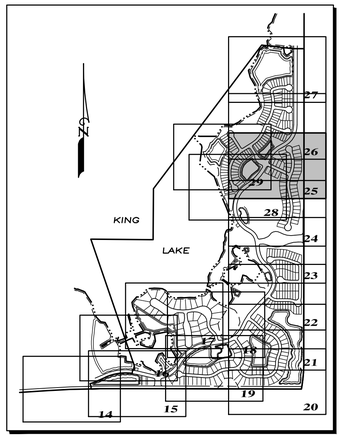

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Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

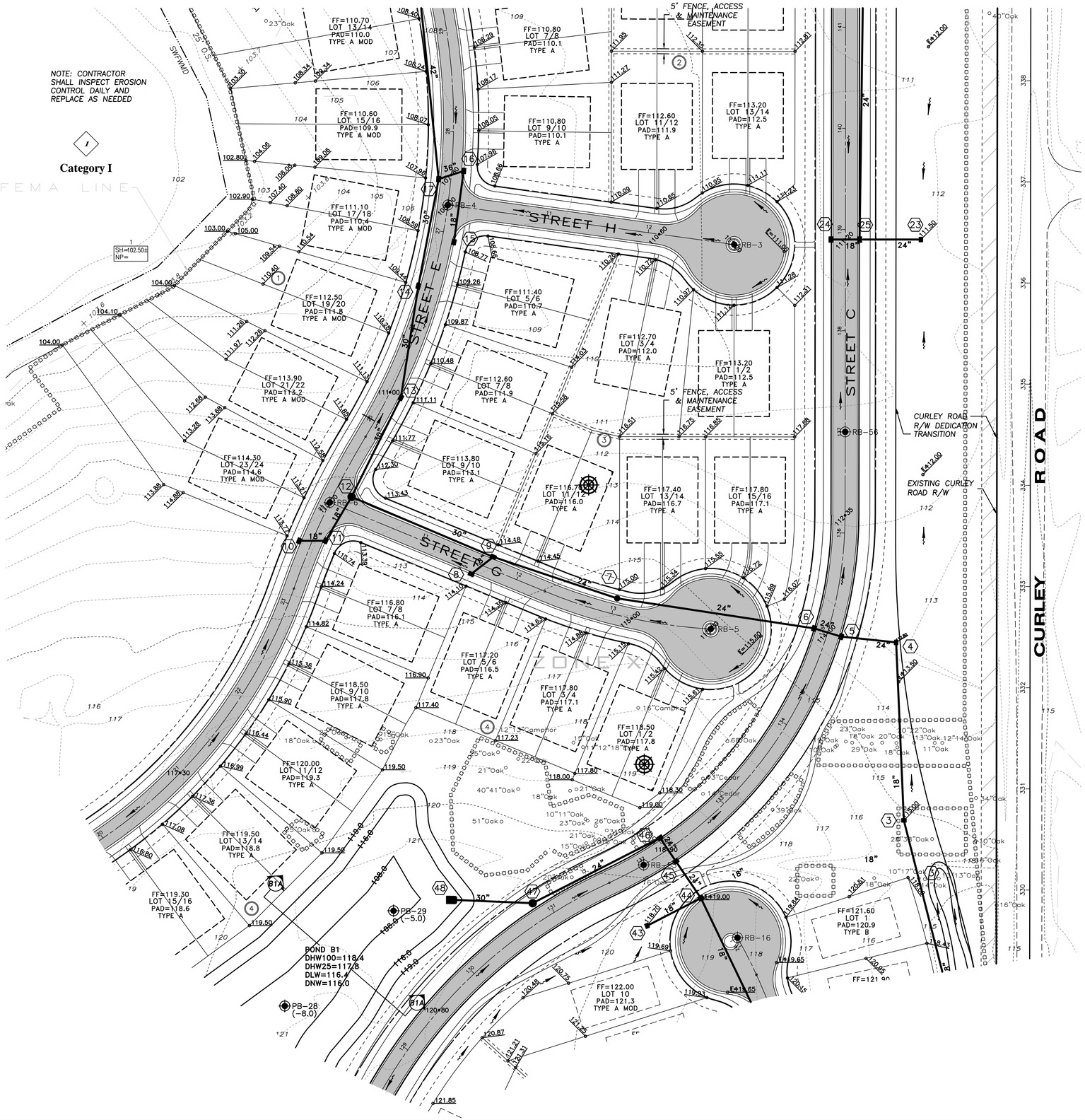
DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

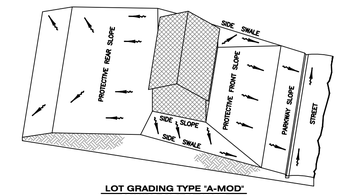
NEIGHBORHOOD GRADING PLAN

EPCO RANCH NORTH
PARCEL A PHASE 1

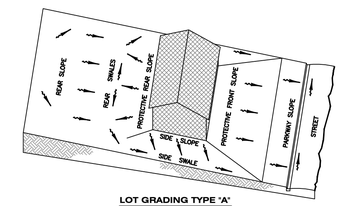
JOB NO.	SPH-EP-009
DESIGN	LAWTON
DRAWN	MIDDLETON
DATE	11/14/2014
FILE	MD12
PREPARED FOR:	STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

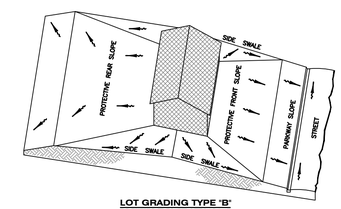




LOT GRADING TYPE 'A-MOD'
DRAINAGE BOTH TO STREET AND REAR YARD TO REAR LOT LINE



LOT GRADING TYPE 'A'
ALL DRAINAGE TO STREET



LOT GRADING TYPE 'B'
DRAINAGE BOTH TO STREET AND TO REAR LOT LINE

N

100 50 0 50 100

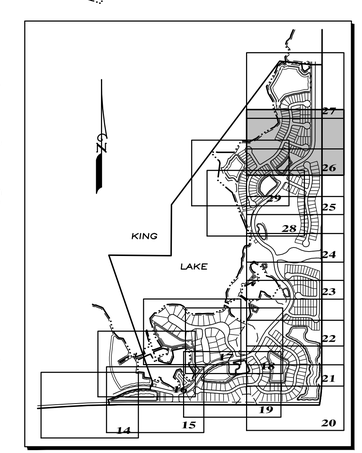
SCALE: 1" = 50'

LEGEND

EXISTING	PROPOSED	
		STORM DRAINAGE STRUCTURE
(10)	(10)	STRUCTURE NO.
+15.00	15.00 OR 15.00	SPOT ELEVATION
15	15.00	CONTOUR
		DIRECTION OF SURFACE FLOW
		STAKED EROSION CONTROL (LIMITS OF FILLING AND CLEARING; REPRESENTS SWFWMD BUFFER WHERE IT IS ADJACENT TO WETLANDS)
		FLOATING TURBIDITY BARRIER
	PB-# (-14)	POND BORING LOCATION (MAX DEPTH OF SUITABLE FILL FROM EXISTING GRADE)
	LB-#	LOT BORING LOCATION
	PS-#	PUMP STATION BORING LOCATION
	RA-#	ROAD AUGER LOCATION
SWFWMD		SWFWMD WETLAND LINE
25' O.S.		25' OFFSET FROM WETLAND LINE (SHOWN FOR INFORMATIONAL PURPOSES)
ZONE A		2014 FEMA FLOOD ZONE BOUNDARY
WETLAND "100"		WETLAND ID*
CATEGORY I		PASCO WETLAND CATEGORY
18.12 Ac.		TOTAL ON-SITE ACREAGE
SH=69.98 NP= N/A		SEASONAL HIGH WATER ELEVATION* *TAKEN FROM CURRENT PROJECT APPROVALS
FF=67.50 LOT 4 PAD=66.80 TYPE A		FINISH FLOOR ELEVATION; LOT NUMBER; PAD ELEVATION; LOT GRADING TYPE
		PROPOSED WETLAND IMPACTS

GRADING & DRAINAGE 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 conditions exist.*
2. *For all lots abutting wetlands no grading shall take place beyond the erosion control line unless specifically shown on the approved construction plans.*
3. *Side yard swales shall be constructed simultaneously with house construction. During the site grading activities, the contractor shall grade the side yards to an elevation no lower than 0.2 ft. below the adjoining house pad grades.*
4. *For Type "A" lot grading receiving runoff from abutting Type "B" lots, all runoff shall be directed to side yard swales.*
5. *For Type "B" lot grading not abutting detention facilities, the builder shall make every practical effort to direct roof runoff to the side yard swales unless otherwise directed by the Engineer of Record.*
6. *For Type 'A' lot grading, the builder shall make every practical effort to direct roof runoff to the side-yard swales unless directed otherwise by the Engineer of Record.*
7. *Minimum side yard swale slopes shall be 1.0%.*
8. *This site appears to lie within Flood Zones "AE", "A" & "X" according to Federal Emergency Management Agency (FEMA) – Flood Insurance Rate Map (FIRM) Community-Panel Nos. 12101C0266F, 12101C0267F, 12101C0268F, 12101C0269F each with an effective date of September 26, 2014. Flood Zone determination based on data provided by FEMA. This data can be found at http://msc.fema.gov/portal.*
9. *If prehistoric artifacts such as pottery or ceramics, stone tools or metal implements, or any other physical remains that could be associated with Native American cultures, or early colonial or American settlement are encountered at any time, the project should cease all activities involving subsurface disturbance in the immediate vicinity of such discoveries. The applicant, or designee, should contact the Florida Department of State, Division of Historical Resources, Compliance and Review Section at 850.245.6333, as well as the appropriate funding agency office. Project activities should not resume without verbal and/or written authorization from the Division of Historical Resources.*
10. *In the event that unmarked human remains are encountered during permitted activities, all work must stop immediately and the proper authorities notified in accordance with Section 872.05, Florida Statue.*



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DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

NEIGHBORHOOD GRADING PLAN

EPCO RANCH NORTH
PARCEL A PHASE 1

JOB NO.	SPH-EP-009
DESIGN	LAWTON
DRAWN	MIDDLETON
DATE	11/14/2014
FILE	MD13
PREPARED FOR:	STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

Category I

Category III

NOTE: CONTRACTOR SHALL INSPECT EROSION CONTROL DAILY AND REPLACE AS NEEDED

CONTROL STRUCTURE

POND A2
DHW100=106.2
DHW25=105.7
DLW=104.4
DNW=104.2

EXISTING CURLEY ROAD R/W

CURLEY ROAD R/W DEDICATION (100')

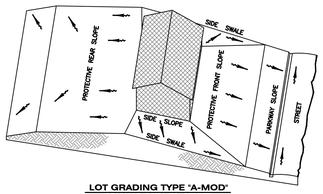
33' DRAINAGE EASEMENT

5' FENCE, ACCESS & MAINTENANCE EASEMENT

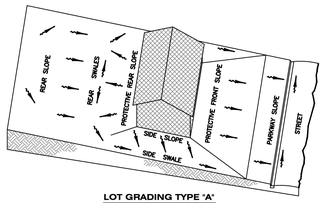
STREET C

CURLEY ROAD

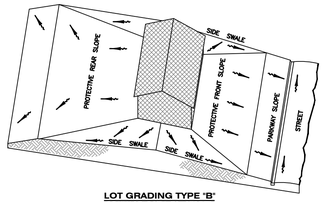
FEMA LINE



LOT GRADING TYPE 'A-MOD'
DRAINAGE BOTH TO STREET AND REAR YARD TO REAR LOT LINE



LOT GRADING TYPE 'A'
ALL DRAINAGE TO STREET



LOT GRADING TYPE 'B'
DRAINAGE BOTH TO STREET AND TO REAR LOT LINE

SCALE: 1" = 50'

LEGEND

EXISTING	PROPOSED	
		STORM DRAINAGE STRUCTURE
(10)	(10)	STRUCTURE NO.
+15.00	+15.00 OR 15+00	SPOT ELEVATION
15	15.00	CONTOUR
		DIRECTION OF SURFACE FLOW
		STAKED EROSION CONTROL (LIMITS OF FILLING AND CLEARING; REPRESENTS SWFWMD BUFFER WHERE IT IS ADJACENT TO WETLANDS)
		FLOATING TURBIDITY BARRIER
	PB–# (–14)	POND BORING LOCATION (MAX DEPTH OF SUITABLE FILL FROM EXISTING GRADE)
	LB–#	LOT BORING LOCATION
	PS–#	PUMP STATION BORING LOCATION
	RA–#	ROAD AUGER LOCATION
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25' O.S.		25' OFFSET FROM WETLAND LINE (SHOWN FOR INFORMATIONAL PURPOSES)
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WETLAND "100"		WETLAND ID*
CATEGORY I		PASCO WETLAND CATEGORY
18.12 Ac.		TOTAL ON-SITE ACREAGE
SH=69.98 NP= N/A		SEASONAL HIGH WATER ELEVATION*
		*TAKEN FROM CURRENT PROJECT APPROVALS
FF=67.50 LOT 4 PAD=66.80 TYPE A		FINISH FLOOR ELEVATION; LOT NUMBER; PAD ELEVATION; LOT GRADING TYPE
		PROPOSED WETLAND IMPACTS

GRADING & DRAINAGE 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 conditions exist.
2. For all lots abutting wetlands no grading shall take place beyond the erosion control line unless specifically shown on the approved construction plans.
3. Side yard swales shall be constructed simultaneously with house construction. During the site grading activities, the contractor shall grade the side yards to an elevation no lower than 0.2 ft. below the adjoining house pad grades.
4. 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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7. Minimum side yard swale slopes shall be 1.0%.
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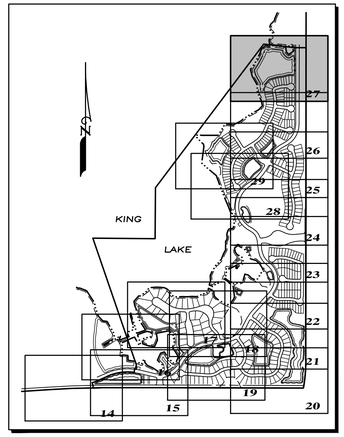

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Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813–223–3919 Fax: 813–223–3975

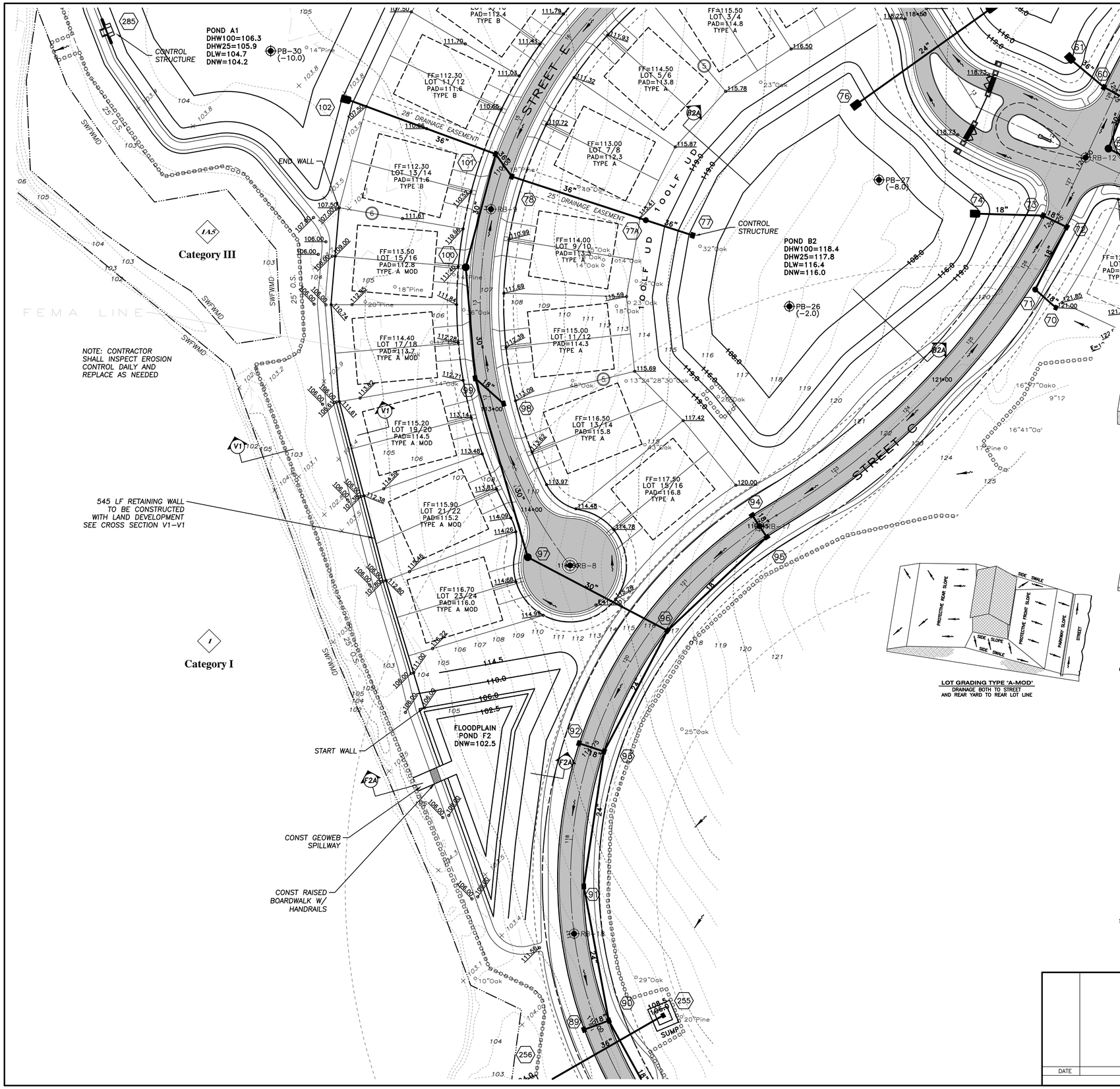
DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

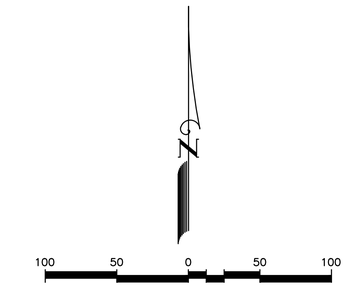
NEIGHBORHOOD GRADING PLAN

EPCO RANCH NORTH
PARCEL A PHASE I

JOB NO.	SPH–EP–009
DESIGN	LAWTON
DRAWN	MIDDLETON
DATE	11/14/2014
FILE	MD14
PREPARED FOR:	STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 =–0.84Feet





LEGEND

EXISTING	PROPOSED	
		STORM DRAINAGE STRUCTURE
10	10	STRUCTURE NO.
+15.00	15.00 OR 15+00	SPOT ELEVATION
15	15.00	CONTOUR
		DIRECTION OF SURFACE FLOW
		STAKED EROSION CONTROL (LIMITS OF FILLING AND CLEARING; REPRESENTS SWFWMD BUFFER WHERE IT IS ADJACENT TO WETLANDS)
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18.12 Ac.		TOTAL ON-SITE ACREAGE
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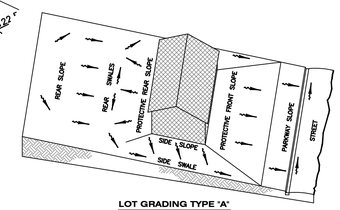
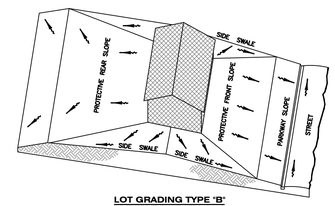


LOT GRADING TYPE 'A'
ALL DRAINAGE TO STREET



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DRAINAGE BOTH TO STREET AND TO REAR LOT LINE

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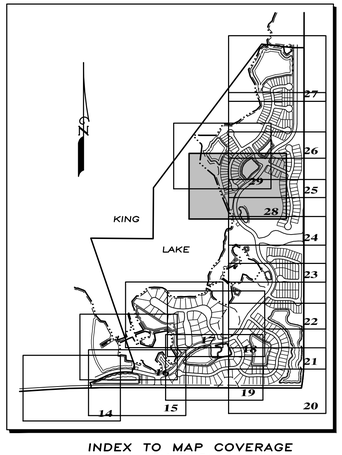

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DATE:
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FLORIDA PROFESSIONAL ENGINEER

NEIGHBORHOOD GRADING PLAN

EPCO RANCH NORTH
PARCEL A PHASE 1

JOB NO.	SPH-EP-009
DESIGN	LAWTON
DRAWN	MIDDLETON
DATE	11/14/2014
FILE	MD15
PREPARED FOR:	STANDARD PACIFIC OF FLORIDA

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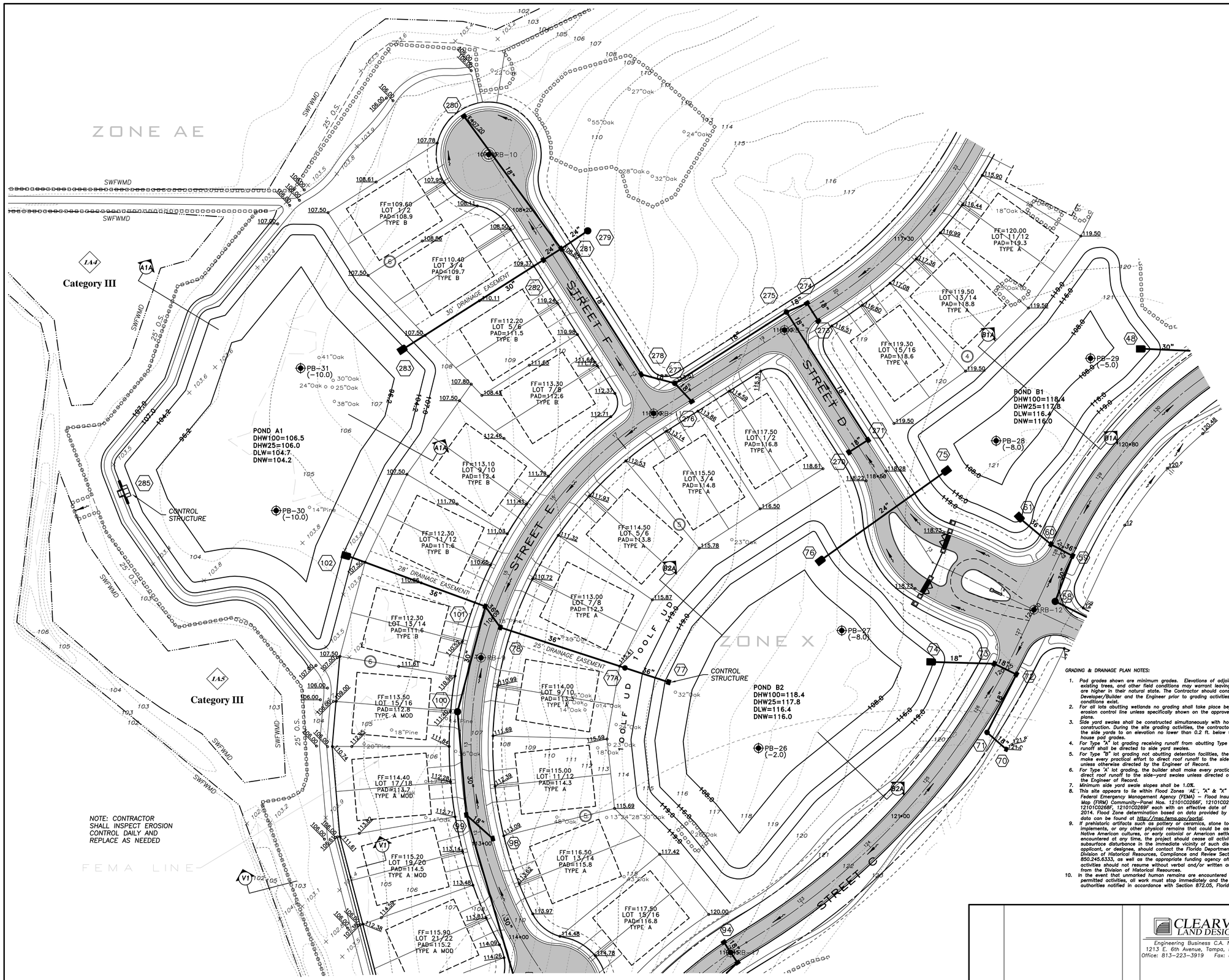

N

100 50 0 50 100

SCALE: 1" = 50'

LEGEND

EXISTING	PROPOSED	
		STORM DRAINAGE STRUCTURE
(10)	(10)	STRUCTURE NO.
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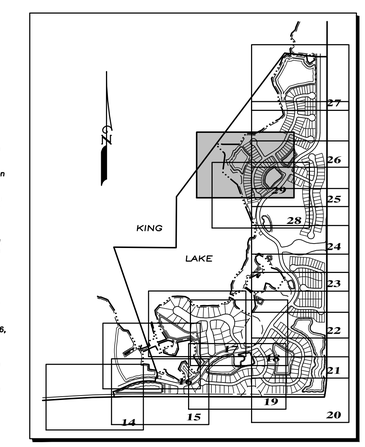

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DESIGN LAWTON

DRAWN MIDDLETON

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

DATE 11/14/2014

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 =-0.84Feet

FILE MD16

STORM STRUCTURE DATA

STRUCTURE			LINE							STRUCTURE LOCATION & REMARKS
NO.	TYPE & SIZE	TOP ELEV.	TYPE	DIAM. IN.	LENGTH FEET	SLOPE %	INVERT ELEV. UPPER END	INVERT ELEV. LOWER END	FALL IN FEET	
1	GTI TYPE C	118.50	RCP	18	300	0.50	113.50	112.00	1.50	FDOT INDEX NO. 232
2	GTI TYPE C	117.50	RCP	18	273	0.55	112.00	110.50	1.50	FDOT INDEX NO. 232
3	GTI TYPE C	115.00	RCP	18	176	0.28	110.50	110.00	0.50	FDOT INDEX NO. 232
4	GTI TYPE C	112.80	RCP	24	54	0.93	109.50	109.00	0.50	FDOT INDEX NO. 232
5	FDOT TYPE 9 CI	113.52	RCP	24	28	0.36	109.00	108.90	0.10	MODIFIED FDOT INDEX NO. 214
6	FDOT TYPE 9 CI	113.52	RCP	24	196	0.20	108.90	108.50	0.40	MODIFIED FDOT INDEX NO. 214
7	MH	114.90	RCP	24	129	0.16	108.50	108.30	0.20	FDOT INDEX NOS. 200, 201
9										
8	FDOT TYPE 9 CI	113.58	RCP	18	27	0.37	109.50	109.40	0.10	MODIFIED FDOT INDEX NO. 214
9	FDOT TYPE 9 CI	113.66	RCP	30	152	0.33	108.30	107.80	0.50	MODIFIED FDOT INDEX NO. 214
12										
10	FDOT TYPE 9 CI	113.26	RCP	18	26	0.39	109.20	109.10	0.10	MODIFIED FDOT INDEX NO. 214
11	FDOT TYPE 9 CI	113.11	RCP	18	50	0.80	109.10	108.70	0.40	MODIFIED FDOT INDEX NO. 214
12	MH	112.80	RCP	30	109	1.93	107.70	105.60	2.10	FDOT INDEX NOS. 200, 201
13	FDOT TYPE 9 CI	110.60	RCP	30	111	1.53	105.60	103.90	1.70	MODIFIED FDOT INDEX NO. 214
14	FDOT TYPE 9 CI	108.92	RCP	30	107	1.40	103.90	102.40	1.50	MODIFIED FDOT INDEX NO. 214
17						0.18				
15	FDOT TYPE 9 CI	108.10	RCP	18	71	0.85	104.00	103.40	0.60	MODIFIED FDOT INDEX NO. 214
16	FDOT TYPE 9 CI	107.40	RCP	36	26	0.39	101.90	101.80	0.10	TYPE 'J' STRUCTURE BOTTOM MODIFIED FDOT INDEX NO. 214
17	FDOT TYPE 9 CI	107.40	RCP	42	202	0.10	101.30	101.10	0.20	TYPE 'J' STRUCTURE BOTTOM MODIFIED FDOT INDEX NO. 214
18	MH	108.50	RCP	42	70	0.14	101.10	101.00	0.10	TYPE 'J' STRUCTURE BOTTOM FDOT INDEX NOS. 200, 201
20						0.14				
19	FDOT TYPE 9 CI	108.34	RCP	18	24	0.42	104.30	104.20	0.10	MODIFIED FDOT INDEX NO. 214
20	FDOT TYPE 9 CI	108.34	RCP	42	153	0.07	101.00	100.90	0.10	TYPE 'J' STRUCTURE BOTTOM MODIFIED FDOT INDEX NO. 214
21	MH	107.40	RCP	48	39	0.13	100.40	100.35	0.05	TYPE 'J' STRUCTURE BOTTOM FDOT INDEX NOS. 200, 201
22	MES									FDOT INDEX NO. 272
23	GTI TYPE C	111.50	RCP	24	57	0.18	106.20	106.10	0.10	FDOT INDEX NO. 232
25										
24	FDOT TYPE 9 CI	110.62	RCP	18	28	0.36	106.50	106.40	0.10	MODIFIED FDOT INDEX NO. 214
25	FDOT TYPE 9 CI	110.62	RCP	24	309	0.13	105.90	105.50	0.40	MODIFIED FDOT INDEX NO. 214
26	MH	112.50	RCP	30	300	0.13	105.00	104.60	0.40	FDOT INDEX NOS. 200, 201
27	FDOT TYPE 9 CI	110.00	RCP	30	28	0.36	104.60	104.50	0.10	MODIFIED FDOT INDEX NO. 214
28	FDOT TYPE 9 CI	110.00	RCP	30	63	0.16	101.50	101.40	0.10	MODIFIED FDOT INDEX NO. 214
29	MES									FDOT INDEX NO. 272
30	GTI TYPE C	107.50	RCP	24	75	0.27	103.00	102.80	0.20	FDOT INDEX NO. 232
31	FDOT TYPE 9 CI	107.52	RCP	24	28	0.36	102.80	102.70	0.10	MODIFIED FDOT INDEX NO. 214
32	FDOT TYPE 9 CI	107.52	RCP	24	52	0.19	102.20	102.10	0.10	MODIFIED FDOT INDEX NO. 214
33	MES									FDOT INDEX NO. 272

STORM STRUCTURE DATA

STRUCTURE			LINE							STRUCTURE LOCATION & REMARKS
NO.	TYPE & SIZE	TOP ELEV.	TYPE	DIAM. IN.	LENGTH FEET	SLOPE %	INVERT ELEV. UPPER END	INVERT ELEV. LOWER END	FALL IN FEET	
40	FDOT TYPE 9 CI	120.39	RCP	18	45	0.22	116.30	116.20	0.10	MODIFIED FDOT INDEX NO. 214
41	FDOT TYPE 9 CI	120.20	RCP	18	79	0.63	116.20	115.70	0.50	MODIFIED FDOT INDEX NO. 214
42	FDOT TYPE 9 CI	119.79	RCP	18	152	0.53	115.70	114.90	0.80	MODIFIED FDOT INDEX NO. 214
44										
43	GTI TYPE C	118.70	RCP	18	60	0.17	115.00	114.90	0.10	FDOT INDEX NO. 232
44	FDOT TYPE 9 CI	118.92	RCP	24	44	0.91	114.40	114.00	0.40	MODIFIED FDOT INDEX NO. 214
45	FDOT TYPE 9 CI	118.50	RCP	24	28	0.36	114.00	113.90	0.10	MODIFIED FDOT INDEX NO. 214
46	FDOT TYPE 9 CI	118.50	RCP	24	141	0.14	113.90	113.70	0.20	MODIFIED FDOT INDEX NO. 214
47	MH	120.65	RCP	30	84	0.12	113.20	113.10	0.10	FDOT INDEX NOS. 200, 201
48	MES									FDOT INDEX NO. 272
50A	GTI TYPE C	128	RCP	18	160	0.25	124.50	124.10	0.40	FDOT INDEX NO. 232
50										
48	FDOT TYPE 9 CI	129.81	RCP	18	36	0.56	125.80	125.60	0.20	MODIFIED FDOT INDEX NO. 214
49	FDOT TYPE 9 CI	129.68	RCP	18	174	0.58	125.60	124.60	1.00	MODIFIED FDOT INDEX NO. 214
50	FDOT TYPE 9 CI	128.67	RCP	18	182	0.71	124.10	122.80	1.30	MODIFIED FDOT INDEX NO. 214
52										
51	FDOT TYPE 9 CI	126.54	RCP	18	30	0.33	122.50	122.40	0.10	MODIFIED FDOT INDEX NO. 214
52	FDOT TYPE 9 CI	126.80	RCP	18	154	1.43	122.40	120.20	2.20	MODIFIED FDOT INDEX NO. 214
54										
53	FDOT TYPE 9 CI	123.31	RCP	18	33	0.31	119.30	119.20	0.10	MODIFIED FDOT INDEX NO. 214
54	MH	124.31	RCP	24	112	1.96	119.20	117.00	2.20	FDOT INDEX NOS. 200, 201
55	FDOT TYPE 9 CI	121.55	RCP	24	245	0.33	117.00	116.20	0.80	MODIFIED FDOT INDEX NO. 214
57										
56	FDOT TYPE 9 CI	120.83	RCP	18	26	0.39	116.80	116.70	0.10	MODIFIED FDOT INDEX NO. 214
57	FDOT TYPE 9 CI	120.83	RCP	30	214	0.28	115.70	115.10	0.60	MODIFIED FDOT INDEX NO. 214
58	MH	120.20	RCP	30	55	0.73	115.10	114.70	0.40	FDOT INDEX NOS. 200, 201
59	FDOT TYPE 9 CI	119.77	RCP	36	28	0.36	114.20	114.10	0.10	TYPE 'J' STRUCTURE BOTTOM MODIFIED FDOT INDEX NO. 214
60	FDOT TYPE 9 CI	119.77	RCP	36	53	0.19	114.10	114.00	0.10	TYPE 'J' STRUCTURE BOTTOM MODIFIED FDOT INDEX NO. 214
61	MES									FDOT INDEX NO. 272
70	GTI TYPE C	121.00	RCP	18	29	0.69	117.20	117.00	0.20	FDOT INDEX NO. 232
71	MH	120.70	RCP	18	74	0.41	116.00	115.70	0.30	FDOT INDEX NOS. 200, 201
72	FDOT TYPE 9 CI	119.77	RCP	18	28	0.36	115.70	115.60	0.10	MODIFIED FDOT INDEX NO. 214
73	FDOT TYPE 9 CI	119.77	RCP	18	72	0.28	115.60	115.40	0.20	MODIFIED FDOT INDEX NO. 214
74	MES									FDOT INDEX NO. 272
75	MES			24	180	0.17	113.00	112.70	0.30	EQUALIZER PIPE FDOT INDEX NO. 272
76	MES									FDOT INDEX NO. 272

STORM STRUCTURE DATA

STRUCTURE			LINE							STRUCTURE LOCATION & REMARKS
NO.	TYPE & SIZE	TOP ELEV.	TYPE	DIAM. IN.	LENGTH FEET	SLOPE %	INVERT ELEV. UPPER END	INVERT ELEV. LOWER END	FALL IN FEET	
77	CS	118.70	RCP	36	52	1.92	111.00	110.00	1.00	POND B1/B2 CS
77A	MH	115.50	RCP	36	149	3.89	110.00	104.20	5.80	TYPE 'J' STRUCTURE BOTTOM FDOT INDEX NOS. 200, 201
78	FDOT TYPE 9 CI	109.71	RCP	36	29	0.36	104.20	104.10	0.10	TYPE 'J' STRUCTURE BOTTOM MODIFIED FDOT INDEX NO. 214
101										
79	GTI TYPE C	124.50	RCP	18	54	0.19	118.50	118.40	0.10	FDOT INDEX NO. 232
81										
80	FDOT TYPE 9 CI	122.52	RCP	18	28	0.36	118.50	118.40	0.10	MODIFIED FDOT INDEX NO. 214
81	FDOT TYPE 9 CI	122.52	RCP	18	176	0.51	118.40	117.50	0.90	MODIFIED FDOT INDEX NO. 214
84										
82	FDOT TYPE 9 CI	125.78	RCP	18	68	0.29	121.70	121.50	0.20	MODIFIED FDOT INDEX NO. 214
83	FDOT TYPE 9 CI	125.70	RCP	18	124	3.23	121.50	117.50	4.00	MODIFIED FDOT INDEX NO. 214
84	MH	121.50	RCP	18	109	3.30	117.50	113.90	3.60	FDOT INDEX NOS. 200, 201
85	FDOT TYPE 9 CI	117.95	RCP	18	117	2.91	113.90	110.50	3.40	MODIFIED FDOT INDEX NO. 214
87										
86	FDOT TYPE 9 CI	114.60	RCP	18	28	0.36	110.50	110.40	0.10	MODIFIED FDOT INDEX NO. 214
87	FDOT TYPE 9 CI	114.60	RCP	18	157	1.66	110.40	107.80	2.60	MODIFIED FDOT INDEX NO. 214
88	FDOT TYPE 9 CI	111.88	RCP	18	131	1.68	107.80	105.60	2.20	MODIFIED FDOT INDEX NO. 214
90										
89	FDOT TYPE 9 CI	109.60	RCP	18	28	0.36	105.50	105.40	0.10	MODIFIED FDOT INDEX NO. 214
90	FDOT TYPE 9 CI	109.60	RCP	24	144	0.14	104.90	104.70	0.20	MODIFIED FDOT INDEX NO. 214
91	FDOT TYPE 9 CI	111.98	RCP	24	144	0.14	104.70	104.50	0.20	MODIFIED FDOT INDEX NO. 214
93										
92	FDOT TYPE 9 CI	114.27	RCP	18	28	0.36	110.10	110.00	0.10	MODIFIED FDOT INDEX NO. 214
93	FDOT TYPE 9 CI	114.27	RCP	24	144	0.14	104.50	104.30	0.20	MODIFIED FDOT INDEX NO. 214
96										
94	FDOT TYPE 9 CI	118.97	RCP	18	28	0.36	114.90	114.80	0.10	MODIFIED FDOT INDEX NO. 214
95	FDOT TYPE 9 CI	118.97	RCP	18	144	0.83	113.90	112.70	1.20	MODIFIED FDOT INDEX NO. 214
96	FDOT TYPE 9 CI	116.70	RCP	30	167	0.12	104.30	104.10	0.20	MODIFIED FDOT INDEX NO. 214
97	MH	114.11	RCP	30	197	0.10	104.10	103.90	0.20	FDOT INDEX NOS. 200, 201
99										
98	FDOT TYPE 9 CI	112.59		18	40	0.75	108.50	108.20	0.30	MODIFIED FDOT INDEX NO. 214
99	FDOT TYPE 9 CI	112.20	RCP	30	118	0.17	103.90	103.70	0.20	MODIFIED FDOT INDEX NO. 214
100	MH	111.23	RCP	30	124	0.16	103.70	103.50	0.20	FDOT INDEX NOS. 200, 201
101	FDOT TYPE 9 CI	109.71	RCP	36	175	0.11	103.50	103.30	0.20	TYPE 'J' STRUCTURE BOTTOM MODIFIED FDOT INDEX NO. 214
102	MES									FDOT INDEX NO. 272

DATE	DESCRIPTION	BY
	REVISIONS	

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DATE:
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STORM STRUCTURE DATA

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE ST

EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

STORM STRUCTURE DATA

STRUCTURE			LINE							STRUCTURE LOCATION & REMARKS
NO.	TYPE & SIZE	TOP ELEV.	TYPE	DIAM. IN.	LENGTH FEET	SLOPE %	INVERT ELEV. UPPER END	INVERT ELEV. LOWER END	FALL IN FEET	
105	GTI TYPE C	128.00	RCP	18	194	0.16	125.00	124.70	0.30	FDOT INDEX NO. 232
106	GTI TYPE C	128.00	RCP	18	217	0.18	124.70	124.30	0.40	FDOT INDEX NO. 232
110										
107	FDOT TYPE 9 CI	128.15	RCP	18	26	0.39	124.10	124.00	0.10	MODIFIED FDOT INDEX NO. 214
108	FDOT TYPE 9 CI	128.15	RCP	18	103	0.19	124.00	123.80	0.20	MODIFIED FDOT INDEX NO. 214
109	FDOT TYPE 9 CI	128.49	RCP	18	24	0.42	123.80	123.70	0.10	MODIFIED FDOT INDEX NO. 214
110	FDOT TYPE 9 CI	128.49	RCP	24	144	0.21	123.20	122.90	0.30	MODIFIED FDOT INDEX NO. 214
113	FDOT TYPE 9 CI	129.00	RCP	24	214	0.14	122.90	122.60	0.30	MODIFIED FDOT INDEX NO. 214
114	FDOT TYPE 9 CI	127.82	RCP	30	24	0.42	122.60	122.50	0.10	MODIFIED FDOT INDEX NO. 214
116	FDOT TYPE 9 CI	127.82	RCP	30	309	0.10	122.50	122.20	0.30	MODIFIED FDOT INDEX NO. 214
117	FDOT TYPE 9 CI	127.92	RCP	36	100	0.20	122.20	122.00	0.20	TYPE 'J' STRUCTURE BOTTOM MODIFIED FDOT INDEX NO. 214
118	FDOT TYPE 9 CI	127.92	RCP	36	293	0.10	122.00	121.70	0.30	TYPE 'J' STRUCTURE BOTTOM MODIFIED FDOT INDEX NO. 214
119	FDOT TYPE 9 CI	127.46	RCP	36	25	0.40	121.70	121.60	0.10	TYPE 'J' STRUCTURE BOTTOM MODIFIED FDOT INDEX NO. 214
120	FDOT TYPE 9 CI	127.56	RCP	42	189	0.11	121.50	121.30	0.20	TYPE 'J' STRUCTURE BOTTOM MODIFIED FDOT INDEX NO. 214
126						0.14				
122	FDOT TYPE 9 CI	130.30	RCP	18	77	0.26	126.20	126.00	0.20	MODIFIED FDOT INDEX NO. 214
123	FDOT TYPE 9 CI	130.44	RCP	18	262	0.19	126.00	125.50	0.50	MODIFIED FDOT INDEX NO. 214
124	FDOT TYPE 9 CI	129.29	RCP	18	41	0.24	125.50	125.40	0.10	MODIFIED FDOT INDEX NO. 214
125	FDOT TYPE 9 CI	129.11	RCP	18	131	0.23	125.40	125.10	0.30	MODIFIED FDOT INDEX NO. 214
126	FDOT TYPE 9 CI	128.48	RCP	42	176	0.12	121.30	121.10	0.20	TYPE 'J' STRUCTURE BOTTOM MODIFIED FDOT INDEX NO. 214
127	MH	126.80	RCP	42	52	0.19	118.60	118.50	0.10	TYPE 'J' STRUCTURE BOTTOM FDOT INDEX NOS. 200, 201
128	MES									FDOT INDEX NO. 272
130	FDOT TYPE 9 CI	125.92	RCP	18	75	0.40	121.70	121.40	0.30	MODIFIED FDOT INDEX NO. 214
131	FDOT TYPE 9 CI	125.51	RCP	18	35	0.29	121.40	121.30	0.10	MODIFIED FDOT INDEX NO. 214
132	FDOT TYPE 9 CI	126.60	RCP	18	55	0.18	119.60	119.50	0.10	MODIFIED FDOT INDEX NO. 214
133	MES									FDOT INDEX NO. 272
136	FDOT TYPE 9 CI	125.22	RCP	18	70	0.29	121.20	121.00	0.20	MODIFIED FDOT INDEX NO. 214
138										
137	FDOT TYPE 9 CI	123.48	RCP	18	28	0.36	119.40	119.30	0.10	MODIFIED FDOT INDEX NO. 214
138	FDOT TYPE 9 CI	123.48	RCP	18	233	2.06	119.30	114.50	4.80	MODIFIED FDOT INDEX NO. 214
140										
139	FDOT TYPE 9 CI	118.66	RCP	18	28	0.36	114.60	114.50	0.10	MODIFIED FDOT INDEX NO. 214
140	FDOT TYPE 9 CI	118.66	RCP	18	198	2.02	114.50	110.50	4.00	MODIFIED FDOT INDEX NO. 214
141	FDOT TYPE 9 CI	114.62	RCP	18	97	1.75	110.50	108.80	1.70	MODIFIED FDOT INDEX NO. 214
144										

STORM STRUCTURE DATA

STRUCTURE			LINE							STRUCTURE LOCATION & REMARKS
NO.	TYPE & SIZE	TOP ELEV.	TYPE	DIAM. IN.	LENGTH FEET	SLOPE %	INVERT ELEV. UPPER END	INVERT ELEV. LOWER END	FALL IN FEET	
143	FDOT TYPE 9 CI	112.88	RCP	18	28	0.36	108.80	108.70	0.10	MODIFIED FDOT INDEX NO. 214
144	FDOT TYPE 9 CI	112.88	RCP	18	222	1.13	108.80	106.30	2.50	MODIFIED FDOT INDEX NO. 214
146										
145	FDOT TYPE 9 CI	110.49	RCP	18	28	0.36	106.40	106.30	0.10	MODIFIED FDOT INDEX NO. 214
146	FDOT TYPE 9 CI	110.49	RCP	24	109	0.46	105.80	105.30	0.50	MODIFIED FDOT INDEX NO. 214
147	FDOT TYPE 9 CI	109.80	RCP	24	86	0.23	105.30	105.10	0.20	MODIFIED FDOT INDEX NO. 214
149						0.42				
148	FDOT TYPE 9 CI	109.52	RCP	18	50	0.20	105.40	105.30	0.10	MODIFIED FDOT INDEX NO. 214
149	FDOT TYPE 9 CI	109.50	RCP	30	149	0.13	104.30	104.10	0.20	MODIFIED FDOT INDEX NO. 214
150	MES									FDOT INDEX NO. 272
153	FDOT TYPE 9 CI	109.78	RCP	18	27	0.37	105.70	105.60	0.10	MODIFIED FDOT INDEX NO. 214
154	FDOT TYPE 9 CI	109.78	RCP	18	50	0.20	105.60	105.50	0.10	MODIFIED FDOT INDEX NO. 214
155	MES									FDOT INDEX NO. 272
160	FDOT TYPE 9 CI	118.29	RCP	18	24	0.42	114.20	114.10	0.10	MODIFIED FDOT INDEX NO. 214
161	FDOT TYPE 9 CI	118.29	RCP	18	128	0.23	114.10	113.80	0.30	MODIFIED FDOT INDEX NO. 214
162	MH	120.80	RCP	18	162	0.19	113.80	113.50	0.30	FDOT INDEX NOS. 200, 201
164										
163	FDOT TYPE 9 CI	122.34	RCP	18	29	0.35	118.00	117.90	0.10	MODIFIED FDOT INDEX NO. 214
164	FDOT TYPE 9 CI	122.22	RCP	24	176	0.17	113.50	113.20	0.30	MODIFIED FDOT INDEX NO. 214
165	MES					0.11				FDOT INDEX NO. 272
170	CS	117.50	RCP	36	71	6.76	110.50	105.70	4.80	TYPE 'J' STRUCTURE BOTTOM
170A	MH	111.20	RCP	36	100	0.10	102.50	102.40	0.10	TYPE 'J' STRUCTURE BOTTOM FDOT INDEX NOS. 200, 201
171	MES									FDOT INDEX NO. 272
175	FDOT TYPE 9 CI	121.58	RCP	18	24	0.42	117.50	117.40	0.10	MODIFIED FDOT INDEX NO. 214
176	FDOT TYPE 9 CI	121.58	RCP	18	163	0.18	117.40	117.10	0.30	MODIFIED FDOT INDEX NO. 214
177	MES									FDOT INDEX NO. 272
180	FDOT TYPE 9 CI	119.61	RCP	18	25	0.40	115.50	115.40	0.10	MODIFIED FDOT INDEX NO. 214
181	FDOT TYPE 9 CI	119.67	RCP	18	119	0.25	115.40	115.10	0.30	MODIFIED FDOT INDEX NO. 214
182	MH	119.45	RCP	18	198	0.30	114.80	114.20	0.60	FDOT INDEX NOS. 200, 201
184										
183	FDOT TYPE 9 CI	118.23	RCP	18	56	0.18	114.10	114.00	0.10	MODIFIED FDOT INDEX NO. 214
184	FDOT TYPE 9 CI	118.36	RCP	24	151	0.20	113.50	113.20	0.30	MODIFIED FDOT INDEX NO. 214
185	MH	119.10	RCP	24	35	0.29	113.20	113.10	0.10	FDOT INDEX NOS. 200, 201
186	MES									FDOT INDEX NO. 272
190	FDOT TYPE 9 CI	117.71	RCP	18	59	0.34	113.60	113.40	0.20	MODIFIED FDOT INDEX NO. 214
192										

STORM STRUCTURE DATA

STRUCTURE			LINE							STRUCTURE LOCATION & REMARKS
NO.	TYPE & SIZE	TOP ELEV.	TYPE	DIAM. IN.	LENGTH FEET	SLOPE %	INVERT ELEV. UPPER END	INVERT ELEV. LOWER END	FALL IN FEET	
191	FDOT TYPE 9 CI	117.40	RCP	18	24	0.42	113.40	113.30	0.10	MODIFIED FDOT INDEX NO. 214
192	FDOT TYPE 9 CI	117.44	RCP	18	251	0.32	113.30	112.50	0.80	MODIFIED FDOT INDEX NO. 214
194										
193	FDOT TYPE 9 CI	115.45	RCP	18	29	0.35	111.40	111.30	0.10	MODIFIED FDOT INDEX NO. 214
194	FDOT TYPE 9 CI	115.57	RCP	18	150	0.87	111.30	110.00	1.30	MODIFIED FDOT INDEX NO. 214
195	MH	113.00	RCP	24	57	0.18	105.00	104.90	0.10	FDOT INDEX NOS. 200, 201
196	MES									FDOT INDEX NO. 272
200	FDOT TYPE 9 CI	113.72	RCP	18	34	0.88	109.60	109.30	0.30	MODIFIED FDOT INDEX NO. 214
201	FDOT TYPE 9 CI	113.55	RCP	18	251	0.80	109.30	107.30	2.00	MODIFIED FDOT INDEX NO. 214
204										
202	FDOT TYPE 9 CI	111.59	RCP	18	27	0.37	107.50	107.40	0.10	MODIFIED FDOT INDEX NO. 214
204										
203	FDOT TYPE 9 CI	109.92	RCP	24	301	0.17	105.30	104.80	0.50	MODIFIED FDOT INDEX NO. 214
204	FDOT TYPE 9 CI	111.68	RCP	30	175	0.11	104.80	104.60	0.20	MODIFIED FDOT INDEX NO. 214
205	MES									FDOT INDEX NO. 272
206	CS			36	156	0.64	103.50	102.50	1.00	TYPE 'J' STRUCTURE BOTTOM
207	MES									FDOT INDEX NO. 272
210	FDOT TYPE 9 CI	108.52	RCP	18	28	0.36	104.50	104.40	0.10	MODIFIED FDOT INDEX NO. 214
211	FDOT TYPE 9 CI	108.52	RCP	18	132	0.23	104.40	104.10	0.30	MODIFIED FDOT INDEX NO. 214
212	FDOT TYPE 9 CI	109.01	RCP	18	113	0.18	103.60	103.40	0.20	MODIFIED FDOT INDEX NO. 214
214										
213	FDOT TYPE 9 CI	107.47	RCP	18	101	0.20	103.40	103.20	0.20	MODIFIED FDOT INDEX NO. 214
214	FDOT TYPE 9 CI	107.47	RCP	36	181	0.17	101.90	101.60	0.30	TYPE 'J' STRUCTURE BOTTOM MODIFIED FDOT INDEX NO. 214
215	FDOT TYPE 9 CI	108.85	RCP	36	108	0.19	101.60	101.40	0.20	TYPE 'J' STRUCTURE BOTTOM MODIFIED FDOT INDEX NO. 214
216	MH	109.90	RCP	36	156	0.13	101.40	101.20	0.20	TYPE 'J' STRUCTURE BOTTOM FDOT INDEX NOS. 200, 201
217	MH	108.30	RCP	36	49	0.20	101.20	101.10	0.10	TYPE 'J' STRUCTURE BOTTOM FDOT INDEX NOS. 200, 201
218	MES									FDOT INDEX NO. 272
220	FDOT TYPE 9 CI	109.02	RCP	18	24	0.42	104.90	104.80	0.10	MODIFIED FDOT INDEX NO. 214
221	FDOT TYPE 9 CI	109.02	RCP	24	149	0.20	104.30	104.00	0.30	MODIFIED FDOT INDEX NO. 214
222	MH	109.70	RCP	24	85	0.24	104.00	103.80	0.20	FDOT INDEX NOS. 200, 201
223	MH	109.55	RCP	24	102	0.20	103.80	103.60	0.20	FDOT INDEX NOS. 200, 201
224	MH	108.75	RCP	30	116	0.52	103.10	102.50	0.60	FDOT INDEX NOS. 200, 201
225	FDOT TYPE 9 CI	107.62	RCP	36	24	0.42	102.00	101.90	0.10	TYPE 'J' STRUCTURE BOTTOM MODIFIED FDOT INDEX NO. 214
226	FDOT TYPE 9 CI	107.62	RCP	42	150	0.13	101.40	101.20	0.20	TYPE 'J' STRUCTURE BOTTOM MODIFIED FDOT INDEX NO. 214
229										

DATE	DESCRIPTION	BY
	REVISIONS	

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STORM STRUCTURE DATA

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE ST

EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

STORM STRUCTURE DATA

STRUCTURE			LINE							STRUCTURE LOCATION & REMARKS
NO.	TYPE & SIZE	TOP ELEV.	TYPE	DIAM. IN.	LENGTH FEET	SLOPE %	INVERT ELEV. UPPER END	INVERT ELEV. LOWER END	FALL IN FEET	
227	FDOT TYPE 9 CI	107.77	RCP	18	24	0.42	103.70	103.60	0.10	MODIFIED FDOT INDEX NO. 214
228	FDOT TYPE 9 CI	107.77	RCP	24	58	0.17	103.10	103.00	0.10	MODIFIED FDOT INDEX NO. 214
229	MH	108.45	RCP	48	174	0.12	101.20	101.00	0.20	TYPE 'J' STRUCTURE BOTTOM FDOT INDEX NOS. 200, 201
230	MH	108.47	RCP	48	209	0.14	101.00	100.70	0.30	TYPE 'J' STRUCTURE BOTTOM FDOT INDEX NOS. 200, 201
231	FDOT TYPE 9 CI	107.32	RCP	48	114	0.18	100.70	100.50	0.20	TYPE 'J' STRUCTURE BOTTOM MODIFIED FDOT INDEX NO. 214
232	FDOT TYPE 9 CI	107.36	RCP	48	208	0.10	100.50	100.30	0.20	TYPE 'J' STRUCTURE BOTTOM MODIFIED FDOT INDEX NO. 214
233	MES									FDOT INDEX NO. 272
240	FDOT TYPE 9 CI	109.37	RCP	18	74	0.27	105.30	105.10	0.20	MODIFIED FDOT INDEX NO. 214
241	FDOT TYPE 9 CI	109.37	RCP	24	58	0.17	104.60	104.50	0.10	MODIFIED FDOT INDEX NO. 214
243										
242	FDOT TYPE 9 CI	109.52	RCP	18	28	0.36	105.40	105.30	0.10	MODIFIED FDOT INDEX NO. 214
243	FDOT TYPE 9 CI	109.52	RCP	24	298	0.13	104.50	104.10	0.40	MODIFIED FDOT INDEX NO. 214
244	FDOT TYPE 9 CI	110.41	RCP	24	55	0.18	104.10	104.00	0.10	MODIFIED FDOT INDEX NO. 214
244A	MES									FDOT INDEX NO. 272
245	FDOT TYPE 9 CI	110.27	RCP	18	28	0.36	106.00	105.90	0.10	MODIFIED FDOT INDEX NO. 214
246	FDOT TYPE 9 CI	110.27	RCP	18	49	0.20	105.60	105.50	0.10	MODIFIED FDOT INDEX NO. 214
247	MES									FDOT INDEX NO. 272
248	FDOT TYPE 9 CI	109.68	RCP	24	76	0.13	104.00	103.90	0.10	MODIFIED FDOT INDEX NO. 214
249	MES									FDOT INDEX NO. 272
250	CS	109.00	RCP	36	148	0.14	104.50	104.30	0.20	TYPE 'J' STRUCTURE BOTTOM
251	MES									FDOT INDEX NO. 272
250A	CS	109.00	RCP	36	148	0.14	104.50	104.30	0.20	TYPE 'J' STRUCTURE BOTTOM
251A	MES									FDOT INDEX NO. 272
255	GTI TYPE D	106.00	RCP	36	117	0.17	100.50	100.30	0.20	TYPE 'J' STRUCTURE BOTTOM FDOT INDEX NO. 232
256	MES									FDOT INDEX NO. 272
260	GTI TYPE E	113.50	RCP	30	143	0.21	108.50	108.20	0.30	FDOT INDEX NO. 232
261	MH	113.50	RCP	30	350	0.20	108.20	107.50	0.70	FDOT INDEX NOS. 200, 201
262	MH	112.00	RCP	30	350	0.20	107.50	106.80	0.70	FDOT INDEX NOS. 200, 201
263	MH	111.50	RCP	30	350	0.20	106.80	106.10	0.70	FDOT INDEX NOS. 200, 201
264	MH	109.50	RCP	30	350	0.20	106.10	105.40	0.70	FDOT INDEX NOS. 200, 201
265	MH	108.50	RCP	30	375	0.11	105.40	104.98	0.42	FDOT INDEX NOS. 200, 201
266	MES									FDOT INDEX NO. 272
270	FDOT TYPE 9 CI	117.61	RCP	18	26	0.39	113.50	113.40	0.10	MODIFIED FDOT INDEX NO. 214
271	FDOT TYPE 9 CI	117.61	RCP	18	172	0.64	113.00	111.90	1.10	MODIFIED FDOT INDEX NO. 214
275						0.19				

STORM STRUCTURE DATA

STRUCTURE			LINE							STRUCTURE LOCATION & REMARKS
NO.	TYPE & SIZE	TOP ELEV.	TYPE	DIAM. IN.	LENGTH FEET	SLOPE %	INVERT ELEV. UPPER END	INVERT ELEV. LOWER END	FALL IN FEET	
273	FDOT TYPE 9 CI	115.91	RCP	18	24	0.42	111.90	111.80	0.10	MODIFIED FDOT INDEX NO. 214
274	FDOT TYPE 9 CI	115.91	RCP	18	25	0.40	111.80	111.70	0.10	MODIFIED FDOT INDEX NO. 214
275	MH	116.30	RCP	18	151	0.99	111.70	110.20	1.50	FDOT INDEX NOS. 200, 201
277										
276	FDOT TYPE 9 CI	113.36	RCP	18	32	0.31	109.20	109.10	0.10	MODIFIED FDOT INDEX NO. 214
277	MH	113.91	RCP	18	35	3.43	109.00	107.80	1.20	FDOT INDEX NOS. 200, 201
278	FDOT TYPE 9 CI	111.81	RCP	18	170	1.77	107.80	104.80	3.00	MODIFIED FDOT INDEX NO. 214
281										
279	MH	110.00	RCP	24	36	0.28	102.40	102.30	0.10	FDOT INDEX NOS. 200, 201
281										
280	FDOT TYPE 9 CI	107.12	RCP	18	187	0.16	103.00	102.70	0.30	MODIFIED FDOT INDEX NO. 214
281	FDOT TYPE 9 CI		108.87	RCP	24	24	0.42	102.30	102.20	0.10 MODIFIED FDOT INDEX NO. 214
282	FDOT TYPE 9 CI	108.87	RCP	30	197	0.10	102.20	102.00	0.20	MODIFIED FDOT INDEX NO. 214
283	MES									FDOT INDEX NO. 272
285	CS									POND A1
290	CS									POND A2
295	CS									POND E1
298	CS									POND C4
300	CS			24	178	0.56	116.00	115.00	1.00	POND C3
300A	MH	120.00	RCP	24	300	0.67	115.00	113.00	2.00	FDOT INDEX NOS. 200, 201
300B	MH	120.20	RCP	24	298	0.17	113.00	112.50	0.50	FDOT INDEX NOS. 200, 201
300C	MES									FDOT INDEX NO. 272
301	ENDWALL			48x84	91	0.22	100.00	99.80	0.20	4' X 7' BOX CULVERT
302	ENDWALL									
303	ENDWALL			48x84	91	0.22	100.00	99.80	0.20	4' X 7' BOX CULVERT
304	ENDWALL									
305	ENDWALL			48x84	91	0.22	100.00	99.80	0.20	4' X 7' BOX CULVERT
306	ENDWALL									
307	ENDWALL			48x84	91	0.22	100.00	99.80	0.20	4' X 7' BOX CULVERT
308	ENDWALL									

STORM STRUCTURE DATA

STRUCTURE			LINE							STRUCTURE LOCATION & REMARKS
NO.	TYPE & SIZE	TOP ELEV.	TYPE	DIAM. IN.	LENGTH FEET	SLOPE %	INVERT ELEV. UPPER END	INVERT ELEV. LOWER END	FALL IN FEET	
309	MES			42	40		101.00	100.70		EXTEND EXIST 42" RCP
310	MES			42	40		101.00	100.70		EXTEND EXIST 42" RCP
311	MES			42	40		101.00	100.70		EXTEND EXIST 42" RCP
313	CS	105.0		18	37		100.50	100.40		POND AC1
314	MES									FDOT INDEX NO. 272
315	CS	105.0		18	36		100.50	100.40		POND AC2
316	MES									FDOT INDEX NO. 272
317	CS	105.0								WETLAND 4
320	CS	122.7								POND 3NB
325	CS	123.7								POND 3NC

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

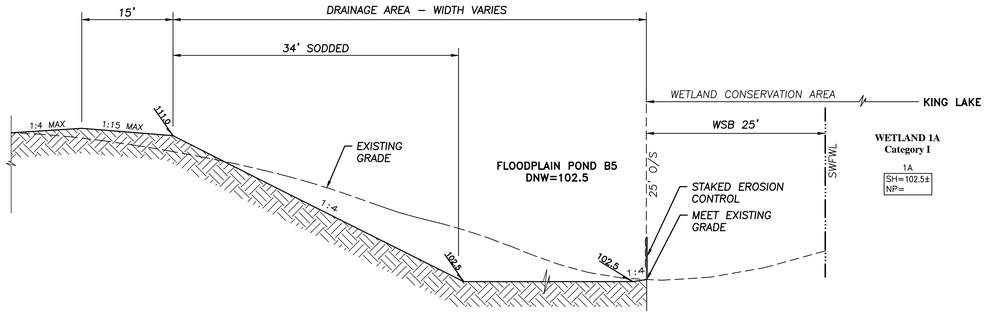
STORM STRUCTURE DATA

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE ST

EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet



FLOODPLAIN POND B5 SECTION B5A–B5A

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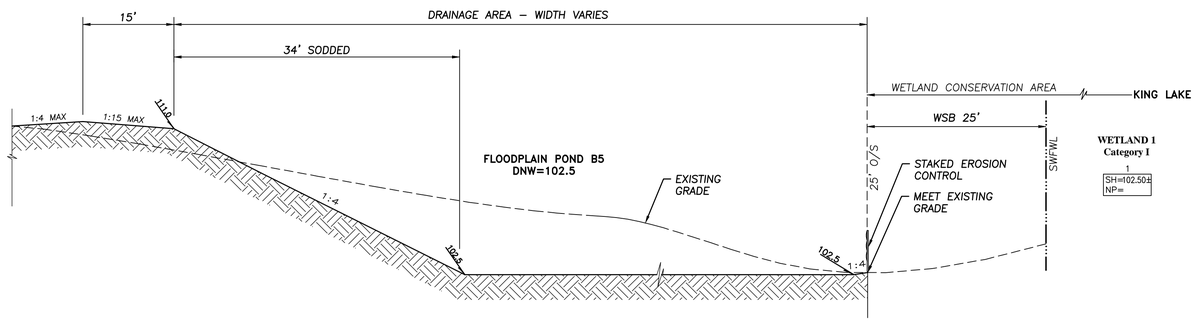

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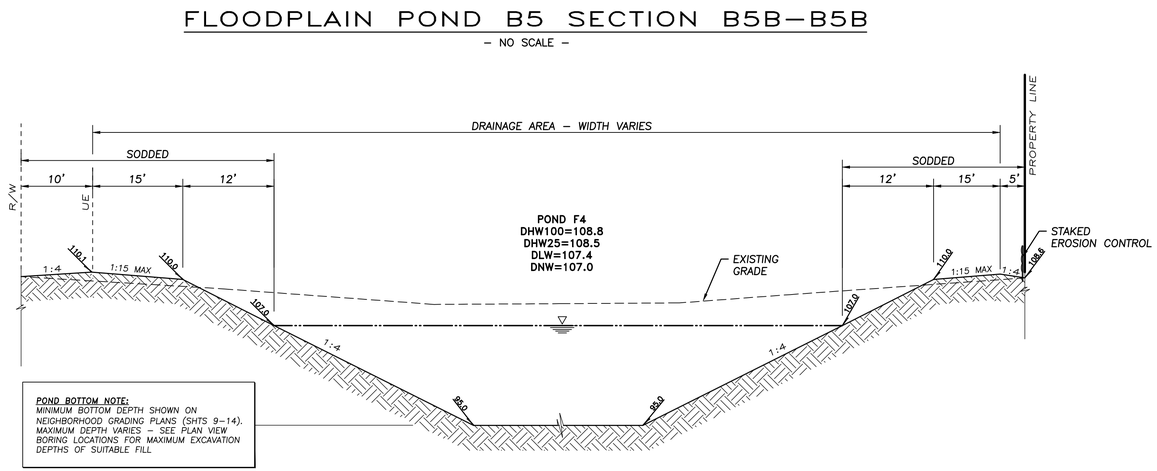

POND F4 SECTION F4A–F4A

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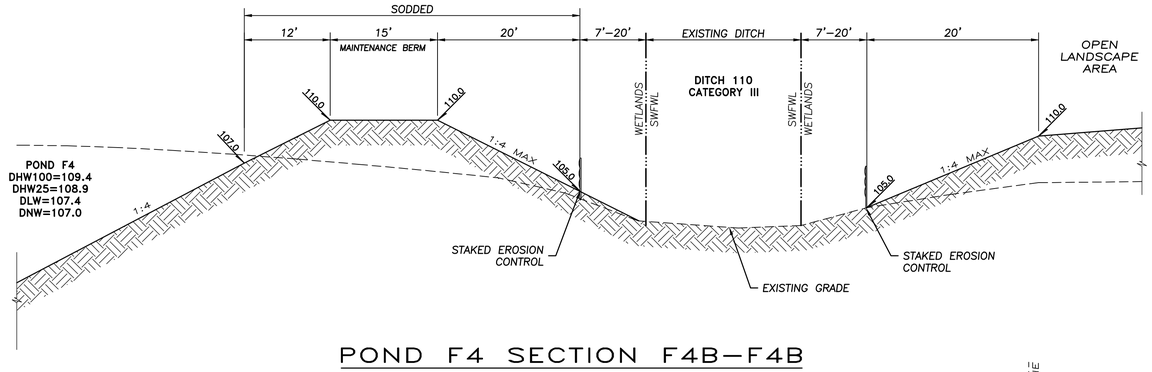
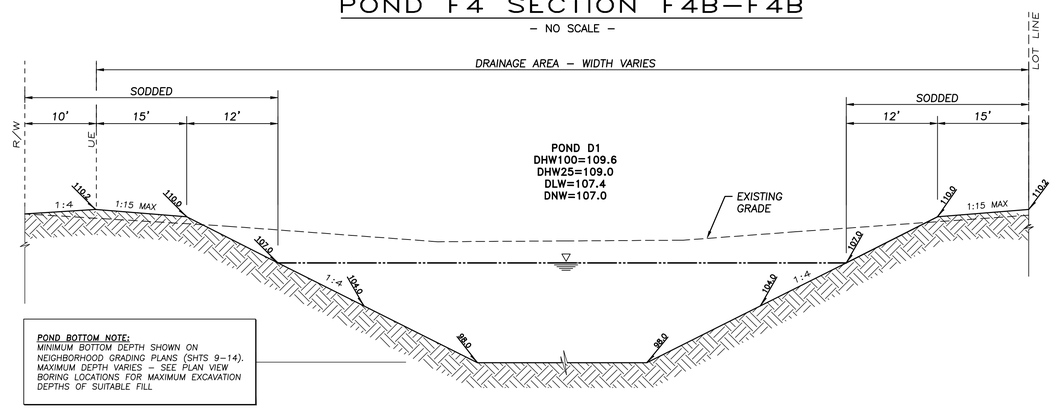


POND F4 SECTION F4B–F4B

– NO SCALE –

FLOODPLAIN POND B5 SECTION B5B–B5B

– NO SCALE –



POND D1 SECTION D1A–D1A

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POND D1 SECTION D1B–D1B

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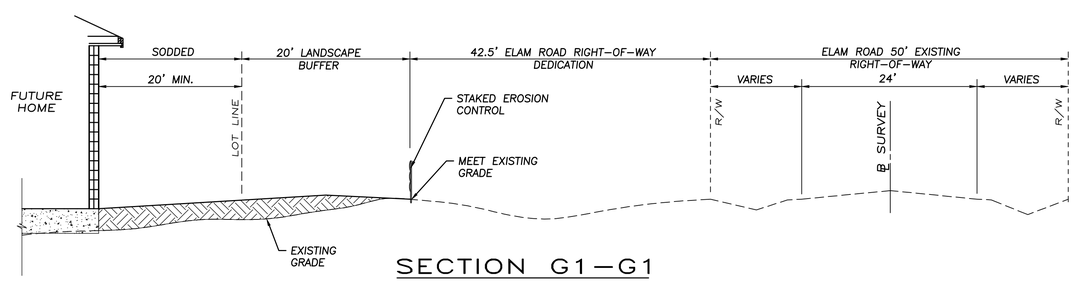

SECTION G1–G1

– NO SCALE –

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
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CROSS SECTIONS

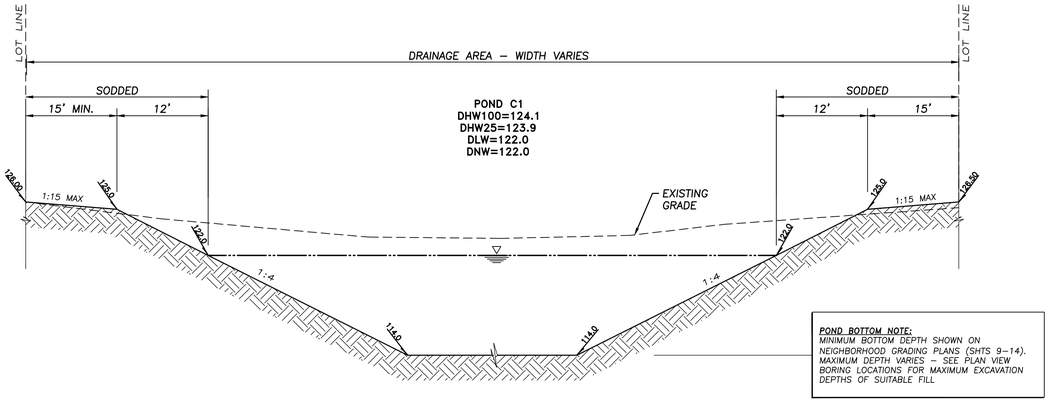
JOB NO. SPH–EP–009
DESIGN LAWTON
DRAWN FINNEY
DATE 11/14/2014
FILE SEC1

EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 =–0.84Feet

SHEET 33 OF 98 SHEETS



POND C1 SECTION C1A–C1A

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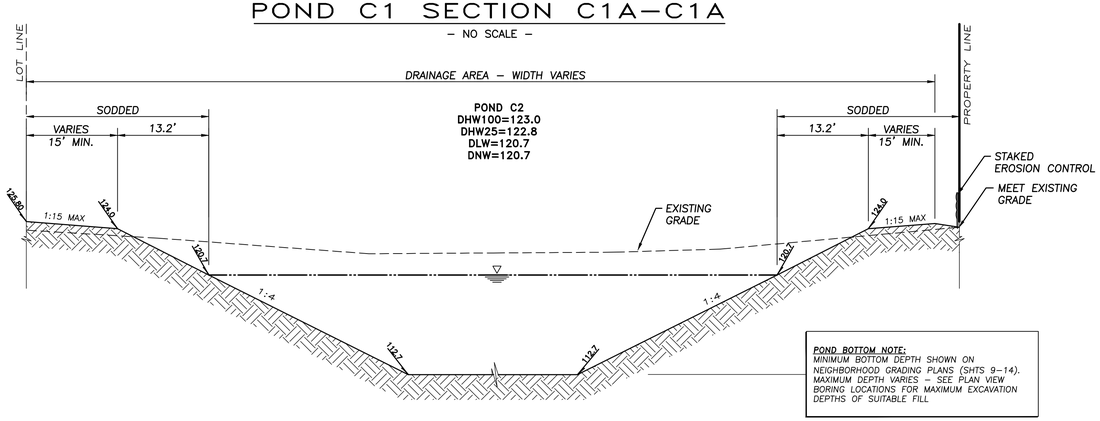

POND C2 SECTION C2A–C2A

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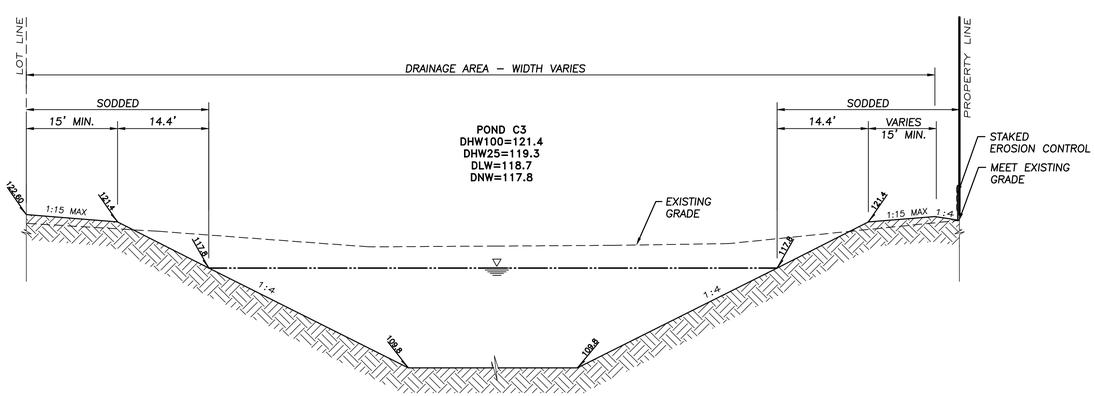

POND C3 SECTION C3A–C3A

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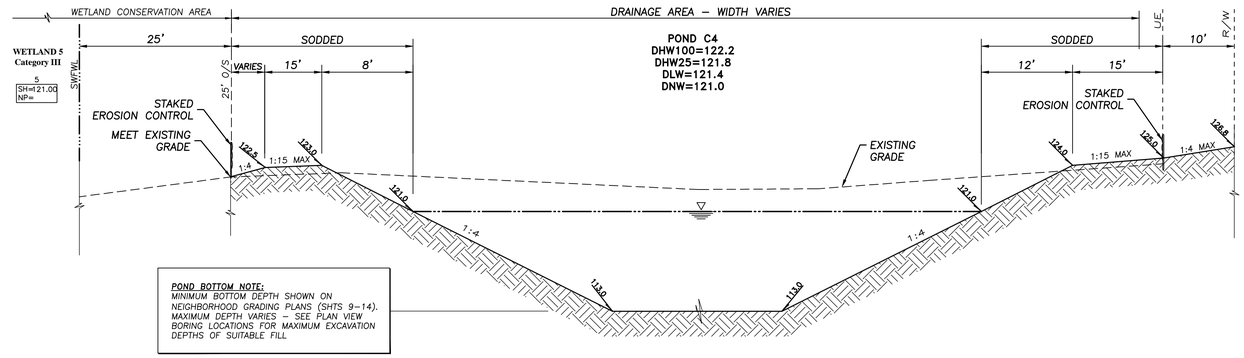

POND C4 SECTION C4A–C4A

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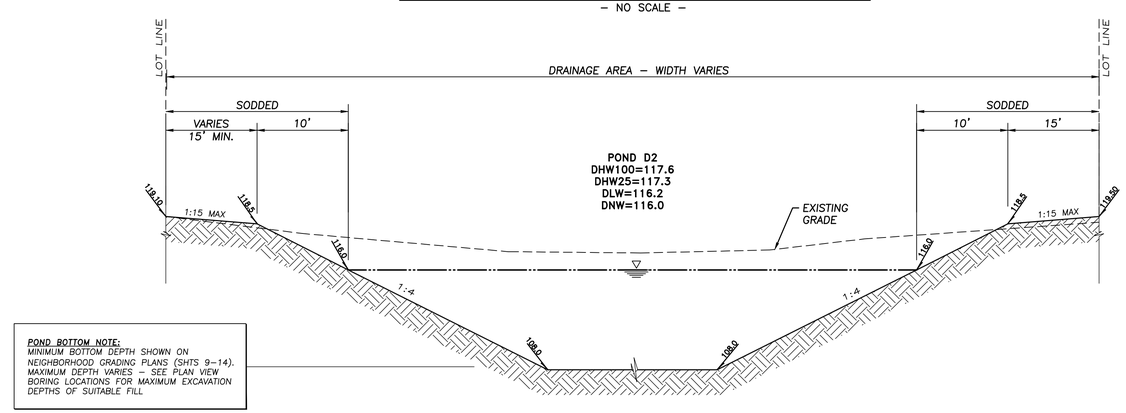

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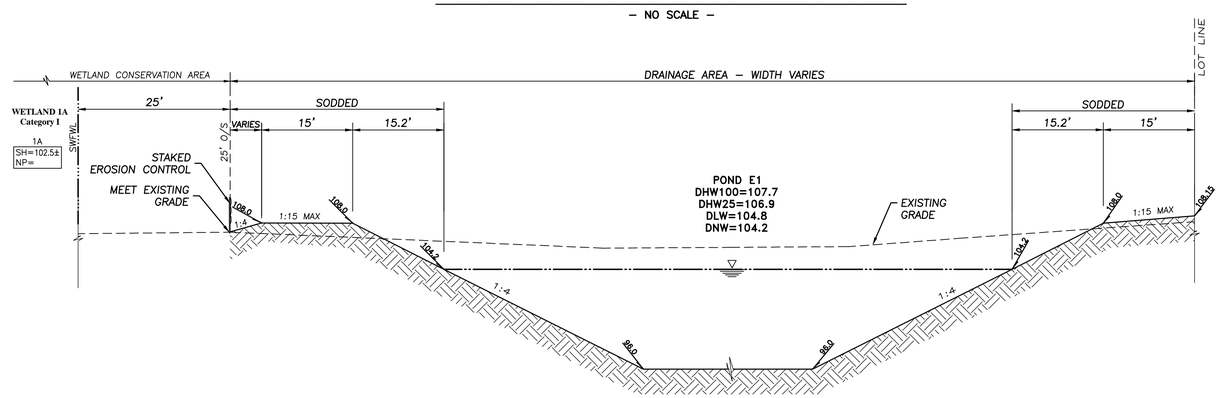

POND E1 SECTION E1A–E1A

– NO SCALE –

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
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CROSS SECTIONS

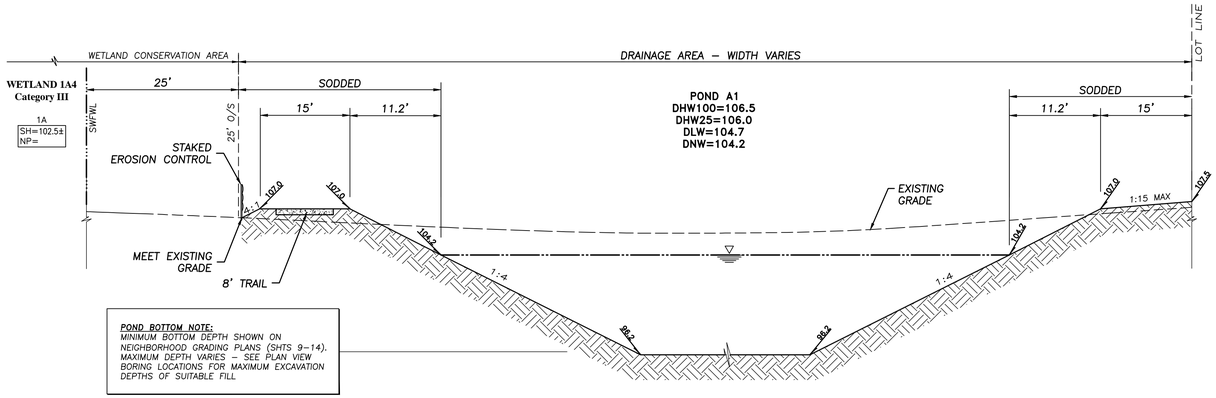
JOB NO. SPH–EP–009
DESIGN LAWTON
DRAWN FINNEY
DATE 11/14/2014
FILE SEC2

EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = –0.84 Feet

SHEET 34 OF 98 SHEETS



POND A1 SECTION A1A–A1A

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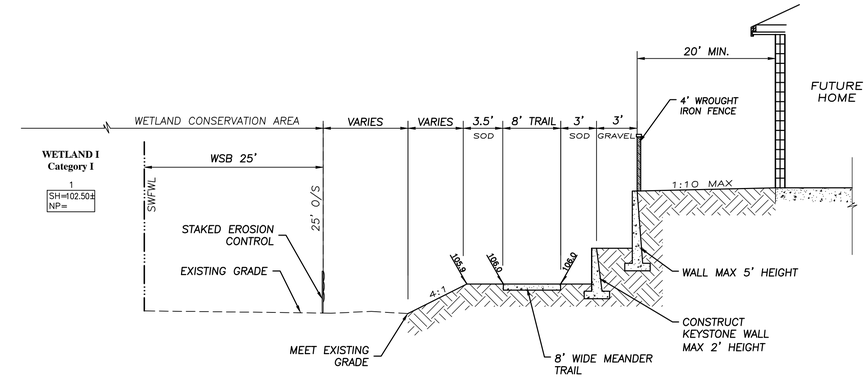

SECTION V1–V1

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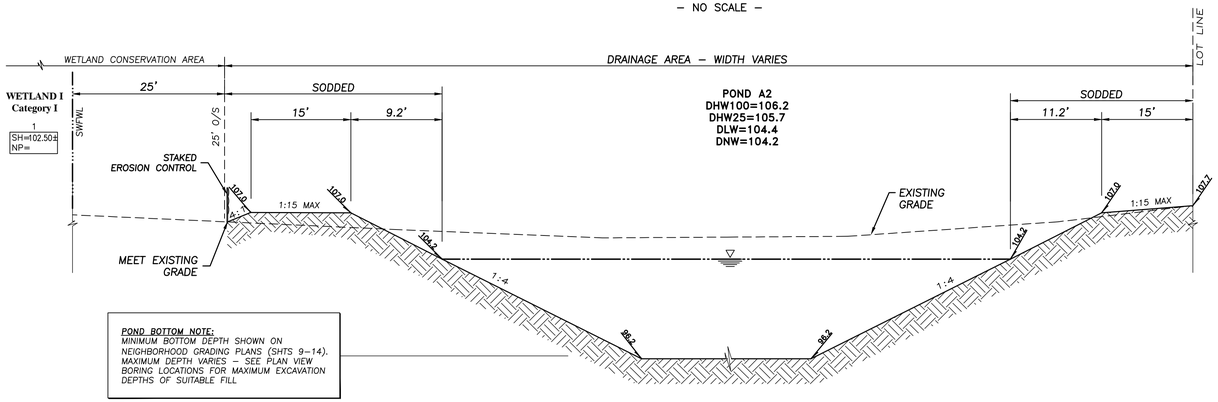

POND A2 SECTION A2A–A2A

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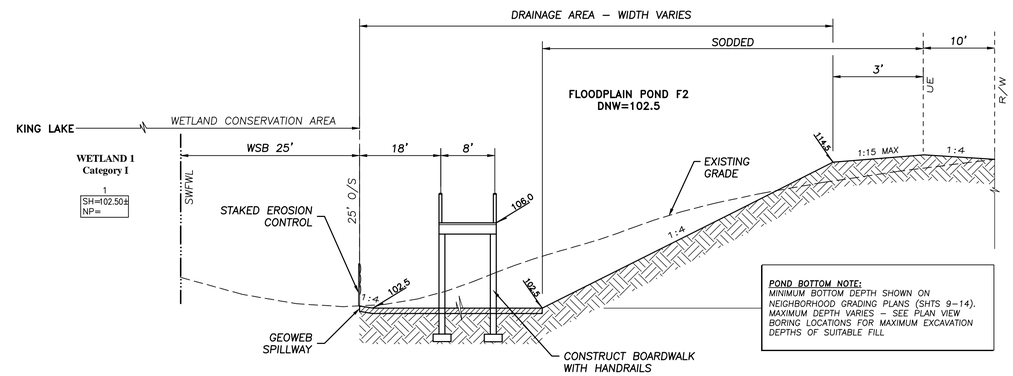

FLOODPLAIN POND F2 SECTION F2A–F2A

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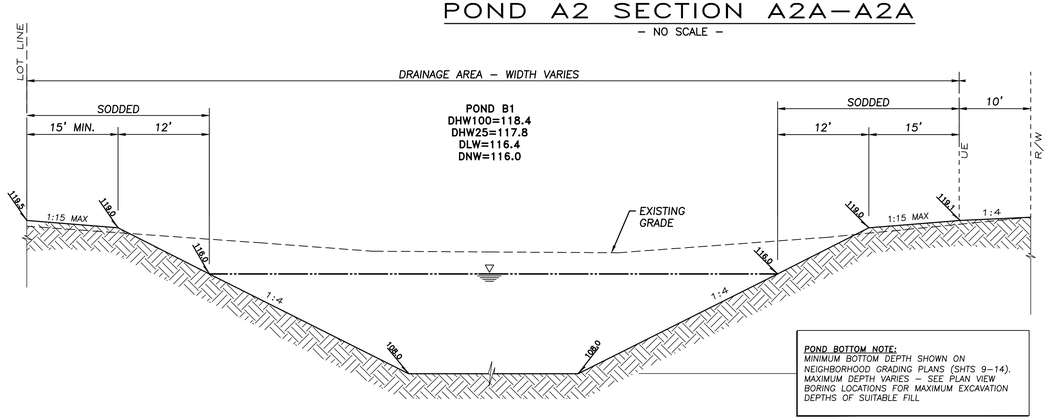

POND B1 SECTION B1A–B1A

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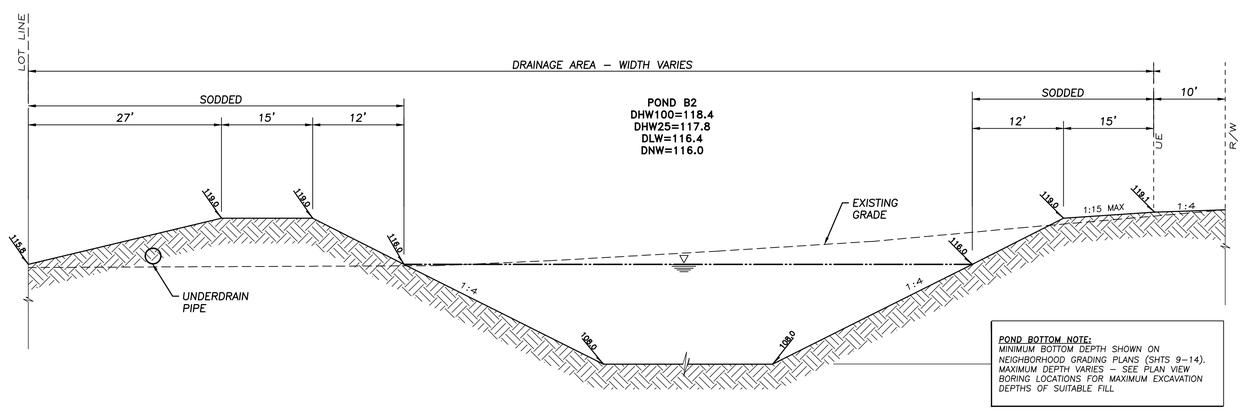

POND B2 SECTION B2A–B2A

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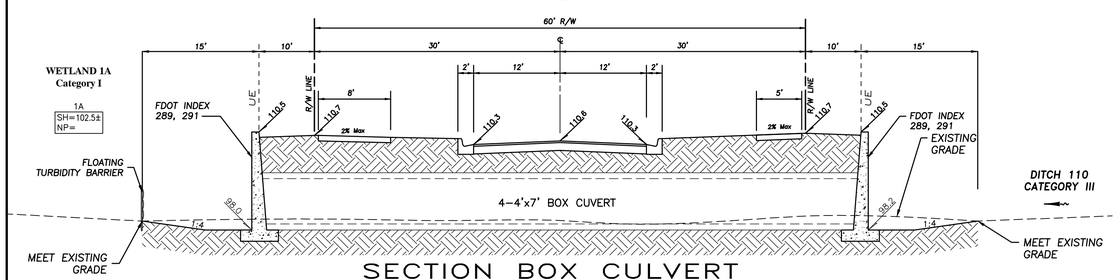

SECTION BOX CULVERT

– NO SCALE –

DATE	DESCRIPTION	BY
	REVISIONS	

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CROSS SECTIONS

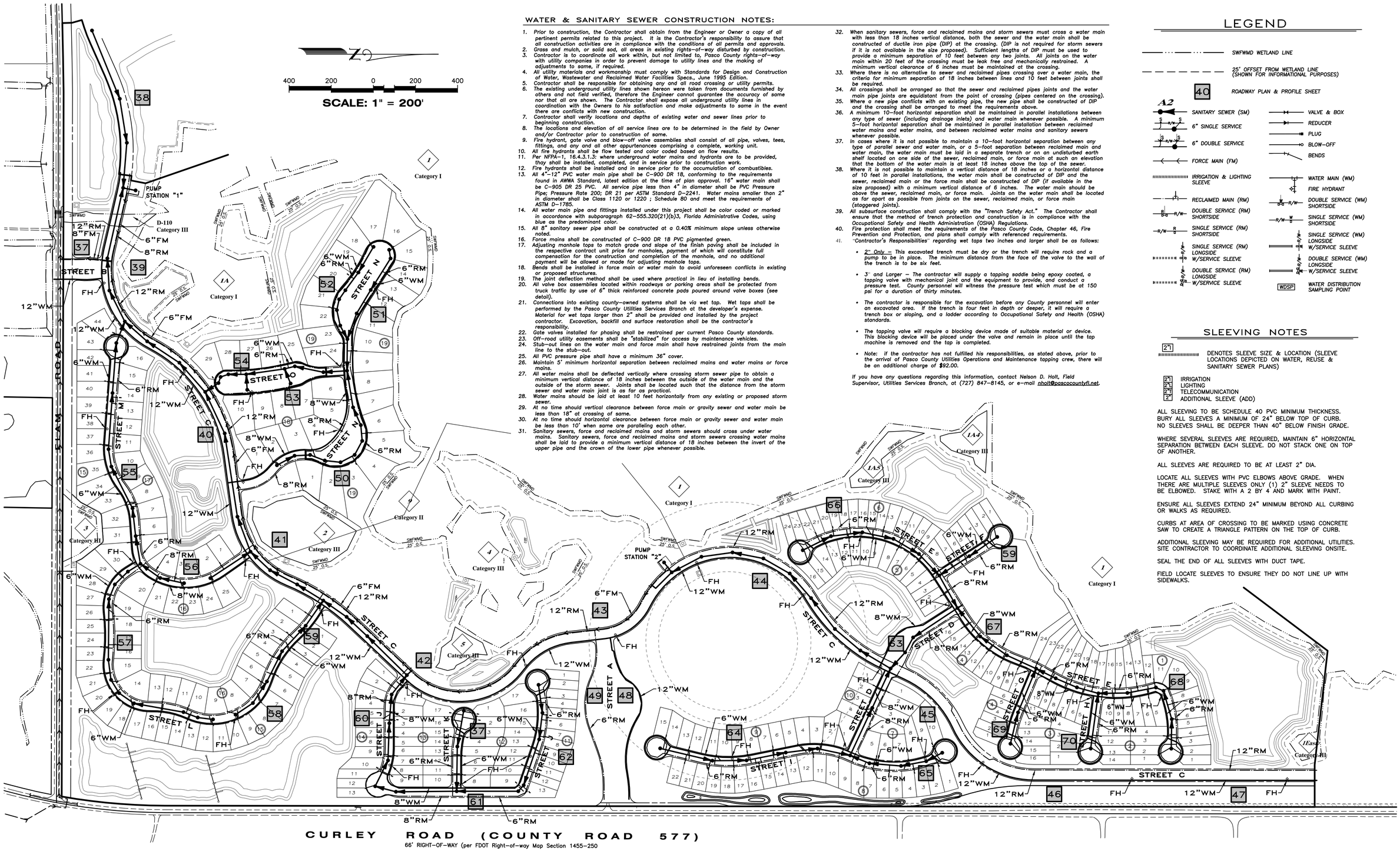
JOB NO. SPH–EP–009
DESIGN LAWTON
DRAWN FINNEY
DATE 11/14/2014
FILE SEC3

EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = –0.84 Feet

SHEET 35 OF 98 SHEETS



WATER & SANITARY 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. Grass and mulch, or solid sod, all areas in existing rights-of-way disturbed by construction.
3. Contractor is to coordinate all work within, but not limited to, Pasco County rights-of-way with utility companies in order to prevent damage to utility lines and the making of adjustments to same, if required.
4. All utility materials and workmanship must comply with Standards for Design and Construction of Water, Wastewater and Reclaimed Water Facilities Specs., June 1995 Edition.
5. Contractor shall be responsible for obtaining any and all road crossing or utility permits.
6. The existing underground utility lines shown hereon were taken from documents furnished by others and not field verified, therefore the Engineer cannot guarantee the accuracy of same nor that all are shown. The Contractor shall expose all underground utility lines in coordination with the Owners to his satisfaction and make adjustments to same in the event there are conflicts with new construction.
7. Contractor shall verify locations and depths of existing water and sewer lines prior to beginning construction.
8. 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.
9. 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.
10. All fire hydrants shall be flow tested and color coded based on flow results.
11. Per NFPA-1, 16.4.3.1.3: where underground water mains and hydrants are to be provided, they shall be installed, completed, and in service prior to construction work.
12. Fire hydrants shall be installed and in service prior to the accumulation of combustibles.
13. All 4"-12" PVC water main pipe shall be C-900 DR 18, conforming to the requirements found in AWWA Standard, latest edition at the time of plan approval. 16" water main shall be C-905 DR 25 PVC. All service pipe less than 4" in diameter shall be PVC Pressure Pipe; Pressure Rate 200; DR 21 per ASTM Standard D-2241. Water mains smaller than 2" in diameter shall be Class 1120 or 1220 ; Schedule 80 and meet the requirements of ASTM D-1785.
14. 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.
15. All 8" sanitary sewer pipe shall be constructed at a 0.40% minimum slope unless otherwise noted.
16. Force mains shall be constructed of C-900 DR 18 PVC pigmented green.
17. 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.
18. Bends shall be installed in force main or water main to avoid unforeseen conflicts in existing or proposed structures.
19. The joint deflection method shall be used where practical in lieu of installing bends.
20. 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).
21. Connections into existing county-owned systems shall be via wet tap. Wet taps shall be performed by the Pasco County Utilities Services Branch at the developer's expense. Material for wet taps larger than 2" shall be provided and installed by the project contractor. Excavation, backfill and surface restoration shall be the contractor's responsibility.
22. Gate valves installed for phasing shall be restrained per current Pasco County standards.
23. Off-road utility easements shall be "stabilized" for access by maintenance vehicles.
24. Stub-out lines on the water main and force main shall have restrained joints from the main line to the stub-out.
25. All PVC pressure pipe shall have a minimum 36" cover.
26. Maintain 5' minimum horizontal separation between reclaimed mains and water mains or force mains.
27. All water mains shall be deflected vertically where crossing storm sewer pipe to obtain a minimum vertical distance of 18 inches between the outside of the water main and the outside of the storm sewer. Joints shall be located such that the distance from the storm sewer and water main joint is as far as practical.
28. Water mains should be laid at least 10 feet horizontally from any existing or proposed storm sewer.
29. At no time should vertical clearance between force main or gravity sewer and water main be less than 18" at crossing of same.
30. At no time should horizontal clearance between force main or gravity sewer and water main be less than 10' when same are paralleling each other.
31. Sanitary sewers, force and reclaimed mains and storm sewers should cross under water mains. Sanitary sewers, force and reclaimed mains and storm sewers crossing water mains shall be laid to provide a minimum vertical distance of 18 inches between the invert of the upper pipe and the crown of the lower pipe whenever possible.
32. When sanitary sewers, force and reclaimed mains and storm sewers must cross a water main with less than 18 inches vertical distance, both the sewer and the water main shall be constructed of ductile iron pipe (DIP) at the crossing. (DIP is not required for storm sewers if it is not available in the size proposed). 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.
33. Where there is no alternative to sewer and reclaimed pipes crossing over a water main, the criteria for minimum separation of 18 inches between lines and 10 feet between joints shall be required.
34. 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).
35. 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.
36. A minimum 10-foot horizontal separation shall be maintained in parallel installations between any type of sewer (including drainage inlets) and water main whenever possible. A minimum 5-foot horizontal separation shall be maintained in parallel installation between reclaimed water mains and water mains, and between reclaimed water mains and sanitary sewers whenever possible.
37. In cases where it is not possible to maintain a 10-foot horizontal separation between any type of parallel sewer and water main, or a 5-foot separation between reclaimed main 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, reclaimed main, 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.
38. 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, reclaimed main 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 be above the sewer, reclaimed main, or force main. Joints on the water main shall be located as far apart as possible from joints on the sewer, reclaimed main, or force main (staggered joints).
39. 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.
40. Fire protection shall meet the requirements of the Pasco County Code, Chapter 46, Fire Prevention and Protection, and plans shall comply with referenced requirements.
41. "Contractor's Responsibilities" regarding wet taps two inches and larger shall be as follows:

- 2" Only – This excavated trench must be dry or the trench will require rock and a pump to be in place. The minimum distance from the face of the valve to the wall of the trench is to be six feet.
- 3" and Larger – The contractor will supply a tapping saddle being epoxy coated, a tapping valve with mechanical joint and the equipment to provide, and conduct a pressure test. County personnel will witness the pressure test which must be at 150 psi for a duration of thirty minutes.
- The contractor is responsible for the excavation before any County personnel will enter an excavated area. If the trench is four feet in depth or deeper, it will require a trench box or sloping, and a ladder according to Occupational Safety and Health (OSHA) standards.
- The tapping valve will require a blocking device made of suitable material or device. This blocking device will be placed under the valve and remain in place until the tap machine is removed and the tap is completed.
- Note: If the contractor has not fulfilled his responsibilities, as stated above, prior to the arrival of Pasco County Utilities Operations and Maintenance tapping crew, there will be an additional charge of $92.00.

If you have any questions regarding this information, contact Nelson D. Holt, Field Supervisor, Utilities Services Branch, at (727) 847-8145, or e-mail nholt@pascocountyfl.net.

LEGEND

- SWFWMD WETLAND LINE
- 25' OFFSET FROM WETLAND LINE (SHOWN FOR INFORMATIONAL PURPOSES)
- 40 ROADWAY PLAN & PROFILE SHEET
- A2
- SANITARY SEWER (SM)
- 6" SINGLE SERVICE
- 6" DOUBLE SERVICE
- FORCE MAIN (FM)
- IRRIGATION & LIGHTING SLEEVE
- RECLAIMED MAIN (RM)
- DOUBLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- VALVE & BOX
- REDUCER
- PLUG
- BLOW-OFF
- BENDS
- WATER MAIN (WM)
- FIRE HYDRANT
- DOUBLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- WDSP WATER DISTRIBUTION SAMPLING POINT

SLEEVING NOTES

2" DENOTES SLEEVE SIZE & LOCATION (SLEEVE LOCATIONS DEPICTED ON WATER, REUSE & SANITARY SEWER PLANS)

2" IRRIGATION
2" LIGHTING
2" TELECOMMUNICATION
2" ADDITIONAL SLEEVE (ADD)

ALL SLEEVING TO BE SCHEDULE 40 PVC MINIMUM THICKNESS. BURY ALL SLEEVES A MINIMUM OF 24" BELOW TOP OF CURB. NO SLEEVES SHALL BE DEEPER THAN 40" BELOW FINISH GRADE.

WHERE SEVERAL SLEEVES ARE REQUIRED, MAINTAIN 6" HORIZONTAL SEPARATION BETWEEN EACH SLEEVE. DO NOT STACK ONE ON TOP OF ANOTHER.

ALL SLEEVES ARE REQUIRED TO BE AT LEAST 2" DIA.

LOCATE ALL SLEEVES WITH PVC ELBOWS ABOVE GRADE. WHEN THERE ARE MULTIPLE SLEEVES ONLY (1) 2" SLEEVE NEEDS TO BE ELBOWED. STAKE WITH A 2 BY 4 AND MARK WITH PAINT.

ENSURE ALL SLEEVES EXTEND 24" MINIMUM BEYOND ALL CURBING OR WALKS AS REQUIRED.

CURBS AT AREA OF CROSSING TO BE MARKED USING CONCRETE SAW TO CREATE A TRIANGLE PATTERN ON THE TOP OF CURB.

ADDITIONAL SLEEVING MAY BE REQUIRED FOR ADDITIONAL UTILITIES. SITE CONTRACTOR TO COORDINATE ADDITIONAL SLEEVING ONSITE.

SEAL THE END OF ALL SLEEVES WITH DUCT TAPE.

FIELD LOCATE SLEEVES TO ENSURE THEY DO NOT LINE UP WITH SIDEWALKS.

CALL 48 HOURS BEFORE YOU DIG
IT'S THE LAW!
DIAL 811
811 Know what's below. Call before you dig.
SUNSHINE STATE ONE CALL OF FLORIDA, INC.

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

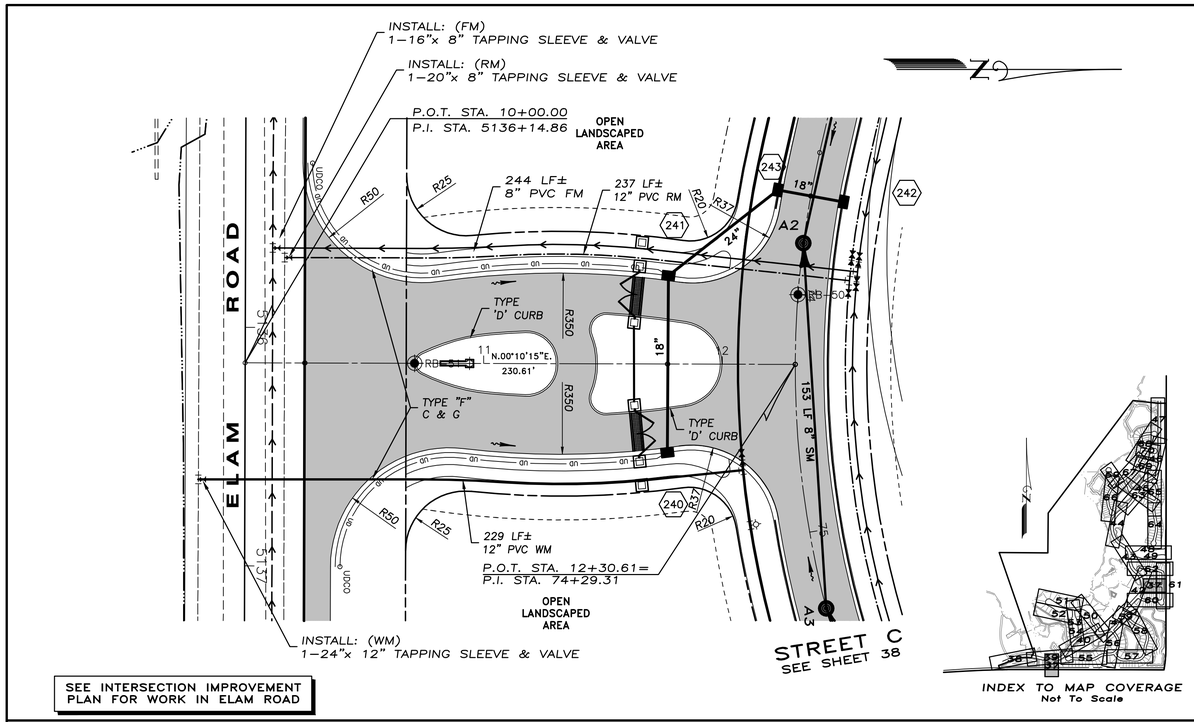
WATER & SEWER KEY MAP

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE WSKEY

EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: **STANDARD PACIFIC OF FLORIDA**

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet



CURVE DATA TABLE

NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
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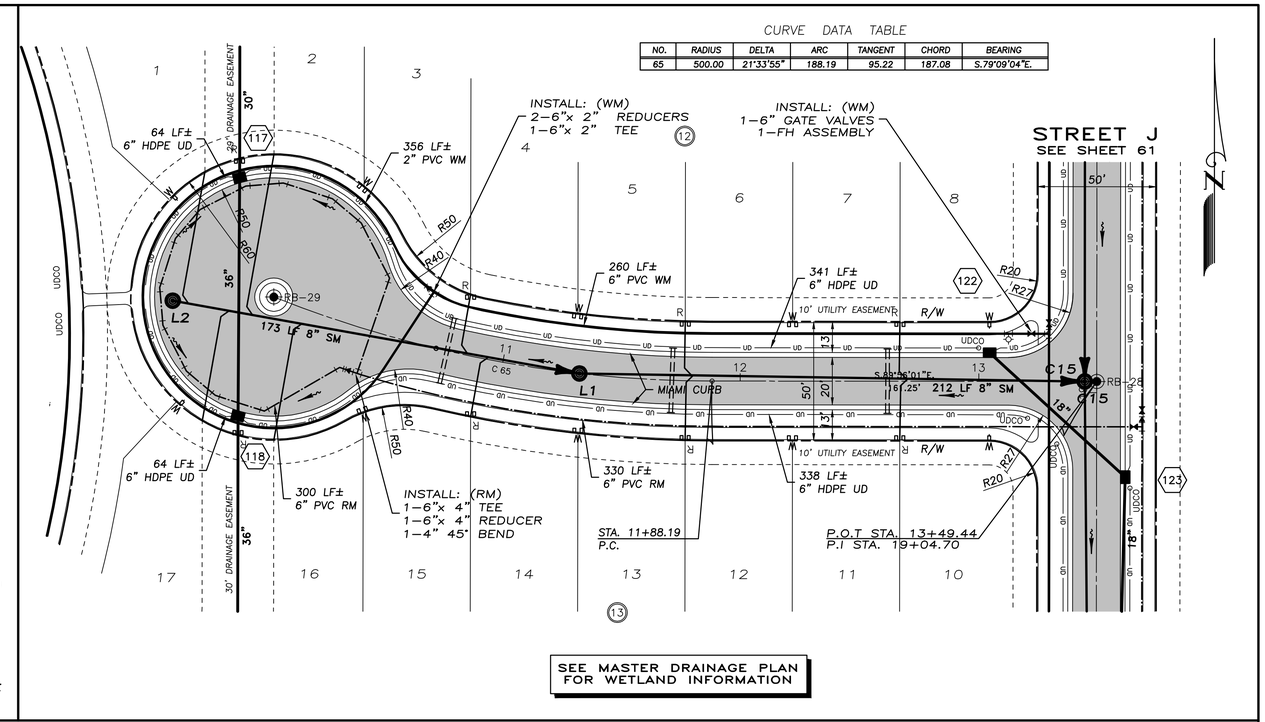
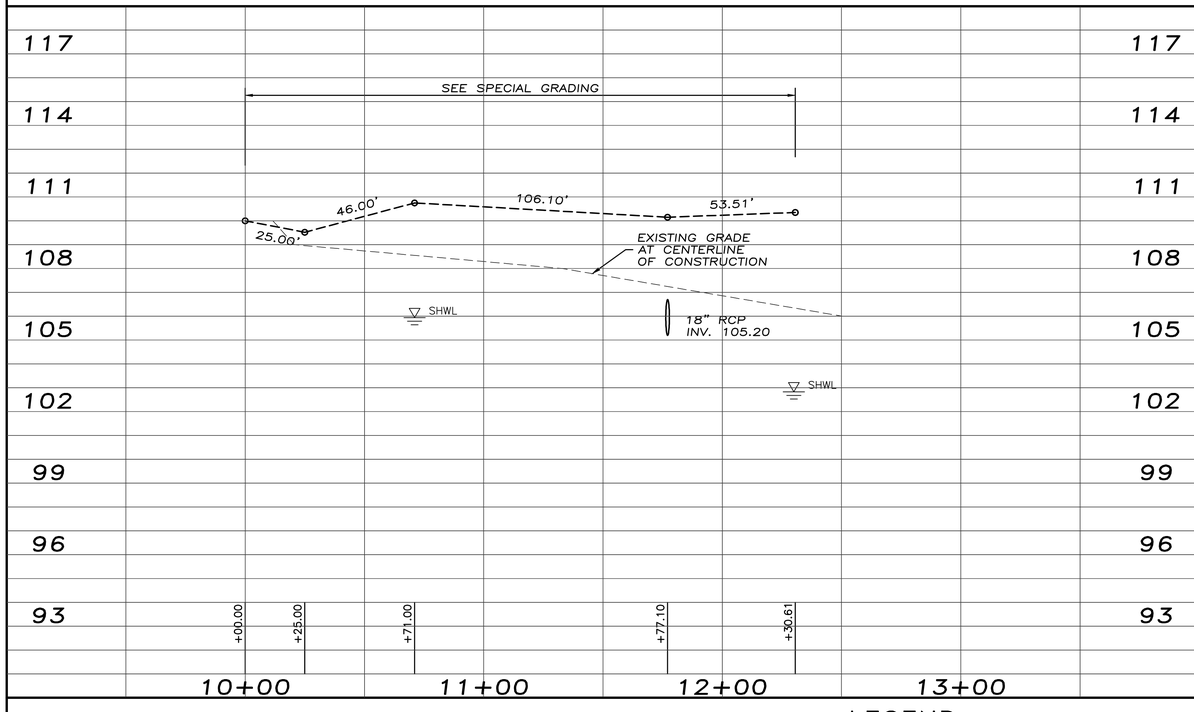
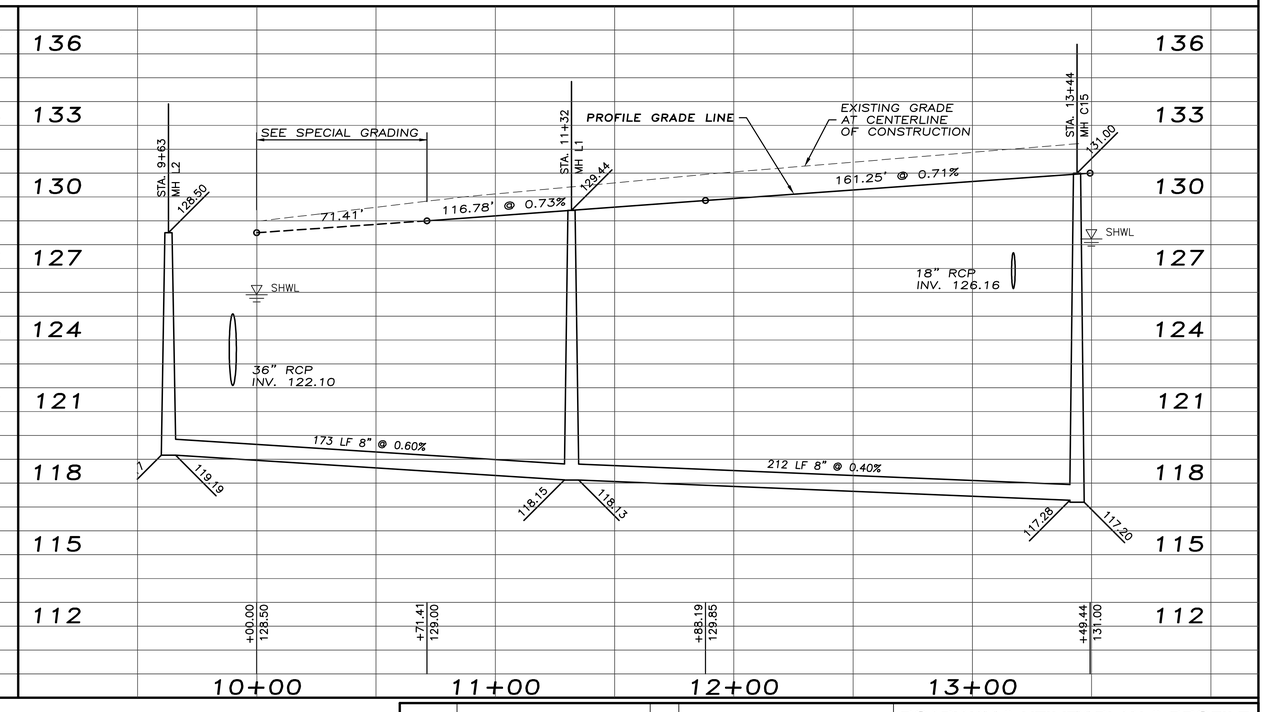


STREET B

STREET K

SCALE: 1" = 3' VERTICAL
1" = 30' HORIZONTAL





LEGEND

- SANITARY SEWER (SM)
- 6" SINGLE SERVICE
- 6" DOUBLE SERVICE
- FORCE MAIN (FM)
- VALVE & BOX
- REDUCER
- PLUG
- BLOW-OFF
- BENDS
- IRRIGATION & LIGHTING SLEEVE
- RECLAIMED MAIN (RM)
- DOUBLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- WATER MAIN (WM)
- FIRE HYDRANT
- DOUBLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- WDSP WATER DISTRIBUTION SAMPLING POINT

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

ROADWAY & UTILITY PLAN & PROFILE

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE RP01

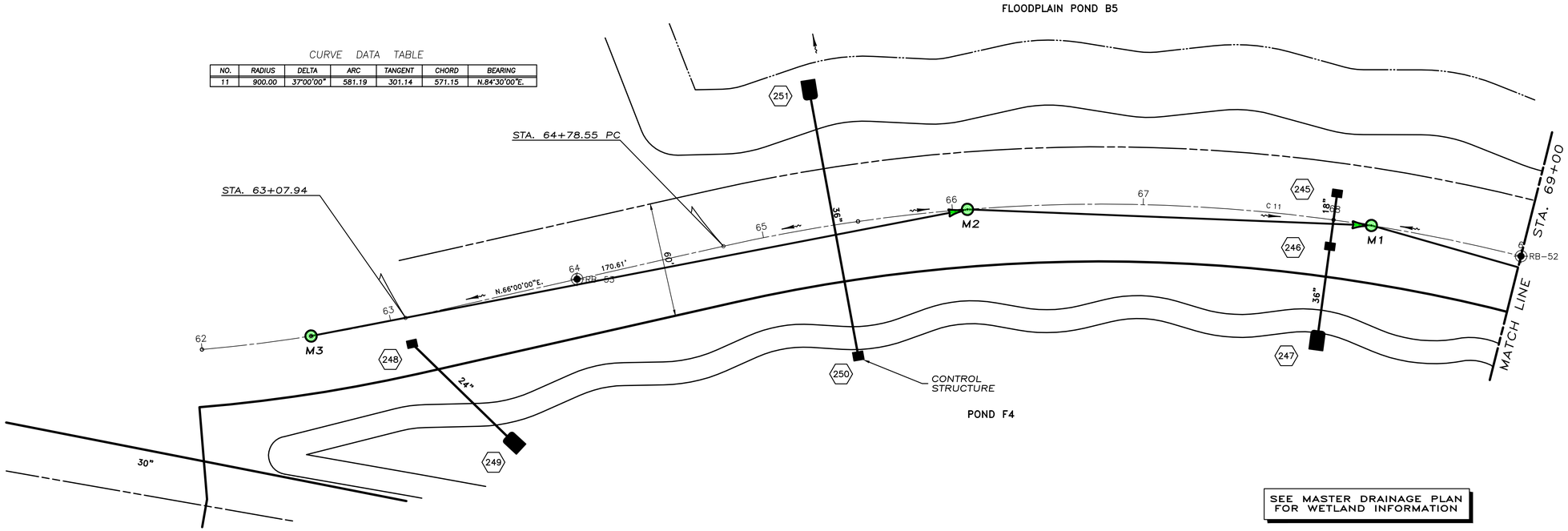
EPCO RANCH NORTH
PARCEL A PHASE 1

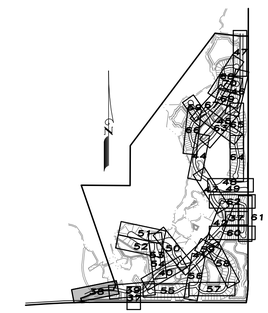
PREPARED FOR: STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

CURVE DATA TABLE

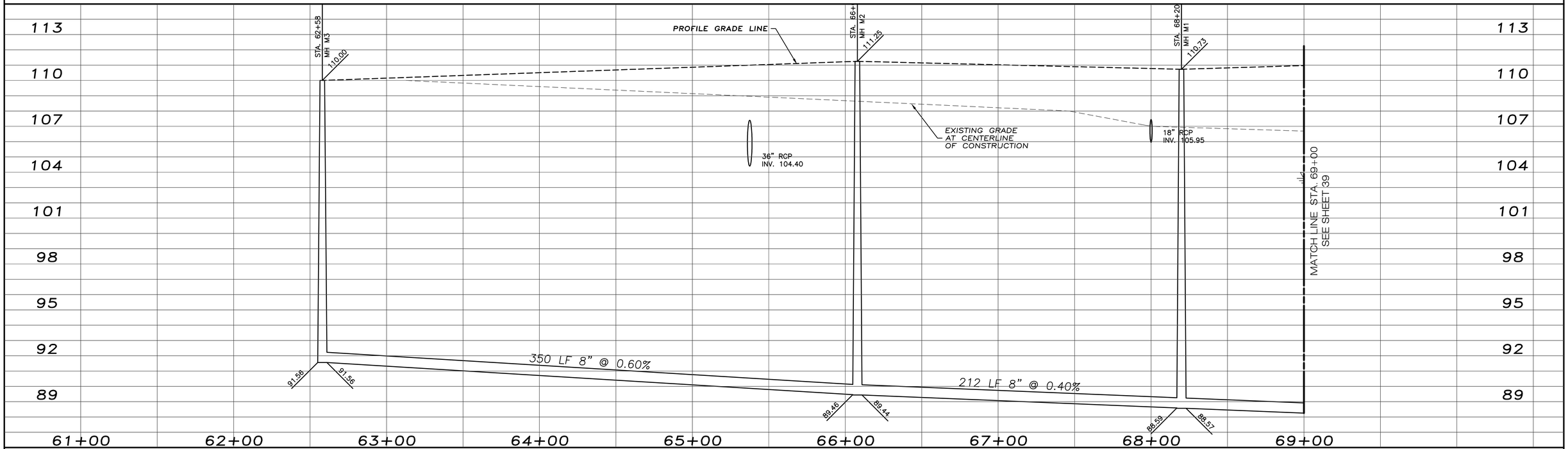
NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
11	900.00	37°00'00"	581.19	301.14	571.15	N.84°30'00"E.





STREET C

SCALE: 1" = 3' VERTICAL
1" = 30' HORIZONTAL



LEGEND

A2

- SANITARY SEWER (SM)
- 6" SINGLE SERVICE
- 6" DOUBLE SERVICE
- FORCE MAIN (FM)
- VALVE & BOX
- REDUCER
- PLUG
- BLOW-OFF
- BENDS
- IRRIGATION & LIGHTING SLEEVE
- RECLAIMED MAIN (RM)
- DOUBLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- WATER MAIN (WM)
- FIRE HYDRANT
- DOUBLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- WDSP WATER DISTRIBUTION SAMPLING POINT

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

ROADWAY & UTILITY PLAN & PROFILE

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE RP02

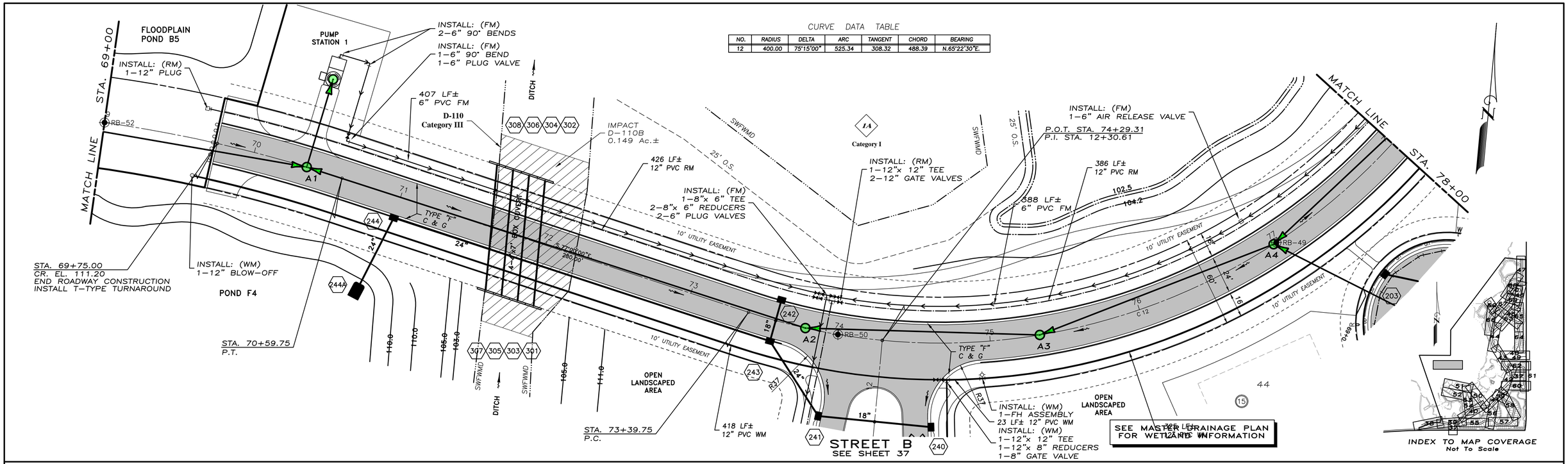
EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: **STANDARD PACIFIC OF FLORIDA**

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

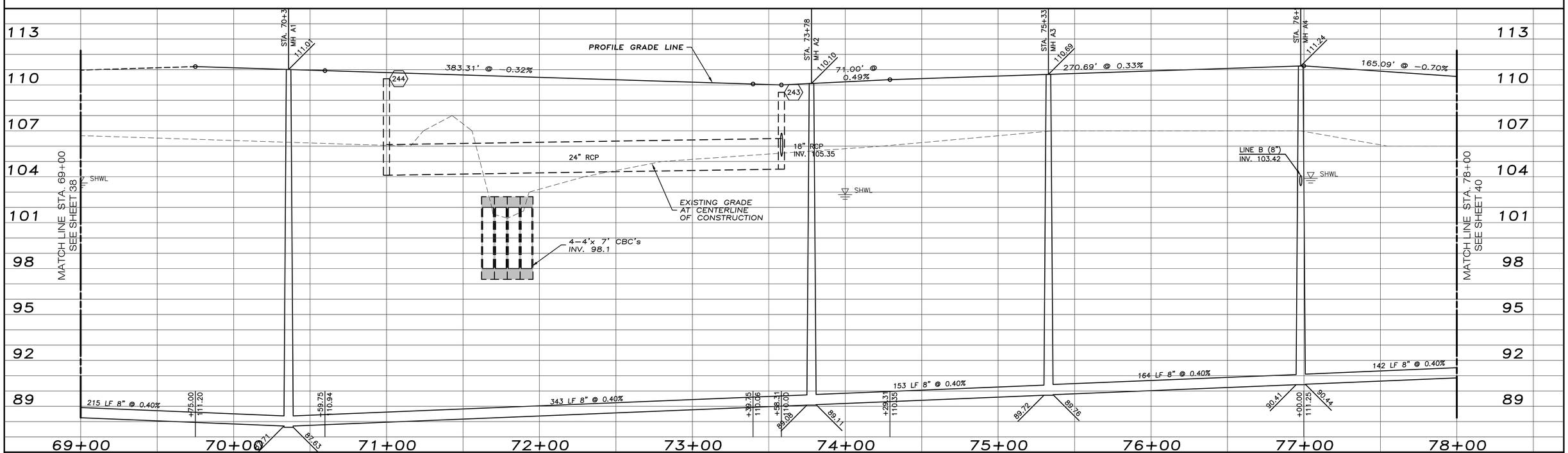
CURVE DATA TABLE

NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
12	400.00	75°15'00"	525.34	308.32	488.39	N.65°22'30"E.



STREET C

SCALE: 1" = 3' VERTICAL
1" = 30' HORIZONTAL



LEGEND

A2 — SANITARY SEWER (SM)
6" SINGLE SERVICE
6" DOUBLE SERVICE
FORCE MAIN (FM)
VALVE & BOX
REDUCER
PLUG
BLOW–OFF
BENDS
IRRIGATION & LIGHTING SLEEVE
RECLAIMED MAIN (RM)
DOUBLE SERVICE (RM) SHORTSIDE
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SINGLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
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SINGLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
DOUBLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
WDSP — WATER DISTRIBUTION SAMPLING POINT

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813–223–3919 Fax: 813–223–3975
DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

ROADWAY & UTILITY PLAN & PROFILE

JOB NO. SPH–EP–009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE RP03

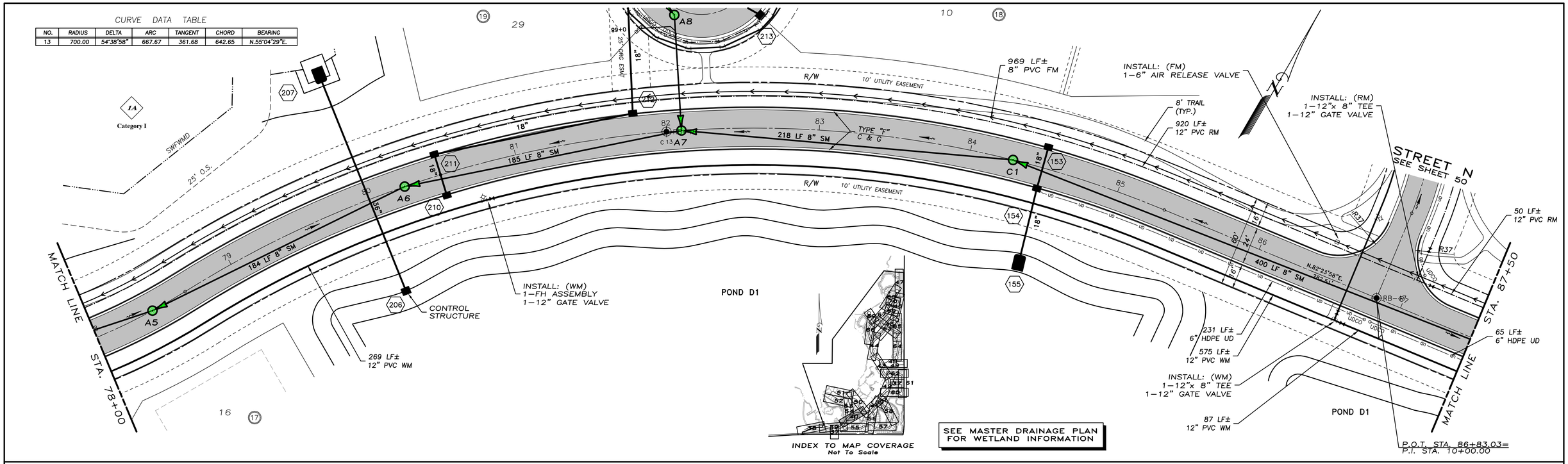
EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: **STANDARD PACIFIC OF FLORIDA**

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = –0.84 Feet

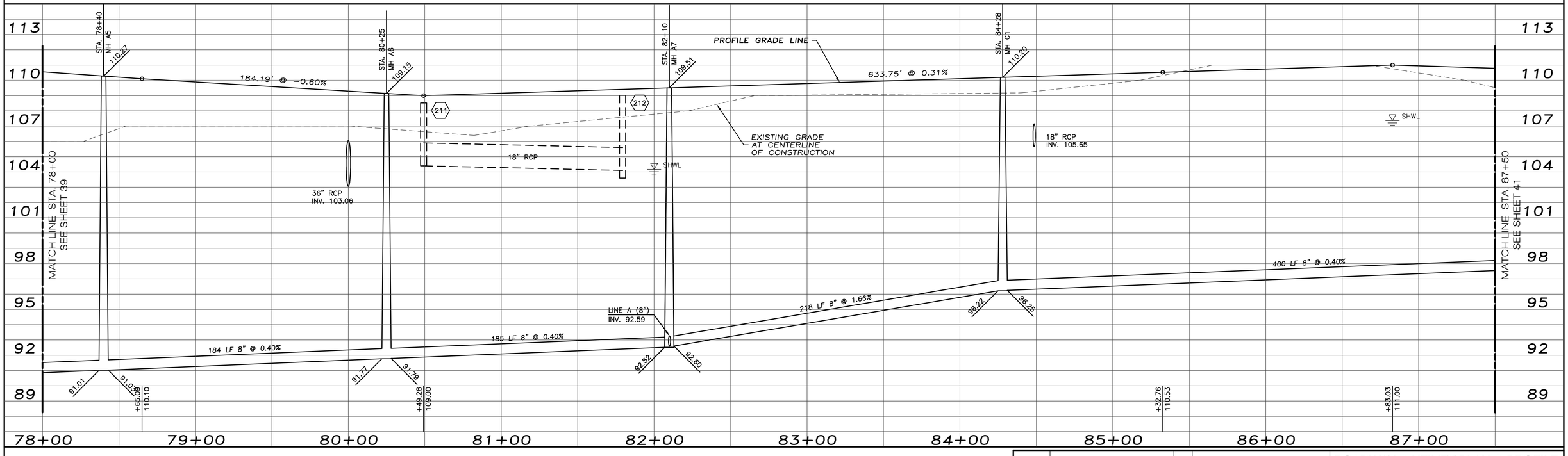
CURVE DATA TABLE

NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
13	700.00	54°38'58"	667.67	361.68	642.65	N.55°04'29"E.



STREET C

SCALE: 1" = 3' VERTICAL
1" = 30' HORIZONTAL



LEGEND

- SANITARY SEWER (SM)
- 6" SINGLE SERVICE
- 6" DOUBLE SERVICE
- FORCE MAIN (FM)
- VALVE & BOX
- REDUCER
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- IRRIGATION & LIGHTING SLEEVE
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- DOUBLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- WDSP WATER DISTRIBUTION SAMPLING POINT

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975
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W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

ROADWAY & UTILITY PLAN & PROFILE

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE RP04

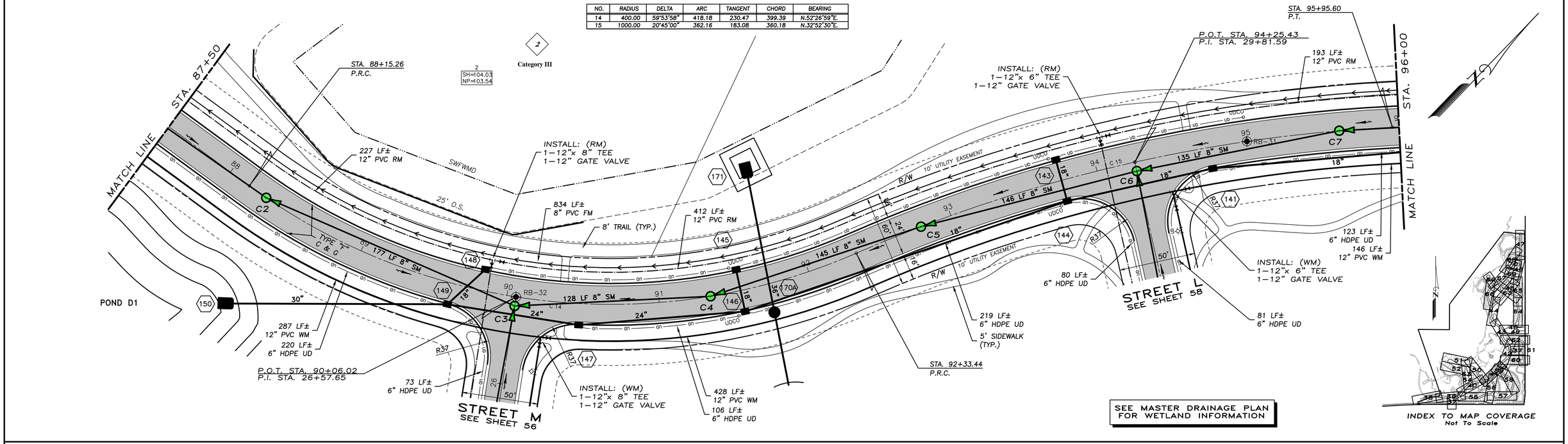
EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84Feet

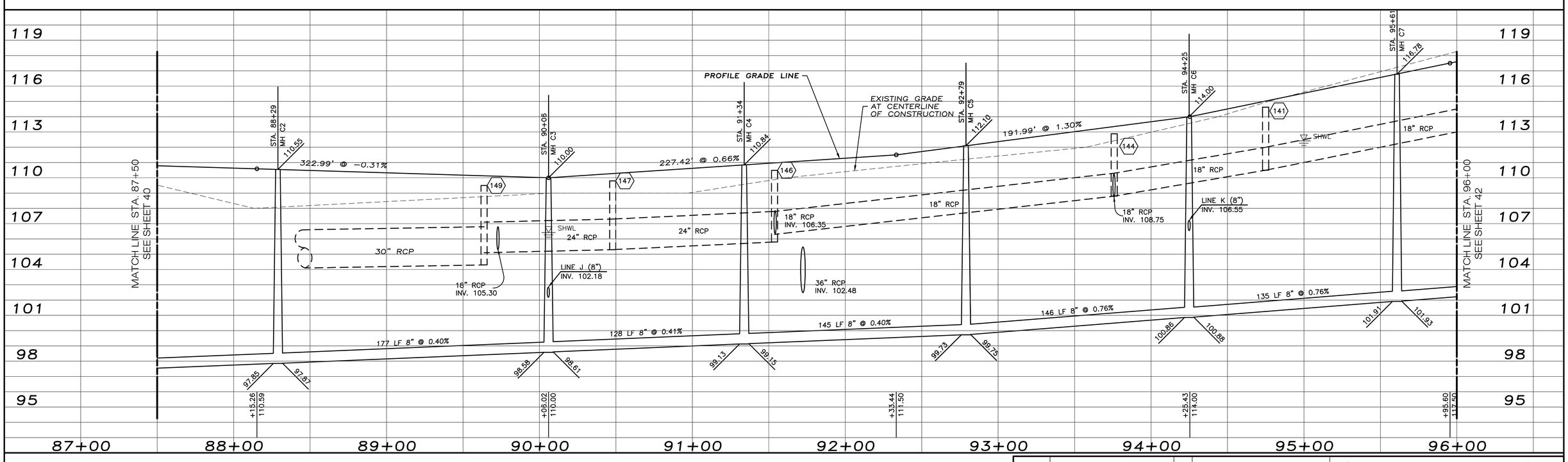
CURVE DATA TABLE

NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
14	400.00	59°53'58"	418.18	230.47	399.39	N.52°26'59"E.
15	1000.00	20°45'00"	362.16	183.08	360.18	N.32°52'30"E.



STREET C

SCALE: 1" = 3' VERTICAL
1" = 30' HORIZONTAL



LEGEND

A2

- SANITARY SEWER (SM)
- 6" SINGLE SERVICE
- 6" DOUBLE SERVICE
- FORCE MAIN (FM)
- VALVE & BOX
- REDUCER
- PLUG
- BLOW-OFF
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- FIRE HYDRANT
- DOUBLE SERVICE (WM) SHORTSIDE
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- SINGLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- WDSP WATER DISTRIBUTION SAMPLING POINT

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

ROADWAY & UTILITY PLAN & PROFILE

JOB NO. SPH-EP-009

DESIGN LAWTON

DRAWN MIDDLETON

DATE 11/14/2014

FILE RP05

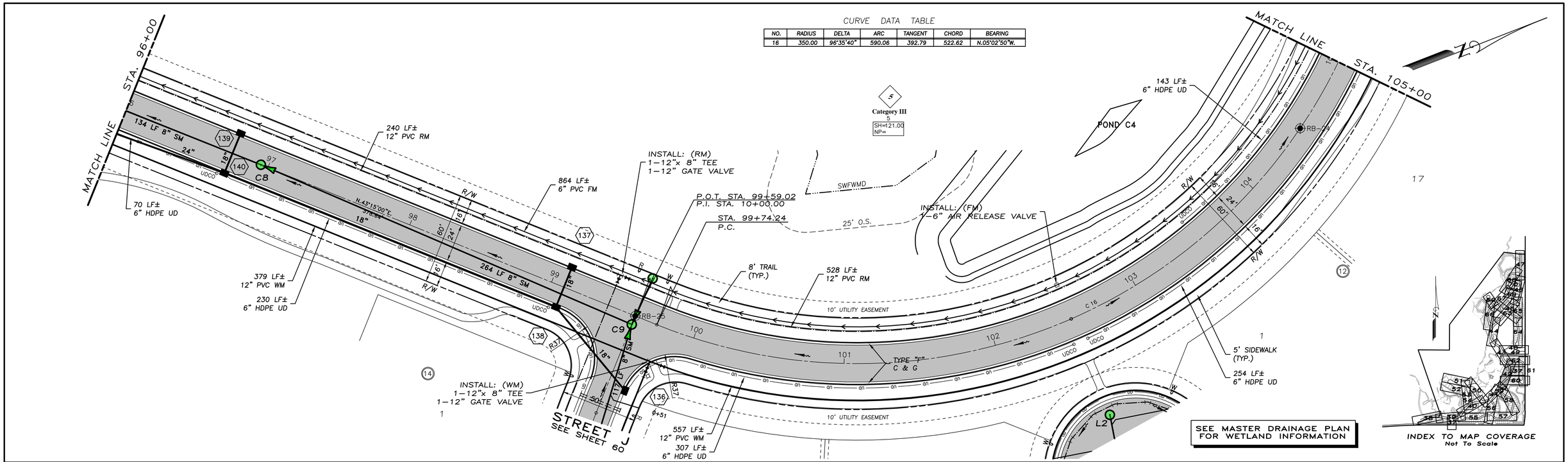
EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

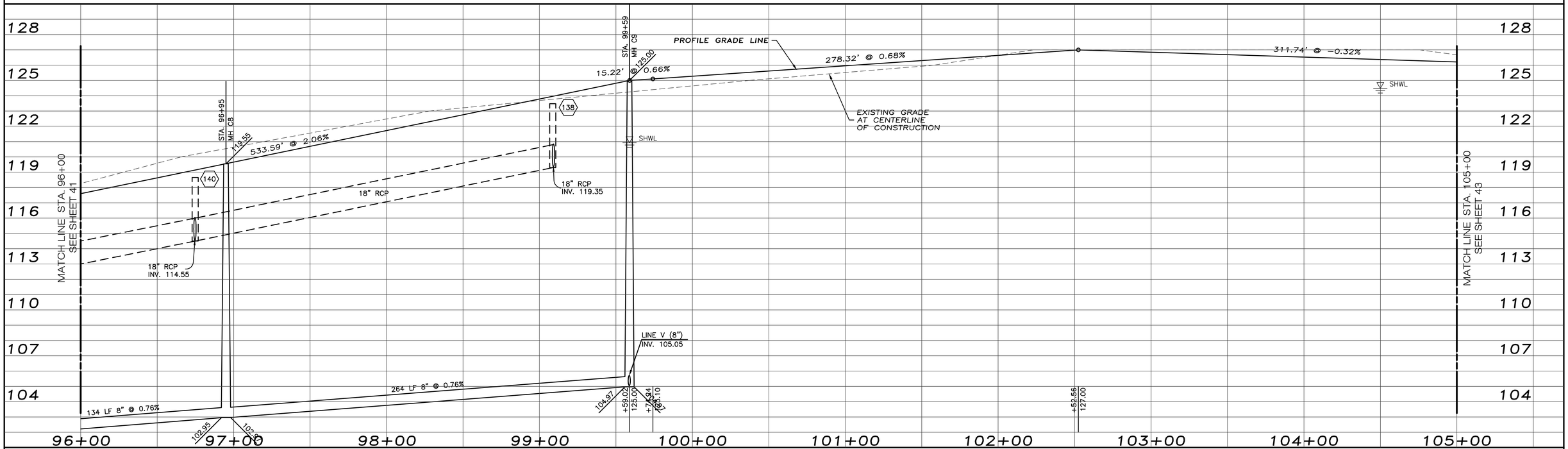
CURVE DATA TABLE

NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
16	350.00	96°35'40"	590.06	392.79	522.62	N.05°02'50"W.



STREET C

SCALE: 1" = 3' VERTICAL
1" = 30' HORIZONTAL



LEGEND

A2

- SANITARY SEWER (SM)
- 6" SINGLE SERVICE
- 6" DOUBLE SERVICE
- FORCE MAIN (FM)
- VALVE & BOX
- REDUCER
- PLUG
- BLOW-OFF
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- IRRIGATION & LIGHTING SLEEVE
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- SINGLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- WDSP WATER DISTRIBUTION SAMPLING POINT

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

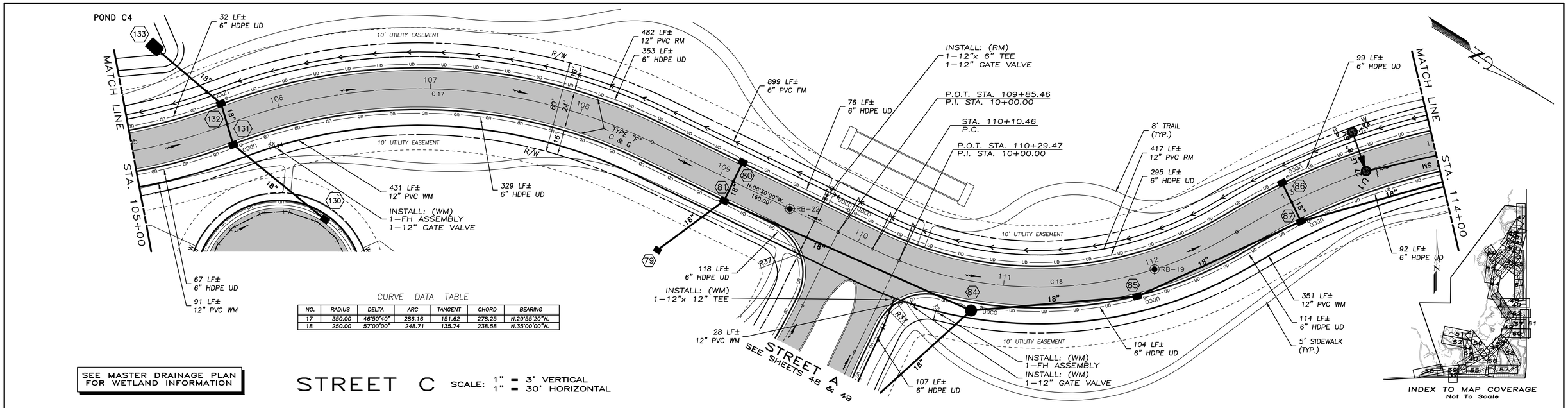
ROADWAY & UTILITY PLAN & PROFILE

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE RP06

EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet



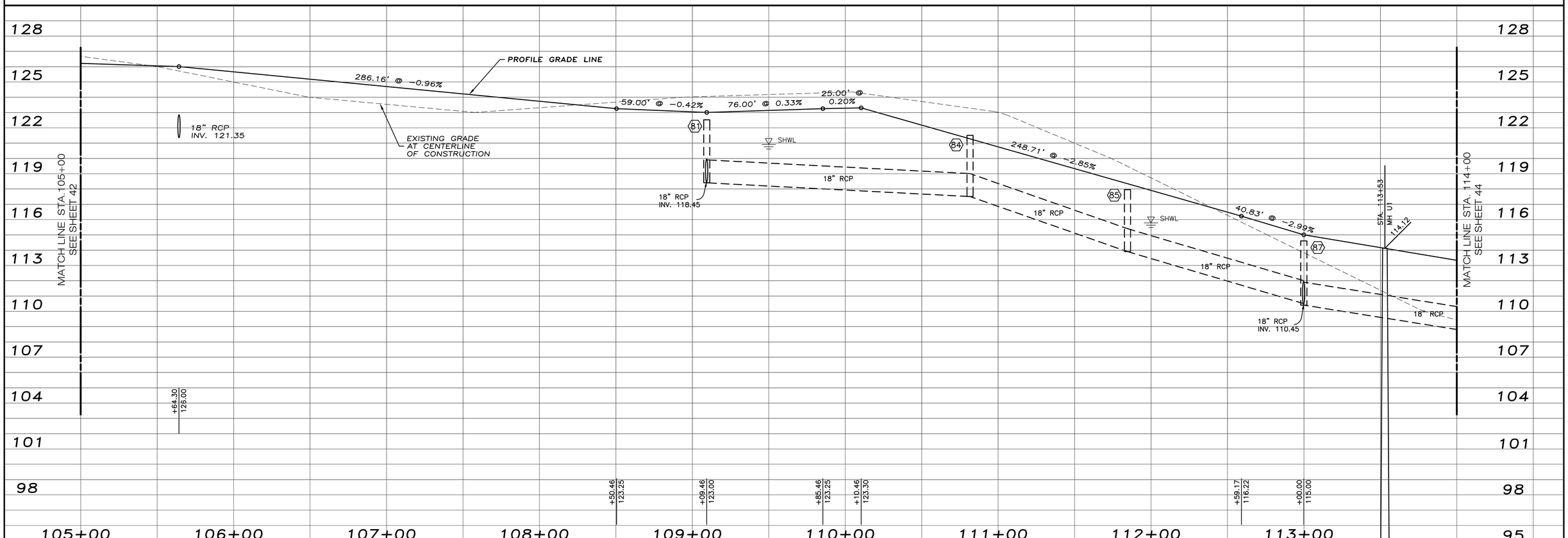
CURVE DATA TABLE

NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
17	350.00	46°50'40"	286.16	151.62	278.25	N.29°55'20"W.
18	250.00	57°00'00"	248.71	135.74	238.58	N.35°00'00"W.

SEE MASTER DRAINAGE PLAN FOR WETLAND INFORMATION

STREET C

SCALE: 1" = 3' VERTICAL
1" = 30' HORIZONTAL



LEGEND

A2

- SANITARY SEWER (SM)
- 6" SINGLE SERVICE
- 6" DOUBLE SERVICE
- FORCE MAIN (FM)
- VALVE & BOX
- REDUCER
- PLUG
- BLOW-OFF
- BENDS
- IRRIGATION & LIGHTING SLEEVE
- RECLAIMED MAIN (RM)
- DOUBLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
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- SINGLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- WDSP — WATER DISTRIBUTION SAMPLING POINT

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

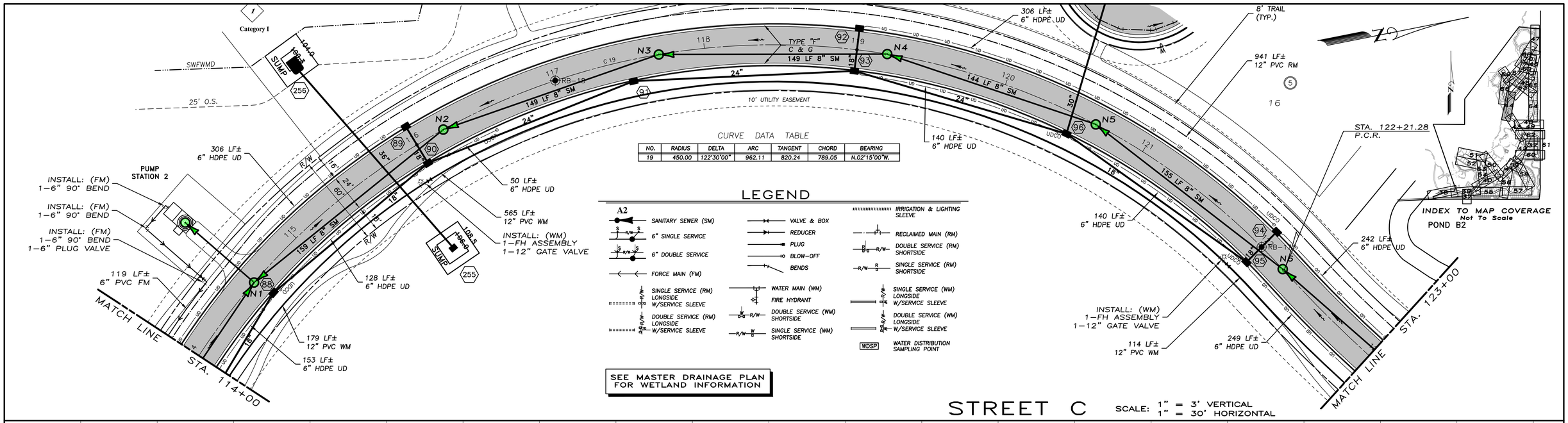
DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

ROADWAY & UTILITY PLAN & PROFILE

EPCO RANCH NORTH
PARCEL A PHASE 1

JOB NO.	SPH-EP-009
DESIGN	LAWTON
DRAWN	MIDDLETON
DATE	11/14/2014
FILE	RP07
PREPARED FOR:	STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84Feet



CURVE DATA TABLE

NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
19	450.00	122°30'00"	962.11	820.24	789.05	N.02°15'00"W.

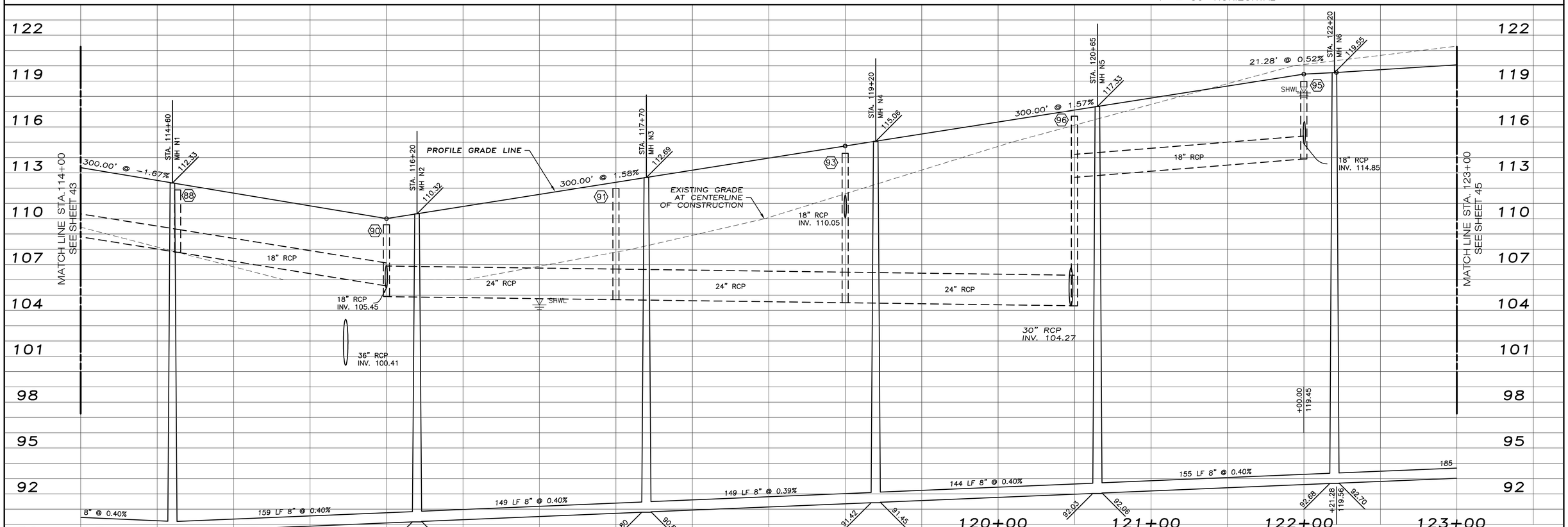
LEGEND

A2

SANITARY SEWER (SM)
6" SINGLE SERVICE
6" DOUBLE SERVICE
FORCE MAIN (FM)
SINGLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
DOUBLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
VALVE & BOX
REDUCER
PLUG
BLOW-OFF
BENDS
WATER MAIN (WM)
FIRE HYDRANT
DOUBLE SERVICE (WM) SHORTSIDE
SINGLE SERVICE (WM) SHORTSIDE
IRRIGATION & LIGHTING SLEEVE
RECLAIMED MAIN (RM)
DOUBLE SERVICE (RM) SHORTSIDE
SINGLE SERVICE (RM) SHORTSIDE
SINGLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
DOUBLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
WDSP WATER DISTRIBUTION SAMPLING POINT

SEE MASTER DRAINAGE PLAN FOR WETLAND INFORMATION

STREET C SCALE: 1" = 3' VERTICAL 1" = 30' HORIZONTAL



DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
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DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

ROADWAY & UTILITY PLAN & PROFILE

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE RP08

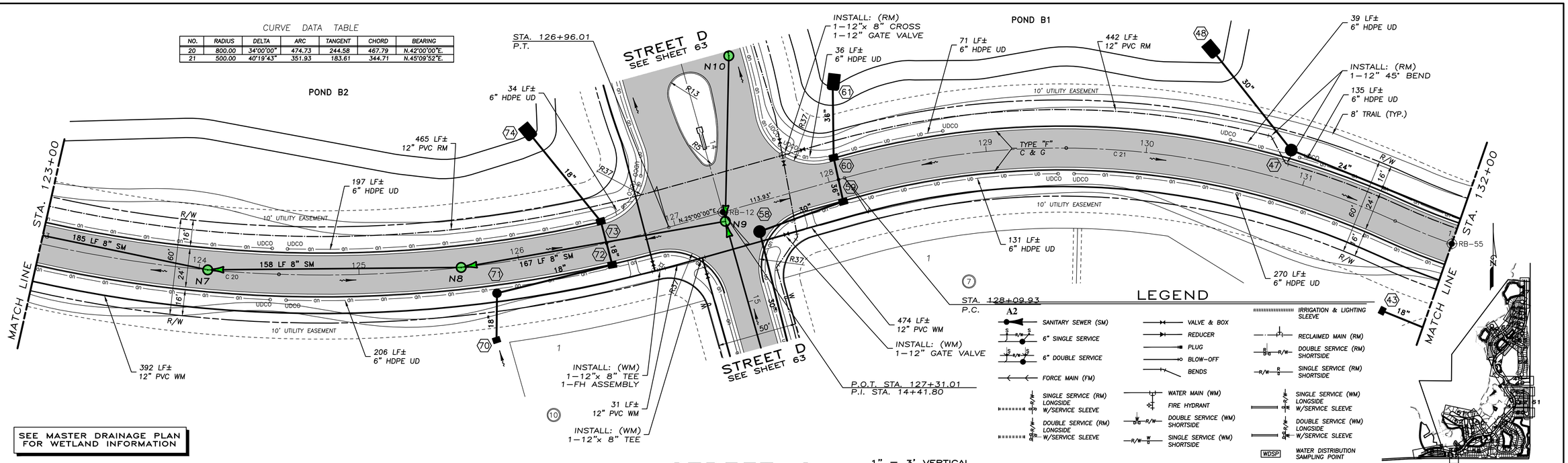
EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

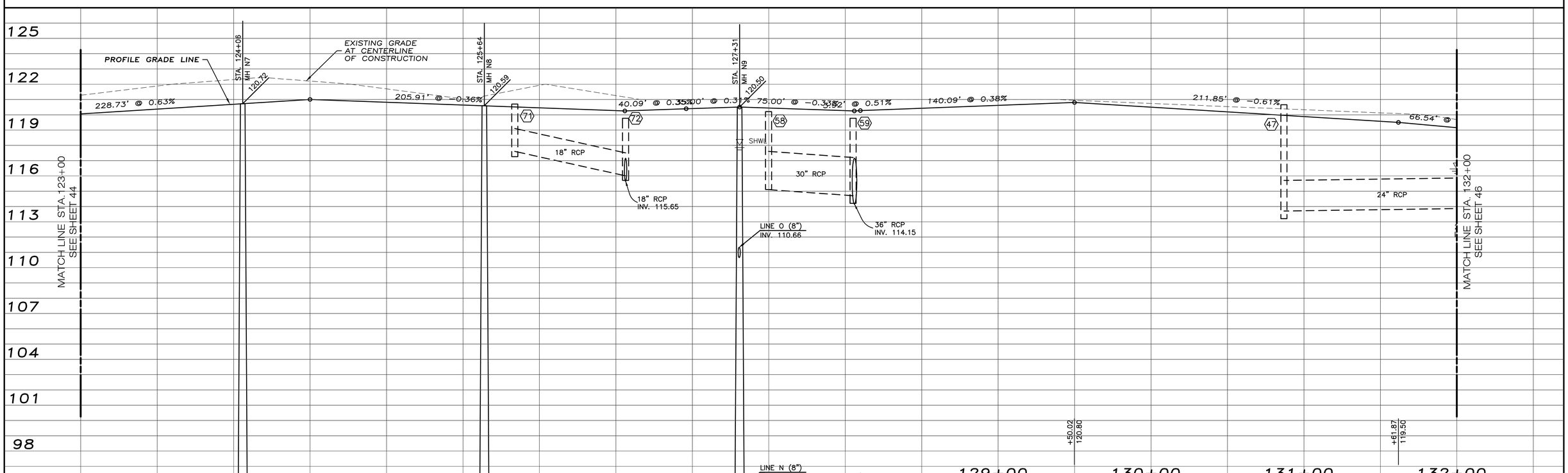
Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

CURVE DATA TABLE

NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
20	800.00	34°00'00"	474.73	244.58	467.79	N.42°00'00"E.
21	500.00	40°19'43"	351.93	183.61	344.71	N.45°09'52"E.



STREET C SCALE: 1" = 3' VERTICAL
1" = 30' HORIZONTAL



DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975
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W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

ROADWAY & UTILITY PLAN & PROFILE

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE RP09

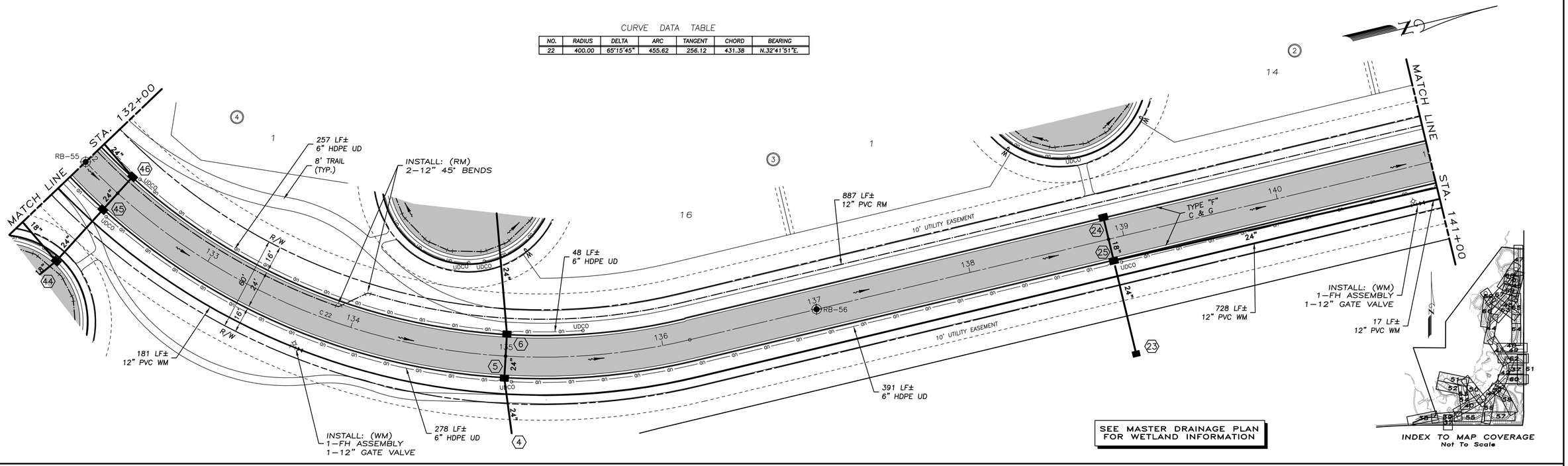
EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

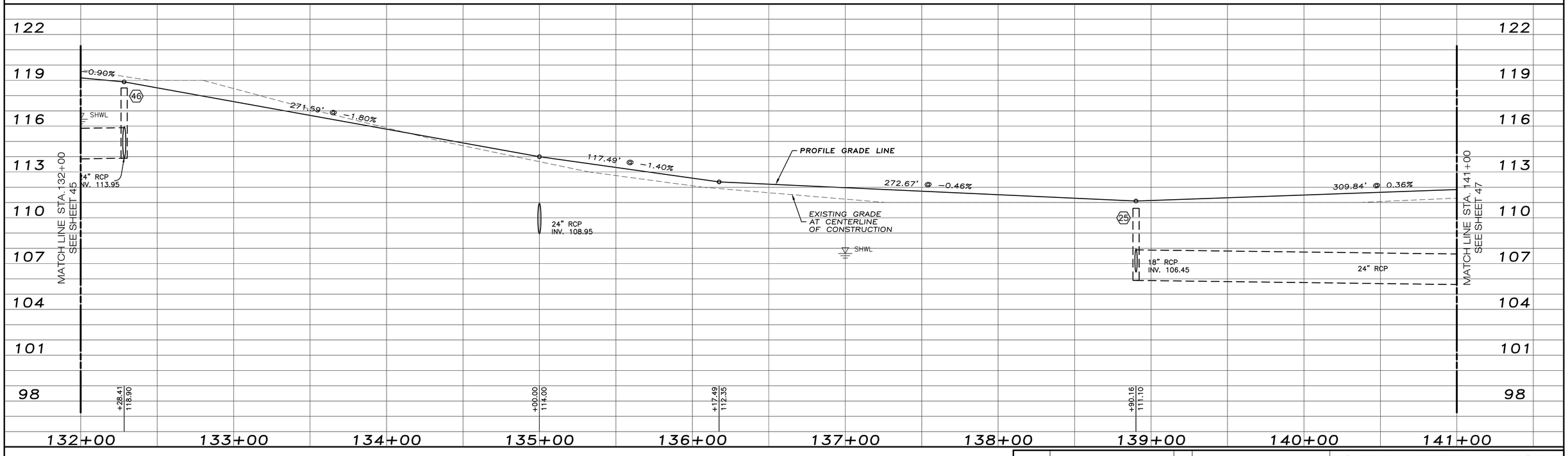
CURVE DATA TABLE

NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
22	400.00	65°15'45"	455.62	256.12	431.38	N.32°41'51"E.



STREET C

SCALE: 1" = 3' VERTICAL
1" = 30' HORIZONTAL



LEGEND

A2

- SANITARY SEWER (SM)
- 6" SINGLE SERVICE
- 6" DOUBLE SERVICE
- FORCE MAIN (FM)
- VALVE & BOX
- REDUCER
- PLUG
- BLOW-OFF
- BENDS
- IRRIGATION & LIGHTING SLEEVE
- RECLAIMED MAIN (RM)
- DOUBLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- WATER MAIN (WM)
- FIRE HYDRANT
- DOUBLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- WDSP WATER DISTRIBUTION SAMPLING POINT

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
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Office: 813-223-3919 Fax: 813-223-3975

DATE:
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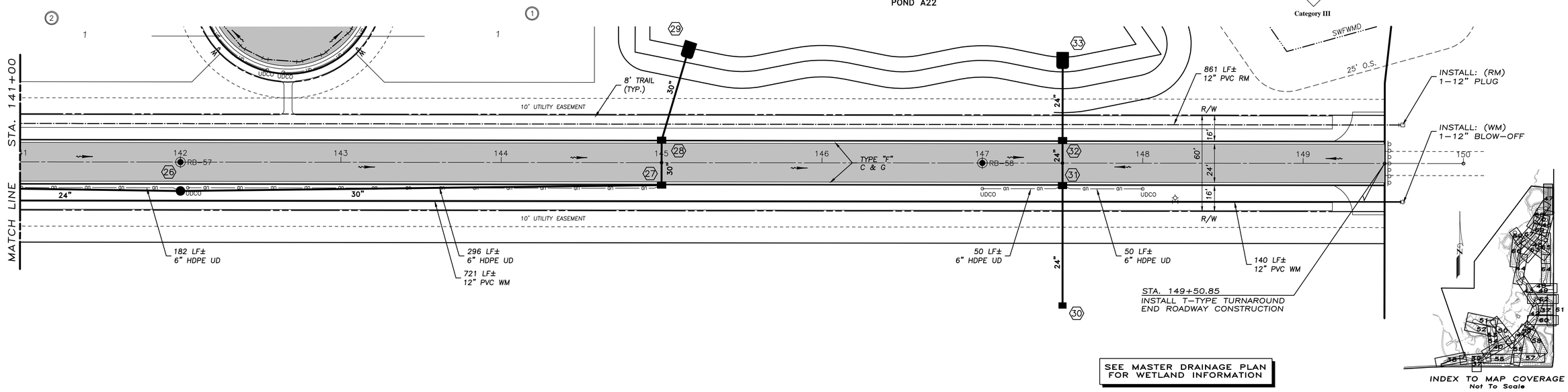
ROADWAY & UTILITY PLAN & PROFILE

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE RP10

EPCO RANCH NORTH
PARCEL A PHASE 1

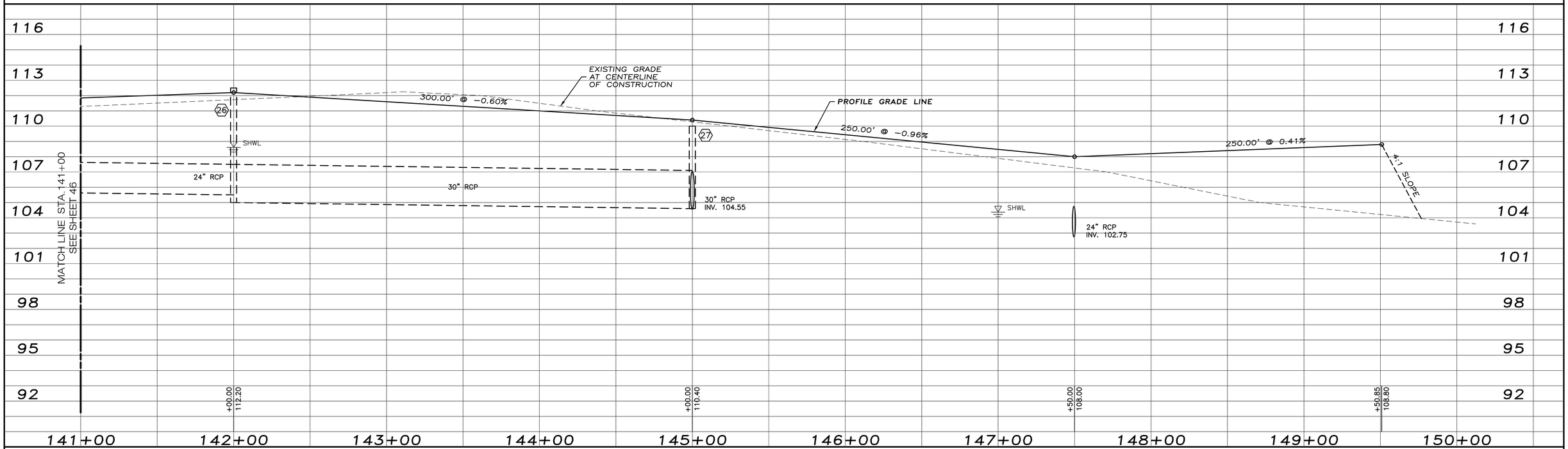
PREPARED FOR: STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet



STREET C

SCALE: 1" = 3' VERTICAL
1" = 30' HORIZONTAL



LEGEND

A2

- SANITARY SEWER (SM)
- 6" SINGLE SERVICE
- 6" DOUBLE SERVICE
- FORCE MAIN (FM)
- VALVE & BOX
- REDUCER
- PLUG
- BLOW-OFF
- BENDS
- IRRIGATION & LIGHTING SLEEVE
- RECLAIMED MAIN (RM)
- DOUBLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- WATER MAIN (WM)
- FIRE HYDRANT
- DOUBLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- WDSP WATER DISTRIBUTION SAMPLING POINT

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
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DATE:
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FLORIDA PROFESSIONAL ENGINEER

ROADWAY & UTILITY PLAN & PROFILE

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE RP11

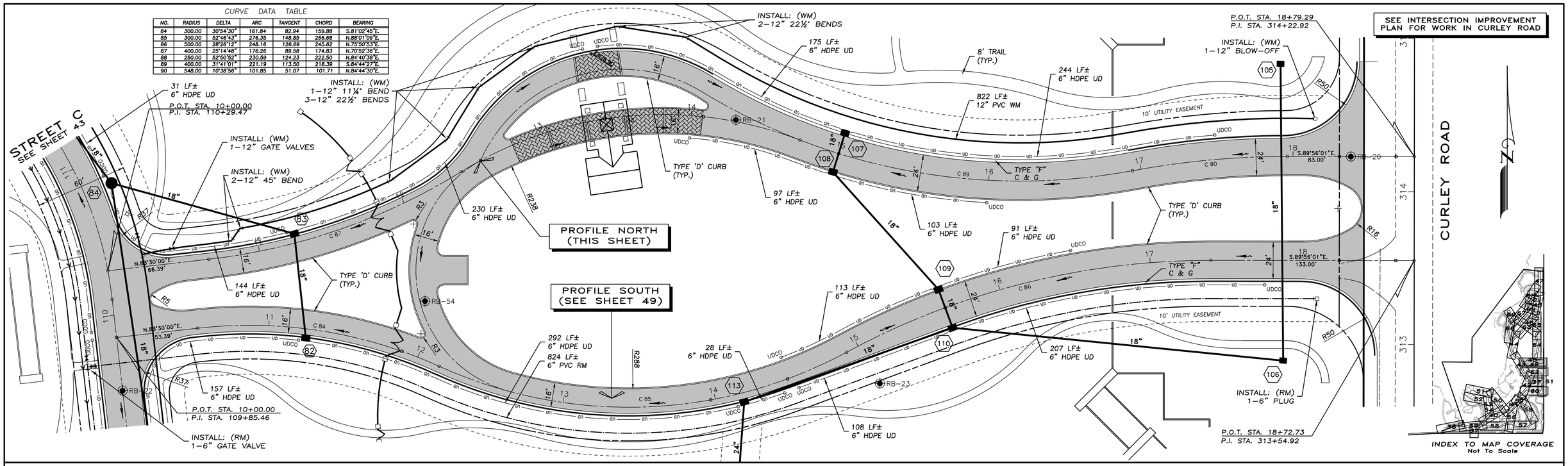
EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

CURVE DATA TABLE

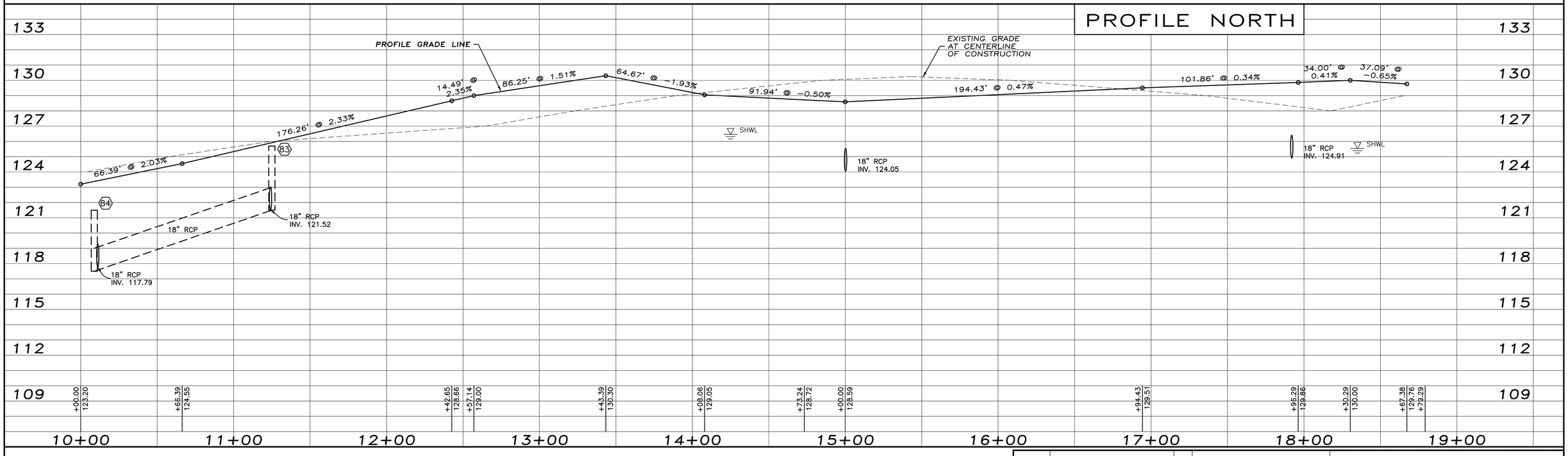
NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
84	300.00	30°54'30"	161.84	82.94	159.88	S.81°02'45"E.
85	300.00	52°46'43"	276.35	148.85	266.68	N.88°01'09"E.
86	500.00	28°26'12"	248.16	126.69	245.62	N.75°50'53"E.
87	400.00	25°14'48"	176.26	89.58	174.83	N.70°52'36"E.
88	250.00	52°50'52"	230.59	124.23	222.50	N.84°40'38"E.
89	400.00	31°41'01"	221.19	113.50	218.39	S.84°44'27"E.
90	548.00	10°38'56"	101.85	51.07	101.71	N.84°44'30"E.



STREET A

SCALE: 1" = 3' VERTICAL
1" = 30' HORIZONTAL

PROFILE NORTH



LEGEND

A2

- SANITARY SEWER (SM)
- 6" SINGLE SERVICE
- 6" DOUBLE SERVICE
- FORCE MAIN (FM)
- VALVE & BOX
- REDUCER
- PLUG
- BLOW–OFF
- BENDS
- IRRIGATION & LIGHTING SLEEVE
- RECLAIMED MAIN (RM)
- DOUBLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- WATER MAIN (WM)
- FIRE HYDRANT
- DOUBLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- WDSP WATER DISTRIBUTION SAMPLING POINT

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
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W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

ROADWAY & UTILITY PLAN & PROFILE

JOB NO. SPH–EP–009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE RP12–13

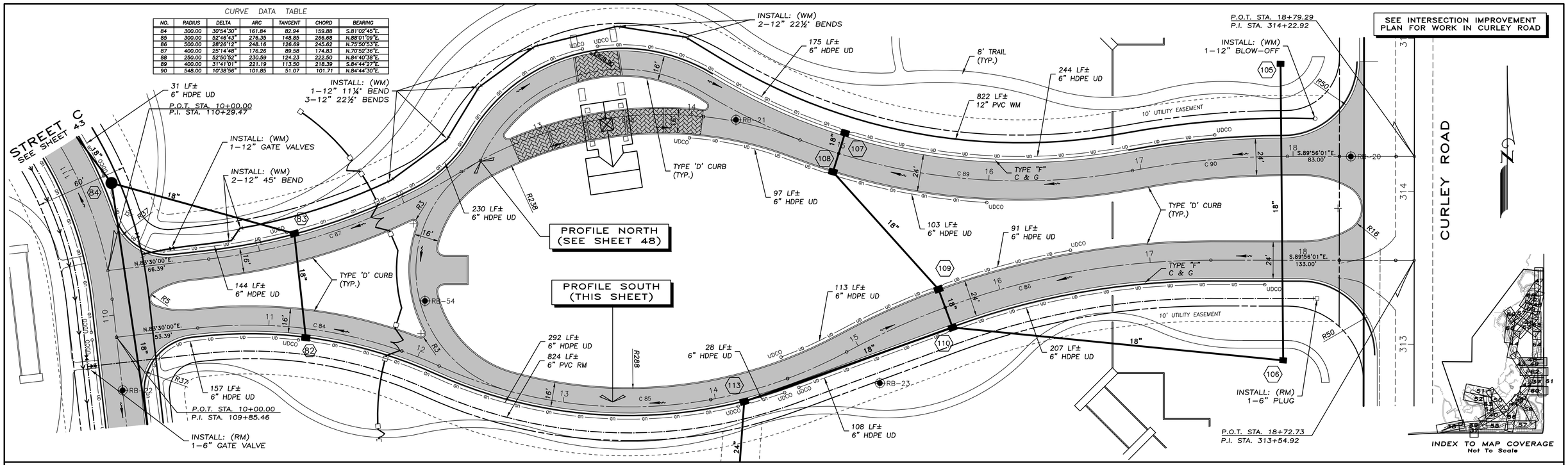
EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = –0.84 Feet

CURVE DATA TABLE

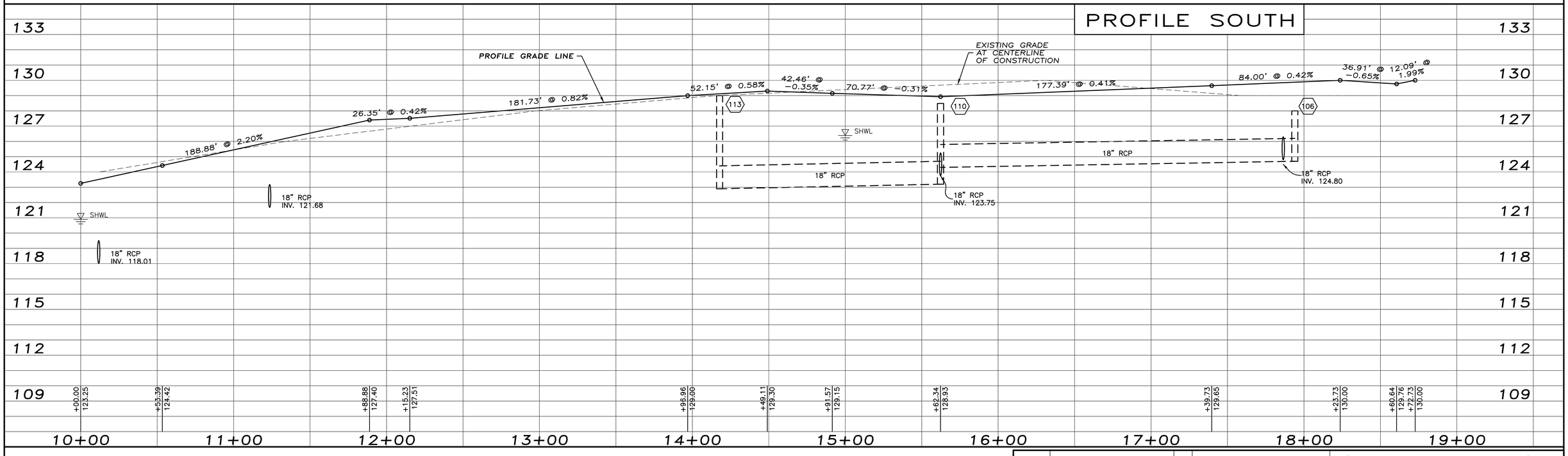
NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
84	300.00	30°54'30"	161.84	82.94	159.88	S.81°02'45"E.
85	300.00	52°46'43"	276.35	148.85	266.68	N.88°01'09"E.
86	500.00	28°26'12"	248.16	126.69	245.62	N.75°50'53"E.
87	400.00	25°14'48"	176.26	89.58	174.83	N.70°52'36"E.
88	250.00	52°50'52"	230.59	124.23	222.50	N.84°40'38"E.
89	400.00	31°41'01"	221.19	113.50	218.39	S.84°44'27"E.
90	548.00	10°38'56"	101.85	51.07	101.71	N.84°44'30"E.



STREET A

SCALE: 1" = 3' VERTICAL
1" = 30' HORIZONTAL

PROFILE SOUTH



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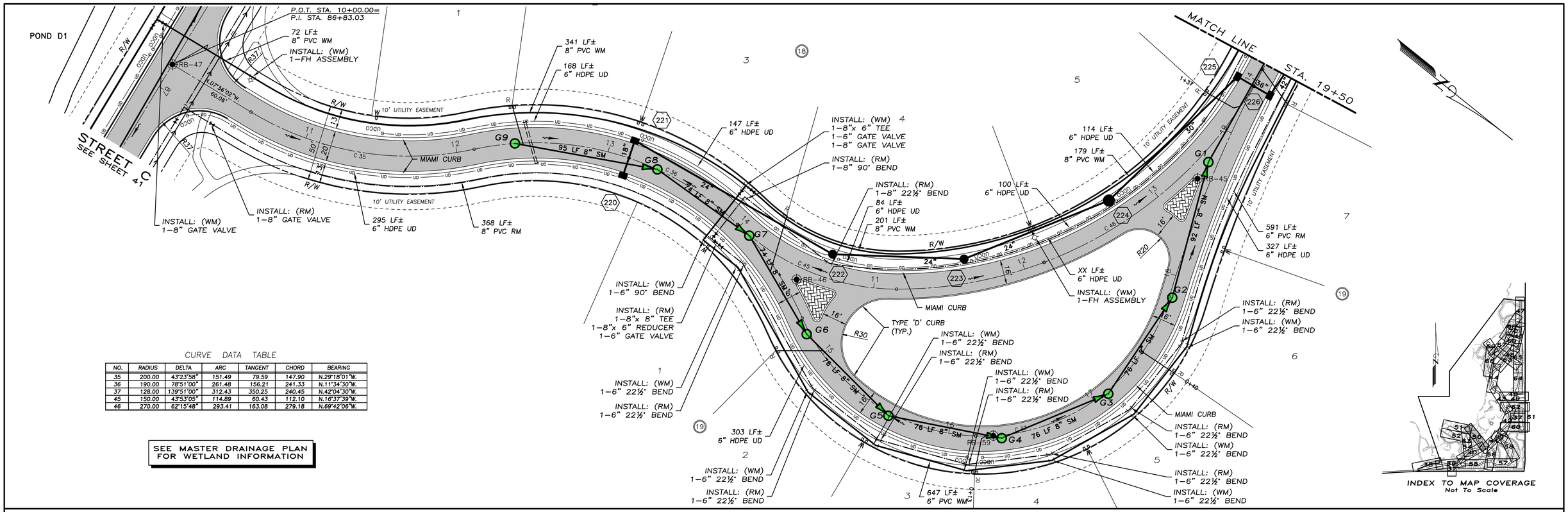
ROADWAY & UTILITY PLAN & PROFILE

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE RP12-13

EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet



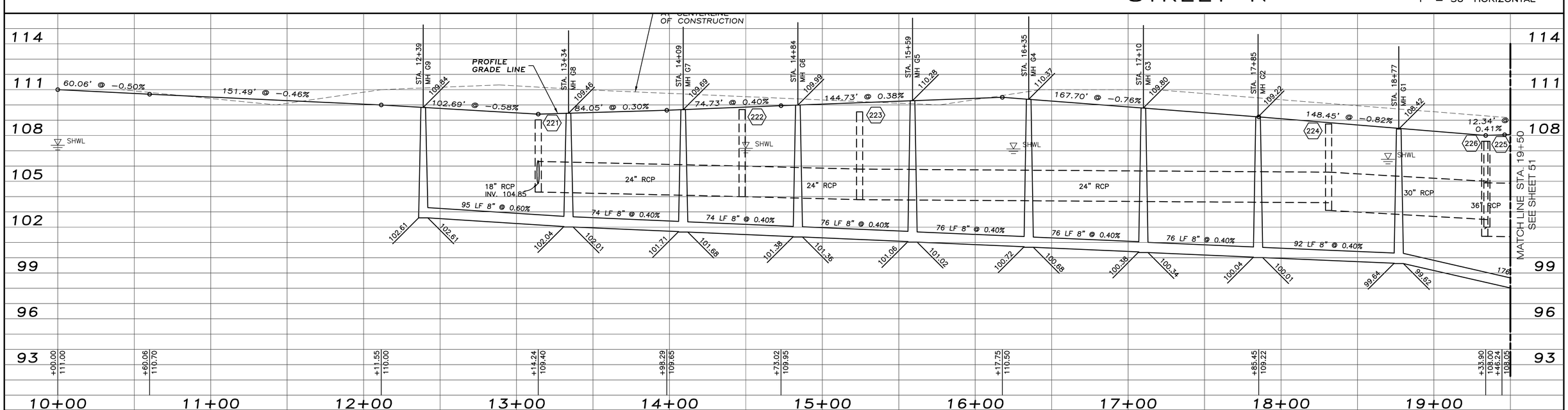
CURVE DATA TABLE

NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
35	200.00	43°23'58"	151.49	79.59	147.90	N.29°18'01"W.
36	190.00	78°51'00"	261.48	156.21	241.33	N.11°34'30"W.
37	128.00	139°51'00"	312.43	350.25	240.45	N.42°04'30"W.
45	150.00	43°53'05"	114.89	60.43	112.10	N.16°37'39"W.
46	270.00	62°15'48"	293.41	163.08	279.18	N.69°42'06"W.

SEE MASTER DRAINAGE PLAN FOR WETLAND INFORMATION

STREET N

SCALE: 1" = 3' VERTICAL
1" = 30' HORIZONTAL



LEGEND

A2

- SANITARY SEWER (SM)
- 6" SINGLE SERVICE
- 6" DOUBLE SERVICE
- FORCE MAIN (FM)
- VALVE & BOX
- REDUCER
- PLUG
- BLOW-OFF
- BENDS
- IRRIGATION & LIGHTING SLEEVE
- RECLAIMED MAIN (RM)
- DOUBLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- WATER MAIN (WM)
- FIRE HYDRANT
- DOUBLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- WDSP — WATER DISTRIBUTION SAMPLING POINT

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
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DATE:
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FLORIDA PROFESSIONAL ENGINEER

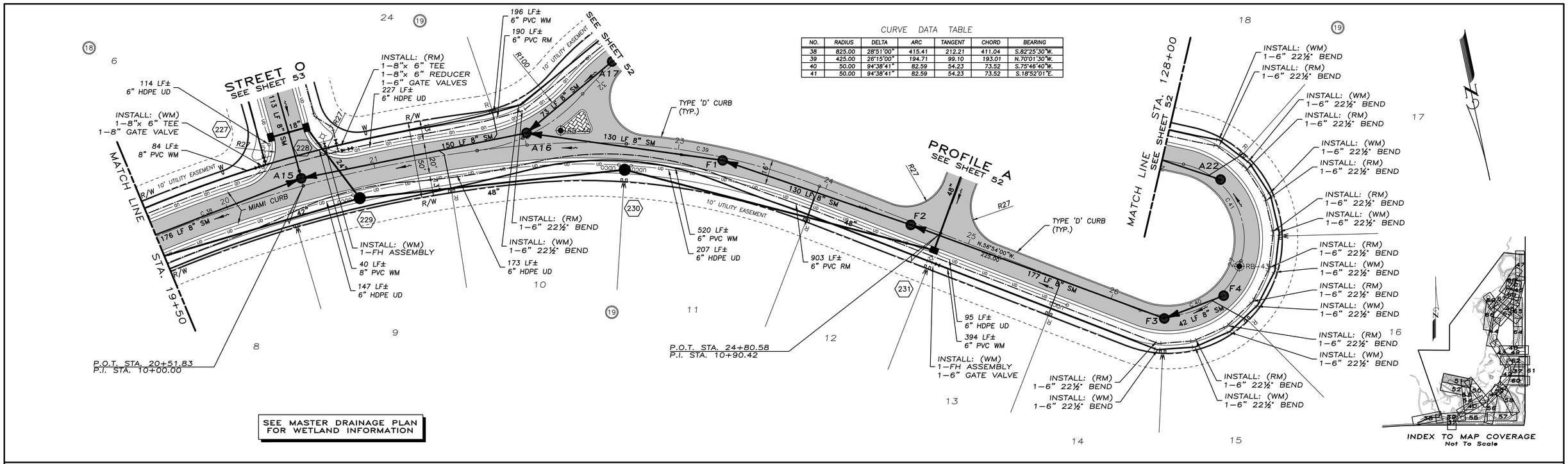
ROADWAY & UTILITY PLAN & PROFILE

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE RP14

EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

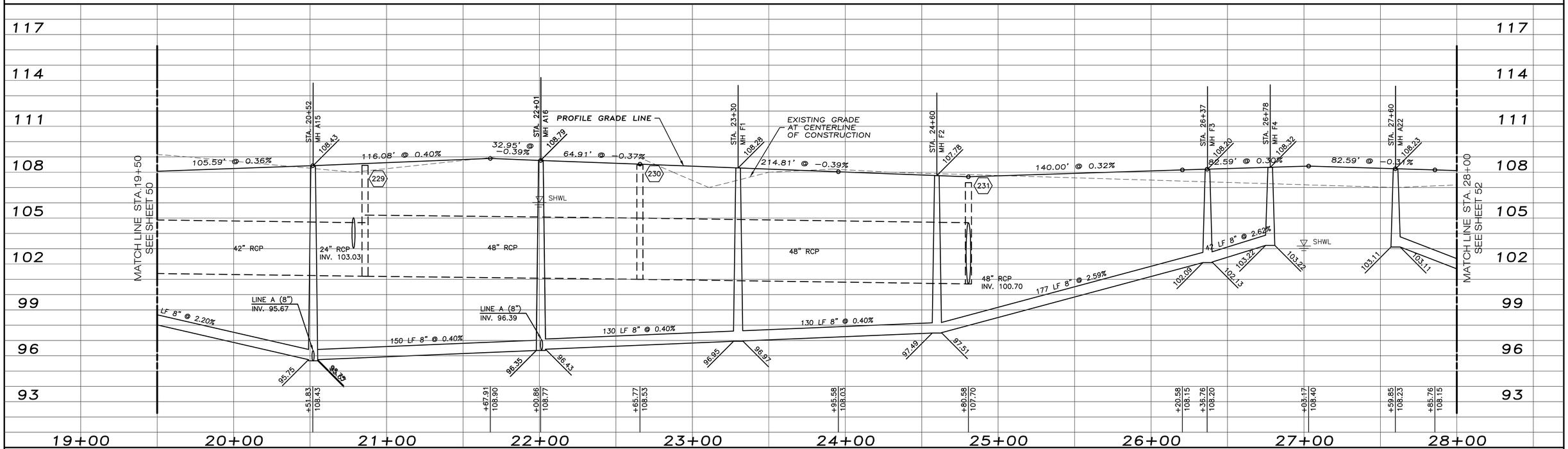


CURVE DATA TABLE

NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
38	825.00	28°51'00"	415.41	212.21	411.04	S.82°25'30"W.
39	425.00	26°15'00"	194.71	99.10	193.01	N.70°01'30"W.
40	50.00	94°38'41"	82.59	54.23	73.52	S.75°46'40"W.
41	50.00	94°38'41"	82.59	54.23	73.52	S.18°52'01"E.

STREET N

SCALE: 1" = 3' VERTICAL
1" = 30' HORIZONTAL



LEGEND

- SANITARY SEWER (SM)
- 6" SINGLE SERVICE
- 6" DOUBLE SERVICE
- FORCE MAIN (FM)
- VALVE & BOX
- REDUCER
- PLUG
- BLOW-OFF
- BENDS
- IRRIGATION & LIGHTING SLEEVE
- RECLAIMED MAIN (RM)
- DOUBLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- WATER MAIN (WM)
- FIRE HYDRANT
- DOUBLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- WDSP WATER DISTRIBUTION SAMPLING POINT

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
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DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

ROADWAY & UTILITY PLAN & PROFILE

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE RP15

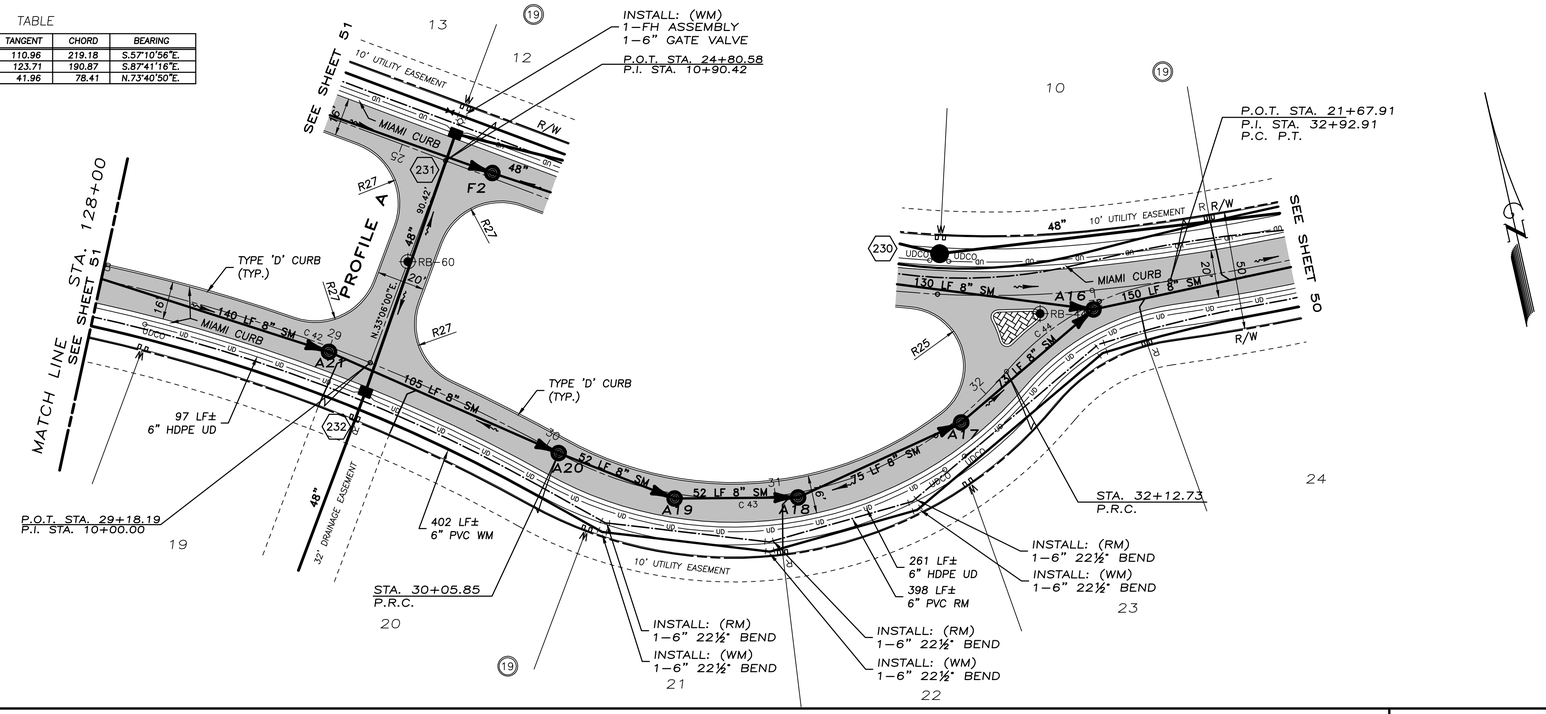
EPCO RANCH NORTH
PARCEL A PHASE 1

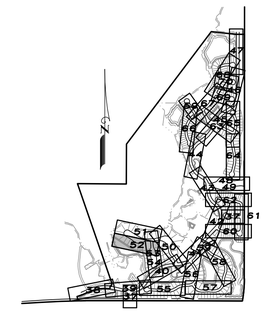
PREPARED FOR: STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

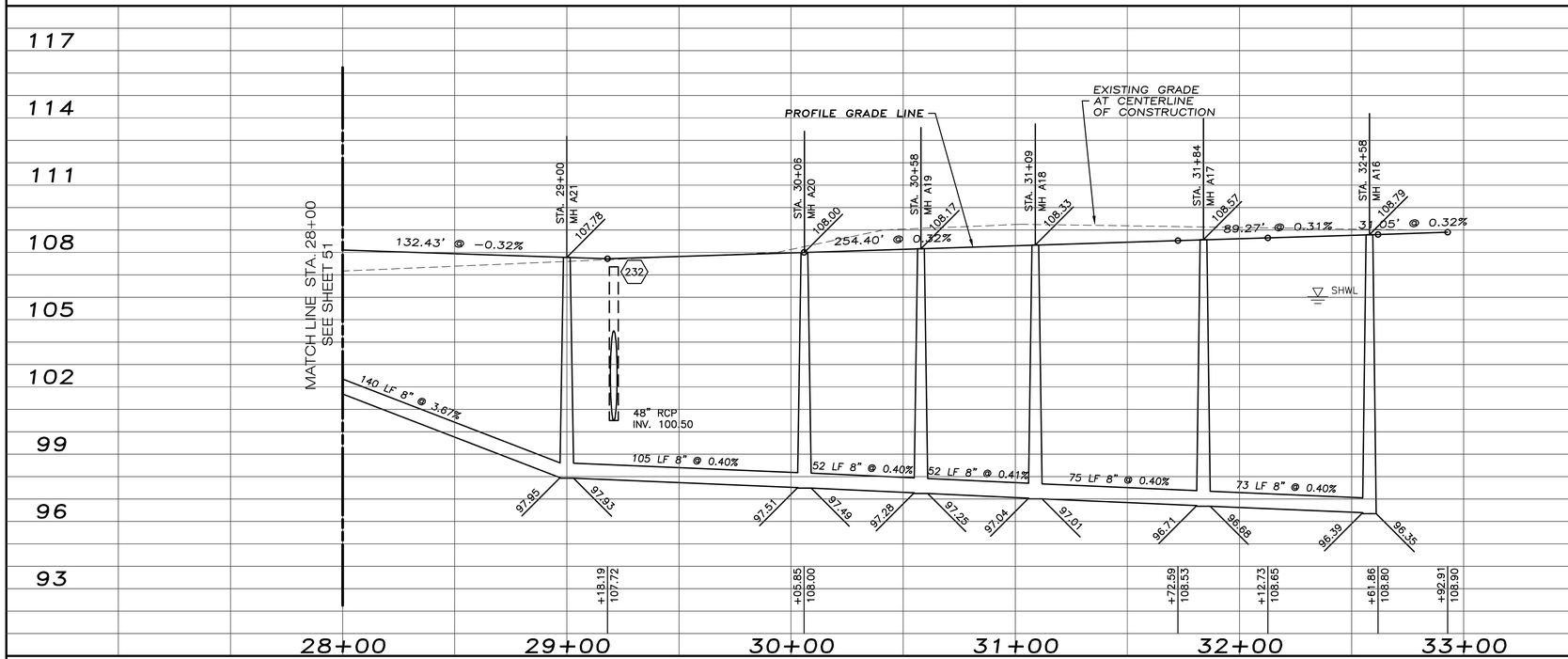
CURVE DATA TABLE

NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
42	700.00	18°00'51"	220.08	110.96	219.18	S.57°10'56"E.
43	150.00	79°01'30"	206.89	123.71	190.87	S.87°41'16"E.
44	110.00	41°45'42"	80.18	41.96	78.41	N.73°40'50"E.



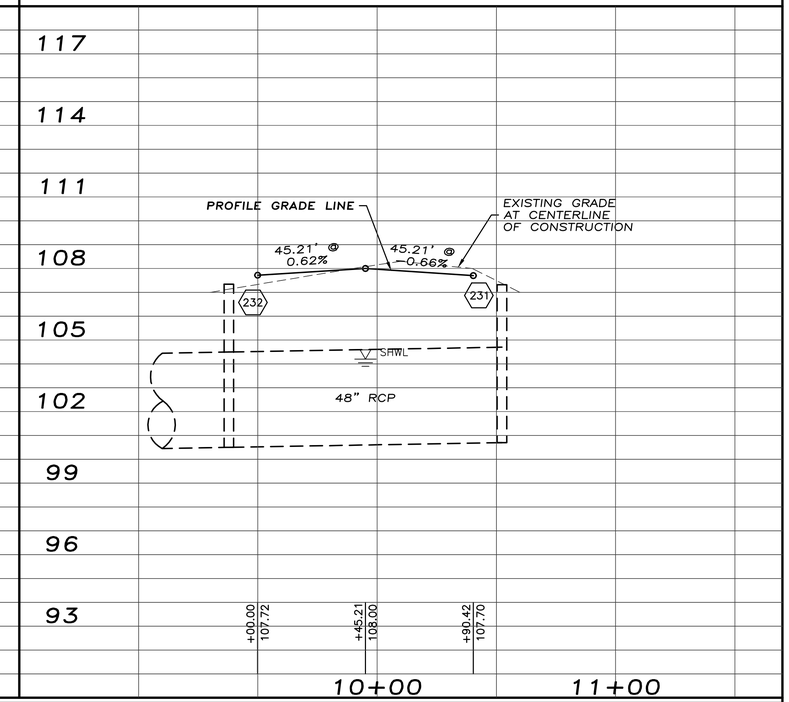


STREET N



PROFILE A

SCALE: 1" = 3' VERTICAL
1" = 30' HORIZONTAL



LEGEND

A2
SANITARY SEWER (SM)
6" SINGLE SERVICE
6" DOUBLE SERVICE
FORCE MAIN (FM)
VALVE & BOX
REDUCER
PLUG
BLOW-OFF
BENDS
IRRIGATION & LIGHTING SLEEVE
RECLAIMED MAIN (RM)
DOUBLE SERVICE (RM) SHORTSIDE
SINGLE SERVICE (RM) SHORTSIDE
SINGLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
DOUBLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
WATER MAIN (WM)
FIRE HYDRANT
DOUBLE SERVICE (WM) SHORTSIDE
SINGLE SERVICE (WM) SHORTSIDE
SINGLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
DOUBLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
WDSP WATER DISTRIBUTION SAMPLING POINT

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975
DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

ROADWAY & UTILITY PLAN & PROFILE

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE RP16

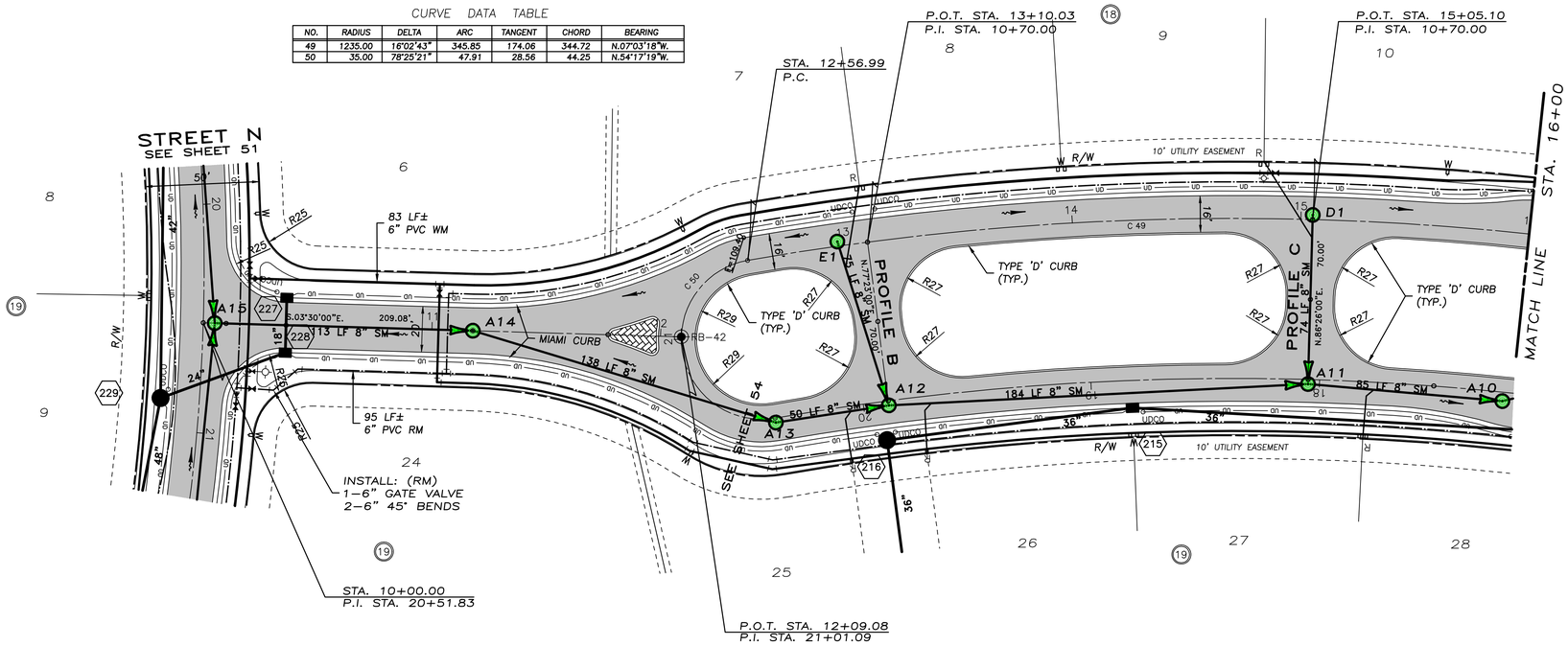
EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

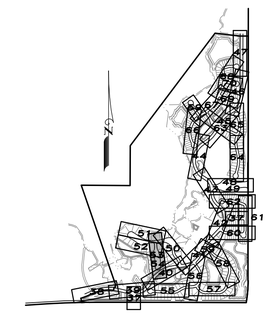
Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

CURVE DATA TABLE

NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
49	1235.00	16°02'43"	345.85	174.06	344.72	N.07°03'18"W.
50	35.00	78°25'21"	47.91	28.56	44.25	N.54°17'19"W.



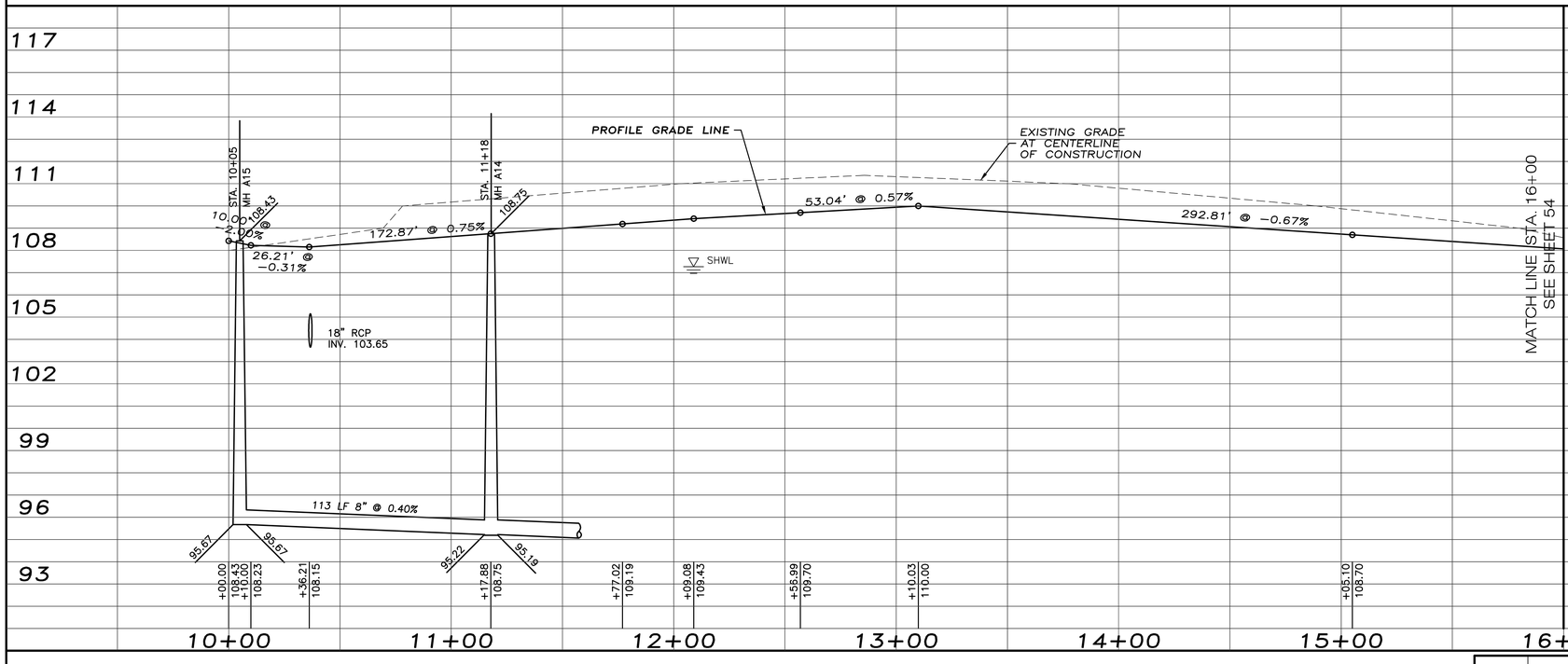
SEE MASTER DRAINAGE PLAN FOR WETLAND INFORMATION

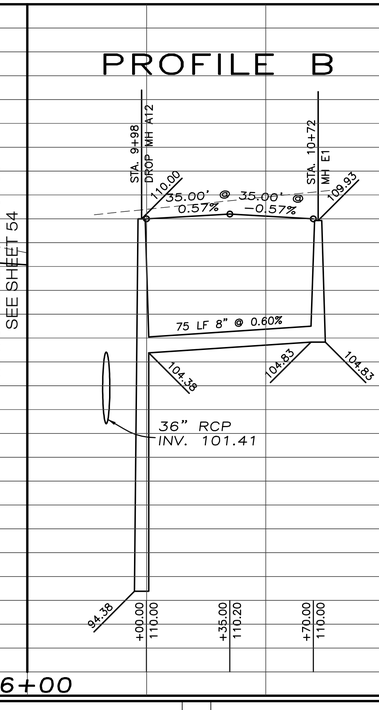


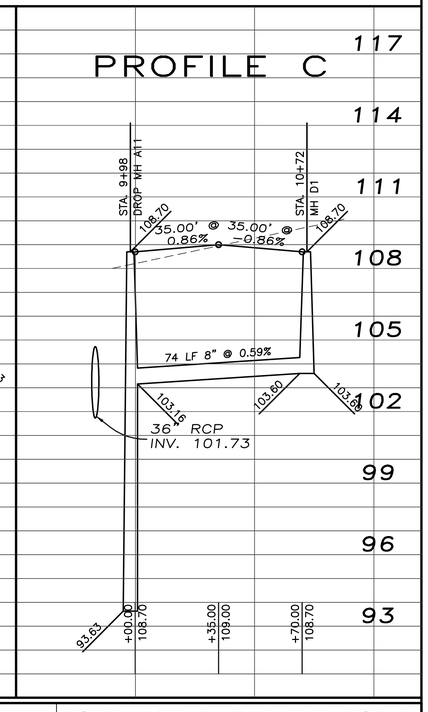
INDEX TO MAP COVERAGE
Not To Scale

STREET O (EAST)

SCALE: 1" = 3' VERTICAL
1" = 30' HORIZONTAL







LEGEND

A2
SANITARY SEWER (SM)
6" SINGLE SERVICE
6" DOUBLE SERVICE
FORCE MAIN (FM)
VALVE & BOX
REDUCER
PLUG
BLOW-OFF
BENDS
IRRIGATION & LIGHTING SLEEVE
RECLAIMED MAIN (RM)
DOUBLE SERVICE (RM) SHORTSIDE
SINGLE SERVICE (RM) SHORTSIDE
SINGLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
DOUBLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
WATER MAIN (WM)
FIRE HYDRANT
DOUBLE SERVICE (WM) SHORTSIDE
SINGLE SERVICE (WM) SHORTSIDE
SINGLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
DOUBLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
WDSP WATER DISTRIBUTION SAMPLING POINT

DATE	DESCRIPTION	BY
	REVISIONS	

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W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

ROADWAY & UTILITY PLAN & PROFILE

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE RP17

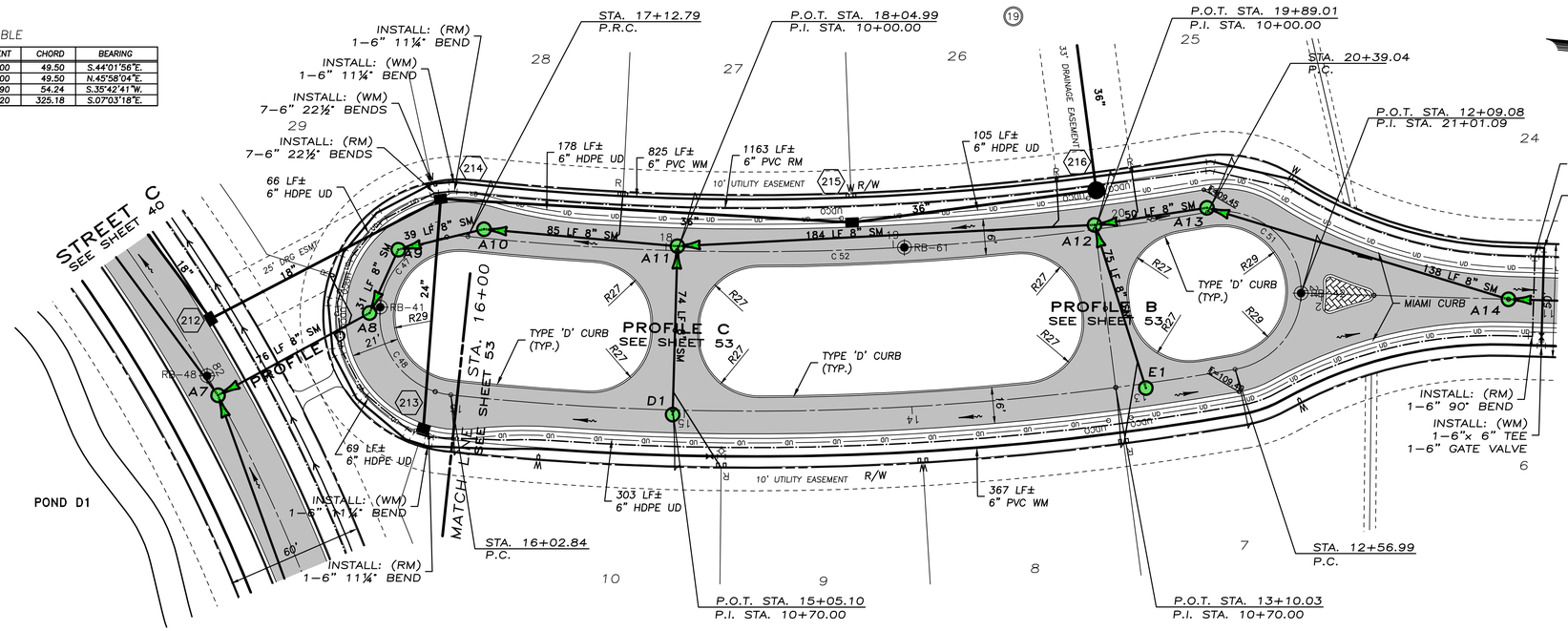
EPCO RANCH NORTH
PARCEL A PHASE 1

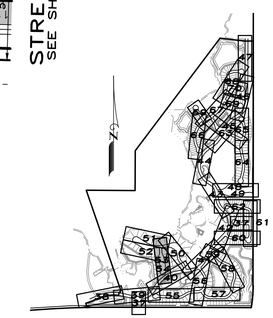
PREPARED FOR: STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

CURVE DATA TABLE

NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
47	35.00	90°00'00"	54.98	35.00	49.50	S.44°01'56"E.
48	35.00	90°00'00"	54.98	35.00	49.50	N.45°58'04"E.
51	35.00	101°34'39"	62.05	42.90	54.24	S.35°42'41"W.
52	1165.00	16°02'43"	326.25	164.20	325.18	S.07°03'18"E.

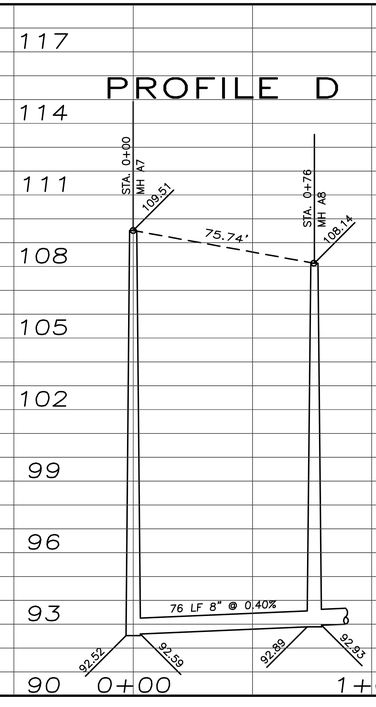


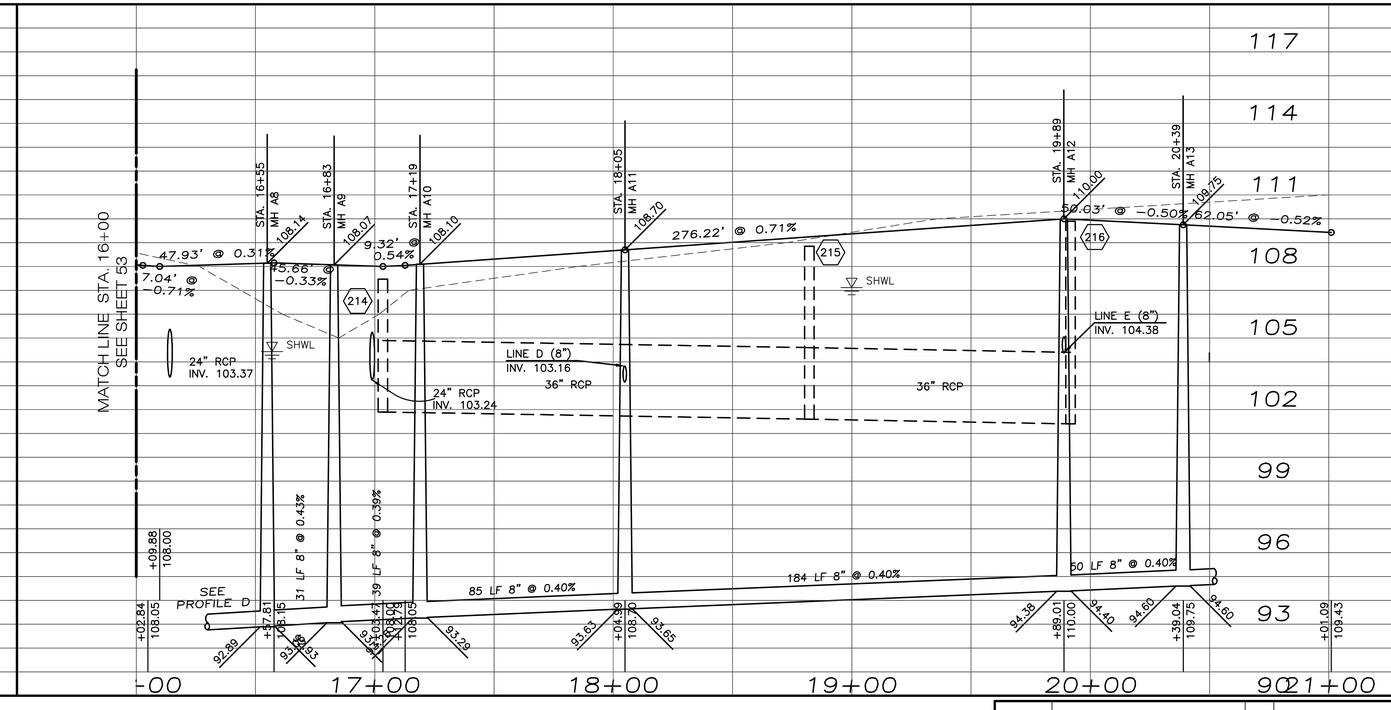


INDEX TO MAP COVERAGE
Not To Scale

STREET O (WEST)

SCALE: 1" = 3' VERTICAL
1" = 30' HORIZONTAL





LEGEND

A2
SANITARY SEWER (SM)
6" SINGLE SERVICE
6" DOUBLE SERVICE
FORCE MAIN (FM)
VALVE & BOX
REDUCER
PLUG
BLOW-OFF
BENDS
IRRIGATION & LIGHTING SLEEVE
RECLAIMED MAIN (RM)
DOUBLE SERVICE (RM) SHORTSIDE
SINGLE SERVICE (RM) SHORTSIDE
SINGLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
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FIRE HYDRANT
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SINGLE SERVICE (WM) SHORTSIDE
SINGLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
DOUBLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
WDSP WATER DISTRIBUTION SAMPLING POINT

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
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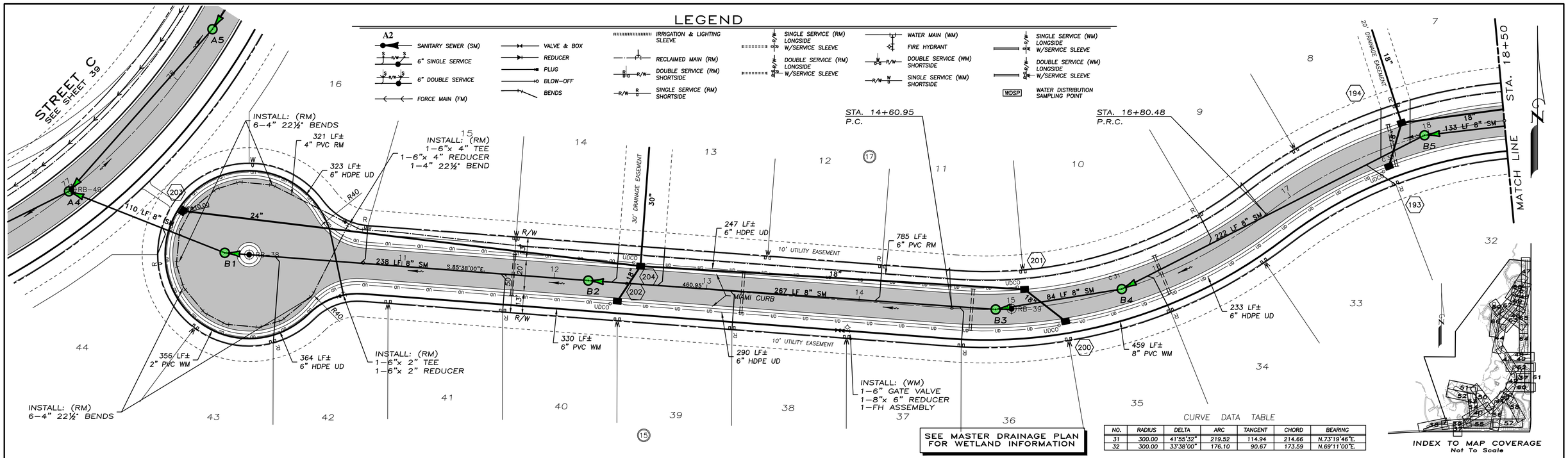
ROADWAY & UTILITY PLAN & PROFILE

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE RP18

EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

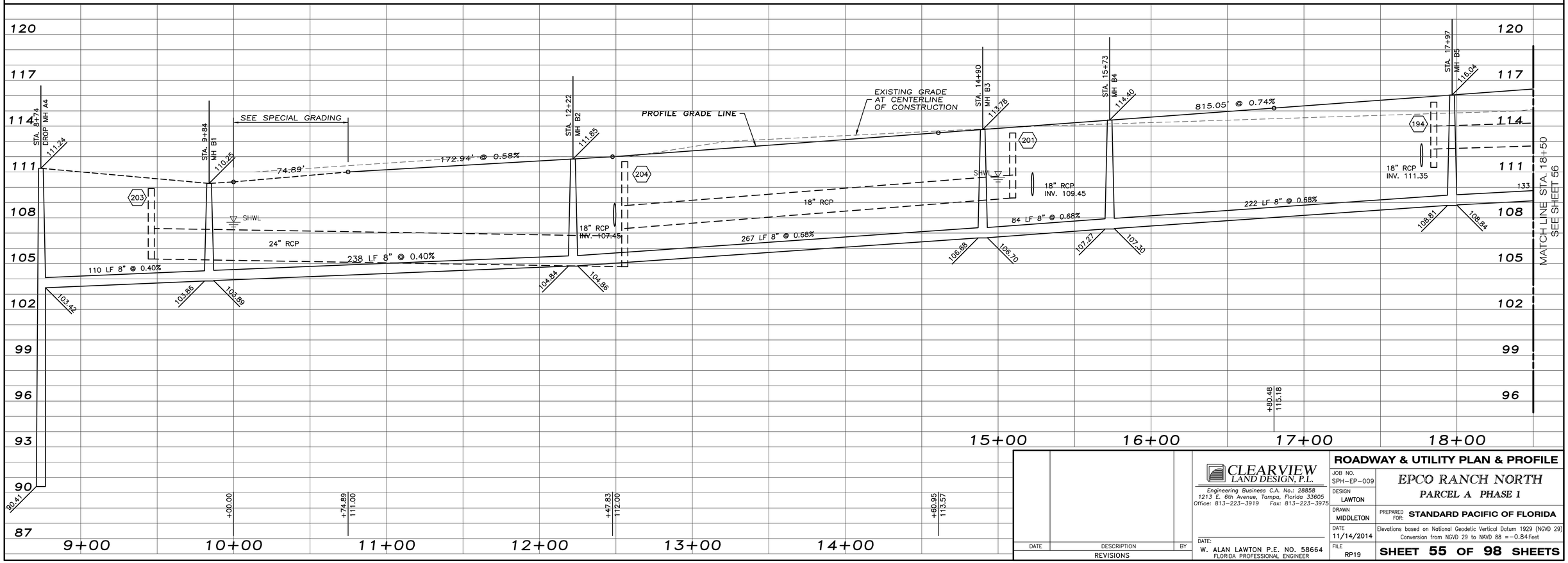


CURVE DATA TABLE

NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
31	300.00	41°55'32"	219.52	114.94	214.66	N.73°19'46"E.
32	300.00	33°38'00"	176.10	90.67	173.59	N.69°11'00"E.

STREET M

SCALE: 1" = 3' VERTICAL
1" = 30' HORIZONTAL



DATE	DESCRIPTION	BY
	REVISIONS	

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1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

ROADWAY & UTILITY PLAN & PROFILE

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE RP19

EPCO RANCH NORTH
PARCEL A PHASE 1

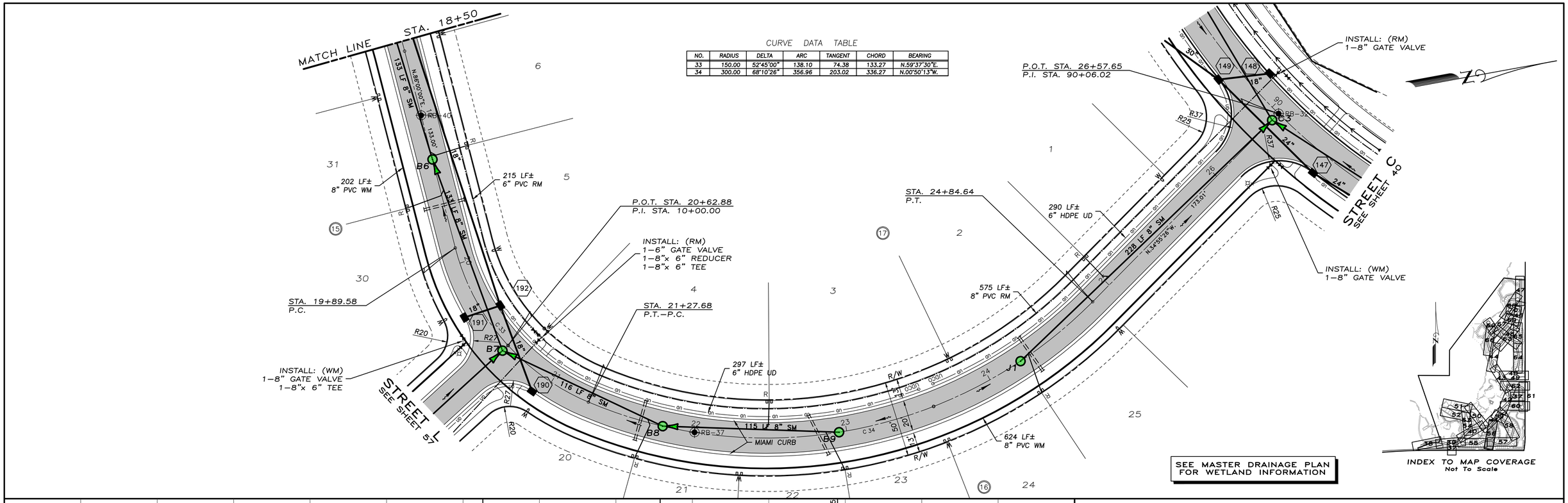
PREPARED FOR: **STANDARD PACIFIC OF FLORIDA**

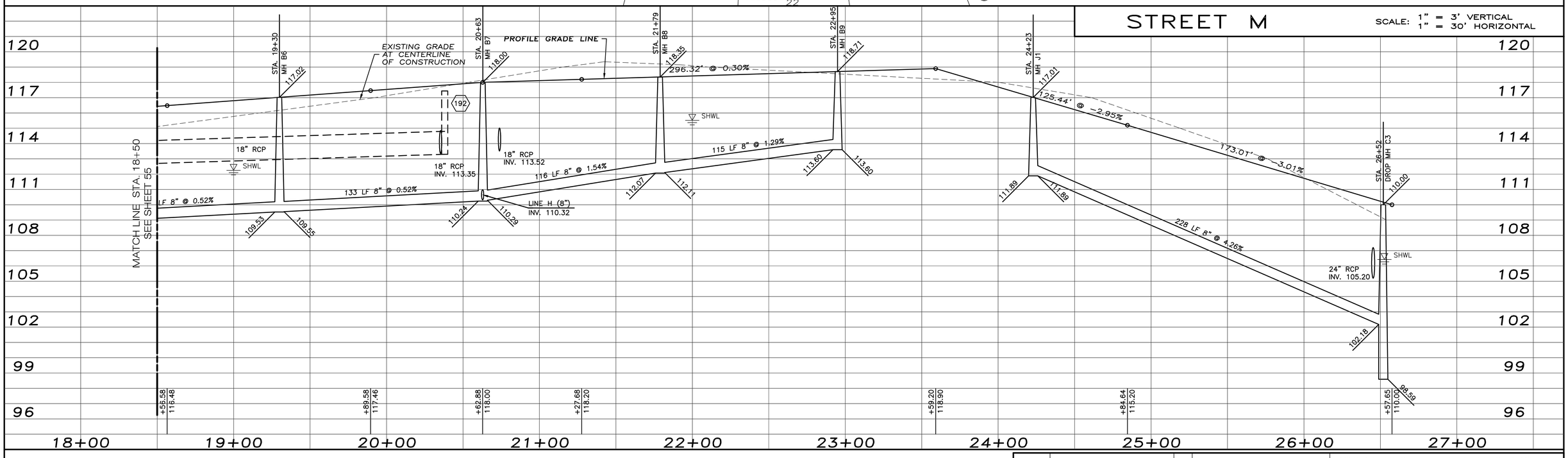
Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

SHEET 55 OF 98 SHEETS

CURVE DATA TABLE

NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
33	150.00	52°45'00"	138.10	74.38	133.27	N.59°37'30"E.
34	300.00	68°10'26"	356.96	203.02	336.27	N.00°50'13"W.





LEGEND

A2

- SANITARY SEWER (SM)
- 6" SINGLE SERVICE
- 6" DOUBLE SERVICE
- FORCE MAIN (FM)
- VALVE & BOX
- REDUCER
- PLUG
- BLOW-OFF
- BENDS
- IRRIGATION & LIGHTING SLEEVE
- RECLAIMED MAIN (RM)
- DOUBLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- WATER MAIN (WM)
- FIRE HYDRANT
- DOUBLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- WDSP WATER DISTRIBUTION SAMPLING POINT

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
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ROADWAY & UTILITY PLAN & PROFILE

JOB NO. SPH-EP-009

DESIGN LAWTON

DRAWN MIDDLETON

DATE 11/14/2014

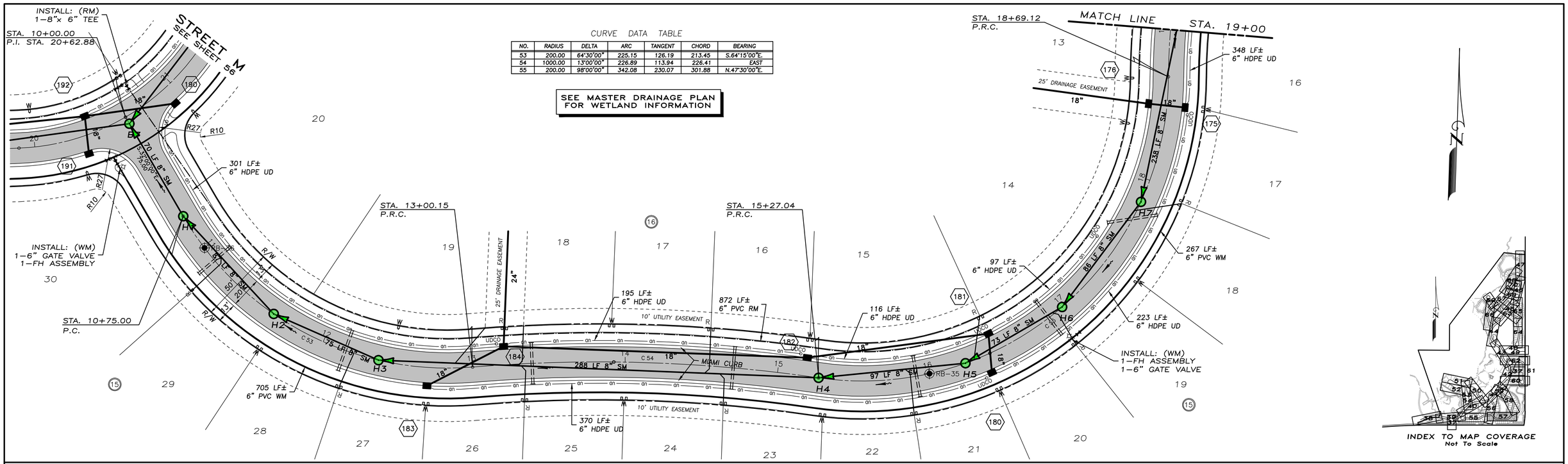
FILE RP20

EPCO RANCH NORTH

PARCEL A PHASE 1

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 = -0.84 Feet



CURVE DATA TABLE

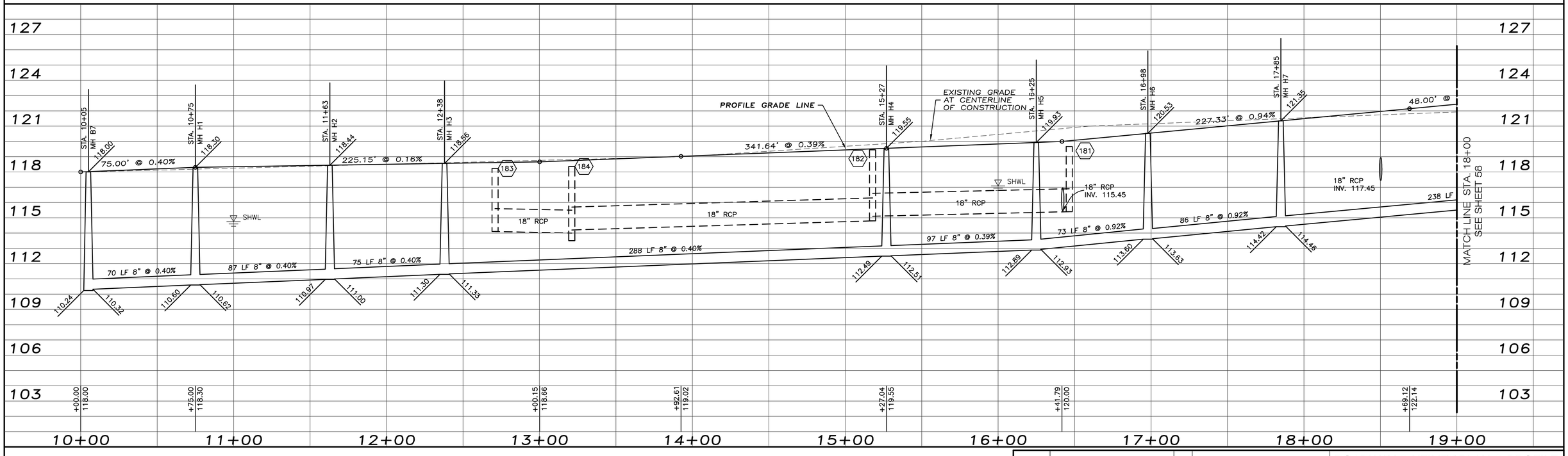
NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
53	200.00	64°30'00"	225.15	126.19	213.45	S.64°15'00"E.
54	1000.00	13°00'00"	226.89	113.94	226.41	EAST
55	200.00	98°00'00"	342.08	230.07	301.88	N.47°30'00"E.

SEE MASTER DRAINAGE PLAN FOR WETLAND INFORMATION

INDEX TO MAP COVERAGE
Not To Scale

STREET L

SCALE: 1" = 3' VERTICAL
1" = 30' HORIZONTAL



LEGEND

A2

- SANITARY SEWER (SM)
- 6" SINGLE SERVICE
- 6" DOUBLE SERVICE
- FORCE MAIN (FM)
- VALVE & BOX
- REDUCER
- PLUG
- BLOW-OFF
- BENDS
- IRRIGATION & LIGHTING SLEEVE
- RECLAIMED MAIN (RM)
- DOUBLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- WATER MAIN (WM)
- FIRE HYDRANT
- DOUBLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- WDSP WATER DISTRIBUTION SAMPLING POINT

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
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DATE:
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FLORIDA PROFESSIONAL ENGINEER

ROADWAY & UTILITY PLAN & PROFILE

JOB NO. SPH-EP-009

DESIGN LAWTON

DRAWN MIDDLETON

DATE 11/14/2014

FILE RP21

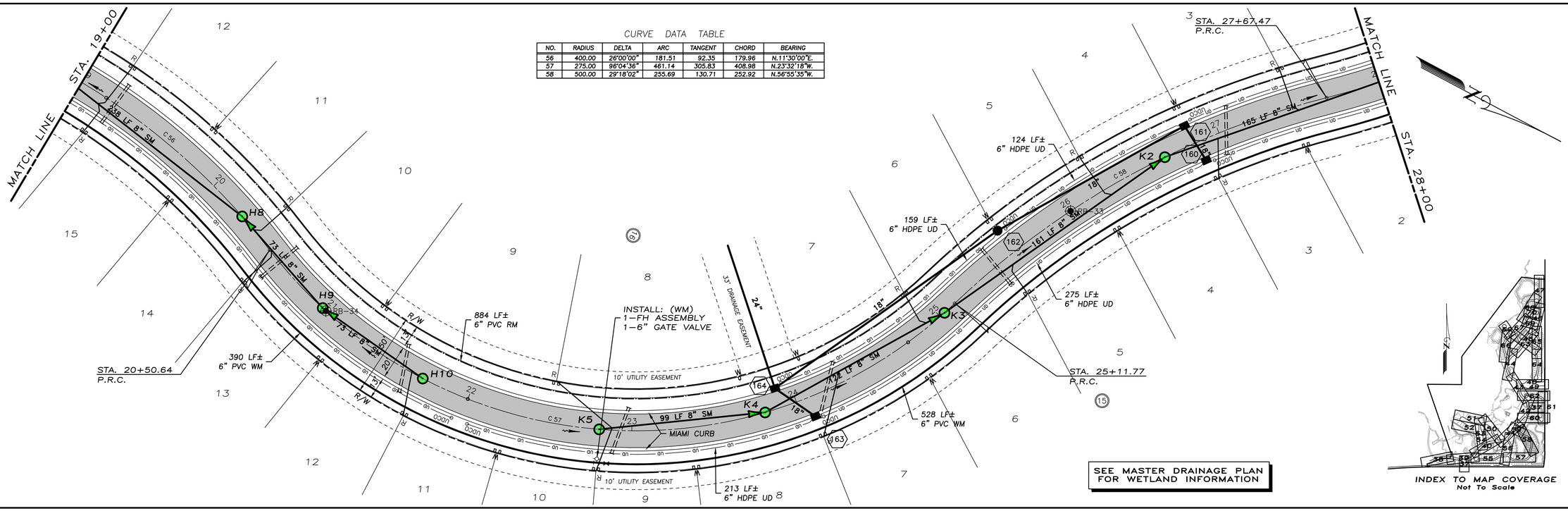
EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: **STANDARD PACIFIC OF FLORIDA**

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

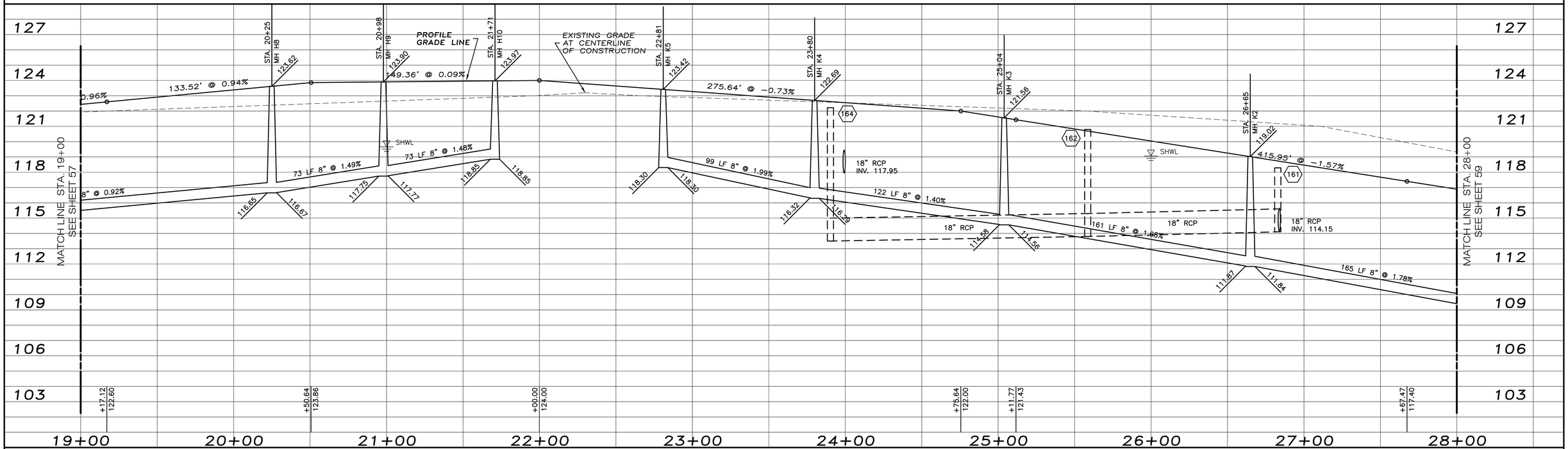
CURVE DATA TABLE

NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
56	400.00	26°00'00"	181.51	92.35	179.96	N.11°30'00"E.
57	275.00	96°04'36"	461.14	305.83	408.98	N.23°32'18"W.
58	500.00	29°18'02"	255.69	130.71	252.92	N.56°55'35"W.



STREET L

SCALE: 1" = 3' VERTICAL
1" = 30' HORIZONTAL



LEGEND

A2

- SANITARY SEWER (SM)
- 6" SINGLE SERVICE
- 6" DOUBLE SERVICE
- FORCE MAIN (FM)
- VALVE & BOX
- REDUCER
- PLUG
- BLOW-OFF
- BENDS
- IRRIGATION & LIGHTING SLEEVE
- RECLAIMED MAIN (RM)
- DOUBLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) SHORTSIDE
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- FIRE HYDRANT
- DOUBLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- WDSP — WATER DISTRIBUTION SAMPLING POINT

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
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ROADWAY & UTILITY PLAN & PROFILE

JOB NO. SPH-EP-009

DESIGN LAWTON

DRAWN MIDDLETON

DATE 11/14/2014

FILE RP22

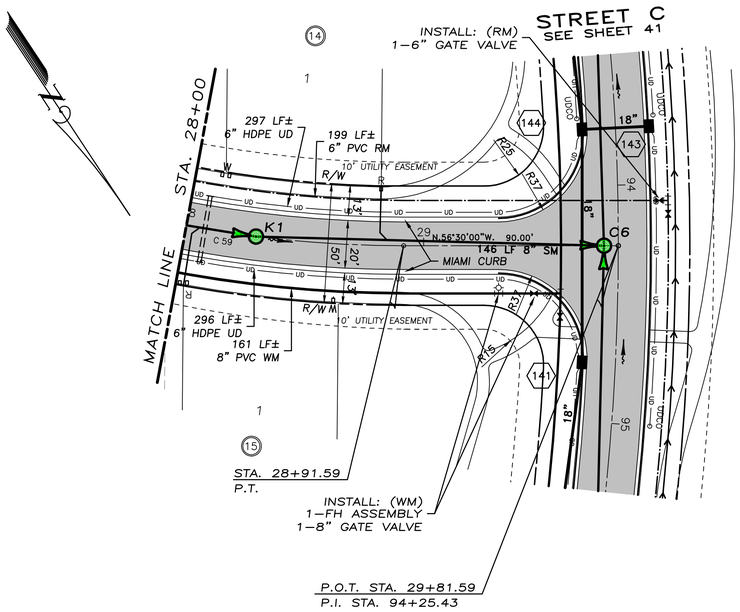
EPCO RANCH NORTH
PARCEL A PHASE 1

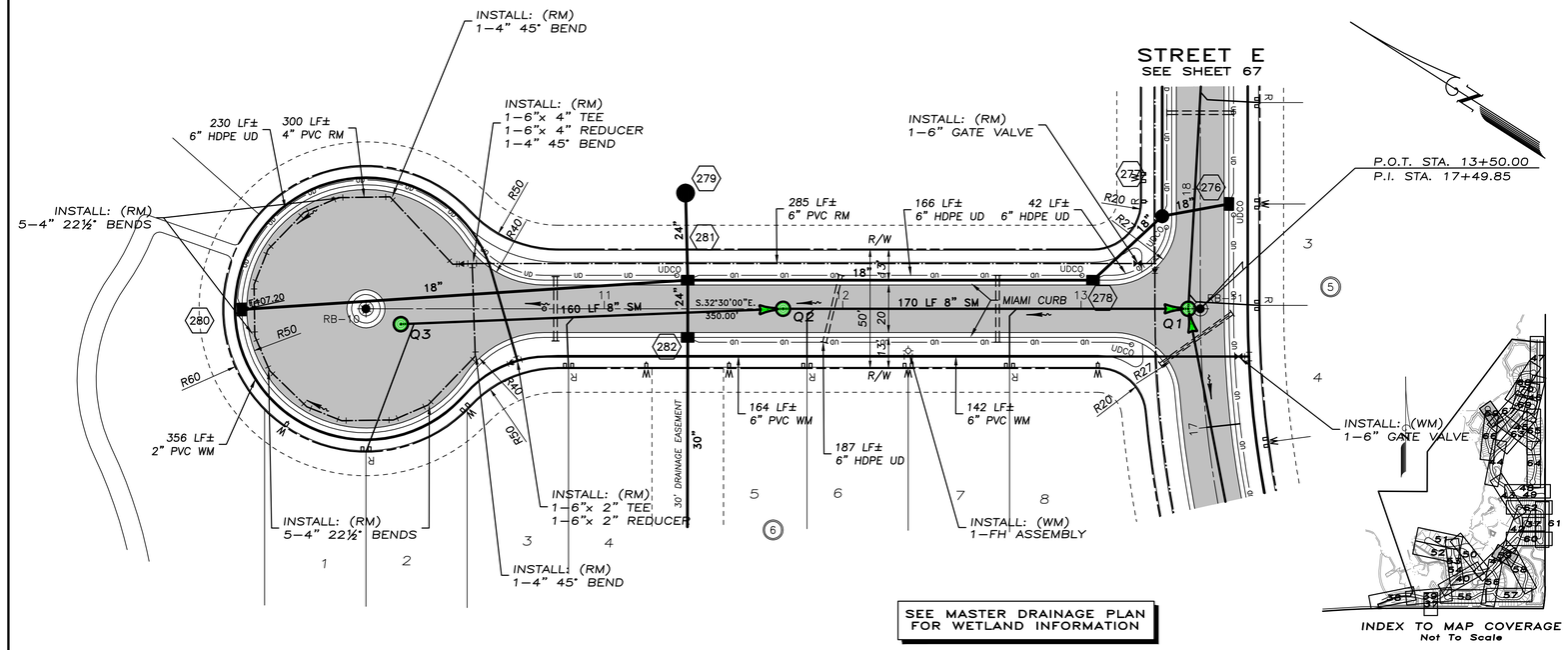
PREPARED FOR: **STANDARD PACIFIC OF FLORIDA**

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

CURVE DATA TABLE

NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
59	500.00	14°13'25"	124.13	62.38	123.81	N.49°23'17"W.

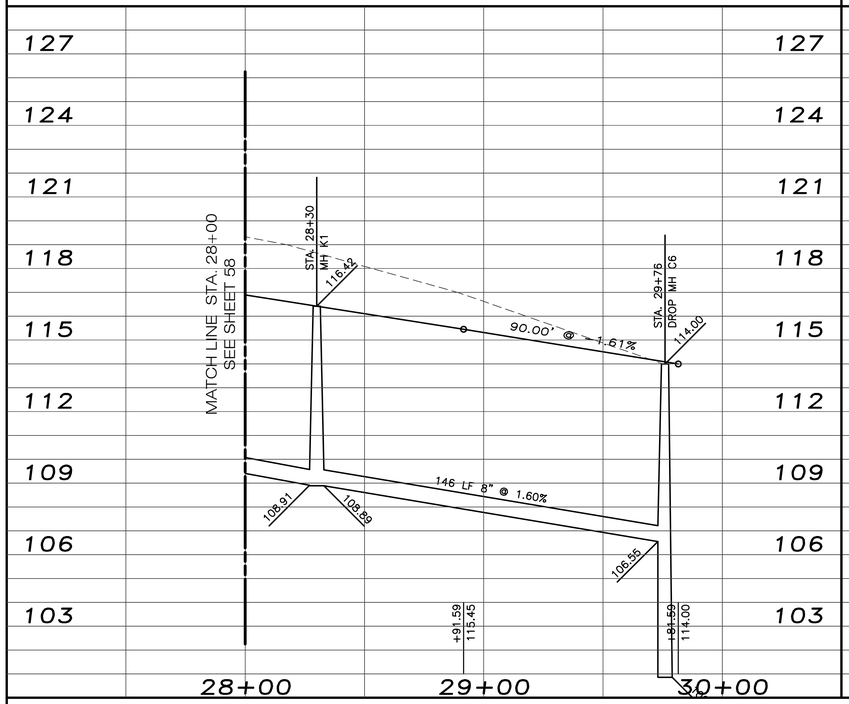


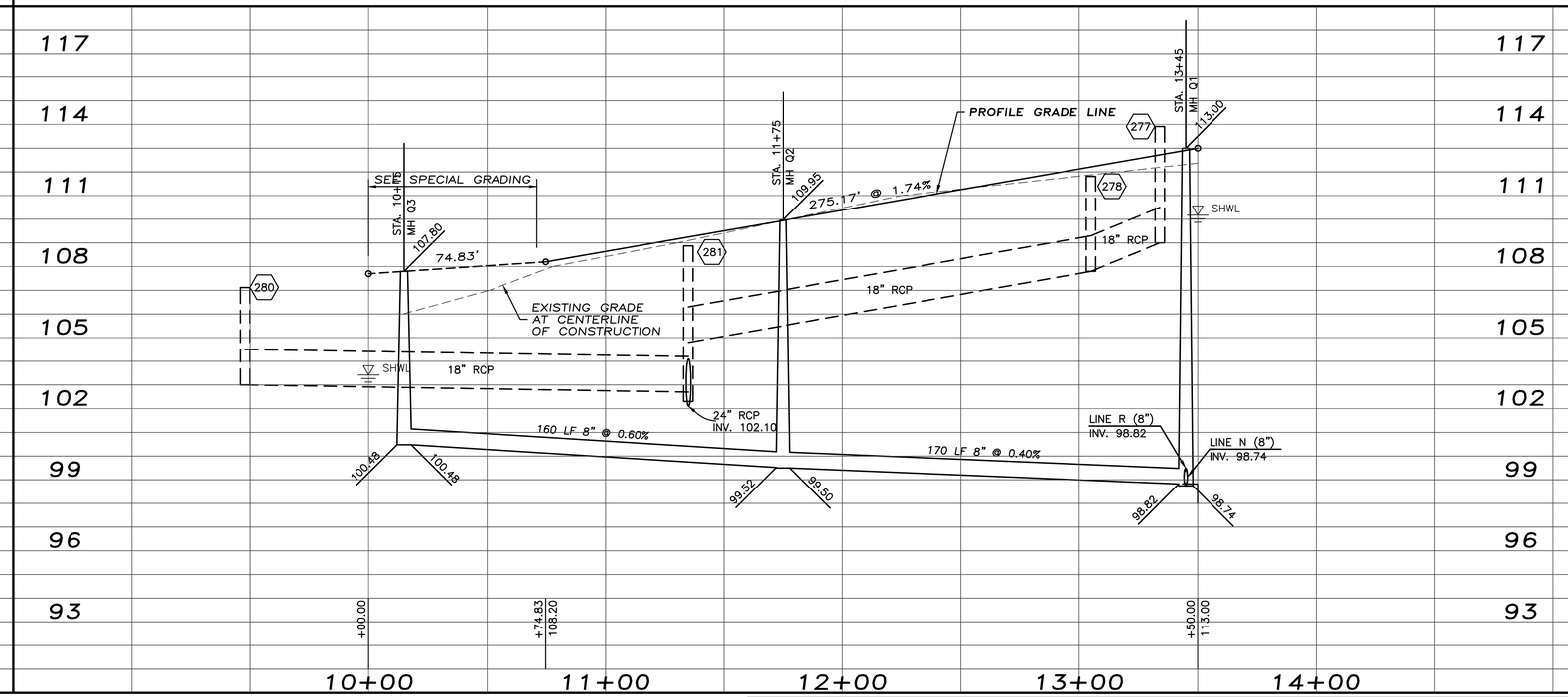


STREET L

STREET F

SCALE: 1" = 3' VERTICAL
1" = 30' HORIZONTAL





LEGEND

A2

- SANITARY SEWER (SM)
- 6" SINGLE SERVICE
- 6" DOUBLE SERVICE
- FORCE MAIN (FM)
- VALVE & BOX
- REDUCER
- PLUG
- BLOW-OFF
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DATE	DESCRIPTION	BY
	REVISIONS	

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FLORIDA PROFESSIONAL ENGINEER

ROADWAY & UTILITY PLAN & PROFILE

JOB NO. SPH-EP-009

DESIGN LAWTON

DRAWN MIDDLETON

DATE 11/14/2014

FILE RP23

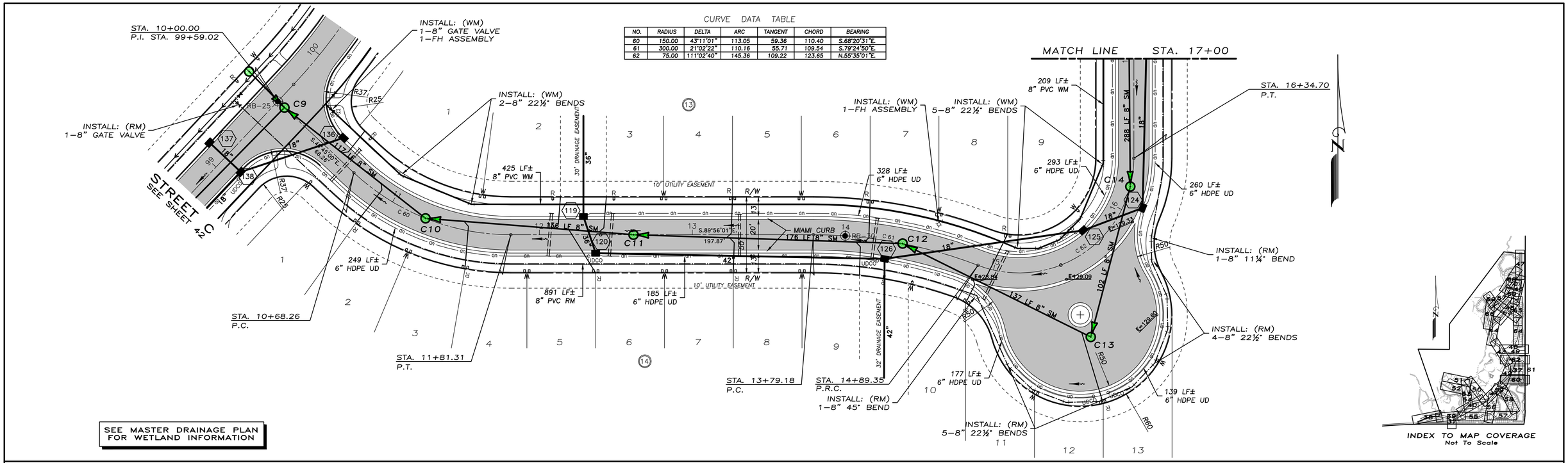
EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

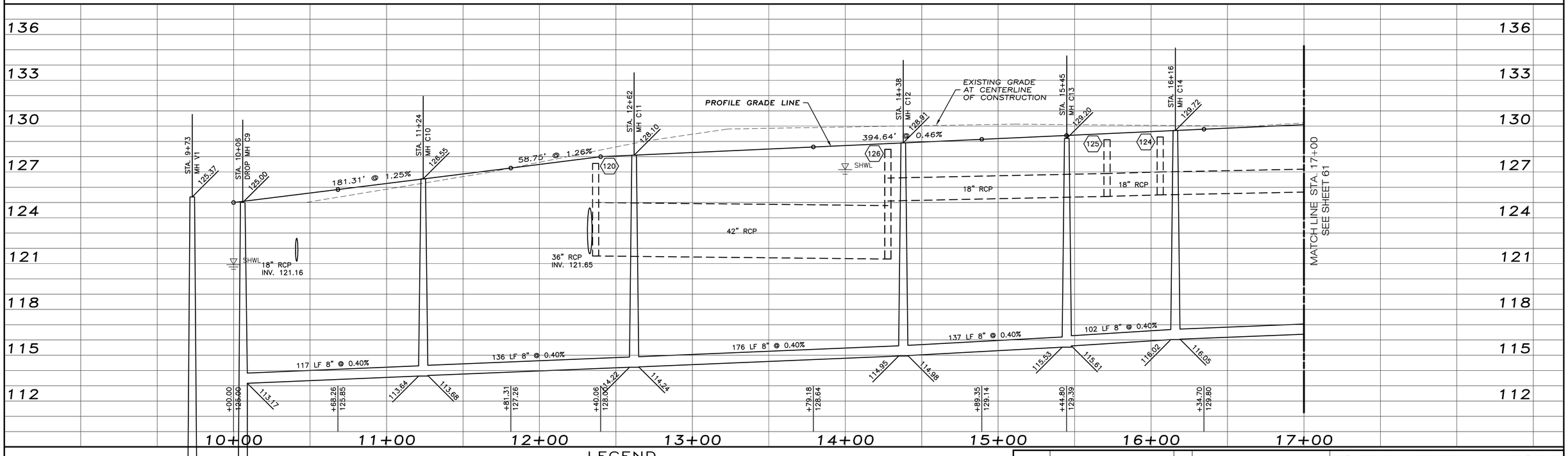
CURVE DATA TABLE

NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
60	150.00	43°11'01"	113.05	59.36	110.40	S.68°20'31"E.
61	300.00	21°02'22"	110.16	55.71	109.54	S.79°24'50"E.
62	75.00	111°02'40"	145.36	109.22	123.65	N.55°35'01"E.



STREET J

SCALE: 1" = 3' VERTICAL
1" = 30' HORIZONTAL



LEGEND

A2

- SANITARY SEWER (SM)
- 6" SINGLE SERVICE
- 6" DOUBLE SERVICE
- FORCE MAIN (FM)
- VALVE & BOX
- REDUCER
- PLUG
- BLOW-OFF
- BENDS
- IRRIGATION & LIGHTING SLEEVE
- RECLAIMED MAIN (RM)
- DOUBLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- WATER MAIN (WM)
- FIRE HYDRANT
- DOUBLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- WDSP WATER DISTRIBUTION SAMPLING POINT

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975
DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

ROADWAY & UTILITY PLAN & PROFILE

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE RP24

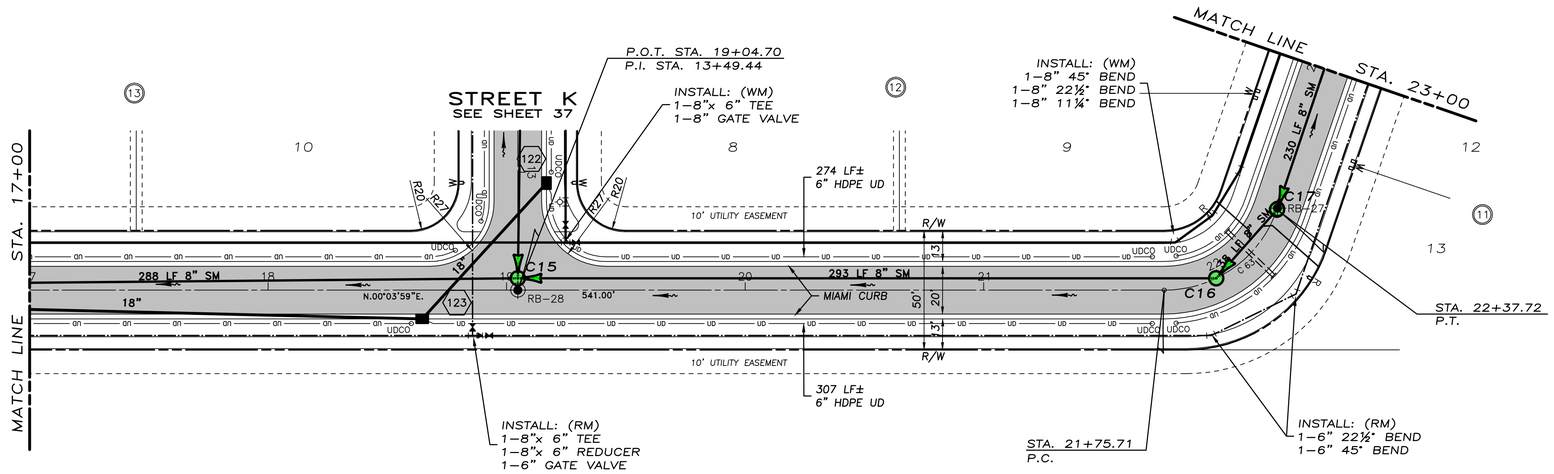
EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

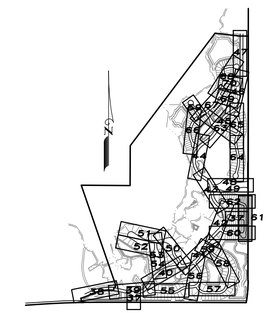
Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

CURVE DATA TABLE

NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
63	50.00	71°03'59"	62.02	35.71	58.12	N.35°28'01"W.



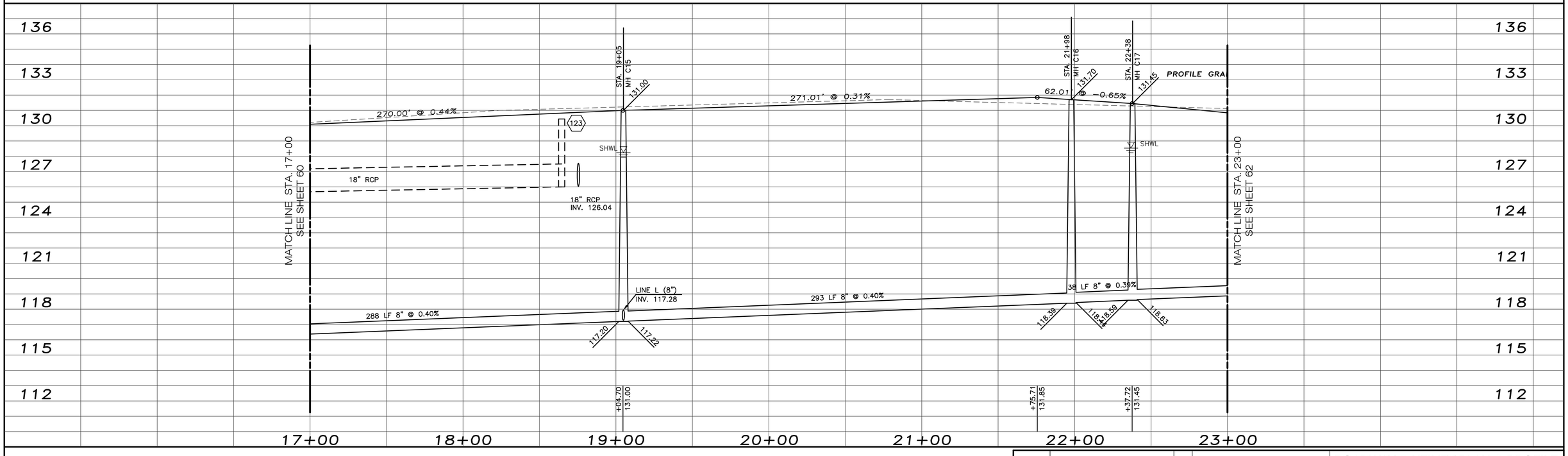
SEE MASTER DRAINAGE PLAN FOR WETLAND INFORMATION



INDEX TO MAP COVERAGE
Not To Scale

STREET J

SCALE: 1" = 3' VERTICAL
1" = 30' HORIZONTAL



LEGEND

A2

- SANITARY SEWER (SM)
- 6" SINGLE SERVICE
- 6" DOUBLE SERVICE
- FORCE MAIN (FM)
- VALVE & BOX
- REDUCER
- PLUG
- BLOW-OFF
- BENDS
- IRRIGATION & LIGHTING SLEEVE
- RECLAIMED MAIN (RM)
- DOUBLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- WATER MAIN (WM)
- FIRE HYDRANT
- DOUBLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- WDSP WATER DISTRIBUTION SAMPLING POINT

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
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DATE:
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ROADWAY & UTILITY PLAN & PROFILE

JOB NO. SPH-EP-009

DESIGN LAWTON

DRAWN MIDDLETON

DATE 11/14/2014

FILE RP25

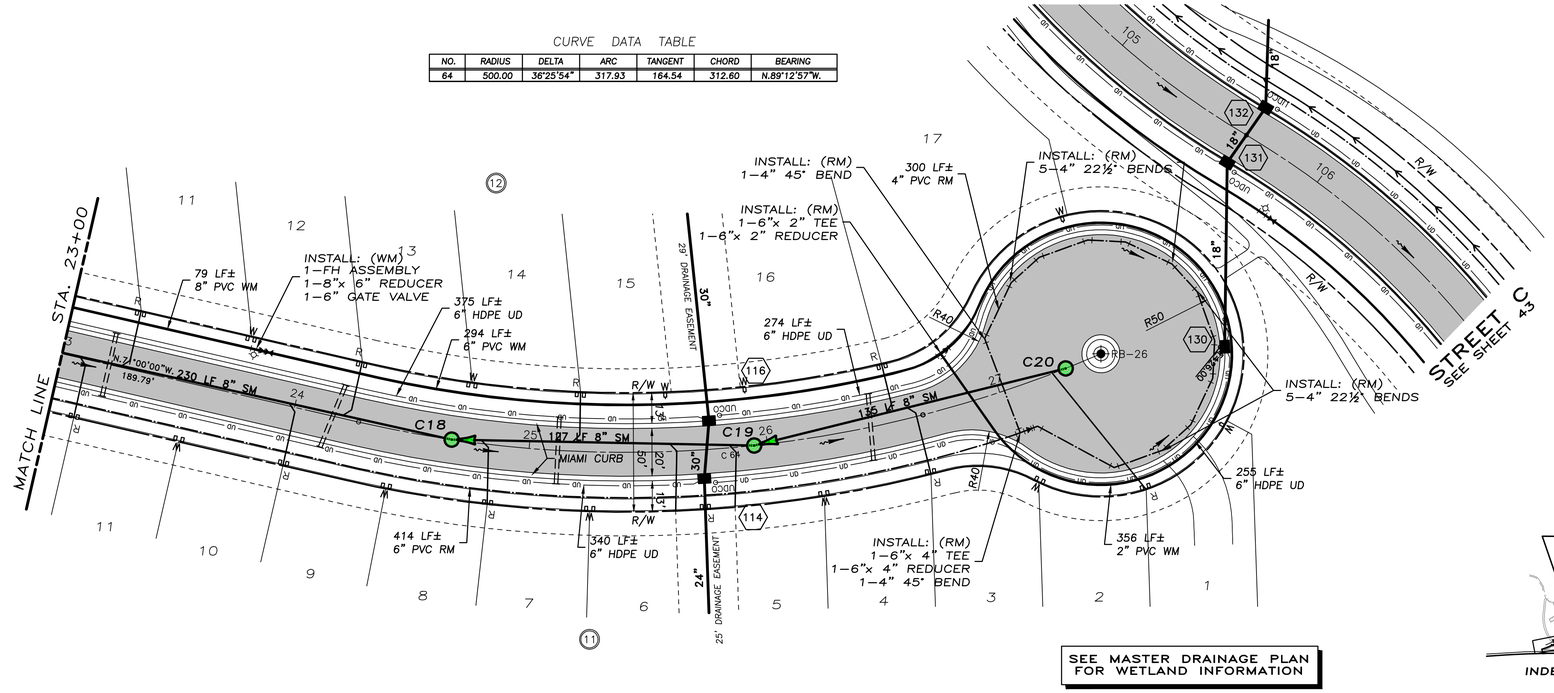
EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

CURVE DATA TABLE

NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
64	500.00	36°25'54"	317.93	164.54	312.60	N.89°12'57"W.



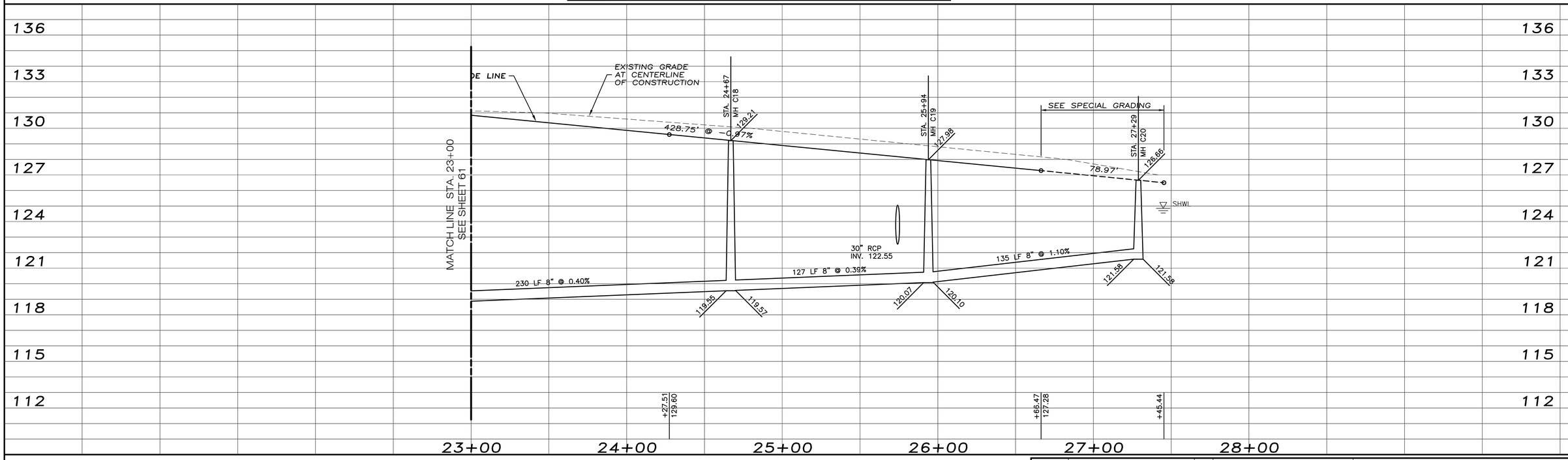
SEE MASTER DRAINAGE PLAN FOR WETLAND INFORMATION

INDEX TO MAP COVERAGE
Not To Scale

= DEVELOPER SIDEWALKS (CONSTRUCTED BY SITE CONTRACTOR)
= BUILDER SIDEWALKS (CONSTRUCTED BY BUILDING CONTRACTOR)

STREET J

SCALE: 1" = 3' VERTICAL
1" = 30' HORIZONTAL



LEGEND

A2

- SANITARY SEWER (SM)
- 6" SINGLE SERVICE
- 6" DOUBLE SERVICE
- FORCE MAIN (FM)
- VALVE & BOX
- REDUCER
- PLUG
- BLOW-OFF
- BENDS
- IRRIGATION & LIGHTING SLEEVE
- RECLAIMED MAIN (RM)
- DOUBLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- WATER MAIN (WM)
- FIRE HYDRANT
- DOUBLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- WDSP WATER DISTRIBUTION SAMPLING POINT

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

ROADWAY & UTILITY PLAN & PROFILE

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE RP26

EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84Feet

SEE MASTER DRAINAGE PLAN FOR WETLAND INFORMATION

STA. 10+00.00
P.I. STA. 19+26.78

INSTALL: (RM) 2–4" 45° BENDS

152 LF± 6" HDPE UD

INSTALL: (RM) 2–8" GATE VALVES 1–12"x 8" CROSS

POND B1

INSTALL: (RM) 1–8" 22½° BEND 1–8" 11¼° BEND

234 LF± 6" HDPE UD

STREET C
SEE SHEET 45

P.O.T. STA. 14+41.80
P.I. STA. 127+31.01

INSTALL: (RM) 2–8" 45° BENDS

204 LF± 6" HDPE UD

249 LF 8" SM

MIAMI CURB

280 LF± 6" HDPE UD

INSTALL: (WM) 1–FH ASSEMBLY

STREET I
SEE SHEET 65

STREET E
SEE SHEET 67

INSTALL: (WM) 1–FH ASSEMBLY

477 LF± 8" PVC WM

279 LF± 6" HDPE UD

253 LF 8" SM

S.32°30'00"E. 314.39'

80 LF 8" SM

103 LF 8" SM

208 LF 8" SM

S.65°00'00"E. 593.28'

420 LF± 8" PVC WM

258 LF± 6" HDPE UD

TYPE 'D' CURB (TYP.)

10' UTILITY EASEMENT

INSTALL: (WM) 1–8" GATE VALVE 2

P.O.T. STA. 19+07.67
P.I. STA. 19+33.62

INSTALL: (WM) 3–8" 22½° BENDS

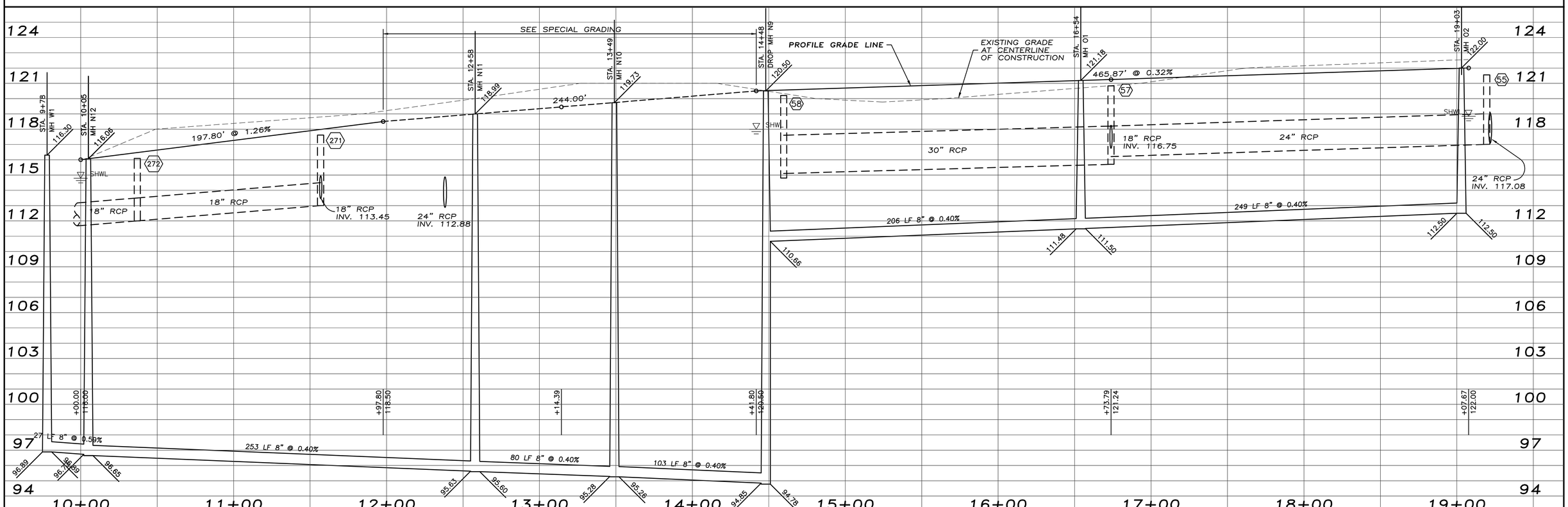
35 LF± 6" HDPE UD

INSTALL: (WM) 1–8" GATE VALVE

STREET D

SCALE: 1" = 3' VERTICAL
1" = 30' HORIZONTAL

INDEX TO MAP COVERAGE
Not To Scale



LEGEND

A2

- SANITARY SEWER (SM)
- 6" SINGLE SERVICE
- 6" DOUBLE SERVICE
- FORCE MAIN (FM)
- VALVE & BOX
- REDUCER
- PLUG
- BLOW–OFF
- BENDS
- IRRIGATION & LIGHTING SLEEVE
- RECLAIMED MAIN (RM)
- DOUBLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- WATER MAIN (WM)
- FIRE HYDRANT
- DOUBLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- WDSP WATER DISTRIBUTION SAMPLING POINT

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813–223–3919 Fax: 813–223–3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

ROADWAY & UTILITY PLAN & PROFILE

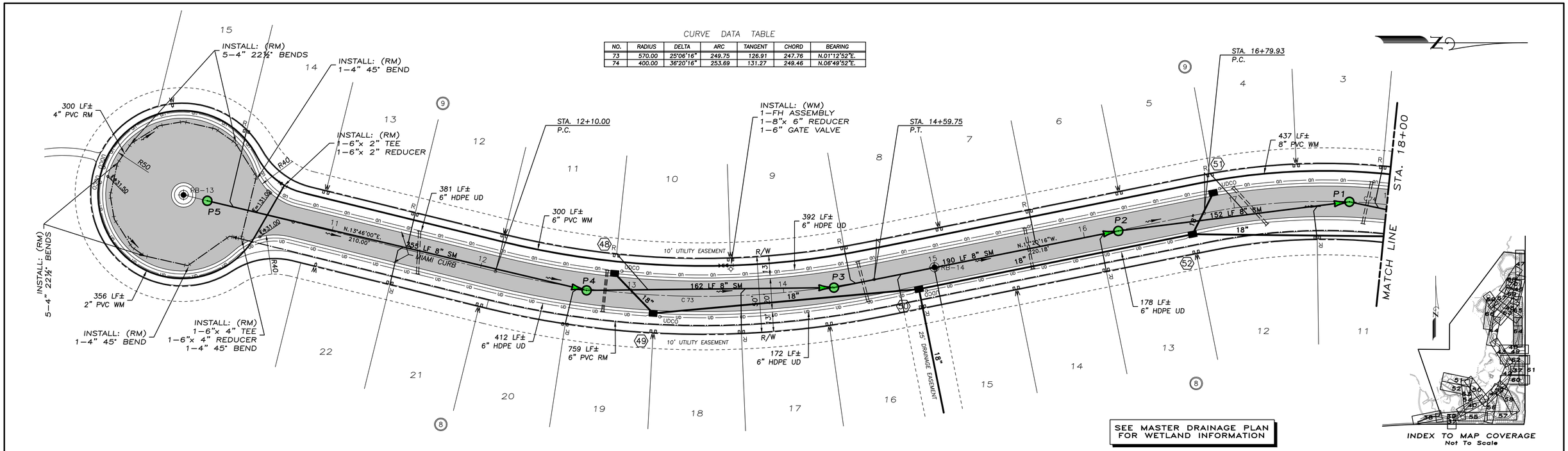
EPCO RANCH NORTH
PARCEL A PHASE 1

JOB NO.	SPH–EP–009
DESIGN	LAWTON
DRAWN	MIDDLETON
DATE	11/14/2014
FILE	RP27
PREPARED FOR:	STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = –0.84 Feet

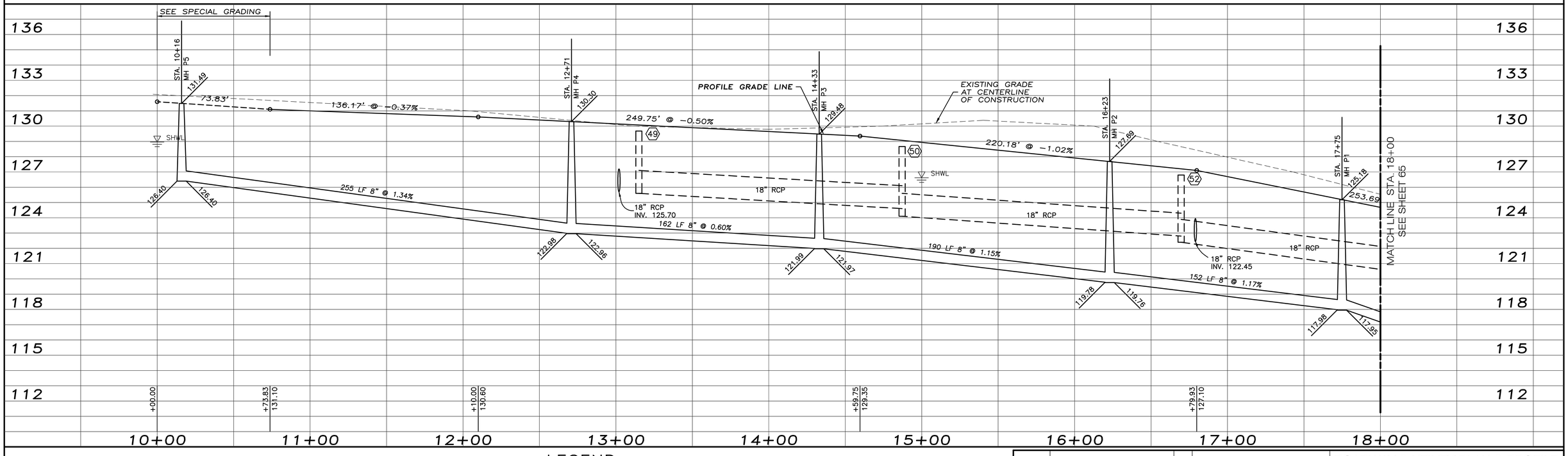
CURVE DATA TABLE

NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
73	570.00	25°06'16"	249.75	126.91	247.76	N.01°12'52"E.
74	400.00	36°20'16"	253.69	131.27	249.46	N.06°49'52"E.



STREET I

SCALE: 1" = 3' VERTICAL
1" = 30' HORIZONTAL



LEGEND

A2

- SANITARY SEWER (SM)
- 6" SINGLE SERVICE
- 6" DOUBLE SERVICE
- FORCE MAIN (FM)
- VALVE & BOX
- REDUCER
- PLUG
- BLOW-OFF
- BENDS
- IRRIGATION & LIGHTING SLEEVE
- RECLAIMED MAIN (RM)
- DOUBLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- WATER MAIN (WM)
- FIRE HYDRANT
- DOUBLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- WDSP — WATER DISTRIBUTION SAMPLING POINT

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
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W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

ROADWAY & UTILITY PLAN & PROFILE

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE RP28

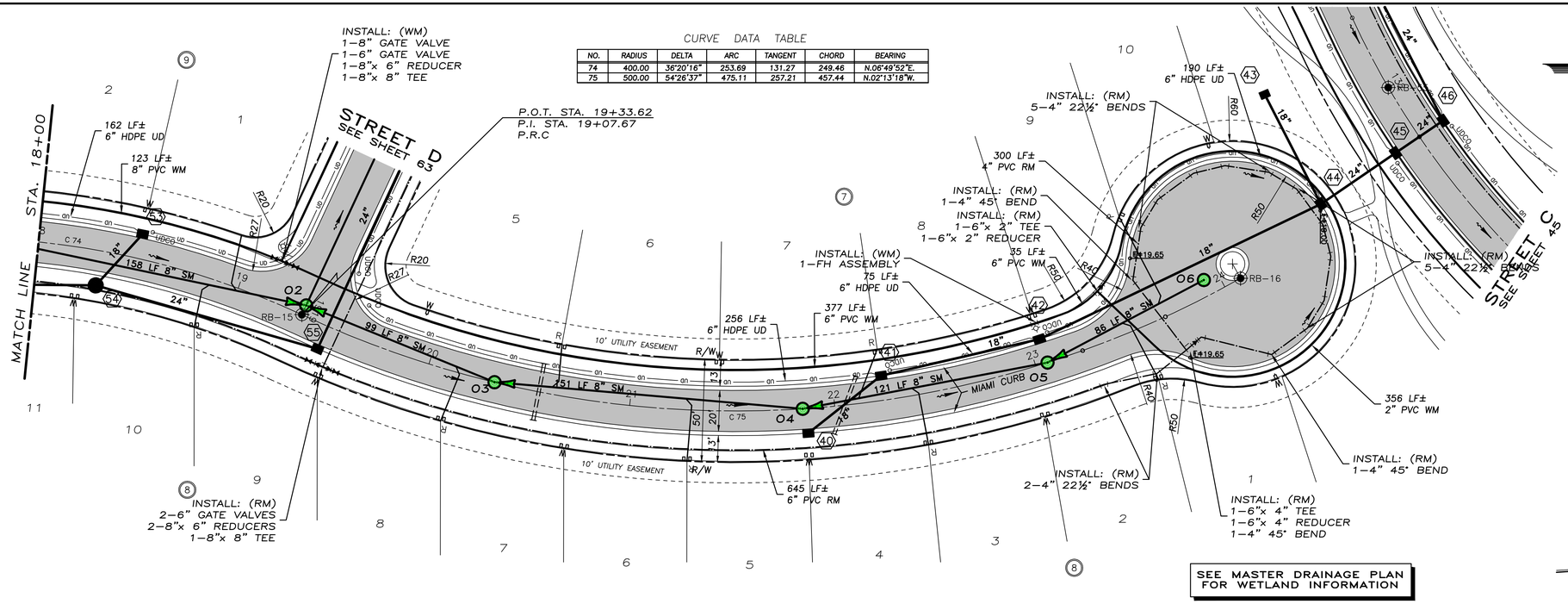
EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

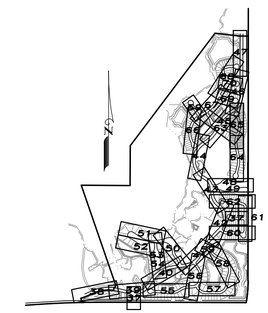
Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

CURVE DATA TABLE

NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
74	400.00	36°20'16"	253.69	131.27	249.46	N.06°49'52"E.
75	500.00	54°26'37"	475.11	257.21	457.44	N.02°13'18"W.



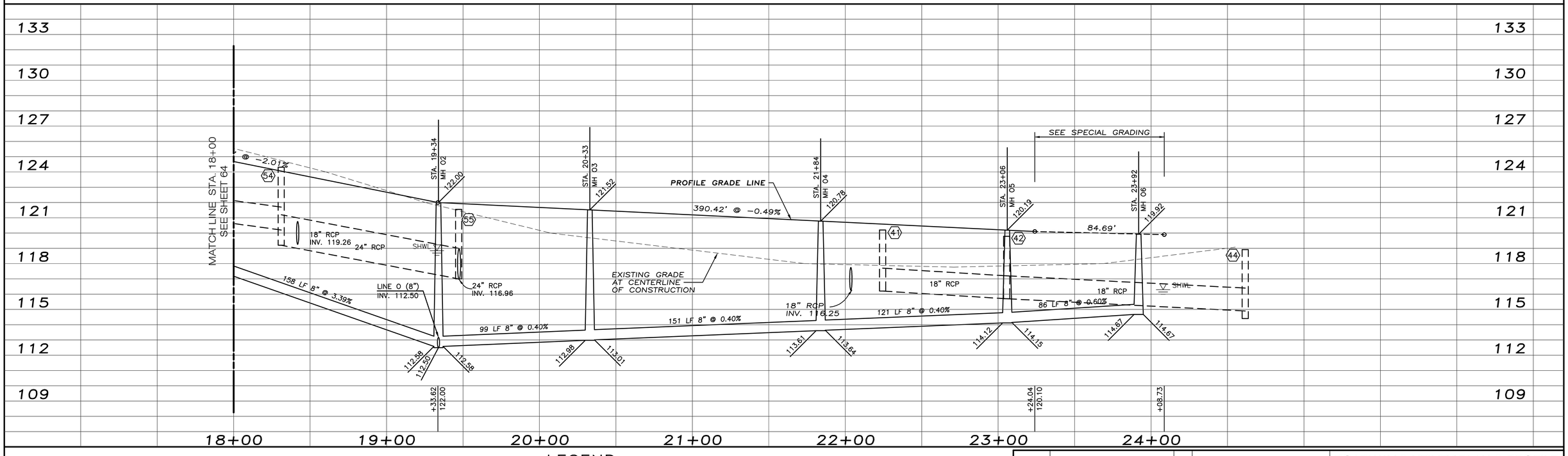
SEE MASTER DRAINAGE PLAN FOR WETLAND INFORMATION



INDEX TO MAP COVERAGE
Not To Scale

STREET I

SCALE: 1" = 3' VERTICAL
1" = 30' HORIZONTAL



LEGEND

A2
SANITARY SEWER (SM)
6" SINGLE SERVICE
6" DOUBLE SERVICE
FORCE MAIN (FM)
VALVE & BOX
REDUCER
PLUG
BLOW-OFF
BENDS
IRRIGATION & LIGHTING SLEEVE
RECLAIMED MAIN (RM)
DOUBLE SERVICE (RM) SHORTSIDE
SINGLE SERVICE (RM) SHORTSIDE
SINGLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
DOUBLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
WATER MAIN (WM)
FIRE HYDRANT
DOUBLE SERVICE (WM) SHORTSIDE
SINGLE SERVICE (WM) SHORTSIDE
SINGLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
DOUBLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
WDSP WATER DISTRIBUTION SAMPLING POINT

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975
DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

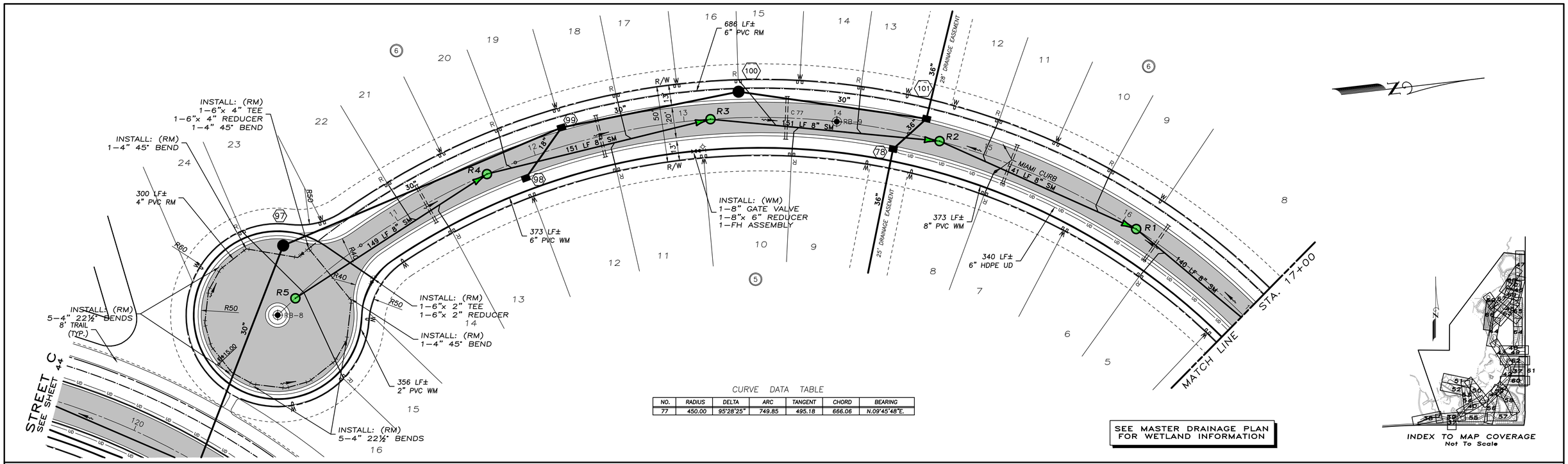
ROADWAY & UTILITY PLAN & PROFILE

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE RP29

EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet



CURVE DATA TABLE

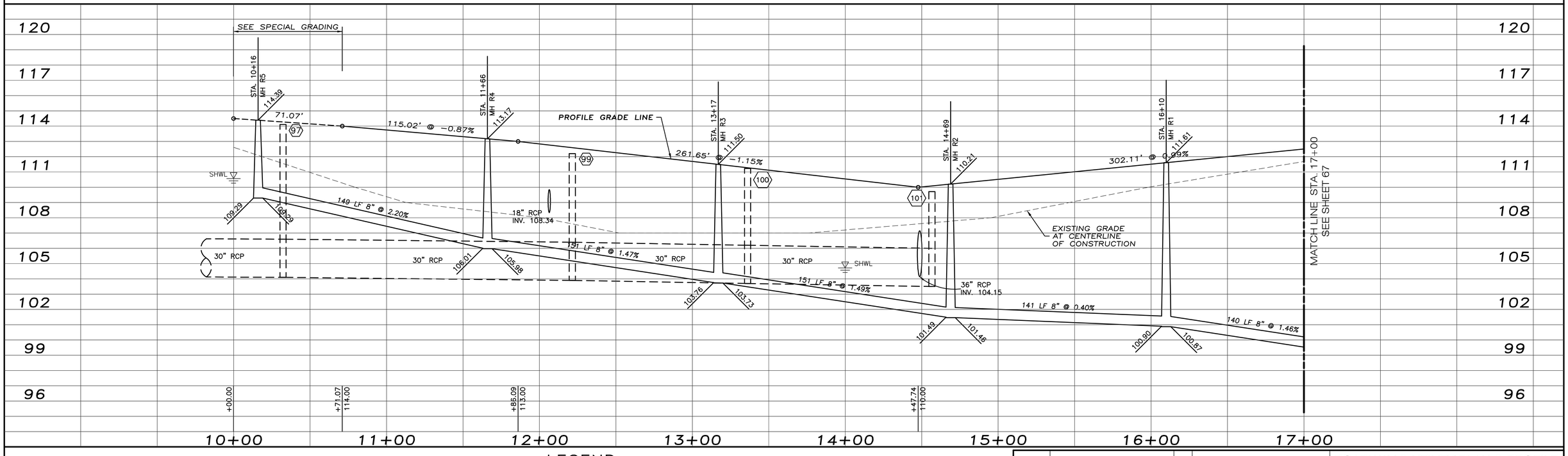
NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
77	450.00	95°28'25"	749.85	495.18	666.06	N.09°45'48"E.

SEE MASTER DRAINAGE PLAN FOR WETLAND INFORMATION

INDEX TO MAP COVERAGE
Not To Scale

STREET E

SCALE: 1" = 3' VERTICAL
1" = 30' HORIZONTAL



LEGEND

A2

- SANITARY SEWER (SM)
- 6" SINGLE SERVICE
- 6" DOUBLE SERVICE
- FORCE MAIN (FM)
- VALVE & BOX
- REDUCER
- PLUG
- BLOW-OFF
- BENDS
- IRRIGATION & LIGHTING SLEEVE
- RECLAIMED MAIN (RM)
- DOUBLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- WATER MAIN (WM)
- FIRE HYDRANT
- DOUBLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- WDSP — WATER DISTRIBUTION SAMPLING POINT

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
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DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

ROADWAY & UTILITY PLAN & PROFILE

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE RP30

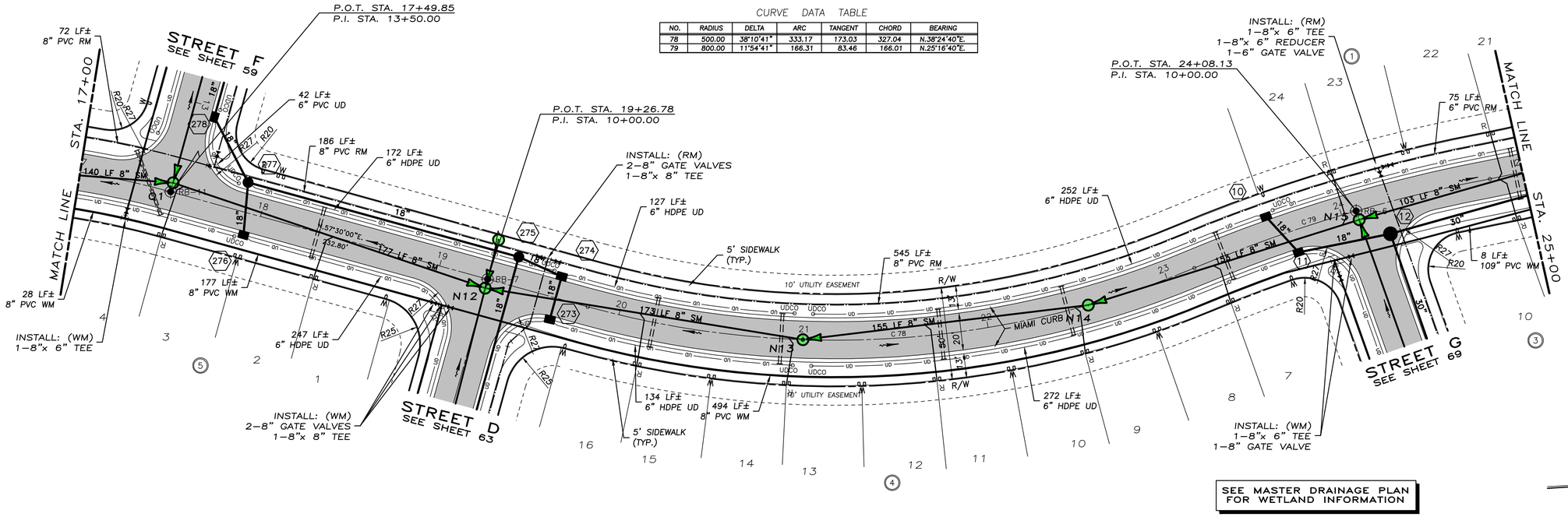
EPCO RANCH NORTH
PARCEL A PHASE 1

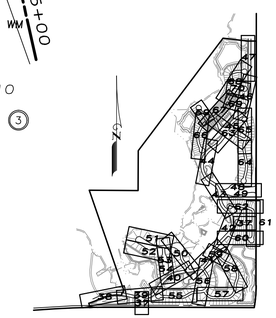
PREPARED FOR: STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

CURVE DATA TABLE

NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
78	500.00	38°10'41"	333.17	173.03	327.04	N.38°24'40"E.
79	800.00	11°54'41"	166.31	83.46	166.01	N.25°16'40"E.

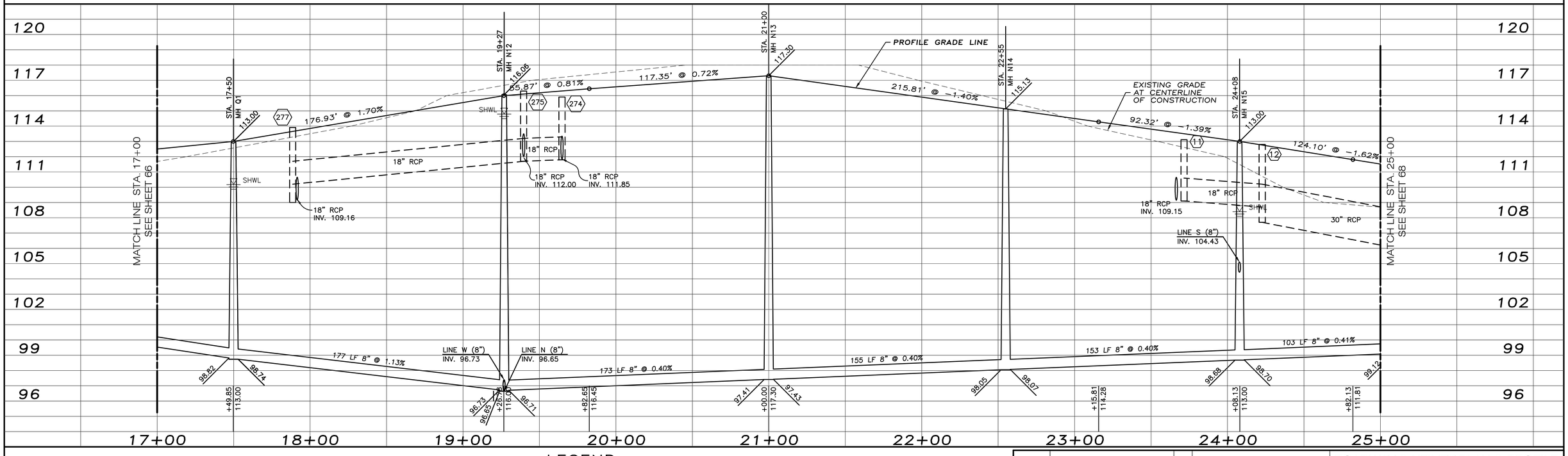




INDEX TO MAP COVERAGE
Not To Scale

STREET E

SCALE: 1" = 3' VERTICAL
1" = 30' HORIZONTAL



LEGEND

A2 SANITARY SEWER (SM)
6" SINGLE SERVICE
6" DOUBLE SERVICE
FORCE MAIN (FM)
VALVE & BOX
REDUCER
PLUG
BLOW-OFF
BENDS
IRRIGATION & LIGHTING SLEEVE
RECLAIMED MAIN (RM)
DOUBLE SERVICE (RM) SHORTSIDE
SINGLE SERVICE (RM) SHORTSIDE
SINGLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
DOUBLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
WATER MAIN (WM)
FIRE HYDRANT
DOUBLE SERVICE (WM) SHORTSIDE
SINGLE SERVICE (WM) SHORTSIDE
SINGLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
DOUBLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
WDSP WATER DISTRIBUTION SAMPLING POINT

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
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DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

ROADWAY & UTILITY PLAN & PROFILE

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE RP31

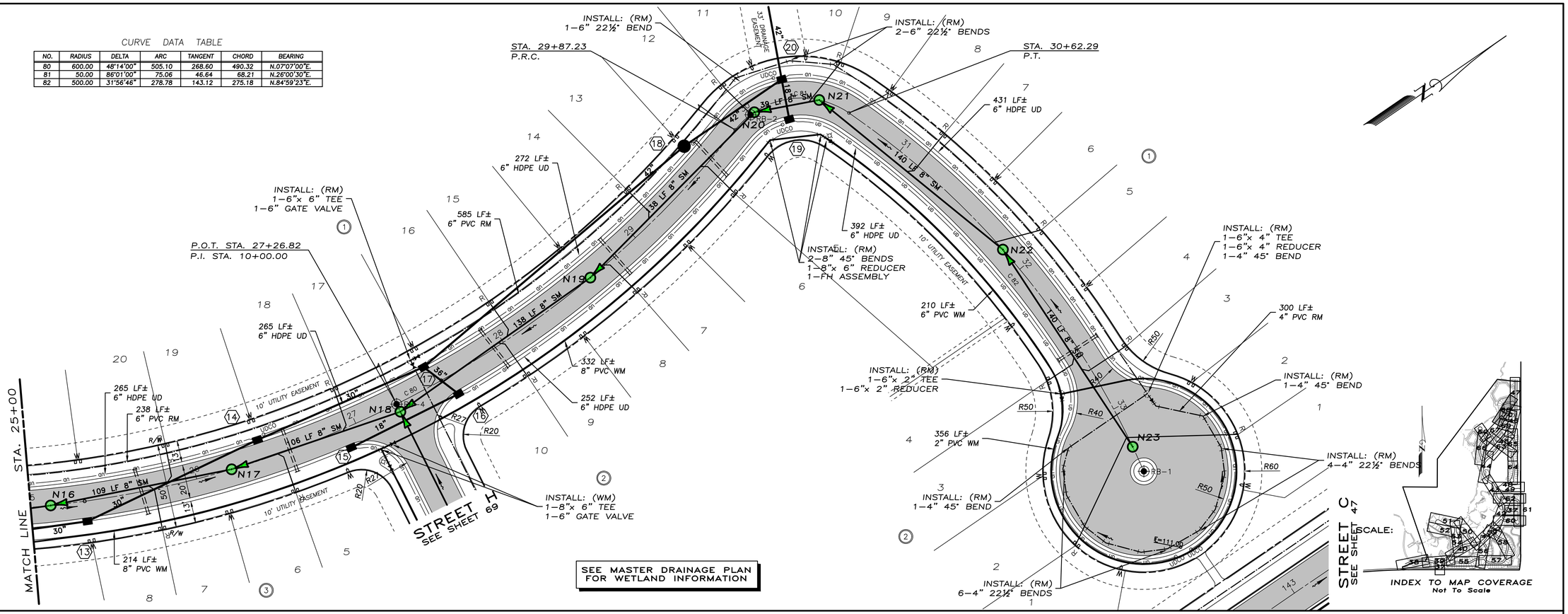
EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

CURVE DATA TABLE

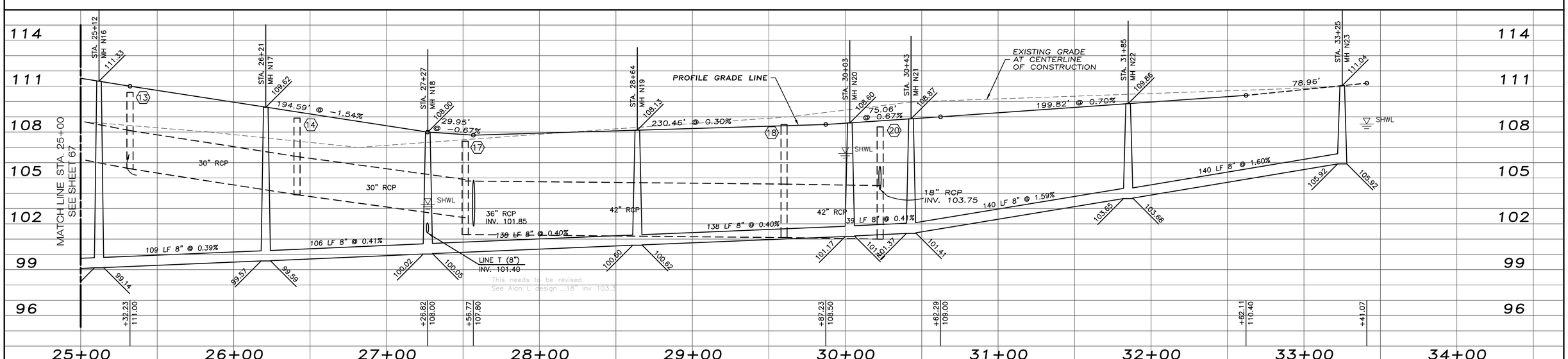
NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
80	600.00	48°14'00"	505.10	268.60	490.32	N.07°07'00"E.
81	50.00	86°01'00"	75.06	46.64	68.21	N.26°00'30"E.
82	500.00	31°56'46"	278.78	143.12	275.18	N.84°59'23"E.



SEE MASTER DRAINAGE PLAN FOR WETLAND INFORMATION

STREET E

1" = 3' VERTICAL
1" = 30' HORIZONTAL



LEGEND

A2

- SANITARY SEWER (SM)
- 6" SINGLE SERVICE
- 6" DOUBLE SERVICE
- FORCE MAIN (FM)
- VALVE & BOX
- REDUCER
- PLUG
- BLOW-OFF
- BENDS
- IRRIGATION & LIGHTING SLEEVE
- RECLAIMED MAIN (RM)
- DOUBLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- WATER MAIN (WM)
- FIRE HYDRANT
- DOUBLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- WDSP WATER DISTRIBUTION SAMPLING POINT

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975
DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

ROADWAY & UTILITY PLAN & PROFILE

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE RP32

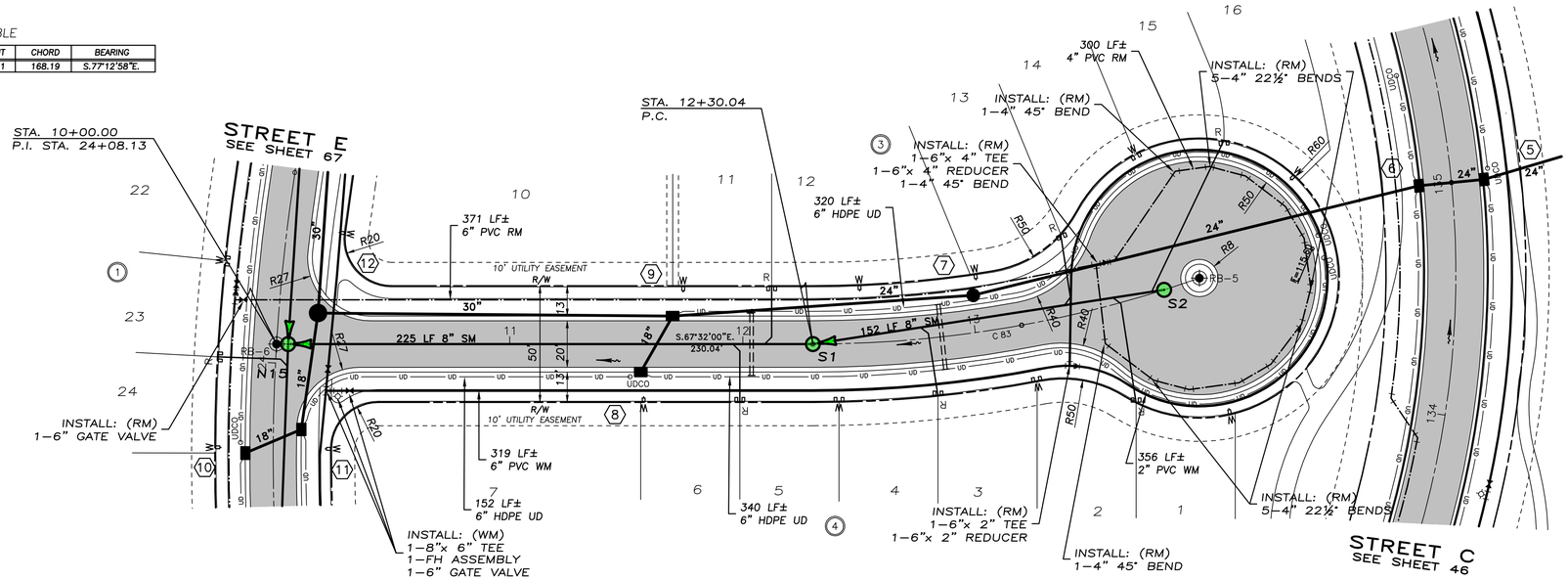
EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

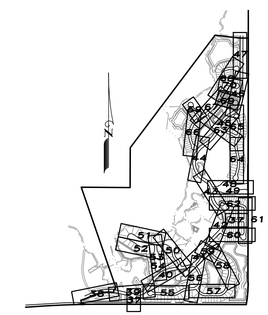
Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

CURVE DATA TABLE

NO.	RADIUS	DELTA	ARC	TANGENT	CHORD	BEARING
83	500.00	19°21'57"	169.00	85.31	168.19	S.77°12'58"E.



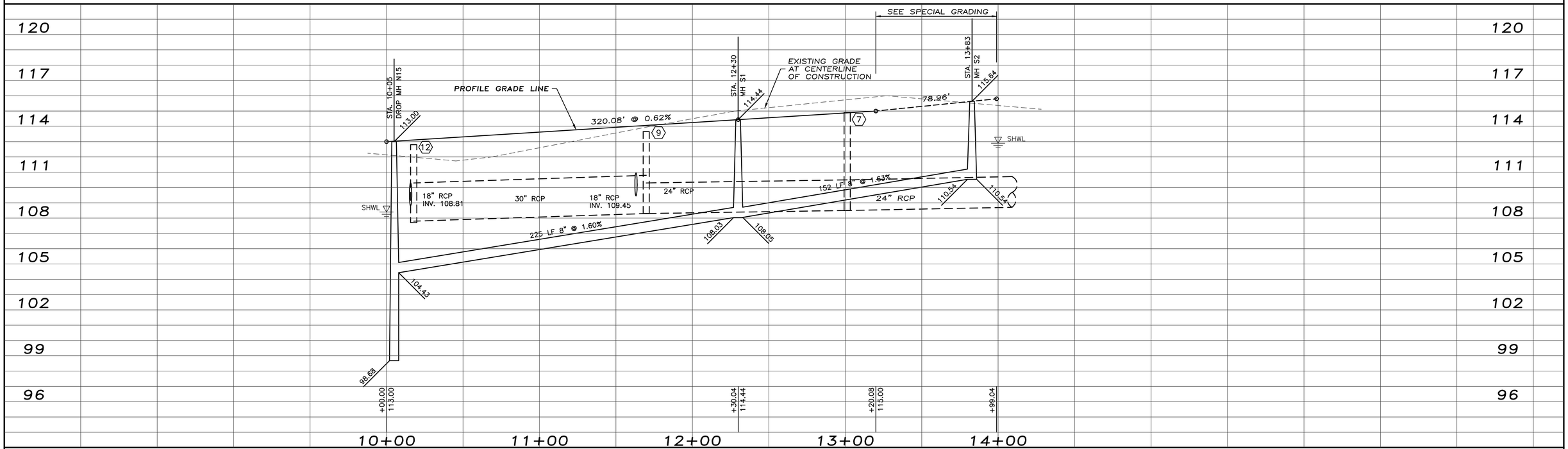
SEE MASTER DRAINAGE PLAN FOR WETLAND INFORMATION



INDEX TO MAP COVERAGE
Not To Scale

STREET G

SCALE: 1" = 3' VERTICAL
1" = 30' HORIZONTAL



LEGEND

A2

- SANITARY SEWER (SM)
- 6" SINGLE SERVICE
- 6" DOUBLE SERVICE
- FORCE MAIN (FM)
- VALVE & BOX
- REDUCER
- PLUG
- BLOW-OFF
- BENDS
- IRRIGATION & LIGHTING SLEEVE
- RECLAIMED MAIN (RM)
- DOUBLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) SHORTSIDE
- SINGLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (RM) LONGSIDE W/SERVICE SLEEVE
- WATER MAIN (WM)
- FIRE HYDRANT
- DOUBLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) SHORTSIDE
- SINGLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- DOUBLE SERVICE (WM) LONGSIDE W/SERVICE SLEEVE
- WDSP — WATER DISTRIBUTION SAMPLING POINT

DATE	DESCRIPTION	BY
	REVISIONS	

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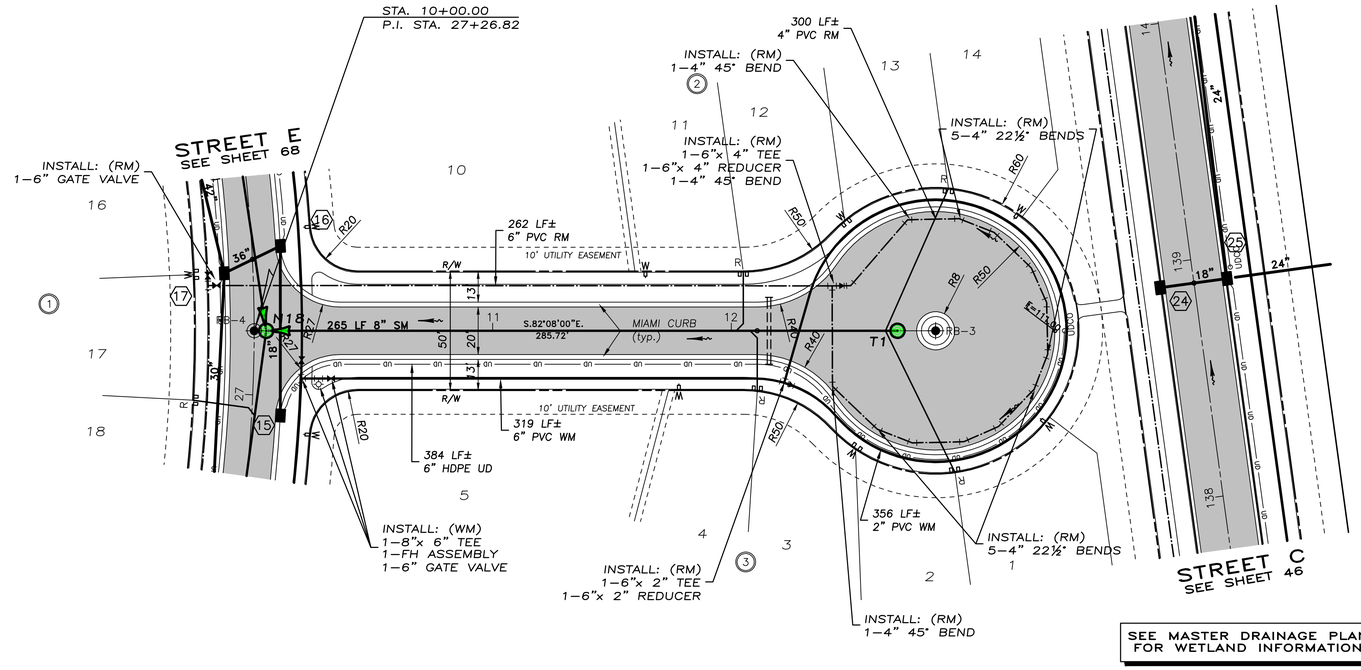
ROADWAY & UTILITY PLAN & PROFILE

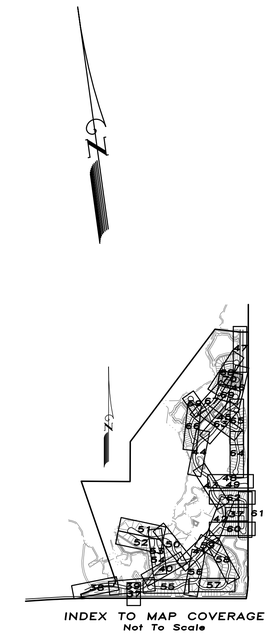
JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE RP33

EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

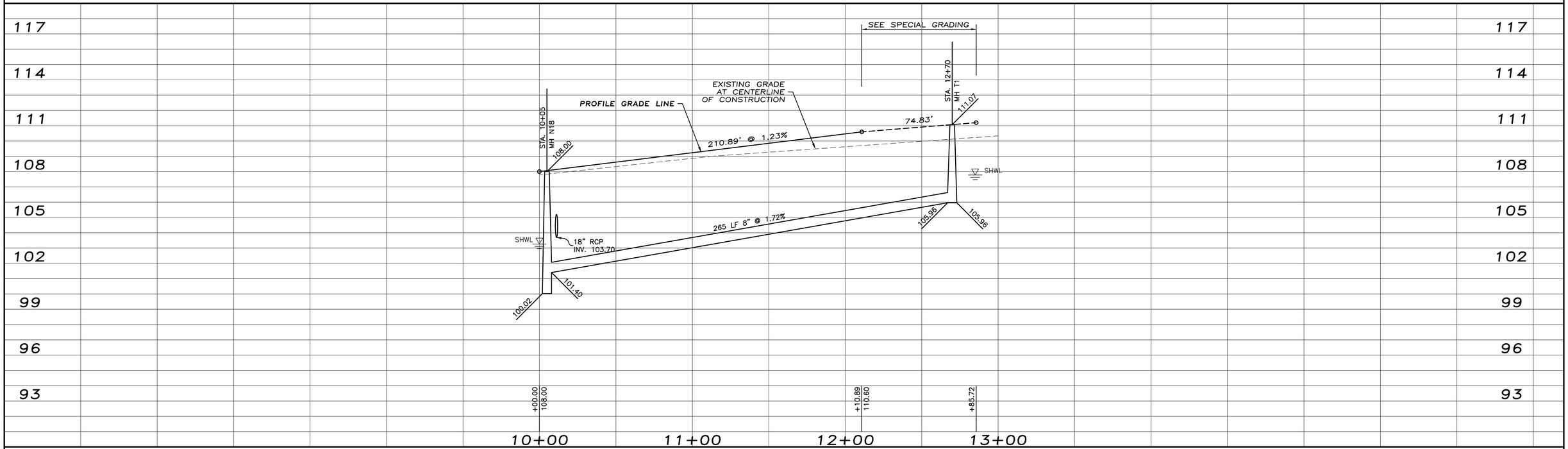
Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet





STREET H

SCALE: 1" = 3' VERTICAL
1" = 30' HORIZONTAL



LEGEND

A2

- SANITARY SEWER (SM)
- 6" SINGLE SERVICE
- 6" DOUBLE SERVICE
- FORCE MAIN (FM)
- VALVE & BOX
- REDUCER
- PLUG
- BLOW-OFF
- BENDS
- IRRIGATION & LIGHTING SLEEVE
- RECLAIMED MAIN (RM)
- DOUBLE SERVICE (RM) SHORTSIDE
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	REVISIONS	

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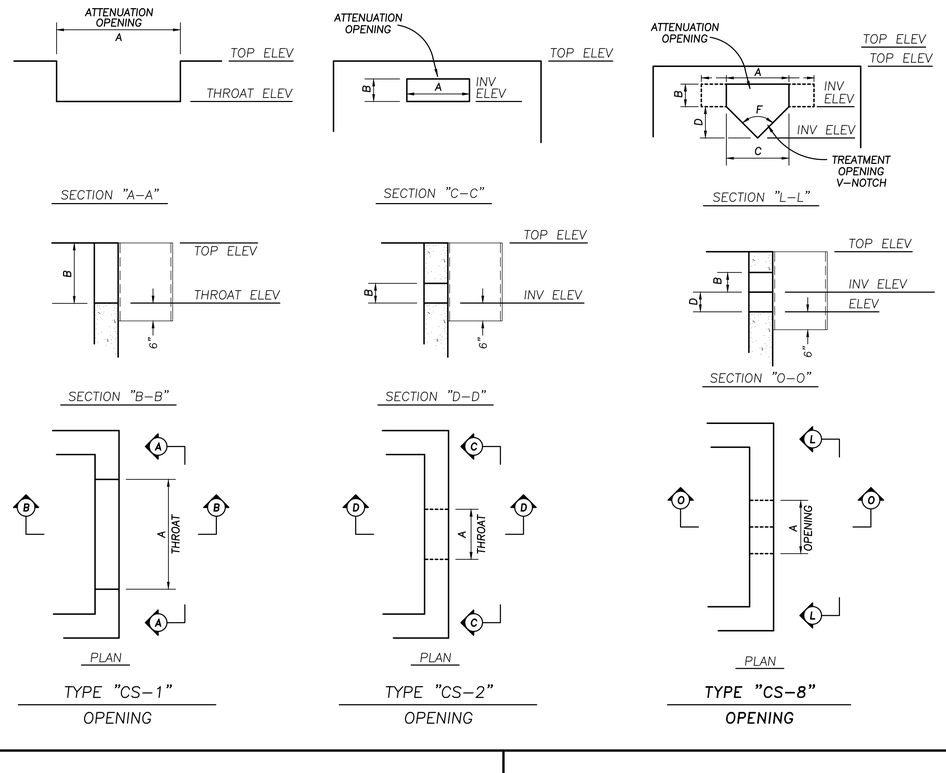
ROADWAY & UTILITY PLAN & PROFILE

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE RP34

EPCO RANCH NORTH
PARCEL A PHASE 1

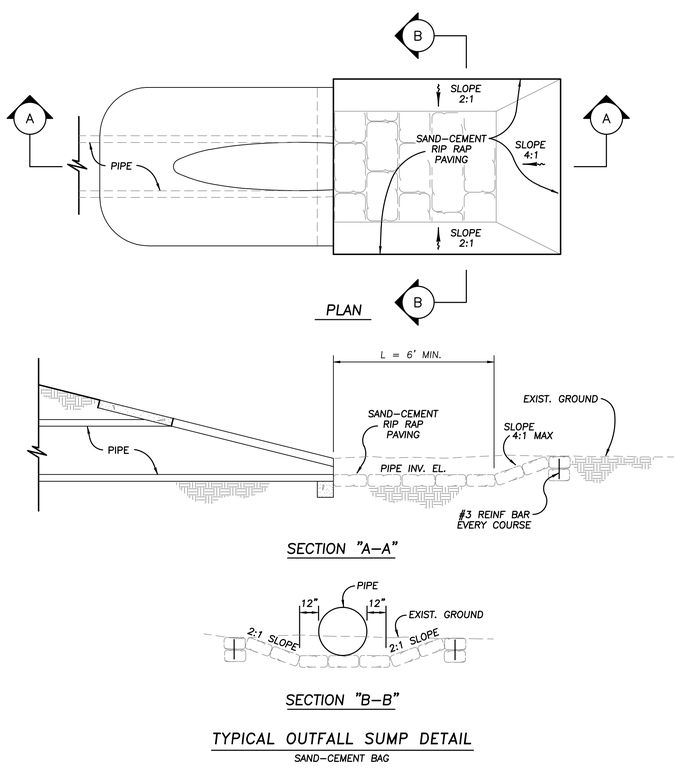
PREPARED FOR: STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet



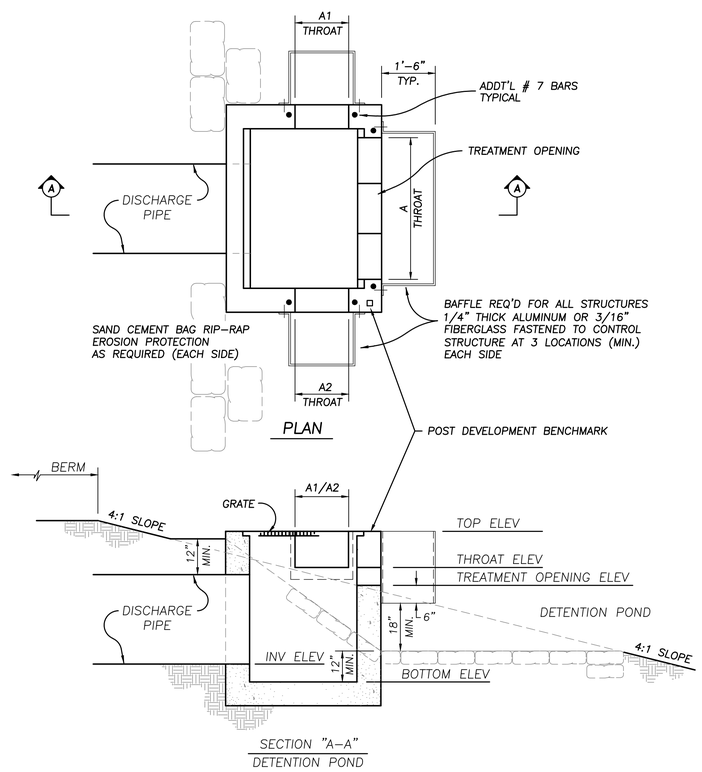
CONTROL STRUCTURE DATA

STR. NO.	FDOT BOX TYPE	TOP EL. (FT.)	BOTT. EL. (FT.)	DISCHARGE PIPE TYPE	DISCHARGE PIPE SIZE (IN.)	DISCHARGE PIPE INV. EL. (FT.)	ATTENUATION AND TREATMENT CONTROLS STR. TYPE	ATTENUATION OPENING A	ATTENUATION OPENING B	EL. (FT.)	TREATMENT OPENING C	TREATMENT OPENING D	TREATMENT OPENING F'	EL. (FT.)	REMARKS
77	D	118.00	110.50	RCP	36	111.00	CS–8	36"	25.2"	116.40	9 5/8"	4 13/16"		116.00	POND B1/B2
							CS–2	24"	25.2"	116.40					
							CS–2	24"	25.2"	116.40					
170	D	117.50	107.50	RCP	36	110.50	CS–8	36"	15.6"	116.20	4 5/8"	2 5/16"		116.00	POND D2
							CS–2	18"	15.6"	116.20					
							CS–2	18"	15.6"	116.20					
206	D	109.20	103.00	RCP	36	103.50	CS–8	36"	22.5"	107.33	8"	4"		107.00	POND D1
							CS–2	22"	22.5"	107.33					
250	D	109.00	103.50	RCP	36	104.00	CS–8	24"	19.6"	107.37	8 7/8"	4 7/16"		107.00	POND F4
							CS–2	24"	19.6"	107.37					
							CS–2	24"	19.6"	107.37					
285	WALL	106.50	100.50				CS–8	132"	25.2"	104.43	5 1/2"	2 3/4"		104.20	POND A2
290	WALL	106.50	101.20				CS–8	204"	22.4"	104.63	10 5/16"	5 3/16"		104.20	POND A1
295	WALL	108.00	102.00				CS–8	48"	38.8"	104.76	13 7/16"	6 3/4"		104.20	POND E1
298	D	122.00	117.80	RCP	36	118.40	CS–8	36"	7.3"	121.39	9 3/8"	4 11/16"		121.00	POND C4
							CS–8	36"	7.3"	121.39					
							CS–8	24"	7.3"	121.39					
							CS–8	24"	7.3"	121.39					
300	C	119.50	115.50	RCP	24	116.00	CS–8	20"	10.6"	118.62	19 11/16"	9 13/16"		117.80	POND C3
320	WALL	122.70					CS–8	1872"							POND C2
325	WALL	123.70					CS–8	1404"							POND C1
313	C	104.90	100.00	RCP	30	100.50					15/16"	15/16"		102.50	POND AC1 CIRCLE BLEEDER ORIFICE
315	C	104.9	100.00	RCP	24	100.50	CS–8	36"	18"	103.20	11/16"	11/16"		102.50	POND AC2 CIRCLE BLEEDER ORIFICE
317	WALL	104.00	98.00				CS–8	40"	18"	102.50					POND WL4S



TYPICAL OUTFALL SUMP DETAIL

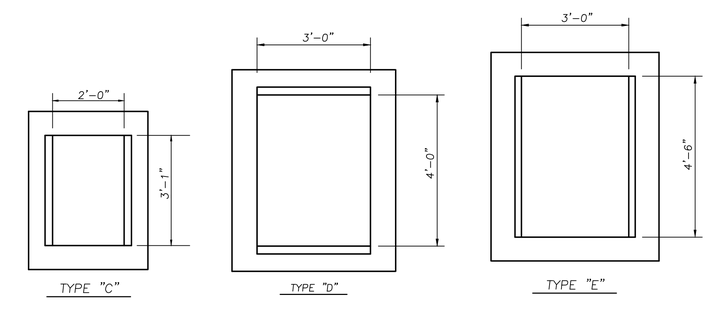
SAND–CEMENT BAG



TYPICAL CONTROL STRUCTURE

NOTE:
CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTING CONTROL STRUCTURES

NOTE:
DRAWING NOT TO SCALE



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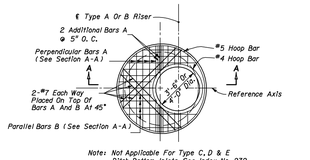
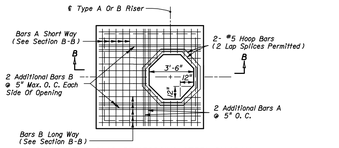
CONTROL STRUCTURE DETAILS

JOB NO. SPH–EP–009	EPCO RANCH NORTH PARCEL A PHASE 1
DESIGN LAWTON	
DRAWN MIDDLETON	PREPARED FOR: STANDARD PACIFIC OF FLORIDA
DATE 11/14/2014	Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 = –0.84 Feet
FILE CSTR	SHEET 71 OF 98 SHEETS

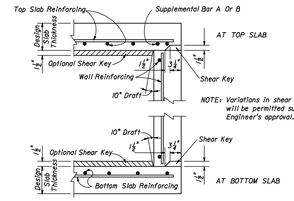


Note: Not Applicable For Type C, D & E Ditch Bottom Inlets. See Index No. 232.

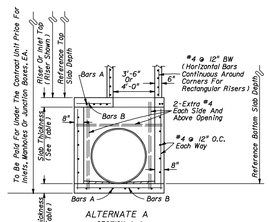
TOP SLAB REINFORCING STEEL DIAGRAM



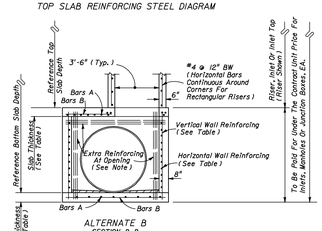
TOP SLAB REINFORCING STEEL DIAGRAM



SLAB TO WALL DETAILS FOR PRECAST ALTERNATE WITH 8" WALLS



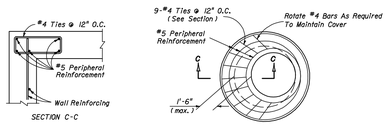
ALTERNATE A
SECTION A-A



ALTERNATE B
SECTION B-B

*NOTE: When the inside diameter of a round structure is not more than 1'-6" larger than the opening in the riser or top slab, the top of the structure or riser shall be constructed according to the "Special Top Slab" details on this sheet.

NOTE: Provide extra reinforcement each side of each opening at 3" maximum spacing equal to half the area of vertical reinforcement removed by the opening and provide the same area of reinforcement above each opening at 3" maximum spacing as removed by the opening.



SPECIAL TOP SLAB *

GENERAL NOTES

1. Standard structure bottoms 4'-0" diameter and smaller (Alt. A) and 3'-6" square (Alt. B) are designated Type P. Larger standard structure bottoms are designated Type J. Risers are permitted for all structures.
2. Walls of circular structures (Alternate A) constructed in place may be of non-reinforced concrete or brick or reinforced concrete. Precast and rectangular structures (Alternate B) shall be constructed of reinforced concrete only.
3. 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 either ASTM C478 (up to 96" diameter) or ASTM C76, Class III, B Wall, modified where the elliptical steel cage area is placed in the center one-third of the wall.
4. Top and floor slab thickness and reinforcement are for precast and cast in place construction. Top and floor slabs shall be of Class II concrete. Concrete as specified in ASTM C478 (4000 psi) may be used in lieu of Class I and Class II concrete in precast items manufactured in plants which are under the "Standard Operating Procedures" for the inspection of precast drainage products.
5. All reinforcement shown is ASTM A615/A615M Grade 60 steel, either smooth or deformed. Equivalent area Grade 40 steel or Grade 65KSI welded wire fabric may be substituted according to Index No. 201.
6. 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 unless otherwise shown in the plans or other standard drawings. Alt. B structure bottoms may be used in conjunction with curb inlet Types 7 & 8, or any ditch bottom inlet unless otherwise shown in the plans or other standard drawings.
7. Rectangular structures may be rotated as directed by the Engineer in order to facilitate connections between the structure walls and storm sewer pipes.
8. Except when ACI hooks are specifically required, reinforcement top and slab shall be straight embedment.
9. All steel bars shall have $1\frac{1}{2}$" minimum cover unless otherwise shown except for precast circular units manufactured under ASTM C76 or ASTM C478. Horizontal steel in rectangular structures shall be lapped a minimum of 24 bar diameters at corners.
10. The corner fillets shown are necessary for rectangular structures used with circular risers and inlet throats and used on skew with rectangular risers, inlet and inlet throats. Fillets will be required in lieu of the bottom slab of the Alt. B riser when used with the Alt. A box. Each fillet shall be reinforced with 2-#5 bars.
11. Inlet throats, riser or manhole tops shall be secured to structures as shown on Index No. 201.
12. Structures with depths over 14' are to be checked for floatation by designer of project drainage.
13. Units larger than specified standard may be substituted at the contractor's option when these units will not cause or increase the severity of utility conflicts. Such larger units shall be furnished at no additional cost to the Department. Larger Alternate A units cannot replace Alternate B units without approval of the Engineer. This note applies to this index only.
14. For manhole and junction box tops, for frames and covers, and, for supplementary details see Index No. 201.

STRUCTURE BOTTOMS TYPE J AND P

SLAB DESIGNS - SQUARE AND RECTANGULAR STRUCTURES

(ALL SLABS 8" THICK - REINFORCING PARALLEL TO SHORT WAY AND LONG WAY)

SHORT-WAY SLAB DEPTH	SHORT-WAY SCHEDULE	LONG-WAY SLAB DEPTH	LONG-WAY SCHEDULE
SIZE: 3'-6" x UNLIMITED			
≥0.5' < 29'	B	≥0.5' - 40'	B
29' - 40'	C		
SIZE: 4'-0" x UNLIMITED			
≥0.5' < 19'	B	≥0.5' < 34'	B
19' < 29'	C	34' - 40'	C
29' - 40'	D		
SIZE: 5' x 5'			
≥0.5' < 3'	C	≥0.5' < 3'	C
3' < 29'	B	3' < 19'	B
19' < 28'	C	19' < 28'	C
28' < 38'	D	28' < 38'	D
38' - 40'	F	38' - 40'	F
SIZE: 5' x 6'			
≥0.5' < 3'	C	≥0.5' < 3'	C
3' < 16'	B	3' < 20'	B
16' < 24'	C	20' < 29'	C
24' < 34'	D	29' - 40'	D
34' - 40'	F		
SIZE: 5' x 7'			
≥0.5' < 3'	C	≥0.5' < 3'	C
3' < 14'	B	3' < 22'	B
14' < 21'	C	22' < 33'	C
21' < 29'	D	33' - 40'	D
29' - 40'	F		
SIZE: 5' x 8'			
≥0.5' < 3'	C	≥0.5' < 39'	B
3' < 8'	B	39' - 40'	C
8' < 17'	C		
17' < 23'	D		
23' - 40'	F		
SIZE: 5' x 9'			
≥0.5' < 3'	C	≥0.5' < 32'	B
3' < 8'	B	32' - 40'	C
8' < 17'	C		
17' < 23'	D		
23' - 40'	F		

SHORT-WAY SLAB DEPTH	SHORT-WAY SCHEDULE	LONG-WAY SLAB DEPTH	LONG-WAY SCHEDULE
SIZE: 6' x 6'			
≥0.5' < 3'	D	≥0.5' < 3'	D
3' < 4'	C	3' < 4'	C
4' < 14'	B	4' < 14'	B
14' < 21'	C	14' < 21'	C
21' < 28'	D	21' < 28'	D
28' - 40'	F	28' - 40'	F
SIZE: 6' x 7'			
≥0.5' < 3'	D	≥0.5' < 3'	D
3' < 4'	C	3' < 4'	C
4' < 12'	B	4' < 15'	B
12' < 19'	C	15' < 21'	C
19' < 26'	D	21' < 30'	D
26' - 40'	F	30' - 40'	F
SIZE: 6' x 8'			
≥0.5' < 3'	D	≥0.5' < 3'	D
3' < 4'	C	3' < 4'	C
4' < 7'	B	4' < 16'	B
7' < 16'	C	16' < 23'	C
16' < 23'	D	23' < 32'	D
23' - 40'	F	32' - 40'	F
SIZE: 6' x 9'			
≥0.5' < 3'	D	≥0.5' < 3'	D
3' < 15'	C	3' < 4'	C
15' < 21'	D	4' < 18'	B
21' < 27'	E	18' < 27'	C
27' - 40'	G	27' < 37'	D
		37' - 40'	E
SIZE: 7' x 7'			
≥0.5' < 3'	E	≥0.5' < 3'	E
3' < 4'	D	3' < 4'	D
4' < 16'	C	4' < 16'	C
16' < 22'	D	16' < 22'	D
22' < 28'	E	22' < 28'	E
28' - 40'	G	28' - 40'	G
SIZE: 7' x 8'			
≥0.5' < 3'	E	≥0.5' < 3'	E
3' < 4'	D	3' < 4'	D
4' < 15'	C	4' < 17'	C
15' < 21'	D	17' < 23'	D
21' < 27'	E	23' < 29'	E
27' - 40'	G	29' - 40'	G
SIZE: 7' x 9'			
≥0.5' < 3'	E	≥0.5' < 3'	E
3' < 4'	D	3' < 4'	D
4' < 12'	C	4' < 18'	C
12' < 18'	D	18' < 24'	D
18' < 24'	E	24' < 32'	E
24' - 40'	G	32' - 40'	G

SHORT-WAY SLAB DEPTH	SHORT-WAY SCHEDULE	LONG-WAY SLAB DEPTH	LONG-WAY SCHEDULE
SIZE: 8' x 8'			
≥ 0.5' < 3'	D	≥ 0.5' < 3'	D
3' < 4'	C	3' < 4'	C
4' < 9'	B	4' < 9'	B
9' < 17'	C	9' < 17'	C
17' < 3'	D	17' < 3'	D
3' - 40'	G	3' - 40'	G
SIZE: 8' x 9'			
≥ 0.5' < 3'	D	≥ 0.5' < 3'	E
3' < 4'	C	3' < 4'	D
4' < 16'	B	4' < 18'	C
16' < 22'	C	18' < 25'	D
22' < 29'	D	25' < 32'	F
29' - 40'	F	32' - 40'	G
SIZE: 9' x 9'			
≥ 0.5' < 3'	F	≥ 0.5' < 3'	F
3' < 14'	C	3' < 14'	C
14' < 20'	D	14' < 20'	D
20' < 26'	E	20' < 26'	E
26' - 40'	G	26' - 40'	G

WALL DESIGNS - RECTANGULAR STRUCTURES

VERTICAL REINFORCING WALL DEPTH	VERTICAL REINFORCING SCHEDULE	HORIZONTAL REINFORCING WALL DEPTH	HORIZONTAL REINFORCING SCHEDULE
SIZE: 3'-6" * SEE NOTE BELOW			
≥1.17' - 40'	A	≥1.17' - 40'	B
SIZE: 4'-0"			
≥1.17' - 40'	A	≥1.17' - 40'	B
SIZE: 5'-0"			
≥1.17' - 40'	A	≥1.17' < 33'	B
		33' - 40'	C
SIZE: 6'-0"			
≥1.17' - 40'	A	≥1.17' < 22'	B
		22' - 40'	C
SIZE: 7'-0"			
≥1.17' - 40'	A	≥1.17' < 15'	B
		15' < 25'	C
		25' - 40'	D
SIZE: 8'-0"			
≥1.17' - 40'	A	≥1.17' < 11'	B
		11' < 19'	C
		19' < 29'	D
		29' - 40'	F
SIZE: 9'-0"			
≥1.17' - 40'	A	≥1.17' < 15'	C
		15' < 22'	D
		22' - 40'	F

* Precast structures 3'-6" x 3'-6" maybe cast with 6" walls to depths of 15'. See Index No. 201.

SLAB DESIGNS - ROUND STRUCTURES

SLAB DEPTH	SLAB THICKNESS	REINFORCING (2 WAYS) SCHEDULE
SIZE: 3'-6"		
≥0.5' - 40'	8"	C
SIZE: 4'-0"		
≥0.5' - 40'	8"	C
SIZE: 5'-0"		
≥0.5' < 30'	8"	C
30' - 40'	8"	D
SIZE: 6'-0"		
≥0.5' < 8'	8"	B
8' < 18'	8"	C
18' < 30'	8"	D
30' < 37'	8"	E
37' - 40'	8"	G
SIZE: 8'-0"		
≥0.5' < 9'	10"	C
9' < 15'	10"	D
15' < 23'	10"	E
23' < 33'	12"	E
33' - 40'	12"	G
SIZE: 10'-0"		
≥0.5' < 6'	10"	C
6' < 11'	10"	D
11' < 17'	10"	E
17' < 23'	12"	E
23' - 40'	12"	G
SIZE: 12'-0"		
≥0.5' < 6'	12"	C
6' < 11'	12"	D
11' < 16'	12"	E
16' < 20'	14"	E
20' - 40'	14"	G

REINFORCING SCHEDULE

SCHEDULE	GRADE 60 STEEL OR 65 KSI (WIRE FABRIC) In/Yd²
A	0.20
B	0.24
C	0.37
D	0.53
E	0.73
F	1.06
G	1.45

GENERAL NOTES

1. Size is the inside dimensions) of a structure.
2. Slab reinforcement is appropriate for top, intermediate, and bottom slabs.
3. Slab depth is measured from finished grade to top of slab.
4. Wall design depth is measured to the top of the bottom slab for boxes and to the top of the intermediate slab for risers.
5. Wall height is the distance between top of lower slab to bottom of upper slab.
6. Wall sizes exceeding 9'-0" require a special design.

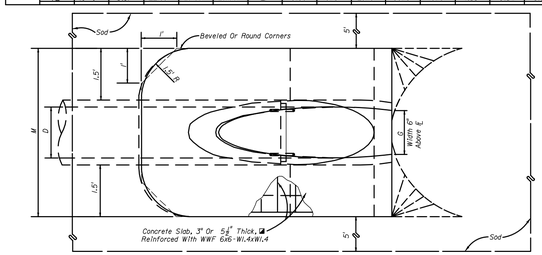
STRUCTURE BOTTOMS TYPE J AND P

DIMENSIONS AND QUANTITIES

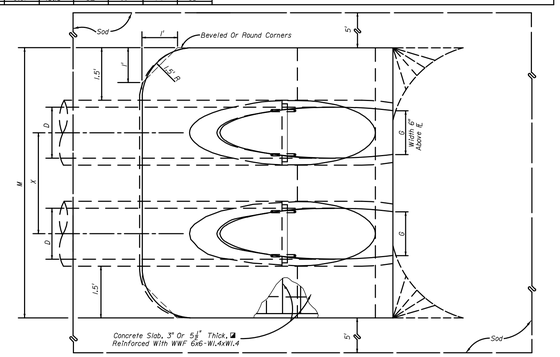
	D	X	A	B	C	E	F	G	M Single Pipe	M Double Pipe	M Triple Pipe	M Quad. Pipe	N	5½" CONCRETE SLAB (CY) ◪ Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe	SODDING (SQ. YDS.) Single Pipe	Double Pipe	Triple Pipe	Quad. Pipe
2J Slope	15"	2'-7"	1.50'	2.18'	4.01'	2.06'	5'	1.22'	4.63'	7.61'	9.79'	12.31'	1.19'	0.38	0.58	0.77	0.96	21	24	27	30
	18"	2'-10"	1.50'	2.14'	4.71'	2.56'	6'	1.41'	4.90'	7.75'	10.58'	13.42'	1.21'	0.44	0.65	0.87	1.09	22	25	28	31
	24"	3'-5"	2.00'	3.81'	5.91'	3.53'	7'	1.73'	5.50'	8.50'	12.33'	15.75'	1.25'	0.54	0.83	1.12	1.42	24	28	31	35
	30"	4'-3"	2.25'	4.92'	7.07'	4.56'	8'	2.00'	6.08'	10.33'	14.58'	18.83'	1.29'	0.66	1.09	1.50	1.91	26	31	35	40
	36"	5'-1"	2.50'	6.08'	8.33'	5.59'	9'	2.24'	6.67'	11.75'	16.83'	21.92'	1.33'	0.81	1.38	1.96	2.54	28	34	39	45
	42"	6'-0"	2.54'	7.21'	9.58'	6.56'	10'	2.45'	7.25'	13.25'	19.25'	25.25'	1.38'	0.97	1.70	2.45	3.19	30	37	43	50
	48"	6'-9"	2.43'	8.33'	10.76'	7.56'	11'	2.65'	7.83'	14.58'	21.33'	28.08'	1.42'	1.13	2.04	2.93	3.84	32	39	47	54
	54"	7'-8"	2.62'	9.44'	11.96'	8.56'	12'	2.83'	8.42'	16.08'	23.75'	31.42'	1.46'	1.31	2.44	3.58	4.72	34	42	51	59
	60"	8'-6"	2.68'	10.56'	13.18'	9.56'	14'	3.00'	9.00'	17.50'	26.00'	34.50'	1.50'	1.51	2.89	4.28	5.68	36	45	55	64
	66"	9'-5"	2.71'	11.68'	14.39'	10.56'	15'	3.18'	9.58'	18.75'	27.92'	37.08'	1.54'	1.68	3.25	4.84	6.43	38	48	58	68
	72"	10'-0"	2.80'	12.80'	15.60'	11.56'	16'	3.30'	10.16'	20.16'	30.16'	40.16'	1.58'	1.89	3.74	5.59	7.45	40	51	62	73
4J Slope	15"	2'-7"	2.22'	4.09'	6.30'	4.03'	8'	1.22'	4.63'	7.61'	9.79'	12.31'	1.19'	0.57	0.87	1.15	1.44	23	26	29	32
	18"	2'-10"	2.36'	5.17'	7.48'	5.03'	9'	1.41'	4.90'	7.75'	10.58'	13.42'	1.21'	0.66	0.99	1.31	1.65	25	28	31	35
	24"	3'-5"	2.53'	7.18' Δ	9.77'	7.03' Δ	11'	1.73'	5.50'	8.92'	12.33'	15.75'	1.25'	0.85	1.30	1.74	2.20	28	32	36	40
	30"	4'-3"	2.70'	9.25'	11.95'	9.03'	13'	2.00'	6.08'	10.33'	14.58'	18.83'	1.29'	1.03	1.74	2.39	3.05	31	36	41	46
	36"	5'-1"	2.87'	11.31' ◇	14.08'	11.03' ◇	15'	2.24'	6.67'	11.75'	16.83'	21.92'	1.33'	1.32	2.21'	3.08'	3.96	34	40	46	52
	42"	6'-0"	3.00'	13.17'	16.42'	13.03'	17'	2.45'	7.25'	13.25'	19.25'	25.25'	1.38'	1.68	2.76'	3.91	5.09	38	44	51	58
	48"	6'-9"	3.22'	15.43'	18.65'	15.03'	19'	2.65'	7.83'	14.58'	21.33'	28.08'	1.42'	1.85	3.33	4.73	6.17	41	48	56	63
	54"	7'-8"	3.39'	17.49'	20.88'	17.03'	21'	2.83'	8.42'	16.08'	23.75'	31.42'	1.46'	2.14	3.95	5.77	7.58	44	52	61	69
	60"	8'-6"	3.56'	19.51'	23.17'	19.03'	23'	3.00'	9.00'	17.50'	26.00'	34.50'	1.50'	2.45	4.66	6.87	9.07	47	56	66	75
	66"	9'-5"	3.73'	21.62'	25.30'	21.03'	25'	3.18'	9.58'	18.75'	27.92'	37.08'	1.54'	2.88	5.54	8.18	10.84	49	59	69	80
	72"	10'-0"	3.91'	22.68'	26.59'	23.03'	27'	3.30'	10.16'	20.16'	30.16'	40.16'	1.58'	3.54	6.61	9.87	13.13	52	63	74	85

◪ See General Note No. 3. See Sheet 5 Of 6 For 3" Slab Quantities

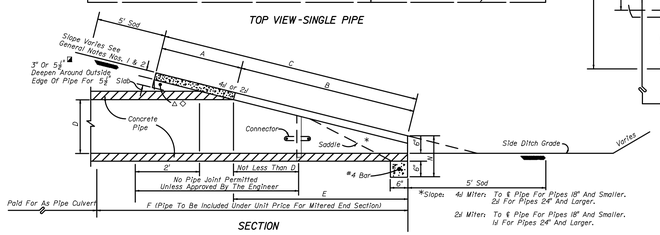
B E
Δ 6.42' Δ 6.25 Dimensions permitted to allow use of 8' standard pipe lengths.
◇ 10.40 ◇10.10' Dimensions permitted to allow use of 12' standard pipe lengths.
Δ ◇ Concrete slab shall be deepened to form bridge across crown of pipe. See section below.



TOP VIEW-SINGLE PIPE



TOP VIEW-MULTIPLE PIPE



SECTION

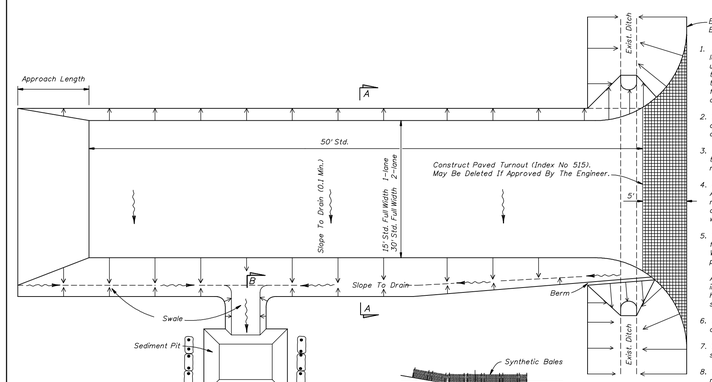
*Slope: 4J Miter: To 6" Pipe For Pipes 18" And Smaller. 2J For Pipes 24" And Larger.
2J Miter: To 6" Pipe For Pipes 18" And Smaller. 1J For Pipes 24" And Larger.

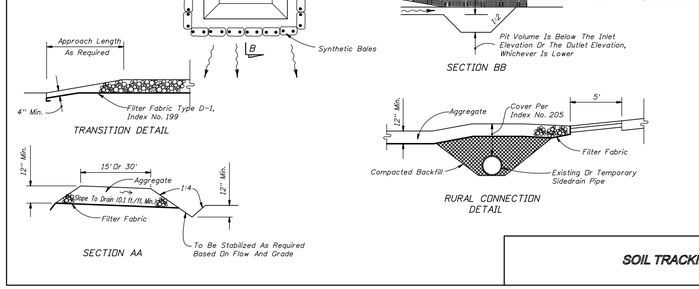
NOTE: See sheet 6 for details and notes.

CROSS DRAIN MITERED END SECTION
SINGLE AND MULTIPLE ROUND CONCRETE PIPE
FDOT INDEX #272

GENERAL NOTES

1. Mitered end sections for pipe sizes 15", 18" and 24" round or equivalent pipe arch or elliptical pipe are permitted within the clear zone. When the slope intersection permits, the mitered end section may be located with the culvert opening as close as 8' beyond the outside edge of the shoulder.
2. Slope and ditch transitions shall be used when the normal roadway slope must be flattened to place end section outside clear zone. See detail left.
3. The reinforced concrete slab shall be constructed for all sizes of cross drain pipe and cast in place with Class I concrete. Slabs shall be $5\frac{1}{2}$" thick unless 3" thickness called for in plans.
4. Concrete pipe used in the assembly of mitered end sections shall be selective lengths to avoid excessive connections.
5. Corrugated metal pipe galvanizing that is damaged during beveling and perforating for mitered end section shall be repaired.
6. That portion of corrugated metal pipe in direct contact with the concrete slab shall be bituminous coated prior to placing of the concrete.
7. 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 pipes 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, mitered end sections shall be constructed with like pipe or concrete pipe.
8. When the mitered end section pipe is dissimilar to the cross drain pipe, a concrete jacket shall be constructed in accordance with Standard Index 280.
9. When existing multiple cross drain pipes are spaced other than the dimensions shown in this detail, or have non-parallel axes, or have non-uniform sections, the mitered end sections will be constructed either separately as single pipe mitered end sections or collectively as multiple pipe end sections as directed by the Engineer; however, mitered end sections will be paid for each based on each independent pipe end.
10. The cost of all pipe(s), fasteners, reinforcing, connectors, anchors, concrete, sealants, jackets, and coupling bands shall be included in the cost for the mitered end section. Sodding shall be paid for separately under the contract unit price of Sodding, SY.
11. Mitered end sections shall be paid for under the contract unit price for Mitered End Section (CD), Each, based on each independent pipe end. Mitered end sections use for detention/retention basin outlets are to be paid for under the contract unit price for Mitered End Section, (BD), Each.





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 off-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 enforce 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 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 isolated from other drainage areas, the following pit volumes will satisfy this requirement:
   15' x 50'=100 ft.³ 30' x 50'=200 ft.³
   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 0.02X minimum and a 1.0X 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

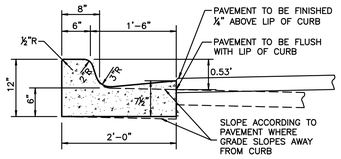
Last Revision	Sheet No.
07/01/07	1 of 1
Index No. 106	

DATE	DESCRIPTION	BY
	REVISIONS	

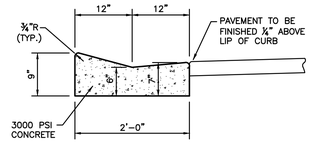
CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975
DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

DRAINAGE DETAILS

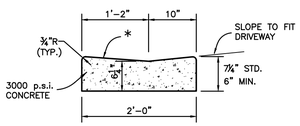
JOB NO. SPH-EP-009	EPCO RANCH NORTH PARCEL A PHASE 1
DESIGN LAWTON	
DRAWN MIDDLETON	PREPARED FOR: STANDARD PACIFIC OF FLORIDA
DATE 11/14/2014	Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 = -0.84Feet
FILE DD	SHEET 72 OF 98 SHEETS



TYPE "F" CURB AND GUTTER

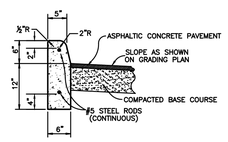


TYPE "A" CURB AND GUTTER

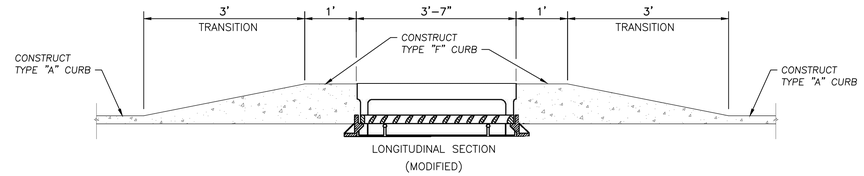


* WHEN USED ON HIGH SIDE OF ROADWAYS, THE CROSS SLOPE OF THE GUTTER SHALL MATCH THE CROSS SLOPE OF THE ADJACENT PAVEMENT. THE THICKNESS OF THE LIP SHALL BE 6", UNLESS OTHERWISE SHOWN.

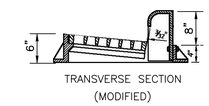
DROP CURB



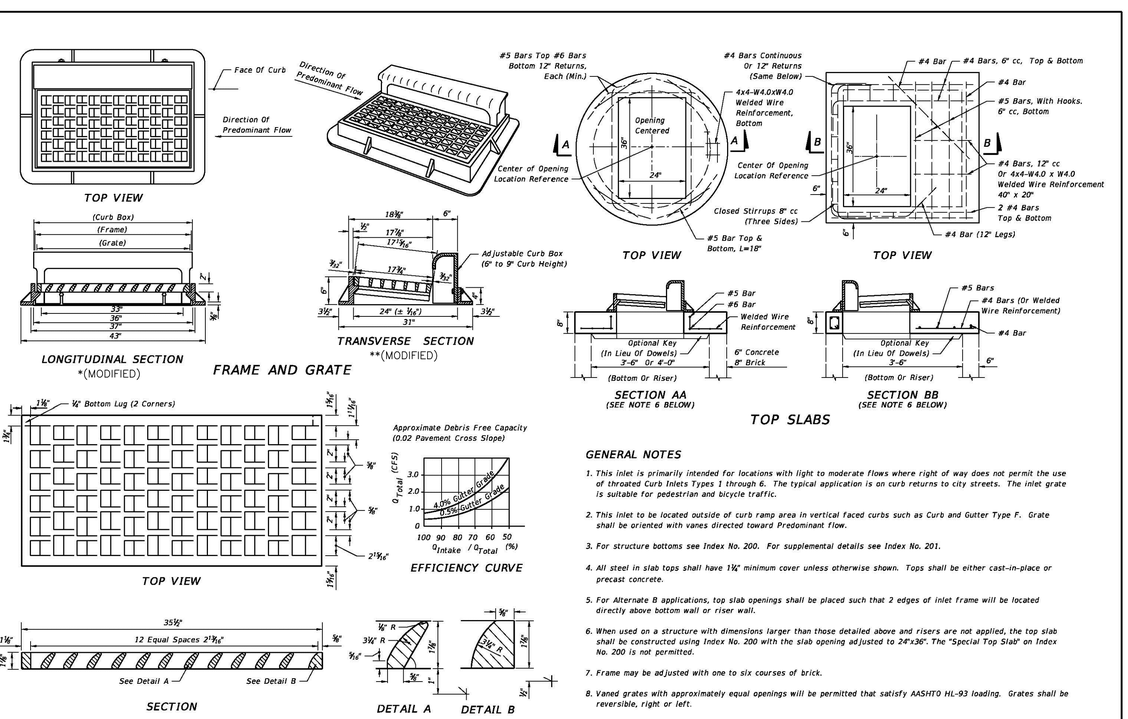
6" UPRIGHT CURB



* CURB TRANSITION DETAIL



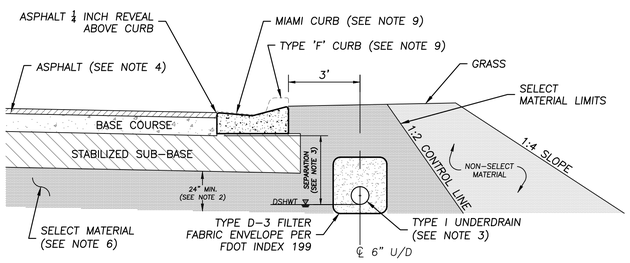
** CURB HEIGHT DETAIL



GENERAL NOTES

1. This inlet is primarily intended for locations with light to moderate flows where right of way does not permit the use of throated Curb Inlets Types 1 through 6. The typical application is on curb returns to city streets. The inlet grate is suitable for pedestrian and bicycle traffic.
2. This inlet to be located outside of curb ramp area in vertical faced curbs such as Curb and Gutter Type F. Grate shall be oriented with vanes directed toward Predominant flow.
3. For structure bottoms see Index No. 200. For supplemental details see Index No. 201.
4. All steel in slab tops shall have 1¼" minimum cover unless otherwise shown. Tops shall be either cast-in-place or precast concrete.
5. For Alternate B applications, top slab openings shall be placed such that 2 edges of inlet frame will be located directly above bottom wall or riser wall.
6. When used on a structure with dimensions larger than those detailed above and risers are not applied, the top slab shall be constructed using Index No. 200 with the slab opening adjusted to 24"x36". The "Special Top Slab" on Index No. 200 is not permitted.
7. Frame may be adjusted with one to six courses of brick.
8. Vaned grates with approximately equal openings will be permitted that satisfy AASHTO HL-93 loading. Grates shall be reversible, right or left.

LAST REVISION	REVISION	DESCRIPTION:	FDOT 2015 DESIGN STANDARDS	CURB INLET TOP TYPE 9	INDEX NO.	SHEET NO.
07/01/13					214	1 of 1



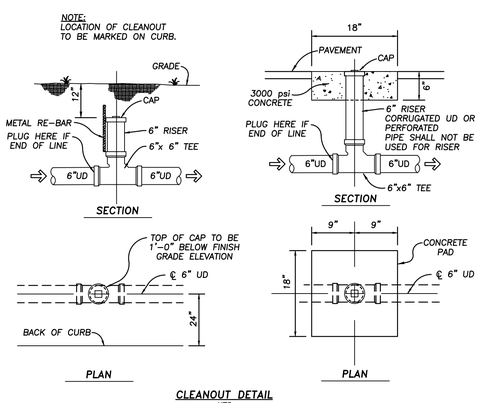
SECTIONAL VIEW
NTS

1. THE MINIMUM VERTICAL SEPARATION BETWEEN THE DESIGN SEASONAL HIGH WATER TABLE (DHSWT) AND THE BOTTOM OF THE BASE AT THE LOWEST EDGE OF PAVEMENT SHALL BE AS FOLLOWS:

A. LIMEROCK BASE	24 INCH
B. SOIL CEMENT BASE	12 INCH
C. CRUSHED CONCRETE BASE (IF APPROVED)	12 INCH
D. ASPHALT BASE COURSE (ABC)	12 INCH

2. A MINIMUM TWO (2) FEET OF SELECT MATERIAL CONSISTING OF A-1, A-3, OR A-2-4 WITH A MAXIMUM 15% PASSING THE #200 SIEVE BELOW THE STABILIZED SUB BASE.
3. TYPE I UNDERDRAIN PER FDOT INDEX 286
   3.1. MINIMUM UNDERDRAIN SLOPE = 0.2% (FDOT INDEX 500)
   3.2. UNDERDRAIN SHALL HAVE A TYPE D-3 FILTER FABRIC ENVELOPE PER FDOT INDEX 199
   3.3. UNDERDRAIN PIPE SIZE = 6"
   3.4. IF THE VERTICAL SEPARATION BETWEEN DSHWT AND BOTTOM OF BASE IS LESS THAN 2 FEET, UNDERDRAINS SHALL BE CONSTRUCTED ALONG BOTH SIDES OF THE ROAD. IF 2-3 FEET, UNDERDRAINS SHALL BE CONSTRUCTED ALONG ONE SIDE.
   3.5. THE INVERT OF A SIX (6) INCH UNDERDRAIN SHALL BE TWO (2) FEET MINIMUM BELOW THE BOTTOM OF THE BASE.
4. TYPE 2 THRU TYPE 5 ROADWAYS SHALL CONTAIN A MINIMUM OF 1.5 INCH OF SP ASPHALTIC CONCRETE. COLLECTOR ROADWAYS SHALL HAVE A MINIMUM OF THREE (3) INCHES OF SP SPHALTIC CONCRETE. TYPE ROADWAYS MAY BE COMPLETED IN STAGES, INITIALLY 2.25 INCHES OF SP 12.5 (S-1) ASPHALT COURSE WITH REQUIRED PAVEMENT MARKINGS AND 0.75 INCHES OF SP 9.5 (S-3) COURSE INSTALLED WITH ANY THERMOPLASTIC STRIPES, PRIOR TO RELEASE OF THE ASSURANCE FOR MAINTENANCE.
5. THE ROAD DESIGN DRAWINGS SHALL CONTAIN SOIL BORING LOCATIONS WITH EXISTING SOIL DATA, OBSERVED WATER LEVEL AND DSHWT SURFACE. UNDERDRAIN OUTFALL POND DATA AND PROXIMATE WETLAND HYDRO PERIOD ELEVATIONS SHALL ALSO BE IDENTIFIED.
6. SELECT MATERIAL SHALL BE PLACED PER FOOT INDEX DRAWINGS 500 & 505.
7. THE REQUIRED MINIMUM STRUCTURAL NUMBER (SN) SHALL BE;
   2.34 MIN. TYPE 2 ROADWAY
   3.50 MIN. TYPE I ROADWAYS
   3.70 MIN. COUNTY COLLECTOR
   4.00 MIN. COUNTY ARTERIAL
8. SOIL CEMENT BASE SHALL NOT BE CONSTRUCTED OVER STABILIZED SUBGRADE EXCEEDING LBR 20. THE COUNTY ASSIGNED LAYER COEFFICIENT FOR A MAXIMUM 12 INCH DEPTH, LBR 20 SHALL BE 0.04 PER INCH.
9. CURB DESIGN IS SITE SPECIFIC AND SHALL BE IDENTIFIED ON PLANS.

NOTE:
NO DEVIATIONS TO THIS DETAIL WILL BE PERMITTED UNLESS APPROVED BY THE COUNTY ENGINEER.
ANY PROPOSED ALTERATIONS SHALL BE CLEARLY IDENTIFIED AND HIGHLIGHTED ON DETAIL.



CLEANOUT DETAIL
NTS

ROADWAY DESIGN CRITERIA & UNDERDRAIN DETAIL

DATE	DESCRIPTION	BY

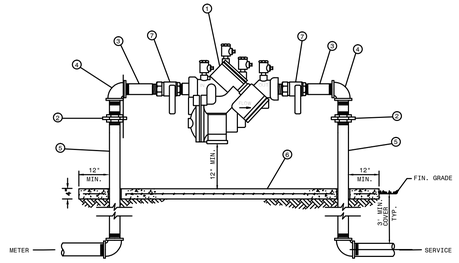
REVISIONS

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

DRAINAGE DETAILS

JOB NO. SPH-EP-009	EPCO RANCH NORTH PARCEL A PHASE 1
DESIGN LAWTON	
DRAWN FINNEY	PREPARED FOR: STANDARD PACIFIC OF FLORIDA
DATE 11/14/2014	Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 =-0.84Feet
FILE DD	SHEET 73 OF 98 SHEETS



MATERIALS		
ITEM	QUANT.	DESCRIPTION
1	1	BACKFLOW PREVENTER ASSEMBLY, REDUCED PRESSURE ZONE
2	2	UNIONS - GALV.
3	2	NIPPLES - BRASS
4	2	ELBOWS - GALV. 90°
5	2	RISER - GALV.
6	*	CONCRETE SLAB
7	2	BALL VALVES - BRASS OR S.S. (PROVIDED WITH BFP ASS'Y)

NOTE:
- FIELD ADJUST AND CUT ITEM 5 TO THE PROPER LENGTH.
- MINIMUM CLEARANCE OF 24" TO BE MAINTAINED AROUND DEVICE FOR TESTING.
- ENTIRE ASSEMBLY TO BE PAINTED SAFETY BLUE.
- CONCRETE SLAB TO EXTEND 12" MIN. AROUND ENTIRE DEVICE.
- DEVICE MUST BE LISTED WITH THE UNIVERSITY OF SOUTHERN CALIFORNIA FOUNDATION FOR CROSS CONNECTION CONTROL AND HYDRAULIC RESEARCH.

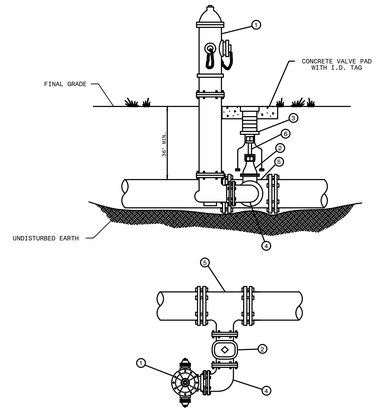
CREATED 02/24/03
REVISED

REDUCED PRESSURE BACKFLOW PREVENTER (SINGLE SERVICE: 3/4", 1", 1-1/2", 2")

PASCO COUNTY UTILITIES

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

DETAIL 11



MATERIALS		
ITEM	QUANT.	DESCRIPTION
1	1	HYDRANT, FIRE (5 1/4" VALVE MIN.), PAINTED YELLOW
2	1	6" VALVE, GATE, MJ RESILIENT WEDGE
3	1	BOX, VALVE SLIP TYPE
4	1	6" BEND, ANCHORING, D.I.
5	1	TEE, ANCHORING, MJ
6	*	VALVE EXTENSION ROD, AS NECESSARY (3' MAX. BELOW GRADE)

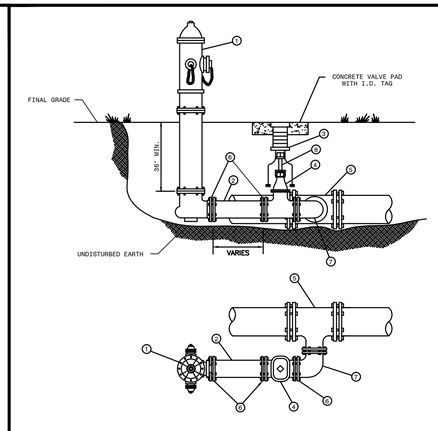
CREATED 02/24/03
REVISED

FIRE HYDRANT PARALLEL TO THE MAIN

PASCO COUNTY UTILITIES

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

DETAIL 22



MATERIALS		
ITEM	QUANT.	DESCRIPTION
1	1	HYDRANT, FIRE (5 1/4" VALVE MIN.), PAINTED YELLOW
2	*	6" PIPE, P.V.C. (DR-18)
3	1	BOX, VALVE SLIP TYPE
4	1	6" VALVE, GATE, M.J. RESILIENT WEDGE
5	1	TEE, ANCHORING, M.J.
6	*	6" RESTRAINER GLAND (MEGALUG)
7	1	BEND, ANCHORING, D.I.
8	*	VALVE EXTENSION ROD, AS NECESSARY (3' MAX. BELOW GRADE)

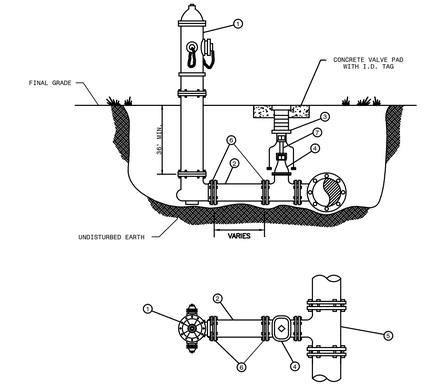
CREATED 02/24/03
REVISED

FIRE HYDRANT PARALLEL TO THE MAIN

PASCO COUNTY UTILITIES

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

DETAIL 23



MATERIALS		
ITEM	QUANT.	DESCRIPTION
1	1	HYDRANT, FIRE (5 1/4" VALVE MIN.), PAINTED YELLOW
2	*	6" PIPE, P.V.C. (DR-18)
3	1	BOX, VALVE SLIP TYPE
4	1	6" VALVE, GATE, M.J. RESILIENT WEDGE
5	1	TEE, ANCHORING, M.J.
6	*	6" RESTRAINER GLAND (MEGALUG)
7	*	VALVE EXTENSION ROD, AS NECESSARY (3' MAX. BELOW GRADE)

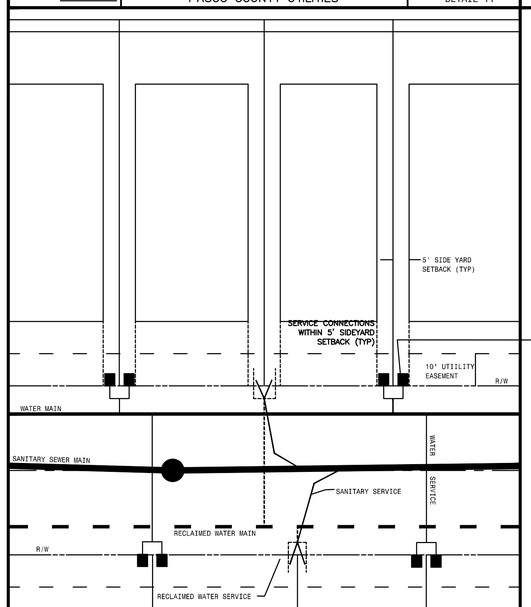
CREATED 02/24/03
REVISED

FIRE HYDRANT PERPENDICULAR TO THE MAIN

PASCO COUNTY UTILITIES

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

DETAIL 24



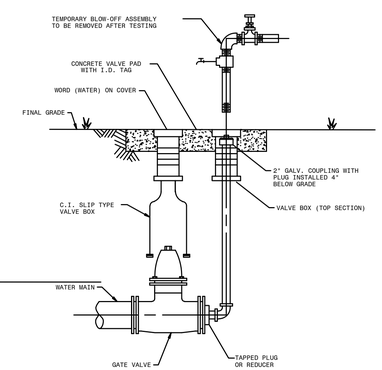
CREATED 02/24/03
REVISED

STANDARD 40' (DETACHED) SINGLE FAMILY TYPICAL UTILITY CONNECTION DETAIL

PASCO COUNTY UTILITIES

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

DETAIL 21



NOTES:
- MECHANICAL JOINTS/UNDERGROUND PIPING SHALL BE RESTRAINED AS SPECIFIED IN JOINT RESTRAINT TABLE (DETAIL 46)
- VALVE EXTENSION ROD SHALL BE UTILIZED, AS NECESSARY, SO THAT VALVE OPERATING NUT IS A MAXIMUM OF 3' BELOW GRADE.

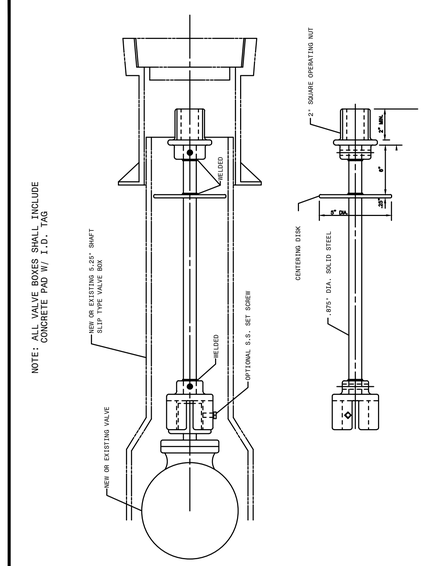
CREATED 02/24/03
REVISED

PERMANENT BLOW-OFF DETAIL

PASCO COUNTY UTILITIES

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

DETAIL 25



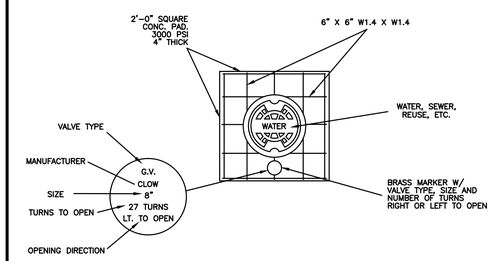
CREATED 02/24/03
REVISED

VALVE EXTENSION RODS

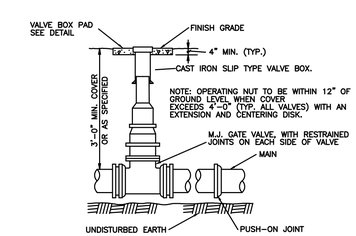
PASCO COUNTY UTILITIES

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

DETAIL 26



TYPICAL CONCRETE VALVE PAD



CREATED 02/24/03
REVISED

VALVE BOX DETAIL SLIP TYPE

PASCO COUNTY UTILITIES

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

DETAIL 27

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

WATER & RECLAIMED SYSTEM DETAILS

JOB NO. SPH-EP-009

DESIGN LAWTON

DRAWN MIDDLETON

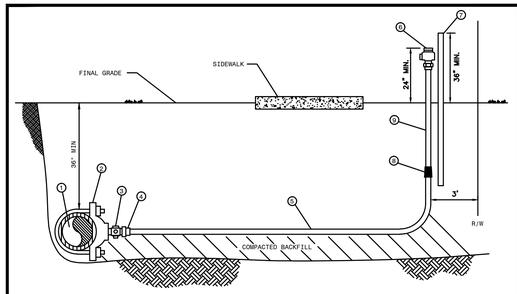
DATE 11/14/2014

FILE WD

EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

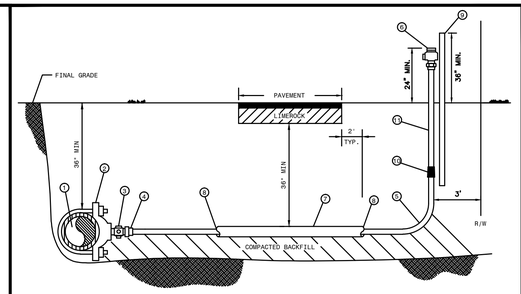
Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 = -0.84 Feet



MATERIALS		
ITEM	QUANT.	DESCRIPTION
1	*	PIPE, PVC (DR-18) OR D.I.P.
2	1	SADDLE, SERVICE W/ 1" F.I.P. THREAD
3	1	1" CORPORATION (M.I.P. x COMP.)
4	1	1" INSERT (STAINLESS STEEL)
5	*	1" TUBING, POLYETHYLENE
6	1	3/4" WATER OR 1" REUSE CURB STOP BALL VALVE W/ LOCK WINGS (F.I.P. x COMP.)
7	1	2" x 4" P.T. MARKER STAKE
8	1	1" x 3/4" COUPLING (COMP. x COMP.) WATER ONLY
9	1	3/4" WATER OR 1" REUSE TUBING, POLYETHYLENE 4'

NOTES: - ALL FITTINGS FOR POLYETHYLENE TUBING ARE BRASS COMPRESSION TYPE.
- A VALVE BOX MAY BE REQUIRED AS SPECIFIED BY THE ENGINEER.
- CURB STOP TO TERMINATE 24" ABOVE GROUND AT R/W LINE.
- REUSE CURB STOPS = 1" / WATER CURB STOPS = 3/4"
- TUBING TO BE YARDLEY 3406 OR EQUAL.
- SADDLES 2" - 3" TO BE BRASS FULL CIRCLE TYPE.
- SADDLES 4" AND LARGER TO BE D.I. DUAL STRAP TYPE.
- CURB STOPS TO BE TIED TO MARKER STAKE.
- SADDLE MAY BE INSTALLED AT ANGLE (WITHIN 45° OF HORIZONTAL).
- MARKER STAKES PAINTED SAFETY BLUE FOR WATER, PURPLE FOR REUSE.

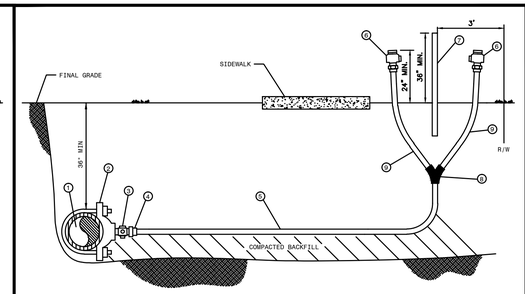
CREATED 02/24/03 REVISED	SINGLE NEAR SIDE WATER SERVICE - 3/4" SINGLE NEAR SIDE REUSE SERVICE - 1" POLYETHYLENE TUBING	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL	
	PASCO COUNTY UTILITIES	DETAIL 16	



MATERIALS		
ITEM	QUANT.	DESCRIPTION
1	*	PIPE, PVC (DR-18) OR D.I.P.
2	1	SADDLE, SERVICE W/ 1" F.I.P. THREAD
3	1	1" CORPORATION (M.I.P. x COMP.)
4	1	1" INSERT (STAINLESS STEEL)
5	*	1" TUBING, POLYETHYLENE
6	1	3/4" WATER OR 1" REUSE CURB STOP BALL VALVE W/ LOCK WINGS (F.I.P. x COMP.)
7	*	2" CASING, PVC OR HDPE - 2' BEYOND EDGE PAVEMENT
8	*	SEALER, RAM-NEK
9	1	2" x 4" P.T. MARKER STAKE
10	1	1" x 3/4" COUPLING (COMP. x COMP.) WATER ONLY
11	1	3/4" WATER OR 1" REUSE TUBING, POLYETHYLENE 4'

NOTES: - ALL FITTINGS FOR POLYETHYLENE TUBING ARE BRASS COMPRESSION TYPE.
- A VALVE BOX MAY BE REQUIRED AS SPECIFIED BY THE ENGINEER.
- CURB STOP TO TERMINATE 24" ABOVE GROUND AT R/W LINE.
- REUSE CURB STOPS = 1" / WATER CURB STOPS = 3/4"
- TUBING TO BE YARDLEY 3406 OR EQUAL.
- SADDLES 2" - 3" TO BE BRASS FULL CIRCLE TYPE.
- SADDLES 4" AND LARGER TO BE D.I. DUAL STRAP TYPE.
- CURB STOPS TO BE TIED TO MARKER STAKE.
- SADDLE MAY BE INSTALLED AT ANGLE (WITHIN 45° OF HORIZONTAL).
- MARKER STAKES PAINTED SAFETY BLUE FOR WATER, PURPLE FOR REUSE.

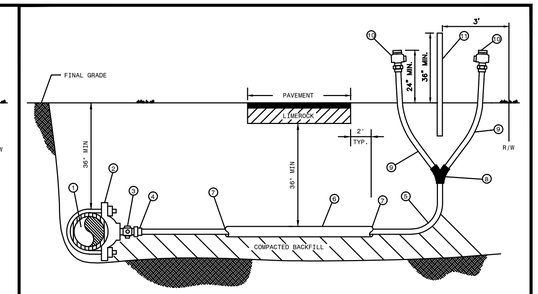
CREATED 02/24/03 REVISED	SINGLE FAR SIDE WATER SERVICE - 3/4" SINGLE FAR SIDE REUSE SERVICE - 1" POLYETHYLENE TUBING	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL	
	PASCO COUNTY UTILITIES	DETAIL 17	



MATERIALS		
ITEM	QUANT.	DESCRIPTION
1	*	PIPE, PVC (DR-18) OR D.I.P.
2	1	SADDLE, SERVICE W/ 1" F.I.P. THREAD
3	1	1" CORPORATION (M.I.P. x COMP.)
4	1	1" INSERT (STAINLESS STEEL)
5	*	1" TUBING, POLYETHYLENE
6	1	3/4" WATER OR 1" REUSE CURB STOP BALL VALVE W/ LOCK WINGS (F.I.P. x COMP.)
7	1	2" x 4" P.T. MARKER STAKE
8	1	1" x 3/4" WYE BRANCH (COMP. x COMP.) WATER ONLY 1" x 1" WYE BRANCH (COMP. x COMP.) REUSE ONLY
9	1	3/4" WATER OR 1" REUSE TUBING, POLYETHYLENE 4'

NOTES: - ALL FITTINGS FOR POLYETHYLENE TUBING ARE BRASS COMPRESSION TYPE.
- A VALVE BOX MAY BE REQUIRED AS SPECIFIED BY THE ENGINEER.
- CURB STOP TO TERMINATE 24" ABOVE GROUND AT R/W LINE.
- REUSE CURB STOPS = 1" / WATER CURB STOPS = 3/4"
- TUBING TO BE YARDLEY 3406 OR EQUAL.
- SADDLES 2" - 3" TO BE BRASS FULL CIRCLE TYPE.
- SADDLES 4" AND LARGER TO BE D.I. DUAL STRAP TYPE.
- CURB STOPS TO BE TIED TO MARKER STAKE.
- SADDLE MAY BE INSTALLED AT ANGLE (WITHIN 45° OF HORIZONTAL).
- MARKER STAKES PAINTED SAFETY BLUE FOR WATER, PURPLE FOR REUSE.

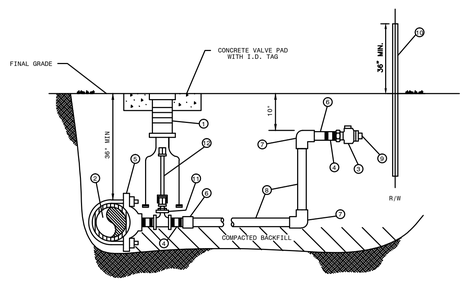
CREATED 02/24/03 REVISED	DOUBLE NEAR SIDE WATER SERVICE - 3/4" DOUBLE NEAR SIDE REUSE SERVICE - 1" POLYETHYLENE TUBING	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL	
	PASCO COUNTY UTILITIES	DETAIL 18	



MATERIALS		
ITEM	QUANT.	DESCRIPTION
1	*	PIPE, PVC (DR-18) OR D.I.P.
2	1	SADDLE, SERVICE W/ 1" F.I.P. THREAD
3	1	1" CORPORATION (M.I.P. x COMP.)
4	1	1" INSERT (STAINLESS STEEL)
5	*	1" TUBING, POLYETHYLENE
6	*	2" CASING, PVC OR HDPE - 2' BEYOND EDGE PAVEMENT
7	*	SEALER, RAM-NEK
8	1	WYE BRANCH FOR POLY TUBING
9	2	3/4" WATER OR 1" REUSE TUBING, POLYETHYLENE 4'
10	2	3/4" WATER OR 1" REUSE CURB STOP BALL VALVE W/ LOCK WINGS (F.I.P. x COMP.)
11	1	2" x 4" P.T. MARKER STAKE

NOTES: - ALL FITTINGS FOR POLYETHYLENE TUBING ARE BRASS COMPRESSION TYPE.
- A VALVE BOX MAY BE REQUIRED AS SPECIFIED BY THE ENGINEER.
- CURB STOP TO TERMINATE 24" ABOVE GROUND AT R/W LINE.
- REUSE CURB STOPS = 1" / WATER CURB STOPS = 3/4"
- TUBING TO BE YARDLEY 3406 OR EQUAL.
- SADDLES 2" - 3" TO BE BRASS FULL CIRCLE TYPE.
- SADDLES 4" AND LARGER TO BE D.I. DUAL STRAP TYPE.
- CURB STOPS TO BE TIED TO MARKER STAKE.
- SADDLE MAY BE INSTALLED AT ANGLE (WITHIN 45° OF HORIZONTAL).
- MARKER STAKES PAINTED SAFETY BLUE FOR WATER, PURPLE FOR REUSE.

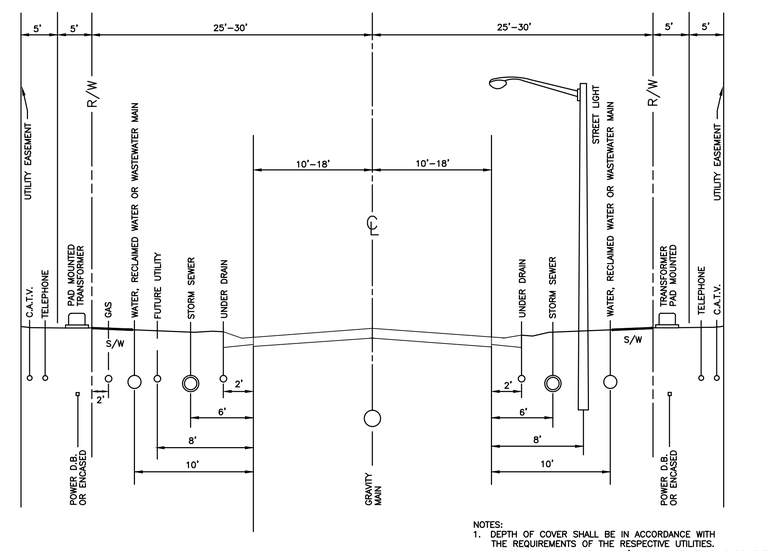
CREATED 02/24/03 REVISED	WATER AND REUSE LATERAL SERVICE 3/4" (DOUBLE - FAR SIDE) POLYETHYLENE TUBING	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL	
	PASCO COUNTY UTILITIES	DETAIL 19	



MATERIALS		
ITEM	QUANT.	DESCRIPTION
1	1	BOX, VALVE CAST IRON SLIP TYPE
2	*	4" & LARGER PIPE, PVC (DR-18) OR D.I.P. (CLASS 50)
3	2	1 1/2", 2" CURB STOP BALL VALVE W/ LOCK WINGS (FIP x FIP OR FIP x CTS)
4	3	1 1/2", 2" NIPPLE, BRASS OR STAINLESS STEEL
5	1	1 1/2", 2" SADDLE, SERVICE (I.P. THREADS)
6	2	1 1/2", 2" ADAPTER (PVC SCH 40 / SLIP x FPT OR BRASS MIP x CTS)
7	2	1 1/2", 2" 90° ELBOW (SLIP x SLIP) SCH 40 (NOT REQUIRED FOR HDPE)
8	*	1 1/2", 2" PIPE, PVC (SCH 40) OR HDPE (340B) - LENGTH VARIES
9	1	1 1/2", 2" PLUG, THREADED (W/ TEFLON TAPE)
10	1	2" x 4" P.T. MARKER STAKE
11	1	2" GATE VALVE, IRON BODY W/ SQUARE NUT
12	1	VALVE EXTENSION ROD, AS REQUIRED (3' MAX. BELOW GRADE)

NOTE: - A VALVE BOX SHALL BE REQUIRED ON ALL GATE VALVES.
- SERVICE SADDLES SHALL BE INSTALLED ON ALL TAPS TO P.V.C. (DR-18) WATER MAINS.
- 2" GATE VALVE TO BE RESILIENT WEDGE IRON BODY TYPE WITH 2" OPERATING UNIT.
- SADDLES 4" AND LARGER TO BE DUCTILE IRON DUAL STRAP TYPE.
- 1 1/2" BRASS REDUCER BUSHING REQUIRED WITH ITEM NO. 11 FOR 1 1/2" SERVICE.
- MARKER STAKES PAINTED SAFETY BLUE FOR WATER, PURPLE FOR REUSE.
- 4" DIAMETER CASING REQUIRED FOR ROAD CROSSINGS

CREATED 02/24/03 REVISED	WATER AND REUSE LATERAL SERVICE 1 1/2" OR 2" SERVICE LATERAL PVC (SCHEDULE 40)	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL	
	PASCO COUNTY UTILITIES	DETAIL 20	



NOTES:
1. DEPTH OF COVER SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE RESPECTIVE UTILITIES.
2. WREC WILL USE THE BACK ±5' WITHIN THE UTILITY EASEMENT. TECO & DUKE ENERGY WILL USE THE FRONT ±5' FEET.

RECOMMENDED UTILITY LOCATIONS

SCALE: N.T.S.

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975
DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

WATER & RECLAIMED SYSTEM DETAILS

JOB NO. SPH-EP-009	EPCO RANCH NORTH PARCEL A PHASE 1
DESIGN LAWTON	
DRAWN MIDDLETON	PREPARED FOR: STANDARD PACIFIC OF FLORIDA
DATE 11/14/2014	Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 = -0.84 Feet
FILE WD	SHEET 75 OF 98 SHEETS

PIPE RESTRAINT LENGTHS IN FEET
COMMON FITTINGS

		WATER MAINS - TEST PRESSURE 150 PSI				
		FITTING TYPE				
		11-1/4°	22-1/2°	45°	90°	DEAD END
PIPE SIZE	4"	2'	4'	8'	20'	45'
	6"	3'	6'	12'	28'	63'
	8"	4'	7'	15'	36'	82'
	10"	4'	9'	18'	43'	98'
	12"	5'	10'	21'	50'	116'
	16"	6'	13'	26'	63'	148'
	20"	7'	15'	31'	76'	179'
	24"	9'	17'	36'	87'	208'

		FORCE MAINS - TEST PRESSURE 100 PSI				
		FITTING TYPE				
		11-1/4°	22-1/2°	45°	90°	DEAD END
PIPE SIZE	4"	1'	3'	6'	13'	30'
	6"	2'	4'	8'	19'	42'
	8"	2'	5'	10'	24'	55'
	10"	3'	6'	12'	29'	66'
	12"	3'	7'	14'	34'	77'
	16"	4'	8'	18'	42'	99'
	20"	5'	10'	21'	50'	119'
	24"	6'	11'	24'	58'	139'

RESTRAINT LENGTHS ARE MEASURED FROM THE CENTER LINE OF THE FITTING ALONG THE PIPE IN BOTH DIRECTIONS (EXCEPT DEAD ENDS).

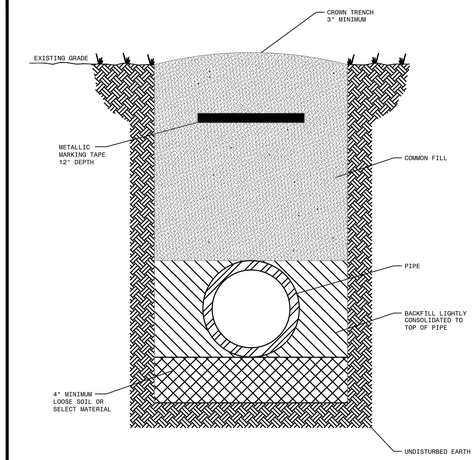
CREATED 02/24/03	RESTRAINED JOINT TABLE COMMON FITTINGS	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL
REVISED	PASCO COUNTY UTILITIES	DETAIL 28

PIPE RESTRAINT LENGTHS IN FEET
TEES (BRANCH SIDE)

		WATER MAINS - TEST PRESSURE 150 PSI								
		BRANCH SIZE								
		3"	4"	6"	8"	10"	12"	16"	20"	24"
RUN SIZE	3"	6'	14'	30'	—	—	—	—	—	—
	4"	2'	11'	28'	44'	—	—	—	—	—
	6"	1'	2'	22'	40'	52'	—	—	—	—
	8"	1'	1'	16'	35'	48'	62'	—	—	—
	10"	1'	1'	10'	30'	44'	58'	83'	—	—
	12"	1'	1'	3'	25'	40'	55'	80'	103'	—
	16"	1'	1'	1'	14'	31'	48'	75'	98'	119'
	20"	1'	1'	1'	2'	22'	40'	69'	94'	116'
	24"	1'	1'	1'	1'	11'	31'	63'	89'	111'

RESTRAINT LENGTHS ARE MEASURED FROM THE CENTER LINE OF THE TEE ALONG THE BRANCH FOR THE DISTANCE INDICATED. A MINIMUM OF 5 FEET OF RESTRAINED PIPE MUST BE INSTALLED ON BOTH RUNS OF THE TEE. MEGALUG TYPE RESTRAINERS ARE REQUIRED ON ALL JOINTS.

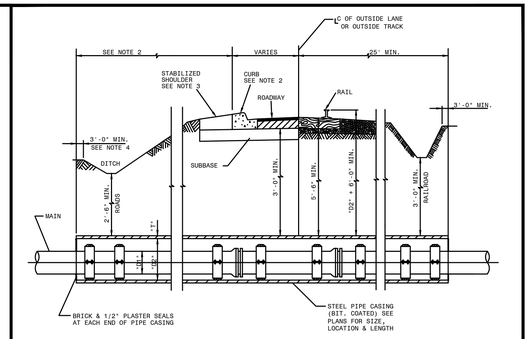
CREATED 02/24/03	RESTRAINED JOINT TABLE TEES (BRANCH SIDE)	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL
REVISED	PASCO COUNTY UTILITIES	DETAIL 29



NOTES: –LOOSE SOIL OR SELECT MATERIAL IS NATIVE SOIL EXCAVATED FROM THE TRENCH FREE OF ROCKS AND FOREIGN MATERIAL.
–COMMON FILL TO BE PLACED AND COMPACTED IN 12" LAYERS. ROLLING EQUIPMENT SHALL NOT BE USED FOR COMPACTION UNTIL A MINIMUM OF 18" OF COMMON FILL HAS BEEN PLACED AND COMPACTED OVER THE PIPE. THREE FEET OF FILL SHALL BE PLACED BEFORE A HYDROHAMMER MAY BE USED FOR COMPACTION.

NTS

CREATED 02/24/03	PIPE LAYING CONDITIONS STANDARD UNPAVED AREAS	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL
REVISED	PASCO COUNTY UTILITIES	DETAIL 32

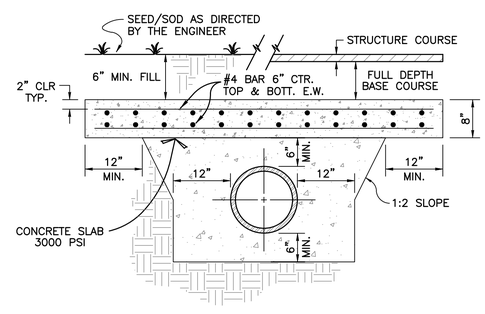


NOTE:
1. VERTICAL DIMENSIONS ARE TYPICAL FOR MAINS.
2. CASINGS SHALL TERMINATE 8' MINIMUM BEYOND EDGE OF PAVEMENT.
3. CASINGS SHALL HAVE 30" MINIMUM COVER UNDER DITCH BOTTOMS AND 36" ELSEWHERE.
4. GRAVITY SEWERS SHALL BE PROPERLY ANCHORED TO PREVENT FLOATATION WITH SPACERS ADJUSTED TO PROVIDE THE SLOPE REQUIRED.
5. SEE SECTION B.2 FOR CASING SIZE.

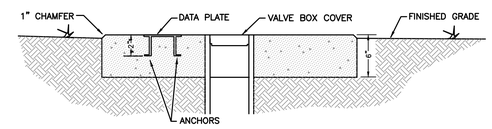
CARRIER PIPE (INCHES)	CASING PIPE (INCHES)	CASING WALL THICKNESS (INCHES)
4	12	1/4
6	16	1/4
8	16	1/4
10	24	5/16
12	24	5/16
16	30	3/8
20	36	3/8
24	42	3/8
30	48	3/8
36	54	1/2
42	60	1/2
48	66	1/2

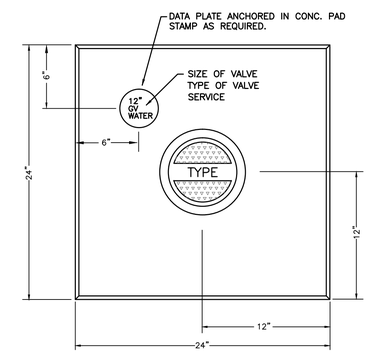
CREATED 02/24/03	JACK & BORE DETAIL	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL
REVISED	PASCO COUNTY UTILITIES	DETAIL 35

NOTE:
ALL PRESSURIZED PIPE WILL BE INSTALLED AT A MAXIMUM DEPTH OF FIVE FEET. TO MEET THIS REQUIREMENT, AT CROSSINGS WITH STORM SEWER OR SANITARY SEWER PIPING, PRESSURIZED PIPE MAY NEED TO BE CONSTRUCTED ON TOP. IF A MINIMUM THREE FEET OF COVER IS NOT ACHIEVABLE, A CONCRETE SHOCK PAD WILL BE INSTALLED (SEE DETAIL BELOW).



CONCRETE SHOCK PAD





CONCRETE VALVE PAD
(FOR UNPAVED AREAS)

NOTES:

CONCRETE TO BE TYPE I GENERAL PORTLAND CEMENT WITH 3/4" TOP SIZE AGGREGATE AND SHALL DEVELOP A 28-DAY STRENGTH OF 3000 P.S.I.

CONCRETE VALVE PAD SHALL BE POURED IN PLACE AND SHALL BE SET 1/2" ABOVE FINISHED GRADE

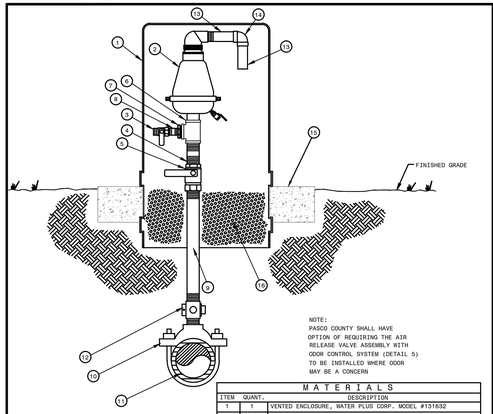
DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

WATER & RECLAIMED SYSTEM DETAILS

JOB NO. SPH-EP-009	EPCO RANCH NORTH PARCEL A PHASE 1
DESIGN LAWTON	
DRAWN MIDDLETON	PREPARED FOR: STANDARD PACIFIC OF FLORIDA
DATE 11/14/2014	Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 = -0.84 Feet
FILE WD	SHEET 76 OF 98 SHEETS



NOTE:
PASCO COUNTY SHALL HAVE OPTION OF REQUIRING THE AIR RELEASE VALVE ASSEMBLY WITH ODOR CONTROL SYSTEM (DETAIL 5) TO BE INSTALLED WHERE ODOR MAY BE A CONCERN

NOTE:

VENTED ENCLOSURE TO BE COLOR CODED AS FOLLOWS:

WATER MAIN – BLUE
FORCE MAIN – GREEN
REUSE MAIN – PURPLE

M A T E R I A L S

ITEM	QUANT.	DESCRIPTION
1	1	VENTED ENCLOSURE, WATER PLUG CORP. MODEL #131632
2	1	AIR RELEASE VALVE 2" NPT (SEE BELOW)
		SEWER AIR RELEASE VALVES SHALL BE ARI MODEL D-025
		WATER AIR RELEASE VALVES SHALL BE VALMATIC OR EQUAL
3	1	1" CURB STOP, S.S.
4	1	2" x 4" NIPPLE, S.S.
5	1	2" BALL VALVE, S.S.
6	1	2" TEE, S.S.
7	1	2" X 1" REDUCER, S.S.
8	1	1" SHORT NIPPLE, S.S.
9	1	2" PIPE, S.S. LENGTH AS REQUIRED
10	1	2" DOUBLE STRAP TAPPING SADDLE, S.S.
11	1	4" & LARGER PIPE, D.I. OR PVC (DR-18)
12	1	2" CORPORATION BRASS
13	2	1-1/2" PIPE, PVC, LENGTH AS REQUIRED
14	1	1-1/2" x 90° ELBOW, PVC
15	1	CONCRETE SLAB AROUND ENCLOSURE
16	1	#57 WHITE ROCK

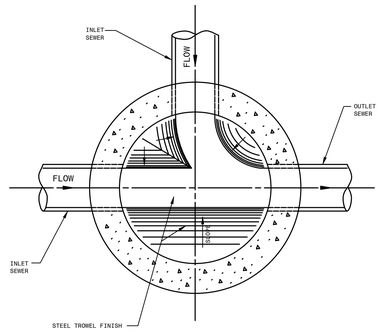
CREATED 02/24/03
REVISED

STANDARD AIR RELEASE VALVE ASSEMBLY
(VERTICAL PIPE LAYOUT)

PASCO COUNTY UTILITIES

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

DETAIL 4



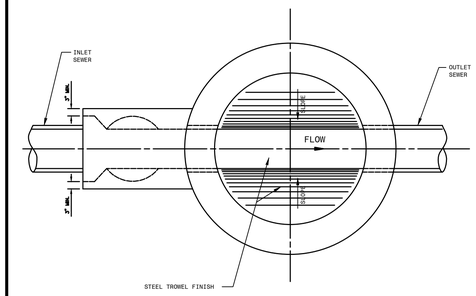
CREATED 02/24/03
REVISED

STANDARD MANHOLE
(BENCH AND INVERTS)

PASCO COUNTY UTILITIES

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

DETAIL 36



NOTE:
DROP MANHOLE TO BE USED WHEN THE DIFFERENCE BETWEEN INVERTS IS 2' OR MORE.

CREATED 02/24/03
REVISED

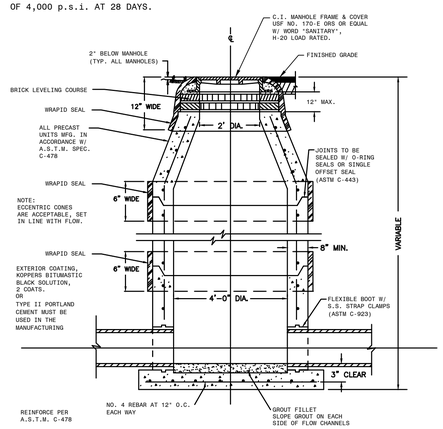
DROP MANHOLE
(BENCH AND INVERTS)

PASCO COUNTY UTILITIES

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

DETAIL 37

NOTE:
PRECAST CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 4,000 p.s.i. AT 28 DAYS.



NOTE: 1. WRAPID SEAL MUST BE USED ON ALL JOINTS, CASTINGS AND RISER RINGS: ON ALL JOINTS ON AIR RELEASES, MANHOLES, GREASE/WATER, OIL/WATER SEPARATORS, AND WETWELLS.
2. WRAPID SEAL MUST BE USED IN ACCORDANCE WITH MANUFACTURES RECOMMENDATIONS.
3. PASCO COUNTY SHALL HAVE THE OPTION OF SPECIFYING THE TYPE OF INTERIOR LINING TO BE INSTALLED FOR EACH INDIVIDUAL MANHOLE.
4. PASCO COUNTY SHALL HAVE THE OPTION OF REQUIRING A NEGATIVE PRESSURE TEST PER ASTM C-1244
5. LIFT HOLES MUST NOT PENETRATE THE WALLS

CREATED 02/24/03
REVISED

STANDARD MANHOLE

PASCO COUNTY UTILITIES

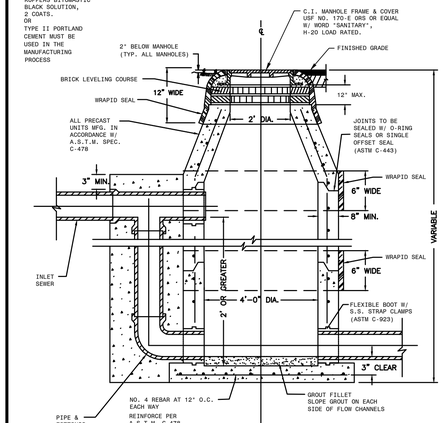
PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

DETAIL 38

NOTE:
ECCENTRIC CONES ARE ACCEPTABLE, SET IN LINE WITH FLOW.

EXTERIOR COATING, KOPPERS BITUMASTIC BLACK SOLUTION, 2 COATS. OR TYPE II PORTLAND CEMENT MUST BE USED IN THE MANUFACTURING PROCESS

NOTE:
PRECAST CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 4,000 p.s.i. AT 28 DAYS.



NOTE: 1. WRAPID SEAL MUST BE USED ON ALL JOINTS, CASTINGS AND RISER RINGS: ON ALL JOINTS ON AIR RELEASES, MANHOLES, GREASE/WATER, OIL/WATER SEPARATORS, AND WETWELLS.
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5. LIFT HOLES MUST NOT PENETRATE THE WALLS

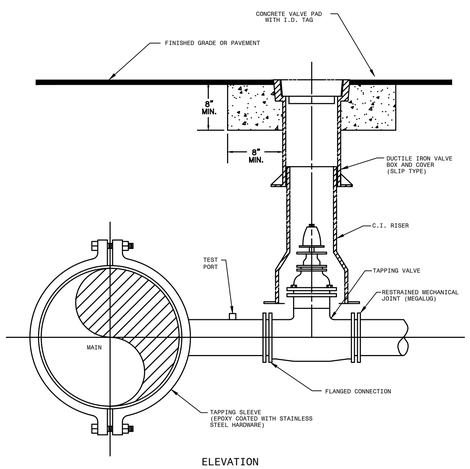
CREATED 02/24/03
REVISED

DROP MANHOLE
(PRE-CAST ONLY)

PASCO COUNTY UTILITIES

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

DETAIL 39



ELEVATION

NOTES:
- SADDLE CONNECTION WILL BE TESTED TO 150 PSI PRIOR TO TAPPING MAIN.
- MECHANICAL JOINTS/UNDERGROUND PIPING SHALL BE RESTRAINED AS SPECIFIED BY COUNTY/ENGINEER.
- VALVE EXTENSION ROD SHALL BE UTILIZED, AS NECESSARY, SO THAT VALVE OPERATING NUT IS A MAXIMUM OF 3' BELOW GRADE.

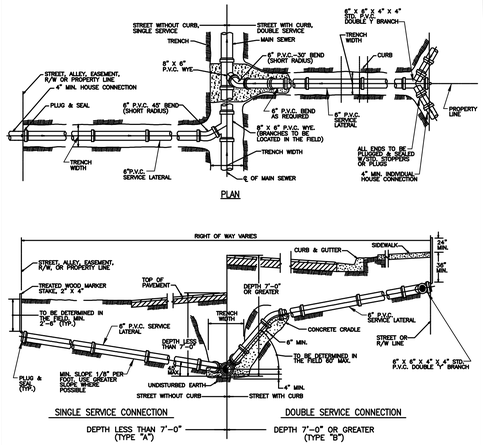
CREATED 02/24/03
REVISED

WATER, REUSE, AND FORCE MAIN
TAPPING DETAIL W/ VALVE LOCATION

PASCO COUNTY UTILITIES

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

DETAIL 34



PLAN

SECTION

NOTE:
- CONTRACTOR SHALL MAKE, ON A CLEAN SET OF PLANS, THE FINAL STATIONING OR DISTANCE AND DIRECTION FROM MANHOLE OF EACH SERVICE LATERAL AND THEN GIVE TO ENGINEER FOR RECORD PURPOSES.
- PROVIDE 2" x 4" PRESSURE TREATED WOOD MARKER STAKE AT ALL SANITARY SERVICES (INCLUDE IN PIPE PRICE), TOP OF STAKE TO BE PAINTED WITH GREEN PAINT.
- THE MINIMUM DIAMETER OF ALL SERVICE LATERALS SHALL BE 6 INCHES.

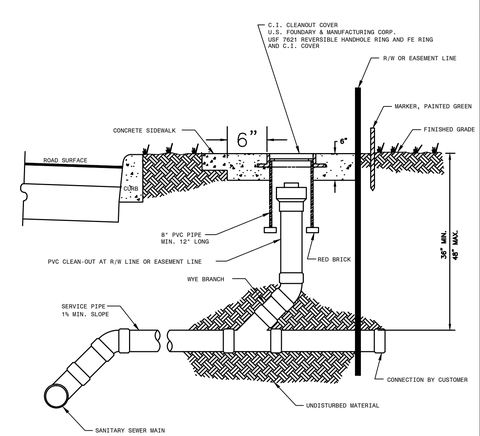
CREATED 02/24/03
REVISED

SEWER LATERAL
CONNECTION

PASCO COUNTY UTILITIES

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

DETAIL 41



NTS

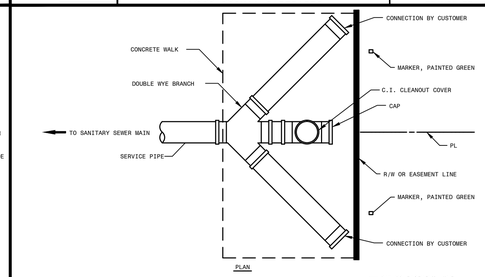
CREATED 02/24/03
REVISED

SANITARY SEWER - SINGLE WYE CONNECTION
AND TYPICAL CLEAN-OUT

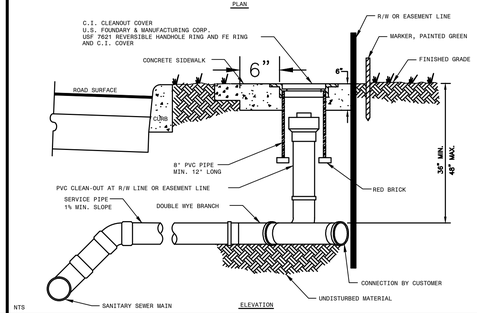
PASCO COUNTY UTILITIES

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

DETAIL 42



PLAN



NTS ELEVATION

CREATED 02/24/03
REVISED

SANITARY SEWER - DOUBLE WYE CONNECTION
AND TYPICAL CLEAN-OUT

PASCO COUNTY UTILITIES

PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL

DETAIL 43

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

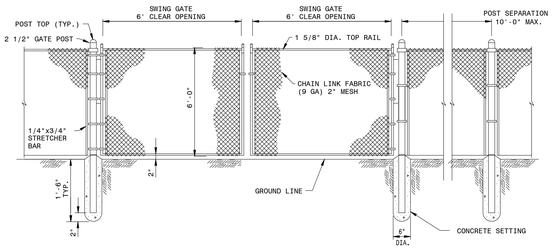
SD - SANITARY SEWER SYSTEM DETAILS

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE SD

EPCO RANCH NORTH
PARCEL A PHASE 1

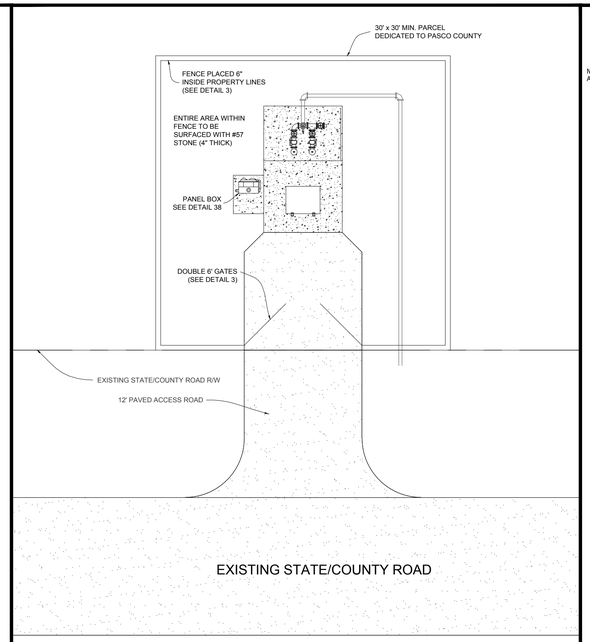
PREPARED FOR: **STANDARD PACIFIC OF FLORIDA**

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 =-0.84Feet

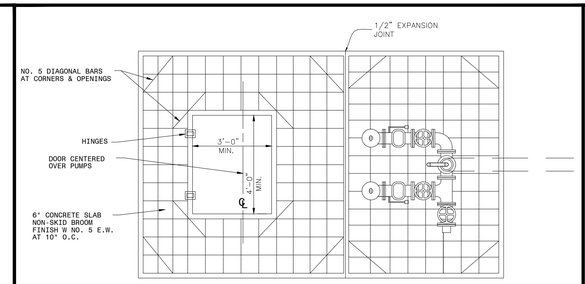


MATERIALS	
ITEM	DESCRIPTION
TYPE	CHAIN LINK
HEIGHT	4', 6', 8' - AS SPECIFIED BY COUNTY
FABRIC	9 GAUGE
POST	2-1/2" DIA. - .085 WALL THICKNESS (MINIMUM)
TOP RAILS	1-5/8" DIA. - .080 WALL THICKNESS (MINIMUM)
GATE	4' x 6' SWING TYPE W/ 2" DIA. - .085 WALL
	THICKNESS (MINIMUM)
	FRAMEWORK (LOCATED AS INDICATED ON METER
	SPEC. SHEET)
LATCH	FORK TYPE - PADLOCK COMPATIBLE

CREATED 02/24/03	FENCE SPECIFICATIONS	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL
REVISED	PASCO COUNTY UTILITIES	DETAIL 04

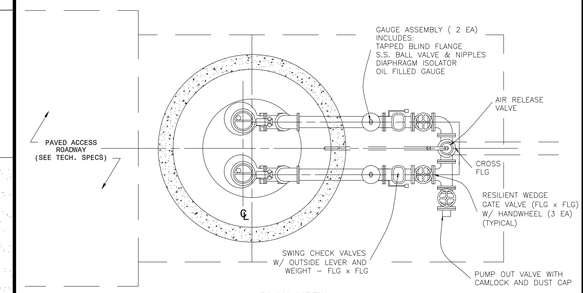


CREATED 02/24/03	PUMP STATION (DUPLEX) SITE PLAN & ACCESS	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL
REVISED	PASCO COUNTY UTILITIES	DETAIL 47



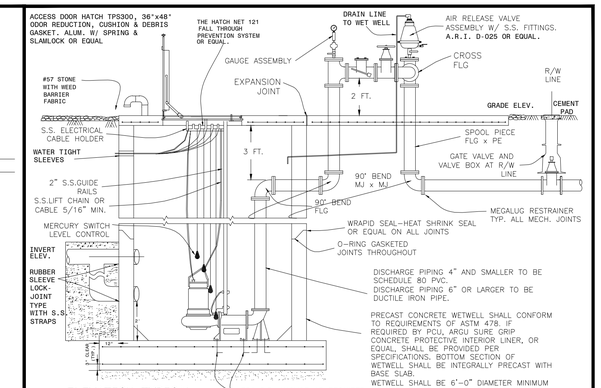
SLAB PLAN VIEW
LIFT STATION & PIPING

NOTE: PUMP OUT ASSEMBLY CAN BE PLACED ON EITHER SIDE TO BEST ACCOMMODATE PROPOSED LAYOUT



PLAN VIEW
LIFT STATION & PIPING

CREATED 02/24/03	PUMP STATION SLAB & PIPING PLAN	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL
REVISED	PASCO COUNTY UTILITIES	DETAIL 48



ELEVATION TYPICAL
LIFT STATION & PIPING

NOTES:

1. ALL PIPING WITHIN THE WETWELL (LARGER THAN 4") AND ALL ABOVE GROUND PIPING SHALL BE MANUFACTURED FLANGED PIPE. FIELD FABRICATED FLANGES (UNI-FLANGE OR MEGAFLANGE) WILL NOT BE PERMITTED.

2. ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE PROVIDED WITH CERAMIC EPOXY INTERIOR LINING (PROTECTO 401). IN ADDITION, ALL PIPE & FITTINGS WITHIN THE WETWELL SHALL BE PROVIDED WITH POLYETHYLENE SHRINK WRAPPED EXTERIOR COATING.

3. ALL UNDERGROUND FITTINGS SHALL BE RESTRAINED MECHANICAL JOINT AND SHALL BE PROVIDED WITH PROTECTO 401 INTERIOR LINING.

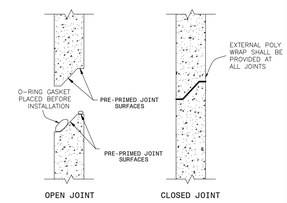
4. IF LIFT CABLES ARE USED, LIFTING RINGS MUST BE PROVIDED EVERY 4 FT.

5. INDIVIDUAL WALL PENETRATION SLEEVES SHALL BE PROVIDED FOR EACH PUMP CABLE.

6. ALL HARDWARE (INCLUDING FLANGE BOLTS & NUTS) SHALL BE STAINLESS STEEL.

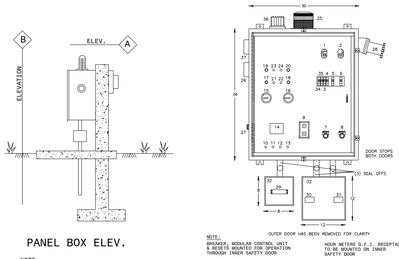
7. ALL ABOVE GROUND PIPING TO BE PAINTED SAFETY GREEN.

8. SLAB ELEVATION TO BE 12 IN. ABOVE C/L OF ROADWAY OR 12 IN. ABOVE 100 YEAR FLOOD PLAIN - WHICHEVER IS HIGHER.



PRECAST JOINT DETAIL

CREATED 02/24/03	DUPLEX PUMP STATION ELEVATION & PIPING PROFILE	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL
REVISED	PASCO COUNTY UTILITIES	DETAIL 49



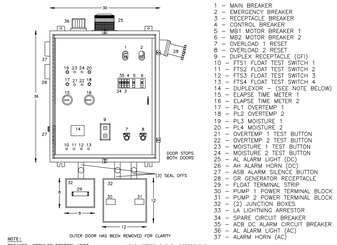
PANEL BOX ELEV.

NOTE:
POSITION PANEL BOX SO OPERATOR IS BACK IS NOT TO WET WELL WHILE FACING BOX

PANEL BOX TO BE LOCATED TO ALLOW UNOBSTRUCTED ACCESS TO WET WELL BY PAVED ACCESS ROAD

PANEL ELEVATION SHALL BE ABOVE 100-YEAR FLOOD ELEV. AND MUST BE SHOWN ON ALL PLANS

DUPLEXOR SHALL BE AN T.T.I. 6012 ANY ALTERNATE TYPE MUST BE SPECIFICALLY APPROVED BY PASCO COUNTY



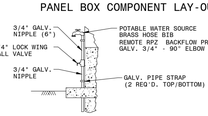
NOTE:
BREAKER, MODULAR CONTROL UNIT, & RESETS MOUNTED FOR OPERATION THROUGH INNER SAFETY DOOR

HOUR METERS G.F.I. RECEPTACLE TO BE MOUNTED ON INNER SAFETY DOOR

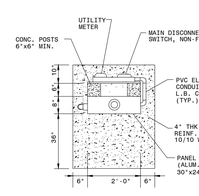
1 - MAIN BREAKER
2 - EMERGENCY BREAKER
3 - RECEPTACLE BREAKER
4 - CONTROL BREAKER
5 - MB1 MOTOR BREAKER 1
6 - MB2 MOTOR BREAKER 2
7 - OVERLOAD 1 RESET
8 - OVERLOAD 2 RESET
9 - DUPLEX RECEPTACLE (GFI)
10 - FTS1 FLOAT TEST SWITCH 1
11 - FTS2 FLOAT TEST SWITCH 2
12 - FTS3 FLOAT TEST SWITCH 3
13 - FTS4 FLOAT TEST SWITCH 4
14 - DUPLEXOR - (SEE NOTE BELOW)
15 - ELAPSE TIME METER 1
16 - ELAPSE TIME METER 2
17 - PL1 OVERTEMP 1
18 - PL2 OVERTEMP 2
19 - PL3 MOSITURE 1
20 - PL4 MOSITURE 2
21 - OVERTEMP 1 TEST BUTTON
22 - OVERTEMP 2 TEST BUTTON
23 - MOSITURE 1 TEST BUTTON
24 - MOSITURE 2 TEST BUTTON
25 - AH ALARM HORN (DC)
26 - AH ALARM HORN (DC)
27 - ASB ALARM SILENCE BUTTON
28 - GR GENERATOR RECEPTACLE
29 - FLOAT TERMINAL STRIP
30 - PUMP 1 POWER TERMINAL BLOCK
31 - PUMP 2 POWER TERMINAL BLOCK
32 - (2) JUNCTION BOXES
33 - LA LIGHTNING ARRESTOR
34 - SPARE CIRCUIT BREAKER
35 - ACB DC ALARM CIRCUIT BREAKER
36 - AL ALARM LIGHT (AC)
37 - ALARM HORN (AC)

SEE TECHNICAL SPECIFICATION FOR DETAILS

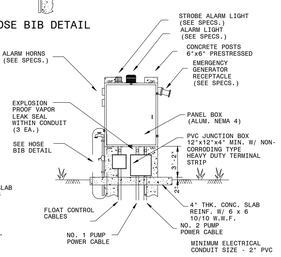
PANEL BOX COMPONENT LAY-OUT



HOSE BIB DETAIL

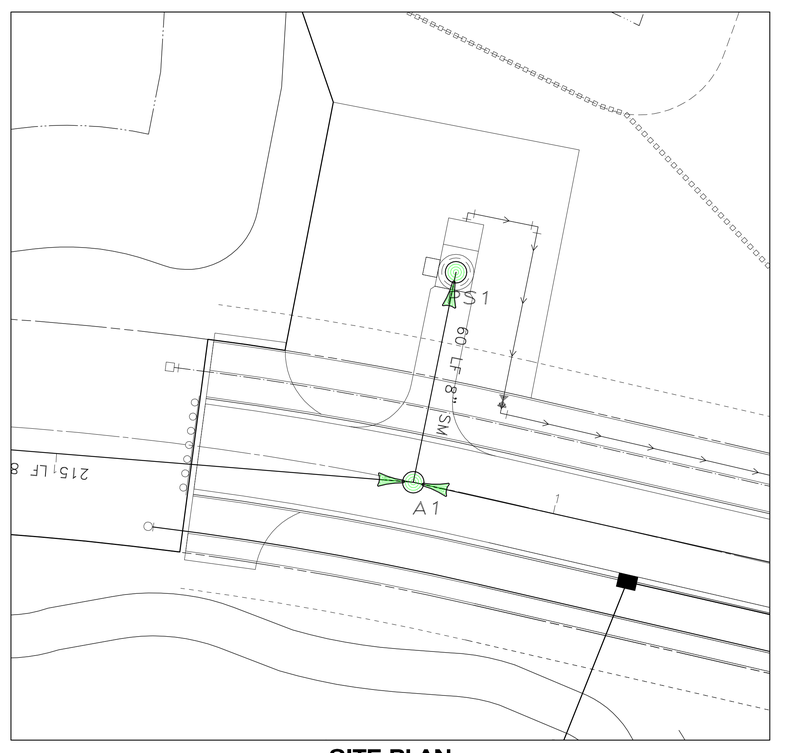


ELEVATION A



ELEVATION B

CREATED 02/24/03	STANDARD PUMP STATION (DUPLEX) PANEL BOX ELEVATION & COMPONENT LAY-OUT	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL
REVISED	PASCO COUNTY UTILITIES	DETAIL 50



SITE PLAN

40 20 0 20 40

SCALE: 1 " = 20'

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

PUMP STATION 1 DETAILS

JOB NO. SPH-EP-009	EPCO RANCH NORTH PARCEL A PHASE 1
DESIGN LAWTON	
DRAWN MIDDLETON	PREPARED FOR: STANDARD PACIFIC OF FLORIDA
DATE 11/14/2014	Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 =-0.84Feet
FILE PS1-1	SHEET 78 OF 98 SHEETS

WASTEWATER PUMP STATION DESIGN PARAMETERS

EPCO RANCH NORTH PARCEL A PHASE 1 WASTEWATER PUMP STATION 1

LOCATION: STREET C, WEST OF STREET B; NORTH OF ELAM ROAD (S/T/R: 22,23,26,27/25S/20E)
NEAREST CROSS STREET

I. DESIGN CAPACITY

A. AVERAGE DAILY FLOW (SEE BEXLEY SOUTH MPUD WASTEWATER UTILITIES SERVICE PLAN)

377 SINGLE-FAMILY UNITS (200 GPD/UNIT) = 75,400 GPD

100 PEOPLE, CLUBHOUSE (10 GPD/PERSON) = 1,000 GPD

B. PEAK INFLUENT RATE PEAK FACTOR = 3.8 (PER STANDARDS FOR DESIGN AND CONSTRUCTION SECTION C.3)

$$\frac{ADF \times PEAK\ FACTOR}{1440} = \frac{76{,}400\ GPD \times 3.8}{1440} = 202\ GPM$$

C. DESIGN MINIMUM FLOW

$$\frac{ADF \times 0.20}{1440} = \frac{76{,}400\ GPD \times 0.20}{1440} = 10.6\ GPM$$

D. DESIGN PUMP CAPACITY (MINIMUM REQUIRED) = 202 GPM

E. VELOCITY IN FORCE MAIN @ MAX. PUMPING RATE = 2.0 ft/s

II. WETWELL DESIGN (DUPLEX SYSTEM)

A. DESIGN CRITERIA

1. MAXIMUM PUMP MOTOR CYCLE RATE = 6 STARTS PER HOUR
2. MAXIMUM DETENTION TIME AT MINIMUM FLOW = 30 MINUTES

B. PUMP CONTROL LEVEL SETTINGS

1. PUMP CYCLING RATES ARE AT A MAXIMUM WHEN INFLOW EQUALS ONE-HALF THE DESIGN PUMPING RATE OF 202 GPM.
2. WETWELL VOLUME REQUIRED BETWEEN LEAD PUMP START AND PUMP SHUT OF LEVEL =

$$V = \frac{CYCLE\ PERIOD \times (1/2)\ PUMP\ RATE}{2}$$

$$V = \frac{10\ MIN. \times (1/2)\ (202)\ GPM}{2} = 505\ GALLONS$$

3. WETWELL DIAMETER = 8 FEET

$$\frac{\pi\ (D)^2 \times 7.48\ GAL./C.F.}{4} = \frac{7.48\ (\pi)(D)^2}{4} = \frac{7.48\ (\pi)(8)^2}{4} = 376\ GALS./FT.DEPTH$$

4. WETWELL LEVEL CHANGE BETWEEN PUMP STOP AND LEAD PUMP START =
505 (II.B.2-GAL.) / 376 (II.B.3-GAL./FT.DEPTH) = 1.35' DESIGN FOR 18 INCHES

5. CONTROL ELEVATIONS

TOP OF SLAB	EL. 111.40
INFLUENT INVERT	EL. 87.39
HIGH WATER ALARM	EL. 86.89
LAG PUMP ON	EL. 86.39
LEAD PUMP ON	EL. 85.39
ALL PUMPS OFF	EL. 83.89
BOTTOM	EL. 81.39

III. SYSTEM CURVE CALCULATIONS

A. FRICTION LOSSES

1. PUMPING STATION PIPING:

	ITEM	SIZE (INCHES)	QUANITY	FRICTION LOSS (ea.)	TOTAL
A	TEE	6	2	34	68
B	90° ELBOW	6	4	14	56
C	CHECK VALVE	6	1	40	40
D	GATE VALVE	6	2	4	8
				TOTAL =	172
				6" (DIA.) DI PIPE LENGTH =	40
				TOTAL EQUIVALENT LENGTH =	212

2. FORCE MAIN PIPING:

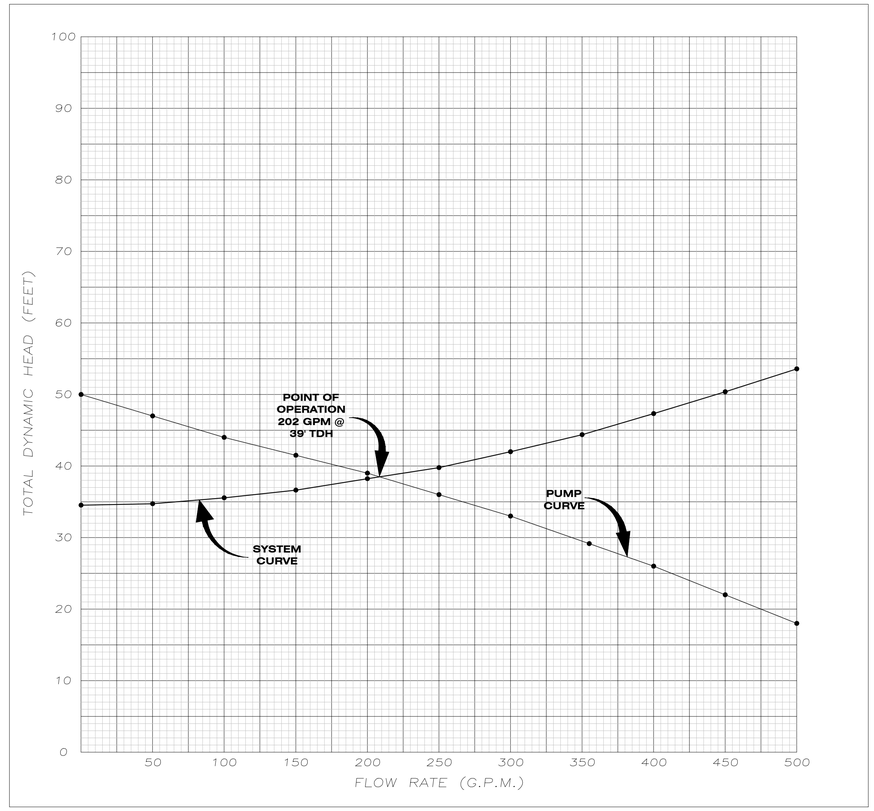
	ITEM	SIZE (INCHES)	QUANITY	FRICTION LOSS (ea.)	TOTAL
A	TEE	8"x 6"	1	45	45
B	90° ELBOW	6	3	11	33
C	AIR RELEASE VALVE	6	0	25	0
D	PLUG VALVE	6	3	2.5	8
E	SIDE OUTLET CROSS	6	0	0	0
F	WYE	6	0	0	0
G	45° ELBOW	6	0	5	10
H	22 1/2° ELBOW	6	0	2.5	2.5
I	11 1/4° ELBOW	6	0	1.3	0
J	REDUCER	12"x 8"	0	8	8
K	22 1/2° ELBOW	8	0	2.5	5
L	45° ELBOW	8	0	5	5
M	PLUG VALVE	8	1	3	3
N	TEE	16"x 8"	1	45	45
				6" FITTING TOTAL =	86
				6" (DIA.) PVC PIPE LENGTH =	405
				TOTAL EQUIVALENT 6" LENGTH =	491
				8" FITTING TOTAL =	48
				8" (DIA.) PVC PIPE LENGTH =	246
				TOTAL EQUIVALENT 8" LENGTH =	294

B. STATIC HEAD

1. PIPE CENTERLINE AT DISCHARGE POINT = ELEV. 107.0±
2. LOW WATER LEVEL (ALL PUMPS OFF) = ELEV. 83.9±
3. TOTAL STATIC HEAD = 23.1 FT.

C. PRESSURE AT POINT OF CONNECTION:
1. 5 psi (per COUNTY 9/23/2014) = ELEV. 11.5±

SYSTEM CURVE vs. PUMP CHARACTERISTIC CURVE



SYSTEMS HEAD COMPUTATIONS – TOTAL FRICTION LOSSES IN FEET

FLOW RATE (G.P.M.)

FLOW RATE (GPM)	0	50	100	150	200	250	300	350	400	450	500	550
ITEM: PUMP STATION PIPING (EQUIVALENT LENGTH) 212 L.F. OF 6" DIP	0.0	0.10	0.4	0.8	1.3	2.0	2.8	3.7	4.8	5.9	7.2	8.6
FORCE MAIN PIPING (EQUIVALENT LENGTH) 491 L.F. OF 6" PVC	0.0	0.1	0.5	1.1	1.9	2.8	4.0	5.3	6.8	8.4	10.3	12.2
FORCE MAIN PIPING (EQUIVALENT LENGTH) 294 L.F. OF 8" PVC	0.0	0.0	0.1	0.2	0.3	0.4	0.6	0.8	1.0	1.3	1.5	1.8
STATIC HEAD = 23.1'	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1	23.1
DESIGN PRESSURE AT POINT OF CONNECTION (BEST/WORST SYSTEM CURVES)	0 / 11.5	0 / 11.5	0 / 11.5	0 / 11.5	0 / 11.5	0 / 11.5	0 / 11.5	0 / 11.5	0 / 11.5	0 / 11.5	0 / 11.5	0 / 11.5
TOTAL LOSSES (BEST/WORST CASE)	0 / 34.6	0 / 34.8	0 / 35.6	0 / 36.7	0 / 38.1	0 / 39.8	0 / 42.0	0 / 44.4	0 / 47.2	0 / 50.2	0 / 53.6	0 / 57.2

PUMP DATA

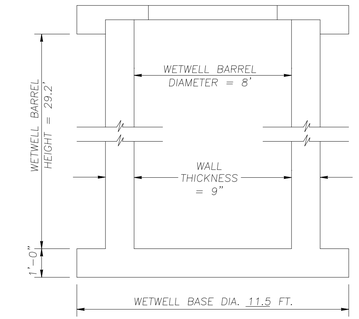
EBARA MODEL 100DLMKFU63.7

RPM: 1800, IMPELLER DIAMETER 7.24 in

5.0 HP, 460 V, 3 PHASE

OPERATING POINTS ARE: 202 GPM @ 39' TDH

FLOTATION CALCULATIONS – CONCRETE WETWELL



ASSUMPTIONS

CONCRETE = 150 LBS./FT.^{3}
SATURATED SOIL = 120 LBS./FT.^{3}
WATER = 62.4 LBS./FT.^{3}
NO WATER IN WET WELL
NEGLECT TOP SLAB WEIGHT
NEGLECT SOIL FRICTION
ROUND BARREL
CIRCULAR BASE
WATER TABLE AT GRADE

BARREL WEIGHT = $[(9.5)^2 - (8)^2]\ (\pi/4)\ (29.2)\ (150)$ = 90,301 LB. ↓

BOTTOM SLAB WEIGHT = $(11.5)^2\ (\pi/4)\ (1)\ (150)$ = 15,580 LB. ↓

SOIL WEIGHT = $[(11.5)^2 - (9.5)^2]\ (\pi/4)\ (29.2)\ (120 - 62.4)$ = 55,481 LB. ↓

TOTAL WEIGHT = 161,362 LB. ↓

WEIGHT OF WATER DISPLACED:

$[(9.5)^2\ (\pi/4)\ (29.2) + (11.5)^2\ (\pi/4)\ (1)]\ (62.4)$ = 135,634 LB. ↑

$$\frac{161{,}362\ LB.\downarrow}{135{,}634\ LB.\uparrow} = 1.19\ \text{SAFETY FACTOR}$$

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

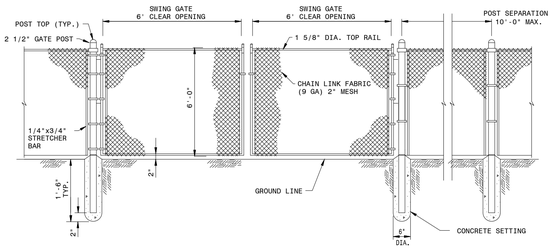
PUMP STATION 1 DETAILS

EPCO RANCH NORTH
PARCEL A PHASE 1

STANDARD PACIFIC OF FLORIDA

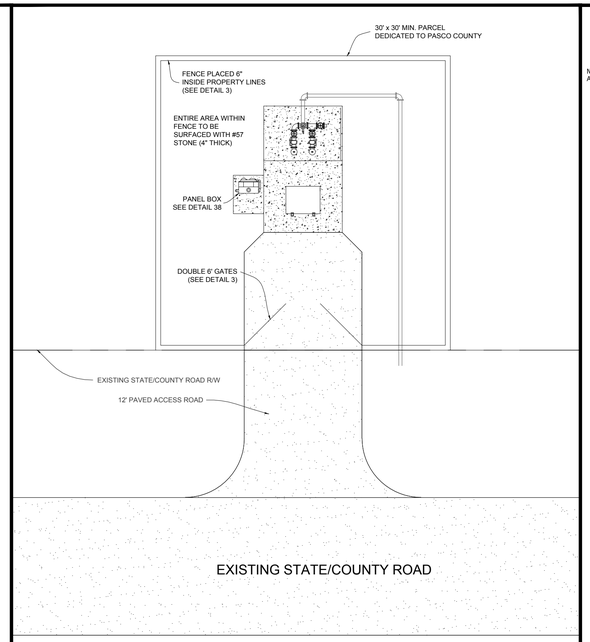
JOB NO.	SPH-EP-009
DESIGN	LAWTON
DRAWN	MIDDLETON
DATE	11/14/2014
FILE	PS1-2

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

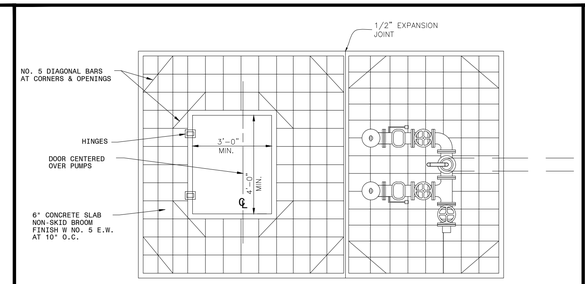


MATERIALS	
ITEM	DESCRIPTION
TYPE	CHAIN LINK
HEIGHT	4', 6', 8' - AS SPECIFIED BY COUNTY
FABRIC	9 GAUGE
POST	2-1/2" DIA. - .085 WALL THICKNESS (MINIMUM)
TOP RAILS	1-5/8" DIA. - .080 WALL THICKNESS (MINIMUM)
GATE	4' x 6' SWING TYPE W/ 2" DIA. - .085 WALL
	THICKNESS (MINIMUM)
	FRAMEWORK (LOCATED AS INDICATED ON METER
	SPEC. SHEET)
LATCH	FORK TYPE - PADLOCK COMPATIBLE

CREATED 02/24/03	FENCE SPECIFICATIONS	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL
REVISED	PASCO COUNTY UTILITIES	DETAIL 04

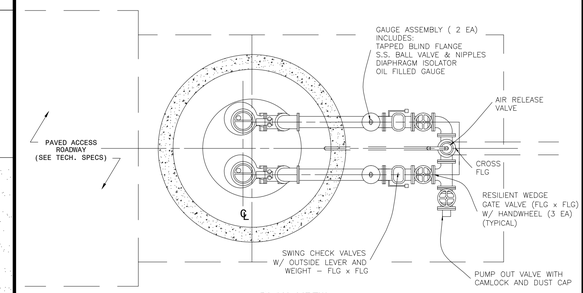


CREATED 02/24/03	PUMP STATION (DUPLEX) SITE PLAN & ACCESS	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL
REVISED	PASCO COUNTY UTILITIES	DETAIL 47



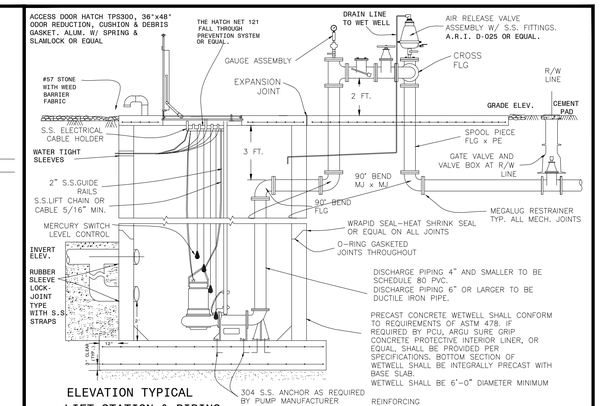
SLAB PLAN VIEW
LIFT STATION & PIPING

NOTE: PUMP OUT ASSEMBLY CAN BE PLACED ON EITHER SIDE TO BEST ACCOMMODATE PROPOSED LAYOUT



PLAN VIEW
LIFT STATION & PIPING

CREATED 02/24/03	PUMP STATION SLAB & PIPING PLAN	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL
REVISED	PASCO COUNTY UTILITIES	DETAIL 48



ELEVATION TYPICAL
LIFT STATION & PIPING

NOTES:

1. ALL PIPING WITHIN THE WETWELL (LARGER THAN 4") AND ALL ABOVE GROUND PIPING SHALL BE MANUFACTURED FLANGED PIPE. FIELD FABRICATED FLANGES (UNI-FLANGE OR MEGAFLANGE) WILL NOT BE PERMITTED.

2. ALL DUCTILE IRON PIPE AND FITTINGS SHALL BE PROVIDED WITH CERAMIC EPOXY INTERIOR LINING (PROTECTO 401). IN ADDITION, ALL PIPE & FITTINGS WITHIN THE WETWELL SHALL BE PROVIDED WITH POLYETHYLENE SHRINK WRAPPED EXTERIOR COATING.

3. ALL UNDERGROUND FITTINGS SHALL BE RESTRAINED MECHANICAL JOINT AND SHALL BE PROVIDED WITH PROTECTO 401 INTERIOR LINING.

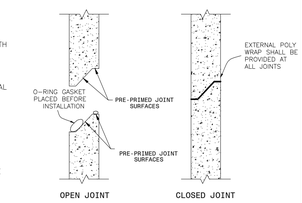
4. IF LIFT CABLES ARE USED, LIFTING RINGS MUST BE PROVIDED EVERY 4 FT.

5. INDIVIDUAL WALL PENETRATION SLEEVES SHALL BE PROVIDED FOR EACH PUMP CABLE.

6. ALL HARDWARE (INCLUDING FLANGE BOLTS & NUTS) SHALL BE STAINLESS STEEL.

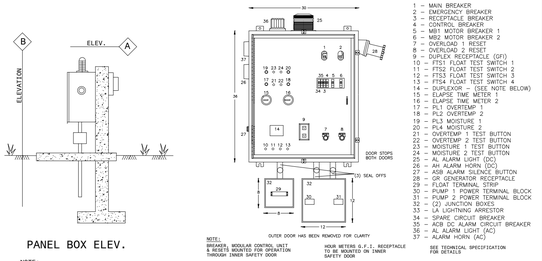
7. ALL ABOVE GROUND PIPING TO BE PAINTED SAFETY GREEN.

8. SLAB ELEVATION TO BE 12 IN. ABOVE C/L OF ROADWAY OR 12 IN. ABOVE 100 YEAR FLOOD PLAIN - WHICHEVER IS HIGHER.



PRECAST JOINT DETAIL

CREATED 02/24/03	DUPLEX PUMP STATION ELEVATION & PIPING PROFILE	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL
REVISED	PASCO COUNTY UTILITIES	DETAIL 49



1 - MAIN BREAKER
2 - EMERGENCY BREAKER
3 - RECEPTACLE BREAKER
4 - CONTROL BREAKER
5 - MB1 MOTOR BREAKER 1
6 - MB2 MOTOR BREAKER 2
7 - OVERLOAD 1 RESET
8 - OVERLOAD 2 RESET
9 - DUPLEX RECEPTACLE (GFI)
10 - FTS1 FLOAT TEST SWITCH 1
11 - FTS2 FLOAT TEST SWITCH 2
12 - FTS3 FLOAT TEST SWITCH 3
13 - FTS4 FLOAT TEST SWITCH 4
14 - DUPLEXOR - (SEE NOTE BELOW)
15 - ELAPSE TIME METER 1
16 - ELAPSE TIME METER 2
17 - PL1 OVERTEMP 1
18 - PL2 OVERTEMP 2
19 - PL3 MOISTURE 1
20 - PL4 MOISTURE 2
21 - OVERTEMP 1 TEST BUTTON
22 - OVERTEMP 2 TEST BUTTON
23 - MOISTURE 1 TEST BUTTON
24 - MOISTURE 2 TEST BUTTON
25 - AH ALARM HORN (DC)
26 - AH ALARM HORN (DC)
27 - ASB ALARM SILENCE BUTTON
28 - GR GENERATOR RECEPTACLE
29 - FLOAT TERMINAL STRIP
30 - PUMP 1 POWER TERMINAL BLOCK
31 - PUMP 2 POWER TERMINAL BLOCK
32 - (2) JUNCTION BOXES
33 - LA LIGHTNING ARRESTOR
34 - SPARE CIRCUIT BREAKER
35 - ACB DC ALARM CIRCUIT BREAKER
36 - AL ALARM LIGHT (AC)
37 - ALARM HORN (AC)

PANEL BOX ELEV.

NOTE:

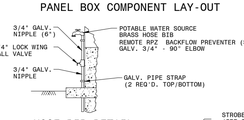
POSITION PANEL BOX SO OPERATOR'S BACK IS NOT TO WET WELL WHILE FACING BOX

PANEL BOX TO BE LOCATED TO ALLOW UNOBSTRUCTED ACCESS TO WET WELL BY PAVED ACCESS ROAD

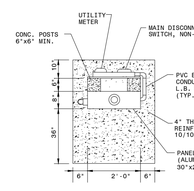
PANEL ELEVATION SHALL BE ABOVE 100-YEAR FLOOD ELEV. AND MUST BE SHOWN ON ALL PLANS

DUPLEXOR SHALL BE AN T.T.I. 6012 ANY ALTERNATE TYPE MUST BE SPECIFICALLY APPROVED BY PASCO COUNTY

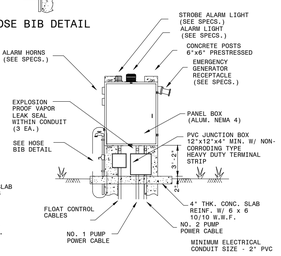
PANEL BOX COMPONENT LAY-OUT



HOSE BIB DETAIL

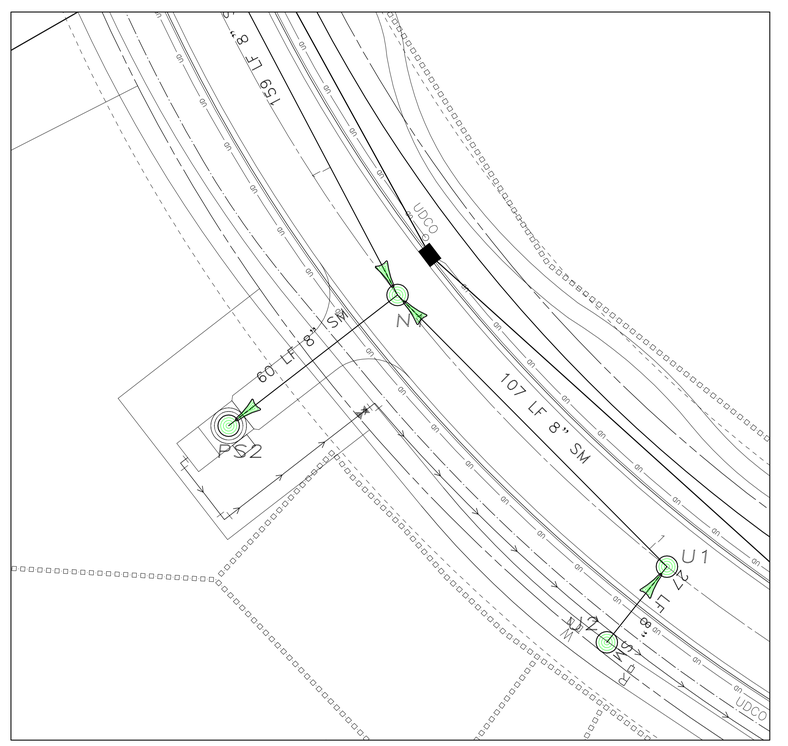


ELEVATION A



ELEVATION B

CREATED 02/24/03	STANDARD PUMP STATION (DUPLEX) PANEL BOX ELEVATION & COMPONENT LAY-OUT	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL
REVISED	PASCO COUNTY UTILITIES	DETAIL 50



SITE PLAN

40 20 0 20 40

SCALE: 1 " = 20'

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

PUMP STATION 2 DETAILS

JOB NO. SPH-EP-009	EPCO RANCH NORTH PARCEL A PHASE 1
DESIGN LAWTON	
DRAWN MIDDLETON	PREPARED FOR: STANDARD PACIFIC OF FLORIDA
DATE 11/14/2014	Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 =-0.84Feet
FILE PS2-1	SHEET 80 OF 98 SHEETS

WASTEWATER PUMP STATION DESIGN PARAMETERS

EPCO RANCH NORTH PARCEL A PHASE 1 WASTEWATER PUMP STATION 2

LOCATION: STREET C, NORTH OF STREET A; WEST OF CURLEY ROAD (S/T/R: 22,23,26,27/25S/20E)
NEAREST CROSS STREET

I. DESIGN CAPACITY

A. AVERAGE DAILY FLOW (SEE BEXLEY SOUTH MPUD WASTEWATER UTILITIES SERVICE PLAN)

161 SINGLE-FAMILY UNITS (200 GPD/UNIT) = 32,200 GPD

200 PEOPLE, (2) CLUBHOUSES (10 GPD/PERSON) = 2,000 GPD

B. PEAK INFLUENT RATE PEAK FACTOR = 3.8 (PER STANDARDS FOR DESIGN AND CONSTRUCTION SECTION C.3)

$\frac{ADF \times PEAK\ FACTOR}{1440} = \frac{34{,}200\ GPD \times 3.8}{1440} = 91$ GPM

C. DESIGN MINIMUM FLOW

$\frac{ADF \times 0.20}{1440} = \frac{34{,}200\ GPD \times 0.20}{1440} = 4.8$ GPM

D. DESIGN PUMP CAPACITY (MINIMUM REQUIRED) = 200 GPM (TO MAINTAIN 2 fps VELOCITY)

E. VELOCITY IN FORCE MAIN @ MAX. PUMPING RATE = 2.0 ft/s

II. WETWELL DESIGN (DUPLEX SYSTEM)

A. DESIGN CRITERIA

1. MAXIMUM PUMP MOTOR CYCLE RATE = 6 STARTS PER HOUR
2. MAXIMUM DETENTION TIME AT MINIMUM FLOW = 30 MINUTES

B. PUMP CONTROL LEVEL SETTINGS

1. PUMP CYCLING RATES ARE AT A MAXIMUM WHEN INFLOW EQUALS ONE-HALF THE DESIGN PUMPING RATE OF 200 GPM.
2. WETWELL VOLUME REQUIRED BETWEEN LEAD PUMP START AND PUMP SHUT OF LEVEL =

$V = \frac{CYCLE\ PERIOD \times (1/2)\ PUMP\ RATE}{2}$

$V = \frac{10\ MIN. \times (1/2)\ (200)\ GPM}{2} = 500$ GALLONS

3. WETWELL DIAMETER = 8 FEET

$\frac{\pi (D)^2 \times 7.48\ GAL./C.F.}{4} = \frac{7.48\ (\pi)(D)^2}{4} = \frac{7.48\ (\pi)(8)^2}{4} = 376$ GALS./FT.DEPTH

4. WETWELL LEVEL CHANGE BETWEEN PUMP STOP AND LEAD PUMP START =
500 (II.B.2-GAL.) / 376 (II.B.3-GAL./FT.DEPTH) = 1.33' DESIGN FOR 18 INCHES

5. CONTROL ELEVATIONS

TOP OF SLAB	EL. 112.70
INFLUENT INVERT	EL. 89.23
HIGH WATER ALARM	EL. 88.73
LAG PUMP ON	EL. 88.23
LEAD PUMP ON	EL. 87.23
ALL PUMPS OFF	EL. 85.73
BOTTOM	EL. 83.23

III. SYSTEM CURVE CALCULATIONS

A. FRICTION LOSSES

1. PUMPING STATION PIPING:

	ITEM	SIZE (INCHES)	QUANITY	FRICTION LOSS (ea.)	TOTAL
A	TEE	6	2	34	68
B	90° ELBOW	6	4	14	56
C	CHECK VALVE	6	1	40	40
D	GATE VALVE	6	2	4	8
				TOTAL =	172
				6" (DIA.) DI PIPE LENGTH =	40
				TOTAL EQUIVALENT LENGTH =	212

2. FORCE MAIN PIPING:

	ITEM	SIZE (INCHES)	QUANITY	FRICTION LOSS (ea.)	TOTAL
A	TEE	8"x 6"	1	45	45
B	90° ELBOW	6	3	11	33
C	AIR RELEASE VALVE	6	3	25	75
D	PLUG VALVE	6	3	2.5	8
E	SIDE OUTLET CROSS	6	0	0	0
F	WYE	6	0	0	0
G	45° ELBOW	6	0	5	10
H	22 1/2° ELBOW	6	0	2.5	2.5
I	11 1/4° ELBOW	6	0	1.3	0
J	REDUCER	12"x 8"	0	8	8
K	22 1/2° ELBOW	8	0	2.5	5
L	45° ELBOW	8	0	5	5
M	PLUG VALVE	8	1	3	3
N	TEE	16"x 8"	1	45	45
				6" FITTING TOTAL =	161
				6" (DIA.) PVC PIPE LENGTH =	4,072
				TOTAL EQUIVALENT 6" LENGTH =	4,233
				8" FITTING TOTAL =	48
				8" (DIA.) PVC PIPE LENGTH =	246
				TOTAL EQUIVALENT 8" LENGTH =	294

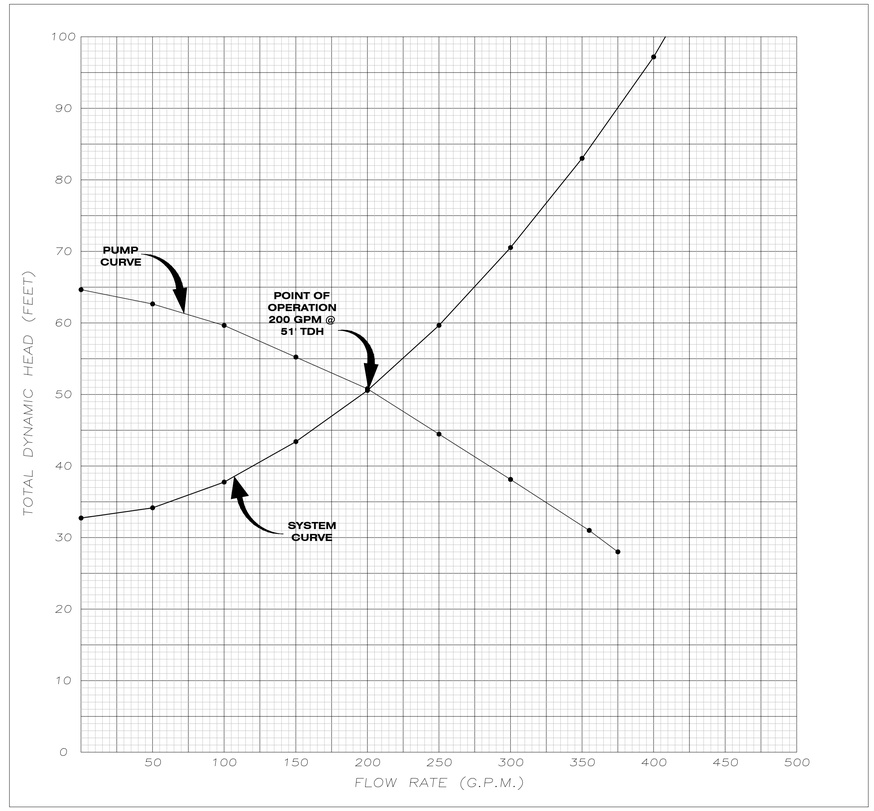
B. STATIC HEAD

1. PIPE CENTERLINE AT DISCHARGE POINT = ELEV. 107.0±
2. LOW WATER LEVEL (ALL PUMPS OFF) = ELEV. 85.7±
3. TOTAL STATIC HEAD = 21.3 FT.

C. PRESSURE AT POINT OF CONNECTION:

1. 5 psi (per COUNTY 9/23/2014) = ELEV. 11.5±

SYSTEM CURVE vs. PUMP CHARACTERISTIC CURVE



SYSTEMS HEAD COMPUTATIONS – TOTAL FRICTION LOSSES IN FEET

FLOW RATE (G.P.M.)

FLOW RATE (GPM)	0	50	100	150	200	250	300	350	400	450	500	550
ITEM: PUMP STATION PIPING (EQUIVALENT LENGTH) 212 L.F. OF 6" DIP	0.0	0.10	0.4	0.8	1.3	2.0	2.8	3.7	4.8	5.9	7.2	8.6
FORCE MAIN PIPING (EQUIVALENT LENGTH) 4,233 L.F. OF 6" PVC	0.0	1.2	4.5	9.5	16.2	24.5	34.3	45.7	58.5	72.8	88.5	105.5
FORCE MAIN PIPING (EQUIVALENT LENGTH) 294 L.F. OF 8" PVC	0.0	0.0	0.1	0.2	0.3	0.4	0.6	0.8	1.0	1.3	1.5	1.8
STATIC HEAD = 21.3'	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3	21.3
DESIGN PRESSURE AT POINT OF CONNECTION (BEST/WORST SYSTEM CURVES)	0 / 11.5	0 / 11.5	0 / 11.5	0 / 11.5	0 / 11.5	0 / 11.5	0 / 11.5	0 / 11.5	0 / 11.5	0 / 11.5	0 / 11.5	0 / 11.5
TOTAL LOSSES (BEST/WORST CASE)	0 / 32.8	0 / 34.1	0 / 37.8	0 / 43.3	0 / 50.6	0 / 59.7	0 / 70.5	0 / 83.0	0 / 97.1	0 / 112.8	0 / 130.0	0 / 148.7

PUMP DATA

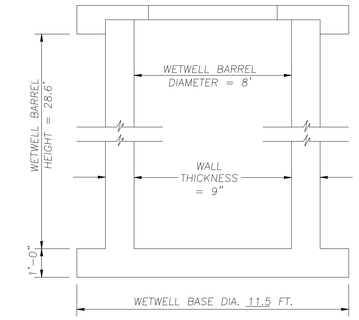
EBARA MODEL 80DLMKFU63.7

RPM: 1800, IMPELLER DIAMETER 8.03 in

5.0 HP, 460 V, 3 PHASE

OPERATING POINTS ARE: 200 GPM @ 51' TDH

FLOTATION CALCULATIONS – CONCRETE WETWELL



ASSUMPTIONS

CONCRETE = 150 LBS./FT.^{3}
SATURATED SOIL = 120 LBS./FT.^{3}
WATER = 62.4 LBS./FT.^{3}
NO WATER IN WET WELL
NEGLECT TOP SLAB WEIGHT
NEGLECT SOIL FRICTION
ROUND BARREL
CIRCULAR BASE
WATER TABLE AT GRADE

BARREL WEIGHT = $[(9.5)^2 - (8)^2]\ (\pi/4)\ (28.6)\ (150) =$ 88,446 LB. ↓

BOTTOM SLAB WEIGHT = $(11.5)^2\ (\pi/4)\ (1)\ (150) =$ 15,580 LB. ↓

SOIL WEIGHT = $[(11.5)^2 - (9.5)^2]\ (\pi/4)\ (28.6)\ (120 - 62.4) =$ 54,341 LB. ↓

TOTAL WEIGHT = 158,367 LB. ↓

WEIGHT OF WATER DISPLACED:

$[(9.5)^2\ (\pi/4)\ (28.6) + (11.5)^2\ (\pi/4)\ (1)]\ (62.4) =$ 132,981 LB. ↑

$\frac{158{,}367\ LB. ↓}{132{,}981\ LB. ↑} =$ 1.19 SAFETY FACTOR

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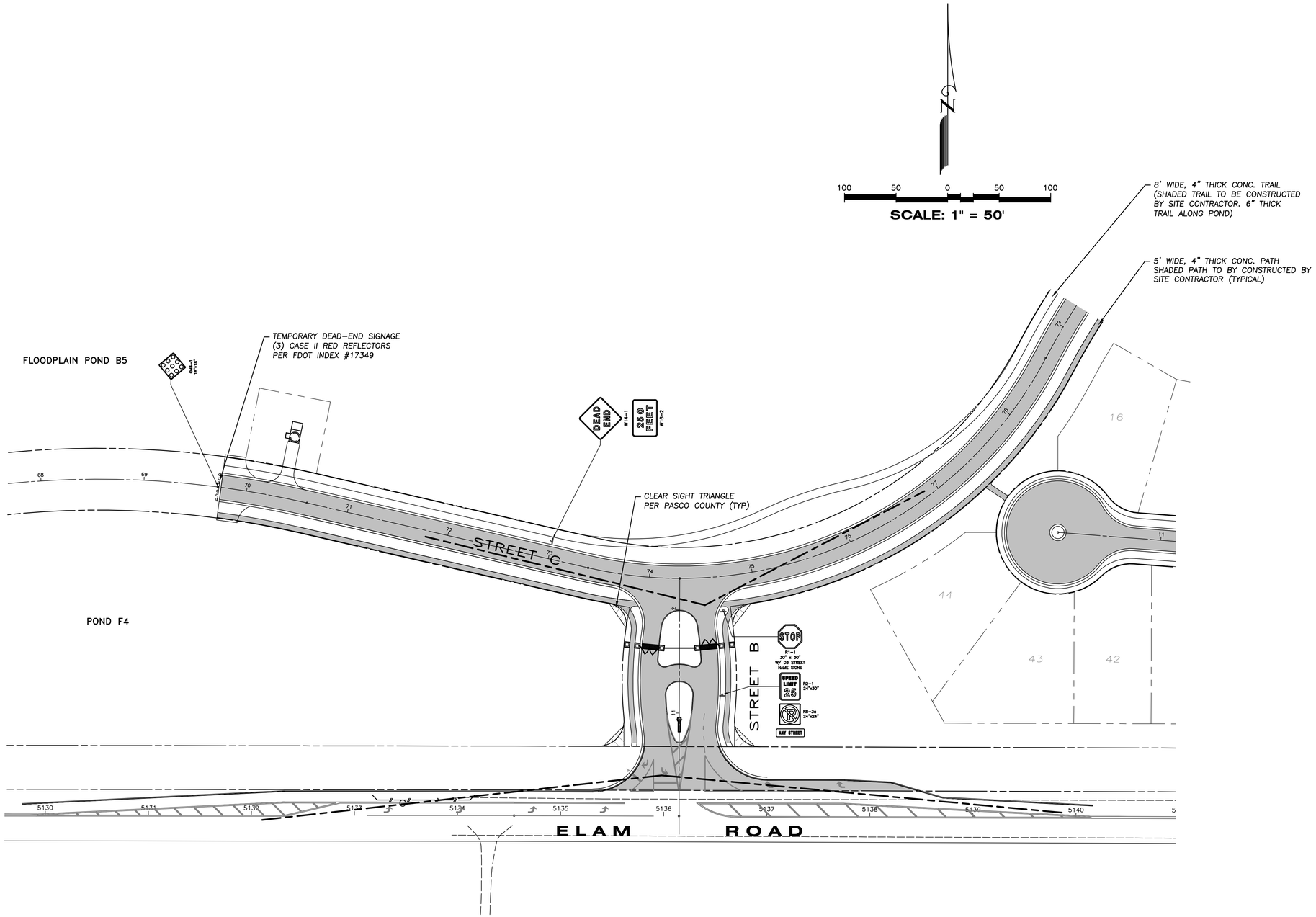
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

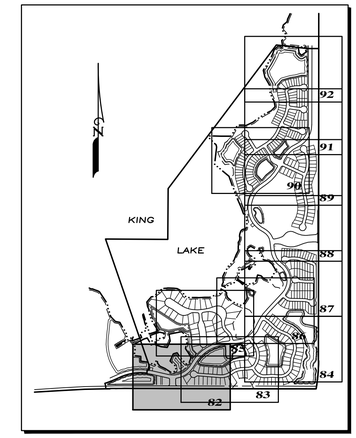
DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

PUMP STATION 2 DETAILS

EPCO RANCH NORTH
PARCEL A PHASE 1

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
PREPARED FOR: STANDARD PACIFIC OF FLORIDA
DATE 11/14/2014
Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 =-0.84Feet
FILE PS2-2





INDEX TO MAP COVERAGE
Not To Scale

SIGHT TRIANGLE LEGEND

LIMITS OF CLEAR SIGHT PER FDOT INDEX 546 & MANUAL OF UNIFORM MINIMUM STANDARDS (FLORIDA GREENBOOK)

CLEAR SIGHT TRIANGLE PER PASCO COUNTY

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NOTE:

SEE OFFSITE INTERSECTION IMPROVEMENT PLAN SHEETS 1-5 FOR SIDEWALK, SIGNING & PAVEMENT MARKINGS.

DATE	DESCRIPTION	BY
REVISIONS		

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
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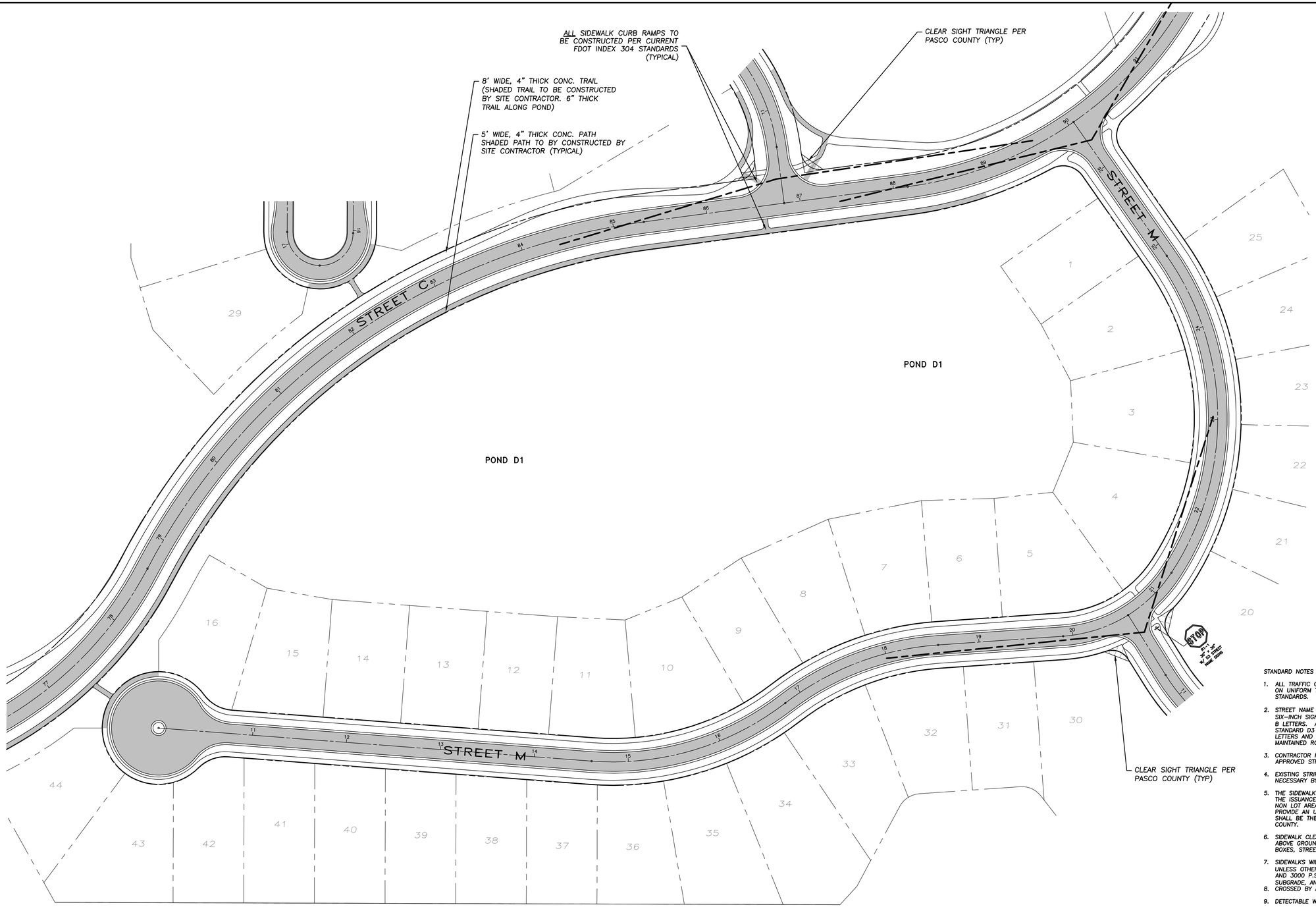
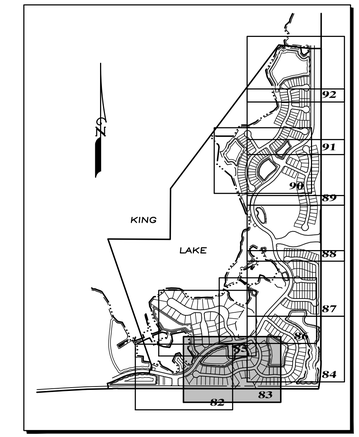
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

SIDEWALK, SIGNING & PAVEMENT MARKING PLAN

JOB NO. SPH-EP-009	EPCO RANCH NORTH
DESIGN LAWTON	PARCEL A PHASE 1
DRAWN FINNEY	PREPARED FOR: STANDARD PACIFIC OF FLORIDA
DATE 11/14/2014	Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 =-0.84Feet
FILE SPM01	SHEET 82 OF 98 SHEETS





INDEX TO MAP COVERAGE
Not To Scale

GN

100 50 0 50 100

SCALE: 1" = 50'

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SIGHT TRIANGLE LEGEND

LIMITS OF CLEAR SIGHT PER FDOT INDEX 546 & MANUAL OF UNIFORM MINIMUM STANDARDS (FLORIDA GREENBOOK)

CLEAR SIGHT TRIANGLE PER PASCO COUNTY

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

SIDEWALK, SIGNING & PAVEMENT MARKING PLAN

JOB NO. SPH-EP-009

EPCO RANCH NORTH
PARCEL A PHASE 1

DESIGN LAWTON

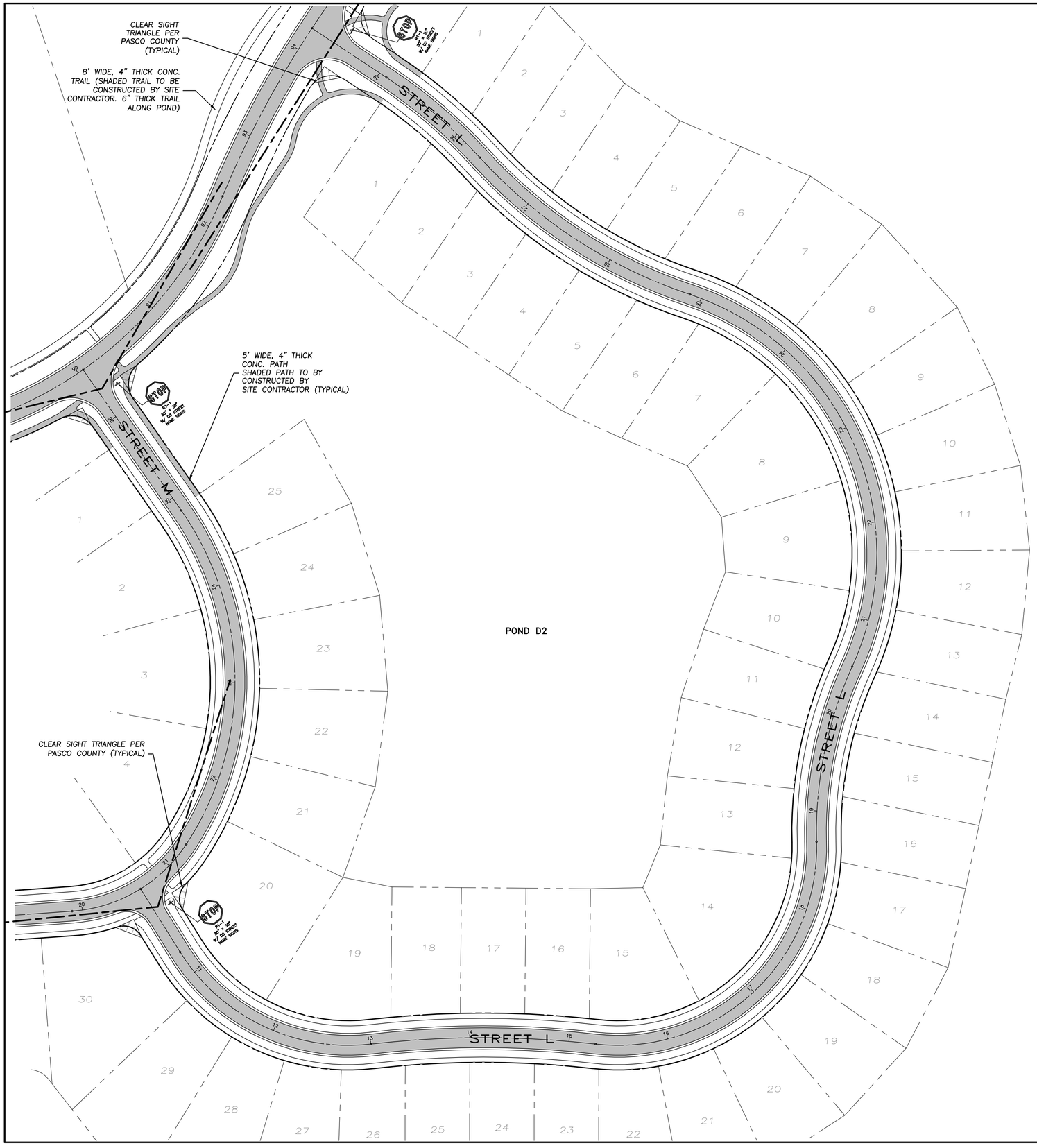
DRAWN FINNEY

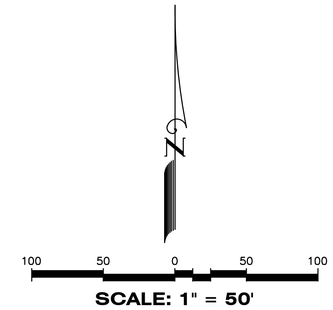
PREPARED FOR: STANDARD PACIFIC OF FLORIDA

DATE 11/14/2014

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

FILE SPM02





SIGHT TRIANGLE LEGEND

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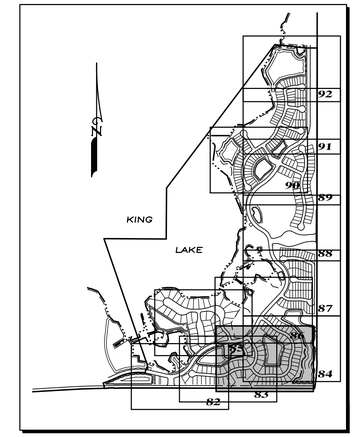
CLEAR SIGHT TRIANGLE PER PASCO COUNTY



INDEX TO MAP COVERAGE
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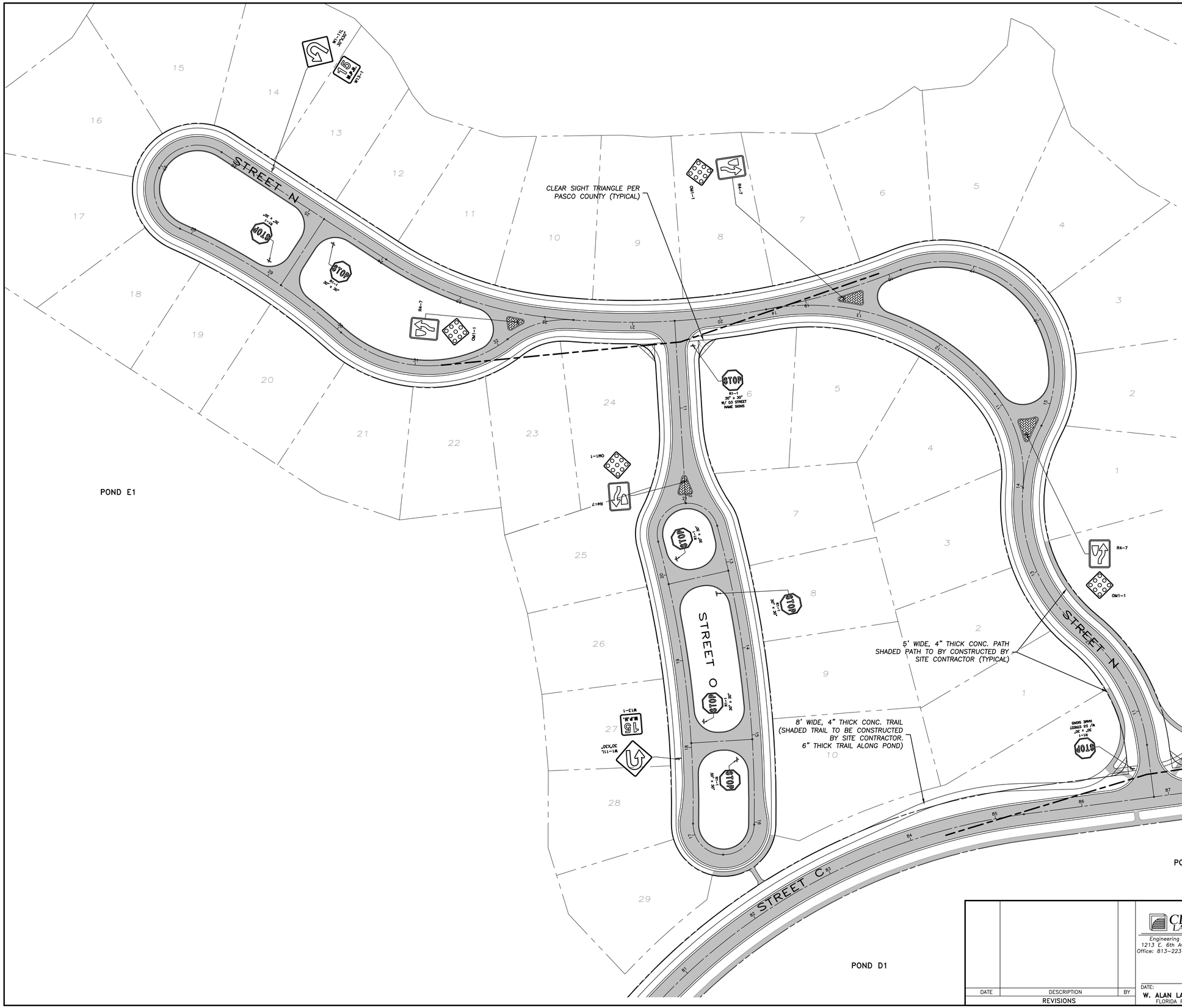
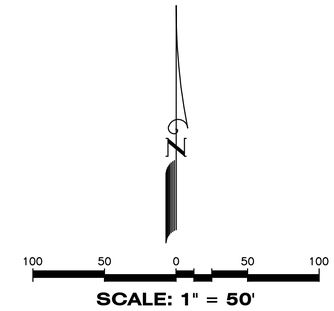
DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

SIDEWALK, SIGNING & PAVEMENT MARKING PLAN

JOB NO. SPH-EP-009	EPCO RANCH NORTH PARCEL A PHASE 1
DESIGN LAWTON	
DRAWN FINNEY	PREPARED FOR: STANDARD PACIFIC OF FLORIDA
DATE 11/14/2014	Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 =-0.84Feet
FILE SPM03	SHEET 84 OF 98 SHEETS





SIGHT TRIANGLE LEGEND

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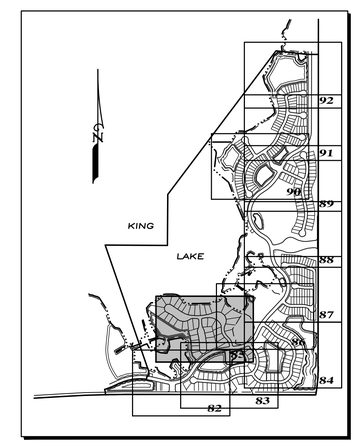

INDEX TO MAP COVERAGE
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Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
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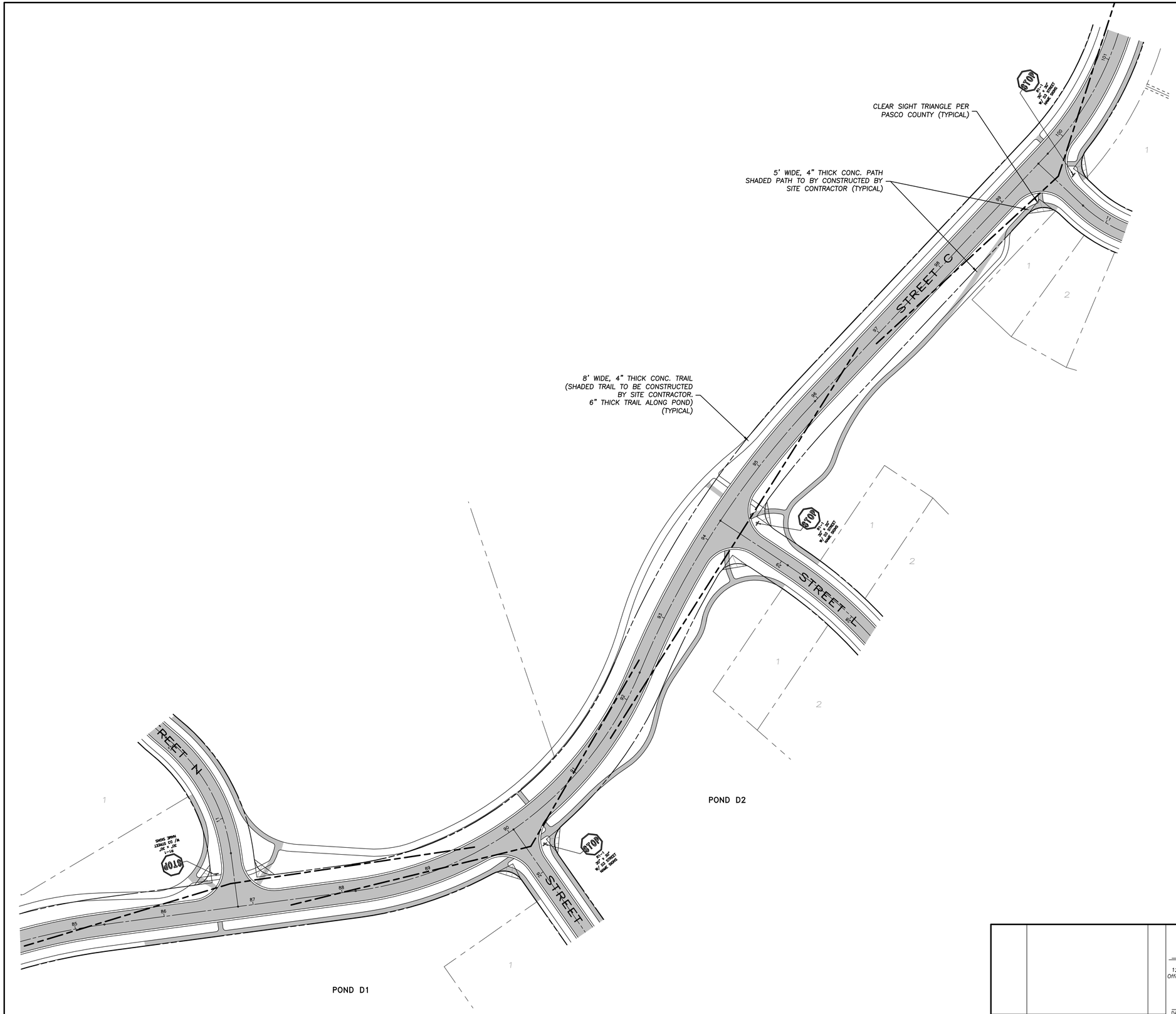
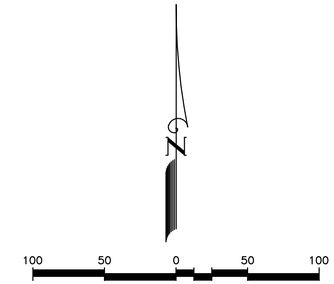
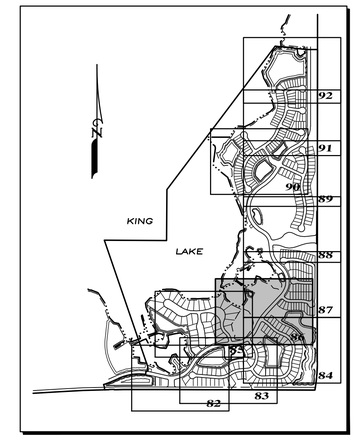
SIDEWALK, SIGNING & PAVEMENT MARKING PLAN

JOB NO. SPH-EP-009	EPCO RANCH NORTH PARCEL A PHASE 1
DESIGN LAWTON	
DRAWN FINNEY	PREPARED FOR: STANDARD PACIFIC OF FLORIDA
DATE 11/14/2014	Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 =-0.84Feet
FILE SPM04	SHEET 85 OF 98 SHEETS





SCALE: 1" = 50'



INDEX TO MAP COVERAGE
Not To Scale

SIGHT TRIANGLE LEGEND

LIMITS OF CLEAR SIGHT PER FDOT INDEX 546 & MANUAL OF UNIFORM MINIMUM STANDARDS (FLORIDA GREENBOOK)

CLEAR SIGHT TRIANGLE PER PASCO COUNTY

STANDARD NOTES (PRIVATE ROADWAYS):

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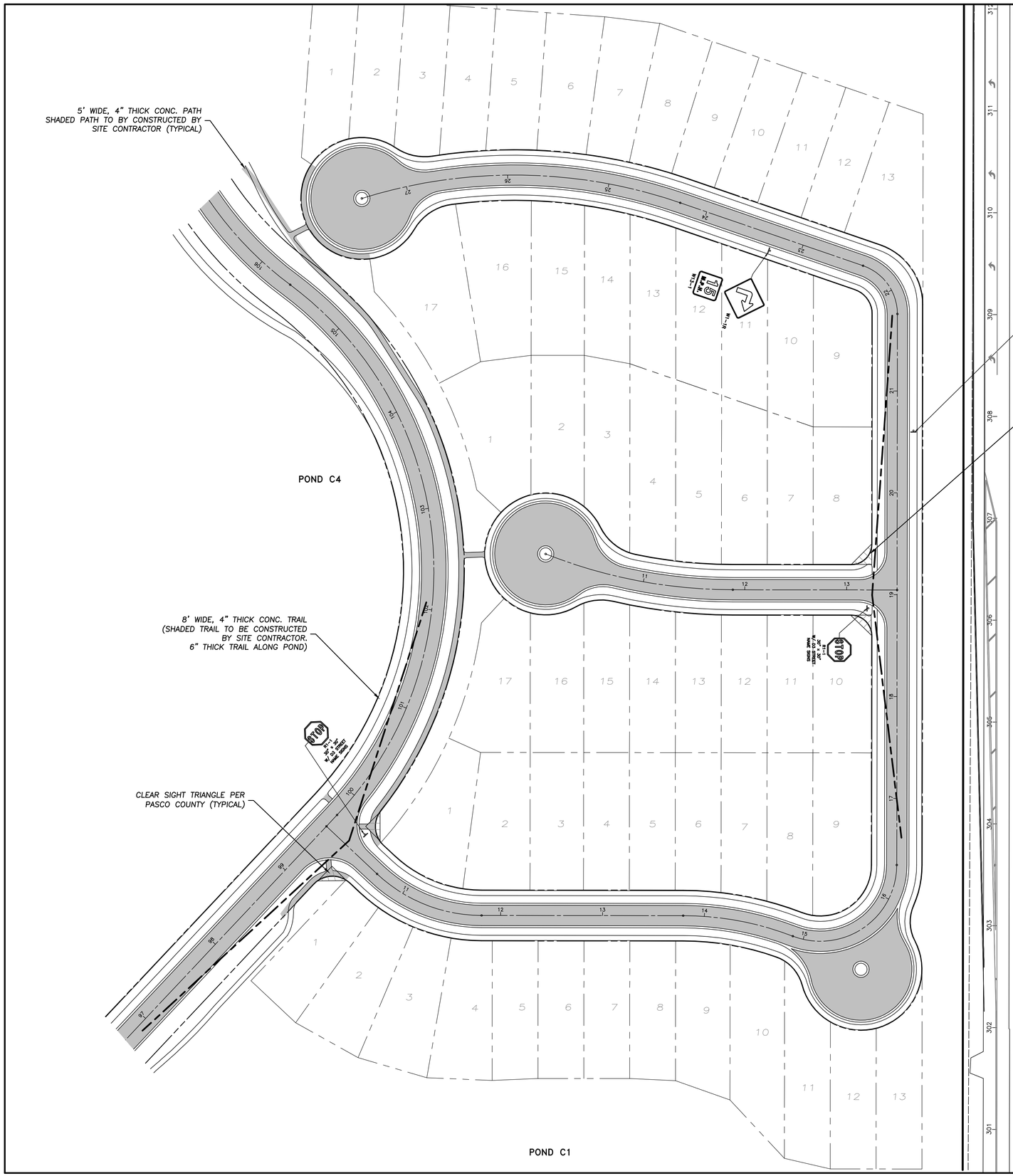
DATE	DESCRIPTION	BY
	REVISIONS	

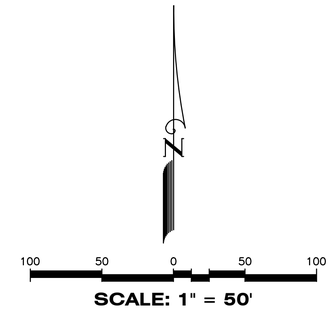
CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

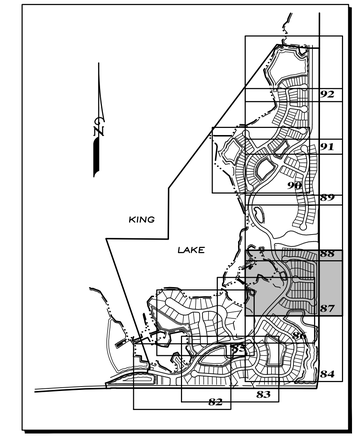
DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

SIDEWALK, SIGNING & PAVEMENT MARKING PLAN

JOB NO. SPH-EP-009	EPCO RANCH NORTH PARCEL A PHASE 1
DESIGN LAWTON	
DRAWN FINNEY	PREPARED FOR: STANDARD PACIFIC OF FLORIDA
DATE 11/14/2014	Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 =-0.84Feet
FILE SPM05	SHEET 86 OF 98 SHEETS







INDEX TO MAP COVERAGE
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SIGHT TRIANGLE LEGEND

LIMITS OF CLEAR SIGHT PER FDOT INDEX 546 & MANUAL OF UNIFORM MINIMUM STANDARDS (FLORIDA GREENBOOK)

CLEAR SIGHT TRIANGLE PER PASCO COUNTY

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CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

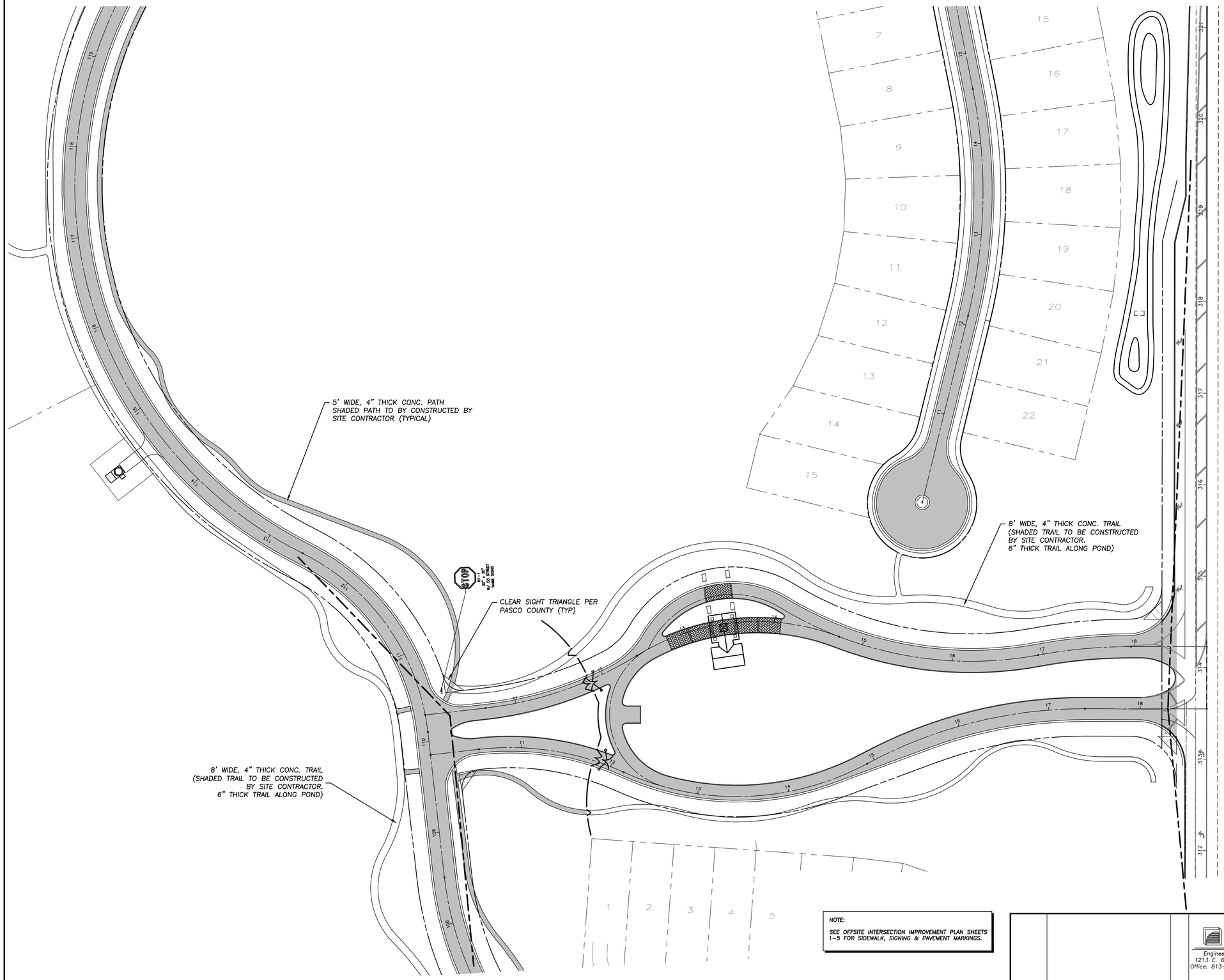
SIDEWALK, SIGNING & PAVEMENT MARKING PLAN

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN FINNEY
DATE 11/14/2014
FILE SPM06

EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: **STANDARD PACIFIC OF FLORIDA**

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet



NOTE:

SEE OFFSITE INTERSECTION IMPROVEMENT PLAN SHEETS 1-5 FOR SIDEWALK, SIGNING & PAVEMENT MARKINGS.

N

100 50 0 50 100

SCALE: 1" = 50'

SIGHT TRIANGLE LEGEND

LIMITS OF CLEAR SIGHT PER FDOT INDEX 546 & MANUAL OF UNIFORM MINIMUM STANDARDS (FLORIDA GREENBOOK)

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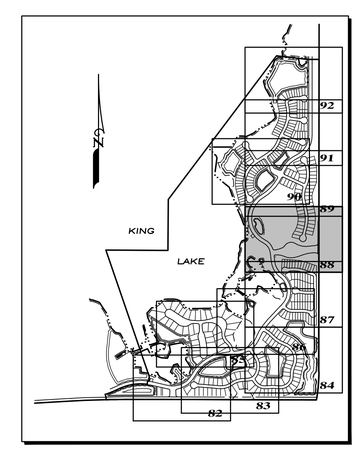


INDEX TO MAP COVERAGE
Not To Scale

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

SIDEWALK, SIGNING & PAVEMENT MARKING PLAN

JOB NO. SPH-EP-009

EPCO RANCH NORTH
PARCEL A PHASE 1

DESIGN LAWTON

DRAWN FINNEY

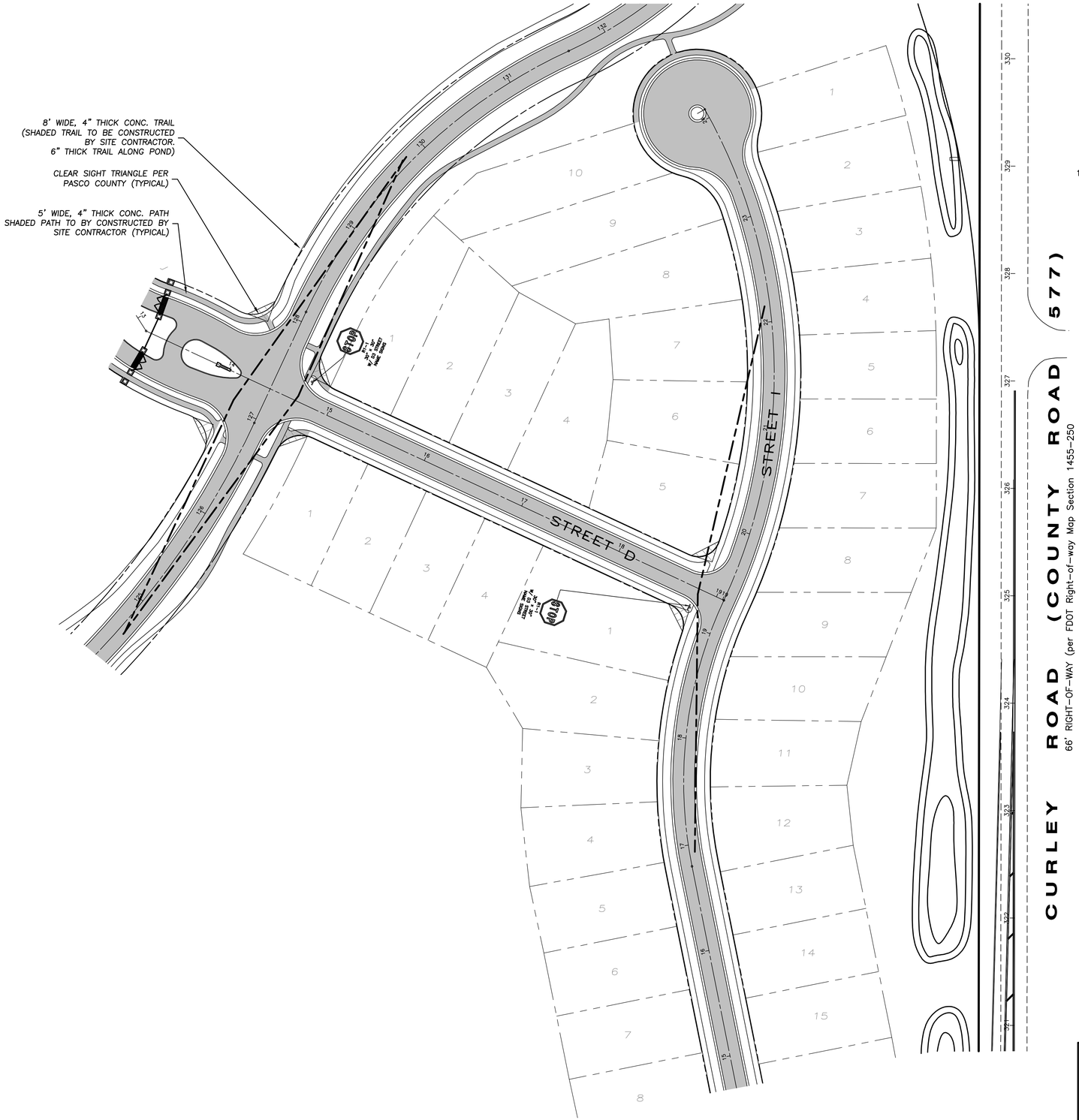
PREPARED FOR: **STANDARD PACIFIC OF FLORIDA**

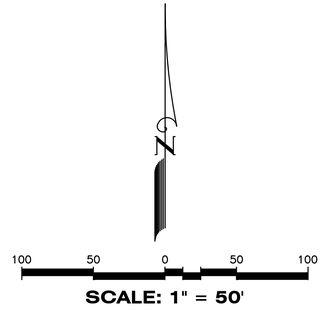
DATE 11/14/2014

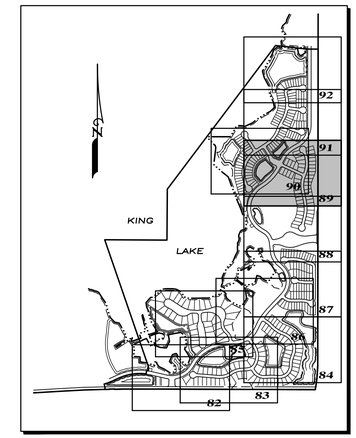
Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

FILE SPM07

SHEET 88 OF 98 SHEETS







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Not To Scale

SIGHT TRIANGLE LEGEND

LIMITS OF CLEAR SIGHT PER FDOT INDEX 546 & MANUAL OF UNIFORM MINIMUM STANDARDS (FLORIDA GREENBOOK)

CLEAR SIGHT TRIANGLE PER PASCO COUNTY

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NOTE:

SEE OFFSITE INTERSECTION IMPROVEMENT PLAN SHEETS 1-5 FOR SIDEWALK, SIGNING & PAVEMENT MARKINGS.

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

SIDEWALK, SIGNING & PAVEMENT MARKING PLAN

JOB NO. SPH-EP-009	EPCO RANCH NORTH PARCEL A PHASE 1
DESIGN LAWTON	
DRAWN FINNEY	PREPARED FOR: STANDARD PACIFIC OF FLORIDA
DATE 11/14/2014	Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 = -0.84 Feet
FILE SPM08	SHEET 89 OF 98 SHEETS

8' WIDE, 4" THICK CONC. TRAIL (SHADED TRAIL TO BE CONSTRUCTED BY SITE CONTRACTOR. 6" THICK TRAIL ALONG POND)

N

100 50 0 50 100

SCALE: 1" = 50'

STREET F

STREET D

STREET E

STREET C

POND A1

POND B1

POND B2

DEAD END

W14-1

8' WIDE, 4" THICK CONC. TRAIL (SHADED TRAIL TO BE CONSTRUCTED BY SITE CONTRACTOR. 6" THICK TRAIL ALONG POND)

CLEAR SIGHT TRIANGLE PER PASCO COUNTY (TYPICAL)

5' WIDE, 4" THICK CONC. PATH SHADED PATH TO BY CONSTRUCTED BY SITE CONTRACTOR (TYPICAL)

8' WIDE, 4" THICK CONC. TRAIL (SHADED TRAIL TO BE CONSTRUCTED BY SITE CONTRACTOR. 6" THICK TRAIL ALONG POND)

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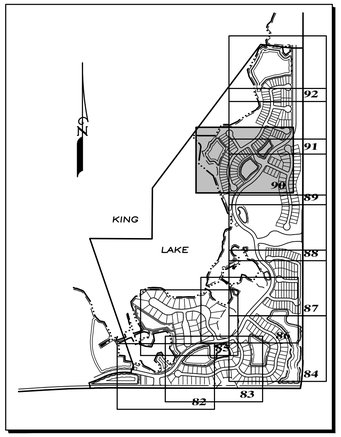

INDEX TO MAP COVERAGE
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SIGHT TRIANGLE LEGEND

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SIDEWALK, SIGNING & PAVEMENT MARKING PLAN

JOB NO. SPH-EP-009	EPCO RANCH NORTH
DESIGN LAWTON	PARCEL A PHASE 1
DRAWN FINNEY	PREPARED FOR: STANDARD PACIFIC OF FLORIDA
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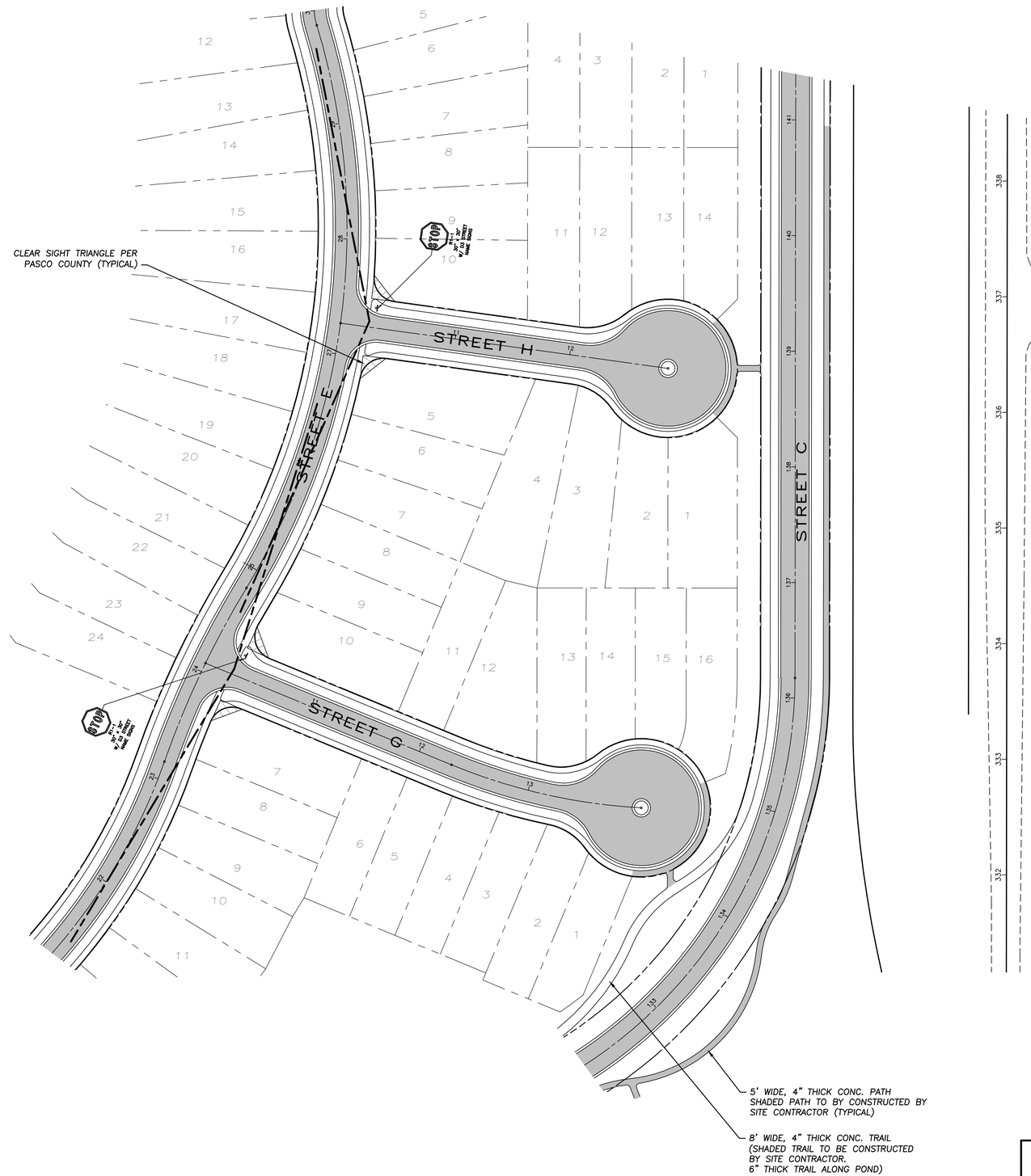
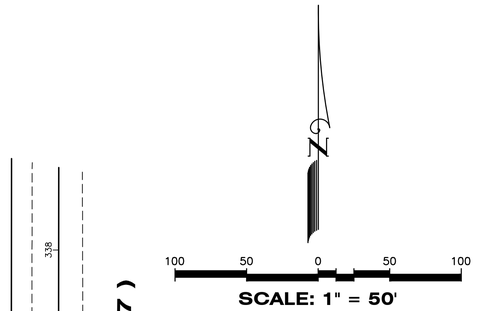
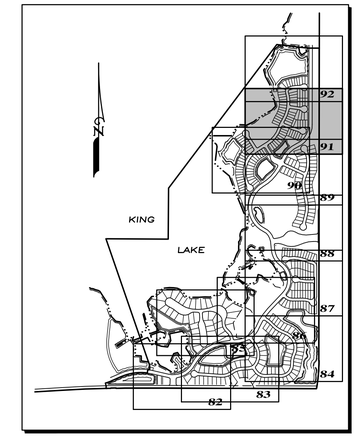
FILE SPM09	SHEET 90 OF 98 SHEETS







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STANDARD NOTES (PRIVATE ROADWAYS):

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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 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 CAN NOT 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.
5. THE SIDEWALK THAT IS TO BE INSTALLED BY THE INDIVIDUAL SHALL BE CONSTRUCTED PRIOR TO THE ISSUANCE OF CERTIFICATE OF OCCUPANCY TO ITS CORRESPONDING DWELLING UNIT. ALONG NON LOT AREAS, SIDEWALKS SHALL BE CONSTRUCTED WITH INFRASTRUCTURE IMPROVEMENTS TO PROVIDE AN UNINTERRUPTED SIDEWALK THROUGHOUT THE SUBDIVISION. MAINTENANCE OF SIDEWALK SHALL BE THE RESPONSIBILITY OF HOMEOWNERS ASSOCIATION OR AN ENTITY OTHER THAN PASCO COUNTY.
6. SIDEWALK CLEAR ZONE SHALL BE FREE OF OBSTACLES, THIS INCLUDES SHRUBS, TREES, FENCES, ABOVE GROUND UTILITIES I.E. POWER POLES, STREET LIGHTS, GUY ANCHORS, FIRE HYDRANTS, MAIL BOXES, STREET SIGNS AND UTILITY MARKERS ETC.
7. SIDEWALKS WILL BE PROVIDED ON BOTH SIDES OF ALL ROADS INCLUDING NON-LOT AREAS. UNLESS OTHERWISE SHOWN, ALL SIDEWALKS SHALL BE FIVE (5) FEET WIDE, 4" THICK CONCRETE, AND 3000 P.S.I., FIBER-REINFORCED, SIDEWALKS SHALL BE CONSTRUCTED ON A NON-YIELDING SUBGRADE, AND 6" IN THICKNESS IS REQUIRED WHERE SIDEWALK IS
8. CROSSED BY A DRIVEWAY.
9. DETECTABLE WARNING SURFACES SHALL BE ALIGNED IN THE DIRECTION OF TRAVEL.
10. CURB RAMPS ARE REQUIRED AT ALL INTERSECTIONS AND SHALL BE CONSTRUCTED BY THE SITE DEVELOPER WITH INFRASTRUCTURE IMPROVEMENTS PER FDOT INDEX 304.
11. ANY TRAFFIC CONTROL DEVICE FOR A PRIVATE ROADWAY PLACED IN A COUNTY OR STATE RIGHT-OF-WAY SHALL BE INSTALLED ON THE APPROPRIATE BREAKAWAY POST ASSEMBLY.

DATE	DESCRIPTION	BY
	REVISIONS	

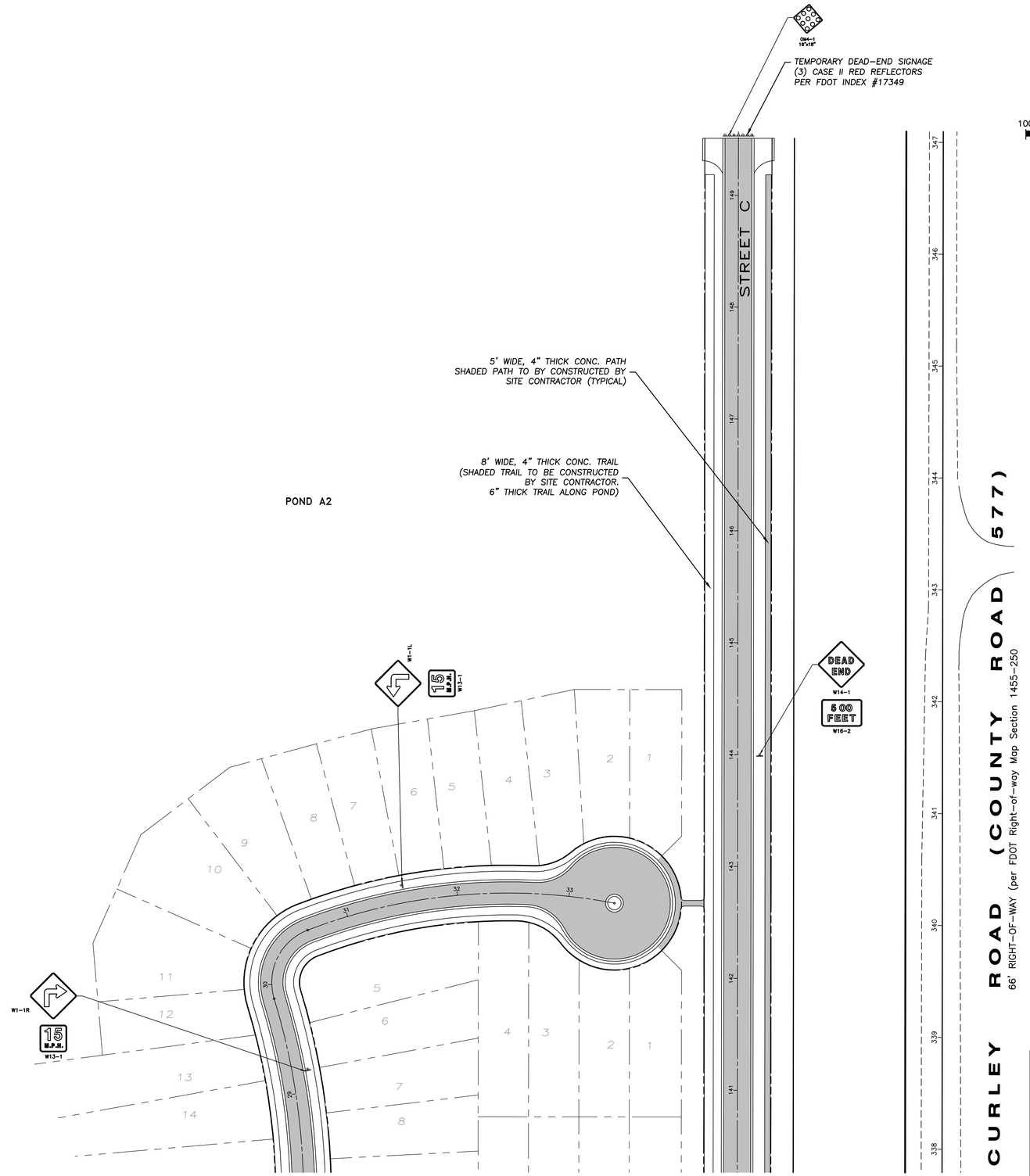
CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

SIDEWALK, SIGNING & PAVEMENT MARKING PLAN

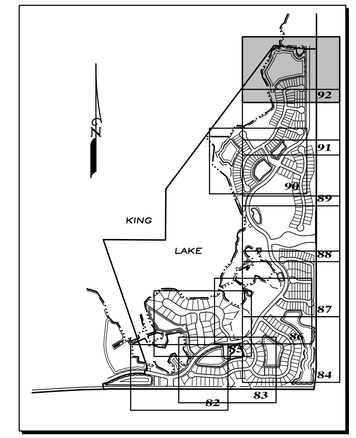
EPCO RANCH NORTH
PARCEL A PHASE 1

JOB NO. SPH-EP-009	
DESIGN LAWTON	
DRAWN FINNEY	PREPARED FOR: STANDARD PACIFIC OF FLORIDA
DATE 11/14/2014	Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 =-0.84Feet
FILE SPM10	SHEET 91 OF 98 SHEETS



100 50 0 50 100

SCALE: 1" = 50'



INDEX TO MAP COVERAGE
Not To Scale

SIGHT TRIANGLE LEGEND

LIMITS OF CLEAR SIGHT PER FDOT INDEX 546 & MANUAL OF UNIFORM MINIMUM STANDARDS (FLORIDA GREENBOOK)

CLEAR SIGHT TRIANGLE PER PASCO COUNTY

STANDARD NOTES (PRIVATE ROADWAYS):

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.
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11. ANY TRAFFIC CONTROL DEVICE FOR A PRIVATE ROADWAY PLACED IN A COUNTY OR STATE RIGHT-OF-WAY SHALL BE INSTALLED ON THE APPROPRIATE BREAKAWAY POST ASSEMBLY.

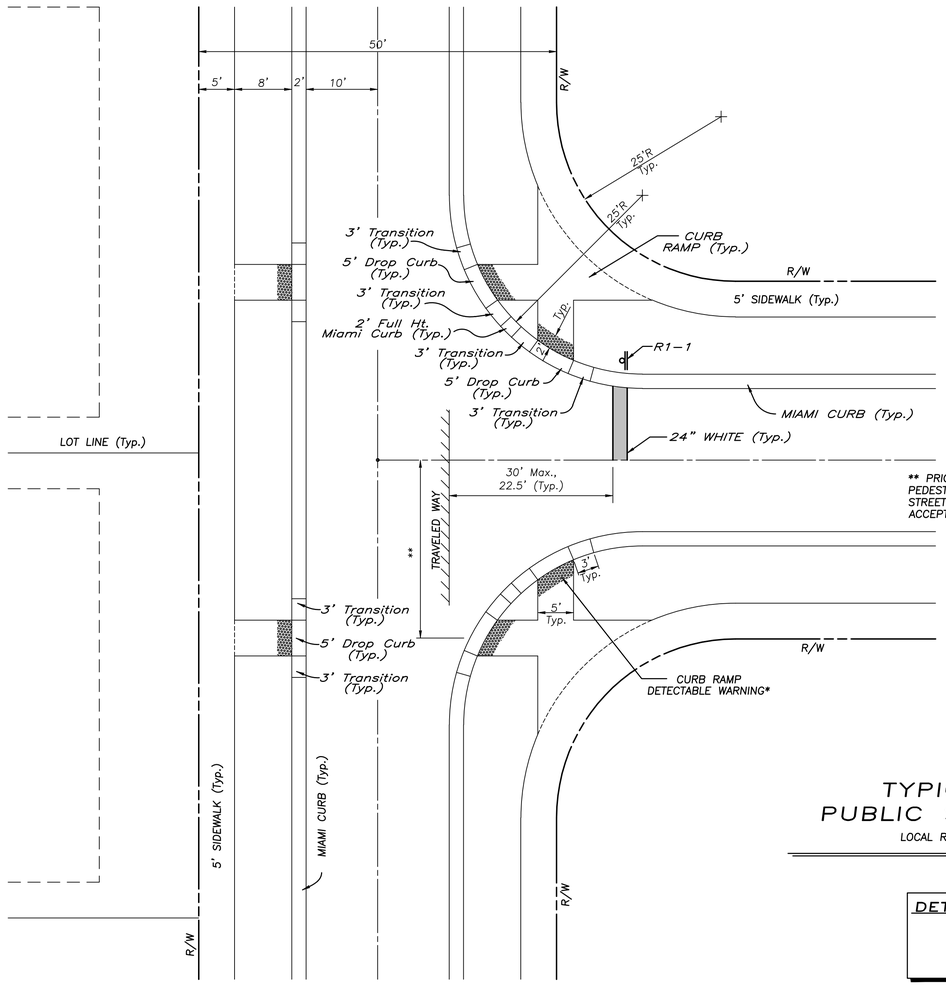
DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

SIDEWALK, SIGNING & PAVEMENT MARKING PLAN

JOB NO. SPH-EP-009	EPCO RANCH NORTH
DESIGN LAWTON	PARCEL A PHASE 1
DRAWN FINNEY	PREPARED FOR: STANDARD PACIFIC OF FLORIDA
DATE 11/14/2014	Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 =-0.84Feet
FILE SPM11	SHEET 92 OF 98 SHEETS



THREE-LEG INTERSECTION

** PRIOR TO THE CONSTRUCTION OF CURB RAMPS, PEDESTRIAN CROSSWALK LOCATIONS ON INTERSECTING STREETS MAY BE FIELD ADJUSTED TO A LOCATION MUTUALLY ACCEPTABLE TO THE COUNTY INSPECTOR AND THE ENGINEER.

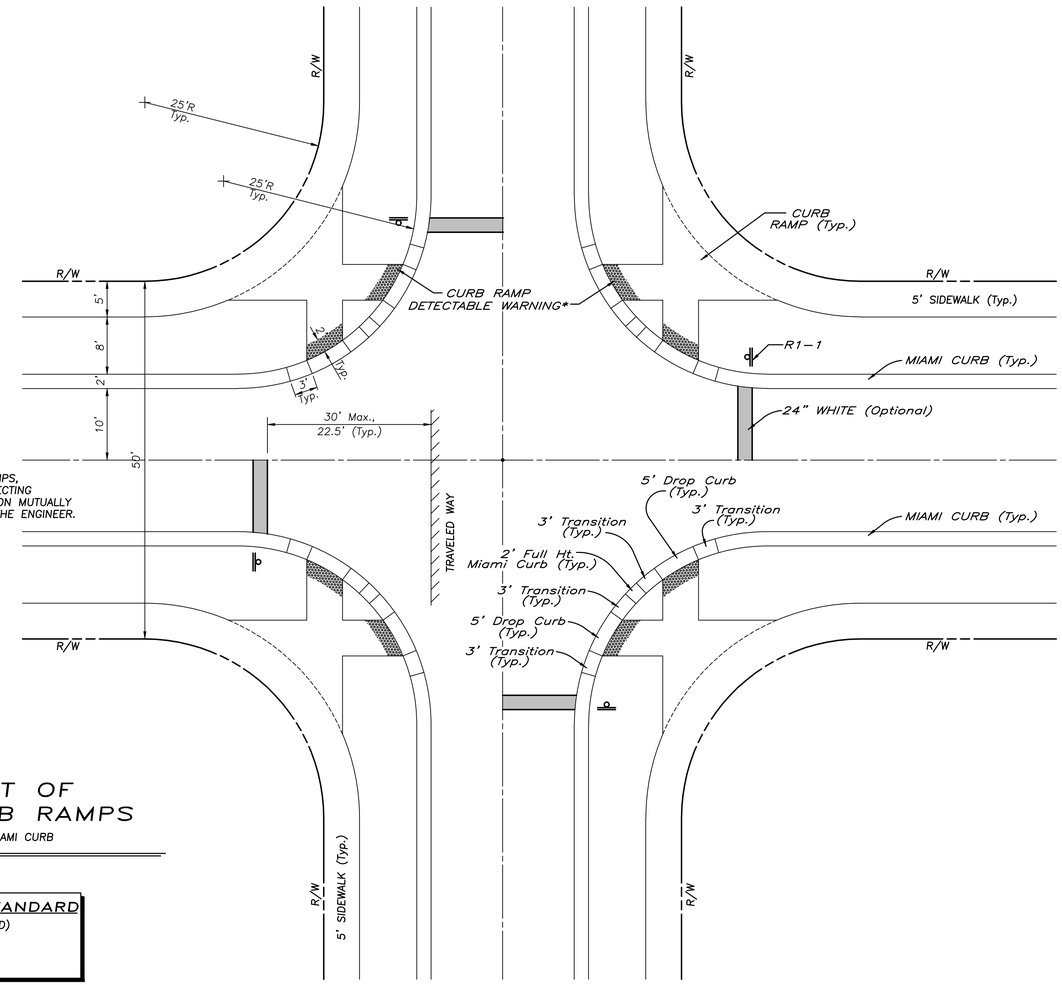
TYPICAL PLACEMENT OF PUBLIC SIDEWALK CURB RAMPS

LOCAL ROADWAY – 20' ASPHALT PAVEMENT – MIAMI CURB

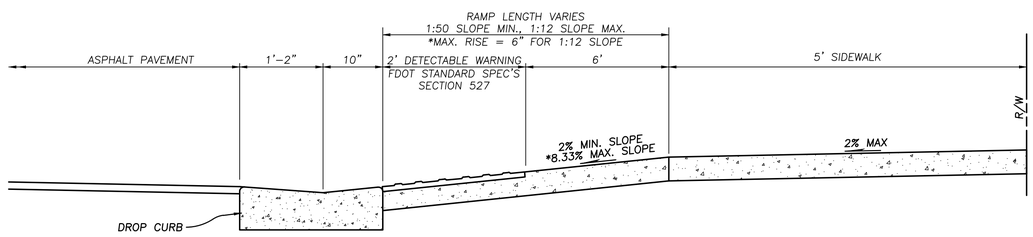
SCALE: 1"=10'

DETECTABLE WARNING STANDARD

(REFER TO LOCAL COLOR STANDARD)
BLACK – FDOT
YELLOW – CITY OF TAMPA
RED – HILLSBOROUGH COUNTY



FOUR-LEG INTERSECTION



RAMP PROFILE

NOT TO SCALE

DATE	DESCRIPTION	BY
	REVISIONS	

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1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

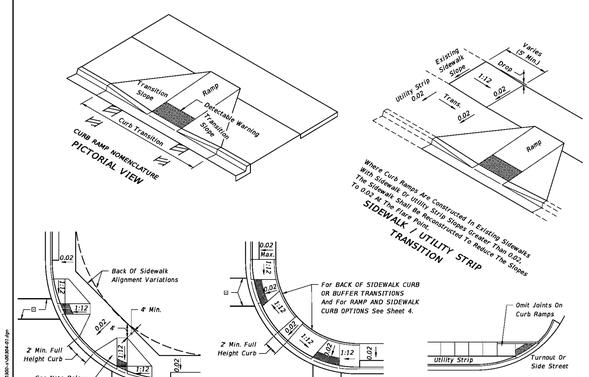
SIDEWALK & SIGNING DETAILS

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE SWD

EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 =-0.84Feet



Note:
When crosswalk markings are required, ramp runs must fall within crosswalk limits and where practical, be parallel with the projected crosswalk alignment. The bottom of the ramp beyond the curb line shall have a clear space 48" minimum within the markings of a marked crosswalk. If no crosswalk markings are present, the bottom of the ramp beyond the curb ramp shall have a clear space 48" minimum outside active traffic lanes.

☐ Crosswalk widths and configuration vary; must conform to Index No. 17344 and 17346.

Note: A portion of one or both ramps may extend outside the return.

TYPICAL PLACEMENT OF PUBLIC SIDEWALK CURB RAMPS AT CURBED RETURNS

GENERAL NOTES

1. Public sidewalk curb ramps shall be constructed in the public right of way at locations that will provide continuous unobstructed pedestrian circulation paths to pedestrian areas, elements and facilities in the public right of way and to accessible pedestrian routes on adjacent sites. Curbed facilities with sidewalks and those without sidewalks are to have curb ramps constructed at all street intersections and at turnouts that have curbed returns. Partial curb returns shall extend to the limit prescribed by Index No. 515 to accommodate curb ramps. Ramps constructed at locations without sidewalks shall have a landing constructed at the top of each ramp, see Sheet 5.
2. The location and orientation of curb ramps shall be as shown in the plans.
3. Curb ramp running slopes at unrestrained sites shall not be steeper than 1:12 and cross slope shall be 0.02 or flatter. Transition slopes shall not be steeper than 1:12.

   When altering existing pedestrian facilities where existing site development precludes the accommodation of a ramp slope of 1:12, a running slope between 1:12 and 1:10 is permitted for a rise of 6" maximum and a running slope of between 1:10 and 1:8 is permitted for a rise of 3" maximum. Where compliance with the requirements for cross slope cannot be fully met, the minimum feasible cross slope shall be provided.

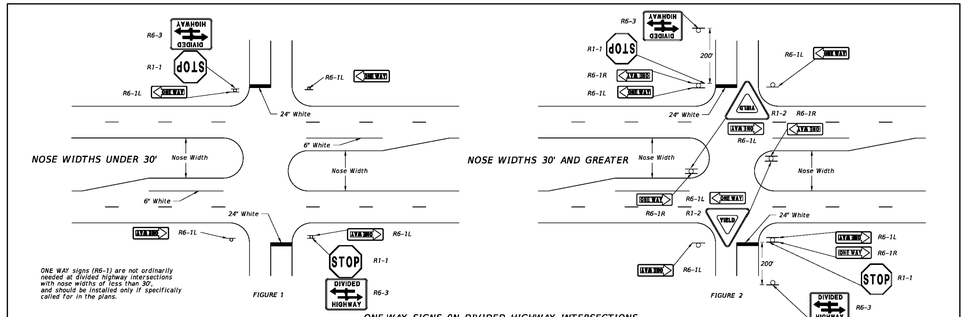
   Ramp running slope is not required to exceed 8' in length, except at sites where the plans specify a greater length.
4. If a curb ramp is located where pedestrians must walk across the ramp, then the walk shall have transition slopes to the ramp; the maximum slope of the transitions shall be 1:12. Ramps with curb returns may be used at locations where other improvements provide guidance away from that portion of curb perpendicular to the sidewalk; improvements for guidance are not required at curb ramps for linear pedestrian traffic.
5. Curb ramp detectable warning surfaces shall extend the full width of the ramp and 24" deep. Detectable warning surfaces shall be constructed in accordance with Specification 527. See Sheet 6 for detectable warning layouts. Transition slopes are not to have detectable warnings. Detectable warnings are required on sidewalks at intersecting roads, streets and railroads. For requirements for detectable warnings on sidewalks at intersecting driveways, see Index 310.
6. Where a curb ramp is constructed within existing curb, curb and gutter and/or sidewalk, the existing curb or curb and gutter shall be removed to the nearest joint beyond the curb transitions or to the extent that no remaining section of curb or curb and gutter is less than 5' long. The existing sidewalk shall be removed to the nearest joint beyond the transition slope or walk around or to the extent that no remaining section of sidewalk is less than 5' long. For details of Concrete Sidewalk See Index 310.
7. Alpha-numeric identifications are for reference (plans, permits, etc.).
8. Public sidewalk curb ramps are to be paid for as follows:

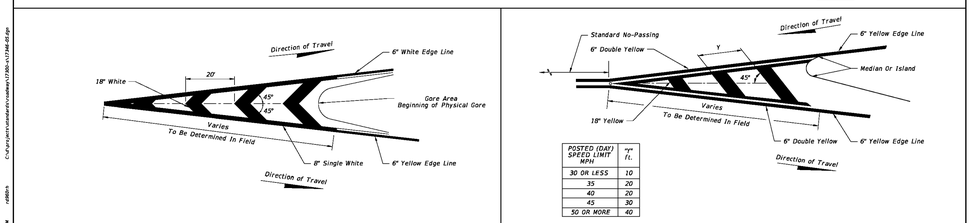
   Ramps, reconstructed sidewalks, walk around sidewalks, sidewalk landings and sidewalk curbs are to be paid for under the contract unit price for Sidewalk Concrete, (__" Thick), SY. Curb transitions and reconstructed curbs are to be paid for under the contract unit price for the parent curb, i.e., Concrete Curb (Type __), LF or Concrete Curb and Gutter (Type __), LF.

   When a separate pay item for the removal and disposal of existing curb, curb and gutter, and/or sidewalk is not provided in the plans, the cost of removal and disposal of these features shall be included in the contract unit price for new curb, curb and gutter and/or sidewalk respectively.
9. Acceptance Criteria for Detectable Warnings:

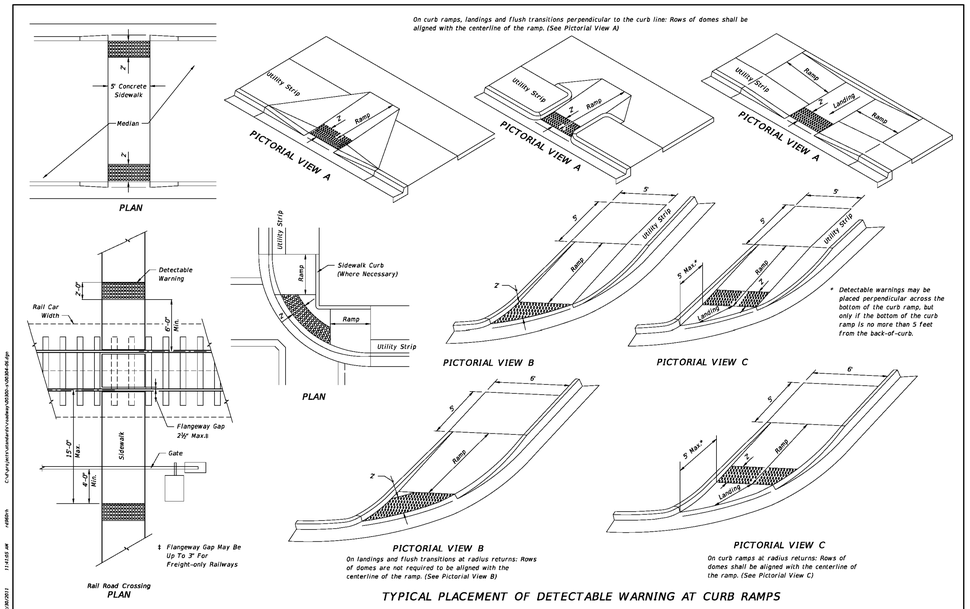
   a. The ramp detectable warning surface shall be complete and uniform in color and texture
   b. 90% of the individual truncated domes must comply with the design criteria
   c. There may be no more than 4 non-complying domes in any one square foot of surface
   d. No two adjacent domes may be non-compliant
   e. Surface may not deviate more than 0.10" from a true plane
10. All sidewalk surfaces, ramp surfaces, and landings with a cross slope shown in this Index to be 0.02 shall be 0.02 maximum. All ramp surfaces and ramp transition slopes with a slope shown in this Index to be 1:12 shall be 1:12 maximum.

LAST REVISION	DESCRIPTION:	FDOT DESIGN STANDARDS FY 2012/2013	PUBLIC SIDEWALK CURB RAMPS	INDEX NO.	SHEET NO.
01/01/11				304	1

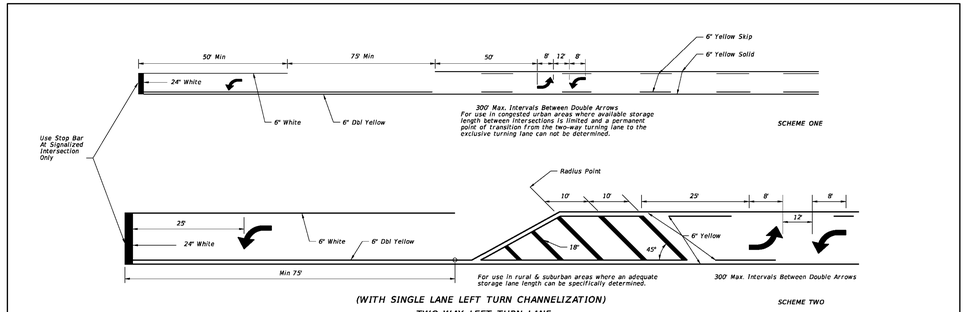


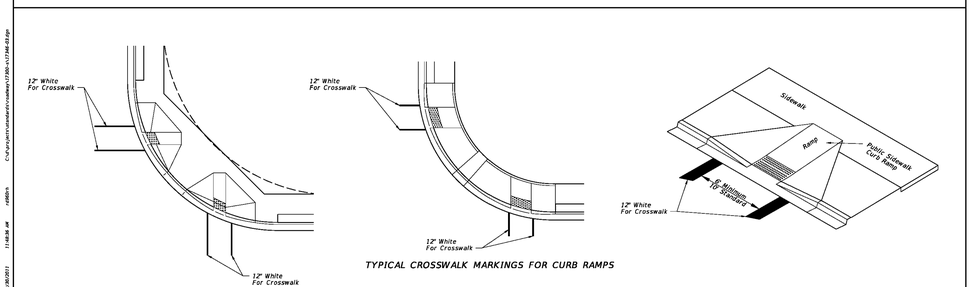


LAST REVISION	DESCRIPTION:	FDOT DESIGN STANDARDS FY 2012/2013	SPECIAL MARKING AREAS	INDEX NO.	SHEET NO.
07/01/09				17346	5



LAST REVISION	DESCRIPTION:	FDOT DESIGN STANDARDS FY 2012/2013	PUBLIC SIDEWALK CURB RAMPS	INDEX NO.	SHEET NO.
01/01/11				304	6





LAST REVISION	DESCRIPTION:	FDOT DESIGN STANDARDS FY 2012/2013	SPECIAL MARKING AREAS	INDEX NO.	SHEET NO.
07/01/09				17346	3

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975
DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

SIDEWALK & SIGNING DETAILS

JOB NO. SPH-EP-009

DESIGN LAWTON

DRAWN MIDDLETON

DATE 11/14/2014

FILE SWD

EPCO RANCH NORTH
PARCEL A PHASE 1

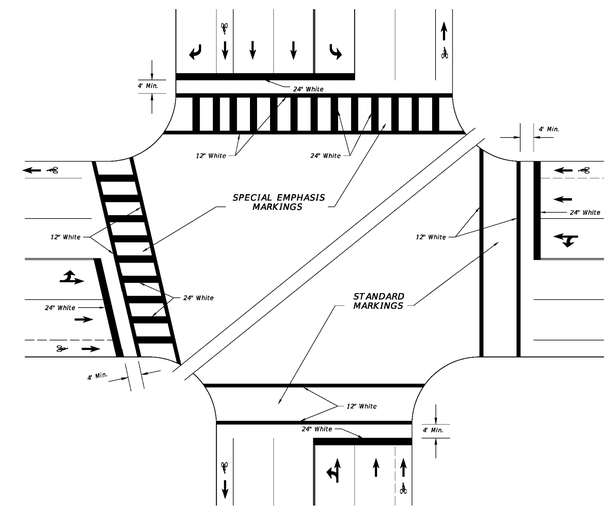
PREPARED FOR: STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

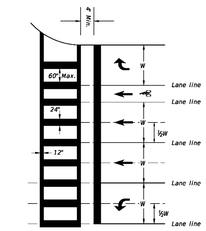
GENERAL NOTES

1. For traffic and pedestrian signal installation, refer to Index No. 17721 through 17890.
2. For public sidewalk curb ramps, refer to Index No. 304.
3. For pavement marking and sign installation, refer to Indexes 11200 through 17356.
4. Crosswalk minimum widths: Intersection Crosswalk 6'. Midblock Crosswalk 10'.
5. All crosswalk marking shall be white.
6. Longitudinal lines in Special Emphasis Crosswalk shall be 24" wide and spaced to avoid the wheel path of vehicles as shown in detail. The maximum space between markings shall not exceed 60". A longitudinal marking shall be centered at each lane line. Additional longitudinal markings shall be placed at the center of each lane (1/2W).

   Where the Crosswalk is skewed to the lane lane lines, the Special Emphasis longitudal lines should be parallel to the lane line.

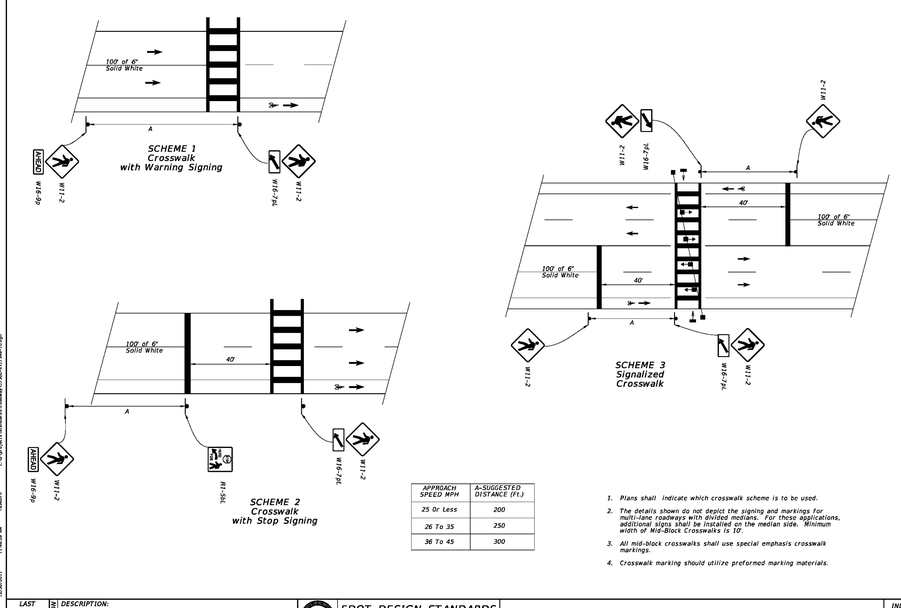


SPECIAL EMPHASIS AND STANDARD CROSSWALKS SIGNALIZED OR STOP SIGN CONTROLLED INTERSECTION



SPECIAL EMPHASIS CROSSWALK MARKING DETAIL

LAST REVISION	DESCRIPTION:	FDOT DESIGN STANDARDS FY 2012/2013	SPECIAL MARKING AREAS	INDEX NO.	SHEET NO.
07/01/09				17346	9



APPROACH SPEED MPH	A-SUGGESTED DISTANCE (Ft.)
25 Or Less	200
26 To 35	250
36 To 45	300

1. Plans shall indicate which crosswalk scheme is to be used.
2. The details shown do not depict the signing and markings for multi-lane roadways with divided medians. For these applications, additional signs shall be installed on the median side. Minimum width of Mid-Block Crosswalks is 10'.
3. All mid-block crosswalks shall use special emphasis crosswalk markings.
4. Crosswalk marking should utilize preformed marking materials.

LAST REVISION	DESCRIPTION:	FDOT DESIGN STANDARDS FY 2012/2013	SPECIAL MARKING AREAS	INDEX NO.	SHEET NO.
01/01/12				17346	10

DATE	DESCRIPTION	BY
REVISIONS		

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SIDEWALK & SIGNING DETAILS

JOB NO. SPH-EP-009	EPCO RANCH NORTH PARCEL A PHASE 1
DESIGN LAWTON	
DRAWN MIDDLETON	PREPARED FOR: STANDARD PACIFIC OF FLORIDA
DATE 11/14/2014	Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 =-0.84Feet
FILE SWD	SHEET 95 OF 98 SHEETS

STORM WATER POLLUTION PREVENTION PLAN

Contained on these plans and within the following notes is a Storm Water Pollution Prevention Plan (SWPPP) which has been developed by Clearview Land Design 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 following entities are identified as team members of "SWPPP": Clearview Land Design, 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, 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:

Clearview Land Design, P.L.

A. Develop SWPPP 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.

E. Complete and submit a Notice of Termination and certification for developer. The NOT's shall be submitted no more than 30 days after
(a) completion of the project and final stabilization of the site or
(b) 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 Clearview Land Design when one of these criteria has been met.

Contractor

A. Sign and return to Clearview 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.

B. During construction, assure compliance with the designed Storm Water Pollution Prevention Plans prepared by Clearview Land Design and the NPDES Generic Permit for Storm Water Discharges from Large and Small Construction Activities.

C. 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.

D. 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.

E. Notify Clearview Land Design 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.

F. Develop a maintenance and inspection plan which includes, but is not limited to the following:

A. The specific areas to be inspected and maintained that includes all the disturbed areas and material storage areas of the site.

B. The erosion and sediment controls identified in the SWPPP to be maintained and inspected and those additional controls that the contractor deems necessary.

C. Maintenance procedures.

D. The procedure to follow if additional work is required or whom to call.

E. Inspections and maintenance forms.

F. 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.

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 Clearview Land Design, P.L. 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.

Retain inspection reports and certifications for at least three years.

G. 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.

H. 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:

a. 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;

b. 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

c. 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.

2. This permit does not authorize the discharge of hazardous substances or oil resulting from an on-site spill.

Developer

A. Notify Clearview 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 Clearview Land Design, P.L.

B. Sign a Certification of Storm Water Pollution Prevention Plan and return to Clearview Land Design, P.L.

C. Notify Clearview when it is time to submit a Notice of Termination as defined under Part E of the Clearview Land Design section of the SWPPP. Sign and return to Clearview Land Design, P.L. for submittal to FDEP a Notice of Termination form and certification.

PRE-DEVELOPED SITE INFORMATION:

1. Total site acreage: 350.2 Ac.±
2. Land use: VACANT PASTURE
3. Vegetation: PASTURE, WETLANDS
4. Receiving waters or municipal separate storm water system: SANDY BRANCH/ ANCLOTE RIVER
5. 2 Year/24 Hour rainfall depth: 4.5"
6. Soil types: PINEDA, MYAKKA, SELLERS, EAUGALLIE FINE SANDS

PROJECT INFORMATION:

1. Project type: Residential
2. Anticipated construction sequence is as follows:
   1. Complete erosion control installation
   2. Clearing and grubbing
   3. Earthwork activities
   4. Storm water system construction
   5. Utility construction
   6. Base and pavement construction
   7. 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: 3/15/2015
4. Anticipated completion date: 3/15/2020
5. Total acres disturbed: 204.0 Ac. ± (SILT FENCE LIMITS)
6. Pre-developed "C" factor: 0.20
7. Post-developed "C" factor: 0.45
8. The storm water management system, upon completion of construction and appropriate certification and as-built submittals will be operated and maintained by CDD (UNLESS OTHERWISE NOTED) .
9. The potential source of pollution from this project is on-site development and construction activity.

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.

NOTE: CONTRACTOR SHALL INSPECT EROSION CONTROL DAILY (INCLUDING BUT NOT LIMITED TO TYPICAL OUTFALLS TO OFWs). CORRECTIVE ACTION SHALL BE TAKEN IMMEDIATELY TO REPAIR OR REPLACE AS NEEDED.

GENERAL EROSION AND TURBIDITY CONTROL NOTES

1. The Site Subcontractor shall be responsible for installation and maintenance of all erosion and turbidity controls and the quality and quantity of offsite or wetland discharges.
2. Prior to construction, the Site Subcontractor is responsible for having his 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 Site Subcontractor 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 Site Subcontractor 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 permeabilities 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 Site Subcontractor, 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 Site Subcontractor'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. Hay bales or silt screens 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 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 Site Subcontractor shall notify the 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 hay 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, 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 should be passed through sufficiently wide areas of existing upland vegetation 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 include solid sod, seeding and mulching or hydromulching to provide a temporary or permanent grass cover mulch blankets, filter fabrics, etc., can be employed to provide vegetative cover.
18. Energy dissipaters (such as rip rap, a gravel bed, hay bales, etc.) shall be installed at the discharge point of pipes or swales if scouring is observed.
19. Attempt to install roadway curb and gutters as soon as possible to reduce the surface area for erosion to occur.
20. Implement storm drain inlet protection (hay 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.
23. Hay 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 windborn 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 which may already be clear enough to allow for direct discharge to wetlands.
28. Ongoing inspections and periodic maintenance by the Site Subcontractor shall occur daily (at a minimum) to insure the above methods are working suitably. Corrective action must be taken immediately to repair or replace any damaged BMP's to ensure the above methods are working properly.
29. Site Subcontractors are required 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. A copy of this document is available for review at Clearview Land Design, P.L.

CSWMP SEQUENCING NOTES

CSWMP PHASE 1 - PERIMETER CONTROLS

1. Install silt fence(s) pertinent to the current limits of construction. Clear only those areas necessary to install silt fence(s).
2. Prepare temporary parking and storage area.
3. Stop all activities and contact the Civil Engineer and Agency Representatives to perform an inspection.

CSWMP PHASE 2 - SITE CONSTRUCTION

4. Begin clearing and grubbing the site in those areas pertinent to the current limits of construction.
5. Begin grading the site in those areas pertinent to the current limits of construction.
6. Proceed with site work. Install utilities, underdrains, storm sewers, curb and gutter, etc. pertinent to the limits of construction. Exposed soils shall be stabilized as soon as possible.
7. All disturbed areas shall be permanently stabilized. Stabilization methods include solid sod, seeding and mulching or hydromulching to provide a temporary or permanent grass cover. Mulch blankets, filter fabrics, etc., can be employed to provide vegetative cover.

STAKED TURBIDITY BARRIER
N.T.S.

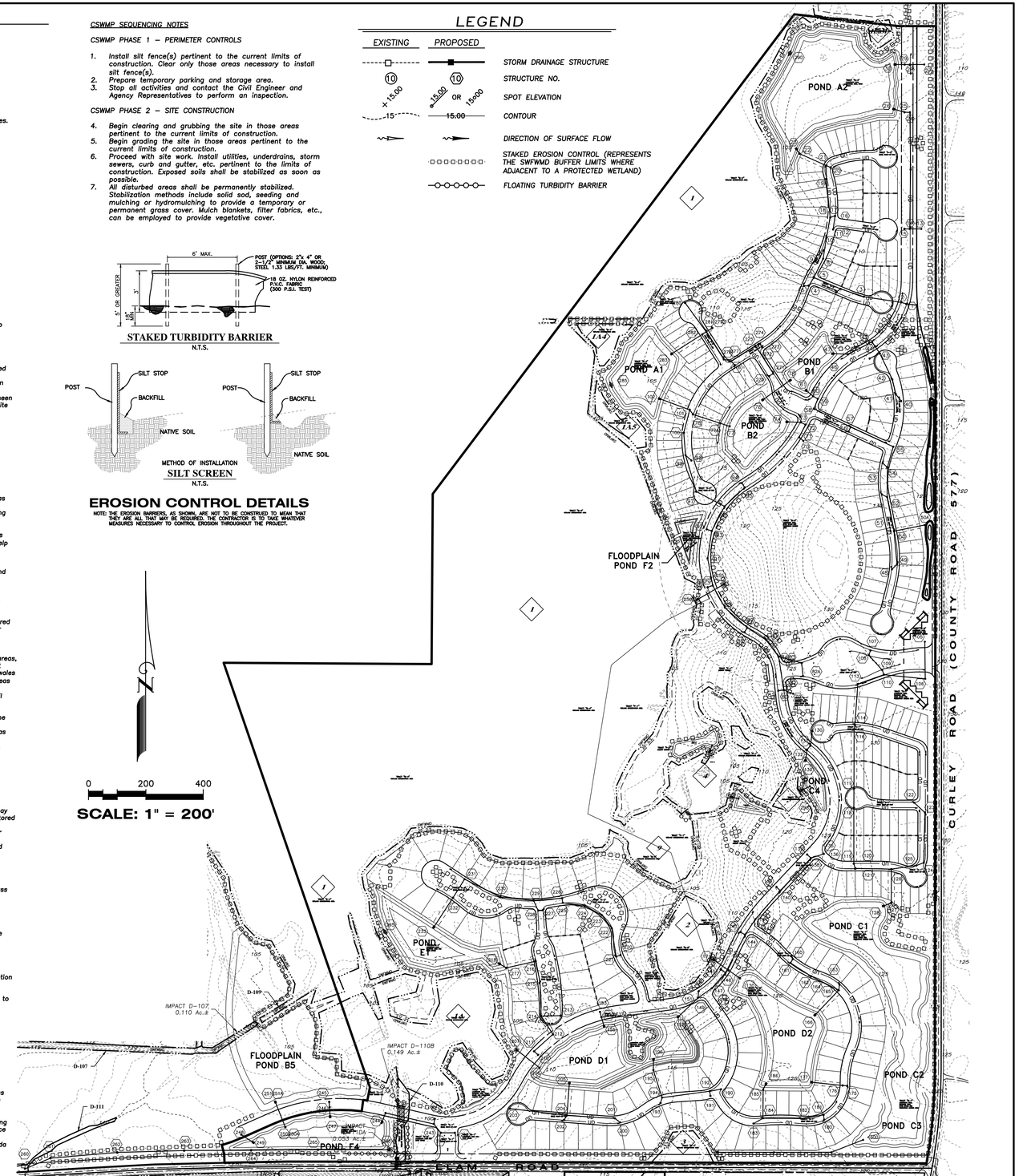
METHOD OF INSTALLATION
SILT SCREEN
N.T.S.

EROSION CONTROL DETAILS

NOTE: THE EROSION BARRIERS, AS SHOWN, ARE NOT TO BE CONSTRUED TO MEAN THAT THEY ARE ALL THAT MAY BE REQUIRED. THE CONTRACTOR IS TO TAKE WHATEVER MEASURES NECESSARY TO CONTROL EROSION THROUGHOUT THE PROJECT.

LEGEND

EXISTING	PROPOSED	
		STORM DRAINAGE STRUCTURE
10	10	STRUCTURE NO.
+15.00	+15.00 OR +5.00	SPOT ELEVATION
15	15.00	CONTOUR
		DIRECTION OF SURFACE FLOW
		STAKED EROSION CONTROL (REPRESENTS THE SWFWMD BUFFER LIMITS WHERE ADJACENT TO A PROTECTED WETLAND)
		FLOATING TURBIDITY BARRIER



Applicant Name: STANDARD PACIFIC OF FLORIDA

Applicant Signature: _____

DATE: _____

DATE	DESCRIPTION	BY
	REVISIONS	

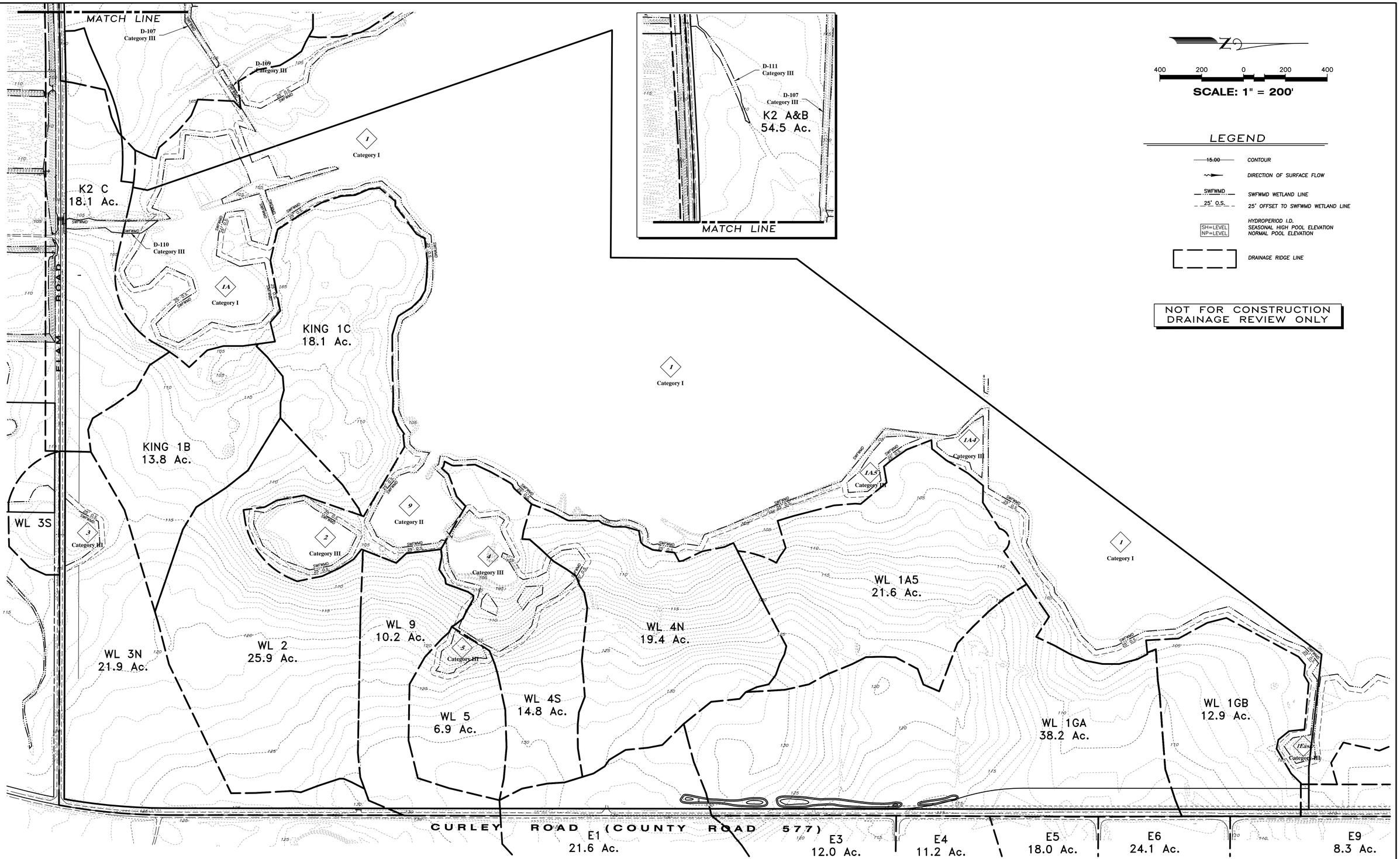
CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

CONSTRUCTION SURFACE WATER MANAGEMENT PLAN

EPCO RANCH NORTH
PARCEL A PHASE 1

JOB NO.	SPH-EP-009
DESIGN	LAWTON
DRAWN	MIDDLETON
PREPARED FOR:	STANDARD PACIFIC OF FLORIDA
DATE	11/14/2014
	Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 =-0.84Feet
FILE	CSWMP



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	REVISIONS	

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Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

PRE-DEVELOPMENT DRAINAGE AREA MAP

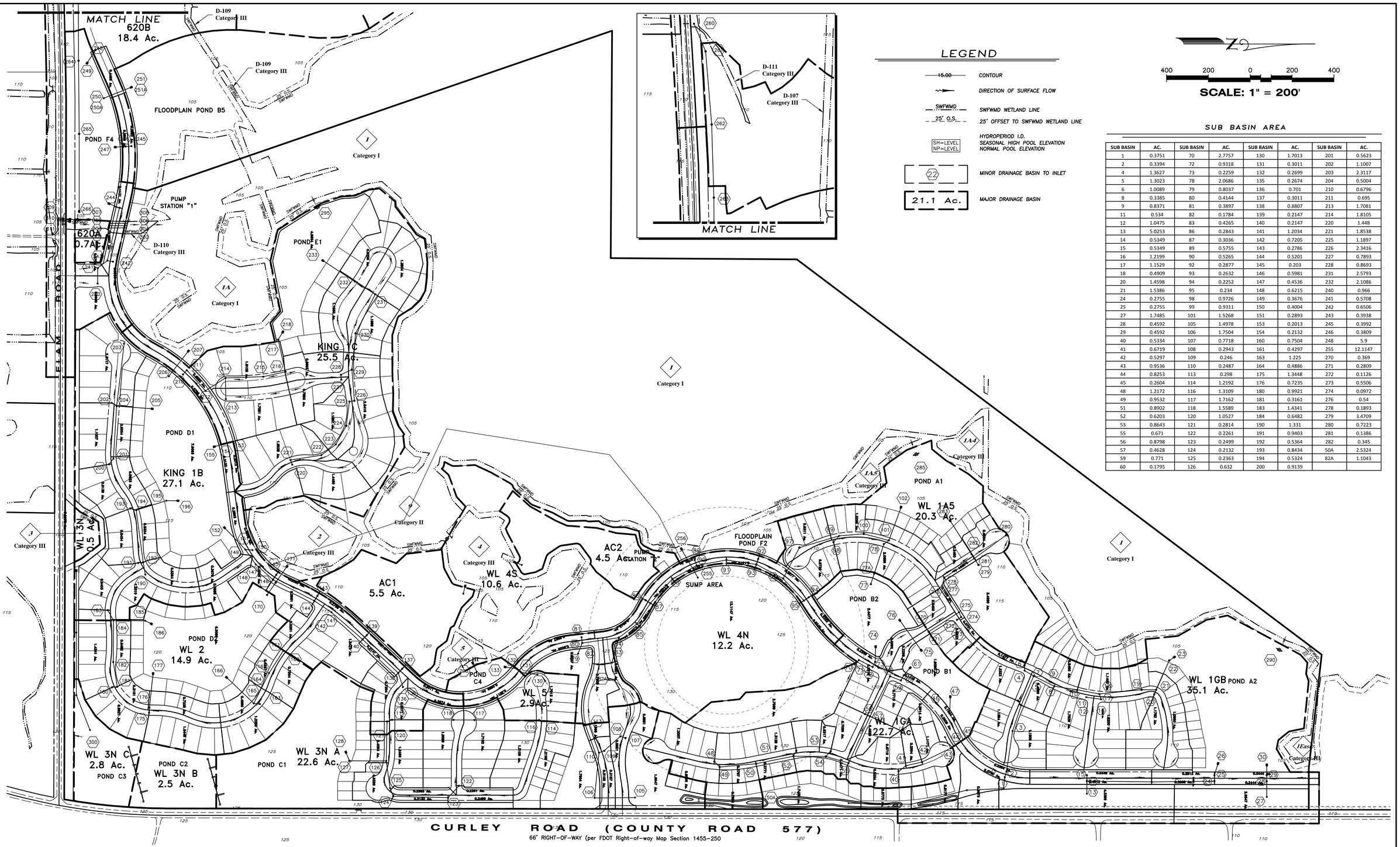
JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE DRAPRE

EPCO RANCH NORTH
PARCEL A PHASE 1

PREPARED FOR: **STANDARD PACIFIC OF FLORIDA**

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

SHEET 97 OF 98 SHEETS



LEGEND

15.00	CONTOUR
	DIRECTION OF SURFACE FLOW
SWFWMD	SWFWMD WETLAND LINE
25' O.S.	25' OFFSET TO SWFWMD WETLAND LINE
SH=LEVEL NP=LEVEL	HYDROPERIOD I.D. SEASONAL HIGH POOL ELEVATION NORMAL POOL ELEVATION
22	MINOR DRAINAGE BASIN TO INLET
21.1 Ac.	MAJOR DRAINAGE BASIN

400 200 0 200 400

SCALE: 1" = 200'

SUB BASIN AREA

SUB BASIN	AC.	SUB BASIN	AC.	SUB BASIN	AC.	SUB BASIN	AC.
1	0.3751	70	2.7757	130	1.7013	201	0.5623
2	0.3394	72	0.9318	131	0.3011	202	1.1007
4	1.3627	73	0.2259	132	0.2699	203	2.3117
5	1.3023	78	2.0686	135	0.2674	204	0.5004
6	1.0089	79	0.8037	136	0.701	210	0.6796
8	0.3385	80	0.4144	137	0.3011	211	0.695
9	0.8371	81	0.3897	138	0.8807	213	1.7081
11	0.534	82	0.1784	139	0.2147	214	1.8105
12	1.0475	83	0.4265	140	0.2147	220	1.448
13	5.0253	86	0.2843	141	1.2034	221	1.8538
14	0.5349	87	0.3036	142	0.7205	225	1.1897
15	0.5349	89	0.5755	143	0.2786	226	2.3416
16	1.2199	90	0.5265	144	0.5201	227	0.7893
17	1.1529	92	0.2877	145	0.203	228	0.8693
18	0.4909	93	0.2632	146	0.5981	231	2.5793
20	1.4598	94	0.2252	147	0.4536	232	2.1086
21	1.5386	95	0.234	148	0.6215	240	0.966
24	0.2755	98	0.9726	149	0.3676	241	0.5708
25	0.2755	99	0.9311	150	0.4004	242	0.6506
27	1.7485	101	1.5268	151	0.2893	243	0.3938
28	0.4592	105	1.4978	153	0.2013	245	0.3992
29	0.4592	106	1.7504	154	0.2132	246	0.3809
40	0.5334	107	0.7718	160	0.7504	248	5.9
41	0.6719	108	0.2943	161	0.4297	255	12.1147
42	0.5297	109	0.246	163	1.225	270	0.369
43	0.9536	110	0.2487	164	0.4886	271	0.2809
44	0.8253	113	0.298	175	1.3448	272	0.1126
45	0.2604	114	1.2192	176	0.7235	273	0.5506
48	1.2172	116	1.3109	180	0.9921	274	0.0972
49	0.9532	117	1.7162	181	0.3161	276	0.54
51	0.8902	118	1.5589	183	1.4341	278	0.1893
52	0.6203	120	1.0527	184	0.6482	279	3.4709
53	0.8643	121	0.2814	190	1.331	280	0.7223
55	0.671	122	0.2261	191	0.9403	281	0.1386
56	0.8798	123	0.2499	192	0.5364	282	0.345
57	0.4628	124	0.2132	193	0.8434	50A	2.5324
59	0.771	125	0.2363	194	0.5324	82A	1.1043
60	0.1795	126	0.632	200	0.9139		

NOT FOR CONSTRUCTION
DRAINAGE REVIEW ONLY

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

POST-DEVELOPMENT DRAINAGE AREA MAP

JOB NO. SPH-EP-009

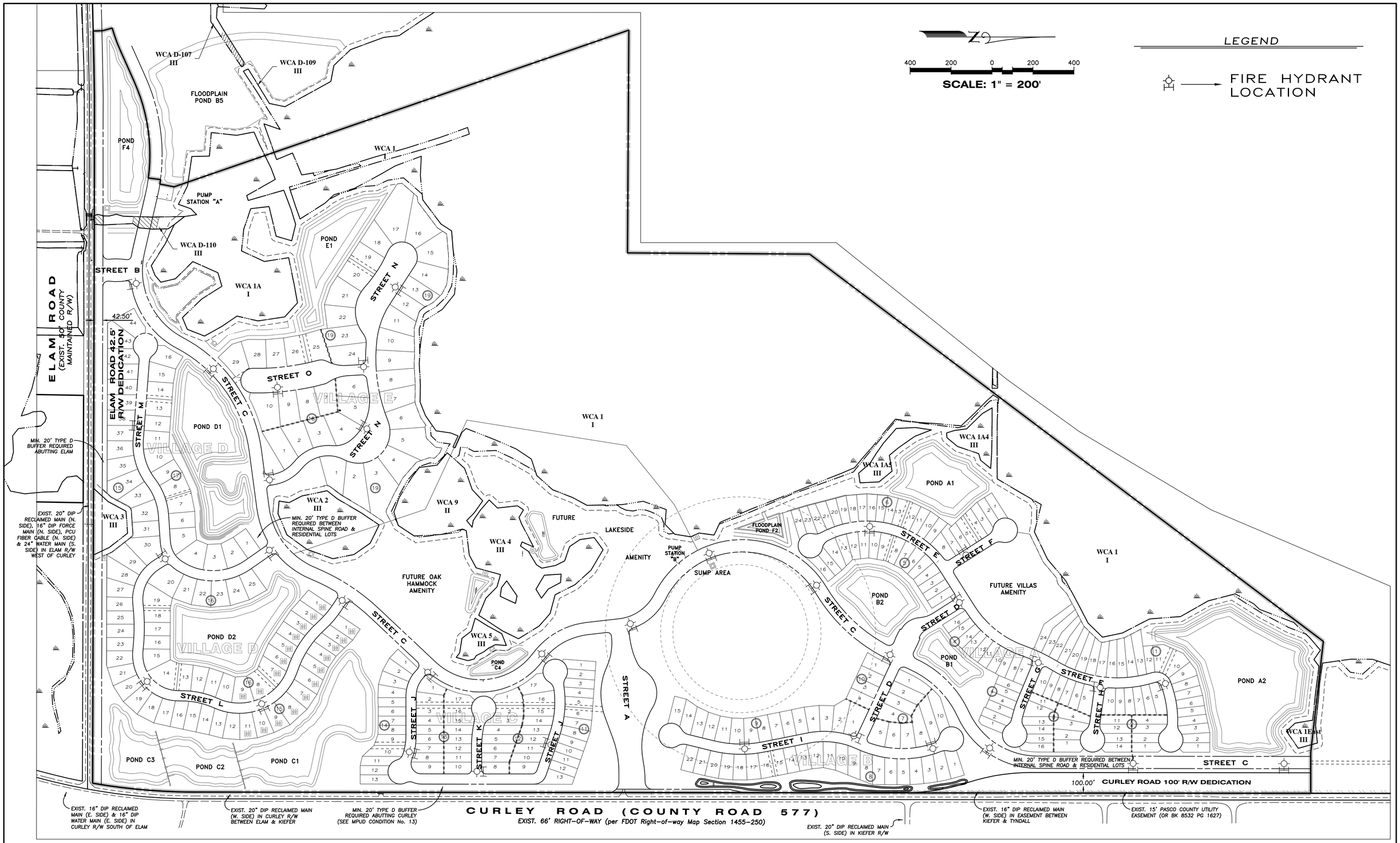
EPCO RANCH NORTH
PARCEL A PHASE 1

DESIGN LAWTON
DRAWN MIDDLETON
DATE 11/14/2014
FILE DRA

PREPARED FOR: **STANDARD PACIFIC OF FLORIDA**

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 = -0.84 Feet

SHEET 98 OF 98 SHEETS



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1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

ADDRESS PLAN

EPCO RANCH NORTH
PARCEL A PHASE 1

JOB NO.	SPH-EP-009
DESIGN	LAWTON
DRAWN	MIDDLETON
DATE	11/14/2014
FILE	AP
PREPARED FOR:	STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
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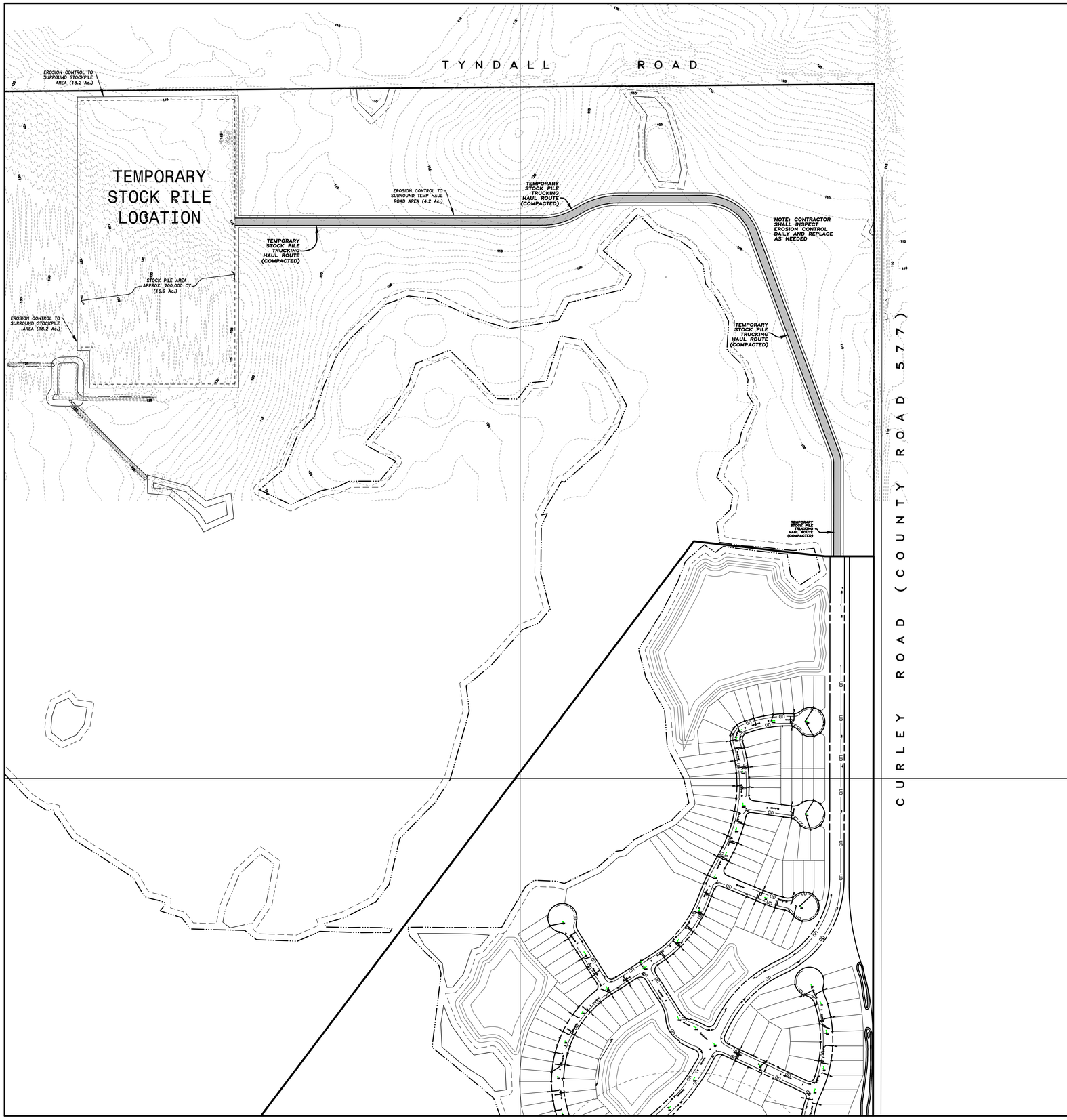
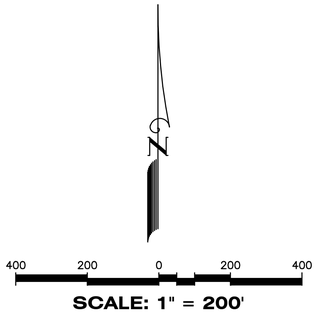
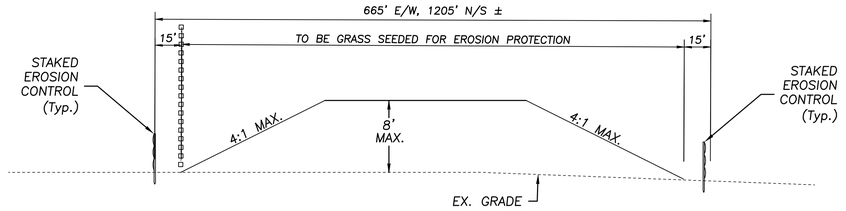
SHEET 1 OF 1 SHEETS

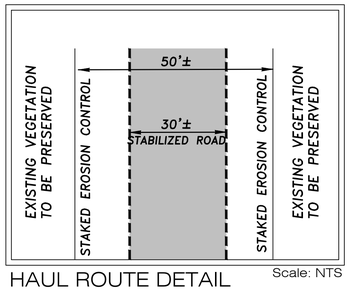






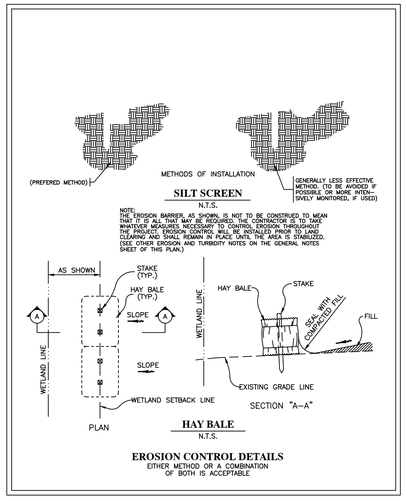
TYPICAL CROSS SECTION 1–1

N.T.S.



HAUL ROUTE DETAIL

Scale: NTS



THIS EXHIBIT WAS PREPARED FOR ILLUSTRATIVE PURPOSES ONLY. THE LATEST SUITABLE DIGITAL AERIAL IMAGES 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.

DATE OF PHOTOGRAPH: *2011*

DATE	DESCRIPTION	BY
	REVISIONS	

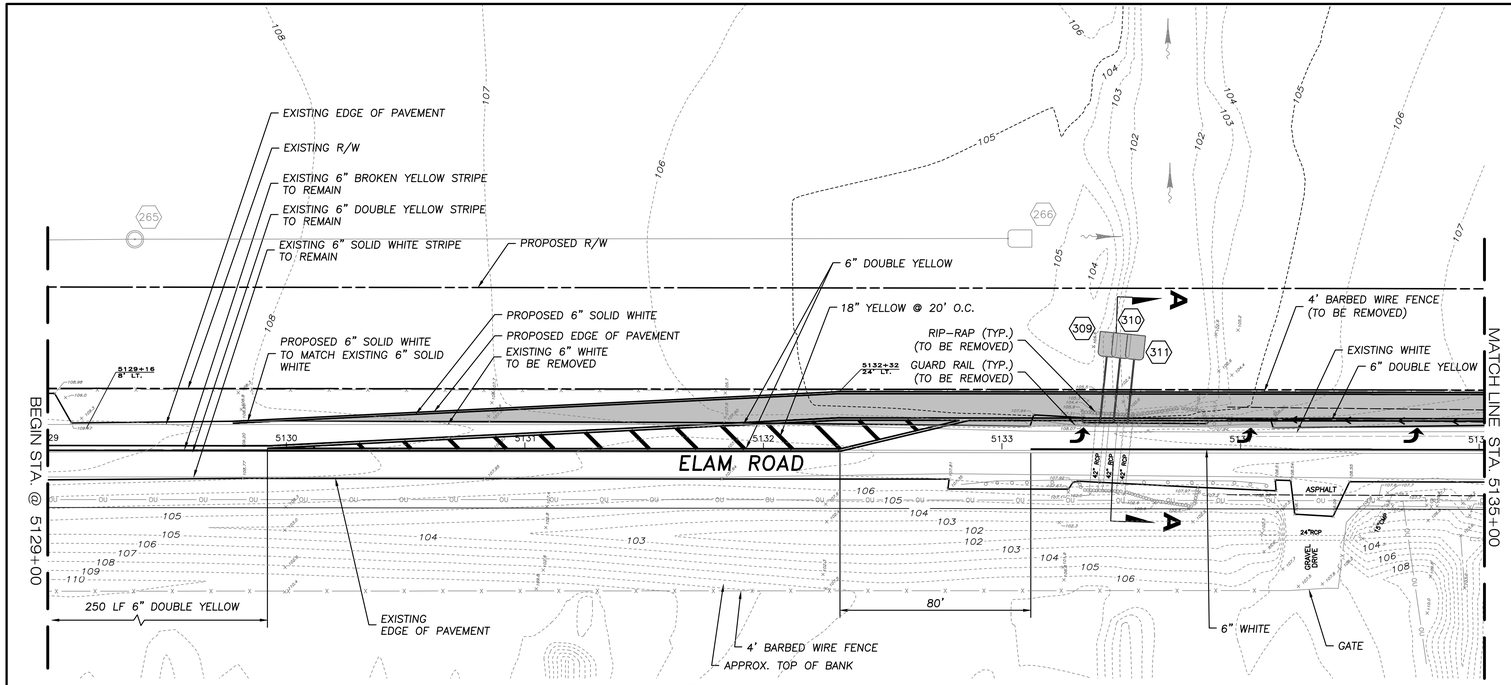
CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813–223–3919 Fax: 813–223–3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

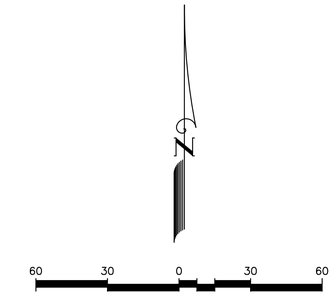
TEMPORARY STOCKPILE PLAN

EPCO RANCH NORTH
PARCEL A PHASE 1

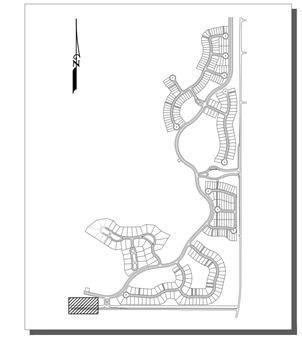
JOB NO. SPH–EP–009	
DESIGN LAWTON	
DRAWN MIDDLETON	PREPARED FOR: STANDARD PACIFIC OF FLORIDA
DATE 11/14/2014	Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 = –0.84 Feet
FILE TSP	SHEET 1 OF 98 SHEETS



ELAM ROAD
SCALE: 1"= 30'



SCALE: 1" = 30'



KEYMAP
N.T.S.

LEGEND

EXISTING	PROPOSED	
		STORM DRAINAGE STRUCTURE
10	10	STRUCTURE NO.
+15.00	15.00 OR 15.00	SPOT ELEVATION
15	15.00	CONTOUR
		STAKED EROSION CONTROL
SWFWMD		SWFWMD WETLAND LINE
25' O.S.		25' OFFSET FROM WETLAND LINE (SHOWN FOR INFORMATIONAL PURPOSES)
		ASPHALT WIDENING

UTILITIES PROVIDERS LIST

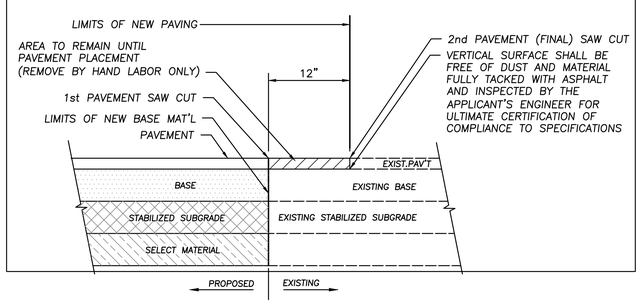
Bright House Networks, LLC
Tom Urgo
352-746-7664 ext 84213
tom.urgo@mybrighthouse.com

Verizon Florida Inc.
Mike Little
813-627-8345
Michael.e.little@verizon.com

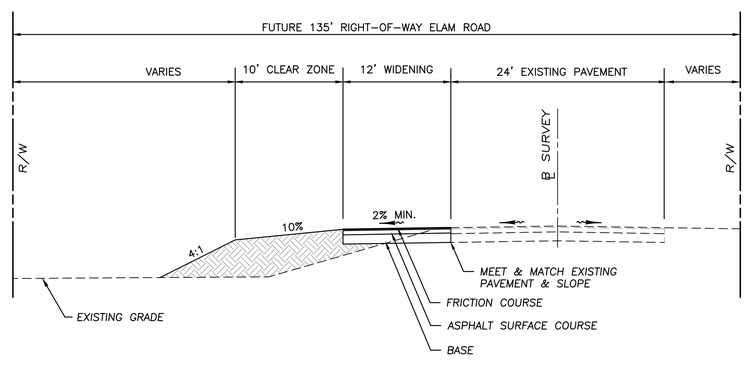
Pasco County Utilities
Edward Elmore
727-847-8145 ext 2517
telmore@pascocountyfl.net

Withlacoochee River
Electric Cooperative
Corey Littlefield
352-588-5115 ext 1131
rlittlefield@wrec.net

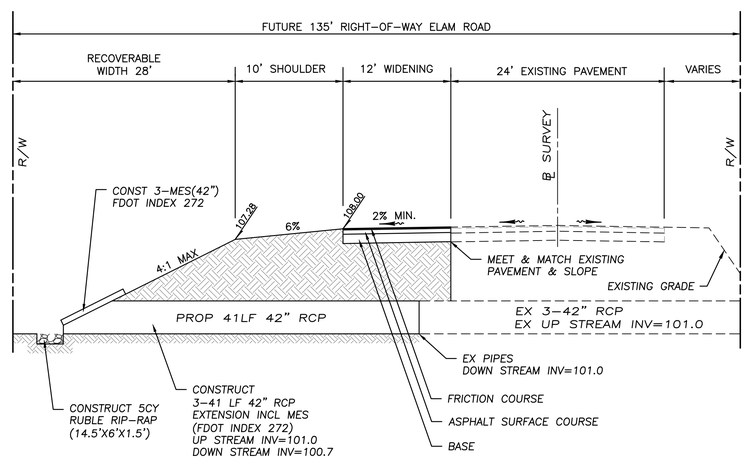
NOTES:
1. THE DEVELOPER'S ENGINEER SHALL INVESTIGATE PAVEMENT LAYER TYPES AND DEPTHS BY RESEARCHING "RECORD/AS-BUILT DRAWINGS" AND/OR PERFORM GEOTECHNICAL BORINGS.
2. THE NEW PAVEMENT SHALL PROVIDE THE MINIMUM STRUCTURAL NUMBER AS FOLLOWS: TYPE 2 - 2.34; TYPE 1 - 3.50; COLLECTOR - 3.70; ARTERIAL - 4.00



PAVEMENT TIE-IN SAW CUT DETAIL
N.T.S.



ASPHALT WIDENING SECTION
N.T.S.



SECTION A-A
N.T.S.

PAVEMENT STRUCTURE FOR LANE ADDITION(S) ON ELAM ROAD:

Layer Coefficients	Thickness
0.44 - Type FC-9.5 Asphalt Surface	1"
0.44 - Type SP-1 Asphalt Surface	2 ½"
0.15 - Crushed Concrete Base (LBR 150 min.)	8"
0.08 - Stabilized Subgrade (LBR 40 min.)	12"

SN = (0.44) (1) + (0.44) (2.5) + (0.15) (8) + (0.08) (12)= 3.70

SWFWMD NOTE:
ERP APPLICATION FOR THIS PROJECT WILL PROVIDE COVERAGE FOR WORKS WITHIN ELAM ROAD R/W ASSOCIATED WITH THE CONSTRUCTION OF TURN LANE ADDITION FOR THIS PROJECT.

CONTRACTOR MAY PROPOSE ALTERNATE PAVEMENT DESIGNS.
CONTRACTOR SHALL SUBMIT ANY PAVEMENT ALTERNATIVES TO ENGINEER FOR APPROVAL PRIOR TO FINAL SUBGRADE PREPARATIONS.

PAVEMENT STRUCTURE FOR LANE ADDITION(S) ON ELAM ROAD:

Layer Coefficients	Thickness
0.44 - Type FC-9.5 Asphalt Surface	1"
0.44 - Type Asphalt Surface	2 ½"
0.15 - Soil-Cement Base (300 p.s.i. min.)	12"
0.04 - Stabilized Subgrade (LBR 20)	12"

SN = (0.44) (1) + (0.44) (2.5) + (0.15) (12) + (0.04) (12)= 3.82

CALL 48 HOURS BEFORE YOU DIG
IT'S THE LAW! DIAL 811
811 Know what's below. Call before you dig.
SUNSHINE STATE ONE CALL OF FLORIDA, INC.

SPECIFICATIONS FOR DESIGN AND INSTALLATION OF TRAFFIC CONTROL DEVICES ON COUNTY ROAD

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 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 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 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 Pasco 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 Pasco 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
01	02	03	04	05	06	07	08	09			

4.6) All post systems, mounting brackets and hardware shall be of a type currently in use by the Pasco 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 (727) 847-8154.
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 Pasco County.

NOTES FOR PRIVATE ROADWAYS:

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 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 CAN NOT 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.

DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

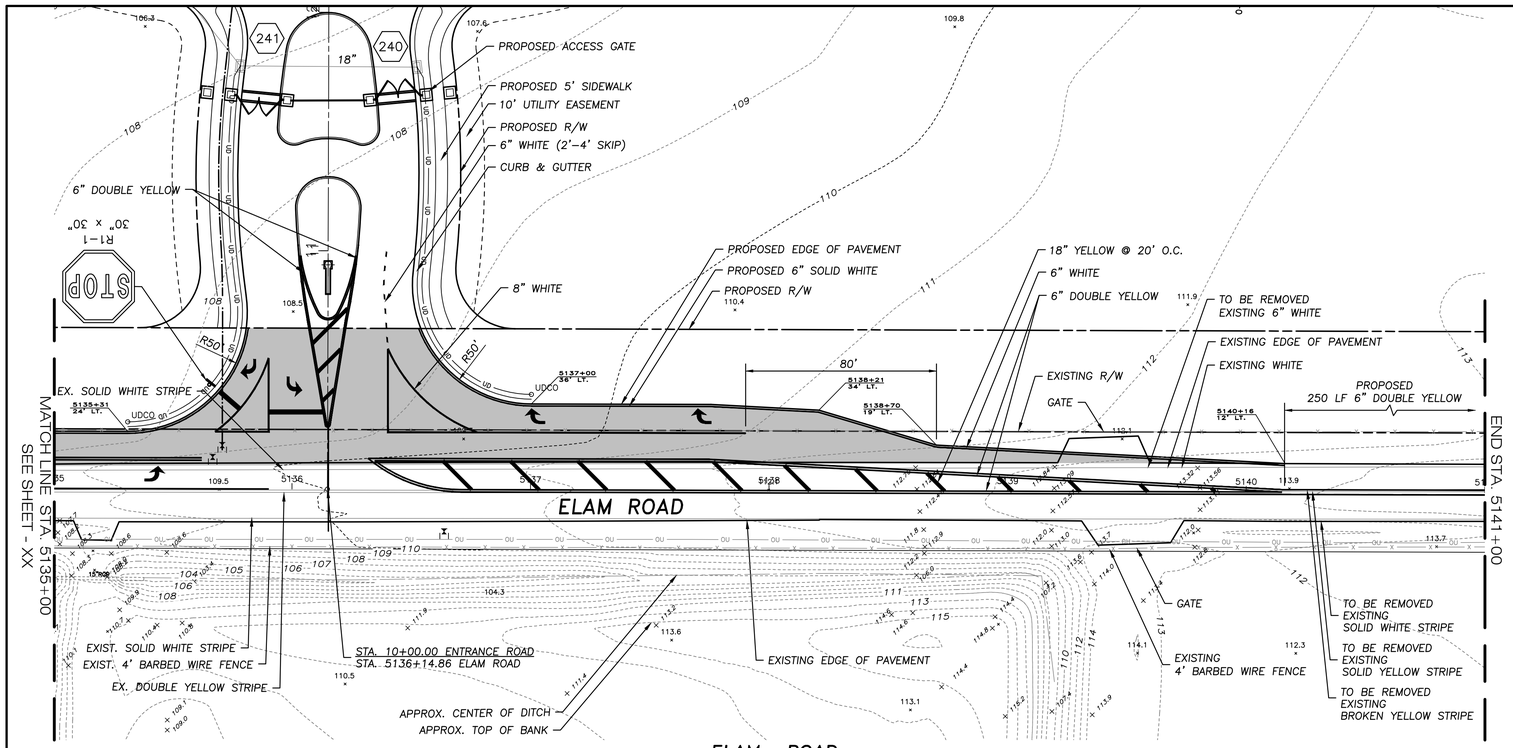
INTERSECTION IMPROVEMENTS ELAM ROAD-1

JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN FINNEY
DATE 11/14/2014
FILE INT1

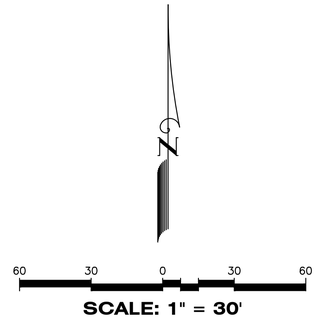
EPCO RANCH NORTH
PARCEL A PHASE 1

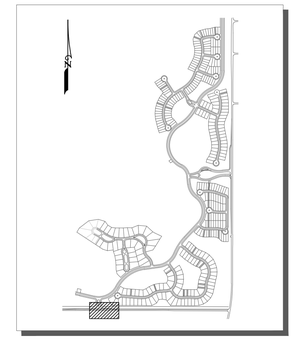
PREPARED FOR: STANDARD PACIFIC OF FLORIDA

Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 =-0.84Feet



ELAM ROAD
SCALE: 1"= 30'





KEYMAP
N.T.S.

LEGEND

EXISTING	PROPOSED	
		STORM DRAINAGE STRUCTURE
10	10	STRUCTURE NO.
+15.00	15.00 OR 15.00	SPOT ELEVATION
15	15.00	CONTOUR
		STAKED EROSION CONTROL
SWFWMD		SWFWMD WETLAND LINE
25' O.S.		25' OFFSET FROM WETLAND LINE (SHOWN FOR INFORMATIONAL PURPOSES)
		ASPHALT WIDENING

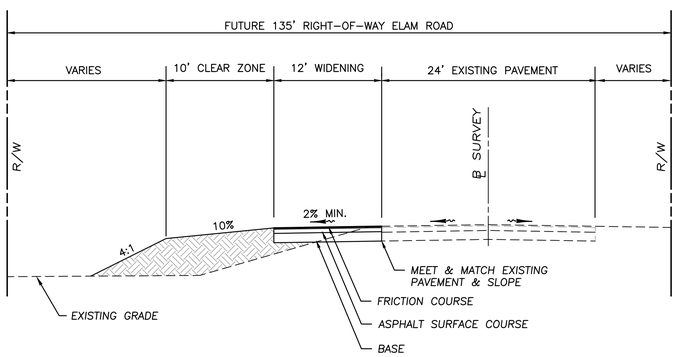
UTILITIES PROVIDERS LIST

Bright House Networks, LLC
Tom Urgo
352-746-7664 ext 84213
tom.urgo@mybrighthouse.com

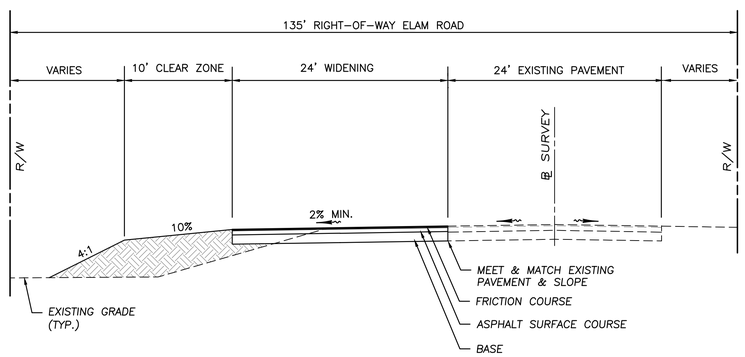
Verizon Florida Inc.
Mike Little
813-627-8345
Michael.e.little@verizon.com

Pasco County Utilities
Edward Elmore
727-847-8145 ext 2517
telmore@pascocountyfl.net

Withlacoochee River
Electric Cooperative
Corey Littlefield
352-588-5115 ext 1131
rlittlefield@wrec.net



ASPHALT 12' WIDENING SECTION
N.T.S.



ASPHALT 24' WIDENING SECTION
N.T.S.

SPECIFICATIONS FOR DESIGN AND INSTALLATION OF TRAFFIC CONTROL DEVICES ON COUNTY ROAD

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.

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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 grade and of a type currently certified by the FDOT for use in the State of Florida.
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4.5) On roads to be maintained by Pasco 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 Pasco 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
01	02	03	04	05	06	07	08	09			

4.6) All post systems, mounting brackets and hardware shall be of a type currently in use by the Pasco 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:

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SWFWMD NOTE:
ERP APPLICATION FOR THIS PROJECT WILL PROVIDE COVERAGE FOR WORKS WITHIN ELAM ROAD R/W ASSOCIATED WITH THE CONSTRUCTION OF TURN LANE ADDITION FOR THIS PROJECT.

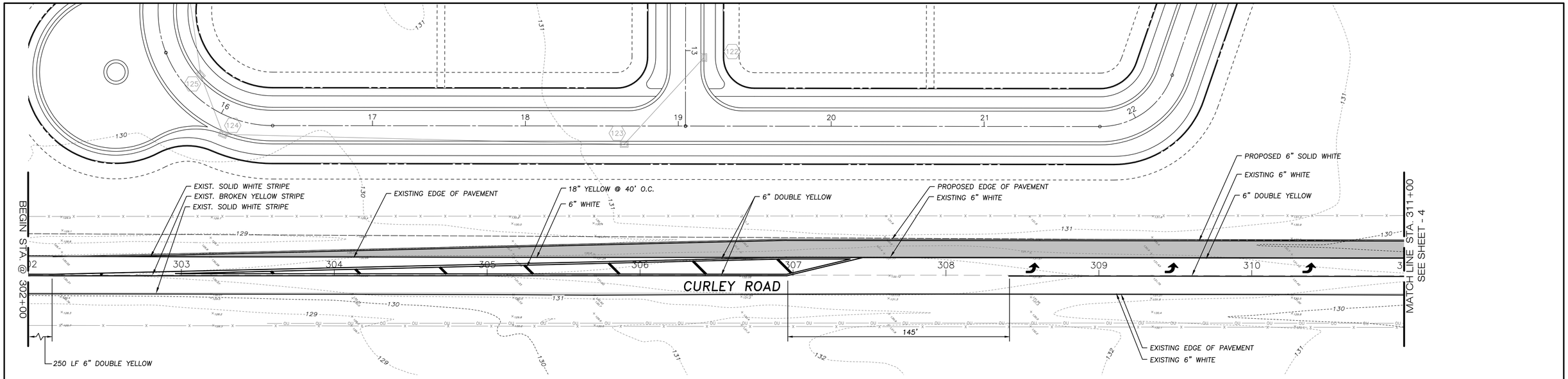
DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

INTERSECTION IMPROVEMENTS ELAM ROAD-2

JOB NO. SPH-EP-009	EPCO RANCH NORTH
DESIGN LAWTON	PARCEL A PHASE 1
DRAWN FINNEY	PREPARED FOR: STANDARD PACIFIC OF FLORIDA ----
DATE 11/14/2014	Elevations based on North American Vertical Datum 1988 (NAVD 88) Conversion from NAVD 88 to NGVD 29 = -0.84 Feet
FILE INT2	SHEET 2 OF 5 SHEETS



CURLEY ROAD
SCALE: 1"= 30'

NOTES:
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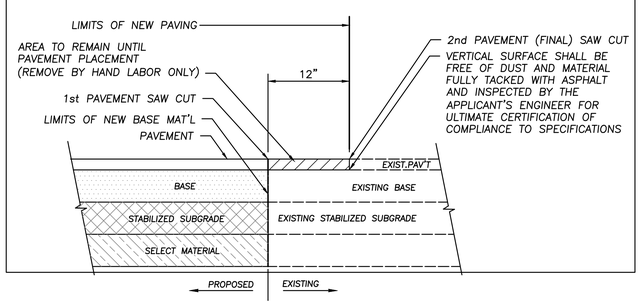
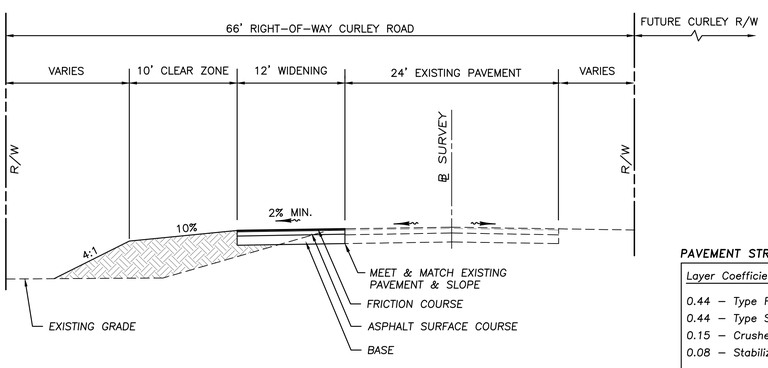


PAVEMENT TIE-IN SAW CUT DETAIL
N.T.S.



ASPHALT WIDENING SECTION
N.T.S.

SPECIFICATIONS FOR DESIGN AND INSTALLATION OF TRAFFIC CONTROL DEVICES ON COUNTY ROAD

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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
01	02	03	04	05	06	07	08	09			

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CONTRACTOR MAY PROPOSE ALTERNATE PAVEMENT DESIGNS.
CONTRACTOR SHALL SUBMIT ANY PAVEMENT ALTERNATIVES TO ENGINEER FOR APPROVAL PRIOR TO FINAL SUBGRADE PREPARATIONS.

PAVEMENT STRUCTURE FOR LANE ADDITION(S) ON ELAM ROAD:

Layer Coefficients	Thickness
0.44 – Type FC-9.5 Asphalt Surface	1"
0.44 – Type SP-1 Asphalt Surface	2 ½"
0.15 – Crushed Concrete Base (LBR 150 min.)	8"
0.08 – Stabilized Subgrade (LBR 40 min.)	12"

SN = (0.44) (1) + (0.44) (2.5) + (0.15) (8) + (0.08) (12)= 3.70

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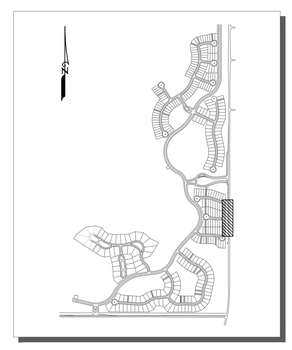
60 30 0 30 60
SCALE: 1" = 30'



KEYMAP
N.T.S.

LEGEND

EXISTING	PROPOSED	
		STORM DRAINAGE STRUCTURE
(10)	(10)	STRUCTURE NO.
+ 15.00	+ 15.00 OR 15.00	SPOT ELEVATION
15	15.00	CONTOUR
		STAKED EROSION CONTROL
SWFWMD		SWFWMD WETLAND LINE
25' O.S.		25' OFFSET FROM WETLAND LINE (SHOWN FOR INFORMATIONAL PURPOSES)
		ASPHALT WIDENING

UTILITIES PROVIDERS LIST

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tom.urgo@mybrighthouse.com

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CALL 48 HOURS BEFORE YOU DIG
IT'S THE LAW! DIAL 811
811 Know what's below. Call before you dig.
SUNSHINE STATE ONE CALL OF FLORIDA, INC.

SWFWMD NOTE:
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DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

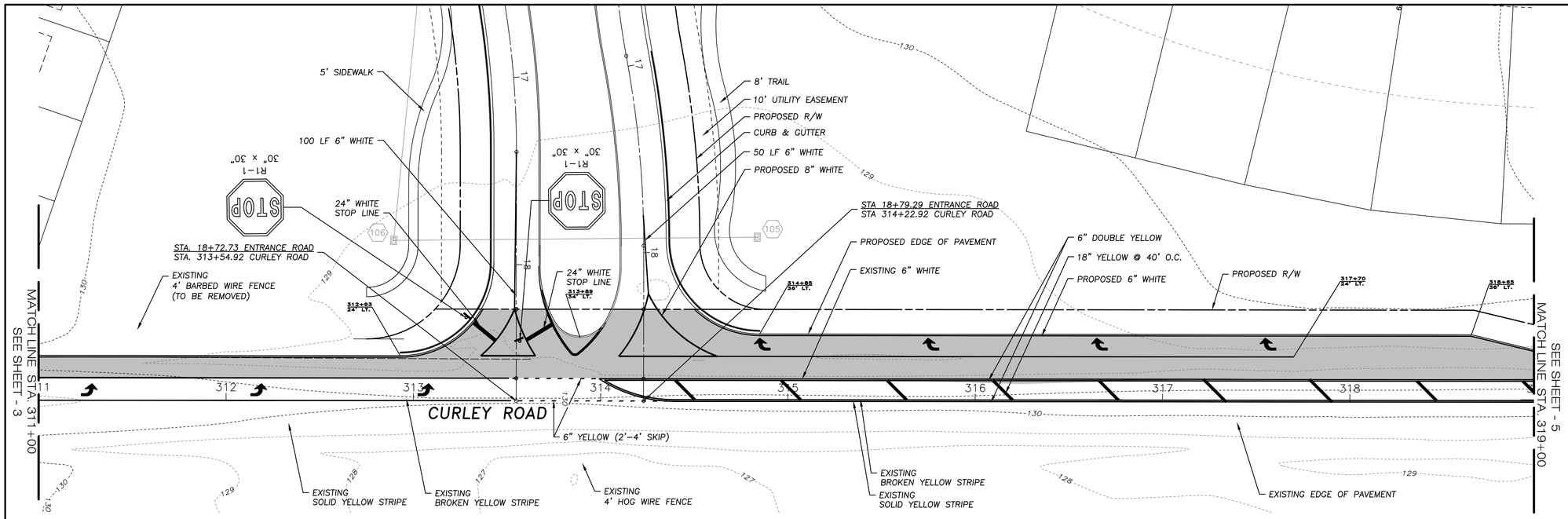
DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

INTERSECTION IMPROVEMENTS CURLEY ROAD-1

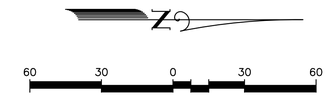
JOB NO. SPH-EP-009
DESIGN LAWTON
DRAWN FINNEY
DATE 11/14/2014
FILE INT3

EPCO RANCH NORTH
PARCEL A PHASE 1
PREPARED FOR: **STANDARD PACIFIC OF FLORIDA**
Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29)
Conversion from NGVD 29 to NAVD 88 =-0.84 Feet

SHEET 3 OF 5 SHEETS



CURLEY ROAD
SCALE: 1"= 30'



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LEGEND

EXISTING	PROPOSED	
		STORM DRAINAGE STRUCTURE
10	10	STRUCTURE NO.
15.00	15.00 OR 15.00	SPOT ELEVATION
15	15.00	CONTOUR
		STAKED EROSION CONTROL
SWFWMD		SWFWMD WETLAND LINE
25' O.S.		25' OFFSET FROM WETLAND LINE (SHOWN FOR INFORMATIONAL PURPOSES)
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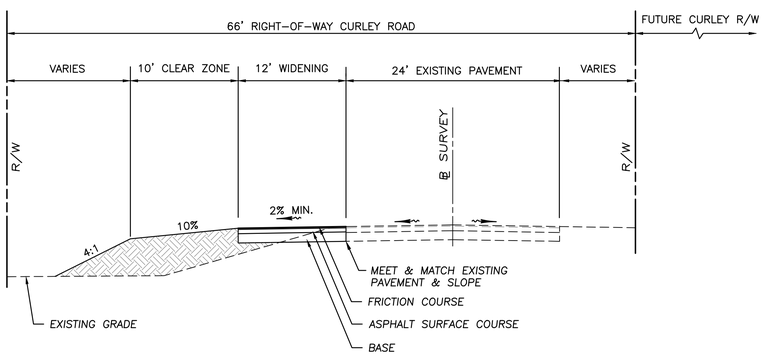
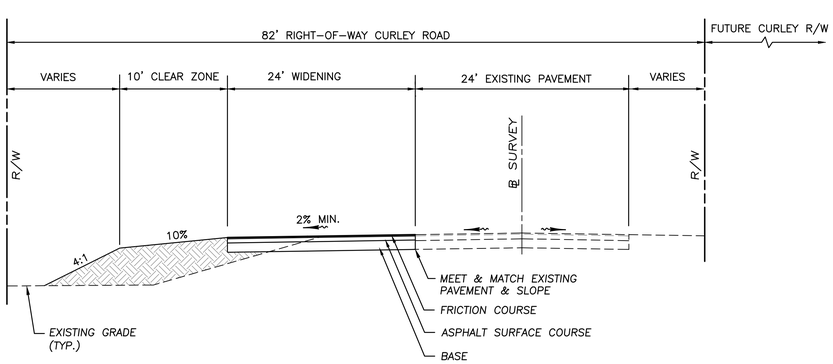


ASPHALT WIDENING SECTION
N.T.S.



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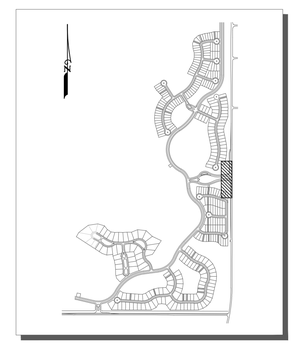

KEYMAP
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SPECIFICATIONS FOR DESIGN AND INSTALLATION OF TRAFFIC CONTROL DEVICES ON COUNTY ROAD

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.
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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
01	02	03	04	05	06	07	08	09			

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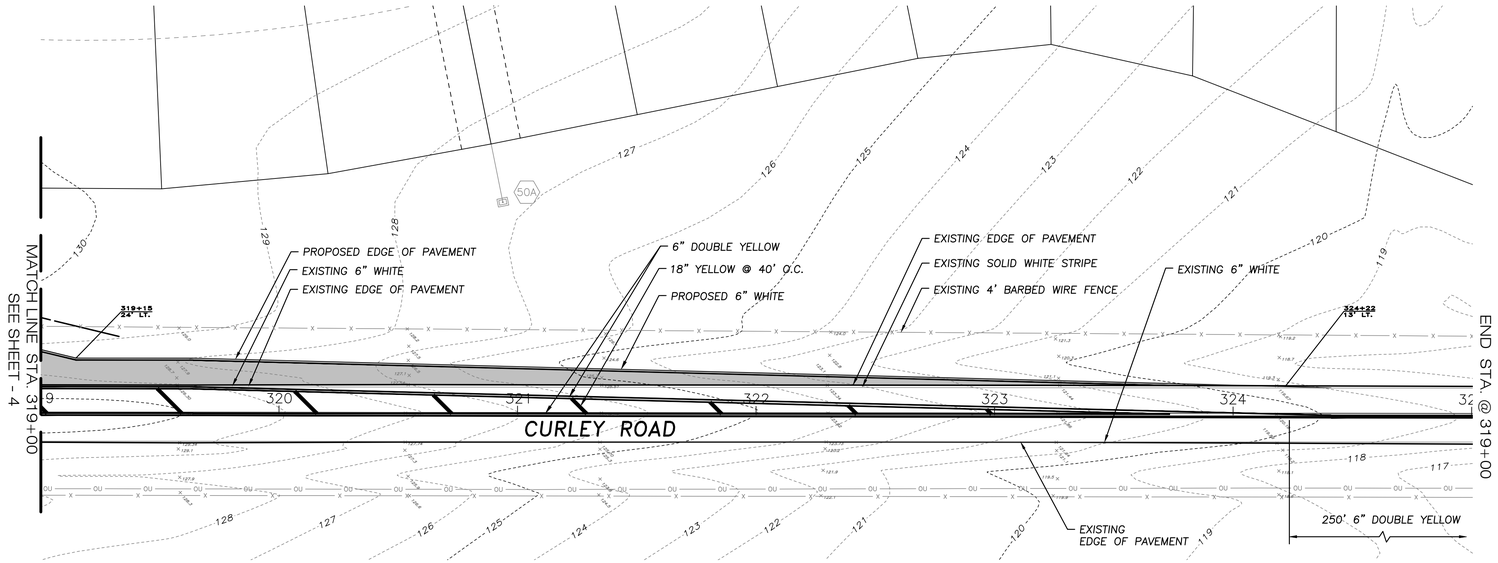
DATE	DESCRIPTION	BY
	REVISIONS	

CLEARVIEW LAND DESIGN, P.L.
Engineering Business C.A. No.: 28858
1213 E. 6th Avenue, Tampa, Florida 33605
Office: 813-223-3919 Fax: 813-223-3975

DATE:
W. ALAN LAWTON P.E. NO. 58664
FLORIDA PROFESSIONAL ENGINEER

INTERSECTION IMPROVEMENTS CURLEY ROAD-2

JOB NO. SPH-EP-009	EPCO RANCH NORTH PARCEL A PHASE 1
DESIGN LAWTON	
DRAWN FINNEY	PREPARED FOR: STANDARD PACIFIC OF FLORIDA
DATE 11/14/2014	Elevations based on National Geodetic Vertical Datum 1929 (NGVD 29) Conversion from NGVD 29 to NAVD 88 =-0.84Feet
FILE INT4	SHEET 4 OF 5 SHEETS



CURLEY ROAD
SCALE: 1"= 30'

60 30 0 30 60

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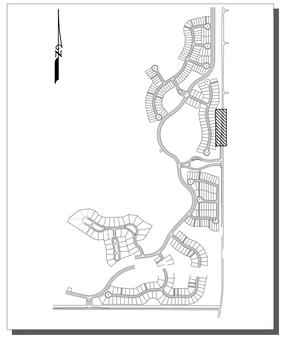

KEYMAP
N.T.S.

LEGEND

EXISTING	PROPOSED	
		STORM DRAINAGE STRUCTURE
10 +15.00	10 +15.00 OR 15.00	STRUCTURE NO. / SPOT ELEVATION
15	15.00	CONTOUR
		STAKED EROSION CONTROL
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INSTALLED

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10's	20's	30's	–	1	2	3	4	5	6	7	8	9
01	02	03	04	05	06	07	08	09			

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INTERSECTION IMPROVEMENTS CURLEY ROAD-3

JOB NO. SPH-EP-009	EPCO RANCH NORTH PARCEL A PHASE 1
DESIGN LAWTON	
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DATE 11/14/2014	Elevations based on North American Vertical Datum 1988 (NAVD 88) Conversion from NAVD 88 to NGVD 29 = -0.84 Feet
FILE INT5	SHEET 5 OF 5 SHEETS

L□□d□□□□□ □□□□□

A. PLANT MATERIAL STANDARDS

- ALL PLANT MATERIAL USED ON THIS PROJECT SHALL BE "FLORIDA NO. 1" AS DESCRIBED IN THE LATEST EDITION OF "GRADES AND STANDARDS FOR NURSERY PLANTS", PARTS I AND II, BY THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES. REFER TO DETAILS FOR FURTHER QUALITY SPECIFICATIONS. ALL QUESTIONS CONCERNING THIS PLAN SET AND/OR SPECIFICATIONS SHALL BE DIRECTED TO THE LANDSCAPE ARCHITECT.
- SHRUB MATERIAL IS TO BE PLANTED AT THE REQUIRED MINIMUM HEIGHT; CONTAINER SIZE DOES NOT QUALIFY FOR FOR FINAL ACCEPTANCE.
- ALL PLANT MATERIAL IS SUBJECT TO APPROVAL BY LANDSCAPE ARCHITECT AND OWNER, BEFORE, DURING AND AFTER INSTALLATION, AS PER SPECIFICATIONS.
- ALL SOD SHALL BE 100% SOLID SOD, 99% FREE OF NOXIOUS WEEDS, WITH A TWO (2) INCH THICKNESS OF ROOTS CAPABLE OF HOLDING SAND. SOD SHALL BE FRESHLY CUT WITHIN TWENTY-FOUR (24) HOURS OF LAYING, LAID WITH TIGHTLY-BUTTED JOINTS AND ROLLED. HAND RAKING SHALL BE DONE AS NECESSARY TO ENSURE PROPER EVEN GRADES AND CLEAR SURFACES FOR SOD.
- ALL SINGLE-TRUNK TREES SHALL BE STRAIGHT TRUNKED WITH ONE CENTRAL LEADER AND FULLY CROWNED.
- ALL TREES SHALL BE FREE OF OPEN WOUNDS AND WOUND SCARS IN THE CLEAR TRUNK AREA.
- ALL REQUIRED TREES TO BE PLANTED SHALL BE A MINIMUM OF 2" CALIPER OR LARGER. MULTI-TRUNK TREES SHALL BE A MINIMUM OF THREE (3) TRUNKS (1" PER TRUNK). SEE PLANT LIST FOR SIZE SPECIFICATION.
- ANY DEVIATION FROM PLANT QUANTITY, SIZE OR GRADE MAY JEOPARDIZE THE CERTIFICATE OF OCCUPANCY. ADDITIONAL PLANTS MAY BE ADDED, BUT MUST COMPLY WITH PASCO COUNTY REQUIREMENTS.
-

B. GRADING OF PLANTING BEDS

- THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR HOLDING FINE GRADING OF PLANTING AREAS TO INSURE AT LEAST 3% POSITIVE DRAINAGE AWAY FROM BUILDINGS AND INTO TURF AREAS, PONDS, STREETS OR OTHER DRAINAGE WAYS. IN ADDITION, THE FINISH MULCH ELEVATION AT THE BUILDINGS SHALL BE AT LEAST 6" BELOW FINISH FLOOR OF THE ADJACENT BUILDINGS. VERIFY THIS CONDITION WITH GENERAL CONTRACTOR PRIOR TO BEGINNING WORK. PARKING LOT ISLANDS SHALL SLOPE AT 3" FROM CENTER OF ISLAND TO CURB. TURF AND PLANTING BEDS SHALL MEET SIDEWALKS AND FLATWORK AT 2" BELOW THE FLATWORK.
- THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR ALL FINAL GRADING OF BERMS, BED AREAS AND SOD AREAS UNTIL FINAL ACCEPTANCE BY THE LANDSCAPE ARCHITECT, BOTH BEFORE AND AFTER LANDSCAPE INSTALLATION HAS BEGUN.

C. BED PREPARATION AND PLANTING

- LOOSEN SOIL TO A MINIMUM DEPTH OF FOUR (4) INCHES AND REMOVE ALL DEBRIS. REGRADE THE BED TO ITS PRE-PLANTING SUBGRADE. SPREAD APPROVED FABRIC-TYPE WEED BARRIER OVER ALL SHRUB BEDS - IF REQ. DIG PLANTING PITS AT 2 TIMES THE DIAMETER OF THE POT. FILL PLANT PIT WITH 50% EXISTING SOIL AND 50% TOPSOIL (SEE BELOW) AND COMPACT SO THAT THE TOP OF ROOT BALL WILL SETTLE 1/8 DEPTH OF ROOT BALL ABOVE FINISH GRADE. SET PLANT AND FILL REMAINDER OF HOLE WITH PLANTING MIX. FERTILIZE EACH PLANT AS RECOMMENDED BY SOIL ANALYSIS. THE LANDSCAPE CONTRACTOR SHALL PROVIDE OWNER WITH A YEARLY FERTILIZATION PROGRAM AS DEFINED BY THE SOIL ANALYSIS. WATER IN THOROUGHLY. RESET ANY PLANTS THAT SETTLE TOO DEEP. REMOVE SPOIL DIRT AND RAKE THE BED TO ITS FINISH GRADING. COVER ALL BED AREAS WITH A 3" DEPTH OF MULCH (SEE PLANT LIST). REMOVE ALL DEBRIS FROM MULCH.
- TREES SHALL NOT BE PLANTED CLOSER THAN TWENTY (20) FEET FROM OTHER TREES UNLESS APPROVED BY THE COUNTY ADMINISTRATOR AND/OR LANDSCAPE ARCHITECT.
- PLANT MATERIAL THAT EXCEEDS TWENTY-FIVE (25) FEET IN HEIGHT AT MATURITY SHOULD NOT BE PLANTED CLOSER THAN TWENTY (20) FEET OF THE VERTICAL PLANE OF AN EXISTING POWER LINE, EXCLUDING SERVICE WIRES.
- BALLED AND BURLAPPED STRAPPING WIRE AND ANY SYNTHETIC MATERIAL SHALL BE REMOVED PRIOR TO FINAL INSPECTION. WIRE BASKETS SHOULD BE CUT 8" BELOW THE TOP OF THE ROOTBALL.
- MULCH SHALL BE PROVIDED A MINIMUM OF THREE (3) INCHES IN DEPTH AROUND ALL NEWLY PLANTED LANDSCAPE.
- A MULCH RING FOR ALL NEWLY PLANTED TREES SHALL BE PROVIDED AT LEAST FOUR (4) FEET IN DIAMETER FOR HARDWOOD TREES AND THREE (3) IN DIAMETER FOR CONIFER TREES. DO NOT MULCH WITHIN SIX (6) INCHES FROM THE TREE TRUNK.
- PLANT INSTALLATION SHALL NOT PROCEED PRIOR TO THE INSTALLATION AND OPERATION OF THE PLANNED LANDSCAPE IRRIGATION SYSTEM. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR DAMAGE TO PLANT MATERIAL CAUSED BY INSUFFICIENT WATER.
- ALL PLANTINGS SHALL BE SET AND APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.

D. TOPSOIL

- TOPSOIL SHALL BE A NATURAL FRIABLE, FERTILE, FINE LOAM SOIL. IT SHALL BE CERTIFIED (BY TESTING) TO BE FREE OF WEED SEEDS AND PATHOGENS. IT SHALL ALSO BE FREE OF LITTER, SOD, CLAY, STONES, ROOTS AND STUMPS. IT SHALL BEAR A PH OF BETWEEN 5.5 AND 7.5.
- SOIL IN TREE ISLANDS SHALL HAVE AT LEAST TWELVE (12) INCHES OF SUITABLE SOIL FOR TREE PLANTINGS AND BE VOID OF ANY CONSTRUCTION DEBRIS OR UNSUITABLE MATERIALS.
- THE GENERAL CONTRACTOR SHALL ENSURE THAT ALL PLANTING ISLANDS, PARKING LOT ISLANDS OR PLANTING AREAS SHALL BE CLEAN OF ALL TRASH, DEBRIS OR OTHER NON-INDIGENOUS MATERIALS TO A DEPTH OF 36" PRIOR TO ANY LANDSCAPE INSTALLATION.
- FILL FOR ALL PARKING LOT ISLANDS SHALL BE A MIN. OF 3" BELOW TOP OF CURBING AND BE CROWNED TO A MIN. OF 6" ABOVE CURBING AT THE CENTER OF EACH ISLAND.

E. EDGING

- ALL EDGING SHALL BE AS DESCRIBED IN THE PLANTING DETAILS.
- MULCHING AND EDGING SHALL BE PER APPROPRIATE NOTES & SPECIFICATIONS.

F. TREE STAKING

- ALL TREES TO BE STAKED AND GUYED AS SHOWN IN THE DETAILS UNLESS OTHERWISE NOTED.
- ALL TREES, INCLUDING PALMS, SHALL BE SET VERTICALLY TO THE GROUND OR IF ON SLOPES OR BERMS, SHALL BE SET VERTICALLY TO THE SURROUNDING FLAT TERRAIN.

G. WARRANTY

- ALL PLANT MATERIAL SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM FINAL ACCEPTANCE BY THE OWNER AND/OR LANDSCAPE ARCHITECT. UNTIL FINAL ACCEPTANCE BY THE OWNER AND/OR LANDSCAPE ARCHITECT, ALL PLANT MATERIAL MUST BE MAINTAINED IN GOOD, LIVING CONDITION. THIS INCLUDES KEEPING BEDS FREE OF DEBRIS AND WEEDS, ALL MECHANICAL MAINTENANCE, FERTILIZATION, CHEMICAL TREATMENTS FOR DISEASE OR INFESTATION AND WATERING.
- THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE TO MAKE ANY AND ALL NECESSARY REPAIRS TO DAMAGE CAUSED BY HIS WORK AT NO ADDITIONAL COST TO THE OWNER OR LANDSCAPE ARCHITECT.
- MEADOW POINTE IS RESPONSIBLE FOR MAINTENANCE OF TREES UNTIL ASSIGNED TO ANOTHER ENTITY.

H. IRRIGATION SYSTEM

- IRRIGATION SHALL BE DESIGNED TO COMPLY WITH THE LDC SECTION 905.4 (IRRIGATION).
- AN AUTOMATIC IRRIGATION SYSTEM SHALL BE PROVIDED WITH 100% HEAD TO HEAD COVERAGE. SYSTEM SHALL BE DESIGNED PER LDC CHAPTER 905.4 (IRRIGATION) USING BEST MANAGEMENT PRACTICES FOR THE PROTECTION OF WATER RESOURCES IN FLORIDA DEVELOPED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION, DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES, DEPARTMENT OF COMMUNITY AFFAIRS, WATER MANAGEMENT DISTRICTS, THE UNIVERSITY OF FLORIDA.
- AT COMMON AREAS ON THE INTERIOR OF THE SITE (SEE SHEET LS-4) AN AUTOMATIC IRRIGATION SYSTEM SHALL BE PROVIDED WITH 100% HEAD TO HEAD COVERAGE. SYSTEM SHALL BE DESIGNED PER LDC CHAPTER 905.4 (IRRIGATION) USING BEST MANAGEMENT PRACTICES FOR THE PROTECTION OF WATER RESOURCES IN FLORIDA DEVELOPED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION, DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES, DEPARTMENT OF COMMUNITY AFFAIRS, WATER MANAGEMENT DISTRICTS, THE UNIVERSITY OF FLORIDA.

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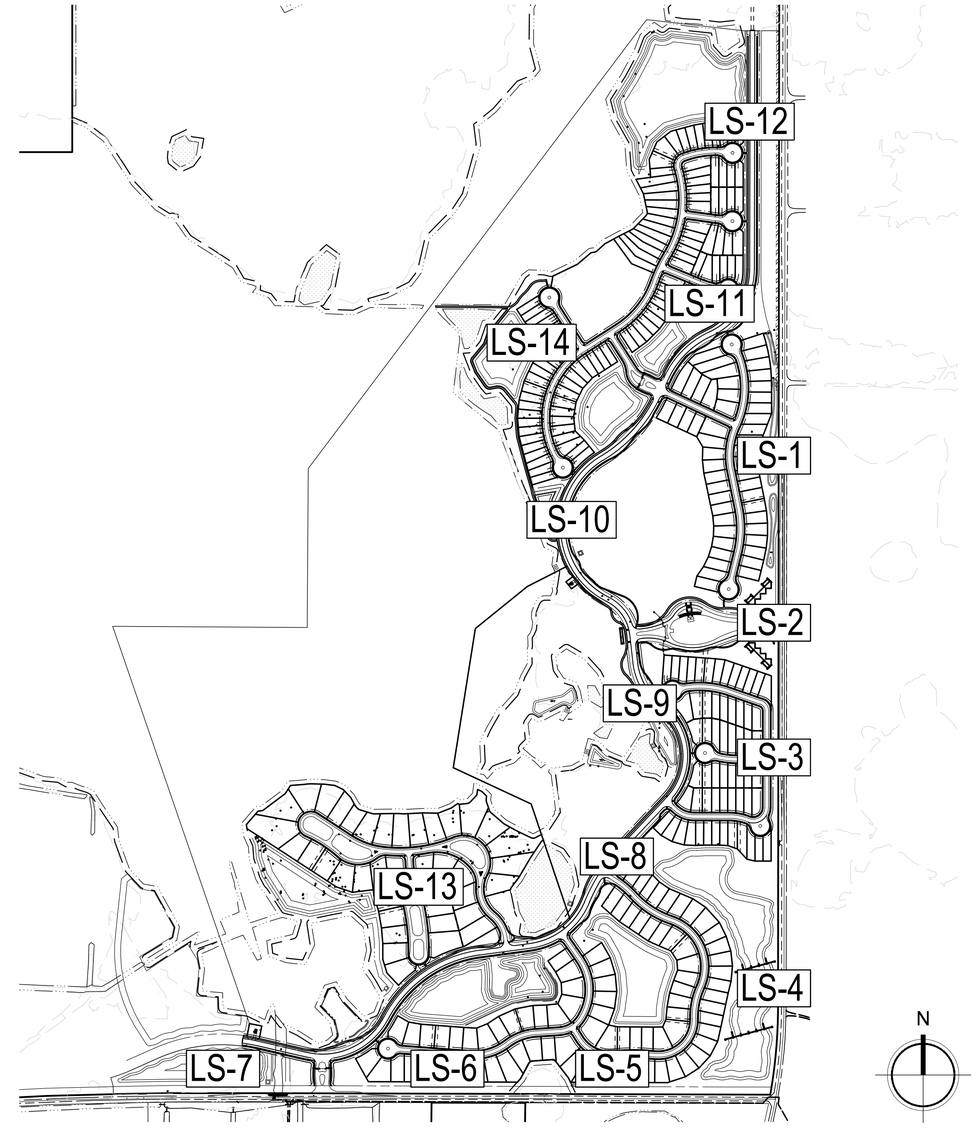
(86.0)	Denotes Existing Spot Grades
31.0	Denotes Proposed Civil Engineers Spot Grades
FG 86.0	Denotes Proposed Landscape Spot Grades
BS 86.0	Denotes Bottom of Stair Elevation
FG 86.0	Denotes Finished Grade Elevation
TS 86.0	Denotes Top of Stair Elevation
TW 86.0	Denotes Top of Wall Elevation
EP 81.5	Denotes Edge of Pavement Elevation
AD 87.0	Denotes Area Drain Elevation
BD 87.0	Denotes Brass Drain Elevation
A.T. 87.0	Denotes Atrium Drain Elevation
N.W.L.	Denotes Normal Water Level
P.A.	Denotes Planter Area
100	Denotes Proposed Contour
82	Denotes Existing Contour
	Denotes Trench Drain
1□" LIO	Denotes Tree to be Removed
1□" LIO	Denotes Tree to be Preserved
HP 81.75	Denotes High Point Elevation
LP 71.75	Denotes Low Point Elevation
T COL 87.5	Denotes Top of Column Elevation
TOB 81.0	Denotes Top of Bank Elevation
BOS 79.5	Denotes Bottom of Slope Elevation
TF 70.5	Denotes Top of Footing Elevation
FFE 85.0	Denotes Finish Floor Elevation
RM 31.0	Denotes Rim Elevation
TC 81.5	Denotes Top of Curb Elevation
	Denotes Disabled Access Ramp
A/C	Denotes A/C Condenser Unit
F.H.	Denotes Fire Hydrant
M.H.	Denotes Manhole Cover
	Denotes Area Drain
T	Denotes Transformer
	Denotes Wheel Stop
	Denotes Surface Drainage Direction
	Denotes Disabled Parking Space



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0 400 800 1200 1600

SCALE: 1" = 400'

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Landscape Index Sheet - Landscape Notes, General Legend, and Site to Context Plan	LS-0
Landscape Index Sheet - General Notes, Plant List	LS-0.1
Landscape Index Sheet - Landscape Data Charts	LS-0.2
Landscape Plan	LS-1
Landscape Plan	LS-2
Landscape Plan	LS-3
Landscape Plan	LS-4
Landscape Plan	LS-5
Landscape Plan	LS-6
Landscape Plan	LS-7
Landscape Plan	LS-8
Landscape Plan	LS-9
Landscape Plan	LS-10
Landscape Plan	LS-11
Landscape Plan	LS-12
Landscape Plan	LS-13
Landscape Plan	LS-14
Landscape Planting Details	LS-15
Landscape Notes and Specifications	LS-16
Landscape Specifications	LS-17

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EPCO RANCH NORTH
Parcel A Phase 1

Standard Pacific Homes
Pasco County, Florida

ISSUE DATES:

NO.	DESCRIPTION	DATE
	PERMIT SET	01.22.15

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PROJ. #:	13-81.1
DATE:	01.22.15
DRAWN BY:	JMG
CHECKED BY:	JMG
SCALE:	AS SHOWN

LANDSCAPE INDEX

SHEET NUMBER

LS-0

C□□r□□□r □□□□

1. THE LANDSCAPE CONTRACTOR SHALL REVIEW ALL LANDSCAPE PLANS AND SPECIFICATION AND PERFORM AN ANALYSIS OF SITE CONDITIONS RELATIVE TO THE PLANS AND SPECIFICATIONS PRIOR TO CONSTRUCTION AS WELL AS BECOMING FAMILIAR WITH ALL UNDERGROUND UTILITIES, PIPES, STRUCTURES AND LINE RUNS PRIOR TO CONSTRUCTION.
2. REPORT ALL DISCREPANCIES IN SITE CONDITIONS OR NON-CONFORMANCE TO SPECIFICATIONS (SUCH AS GRADING, BACKFILLING, REMOVAL OF DEBRIS, GRUBBING, ETC.) TO LANDSCAPE ARCHITECT PRIOR TO COMMENCING WORK.
3. TO INSURE A TIMELY FLOW OF WORK, THE LANDSCAPE CONTRACTOR SHALL COORDINATE WORK WITH OTHER TRADES OR PROFESSIONALS ON THE SITE WHOSE WORK MAY OVERLAP OR INTERFERE WITH THE WORK SET FORTH IN THE PLAN SET OR WRITTEN SPECIFICATIONS.
4. THE PLANT QUANTITIES WITHIN THE PLANT LIST ARE PROVIDED FOR CONVENIENCE PURPOSES. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL PLANT MATERIAL QUANTITIES AND ALL QUANTITIES FOR SOD, MULCH, ROCK MULCH, FINISH GRADE/BERMING AND PLANTING SOIL, PRIOR TO BIDDING. WHERE CONFLICTS OCCUR BETWEEN PLAN DRAWINGS AND PLANT LIST, THE PLAN DRAWINGS SHALL PREVAIL.
5. DISCREPANCIES IN DOCUMENTS OR SITE CONDITIONS SHALL BE REPORTED TO THE LANDSCAPE ARCHITECT IN WRITING AT TIME OF BIDDING OR PRIOR TO CONSTRUCTION. NO ACCOUNT SHALL BE MADE AFTER CONTRACT COMPLETION FOR FAILURE TO REPORT SUCH CONDITION OR FOR ERRORS ON THE PART OF THE LANDSCAPE CONTRACTOR AT TIME OF BIDDING (ONLY EXTREMELY PECULIAR AND UNUSUAL CONDITIONS WILL BE CONSIDERED FOR NEGOTIATION).
6. ALL QUESTIONS CONCERNING THIS PLAN SET OR SPECIFICATION SHALL BE DIRECTED TO THE LANDSCAPE ARCHITECT.
7. PLANT MATERIALS ARE TO BE BID AS SPECIFIED UNLESS UNAVAILABLE, AT WHICH TIME THE LANDSCAPE ARCHITECT WILL BE NOTIFIED BY TELEPHONE AND IN WRITING OF THE INTENDED CHANGES. THERE SHALL BE NO ADDITIONS, DELETIONS OR SUBSTITUTIONS WITHOUT THE WRITTEN APPROVAL OF THE LANDSCAPE ARCHITECT.
8. IF ISSUED, WRITTEN SPECIFICATIONS SHALL BE AN INTEGRAL PART OF THIS PLAN SET.
9. THE LANDSCAPE CONTRACTOR SHALL FIELD VERIFY PROPERTY LINE LOCATIONS BEFORE INSTALLATION OF ANY PERIMETER PLANT MATERIAL OR IRRIGATION SYSTEM.
10. THE LANDSCAPE CONTRACTOR WILL PROVIDE A SOIL SAMPLE ANALYSIS TO DETERMINE APPROPRIATE SOIL AMENDMENTS (i.e. FERTILIZER, LIME, etc.). THE CONTRACTOR WILL PROVIDE COPIES OF THE TEST RESULTS TO THE OWNER AND THE LANDSCAPE ARCHITECT.
11. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ALL NECESSARY APPLICABLE PERMITS AND LICENSES TO PERFORM THE WORK SET FORTH IN THE PLANT SET OR WRITTEN SPECIFICATIONS.

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1. CONTRACTOR IS RESPONSIBLE FOR REVIEWING SITE CONDITIONS PRIOR TO BIDDING AND CONSTRUCTION. ANY DISCREPANCIES BETWEEN THESE PLANS AND ACTUAL SITE CONDITIONS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE OWNER'S ENGINEER AND LANDSCAPE ARCHITECT PRIOR TO FINAL BID AND/OR CONSTRUCTION.

2. CONTRACTOR IS RESPONSIBLE FOR A THOROUGH UNDERSTANDING OF ALL ENGINEERING AND LANDSCAPE DESIGN DRAWINGS. DISCREPANCIES BETWEEN THESE DRAWINGS SHALL BE IMMEDIATELY IDENTIFIED AND BROUGHT TO THE ATTENTION OF THE OWNER'S ENGINEER AND LANDSCAPE ARCHITECT PRIOR TO FINAL BID AND/OR CONSTRUCTION.

3. THE EXTENT OF THE CONTRACTOR'S WORK IS AS INDICATED IN THE PLANS AND DETAILS. THE CONTRACTOR IS RESPONSIBLE TO UNDERSTAND THE EXTENT OF WORK DESCRIBED HEREIN. DISCREPANCIES IN THE DEFINED WORK LIMITS IN THESE DRAWINGS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE OWNER OR OWNER'S REPRESENTATIVE. ANY MISUNDERSTANDINGS REGARDING THE EXTENT OF WORK ARE FULLY THE RESPONSIBILITY OF THE CONTRACTOR.

4. IN THESE DRAWINGS WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED DIMENSIONS. THE CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB. ELM, INC. MUST BE NOTIFIED OF ANY VARIATION FROM THE DIMENSIONS AND CONDITIONS SHOWN IN THESE DRAWINGS.

5. BOUNDARY, EASEMENT, AND BUILDING LOCATION INFORMATION SHOWN HEREIN IS TAKEN FROM PLANS BY CLEARVIEW LAND DESIGN, P.L., 1213 EAST 6TH AVENUE, TAMPA, FL 33605. PHONE: (813) 223-3414.

6. NO REFERENCE TO ENGINEERING SHOULD BE MADE FROM THE LANDSCAPE PLANS. FOR LANDSCAPE REFERENCE ONLY.

7. ALL DIMENSIONS SHOWN ARE TO WALL CENTER UNLESS OTHERWISE NOTED. ALL SPOT ELEVATIONS ARE TO FINISHED CONCRETE WORK, UNLESS OTHERWISE NOTED.

8. CONTRACTOR SHALL BE RESPONSIBLE FOR CONFIRMING AND VERIFYING FINAL GRADES, SLOPES, AND SWALES WITH CIVIL ENGINEER'S GRADING PLAN AND THE HARDSCAPE PLANS. ANY DISCREPANCIES BETWEEN THESE PLANS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE OWNER'S ENGINEER AND LANDSCAPE ARCHITECT PRIOR TO FINAL BID AND/OR CONSTRUCTION. POSITIVE DRAINAGE SHALL BE MAINTAINED IN ALL AREAS. AREA DRAINS MAY NEED TO BE ADDED WHERE POSITIVE DRAINAGE CAN NOT OCCUR.

E□□□□□□ Tr□□ C□r□ □ □□□□

A. FLAG ALL TREES AND PALMS TO BE SAVED IN PLACE. PROVIDE BARRICADING IN ACCORDANCE WITH LOCAL STANDARDS AROUND TREES TO BE SAVED. BARRICADING SHALL BE IN PLACE PRIOR TO SITE DEMOLITION.

B. ALL EXISTING TREES TO REMAIN SHALL BE BARRICADED (SEE DETAILS). SUCH BARRICADE SHALL BE IN PLACE PRIOR TO LAND CLEARING OR CONSTRUCTION ACTIVITIES.

C. ALL CLEARING, GRUBBING, EXCAVATING AND/OR GRADING UNDER THE DRIP LINE OF TREES TO REMAIN SHALL BE DONE BY HAND. ANY EXCEPTIONS TO THIS SHALL BE APPROVED BY THE LANDSCAPE ARCHITECT OR PROJECT ARBORIST.

D. ANY ACTIVITIES (DRIVING, STORAGE, ETC.) TO OCCUR WITHIN DRIPLINE OF THE TREES SHOULD BE OF TEMPORARY NATURE AND SHALL ONLY OCCUR AFTER A TEMPORARY MATERIAL SUCH AS MARINE GRADE PLYWOOD AND PINE BARK MULCH (MIN. 12" DEPTH) HAS BEEN SPREAD IN THE DRIPLINE AREA TO BE AFFECTED.

E. ALL WORK SHALL BE UNDERTAKEN IN THE PRESENCE OF A REGISTERED ARBORIST EMPLOYED BY THE LANDSCAPE CONTRACTOR. ALL TREES AND PALMS TO BE SAVED SHALL BE EXAMINED FOR DAMAGE, DISEASE AND INSECT INFESTATION. PARTS OF THE TREE SHOWING THESE CONDITIONS SHALL BE TREATED OR PRUNED IN ACCORDANCE WITH THE ARBORISTS RECOMMENDATIONS. REMOVE ALL DEAD LIMBS AND VINES.

F. ALL TREES TO REMAIN SHALL HAVE ALL DEAD WOOD AND CONFLICTING WOOD REMOVED. ALL TRUNK AND MAJOR LIMB (OVER TWO [2] INCHES DIAMETER) CUTS SHALL BE COATED. COATING USED SHALL BE APPROVED BY PROJECT ARBORIST.

G. ROOT PRUNE ALL TREES TO BE SAVED PRIOR TO GRADING AROUND TREES. CUT ALONG LINES OFFSET FROM LINES OF DEVELOPMENT SURROUNDING THE TREE (i.e. AT BUILDING FOUNDATIONS, PARKING LOTS, ETC.)

H. TREAT ALL CUTS WITH FUNGICIDAL BARRIER. 1. BACKFILL THE TRENCH, WITHIN 4 HOURS OF DIGGING, WITH A 1:1 MIXTURE OF SITE SOIL AND SANDUST OR OTHER FINE ORGANIC MATERIAL. DO NOT COMPACT.

I. FERTILIZE THE PLANT AS DIRECTED BY THE CONSULTING ARBORIST.

J. AN ARBORIST SHALL VISIT THE SITE PERIODICALLY TO ASSESS THE HEALTH OF THE TREES AND ISSUE REPORTS ON THE RELATIVE HEALTH OF THE TREE AND MAKE RECOMMENDATIONS FOR FURTHER TREATMENT IF NECESSARY.

K. ALL VINES SHALL BE REMOVED FROM CANOPY AND ALL AIR PLANTS HARMFUL TO THE TREES HEALTH SHALL BE REMOVED.

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1. TREES AND OTHER LANDSCAPING SHALL BE PLANTED IN SUCH A MANNER AS NOT TO IMPEDE THE STORM-WATER RUN OFF TO OR IN A DITCH, SWALE OR POND, AND AWAY FROM THE PIPES, UNDERDRAINS AND SIDEWALK WITHOUT OBSTRUCTING THE MAINTENANCE ACCESS TO THE STORMWATER FACILITY.
2. ALL THE TREES OVERHANG TO THE PUBLIC RIGHT OF WAY/OR TREES WITHIN THE ROW SHALL BE TRIMMED AND PRUNED TO MAINTAIN A MINIMUM VERTICAL CLEAR HEIGHT OF 8' FROM THE FINISHED GROUND SURFACE OF THE SIDEWALK TO THE BOTTOM OF CANOPY/ 16.6' CLEAR HEIGHT ABOVE THE ROADWAY PATHS.
3. SITE TRIANGLE SHALL BE UNOBSTRUCTED AND SHALL BE INSPECTED AND MAINTAINED IN CONFORMANCE WITH FDOT INDEX 546. ALL LANDSCAPE MAINTENANCE WITHIN THE ROW AND OTHER COMMON AREAS SHALL BE THE RESPONSIBILITY OF THE HOA OR CDD.
4. TREES PLANTED SHALL BE PLANTED A MINIMUM OF 4'-0" FROM FACE OF CURB AND TREES PLANTED WITHIN A ROADWAY MEDIAN SHALL BE A MINIMUM OF 6'-0" FROM FACE OF CURB.
5. FOR EVERY FIVE TREES REQUIRED THERE SHALL BE A MINIMUM OF ONE SPECIES PROVIDED, UP TO A MAX. OF EIGHT SPECIES WHEN 40 OR MORE TREES ARE REQUIRED.

STREET TREE LIST

Symbol	Quantity	Botanical Name	Common Name	Space	Specification	Total Cal. Inches	Drought Tol.	Native Fla.
	87	QUERCUS VIRGINIANA	LIVE OAK	A.S.	14' - 16' HEIGHT, 6' - 8' SPREAD MIN., 3" CAL., B&B OR 100 GAL.	261	YES	YES
	107	ULMUS PARVIFOLIA 'EMER II'	ALLEE ELM	A.S.	14' - 16' HEIGHT, 6' - 8' SPREAD MIN., 3" CAL., 100 GAL. OR B&B	321	YES	YES
	194 (100%)	DROUGHT TOL.	194 (100%)	NATIVE	TOTAL CAL. INCHES	582"		
	0 (0%)	NON-DROUGHT TOL.	0 (0%)	NON-NATIVE				

PLANT LIST

Symbol	Quantity	Botanical Name	Common Name	Space	Specification	Total Cal. Inches	Drought Tol.	Native Fla.
TREES								
	106	ACER RUBRUM 'FLORIDA FLAME'	FLORIDA FLAME RED MAPLE	A.S.	8' - 10' HEIGHT, 3' -4' SPREAD MIN., 2" CAL., 30 GAL.	212	YES	YES
	75	LAGERSTROEMIA INDICA 'NATCHEZ'	NATCHEZ CRAPE MYRTLE	A.S.	8' - 10' HEIGHT, 4' - 5' SPREAD MIN., 3 - 5 STEMS, 1" CAL. MIN., 3 LARGEST CANES, 30 GAL.	225	YES	NO
	87	LIQUIDAMBAR STRYACIFLUA	AMERICAN SWEET GUM	A.S.	14' - 16' HEIGHT, 6' - 8' SPREAD MIN., 3" CAL., 100 GAL. OR B&B	261	YES	YES
	83	MAGNOLIA VIRGINIANA	SWEET BAY	A.S.	8' - 10' HEIGHT, 3' - 4' SPREAD MIN., 2" CAL., 30 GAL.	166	YES	YES
	70	NYSSA SYLVATICA 'BLACK TUPELO'	SOUR GUM	A.S.	8' - 10' HEIGHT, 3' - 4' SPREAD MIN., 2" CAL., 30 GAL.	140	YES	YES
	251	PINUS ELLIOTTI	SLASH PINE	A.S.	10' - 12' HEIGHT, 3' - 4' SPREAD MIN., 2" CAL., B & B	502	YES	YES
	170	QUERCUS VIRGINIANA	LIVE OAK	A.S.	14' - 16' HEIGHT, 6' - 8' SPREAD MIN., 3" CAL., B&B OR 100 GAL.	510	YES	YES
	153	TAXODIUM DISTICHUM	BALD CYPRESS	A.S.	10' -12' HEIGHT, 2' - 3' SPREAD MIN., 2" CAL, 30 GAL.	306	YES	YES
	110	ULMUS PARVIFOLIA 'EMER II'	ALLEE ELM	A.S.	14' - 16' HEIGHT, 6' - 8' SPREAD MIN., 3" CAL., 100 GAL. OR B&B	330	YES	YES
	1,105 (100%)	DROUGHT TOL.	1,030 (93%)	NATIVE	TOTAL CAL. INCHES	2,652"		
	0 (0%)	NON-DROUGHT TOL.	75 (7%)	NON-NATIVE				
Symbol	Quantity	Botanical Name	Common Name	Space	Specification	Total SF Calcs.	Drought Tol.	Native Fla.
SHRUBS / GROUND COVERS / GRASSES								
	391	CEPHALANTHUS OCCIDENTALIS	BUTTONBUSH	36" o.c.	24" - 30" HEIGHT, 18" - 20" SPREAD, 3 GAL.	3,520	YES	YES
	440	CRINUM ASIATICUM	CRINUM LILY	48" o.c.	24" X 24", 3 GAL.	1,760	NO	NO
	782	ERAGROSTIS SPECTABILIS	PURPLE LOVE GRASS	36" o.c.	12" HEIGHT, 8" - 10" SPREAD, FULL, 1 GAL.	7,041	YES	YES
	391	ILEX VOMITORIA	YAUPON HOLLY	36" o.c.	18" - 24" HEIGHT, 18" - 24" SPREAD, FULL, 3 GAL	3,520	YES	YES
	2,253	ILEX VOMITORIA 'NANA'	DWARF YAUPON HOLLY	24" o.c.	16" - 18" HEIGHT, 16" SPREAD, 3 GAL.	14,081	YES	YES
	587	ILLICIUM PARVIFOLIUM 'FOREST GREEN'	FOREST GREEN ANISE	36" o.c.	24" - 30" HEIGHT, 18" - 20" SPREAD MIN., 3 GAL.	5,281	YES	YES
	2,816	JUNIPERUS DAVURICA 'PARSONII'	PARSON'S JUNIPER	36" o.c.	12" - 14" HEIGHT, 16" SPREAD, 3 GAL.	17,602	YES	NO
	1,565	LIROPE MUSCARI	LILY TURF	18" o.c.	12" HEIGHT AND SPREAD, FULL, 1 GAL.	3,520	YES	NO
	1,173	MUHLENBERGIA CAPILLARIS	MUHLY GRASS	36" o.c.	8" - 10" HEIGHT AND SPREAD, FULL, 1 GAL.	10,561	YES	YES
	176	MYRICA CERIFERA	WAX MYRTLE	54" o.c.	24" - 30" HEIGHT, 18" - 20" SPREAD, 3 GAL.	3,520	YES	YES
	220	MYRICANTHES FRAGRANS	SIMPSON'S STOPPER	48" o.c.	24" - 30" HEIGHT, 18" - 20" SPREAD, 3 GAL.	3,520	YES	YES
	5,281	RHAPHIOLEPIS INDICA	DWARF INDIAN HAWTHORNE	24" o.c.	14" - 16" HEIGHT, 16" SPREAD, 3 GAL.	21,122	YES	NO
	1,760	RHODODENDRON FORMOSA	FORMOSA AZALEA	36" o.c.	18" - 24" HEIGHT, 18" SPREAD MIN., 3 GAL.	15,842	YES	NO
	2,934	SPARTINA BAKERI	SAND CORD GRASS	36" o.c.	12" - 14" HEIGHT AND SPREAD, FULL, 1 GAL.	26,403	YES	YES
	3,129	TRACHELOSPERMUM ASIATICUM	DWARF JASMINE	18" o.c.	12" - 15" SPR., MIN. 3 RUNNERS PER POT, 1 GAL.	7,041	YES	NO
	1,210	TRIPSACUM FLORIDIANA	DWARF FAKAHATCHEE GRASS	48" o.c.	12" HEIGHT, 8" - 10" SPREAD, FULL, 1 GAL.	19,362	YES	YES
	1,369	VIBURNUM ODORATISSIMUM	SWEET VIBURNUM	36" o.c.	24" - 30" HEIGHT, 18" - 20" SPREAD MIN., 3 GAL.	12,321	YES	NO
	26,037 (98%)	DROUGHT TOL.	10,118 (38%)	NATIVE	TOTAL SF	176,018'		
	440 (2%)	NON-DROUGHT TOL.	16,360 (62%)	NON-NATIVE				
SOD								
SOD A	FIELD MEASURE	STENOTAPHRUM SECUNDATUM	ST. AUGUSTINE SOD	A.S.	SOD - SEE SPECS		NO	NO
SOD B	FIELD MEASURE	CYNODON DACTYLON 'CELEBRATION'	CELEBRATION BERMUDA SOD	A.S.	SOD - SEE SPECS		YES	NO

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EPCO RANCH NORTH
Parcel A Phase 1

Standard Pacific Homes
Pasco County, Florida

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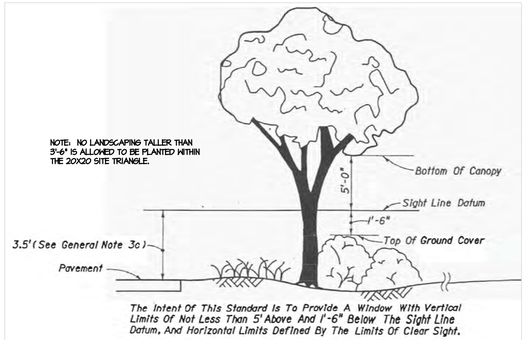
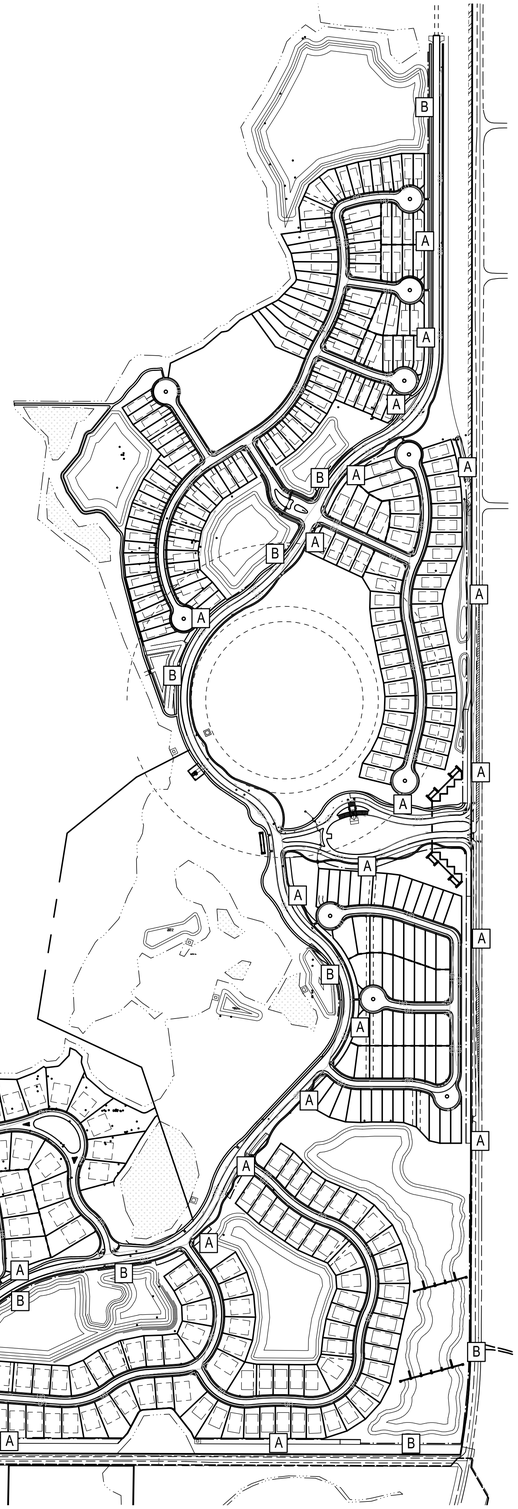
LANDSCAPE INDEX

SHEET NUMBER

LS-0.1

Wd D





Br M

A Type D Buffer

B Retention Pond Buffer

Br C

Buffer Landscaping Requirements - Type D Buffers	Required	Provided
20' Wide Landscape Buffer (10,312 LF x 20 = 206,240 SF)	Yes	20' wide
Shade trees located 20' away from overhead electric lines	Yes	in compliance
Required number of trees 1 Tree per 30 LF (10,312 LF/ 30 = 349 Trees)	349	355
Required number of shrubs 5 Shrubs per required tree (349 Trees x 5 = 1,745 Shrubs)	1,745	1,775

Buffer Landscaping Requirements - Retention Pond Buffers	Required	Provided
Buffer at Retention Ponds 5' Wide Landscape Buffer (5,898 LF x 5 = 29,490 SF)	Yes	5' wide
Required number of trees 1 Tree per 50 LF (5,898 LF/ 50 = 120 Trees)	120	135

Sr Gd r R r

SHRUBS + G. COVERS	MIN. 30% NATIVE	REQ'D.
26,478	.30	7,944
	TOTAL NATIVE SHRUB + G.C. PROVIDED	10,118
	PERCENTAGE PROVIDED	38%

Dr T r R r

SHRUBS + G. COVERS	MIN. 50% DROUGHT TOL.	REQ'D.
26,478	.50	13,239
	TOTAL DROUGHT TOL. SHRUB + G.C. PROVIDED	26,037
	PERCENTAGE PROVIDED	98%

Sr Gd r C r R r

SHRUBS + G. COVERS COVERAGE	25% MAX COVERAGE ANY PLANT	Max SF Coverage
176,018 S.F.	.25	44,006 S.F.

NOTE: SEE SHEET LS-0.1 WHICH SHOWS SF COVERAGES FOR INDIVIDUAL PLANTS.

Wr M R r

MINIMUM 5'-0" WIDE PLANTING AREA TO BE MAINTAINED BETWEEN RETENTION POND AND PUBLIC R.O.W. OR ADJACENT PARCEL @ 1 TREE / 50 LF.

PLANTING AREA LF	MIN. TREE PLANTING	REQ'D.
5,898 LF	1 TREE / 50 LF	120
	TOTAL TREES PROVIDED	135

Gd Ar R r

PER LDC Table 905.2-E: NO MORE THAN THIRTY (30) PERCENT OF THE REQUIRED LANDSCAPE AREA WITHIN THE TYPE D BUFFER SHALL BE GRASSED.

REQ'D. LANDSCAPE AREA	MAX. 30% GRASS	REQ'D.
206,240 S.F.	.30	61,872 SF
	PERCENT GRASSED AREA COVERAGE PROVIDED	29%

E Tr

EXISTING TREES TO BE REMOVED WILL BE HARVESTED IN COMPLIANCE WITH THE AGRICULTURAL EXEMPTION.

Lot Tree List
SHADE TREES (2" min.)
ULMUS AMERICANA - AMERICAN ELM QUERCUS VIRGINIANA - LIVE OAK QUERCUS RUBRA - RED OAK ACER RUBRUM - RED MAPLE MAGNOLIA VIRGINIANA - MAGNOLIA PINUS ELLIOTTII - SLASH PINE
UNDERSTORY TREES (2" min.)
CASSIA FISTULA - CASSIA LAGERSTROEMIA INDICA 'NATCHEZ' - NATCHEZ CRAPE MYRTLE LAGERSTROEMIA INDICA 'MUSKOGEE' - MUSKOGEE CRAPE MYRTLE LAGERSTROEMIA INDICA 'TUSCARORA' - TUSCARORA CRAPE MYRTLE CORNUS FLORIDA - DOGWOOD ILEX X ATTENUATA 'EAST PALATKA' - EAST PALATKA HOLLY LIGUSTRUM JAPONICUM - LIGUSTRUM CERCIS CANADENSIS - RED BUD ULMUS ALATA - WINGED ELM

Bd r R rd rd Tr B d L S

Size of Lot (Square Feet)	Minimum Number of Trees
Less than 3,500	1
3,500-6,000	2
6,001-7,500	3
7,501-9,500	4
9,501-16,000	6
Over 16,000 to Under 1 Acre	8
1 Acre to Under 2.5 Acres	8
2.5 Acres to Under 5 Acres	6 per Developable Acre
5 Acres and Larger	4 per Developable Acre

T E Ad R d Tr 1"

Type of Tree	Existing Trees	Existing Inches	Trees Removed	Inches Removed	Replace Factor	Required Replacement Inches
OAK	685	16,201"	251	6,210"	1.00	6,210"
PINE	45	682"	10	147"	0.33	49"
CEDAR	6	101"	3	46"	0.33	16"
ELM	2	51"	1	41"	0.33	14"
SWEETGUM	8	106"	--	--	0.33	--
MAPLE	2	30"	--	--	0.33	--
BAY	1	19"	--	--	0.33	--
CAMPHOR	3	53"	3	53"	0	Invasive. To be removed.
CABBAGE PALM	1	12"	1	12"	0.33	4"
TOTAL	753	17,255"	269	6,504"		6,293"
TOTAL EXISTING INCHES REMOVED						6,293"
TOTAL REPLACEMENT INCHES PROVIDED 2,404 TOTAL REPLACEMENT INCHES FOR COMMON DEVELOPMENT AREA PROVIDED 2,956 TOTAL REPLACEMENT INCHES FOR LOTS						5,365"
TOTAL INCHES (SURPLUS/ DEFICIT)						DEFICIT 928"

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LANDSCAPE INDEX

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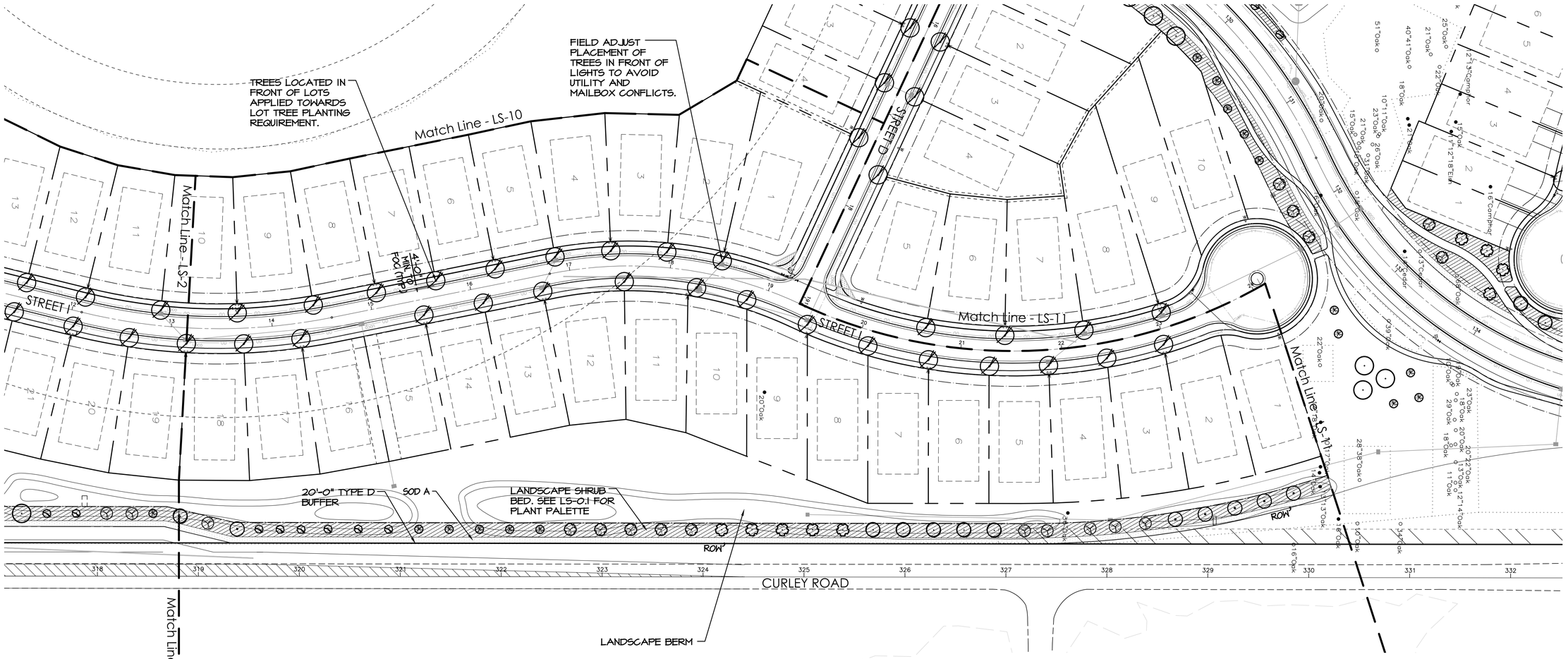
LS-0.2

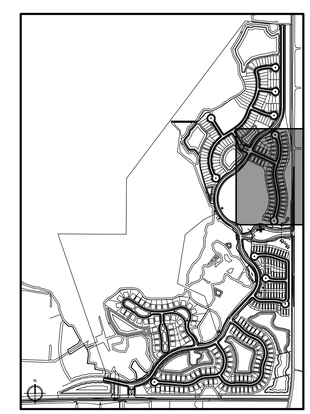


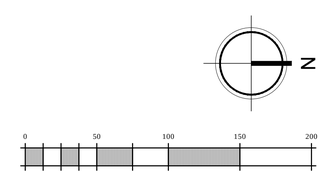
Curley Road
TYPE D BUFFER

Buffer Area:
Buffer provided for 1,147 LF of Frontage along Curley Road
Buffer area: 22,940 SF (1,147 LF x 20' depth)

Buffer Requirements:	Required	Provided
15 Acre or Larger Project	20' Buffer	20' Buffer
Required Trees (spaced an average of 30' OC)	39	39
Various Tree Species	8	8
30% Max Sod	6,882 SF Max	6,882 SF
Required shrubs (5 shrubs per tree)	195	+195

Landscape Material Notes:
- A maximum of fifty (50) percent of the plant materials, other than trees, may be nondrought tolerant.
- A minimum of thirty (30) percent of the plant materials other than trees and turfgrass, shall be native Floridian species suitable for growth in the county.
- No one (1) plant species of shrubs or ground cover plants or combination thereof, excluding turfgrass, shall constitute more than twenty-five (25) percent coverage of the overall landscape area.





SCALE: 1" = 50'

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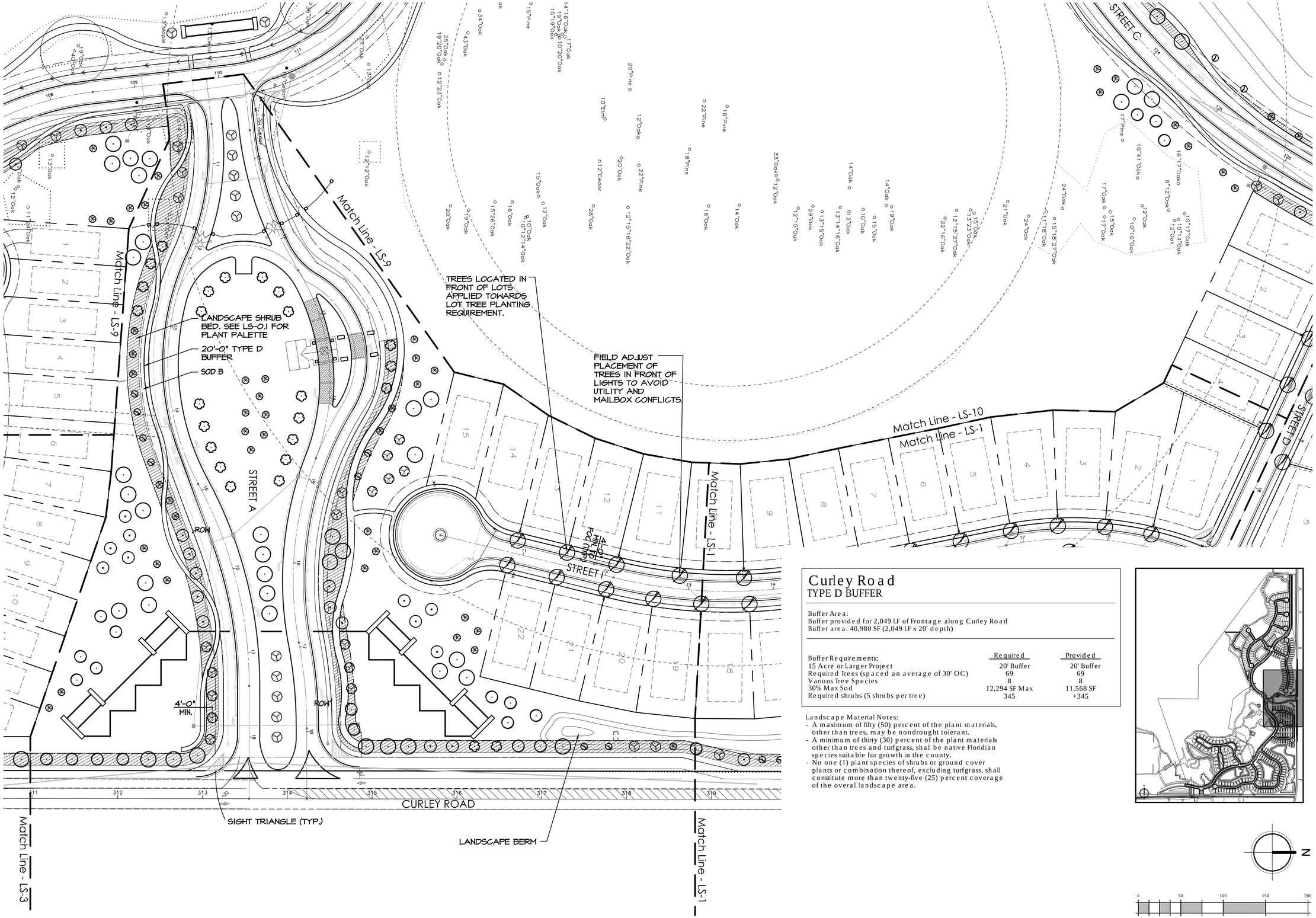
LANDSCAPE PLAN

SHEET NUMBER
LS-1



Curley Road
TYPE D BUFFER

Buffer Area:
Buffer provided for 2,049 LF of Frontage along Curley Road
Buffer area: 40,980 SF (2,049 LF x 20' depth)

Buffer Requirements:	Required	Provided
15 Acre or Larger Project	20' Buffer	20' Buffer
Required Trees (spaced an average of 30' OC)	69	69
Various Tree Species	8	8
30% Max Sod	12,294 SF Max	11,568 SF
Required shrubs (5 shrubs per tree)	345	+345

Landscape Material Notes:
- A maximum of fifty (50) percent of the plant materials, other than trees, may be nondrought tolerant.
- A minimum of thirty (30) percent of the plant materials other than trees and turfgrass, shall be native Floridian species suitable for growth in the county.
- No one (1) plant species of shrubs or ground cover plants or combination thereof, excluding turfgrass, shall constitute more than twenty-five (25) percent coverage of the overall landscape area.

N

0 50 100 150 200

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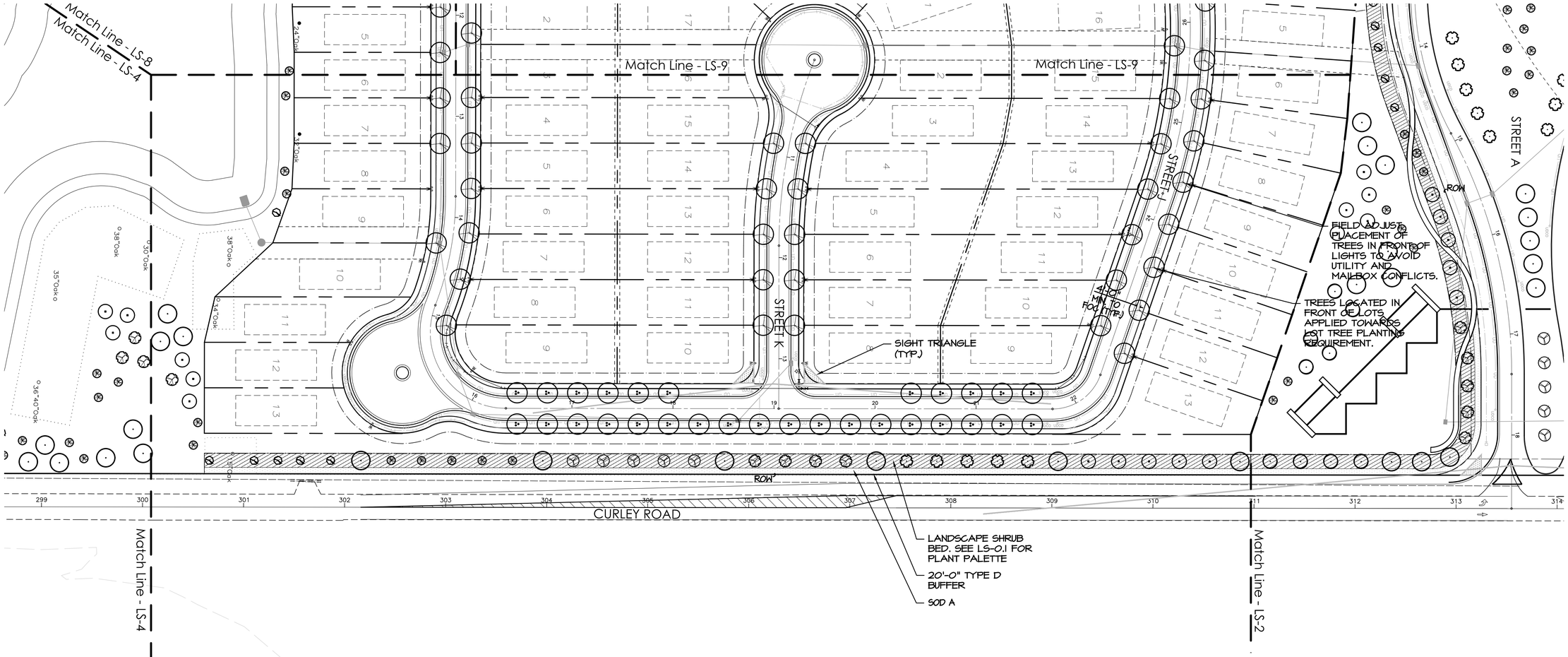
LS-2



Curley Road
TYPE D BUFFER

Buffer Area:
Buffer provided for 1,036 LF of Frontage along Curley Road
Buffer area: 20,720 SF (1,036 LF x 20' depth)

Buffer Requirements:	Required	Provided
15 Acre or Larger Project	20' Buffer	20' Buffer
Required Trees (spaced an average of 30' OC)	35	35
Various Tree Species	8	8
30% Max Sod	6,216 SF Max	6,216 SF
Required shrubs (5 shrubs per tree)	175	+175

Landscape Material Notes:
- A maximum of fifty (50) percent of the plant materials, other than trees, may be nondrought tolerant.
- A minimum of thirty (30) percent of the plant materials other than trees and turfgrass, shall be native Floridian species suitable for growth in the county.
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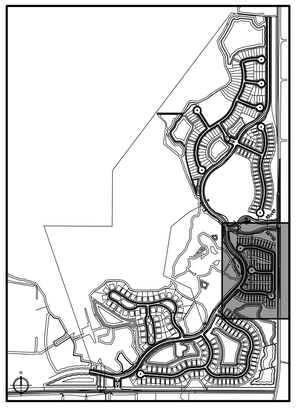

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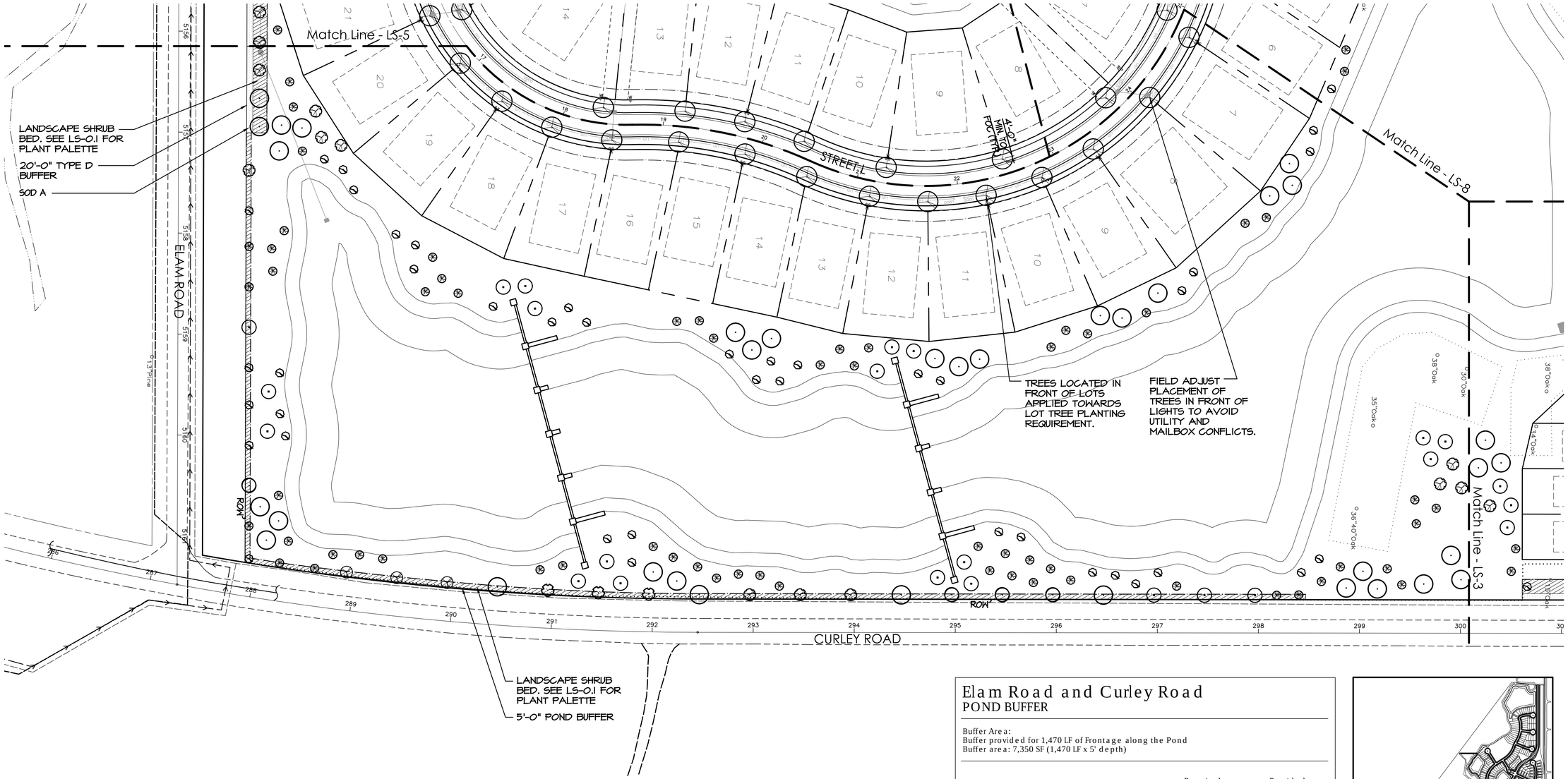


Elam Road and Curley Road
POND BUFFER

Buffer Area:
Buffer provided for 1,470 LF of Frontage along the Pond
Buffer area: 7,350 SF (1,470 LF x 5' depth)

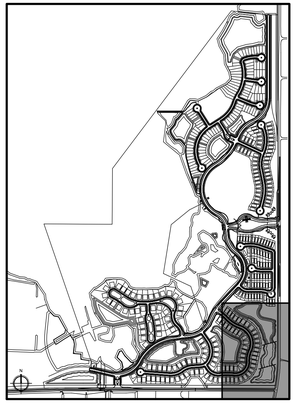
Buffer Requirements:	Required	Provided
Landscape planting area	5' Buffer	5' Buffer
Required Trees (spaced an average of 50' OC)	30	34

Elam Road
TYPE D BUFFER

Buffer Area:
Buffer provided for 86 LF of Frontage along Elam Road
Buffer area: 1,720 SF (86 LF x 20' depth)

Buffer Requirements:	Required	Provided
15 Acre or Larger Project	20' Buffer	20' Buffer
Required Trees (spaced an average of 30' OC)	3	3
Various Tree Species	8	8
30% Max Sod	516 SF Max	514 SF
Required shrubs (5 shrubs per tree)	15	+15

Landscape Material Notes:
- A maximum of fifty (50) percent of the plant materials, other than trees, may be nondrought tolerant.
- A minimum of thirty (30) percent of the plant materials other than trees and turfgrass, shall be native Floridian species suitable for growth in the county.
- No one (1) plant species of shrubs or ground cover plants or combination thereof, excluding turfgrass, shall constitute more than twenty-five (25) percent coverage of the overall landscape area.



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SHEET NUMBER
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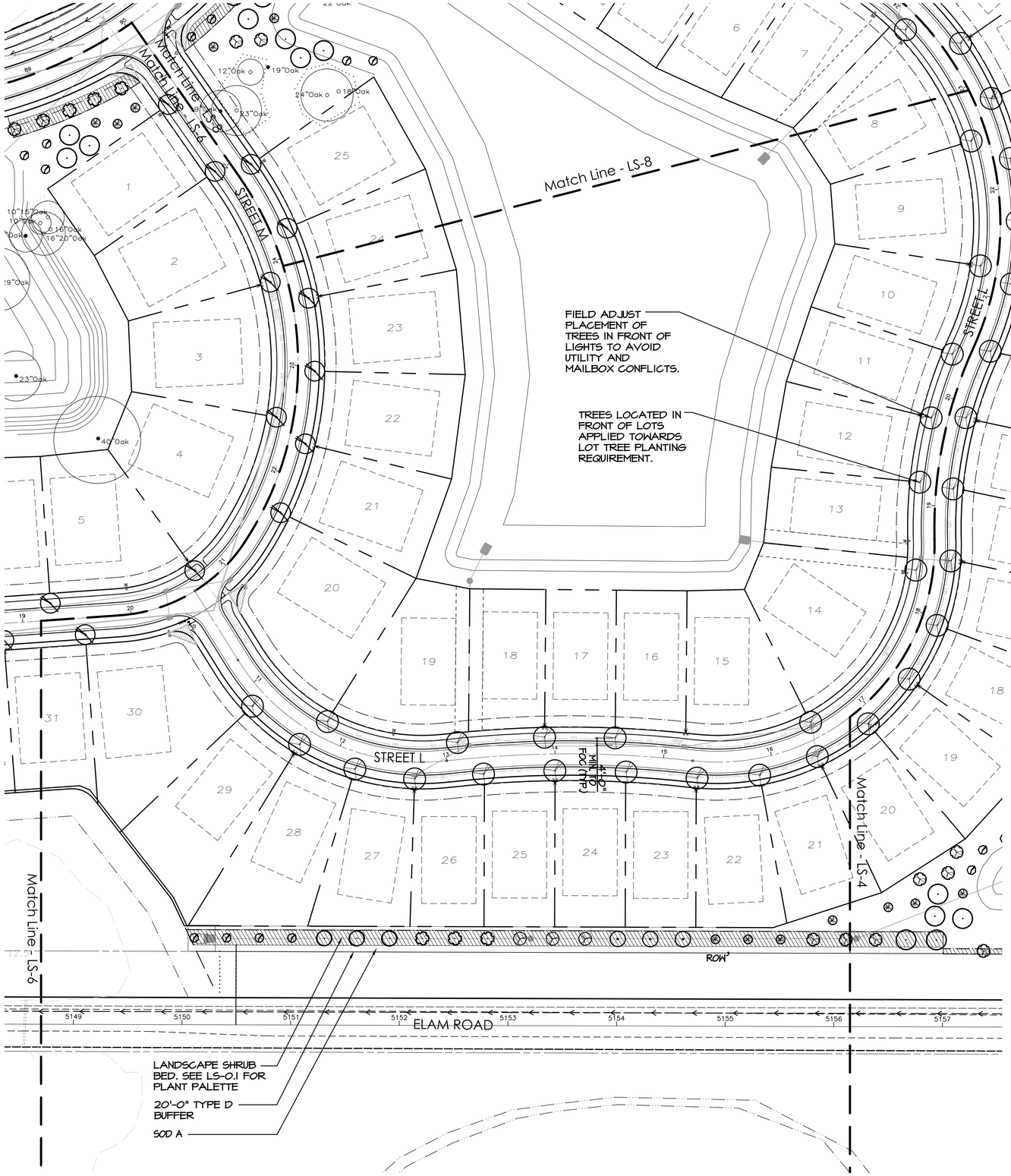

Curley Road
TYPE D BUFFER

Buffer Area:
Buffer provided for 608 LF of Frontage along Curley Road
Buffer area: 12,160 SF (608 LF x 20' depth)

Buffer Requirements:	Required	Provided
15 Acre or Larger Project	20' Buffer	20' Buffer
Required Trees (spaced an average of 30' OC)	21	21
Various Tree Species	8	8
30% Max Sod	3,648 SF Max	3,618 SF
Required shrubs (5 shrubs per tree)	105	+105

Landscape Material Notes:
- A maximum of fifty (50) percent of the plant materials, other than trees, may be nondrought tolerant.
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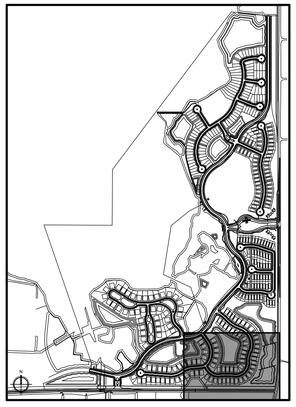

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SHEET NUMBER
LS-5

Street C
POND BUFFER

Buffer Area:
Buffer provided for 1,141 LF of Frontage along the Pond
Buffer area: 5,705 SF (1,141 LF x 5' depth)

Buffer Requirements:	Required	Provided
Landscape planting area	5' Buffer	5' Buffer
Required Trees (spaced an average of 50' OC)	23	28

Elam Road and Street C
TYPE D BUFFER

Buffer Area:
Buffer provided for 1,967 LF of Frontage along Elam Road and Street C
Buffer area: 39,340 SF (1,967 LF x 20' depth)

Buffer Requirements:	Required	Provided
15 Acre or Larger Project	20' Buffer	20' Buffer
Required Trees (spaced an average of 30' OC)	66	71
Various Tree Species	8	8
30% Max Sod	11,802 SF Max	11,802 SF
Required shrubs (5 shrubs per tree)	330	+355

Landscape Material Notes:
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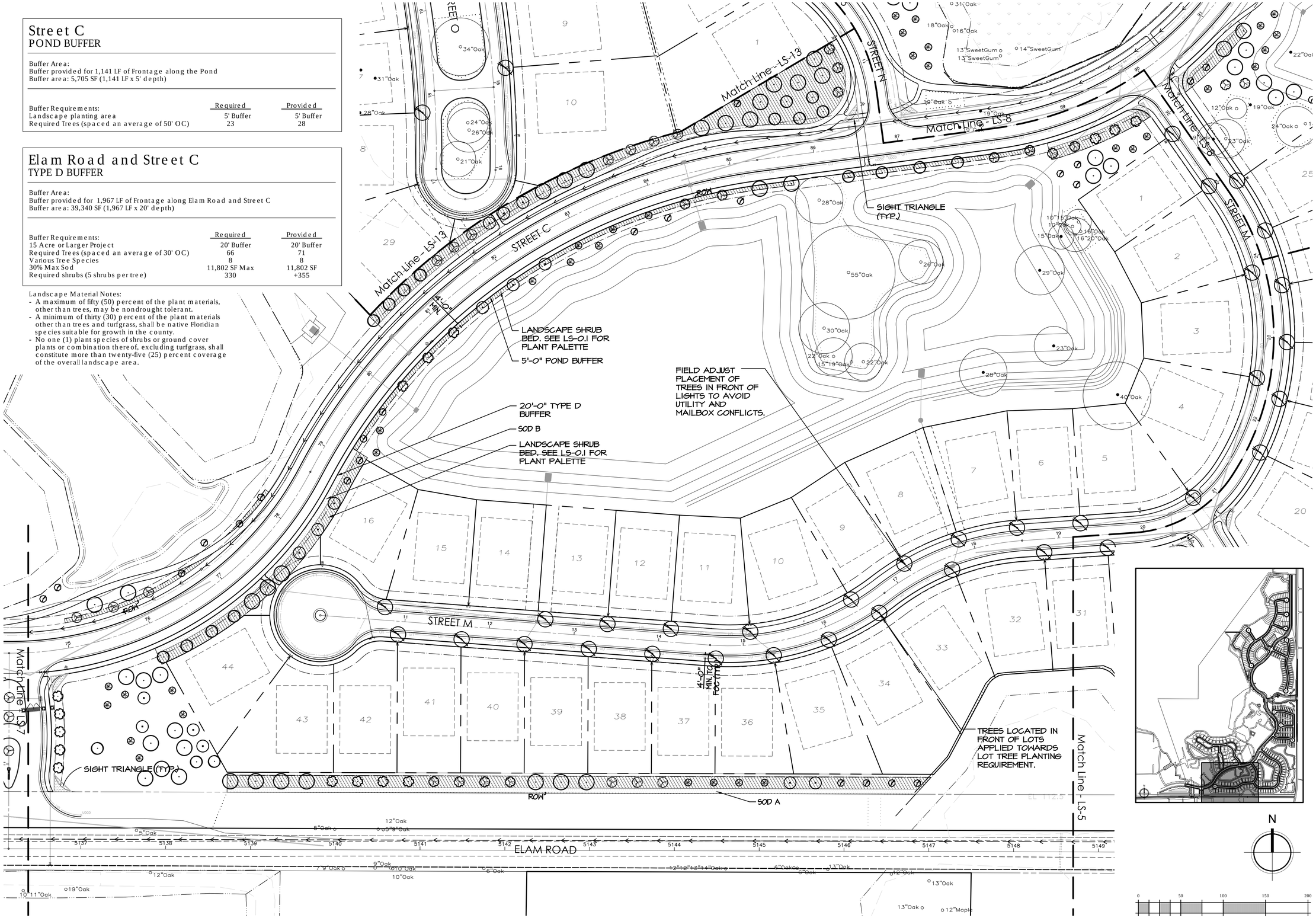

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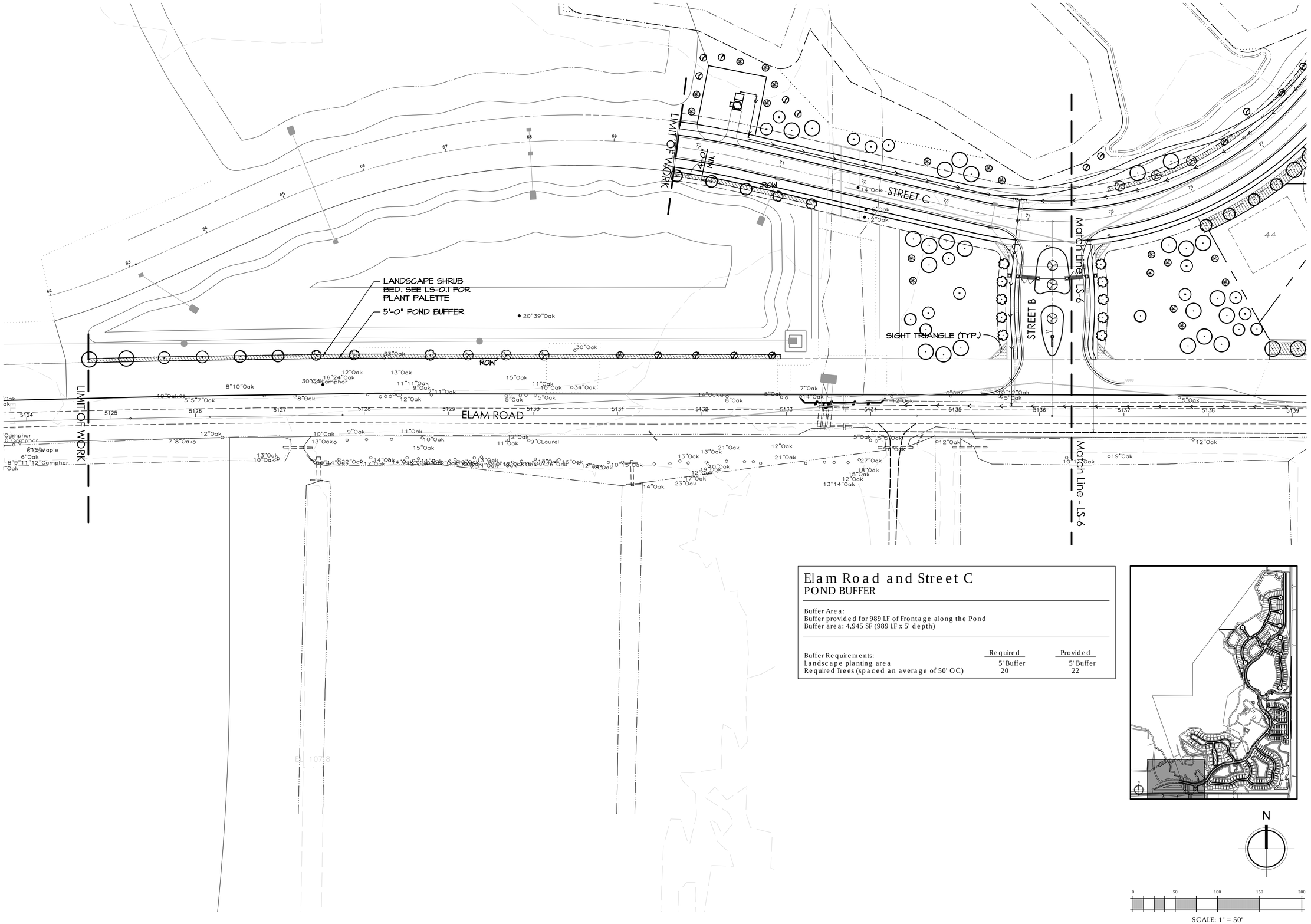
SCALE:	AS SHOWN

LANDSCAPE PLAN

SHEET NUMBER
LS-6



Elam Road and Street C
POND BUFFER

Buffer Area:
Buffer provided for 989 LF of Frontage along the Pond
Buffer area: 4,945 SF (989 LF x 5' depth)

Buffer Requirements:	Required	Provided
Landscape planting area	5' Buffer	5' Buffer
Required Trees (spaced an average of 50' OC)	20	22

N

0 50 100 150 200

SCALE: 1" = 50'

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LA6666945

EPCO RANCH NORTH
Parcel A Phase 1

Standard Pacific Homes
Pasco County, Florida

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LANDSCAPE PLAN

SHEET NUMBER
LS-7

WETLAND

EXISTING VEGETATION TO REMAIN

LANDSCAPE SHRUB BED. SEE LS-0.1 FOR PLANT PALETTE

20'-0" TYPE D BUFFER

SOD B

SIGHT TRIANGLE (TYP.)

STREET C

ROW

STREET J

STREET L

STREET M

STREET N

4'-0" MIN.

4'-0" MIN. TO FOC (TYP.)

FIELD ADJUST PLACEMENT OF TREES IN FRONT OF LIGHTS TO AVOID UTILITY AND MAILBOX CONFLICTS.

TREES LOCATED IN FRONT OF LOTS APPLIED TOWARDS LOT TREE PLANTING REQUIREMENT.

Match Line - LS-3

Match Line - LS-4

Match Line - LS-5

Match Line - LS-6

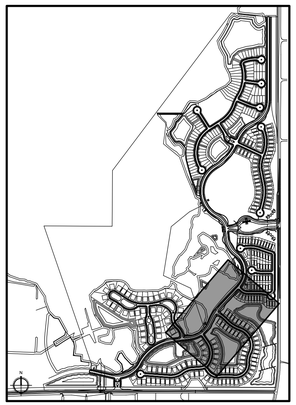
Match Line - LS-9

Street C
TYPE D BUFFER

Buffer Area:
Buffer provided for 456 LF of Frontage along Street C
Buffer area: 9,120 SF (456 LF x 20' depth)

Buffer Requirements:	Required	Provided
15 Acre or Larger Project	20' Buffer	20' Buffer
Required Trees (spaced an average of 30' OC)	16	16
Various Tree Species	8	8
30% Max Sod	2,736 SF Max	2,736 SF
Required shrubs (5 shrubs per tree)	80	+80

Landscape Material Notes:
- A maximum of fifty (50) percent of the plant materials, other than trees, may be nondrought tolerant.
- A minimum of thirty (30) percent of the plant materials other than trees and turfgrass, shall be native Floridian species suitable for growth in the county.
- No one (1) plant species of shrubs or ground cover plants or combination thereof, excluding turfgrass, shall constitute more than twenty-five (25) percent coverage of the overall landscape area.



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SCALE: 1" = 50'

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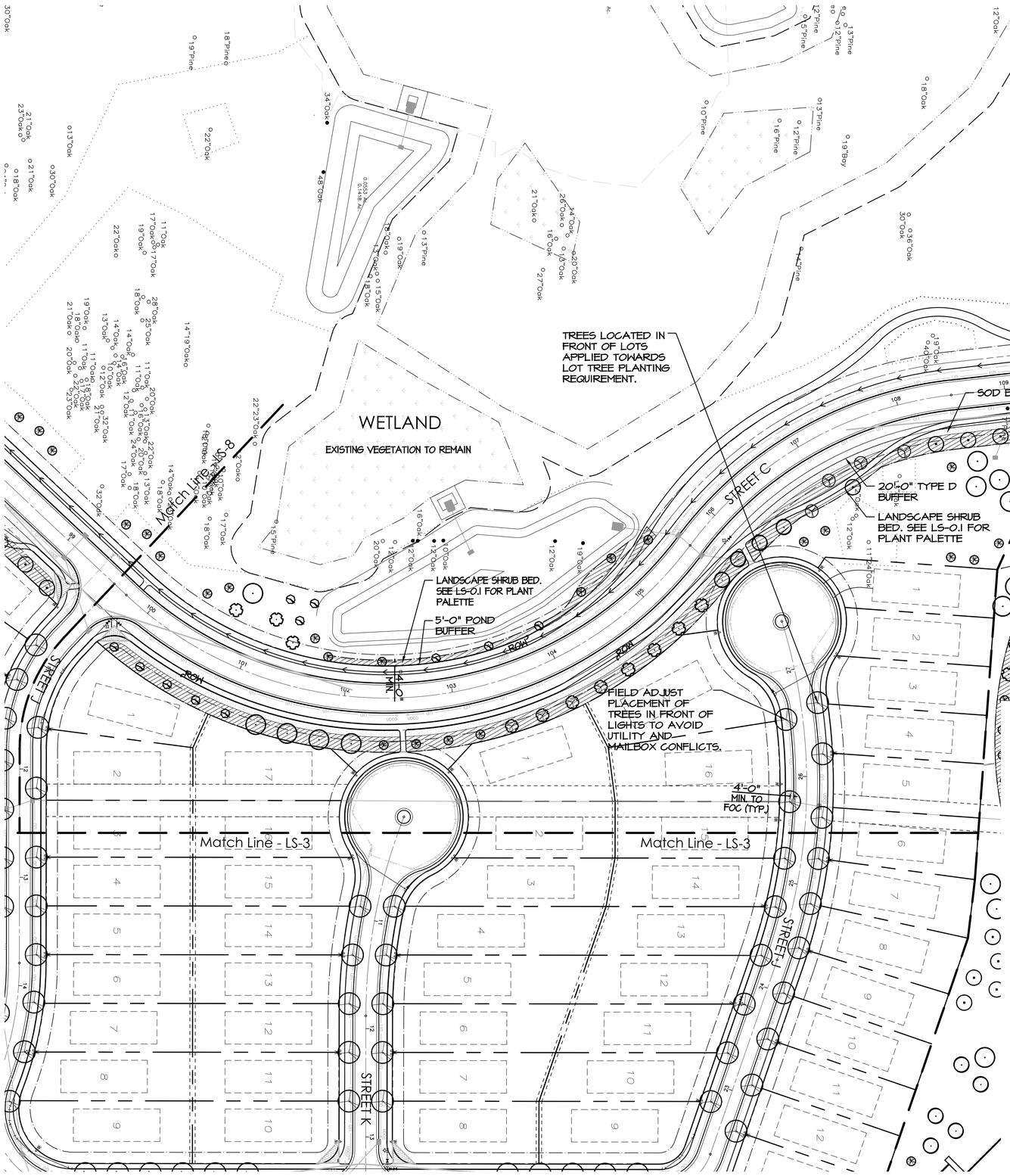
SHEET NUMBER

LS-8



Street C
TYPE D BUFFER

Buffer Area:
Buffer provided for 985 LF of Frontage along Street C
Buffer area: 19,700 SF (985 LF x 20' depth)

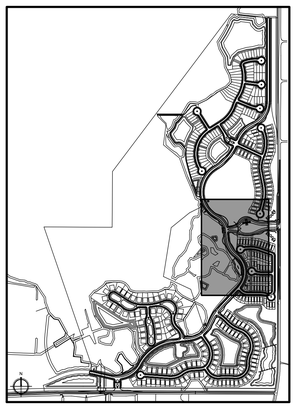
Buffer Requirements:	Required	Provided
15 Acre or Larger Project	20' Buffer	20' Buffer
Required Trees (spaced an average of 30' OC)	33	33
Various Tree Species	8	8
30% Max Sod	5,910 SF Max	5,910 SF
Required shrubs (5 shrubs per tree)	165	+165

Landscape Material Notes:
- A maximum of fifty (50) percent of the plant materials, other than trees, may be nondrought tolerant.
- A minimum of thirty (30) percent of the plant materials other than trees and turfgrass, shall be native Floridian species suitable for growth in the county.
- No one (1) plant species of shrubs or ground cover plants or combination thereof, excluding turfgrass, shall constitute more than twenty-five (25) percent coverage of the overall landscape area.

Street C
POND BUFFER

Buffer Area:
Buffer provided for 337 LF of Frontage along the Pond
Buffer area: 1,685 SF (337 LF x 5' depth)

Buffer Requirements:	Required	Provided
Landscape planting area	5' Buffer	5' Buffer
Required Trees (spaced an average of 50' OC)	7	8



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SCALE: 1" = 50'

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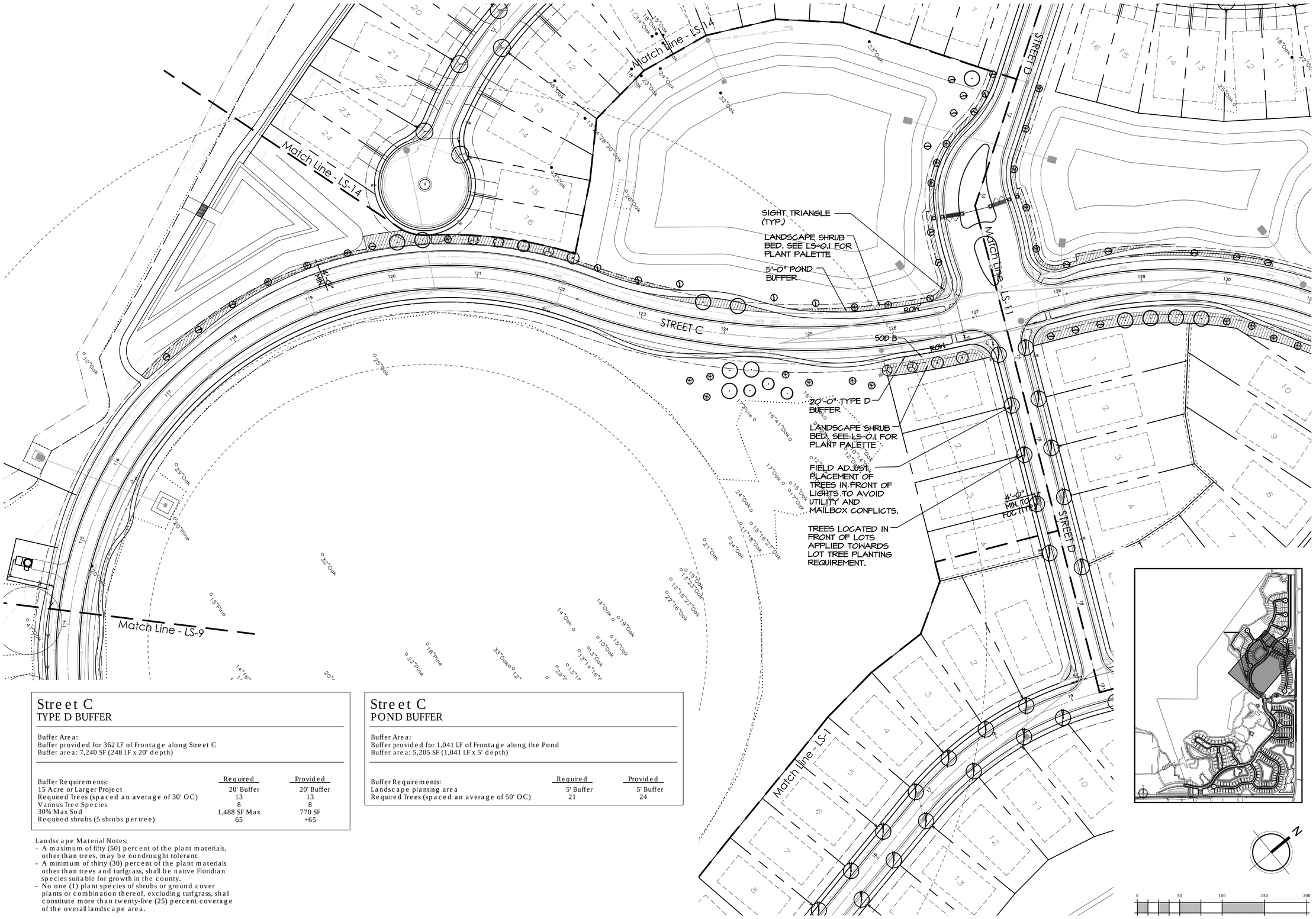
SHEET NUMBER
LS-9



Street C
TYPE D BUFFER

Buffer Area:
Buffer provided for 362 LF of Frontage along Street C
Buffer area: 7,240 SF (248 LF x 20' depth)

Buffer Requirements:	Required	Provided
15 Acre or Larger Project	20' Buffer	20' Buffer
Required Trees (spaced an average of 30' OC)	13	13
Various Tree Species	8	8
30% Max Sod	1,488 SF Max	770 SF
Required shrubs (5 shrubs per tree)	65	+65

Street C
POND BUFFER

Buffer Area:
Buffer provided for 1,041 LF of Frontage along the Pond
Buffer area: 5,205 SF (1,041 LF x 5' depth)

Buffer Requirements:	Required	Provided
Landscape planting area	5' Buffer	5' Buffer
Required Trees (spaced an average of 50' OC)	21	24

Landscape Material Notes:
- A maximum of fifty (50) percent of the plant materials, other than trees, may be nondrought tolerant.
- A minimum of thirty (30) percent of the plant materials other than trees and turfgrass, shall be native Floridian species suitable for growth in the county.
- No one (1) plant species of shrubs or ground cover plants or combination thereof, excluding turfgrass, shall constitute more than twenty-five (25) percent coverage of the overall landscape area.

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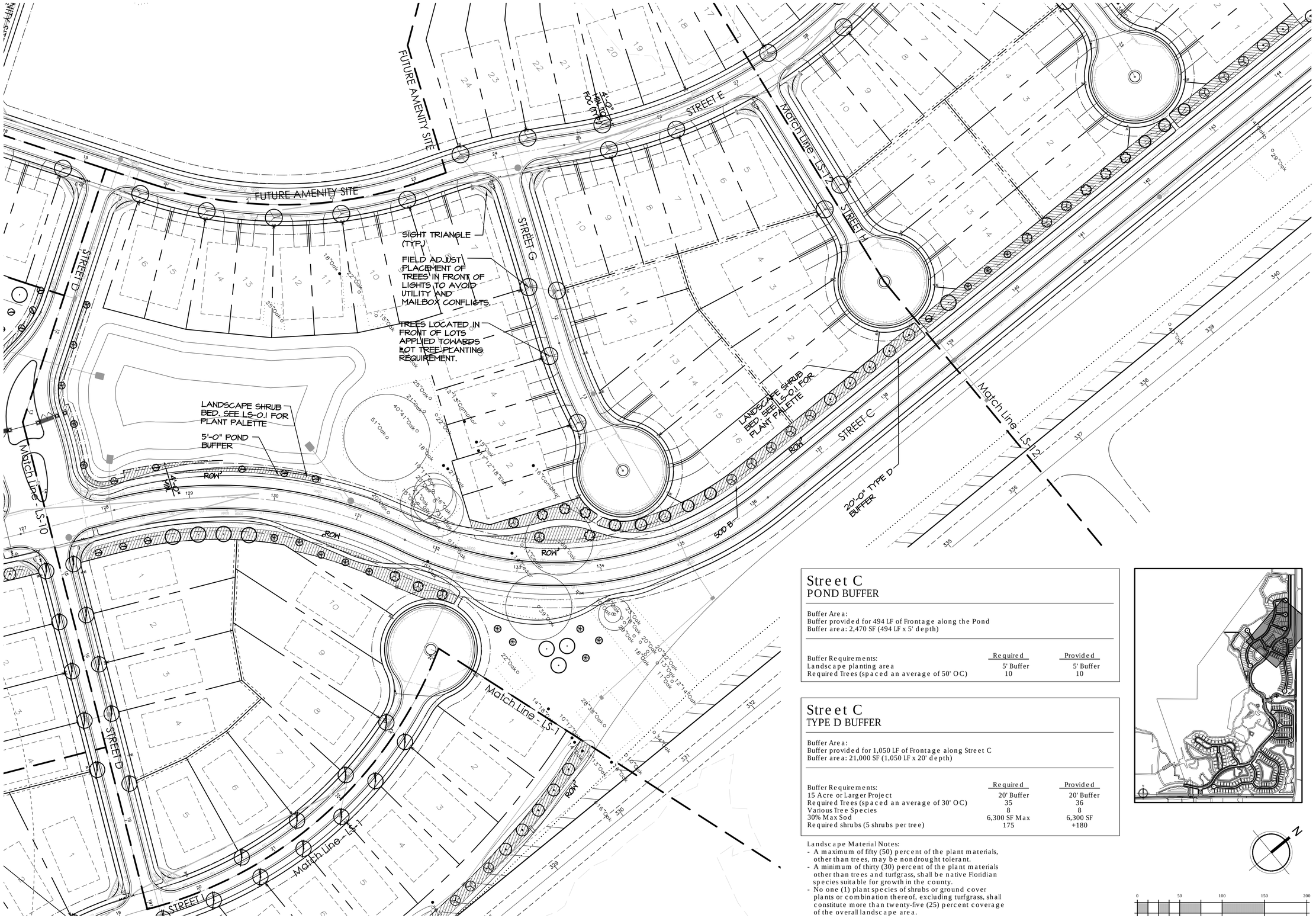
LANDSCAPE PLAN

SHEET NUMBER
LS-10



Street C
POND BUFFER

Buffer Area:
Buffer provided for 494 LF of Frontage along the Pond
Buffer area: 2,470 SF (494 LF x 5' depth)

Buffer Requirements:	Required	Provided
Landscape planting area	5' Buffer	5' Buffer
Required Trees (spaced an average of 50' OC)	10	10

Street C
TYPE D BUFFER

Buffer Area:
Buffer provided for 1,050 LF of Frontage along Street C
Buffer area: 21,000 SF (1,050 LF x 20' depth)

Buffer Requirements:	Required	Provided
15 Acre or Larger Project	20' Buffer	20' Buffer
Required Trees (spaced an average of 30' OC)	35	36
Various Tree Species	8	8
30% Max Sod	6,300 SF Max	6,300 SF
Required shrubs (5 shrubs per tree)	175	+180

Landscape Material Notes:
- A maximum of fifty (50) percent of the plant materials, other than trees, may be nondrought tolerant.
- A minimum of thirty (30) percent of the plant materials other than trees and turfgrass, shall be native Floridian species suitable for growth in the county.
- No one (1) plant species of shrubs or ground cover plants or combination thereof, excluding turfgrass, shall constitute more than twenty-five (25) percent coverage of the overall landscape area.

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SCALE: 1" = 50'

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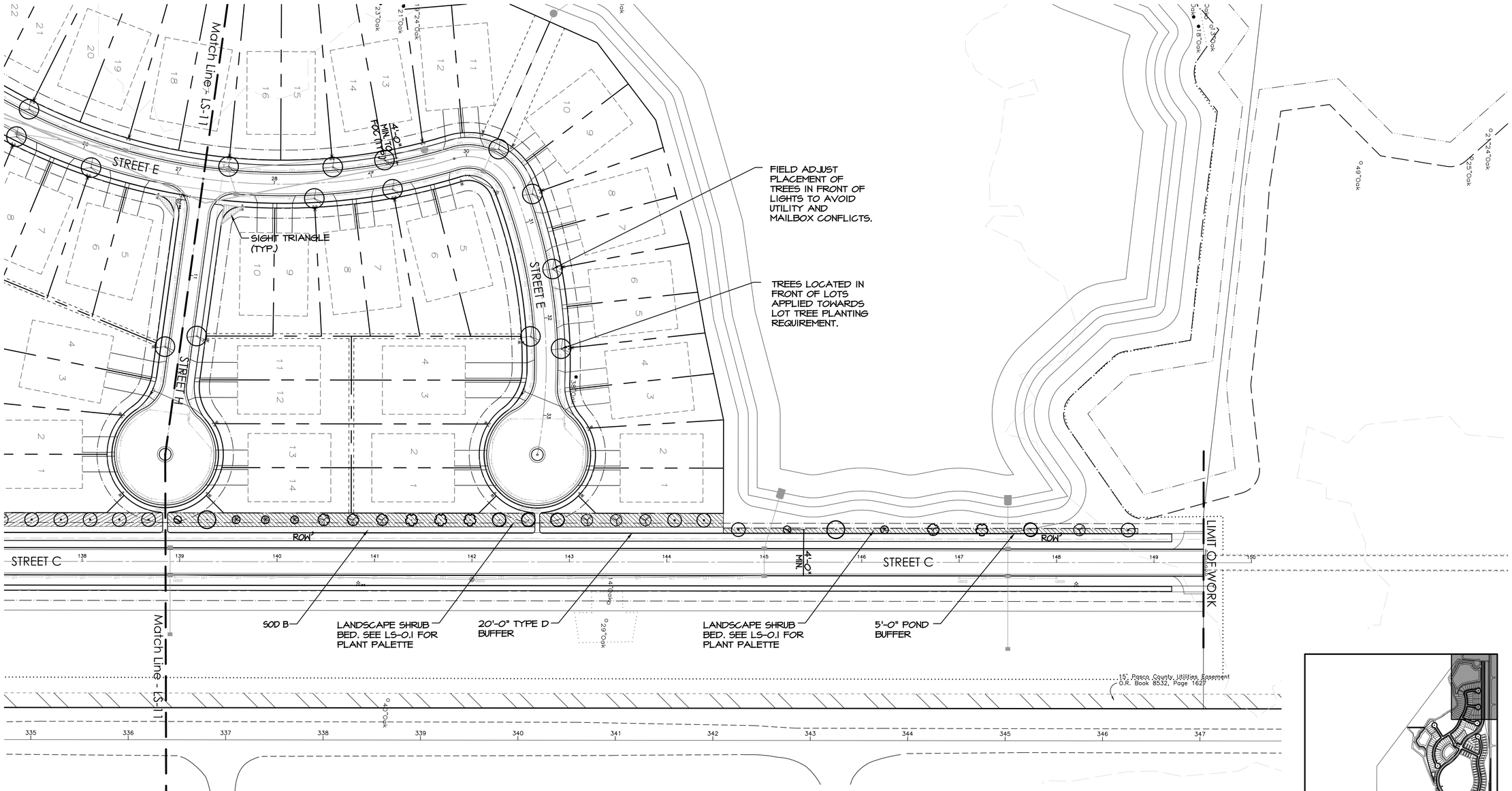
LANDSCAPE PLAN

SHEET NUMBER
LS-11



Street C
POND BUFFER

Buffer Area:
Buffer provided for 426 LF of Frontage along the Pond
Buffer area: 2,130 SF (426 LF x 5' depth)

Buffer Requirements:	Required	Provided
Landscape planting area	5' Buffer	5' Buffer
Required Trees (spaced an average of 50' OC)	9	9

Street C
TYPE D BUFFER

Buffer Area:
Buffer provided for 566 LF of Frontage along Street C
Buffer area: 11,320 SF (566 LF x 20' depth)

Buffer Requirements:	Required	Provided
15 Acre or Larger Project	20' Buffer	20' Buffer
Required Trees (spaced an average of 30' OC)	19	19
Various Tree Species	8	8
30% Max Sod	3,396 SF Max	3,396 SF
Required shrubs (5 shrubs per tree)	95	+95

Landscape Material Notes:
- A maximum of fifty (50) percent of the plant materials, other than trees, may be nondrought tolerant.
- A minimum of thirty (30) percent of the plant materials other than trees and turfgrass, shall be native Floridian species suitable for growth in the county.
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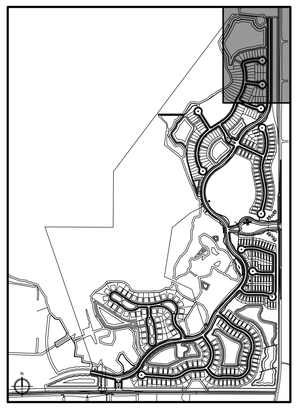

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SCALE: 1" = 50'

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LANDSCAPE PLAN

SHEET NUMBER
LS-12

SIGHT TRIANGLE (TYP.)

FIELD ADJUST PLACEMENT OF TREES IN FRONT OF LIGHTS TO AVOID UTILITY AND MAILBOX CONFLICTS.

TREES LOCATED IN FRONT OF LOTS APPLIED TOWARDS LOT TREE PLANTING REQUIREMENT.

4'-0" MIN. TO FOC (TYP.)

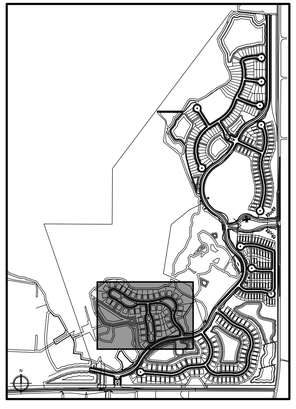
STREET N

STREET O

STREET C

Match Line - LS-8

Match Line - LS-6



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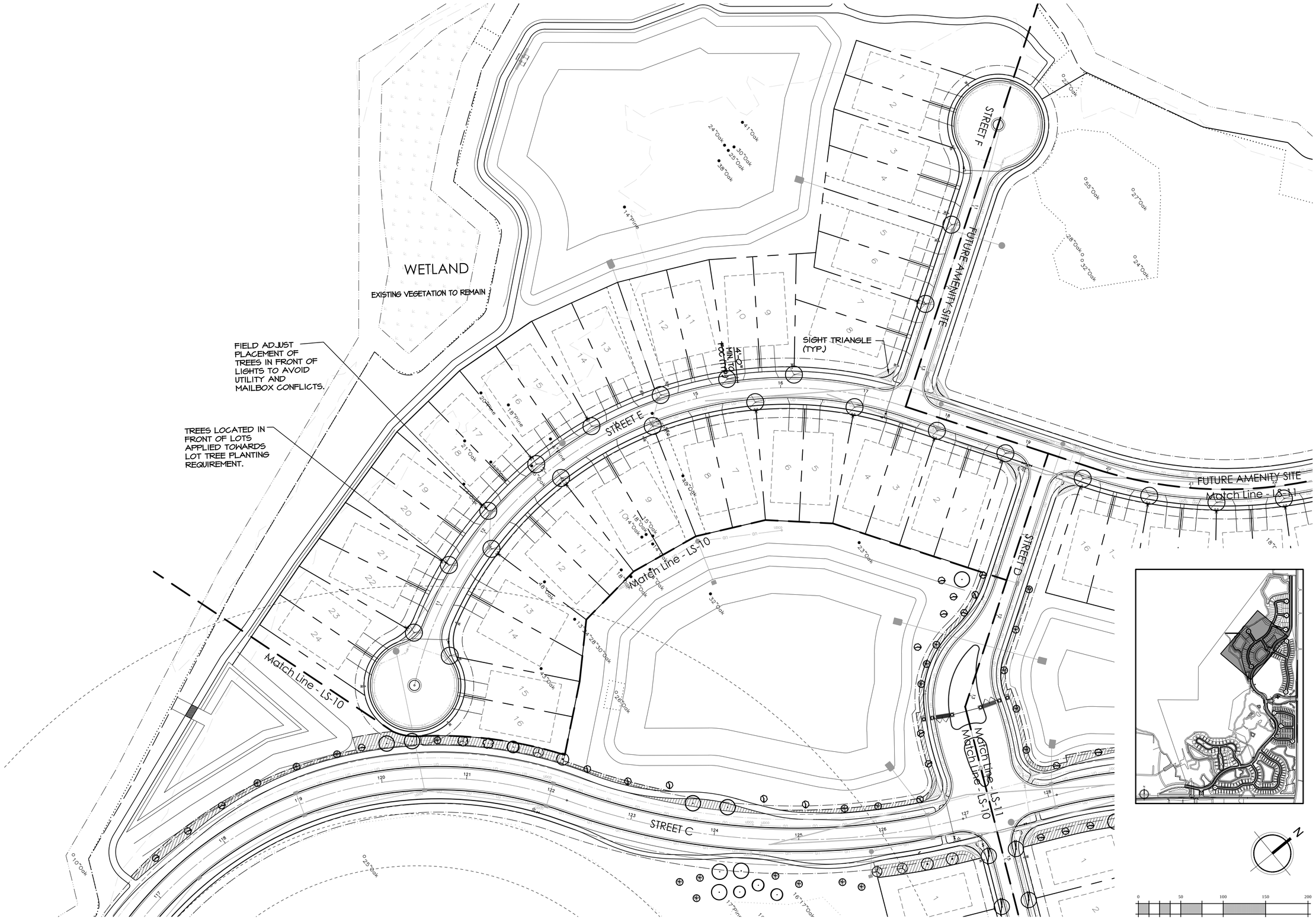
LANDSCAPE PLAN

SHEET NUMBER

LS-13



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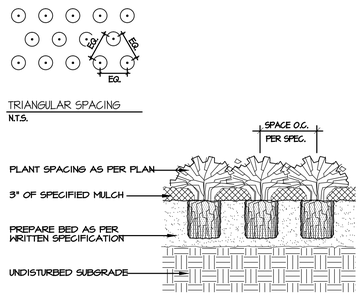
LANDSCAPE PLAN

SHEET NUMBER
LS-14

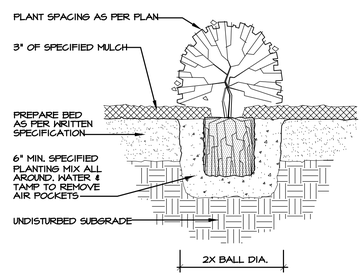


NOTES:

- GROUND COVER PLANTS ARE TO BE SPACED AS INDICATED ON PLANTING PLAN.
- 3" MIN. SPECIFIED PLANTING MIX UNDER AND AROUND - WATER AND TAMP TO AIR POCKETS.

GROU□DCO□ER □LA□TI□G

N.T.S.

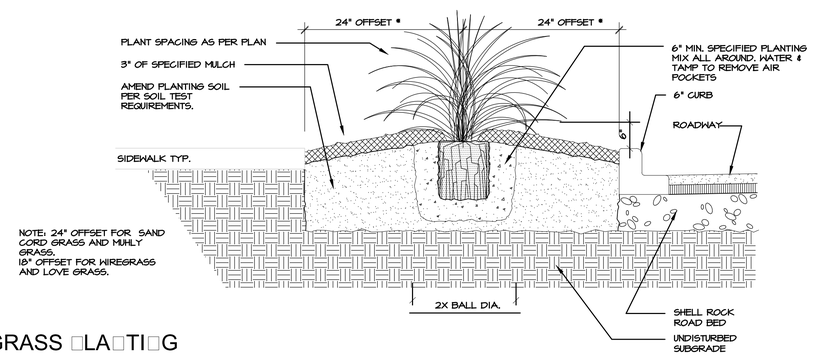


NOTES:

- PLANT SO THAT TOP OF ROOT BALL IS EVEN WITH THE FINISHED GRADE.
- MIN. 18"HT. AT INSTALL, 24" WITHIN 1 YEAR. DWARF SPECIES MIN. 14"HT. AT INSTALL.

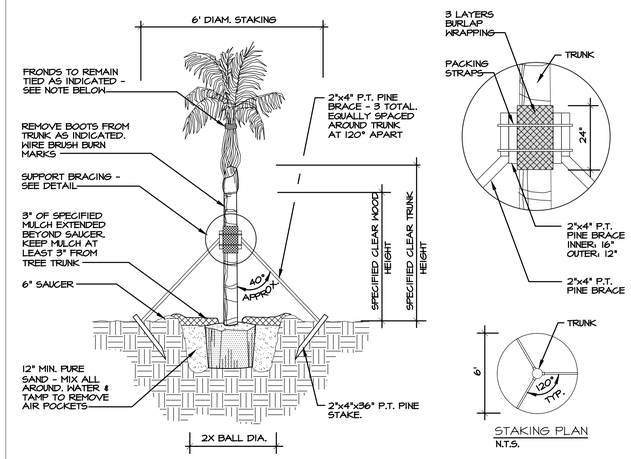
SHRUB □LA□TI□G

N.T.S.



GRASS □LA□TI□G

N.T.S.

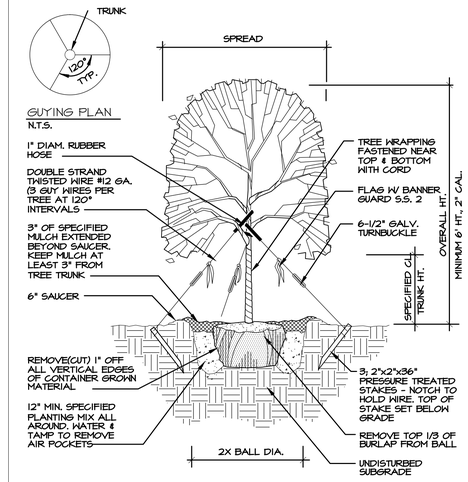


NOTES:

- PALM FRONDS SHALL BE TIED UP UNTIL AFTER PLANTING. TIES SHALL BE REMOVED AS FOLLOWS: DATE PALM - ONE WEEK; WASHINGTON PALM & QUEEN PALM - IMMEDIATELY; SABAL PALMS WHICH ARE NOT HURRICANE CUT SHALL REMAIN TIED FOR SIX MONTHS. REMOVE ALL DEAD AND BROKEN FRONDS. NEVER CUT BUD.
- ALL TRUNKS SHALL BE PREPARED PRIOR TO DELIVERY. DATE PALMS SHALL BE 'CLASSIC CUT'; SABAL AND WASHINGTON PALMS SHALL BE BOOTED OR SHAVED AS SPECIFIED.
- PLANT IN PURE SAND. PLANT SO THAT TOP OF ROOT BALL IS 2" ABOVE FINISHED GRADE; BOTTOM OF ROOT BALL SHALL BE SEATED DIRECTLY ON UNDISTURBED SUBGRADE.
- NEVER NAIL INTO TRUNK.
- PALMS MAY BE SUBSTITUTED FOR UP TO 30% OF SHADE TREES, 3 PALMS FOR 1 SHADE TREE, GROUPED TOGETHER, 10 FT. CLEAR TRUNK

□ALM □LA□TI□G

N.T.S.



NOTES:

- PLANT SO THAT TOP OF ROOT BALL IS 2-3 INCHES ABOVE THE FINISHED GRADE.
- BOTTOM OF ROOT BALL SHALL BE SEATED DIRECTLY ON UNDISTURBED SUBGRADE.
- STAKE ABOVE FIRST STRONG BRANCHES OR AS NECESSARY FOR FIRM SUPPORT.
- FLAG GUYING WIRES WITH BANNER GUARD S.S. 2 OR APPROVED EQUAL.
- MINIMUM 2" CAL. AND 6' HT. AT INSTALLATION; MATURE SPREAD GREATER THAN 20'

TREE □LA□TI□G □GUY WIRES

N.T.S.

NOTES:

1. NO TREE SHALL BE REMOVED UNLESS SPECIFICALLY TAGGED FOR REMOVAL BY THE ENGINEER.
2. THE CONTRACTOR SHALL TAKE SPECIAL CARE NOT TO DAMAGE ANY TREES THAT ARE TO REMAIN.
3. ROOTS GREATER THAN 1" DIAM. SHALL NOT BE CUT UNLESS OTHERWISE APPROVED BY THE ENGINEER.
4. ROOTS OF 1" DIAM. OR LARGER THAT NEED TO BE CUT SHALL BE CUT NEATLY.
5. STOCKPILED MATERIALS OR UNNECESSARY VEHICULAR TRAFFIC SHALL NOT BE ALLOWED OVER ANY TREE ROOT SYSTEM.
6. TYPE 'A' BARRIER OR TYPE 'B' BARRIER SHALL BE CONSTRUCTED WHEN CALLED FOR ON PLANS OR AS DIRECTED BY THE ENGINEER. BARRIERS SHALL BE MAINTAINED IN PLACE UNTIL REMOVAL IS DIRECTED BY THE ENGINEER.
7. COST OF ALL TREE BARRICADES SHALL BE INCLUDED IN PAY ITEM 120-1100 (GRADING).

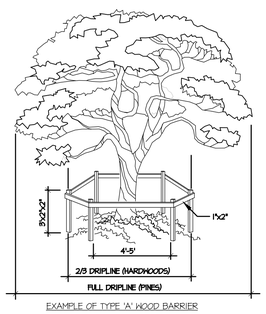
BEFORE PERMIT:

1. BARRIERS ARE TO BE ERECTED AROUND ALL TREES 4" DBH AND GREATER TO REMAIN. THIS MUST BE DONE BEFORE CONSTRUCTION, GRADING, OR BEFORE ANY TREES ARE REMOVED.
2. TREES 4" DBH AND GREATER THAT ARE LOCATED WITHIN 10' OF THE LOT UNDER CONSTRUCTION SHALL ALSO BE PROTECTED BY A BARRICADE.

INSTALLATION SPECIFICATIONS:

* NOTE: EITHER TYPE 'A' BARRICADE (WOOD) OR TYPE 'B' BARRICADE (RIBBON) MAY BE USED.

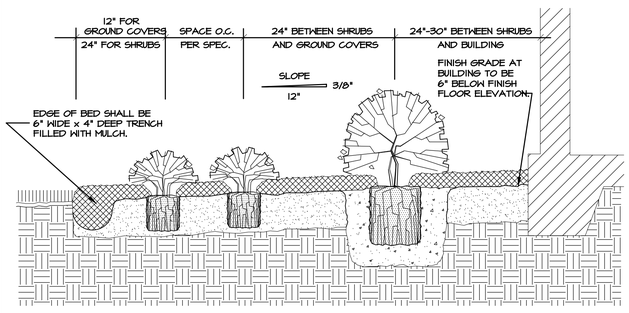
1. MINIMUM RADIUS TO BE PROTECTED:
   PINES:
   DRIPLINE OR 6', WHICHEVER IS GREATER.
   HARDWOODS AND ALL OTHERS:
   2/3 OF THE DRIPLINE OR 6', WHICHEVER IS GREATER.
2. METHOD OF ERECTION: (SEE DIAGRAM)
   A. MINIMUM HEIGHT OF UPRIGHTS SHALL BE 3' AND NO LESS THAN 2"x2" LUMBER.
   B. UPRIGHTS SHALL HAVE HORIZONTAL RIBBONING AT THE TOP AND 12" BELOW THE TOP. (TYPE 'B' BARRIER)
   C. UPRIGHTS SHALL BE SPACED AT NO MORE THAN 4'-5' INTERVALS.
   D. HORIZONTAL MEMBERS SHALL BE OF NO LESS THAN 1"x2" LUMBER. (TYPE 'A' BARRIER)



EXAMPLE OF TYPE 'A' WOOD BARRIER

TREE BARRICADE

REFER TO CIVIL DRAWINGS FOR FINAL LOCATIONS OF TREES TO REMAIN IN PLACE

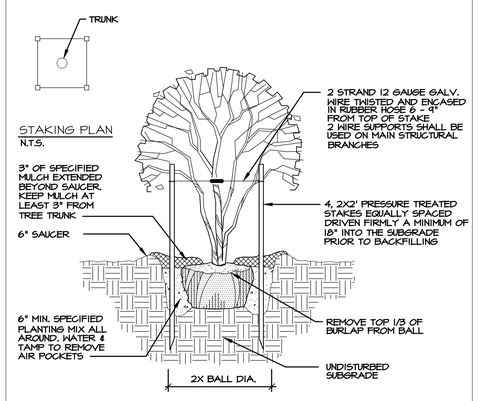


NOTES:

- FINISH GRADE AT BUILDING TO BE 6" BELOW FINISH FLOOR ELEVATION.
- BED GRADE TO SLOPE AT 3/8" PER FOOT AWAY FROM BUILDING.
- SEE DETAILS AND SPECIFICATIONS FOR PLANTING INSTRUCTIONS.

BED □RE□ARATIO□

N.T.S.



NOTES:

- STAKE TO FIRST BRANCHES AS NECESSARY FOR FIRM SUPPORT.
- WIRE SHALL NOT TOUCH OR RUB ADJACENT TRUNKS OR BRANCHES.
- MULTI-TRUNK TREES TO BE A MIN. OF 3 TRUNKS AT 1" EA.; 6' HT. AT INSTALLATION.

MULTI□TRU□□ TREE STA□I□G

N.T.S.

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EPCO RANCH NORTH
Parcel A Phase 1

Standard Pacific Homes
Pasco County, Florida

ISSUE DATES:

NO.	DESCRIPTION	DATE
	PERMIT SET	01.22.15

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DATE:	01.22.15
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CHECKED BY:	JMG
SCALE:	AS SHOWN

LANDSCAPE DETAILS

SHEET NUMBER

LS-15

Load Square Calc

To calculate fertilizer rates:

1. Measure the area to be fertilized in square feet.
2. Select fertilizer(s) to be used based on the soil testing laboratory recommendations by matching the ratio of nutrients recommended to the fertilizer grades available.
3. Determine the amount of fertilizer to apply to a given area (1,000 sq. ft.) by dividing the recommended amount of nutrient by the percentage of the nutrient (on a decimal basis) in the fertilizer. Apply no more than 0.25 lbs P2O5/1,000 sf per application prior to planting.
4. Adjust the amount of fertilizer to the project area.

6. Mulch: Mulch shall consist of either pine straw or simulated cypress mulch (Gold Mulch). Pine straw is to be placed in all landscape beds, along all the upland buffer and existing woodland edges, and any other area specified on the plan (refer to plant list). Gold mulch will be placed in all planting beds adjacent to pool areas and as specified on the plans (refer to plan list). All mich is to be clean, bright and free of weeds, moss, sticks, sapwood, chips or other debris. All mulch is to be installed evenly to a depth as specified in plant list and cover all areas of the planting beds. Rock mulch in pool area planting beds shall consist of lava rock and be placed within the first 2'-0" of each landscape bed. The contractor shall submit lava rock color samples for review and approved by Landscape Architect and Owner.

H. Water: Water used for landscaping is to be reclaimed, open waterbody, and/or potable. Refer to irrigation plans and specifications.

2.02 TOPSOIL MIXTURE

A. All top soil used in tree, shrub and ground cover beds for planting operation as specified and shall be prepared and conditioned as follows (unless noted otherwise in Plant Schedule):

1. Mix one part by volume peat and two parts by volume of existing soil and five pounds of 75% organic 6-4. 54-8 fertilizer and five pounds of commercial 50% organic 6-6-6 fertilizer to each cubic yard of the mixture. Add wet-able sulfur and irons sulfate in quantities necessary to bring the soil to Ph rating of 6.0.

2.03 PLANT MATERIAL

A. Quality and Size: Plants shall be in accordance with "Horticultural Standards" (Latest Edition) of the rules and grading adopted by the American Association of Nursrymen and "Grades and Standards for Nursery Plants". All plants shall have a normal habit of growth and shall be of sound health, vigorous and free from insect infestations. Any tree with weak, thin trunks not capable of supporting itself when planted in the open will not be accepted. The minimum acceptable size of all plants, measure before pruning, with branches in normal position, shall conform to dimensions as shown in the Plant Schedule. Larger plants of equal quantity may be accepted at no additional cost to the owner. Specimen trees may be specified to be installed by others at the discretion of the Landscape Architect or Owner.

B. Balled Plants: Plants that are balled and burlapped (B&B) shall be adequately balled with firm natural balls of soil sized as set forth in "Horticultural Standards". Balls shall be firmly wrapped with burlap or equal approved strong cloth. No balled plant shall be planted if the ball is cracked or broken before or during the process of planting.

C. Balled and Wire Plants: Plants that are wire balled and burlapped (WB & B) shall be dug with solid balls or adequate size, the balls securely wrapped with heavy burlap or equal and tightly bound with mesh.

D. Container Grown Plants: Plants that are container grown shall have been grown in pots, cans, tubs or boxes and shall have sufficient roots to hold earth together intact after removal from containers without being rootbound.

E. Options as to Methods: Any plant may be furnished container grown instead of balled if all other requirements are met.

F. Protection Against Drying Out: All plants shall be handled so that roots will be adequately protected at all times from drying out and from other injury. The balls or balled plants which cannot be planted immediately on delivery shall be well protected with soil or other acceptable material.

G. Plant Labels: Durable, legible labels, stating in weather resistant ink or equal, the correct plant name and size, specified on the plant list, shall be securely attached to all plants, bundles and/or containers or plant material delivered at the planting site, for the purpose of inspection and planting identification.

H. Washington Palms shall be full head - not hurricane cut.

2.04 SPECIAL TREATMENT AND HANDLING FOR SPECIMEN PLANTS

Trees and shrubs intended for isolated specimen planting shall be selected for shape and symmetrical branching habit which at maturity will produce a strong, full-foliaged tree, bush or other specimen. Particular care shall be exercised in the digging, binding and wrapping of such specimens to assure safe loading, shipment and handling or the entire operation of transportation from grown locations to the replanting locations shown on the drawings and in Plant Schedule.

2.05 GUYING AND STAKING

A. All trees shall have 3 stakes, unless planting details are part of this set.

1. Hose: Hose shall be suitable garden hose not less than 1/2" inside diameter.
2. Stakes: Stakes for supporting trees and palms shall be of sound wood of uniform size, creosoted or pressure-treated by an approved process. Stakes shall not be less than 2 inches by 4 inches nominal dimensions and not less than 2-1/2 feet in length for guying and not less than 4 feet for staking, and shall be in all cases of sufficient dimensions and length to satisfactorily and firmly guy each tree.
3. Wire: Wire shall be galvanized pliable, zinc-coated iron not less than No. 12 gauge.
4. Turnbuckles: Turnbuckles for guying trees shall be galvanized or cadmium-plated and shall be of adequate size and strength to properly maintain tight guy wires.
5. Option of Contractor: At the option of the Landscape Contractor, the staking and guying of trees may be omitted. The Landscape Contractor assumes all responsibility if he does not stake or guy.

B. All palms shall be adequately braced with 2 x 4 props.

C. Water in trees: All trees, including palms, whether balled, container or spaded, shall be watered in properly, immediately after planting. A water hose is to jet water around the perimeter of the ball at least in three separate places. Watering is to continue until all air pockets have been filled. Additional fill may be needed to bring fill to proper height. Retamp for compaction and grade.

D. Tree Spading Operations:

1. Spades will be of sufficient size comparable to trunk caliper so as not to damage the root system.
2. Trees are to be set so as not to have any part of the root ball side exposed. If this occurs then the tree spade contractor is responsible for adding additional fill and hand grade to match existing slope. Landscape logs may be used by the Landscape Contractor if conditions warrant as directed by the Landscape Architect.
3. Immediately after spading the tree it is to be watered in properly and a water dish built to retain the water around the root ball.

Load Square

SECTION 02800 - LANDSCAPE INSTALLATION

PART I - GENERAL

1.01 EXTENT OF WORK

A. The work under this section shall include all services, tools, apparatus, materials, labor and other means of construction required for the landscaping work in accordance with drawings and these specifications.

1. Lay out beds, tree and palm locations, shrubs and ground cover as shown on the drawings.
2. The work shall include the preparation of the ground, finish grading, planting, fertilizing, mulching, clipping and pruning of plant materials, preparation and applying peat and fertilizers and all other work required by the drawings and specifications.

1.02 APPLICABLE DOCUMENTS

A. The following specifications are standards of the issues listed and referred to form a part of this specification to the extent required by the reference thereto.

1. American Association of Nurserymen, (1944 Edition of Horticultural Standards, (635- 636 Southern Building, Washington, DC).
2. The Standard Encyclopedia of Horticulture, L. H. Bailey 1953 Edition, 3 Volumes by the MacMillan Company, New York, New York.
3. Grades and Standards for Nursery Plants, Part I and Part II, Department of Agriculture, State of Florida, Division of Plant Industry, Post Office Drawer 1269, Gainesville, Florida 32601.

1.03 GENERAL REQUIREMENTS

A. Approval and Rejection of Material and Work: The selection of all materials and execution of all operations required under the drawings and specifications shall be subject to the approval of the Landscape Architect. The Landscape Architect or his representative shall have the right to reject any and all work which in his opinion does not meet the requirements of the specifications at any stage of the operations. All rejected materials shall be removed from the site.

B. Scientific and Common Names: Attention is called to the fact that the scientific and common names for the plants required under this Contract are generally in conformity with the approved names given in the Standard Plant Names, published by the American Joint Committee on the Horticultural Nomenclature. The names of varieties not included therein are generally in conformity with the name accepted in the nursery trade. Any question regarding plant names shall be brought to the attention of the Landscape Architect prior to installation.

C. All plants shall conform to the varieties specified in the Plant Schedule. No substitution of varieties or colors will be allowed without prior written or verbal approval of the Landscape Architect.

D. All plant materials shall conform to a Florida No. I or better. Those not listed by "Grades and Standards for Nursery Plants" published by the Division of Plant Industry, shall conform to a Florida No. I as to:

1. Health and vitality
2. Condition of foliage
3. Root system
4. Freedom from pest or mechanical damage
5. Heavily branched and densely foliated according to the accepted normal shape of species.

PART II - PRODUCT AND PROCEDURES

2.01 MATERIAL

A. Topsoil: Planting areas shall use existing soil on the site as long as it has been cleared of unsightly underbrush and their roots, limbs, buried construction debris, pockets of clay, rocks and other extraneous matter.

B. Unsuitable Soil Conditions: Absolutely no plastic or clayey soil is to be used in any planting landscape areas. If such a condition is found it is to be removed to a depth of 3 feet and 1 foot outside of said planting bed. This area is to be back-filled with material of suitable sandy gradation which is porous and percolates well with reasonable compaction. If any planting or sod area has a plastic or clayey soil condition which does not allow for proper drainage, then a system of underdraining, turf drain or some other means of releasing underground standing water must be incorporated under the direction of the Landscape Architect and Owner.

C. Planters: All enclosed planters must be free of debris, harmful chemicals such as cement or other construction materials. They are to be filled with a suitable material of sandy gradation which is porous and percolates well. Any certified potting soil mixture is also acceptable for fill. It is the responsibility of the Landscape Contractor to be sure that these planters have been properly sealed before fill is placed.

D. Soil Tests: The Landscape Contractor is to verify all soil conditions of all planting areas as to its Ph and organic stability before planting to be sure all unsuitable material has been removed. Before any soil addenda are added to the soil, a soil test shall be taken. A minimum of three (3) soil samples shall be taken. Label each sample with the date, location keyed to a site plan, visible soil condition, and sampling depth. Split each sample into two, equal parts. Send half to the testing agency and half to Owner for its records. The soil samples shall be tested for the Physical Soil Texture, Chemical Makeup, and Soil-Fertility analysis according to standard laboratory protocol. For each unamended soil type, perform testing on soil samples and furnish soil analysis and a written report containing soil-amendment and fertilizer recommendations by a qualified testing agency performing the testing according to "Soil-Sampling Requirements" and "Testing Requirements" articles. All proposed fill shall be tested prior to being delivered to the site.

E. Peat: It shall be Horticultural Peat, or imported, brown in color and shall be free of all debris and shall be pulverized before use. Peat is not to be used where soil conditions are damp or excessively wet. It is the responsibility of the Landscape Contractor to determine where peat should and should not be introduced and insure the health and welfare of the plants.

F. Fertilizer:
Fertilizers shall comply with the State fertilizer laws.
The numerical designations for fertilizer indicate the minimum percentages (respectively) of (1) total nitrogen, (2) available phosphoric acid, and (3) water-soluble potash, contained in the fertilizer. At least 50% of the nitrogen shall be from a slow-release source.

Certification.
The Contractor shall provide the Engineer a certified test report from the manufacturer of the commercial fertilizer confirming that the requirements of this Section are met. The certified test report shall conform to the requirements of Section 6 and include test results for total nitrogen, available phosphoric acid, water-soluble potash, and sulfur. Each certification shall cover one batch per type for dry type fertilizer.

Fertilizer Rates.
Soil laboratory fertilization recommendations are based on the amount (lbs) of nutrients (N, P2O5, K2O) to apply per given area (usually 1,000 sq. ft.). From this recommendation it is necessary to select an appropriate fertilizer grade and then determine how much of this fertilizer to apply to the area.

If a complete fertilizer (containing all three primary nutrients) is not available in the ratio of N-P-K necessary to match the ratio required in the fertilizer recommendation, mixed-grade or single-nutrient fertilizers should be used to satisfy each nutrient requirement.

Minimum Calc

C. BARE-ROOTSTOCK.
(1) ROOTS HEALTHY AND VIGOROUS, CHARACTERIZED BY VERY GOOD COLOR AND SUCCULENCE.
(2) WELL SUPPLIED WITH MAIN LATERAL ROOTS, UNIFORMLY DISTRIBUTED AROUND CROWN OR TAPROOT.
(3) WELL SUPPLIED THROUGHOUT WITH FIBROUS (FEEDER) ROOTS.
(4) INSECT LESIONS AND OTHER MECHANICAL INJURY WELL CALLOUSED AND NOT TO EXCEED IN GREATEST DIMENSION ¼ THE DIAMETER OF THE ROOT BENEATH UNLESS COMPLETELY HEALED.
(5) RAGGED DIGGING CUTS PRUNED CLEAN.
(6) ROOT SYSTEMS SHALL BE KEPT MOIST, OUT OF DIRECT SUNLIGHT AND DRYING BREEZES AT ALL TIMES.
(7) ROOT SYSTEMS SHALL HAVE A SPREAD AND DEPTH EQUAL TO MINIMUM BALL SIZE WHEN ROOT PRUNED PRIOR TO DIGGING, OR 1/3 GREATER THAN MINIMUM BALL SIZE IF NOT ROOT-PRUNED.

WETLAND PLANT MATERIAL

1. SPECIMENS SHALL BE FREE OF OTHER PLANTS CONSIDERED AS NUISANCE OR EXOTIC SPECIES.

2. NON-CONTAINERIZED SPECIMENS SHALL EXHIBIT A HEALTHY, WELL DISTRIBUTED ROOT STRUCTURE WHICH EXTENSIVELY PENETRATES THE SOIL SUCH THAT AT LEAST 75% OF THE SOIL MASS REMAINS INTACT. THEY SHALL ALSO EXHIBIT SUFFICIENT TOP GROWTH TO ENSURE VIABILITY AT THE SPECIFIED WATER DEPTH AND/OR LOCATION BEING PLANTED.

3. CONTAINERIZED SPECIMENS SHALL EXHIBIT A HEALTHY, WELL DISTRIBUTED ROOT STRUCTURE WHICH EXTENSIVELY PENETRATES THE SOIL SUCH THAT AT LEAST 95% OF THE SOIL MASS REMAINS INTACT. THEY SHALL ALSO EXHIBIT VIGOROUS TOP GROWTH WITH A BASE DIAMETER AT LEAST 50% OF THE DIAMETER OF THE CONTAINER.

Minimum

TREE MATERIAL

TRUNK STRUCTURE
TRUNKS WHICH BRANCH (FORKS) INTO TWO EQUAL TRUNKS IN THE UPPER 1/2 HALF OF THE TREE SHALL HAVE THE SECONDARY LEADER PRUNED (REMOVED) PRIOR TO TREE BEING DELIVERED TO THE JOB SITE. SINGLE TRUNKS TREES SHALL NOT BOW GREATER THEN 10°, IF SO THE TREE WILL NOT BE ACCEPTABLE. THE TIP OF THE LEADER ON THE MAIN TRUNK MUST BE INTACT AND ITS TERMINAL BUD MUST BE THE HIGHEST PART OF THE TREE. ANY TOPPED TREES WILL BE REJECTED. IF THE TRUNK BRANCHES INTO TWO NEARLY EQUAL TRUNKS ALONG THE LOWER 1/2 OF THE TREE OR BRANCHES INTO THREE OR MORE NEARLY EQUAL DIAMETER TRUNKS IN THE UPPER 1/2 OF THE TREE, OR IF THE TRUNK BRANCHES INTO THREE OR MORE NEARLY EQUAL DIAMETER TRUNKS IN THE LOWER 1/2 OF THE TREE, THE TREE WILL NOT BE ACCEPTABLE. NO TRUNK SHALL HAVE NO OPEN WOUNDS OR OTHER BARK INJURIES OR DAMAGE DUE TO HANDLING, IF SO THE TREE WILL NOT BE ACCEPTABLE. ALL PRUNING SCARS SHALL BE AS DESCRIBED IN THE GRADES AND STANDARDS FOR NURSERY PLANTS BY THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES, LATEST EDITION. ANY TREE WITH 'FLUSH CUT' PRUNING SCARS OR OTHER IMPROPER PRUNING WILL NOT BE ACCEPTABLE.

BRANCH ARRANGEMENT
ALL BRANCHES SHALL BE MORE OR LESS EQUALLY DOMINANT OR HAVE SEVERAL DOMINANT BRANCHES GREATER THEN 4" APART. ONE BRANCH IN THE UPPER HALF OF THE TREE CAN BE GREATER THAN 2/3 THE DIAMETER OF THE TRUNK MEASURED DIRECTLY ABOVE THE BRANCH. NO BRANCH TIPS CAN BE TALLER THAN THE TRUNK. IF MOST MAJOR BRANCHES ARE ORIENTED VERTICALLY; AND/OR NEARLY EQUAL-DIAMETER MAJOR BRANCHES ARE LOCATED WITHIN 4" OF EACH OTHER AT TWO OR MORE POSITIONS AND/OR ONE OR MORE BRANCHES IN THE LOWER HALF OF THE TREE ARE LARGER THAN 2/3 THE DIAMETER OF THE TRUCK MEASURED DIRECTLY ABOVE THE BRANCH, THE TREE WILL NOT BE ACCEPTABLE. IF BRANCHES ARE VERTICALLY FORMING NARROW ANGLES WITH THE TRUNK, OR MOST MAJOR BRANCHES GROWING FROM THE SAME POINT ON THE TRUNK, THE TREE WILL NOT BE ACCEPTABLE.

STRUCTURAL UNIFORMITY OF THE CROWN
ONE MAJOR BRANCH MAYBE LOCATED DIRECTLY ABOVE ANOTHER BUT THE OTHERS MUST BE EVENLY DISTURBED AROUND THE TRUNK. THE CROWN A TREE CAN HAVE SOME SMALL VOIDS IN THE CANOPY AND MAY NOT BE COMPLETELY FULL OF FOLIAGE. IF BRANCHES ARE NOT EVENLY DISTRIBUTED AROUND THE TRUNK, OR SEVERAL ARE GROWING FROM THE SAME SIDE WITH TWO OR MORE DIRECTLY ABOVE OTHERS, THE TREE WILL NOT BE ACCEPTABLE. IF THE TREE IS ONE-SIDED OR IS FLAT-SIDED, OR MAJOR BRANCHES ARE GROWING FROM ONLY ONE OR TWO SIDES OF THE TRUNK AND LARGE GAPS ARE IN THE CROWN, THE TREE WILL NOT BE ACCEPTABLE.

ROOT STRUCTURE
THE SIZE OF THE ROOT BALL OR CONTAINER SHALL BE PER THE GRADES AND STANDARDS FOR NURSERY PLANTS BY THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES MATRIX FOR SPECIFIC SPECIES OF TREE. ROOT SYSTEM SHALL BE STURDILY ESTABLISHED IN CONTAINER AND SHALL NOT BE EXCESSIVELY ROOTBOUND. CONTAINER MATERIAL SHALL HAVE NO ROOTS GROWING GREATER THAN 1/5 THE DIAMETER OF THE TRUNK GROWING OUT OF THE CONTAINER. BALL AND BURLAPPED, GROW BAGS, ETC. SHALL HAVE BEEN ROOT PRUNED AND HAVE BEEN CURED PRIOR TO BEING DELIVERED TO THE JOB SITE. TREES WITH GIRDLING ROOTS, 1/10 THE DIAMETER OF THE TRUNK CIRCLING AROUND MORE THAN 1/3 OF THE TRUNK, THE TREE WILL NOT BE ACCEPTABLE.

PALM AND CYCADS MATERIAL

TRUNK SPECIFICATION:
TRUNK CALIPER MUST MEET OR EXCEED THE CALIPER SPECIFICATIONS AS NOTED IN THE PLANS AND/OR AS PER DESCRIBED IN GRADES AND STANDARDS FOR NURSERY PLANTS BY THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES. TRUNK SHALL BE WELL FORMED, WITH NO ABRUPT CHANGES IN CALIPER UNLESS TYPICAL OF NORMAL GROWTH OF THE SPECIES. NO HOLES, CAVITIES, GOUGES, DEPRESSED AREAS OR OLD LEAF-BASES SHALL REMAIN, OR PALM WILL BE REJECTED. PETIOLES SHALL BE CUT CLEAN AND SYMMETRICALLY AT THE TRUNK ON ANY OLD LEAF-BASES REMAINING. NO RAGGED OR TORN BOOTS, OR SCARRING OF TRUNK CAUSED BY TEARING OFF BOOTS PREMATURELY, WILL BE ACCEPTED.

FRONDS AND LEAVES:
ALL PALMS TO BE STRAIGHT TRUNK UNLESS OTHERWISE NOTED, WITH HEAVY, DENSE CANOPY WITH ALL PETIOLES IN ASCENDING POSITION. LEAVES SHALL BE NON-CHLOROTIC WITH AT LEAST 75% OF THE LEAVES IN EXCELLENT CONDITION. THE PALM SHALL HAVE NO LIVE INSECTS OR INSECT DAMAGE, ANY SYMPTOMS OF PLANT DISEASE AND NO EXTREME SUCCULENCE.

ROOT BALL:
PALM ROOT BALLS MUST BE WRAPPED OR SECURED TO PRESERVE THE INTEGRITY OF THE ROOT BALL DURING TRANSPORT. IN CONTAINERIZED PALMS, THE ROOT MASS SHALL FILL THE CONTAINER SIZE SPECIFIED. IF CIRCLING ROOTS HAVE DISPLACED MOST OF THE SOIL IN THE CONTAINER, THEN THE CIRCLING ROOT MASS NEEDS TO BE CUT PER GRADES AND STANDARDS FOR NURSERY PLANTS BY THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES, RECOMMENDS. THE ROOT BALL SHALL MEET OR EXCEED THE SPECIFICATIONS NOTED IN THE PLANS AND/OR AS PER DESCRIBED IN GRADES AND STANDARDS.

SHRUB MATERIAL

THE SELECTED PLANT SHALL BE HEALTHY, VIGOROUS PLANT WHICH IS WELL-SHAPED, WELL-BRANCHED AND WELL-FOLIATED (SUBJECT TO NATURAL GROWTH OF THE VARIETY).

1. CANES OR TRUNK (S) AND BRANCHES:
A. WELL-FORMED AND STURDY.
B. GOOD BRANCHING, UNIFORMLY DISTRIBUTED TO FORM A WELL-BALANCED PLANT.
C. SCARS SHALL BE FREE OF ROT AND NOT EXCEED IN GREATEST DIMENSION THE DIAMETER OF THE WOOD BENEATH UNLESS CLEAN AND HEALED 75 % OR BETTER (EXCEPT PRUNING SCARS).
D. PRUNING SCARS CLEAN CUT LEAVING LITTLE OR NO PROTRUSION FROM TRUCK OR BRANCH.
E. GRAFT UNION HEALED 75% OR BETTER.
F. NO EXTREME SUCCULENCE.

2. FOLIAGE:
A. WELL SUPPLIED WITH LEAVES OF NORMAL SIZE, SHAPE, COLOR AND TEXTURE (EXCEPT SHRUBS MOVED BARE-ROOT OR DECIDUOUS SHRUBS WHEN DORMANT).
B. NO HOLES, CAVITIES OR DEPRESSED AREAS CAUSED BY BROKEN OR DEAD FOLIAGE.
C. MAXIMUM CHLOROSIS VERY SLIGHT AND NOT MORE THAN 10% OF TOTAL FOLIAGE.
D. PEST OR MECHANICAL DAMAGE CONFINED TO NO MORE THAN 10% OF TOTAL FOLIAGE.
E. FROST OR COLD DAMAGE CONFINED TO NO MORE THAN A SLIGHT TIP BURN ON THE LEAVES COVERING 10% OR LESS OF THE SURFACE AREA.

3. ROOT SYSTEM:
A. CONTAIN-GROWN STOCK.
(1) STURDILY ESTABLISHED IN CONTAINER.
(2) SHALL NOT BE EXCESSIVELY ROOTBOUND EXCEPT PLANTS DELIBERATELY GROWN ROOTBOUND TO PRODUCE A DWARF PLANT.
(3) NO LARGE ROOTS GROWING OUT OF CONTAINER.

B. BALLED OR BALLED AND BURLAPPED STOCK (B&B).
(1) STURDILY ESTABLISHED IN BALL THAT HAS BEEN TIGHTLY WRAPPED AND SECURELY TIED WITH TWINE OR WIRE, OR PINNED.
(2) PLANTS MUST HAVE BEEN PREVIOUSLY ROOT PRUNED AND/OR CONTAIN SUFFICIENT ROOTS FOR CONTINUED GROWTH WITHOUT RESULTING SHOCK.
(3) MINIMUM BALL SIZE: SEE CHART, PAGE 7.

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EPCO RANCH NORTH
Parcel A Phase 1

Standard Pacific Homes
Pasco County, Florida

ISSUE DATES:

NO.	DESCRIPTION	DATE
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DRAWN BY:	JMG
CHECKED BY:	JMG
SCALE:	AS SHOWN

LANDSCAPE NOTES

SHEET NUMBER

LS-16

Certification.
The Contractor shall provide the Engineer a certified test report from the manufacturer of the commercial fertilizer confirming that the requirements of this Section are met. The certified test report shall conform to the requirements of Section 6 and include test results for total nitrogen, available phosphoric acid, water-soluble potash, and sulfur. Each certification shall cover one batch per type for dry type fertilizer.

Fertilizer Rates.
Soil laboratory fertilization recommendations are based on the amount (lbs) of nutrients (N, P205, K20) to apply per given area (usually 1,000 sq. ft.). From this recommendation it is necessary to select an appropriate fertilizer grade and then determine how much of this fertilizer to apply to the area.

If a complete fertilizer (containing all three primary nutrients) is not available in the ratio of N-P-K necessary to match the ratio required in the fertilizer recommendation, mixed-grade or single-nutrient fertilizers should be used to satisfy each nutrient requirement.

To calculate fertilizer rates:

1. Measure the area to be fertilized in square feet.
2. Select fertilizer(s) to be used based on the soil testing laboratory recommendations by matching the ratio of nutrients recommended to the fertilizer grades available.
3. Determine the amount of fertilizer to apply to a given area (1,000 sq. ft.) by dividing the recommended amount of nutrient by the percentage of the nutrient (on a decimal basis) in the fertilizer. Apply no more than 0.25 lbs P205/1000 sf per application prior to planting.
4. Adjust the amount of fertilizer to the project area.

2.03 MULCH

A. The mulch shall consist of oat, rye or wheat straw or of pangola, peanut coastal Bermuda or Bahia grass hay. Other types of mulch may be used only when approved by the Landscape Architect.

2.04 SODDING MATERIALS

A. Unless otherwise indicated on the plans, sod materials shall be specified on the landscape plant list.

B. The sod shall be taken up in commercial size rectangles, preferable 12 x 24 inches or larger, except where six inch (6") strip sodding is called for. The sod shall be sufficiently thick to secure a dense stand of live grass. The sod shall be live, fresh and uninjured, at the time of planting. It shall have a soil mat of necessary sufficient thickness adhering firmly to the roots to withstand all necessary handling. It shall be reasonably free of weeds and other grasses. It shall be planted as soon as possible after being dug and shall be shaded and kept moist from the time it is dug until it is planted. The source of the sod may be inspected and approved by the Landscape Architect prior to being cut for use in the work. After approval, the area from which the sod is to be harvested shall be closely mowed and raked as necessary to remove excessive top growth and debris.

C. Approved devices, such as sod cutters, shall be used for cutting the sod and due care shall be exercised to retain the native root soil intact.

2.05 WATER

A. The water shall be free of excess and harmful chemicals, acids and alkalis or any substance that might be harmful to plant growth or obnoxious to traffic. Salt water shall not be used. The contractor shall make all arrangements for obtaining and transporting water to the job site.

PART III - EXECUTION

3.01 PREPARATION OF GROUND

A. Final grading and cleaning shall be completed prior to preparation of ground for grassing. The areas to be grassed shall be scarified or loosened to a depth of at least six inches (6"). All areas shall be smooth and free of large clods, roots and other materials that may interfere with the work or future mowing and maintenance operation. No subsequent operations shall be commenced until the Landscape Architect has approved the condition of prepared areas.

3.02 APPLICATION

A. Fertilizer: Fertilize as necessary based on soil testing performed in accordance with Section 2.01 "Soil Testing" and 2.02 "Fertilizer".
For bid purposes, base estimated quantities on an initial application of 265 lbs/acres and one subsequent application of 135 lbs/acre of 16-0-8.

B. Seed Mixture: Seeding shall be done immediately after fertilizing, while the soil is still loose and moist. The seed shall be scattered uniformly over the area to be grassed by a mechanical hand spreader or other approved type of spreader. The rate of spreading shall be five (5) pounds per one thousand (1,000) square feet unless otherwise designated.

C. Mulch: Immediately after completion of seeding, dry mulch shall be uniformly applied over the seeded area approximately two inches (2") loose thickness. The mulch shall then be cut uniformly into the soil so as to produce a loose mulched thickness of three to four inches (3" - 4") and rolled with a cultipacker, traffic roller or other suitable equipment. After seeding and mulching is completed, the entire area shall be watered so as to provide optimum growth conditions for establishment of the grass.

D. Placement of Sod: Sodding shall be incorporated into the project at the earliest practical time in the life of the contract. No sod which has been cut for more than seventy-two (72) hours shall be used unless specifically authorized by the Landscape Architect after his careful inspection thereof. Any sod that is not planted within twenty-four (24) hours after cutting shall be stacked in an approved manner and maintained properly moistened.

1. Sodding shall not be performed when weather and soil conditions are, in the Landscape Architect's opinion, unsuitable for proper results.
2. The sod shall be placed on the prepared surface, with edges in close contact and shall be firmly and smoothly embedded by light tamping with appropriate tools or rolled with approved rollers.
3. Where sodding is used in drainage ditches, the setting of the pieces shall be staggered, such as to avoid a continuous seam along the line of flow. Along the edges of such staggered areas the offsets of individual strips shall not exceed six inches (6"). In order to prevent erosion caused by vertical edges at the outer limits, the outer pieces of sod shall be tamped so as to produce a feather edge effect.
4. On areas where the sod may slide, due to height and slope, the Landscape Architect may direct that the sod be pegged, with pegs driven through the sod blocks into firm earth, at suitable intervals. Any pieces of sod which, after placing, show an appearance of extreme dryness shall be removed from the work.
5. Watering of Grassed Areas: The grassed areas shall be watered for the duration of the contract so as to provide optimum growth conditions for the establishment of the grass. In no case, however, shall the period of maintaining such moisture be less than two (2) weeks after the planting. The water used may be obtained from any approved spring, pond, lake, stream or municipal water system.

3.03 MAINTENANCE OF GRASSED AREAS

A. The Contractor shall, at his expense, Maintain the planted areas in a satisfactory condition until final acceptance of the project. Such maintenance shall include the filling, leveling and repairing of any washed or eroded areas, as may be necessary. The Landscape Architect, at any time, may require replanting of any areas in which the establishment of the grass stand does not appear to be developing satisfactorily. If a planted area must be replanted due to the Landscape Contractor's negligence, carelessness or failure to provide routine maintenance of such area, such replacement shall be at the Landscape contractor's expense. If replanting is necessary due to factors determined to be beyond the control of the Landscape Contractor, payment for replacement will be made under the appropriate contract pay items.

(End of Section)

F. Thickness shall be a uniform as possible, approximately 1-1/2 inches or more, depending on the nature of the sod, so that practically all the dense root system of the grasses will be retained, but exposed in the sod strip, and so that sod can be handled without undue tearing or breaking.

G. Sod shall be watered before lifting and in sufficient quantities to provide a well moistened condition of the sod, full depth to which it is to be cut.

H. The sod shall be live, fresh and uninjured at the time of planting. It shall be planted as soon as possible after being dug and shall be shaded and kept moist from the time it is dug until it is planted. The sod shall be approved by the Landscape Architect before planting.

I. Sod shall be laid with broken joints and fitted together to form a uniform neat blanket effect. All poor grass, light spots and trash shall be cut out of the sod and patched with good sod.

J. Sod shall be rolled with approved lawn roller in two directions to level and smooth sod to a carpet effect. Hand tamp out all high spots that rolling does not remove. Low spots shall be lifted, filled and relayed to give proper effect.

K. Watering: The grassed areas shall be kept in a moist condition for at least two weeks after it is planted and as long as required for a stand of grass.

L. Patching: Weak sodded areas which have to be removed and replaced will be done so by cutting out the effected area - graded to a depth equal to bottom of existing sod adjacent and replaced tightly to form a uniform carpet not noticeable whether the grade is flat or on slope.

2.13 MULCHING

A. After all plants in a group or in a plant bed have been set and approved, the areas between plants shall be cultivated and raked to an even grade to conform to the required remulching finish grades. All plant beds and plant saucers shall then be uniformly covered with three inches (3") layer of approved mulch material.

B. Trees which are not located in plant beds shall be mulched the full width of the tree pit.

PART III - COMPLETION

3.01 CLEAN-UP AND PROTECTION

A. Upon completion of the work, the grounds shall be cleared of all debris, superfluous materials and equipment due to landscape operations.

B. The Landscape Contractor shall protect all work included under his contract against trespassing and damage of any kind until final inspection and acceptance. If any material is injured it shall be treated, repaired or replaced as required.

3.02 FINAL INSPECTION

A. At the conclusion of the planting, a final inspection of the work will be made to determine the condition of plant materials. All plants not in a healthy growing condition, as determined by the Landscape Architect or his representative, shall be removed from the site and promptly replaced with plants of the like, kind, and size in the same manner as specified for the original planting, at no additional cost to the Owner.

B. At the conclusion of this final inspection, if the Landscape Architect or Owner has reason to believe that the plants are not of the specified grade, he will request a regarding inspection by the Division of Plant Industry, and such evidence will be the basis for requesting replacement of plants and for legal or other action taken by the Division of Plant Industry according to law, should this become necessary.

3.03 HURRICANE DAMAGE OR ACTS OF GOD

A. The Contractor shall not be held responsible for replacement or repairs of plants or planting areas killed or damaged by hurricanes or Acts of God providing he shall have taken all reasonable precautions to minimize their damage.

3.04 GUARANTY

A. All shrub and ground cover materials will be guaranteed for a period of 120 days and trees, palms and accents shall be guaranteed for a period of one (1) year after final inspection and acceptance by the Owner.

3.05 HARM TO PLANT MATERIAL

The General Contractor is responsible for damage to any plant materials or sod which is harmed by foot traffic, ladders in beds, paint brush cleaning, spillage of chemicals in landscape areas, heavy equipment traffic, construction debris lift laying, roofing materials or any other circumstances which is obviously the result of construction work aftermath.

(End of Section)

SECTION 02811 - GRASSING, SEEDING OR SODDING

PART I - GENERAL

1.01 DESCRIPTION

A. The work specified in this section consists of the establishing of a stand of grass within the areas called for and maintaining such areas until completion and final acceptance of project. The methods specified herein are grassing by seeding and grassing by sodding.

1.02 JOB CONDITIONS

A. Sodding: In areas defined as turf on project landscape plans, sodding will be required.

PART II - PRODUCTS

2.01 SOIL TESTS:

The Landscape Contractor is to verify all soil conditions of all planting areas as to its Ph and organic stability before planting to be sure all unsuitable material has been removed. Before any soil addenda are added to the soil, a soil test shall be taken. A minimum of three (3) soil samples shall be taken. Label each sample with the date, location keyed to a site plan, visible soil condition, and sampling depth. Split each sample into two, equal parts. Send half to the testing agency and half to Owner for its records. The soil samples shall be tested for the Physical Soil Texture, Chemical Makeup, and Soil-Fertility analysis according to standard laboratory protocol. For each unamended soil type, perform testing on soil samples and furnish soil analysis and a written report containing soil-amendment and fertilizer recommendations by a qualified testing agency performing the testing according to "Soil-Sampling Requirements" and "Testing Requirements" articles. All proposed fill shall be tested prior to being delivered to the site.

2.02 FERTILIZER:

Fertilizers shall comply with the State fertilizer laws.
The numerical designations for fertilizer indicate the minimum percentages (respectively) of (1) total nitrogen, (2) available phosphoric acid, and (3) water-soluble potash, contained in the fertilizer. At least 50% of the nitrogen shall be from a slow-release source.

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2.06 PLANT SCHEDULE

A. The species, size, manner in which to be furnished and the number of plants required to complete the planting as indicated on the Landscape Plan are given in the Plant Schedule.

1. All dimensions given under the Plant Schedule shall be the minimum acceptable sizes.

2.07 INSPECTION OF PLANTS

A. The Landscape Contractor shall be responsible for all certificates of inspection of plant materials that may be required by Federal, State or other authorities to accompany shipment of plants. All plants shall be subject to inspection and approval by the Landscape Architect at any place and at any time. Plants required for the work may be inspected at the place of growth but inspection should not in any way impair the right of rejection at the site. All plants must be inspected and approved before they are planted. All plants that are rejected shall be immediately removed from the site.

2.08 PLANTING SEASON

A. The planting of plant materials may proceed at any time or period or season agreed upon by the Landscape Architect or his representative as being satisfactory.

2.09 GRADING PREPARATION

A. Before the preparations of the planting area begins, all barricades around remaining trees and other protective areas shall be removed by the Landscape Contractor.

B. The finish grade of all planting areas shall be 2-1/2" below the top of abutting curbs, walks, paving and abutments.

2.10 GRADING

A. General Contractor is to verify exact amount of fill needed as shown on civil grading plans and/or hardscape plans and stock pile on job, if feasible.

B. All fill for berming, landscaping areas such as planters, planting beds and in curb islands shall be of suitable construction material. All proposed fill shall be tested as per section 2.01-D prior to being delivered to the site. The General Contractor shall be responsible for coordinating soil testing of offsite fill and shall submit test results to the Landscape Architect or his representative.

C. Absolutely no clay, mulch, gumbo or sandy clay may be used. Suitable material will consist of only clean, sandy, porous gradation.

D. Any unsuitable material found in the above landscaping areas will be removed to a depth of six feet and three feet outside the planting bed perimeter, then will be filled with suitable material to reasonable compaction.

E. Grading: Rough grading and intermediate rough grading will be done by the General Contractor. Fine grading will be done by the Landscape Contractor.

1. Rough grading is the placement of all dirt in designated areas (including planters), balanced to rough grade and shaped to the general intent of the plans as directed by the Landscape Architect.
2. Intermediate rough grading is that work which is needed, by request of the Landscape Architect, to repair all erosion problems on site, including washouts, into the lake, roadway or around building pads.
3. Fine grading is that work which will be done by the Landscape Contractor exclusively. This work consists of hand grading all areas for sodding and final shaping, formation of berms by General Contractor under rough shaping.
4. If fine grading has been completed and severe erosion has taken place before sod or plant material has been installed, then intermediate rough grading will be requested and approved by the Landscape Architect.
5. If severe erosion has taken place after sod or plant material has been installed, then intermediate rough grading will be requested and approved by the Landscape Architect.

2.11 GROUND COVER PLANTING

A. Plants planted at a spacing of less than twenty four (24) inches and plants of smaller size shall be treated as ground cover plants.

B. Preparation of the top six inches (6") of planting soil shall be prepared as follows (unless noted otherwise in Plant Schedule):

1. Fine grade to remove all extraneous matter.
2. Spread three inches (3") of peat moss or humus uniformly over entire ground cover area.
3. Spread organic slow release fertilizer as determined by soil analysis report.
5. Rotor mix or mix by other method to a depth of six inches (6").
6. Regrade to the finished grade before mulching.
7. Plant beds that have a spacing of plants that is twelve inches (12") or less may be mulched before planting.
8. Thorough water and firm the plants into the ground cover mixture.
9. Any soil that may have gotten on the mulch during the planting of the ground covers shall be removed and the area remulched.

C. Plants shall be oriented so that the spread on the plants will uniformly cover the space between them.

2.12 SODDING

A. The finish level of all grass areas after settlement shall be one inch below the top abutting curbs, walks, and paving

B. The sub-grade soil shall be loosened by roto-tiller or other approved method to a minimum of six inches and graded to remove all ridges and depressions so that it will be after settlement everywhere parallel to and at the proper level to provide finished grades specified herein. All stones over two inches in dimensions, stocks, debris and other extraneous matter shall be moved during this operation.

C. Soil Tests: The Landscape Contractor is to verify all soil conditions of all planting areas as to its Ph and organic stability before planting to be sure all unsuitable material has been removed. Before any soil addenda are added to the soil, a soil test shall be taken. A minimum of three (3) soil samples shall be taken. Label each sample with the date, location keyed to a site plan, visible soil condition, and sampling depth. Split each sample into two, equal parts. Send half to the testing agency and half to Owner for its records. The soil samples shall be tested for the Physical Soil Texture, Chemical Makeup, and Soil-Fertility analysis according to standard laboratory protocol. For each unamended soil type, perform testing on soil samples and furnish soil analysis and a written report containing soil-amendment and fertilizer recommendations by a qualified testing agency performing the testing according to "Soil-Sampling Requirements" and "Testing Requirements" articles. All proposed fill shall be tested prior to being delivered to the site.

D. After preparation of sub-soil, a slow release commercial fertilizer shall be applied as recommended by the soil testing agencies report.

E. Solid soil shall be sufficiently thick to secure a dense stand of live grass, and shall be free from weeds or undesirable grasses. At the time the sod is cut, the grass shall not have a length of more than two inches.

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EPCO RANCH NORTH
Parcel A Phase 1

Standard Pacific Homes
Pasco County, Florida

ISSUE DATES:

NO.	DESCRIPTION	DATE
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LANDSCAPE SPECIFICATIONS

SHEET NUMBER

LS-17