

<p>GENERAL EROSION AND TURBIDITY CONTROL NOTES</p> <ol style="list-style-type: none"> The soil erosion and sediment control devices shall be installed prior to construction and maintained throughout construction until the site is permanently stabilized. 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. 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. 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: <ol style="list-style-type: none"> Clay content in excavated materials and/or permeabilities rates Depth of cut in ponds, trenches, or utility lines Ambient ground water levels Actual rainfall amounts and time of year relative to normal rainy season Proximity to wetlands, water bodies or offsite properties Class designation of receiving water bodies (i.e., Outstanding Florida Waters, shellfish harvesting areas, etc.) Density, type, and proximity of upland vegetation to be retained during construction (for use as possible filtration areas) Fill height relative to natural grade and length and steepness of the proposed slopes Existing topography and directions of surface flow Type of equipment used Project type Duration of construction activities Separation distance of onsite ponds Ambient quality of surface and groundwater Temporary stockpile locations and heights 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. <p>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.</p> 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. 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. 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. 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. 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. 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. 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. 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. 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. Water can be transported around the site by the use of internal swales or by pumps and pipes. 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. Exposed soils shall be stabilized as soon as possible, especially slopes leading to wetlands. Stabilization methods include solid soil, 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. 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. Attempt to install roadway curb and gutters as soon as possible to reduce the surface area for erosion to occur. 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. Water discharge velocities from impounded areas and temporary sedimentation basins shall be restricted to avoid scouring in receiving areas. 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. 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. All fuel storage areas or other hazardous storage areas shall conform to accepted state or federal criteria for such containment areas. Vehicle or equipment washdown areas will be sufficiently removed from wetlands or offsite areas. Fugitive dust controls (primarily by using water spray trucks) shall be employed as needed to control windborn emissions. 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. Ongoing inspections and periodic maintenance by the Site Subcontractor shall occur throughout construction as necessary to insure the above methods are working suitably. This may be needed daily, if conditions so warrant. Site Subcontractors are encouraged to obtain and thoroughly review The Florida Development Manual: A Guide to Sound Land and Water Management, which was developed by the State of Florida Department of Environmental Protection in 1988. This provides fairly in-depth discussions of recommended techniques and also provides specific design and technical standards. A copy of this document is available for review at Heidt Design, LLC. The contractor will perform daily inspections of all on-site wetlands within the construction area to ensure that water levels within those wetlands are not excessively impounded prior to the time when the permitted control structure or outfall is built. Water levels significantly above normal should be corrected at a frequency that prevents a change in the vegetative character or health of any wetlands. 	<p>SOIL REUSE REQUIREMENTS</p> <p>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 Contractor's 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 Contractor's failure to properly reuse soil materials onsite as specifically described below, will be the Contractor's 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.</p> <p>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.</p> <ol style="list-style-type: none"> Site Demolition Debris (Site demolition debris, not generally considered an environmental/contamination hazard, includes such items as wood pieces, concrete pieces, plastic pipe pieces, certain metal/steel pieces, or similar. If any such debris or other demolition debris is considered an environmental/contamination hazard, or if burial onsite of such materials is prohibited by the governing environmental agency, then all such materials shall be hauled off site by the Contractor for proper disposal, in accordance with all applicable governing environmental agency requirements. In no case, shall any such debris materials remain, or be placed by the Contractor, beneath any type of structure, pavement, roadway, house, building, pipeline, slab, etc.) <p>All Site Demolition Debris shall be removed from the site development and disposed of properly in accordance with all applicable governing environmental agency requirements.</p> <ol style="list-style-type: none"> 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.) <p>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:</p> <ol style="list-style-type: none"> 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/Engineer; 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; 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; 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. <p>In all instances, the minimum pond depth (including floodplain and wetland mitigation areas) shall be no less than required by the Engineer.</p> <p>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.</p> <p>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.</p>	<ol style="list-style-type: none"> 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.) <p>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:</p> <ol style="list-style-type: none"> 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; 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; 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; 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. <p>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.</p> <p>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 material disposal, and what approximate elevations will be the top and bottom of the organic materials.</p> <ol style="list-style-type: none"> 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.) <p>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:</p> <ol style="list-style-type: none"> 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; 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; placed along the bottom of selected floodplain mitigation ponds (not in side banks), not below the permitted excavation depth of the pond; placed along the bottom of selected deeper stormwater ponds (not in side banks), not below the permitted design depth. <p>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.</p>	<p>WETLAND NOTES:</p> <p>"Conservation Area" designation is given to all protected wetlands per Pasco County requirements. They are not designated as "Conservation Easements" for SWFWMD compensation.</p> <p>Wetland lines permitted under ERP No. 4202 8993.003</p> <p>No construction activities including clearing, grading, or grubbing shall occur within the Wetland Upland Buffer.</p> <p>EARTHWORK NOTE:</p> <p>Excess material excavated and stockpiled on-site from floodplain and stormwater detention ponds within the previously approved Starkey Ranch village 1 Mass Grading project will be reused as fill for this Roadway Extension.</p> <p>CUT= _____ CU.YD FILL= 646,100 CU.YD NET= 0 CU.YD</p> <ol style="list-style-type: none"> There will be no net earthwork export from this Roadway Extension. <p>PERMIT NOTES:</p> <ol style="list-style-type: none"> As applicable, the owner/developer will provide copies of the required permits from the respective governing agencies, prior to issuance of the SDP. <p>CURB RAMP NOTE:</p> <ol style="list-style-type: none"> Curb ramps shall be constructed per FDOT Index 304 <p>TURN OUT NOTE:</p> <ol style="list-style-type: none"> Turn outs shall be constructed per FDOT Index 515 <p>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.</p> <p>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.</p> <ol style="list-style-type: none"> 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.) <p>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.</p> <p>Where pond excavation is planned or accomplished down to or near (or just into) the top of the found clay layer (Stratum 7) based on geotechnical test boring data or the design plans/pond cross sections, or based on actual conditions discovered in the field during excavation, then pond excavation shall cease in the pond area; the contractor before leaving the area shall confirm that either 2 feet (+/-) of fine sand to slightly clayey sand (Strata 1-5) is left overtop the clay layer (Stratum 7), or limestone surface (Stratum 8) if no clay is present; or the contractor shall add or replace (or spread out) Strata 1-5 sand soil materials (including topsoil materials or similar) overtop any deficient areas, such that upon leaving a pond area, there is 2 feet (+/-) of sandy soil material (Strata 1-5) in place overtop the clay layer (Stratum 7), or limestone (Stratum 8), so as to reduce post construction turbid water concerns.</p>						
<p>GENERAL NOTES</p> <p>STARKEY RANCH LAKE BLANCHE DRIVE EXTENSION GENERAL NOTES</p> <p>PREPARED FOR: WS-TSR, LLC</p> <table border="1"> <thead> <tr> <th>NO.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>06/02/2016</td> <td>REVIEW SUBMITTAL</td> </tr> </tbody> </table> <p>PROJECT NO: TSR-SR-1020 FILE: GNOTES DESIGN BY: TUCKER DRAWN BY: MELMS FLORIDA PROFESSIONAL ENGINEER</p> <p>GARY D. MILLER DATE: _____ REGISTRATION NO. 52717</p> <p>C-101</p>	NO.	DATE	DESCRIPTION	1	06/02/2016	REVIEW SUBMITTAL	<p>GEOTECHNICAL NOTES:</p> <ol style="list-style-type: none"> 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: <ol style="list-style-type: none"> 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. Take immediate measures to ensure no surface water drains into the affected areas. Visually inspect the affected area. Excavate and backfill or grout as required to fill the affected area and prevent further subsidence. Use soil reinforcement materials in the backfilling operation, when appropriate. 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. If the affected area is in the vicinity of a water-retention area and the above methods do not stabilize the collapse, relocated area. Discharge of storm-water into depressions with direct or demonstrated hydrologic connection to the Floridan Aquifer shall be prohibited. 	<p>CONSTRUCTION COMPLETION NOTE:</p> <p>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 recommendation of the geotechnical/geological engineering report.</p> <p>UNDERDRAIN NOTES:</p> <p>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.</p> <p>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.</p> <p>Underdrain shall be maintained by TSR CDD.</p>	<p>SELECTED MATERIAL NOTE:</p> <p>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 the standards prior to installation of the base. Certification shall strictly comply with the subgrade certification from available in "Engineering Services Department: A Procedural Guide for the Preparation of Assurances of Completion and Maintenance."</p> <p>ELEVATIONS BASED ON: NORTH AMERICAN VERTICAL DATUM 1988 CONVERSION: NAVD 88 TO NGVD 29 = +0.85</p>
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1	06/02/2016	REVIEW SUBMITTAL							

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 Landscape Architecture Certificate of Authorization No. LC26000405

STARKEY RANCH
LAKE BLANCHE DRIVE EXTENSION
GENERAL NOTES

PREPARED FOR: WS-TSR, LLC

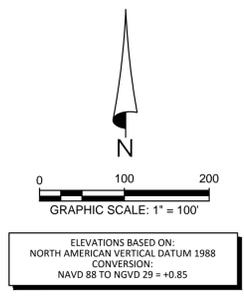
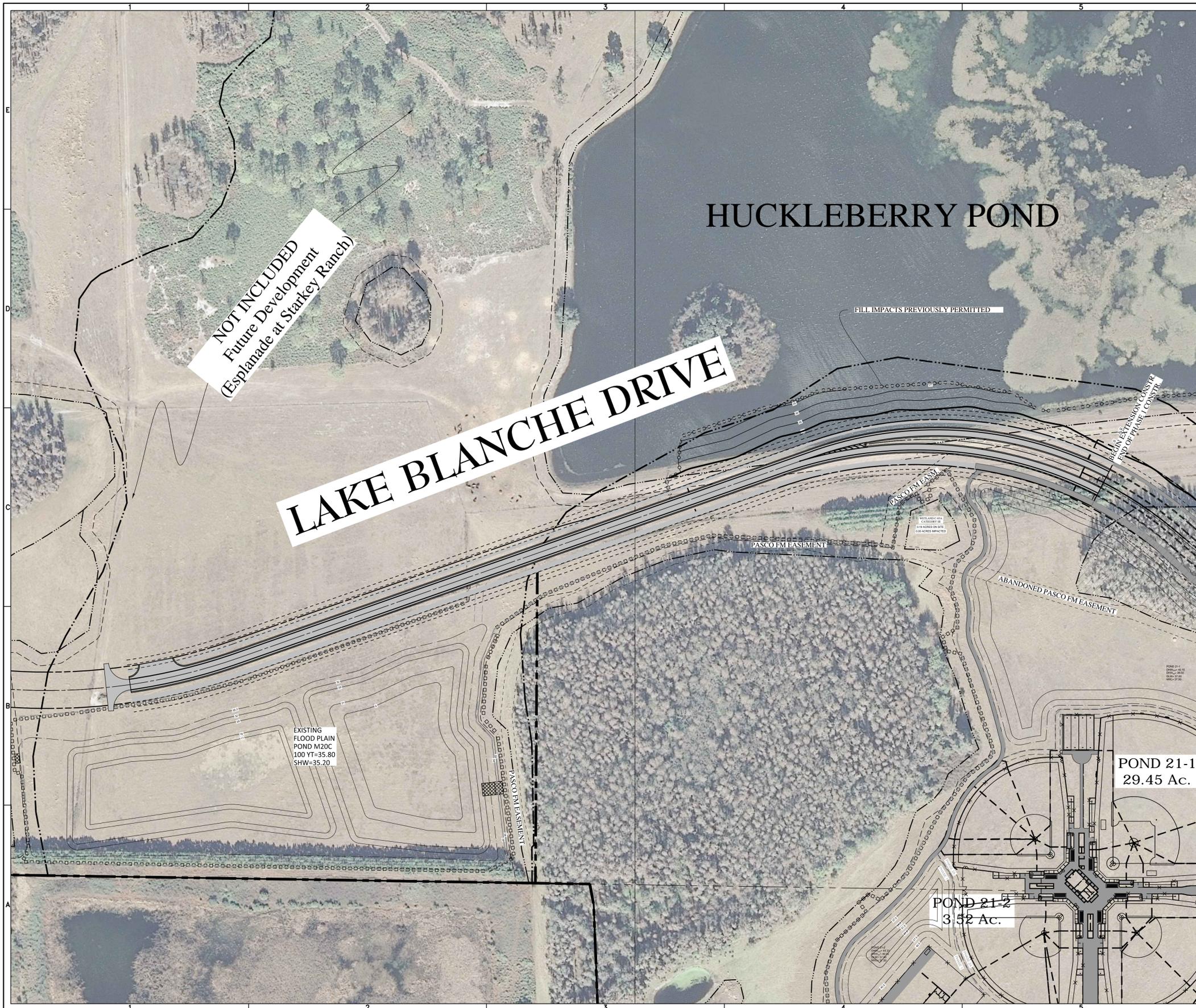
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PROJECT NO: TSR-SR-1020
 FILE: GNOTES
 DESIGN BY: TUCKER
 DRAWN BY: MELMS
 FLORIDA PROFESSIONAL ENGINEER

GARY D. MILLER
 DATE: _____
 REGISTRATION NO. 52717

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STARKEY RANCH
 LAKE BLANCHE DRIVE EXTENSION
 AERIAL SITE PLAN

PREPARED FOR:
 WS-TSR, L.L.C.

NO.	DATE	REVISION SUBMITTAL	DESCRIPTION
1	06/05/2016		

LAKE BLANCHE DRIVE AND REQUIRED DISTRICT PARK IMPROVEMENTS PERMITTED BY SWFWMD VIA PERMIT 43028893.023

PROJECT NO: TSR-SR-1020
 FILE: ASP
 DESIGN BY: TUCKER
 DRAWN BY: MELMS

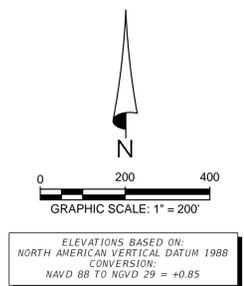
FLORIDA PROFESSIONAL ENGINEER

GARY D. MILLER
 DATE: _____
 REGISTRATION NO. 52717

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LAKE BLANCHE DRIVE EXTENSION

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ELEVATIONS BASED ON:
NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION:
NAVD 88 TO NAVD 29 = +0.85

SECTIONS 20 & 21, TOWNSHIP 26 SOUTH,
RANGE 17 EAST, PASCO COUNTY, FLORIDA

GENERAL LEGEND

---	WETLAND LINE
---	WETLAND CONS. AREA SETBACK
▨	WETLAND IMPACT
▩	WETLAND SECONDARY IMPACT
◇	PROPOSED TREE BARRICADE
□	STAKED EROSION CONTROL
○	FLOODPLAIN LIMITS

DRAINAGE LEGEND

---	EXISTING	---	PROPOSED
---	STORM DRAINAGE STRUCTURE & PIPE	---	STRUCTURE NO.
---	STRUCTURE NO.	---	SPOT ELEVATION
---	PROFILE GRADE ELEVATION REFERENCE	---	CONTOUR
---	DIRECTION OF SURFACE FLOW		

STARKEY RANCH MPUD APPROVAL

ACTION REFERENCE	REFERENCE NUMBER	APPROVAL DATE	STATUS
VILLAGE 2 PHASE 1A CONSTRUCTION PLAN	RSD 16-007	2016-06-27	APPROVED
VILLAGE 2 PRELIMINARY DEVELOPMENT PLAN	RSD 15-016	2015-11-10	APPROVED
RANGELAND BLVD. WEST PHASE 1 CONSTRUCTION PLANS	LRG 15-011	2015-06-15	APPROVED
RANGELAND BLVD. WEST PHASE 1 CONSTRUCTION PLANS MODIFICATION	LRG 15-011	2016-05-06	APPROVED
STARKEY RANCH WELCOME CENTER	SML 14-024	2014-05-21	APPROVED
STARKEY RANCH MPUD PARCEL 2 NEIGHBORHOOD BLOCK PLAN	PDD 16-66	2015-10-08	APPROVED
UNIFIED SIGN PLAN	PDD 15-1685	2015-10-06	APPROVED
STARKEY RANCH TRANSIT ACCOMMODATION PLAN		2015-07-17	APPROVED
MASTER UTILITY PLAN MODIFICATION	06-139.00	2015-07-10	APPROVED
MPUD NON-SUBSTANTIAL MODIFICATION	PDD 15-562	2015-04-08	APPROVED
MPUD NON-SUBSTANTIAL MODIFICATION	PDD 15-821	2015-04-08	APPROVED
MPUD NON-SUBSTANTIAL MODIFICATION	PDD15-562	2015-04-08	APPROVED
LICENSE AND MAINTENANCE AGREEMENT		2015-02-11	APPROVED
MPUD NON-SUBSTANTIAL MODIFICATION	PDD 15-259	2015-01-08	APPROVED
MASTER BIKE & PEDESTRIAN PLAN NON-RESIDENTIAL MODIFICATION	PDD 15-257	2014-12-30	APPROVED
MASTER PARK PLAN AND ALTERNATE STANDARD	PDD 15-258	2014-12-30	APPROVED
MASTER ROADWAY PLAN AND ALTERNATE STANDARD	PDD 15-255	2014-12-18	APPROVED
MPUD NON-SUBSTANTIAL MODIFICATION	PDD 15-5259	2014-12-04	APPROVED
WATER, SEWER AND RECLAIMED UTILITIES SERVICE PLAN (REV.)	PCU 06-139.00.A.6	2014-08-06	APPROVED
STARKEY RANCH VILLAGE 1 PHASES 1-5 PLANS	RSD 14-008	2014-06-05	APPROVED
NON-SUBSTANTIAL MODIFICATION TO MPUD RZ-7078	PDD 14-885	2014-05-24	APPROVED
STARKEY RANCH HEART PINE AVE/RANGELAND BLVD PLANS	LRG 14-010	2014-05-23	APPROVED
WATER, SEWER AND RECLAIMED UTILITIES SERVICE PLAN	PCU 06-139.00.A.6	2014-04-04	APPROVED
WATER SUPPLY, RECLAIMED WATER AND WASTEWATER TREATMENT SERVICE AGREEMENT C79	UTD 14-453	2014-02-25	APPROVED
STARKEY RANCH VILLAGE 1 MASS GRADING PLANS	RSD 14-001	2014-01-16	APPROVED
DISTRICT PARK, SITE, SCHOOL SITE, LIBRARY-THEATRE ACQUISITION, DEVELOPMENT SHARED-USE & MANAGEMENT AGREEMENT	CAO 14-3501	2013-12-17	APPROVED
STARKEY RANCH MPUD SUBSTANTIAL MODIFICATION	RZ-7078	2013-12-17	APPROVED
BICYCLE & PEDESTRIAN MASTER PLAN	PDD 14-035	2013-11-21	APPROVED
MASTER PARK & ALT. STD.	PDD 14-257	2013-11-21	APPROVED
MASTER ROADWAY PLAN & ALT. STD.	PDD 14-032	2013-11-21	APPROVED
AMENDED AND RESTATED DEVELOPMENT AGREEMENT	PDD 13-141	2012-11-07	APPROVED
DEVELOPMENT AGREEMENT AMENDMENT	OR BK 8785 PG 585	2012-11-07	APPROVED
COMPREHENSIVE PLAN AMENDMENT ORD. 12-21	PGM 12-204	2012-09-11	APPROVED
COMPREHENSIVE PLAN AMENDMENT ADOPTION	ORD. 12-21	2012-09-11	APPROVED
DRI RESCISSION	RES. NO. 12-309	2012-09-11	APPROVED
DRI RESCISSION RES. NO. 12-309	PGM 12-206	2012-09-11	APPROVED
MPUD	REZONING 7027	2012-09-11	APPROVED
REZONING 7027	PGM 12-205	2012-09-11	APPROVED
STARKEY RANCH MPUD REZONING PETITION	RZ-7027	2012-09-11	APPROVED
COMPREHENSIVE PLAN AMENDMENT ORD. 08-42	GM 08-466	2008-09-23	APPROVED
COMPREHENSIVE PLAN AMENDMENT	ORD. 08-42	2008-09-23	APPROVED
DRI DEVELOPMENT ORDER	RES. NO. 08-393	2008-09-23	APPROVED
DRI NO 264 DEVELOPMENT AGREEMENT	GM 08-467	2008-09-23	APPROVED
DRI/DEVELOPMENT AGREEMENT	RES. NO. 08-42	2008-09-23	APPROVED
DR/DEVELOPMENT ORDER 264 RES. NO. 08-393	GM 08-468	2008-09-23	APPROVED

DESCRIPTION:

A parcel of land lying in Sections 20 and 21, Township 26 South, Range 17 East, Pasco County, Florida, and being more particularly described as follows:

COMMENCE at the Southeast corner of said Section 20, run thence along the East boundary of said Section 20, N.00°30'39"E., a distance of 86.29 feet to the POINT OF BEGINNING; thence Northwesterly, 353.29 feet along the arc of a curve to the right having a radius of 1232.00 feet and a central angle of 16°25'49" (chord bearing N.61°47'16"W., 352.08 feet); thence Westerly, 507.55 feet along the arc of a reverse curve to the left having a radius of 1068.00 feet and a central angle of 27°13'45" (chord bearing N.67°11'13"W., 502.79 feet); thence Northwesterly, 635.82 feet along the arc of a reverse curve to the right having a radius of 1132.00 feet and a central angle of 32°10'55" (chord bearing N.64°42'38"W., 627.50 feet); thence Northwesterly, 345.35 feet along the arc of a reverse curve to the left having a radius of 745.00 feet and a central angle of 26°33'34" (chord bearing N.61°53'58"W., 342.26 feet); thence Westerly, 505.11 feet along the arc of a compound curve to the left having a radius of 850.00 feet and a central angle of 34°02'52" (chord bearing S.87°47'49"W., 497.71 feet); thence S.70°46'23"W., a distance of 458.16 feet; thence N.19°13'37"W., a distance of 73.94 feet; thence Easterly, 37.63 feet along the arc of a non-tangent curve to the right having a radius of 1000.00 feet and a central angle of 02°09'21" (chord bearing N.74°29'25"E., 37.63 feet); thence Easterly, 83.69 feet along the arc of a reverse curve to the left having a radius of 1000.00 feet and a central angle of 04°47'42" (chord bearing N.73°10'14"E., 83.67 feet); thence N.70°46'23"E., a distance of 433.33 feet; thence Easterly, 640.86 feet along the arc of a tangent curve to the right having a radius of 795.00 feet and a central angle of 46°11'13" (chord bearing S.86°08'01"E., 623.65 feet); thence Southeasterly, 213.18 feet along the arc of a compound curve to the right having a radius of 847.00 feet and a central angle of 14°25'13" (chord bearing S.55°49'47"E., 212.61 feet); thence Southeasterly, 578.53 feet along the arc of a reverse curve to the left having a radius of 1030.00 feet and a central angle of 32°10'55" (chord bearing S.64°42'38"E., 570.96 feet); thence Easterly, 556.03 feet along the arc of a reverse curve to the right having a radius of 1170.00 feet and a central angle of 27°13'45" (chord bearing S.67°11'13"E., 550.81 feet); thence Southeasterly, 306.76 feet along the arc of a reverse curve to the left having a radius of 1130.00 feet and a central angle of 15°33'18" (chord bearing S.61°21'00"E., 305.84 feet) to the Southwest corner of Tract C-2 of STARKEY RANCH CILLAGE 1 PHASES 1-5, according to the plat thereof, recorded in Plat Book 70, pages 60 through 104, inclusive, of the Public Records of Pasco County, Florida; thence along the South boundary of said Tract C-2 the following two (2) courses: 1) Easterly, 482.40 feet along the arc of a compound curve to the left having a radius of 1130.00 feet and a central angle of 24°27'36" (chord bearing S.81°21'27"E., 478.75 feet); 2) N.86°24'45"E., a distance of 425.49 feet to a point on the West boundary of STRAKEY RANCH CILLAGE 1 PHASE 2B, according to the plat thereof, recorded in Plat Book 71, pages 118 through 123, inclusive, of the Public Records of Pasco County, Florida; thence along said West boundary, S.03°35'15"E., a distance of 112.00 feet; thence S.86°24'45"W., a distance of 157.01 feet; thence N.51°49'48"W., a distance of 15.02 feet; thence S.86°24'45"W., a distance of 257.28 feet; thence Westerly, 507.13 feet along the arc of a tangent curve to the right having a radius of 1232.00 feet and a central angle of 23°35'04" (chord bearing N.81°47'42"W., 503.55 feet) to the POINT OF BEGINNING.

Containing 8,273 acres, more or less.

NOTES:

- DEVELOPER/OWNER: WS-TSR, LLC (WHEELOCK STREET CAPITAL) 1217 KIRKBRUCK AVENUE SAINT CLOUD, FL 34769 (312) 805-4830
- ENGINEER: HEIDT DESIGN, INC. 5806-B BRECKENRIDGE PARKWAY TAMPA, FLORIDA 33610 (813) 253-5311
- SURVEYOR: GEOPPOINT SURVEYING, INC. 1403 EAST 5TH AVENUE TAMPA, FL 33605 (813) 248-8888
- EXISTING ZONING: MPUD; EXISTING USE: VACANT/AGRICULTURAL
- FUTURE LAND USE CLASSIFICATION: PD
- THE ORIGINAL MPUD PLAN WAS APPROVED ON 9/11/12 (REZONING 7027).
- REVISED MPUD APPROVED 12/17/13 (REZONING 7078).
- WATER SERVICE TO BE PROVIDED BY PASCO COUNTY UTILITIES.
- SEWAGE DISPOSAL SERVICE TO BE PROVIDED BY PASCO COUNTY UTILITIES.
- ELECTRICAL SERVICE TO BE PROVIDED BY DUKE ENERGY.
- TELEPHONE SERVICE TO BE PROVIDED BY VERIZON.
- STREET LIGHTING TO BE PROVIDED BY CDD.
- FIRE PROTECTION TO BE PROVIDED BY THE EXISTING PASCO COUNTY FIRE STATION #15, LOCATED APPROXIMATELY ONE (1.25) MILE FROM SITE. FIRE HYDRANTS TO BE PROVIDED ON SITE.
- THE UPLANDS ARE ACTIVELY GRAZED BAHIA PASTURE. THE WETLANDS ARE CYPRESS SWAMPS AND GRASSY MARSHES.
- PREDOMINANT SOIL TYPES ON-SITE CONSIST OF: SELLERS, SMYRNA, IMMOKALEE, & MYAKKA.
- RECREATION AREAS, CONSERVATION AREAS, AND DETENTION PONDS WILL BE OWNED AND MAINTAINED BY THE CDD. LANDSCAPE EASEMENTS ALONG COLLECTOR AND ARTERIAL ROADWAYS WILL BE DEDICATED TO THE CDD FOR MAINTENANCE.
- DETENTION PONDS TO BE WITHIN DRAINAGE EASEMENTS DEDICATED TO THE CDD FOR MAINTENANCE.
- CONTOURS SHOWN ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988.
- PROPOSED RIGHTS-OF-WAY FOR LOCAL STREETS SHALL BE A MINIMUM OF FIFTY (50) FEET.
- ALL ROADWAY STANDARDS TO COMPLY WITH THE MANUAL OF UNIFORM MINIMUM STANDARDS, STATE OF FLORIDA.
- ALL WATER AND WASTEWATER FACILITIES TO BE INSTALLED IN COMPLIANCE WITH PASCO COUNTY STANDARDS FOR DESIGN AND CONSTRUCTION OF WATER AND WASTEWATER FACILITIES.
- ALL UTILITY LINES SHALL BE INSTALLED UNDERGROUND.
- ENTIRE PROJECT LIES WITHIN FLOOD ZONE "A", "AE", & "X" ACCORDING TO FLOOD INSURANCE RATE MAPS FOR PASCO COUNTY, FLORIDA, FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) - FLOOD INSURANCE RATE MAP (FIRM) COMMUNITY PANEL NO. 1202300000 DATED SEPTEMBER 30, 1992 AND PANEL NO. 1202300360 DATED SEPTEMBER 30, 1992 AND ISSUED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY. BASE FLOOD ELEVATION OF "AE" ZONES VARY BETWEEN, ELEVATION 42 TO ELEVATION 45 (NGVD).
- A MINIMUM OF 16" OF SOD STRIP WILL BE PROVIDED ALONG ALL ROADWAYS PER PASCO COUNTY REQUIREMENTS.
- 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 SWFPMD, ALLOWABLE USES AND RESTRICTIONS FOR BUFFERS SHALL IN ACCORDANCE WITH SECTION 702 OF THE PASCO COUNTY LAND DEVELOPMENT CODE.
- SIDEWALKS WILL BE PROVIDED ON BOTH SIDES OF ALL ROADS INCLUDING NON-LOT AREAS. UNLESS OTHERWISE SHOWN, ALL SIDEWALKS SHALL BE A MINIMUM OF FIVE (5) FEET WIDE, 4 1/2" THICK 3,000 P.S.I., FIBER REINFORCED CONCRETE, CONSTRUCTED ON NON-YIELDING SUBGRADE.
- 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.
- ALL LANDSCAPE AND SODDED AREAS ALONG COLLECTOR ROAD WILL BE IRRIGATED.
- THIS PROJECT WILL COMPLY WITH THE PASCO COUNTY TREE PROTECTION AND RESTORATION ORDINANCE.
- THIS PROJECT SHALL BE SUBJECT TO THE PASCO COUNTY NEW DEVELOPMENT FAIR SHARE CONTRIBUTION FOR ROAD IMPROVEMENTS ORDINANCE AND SCHOOL IMPACT FEE ORDINANCE.
- 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.
- 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 SITE.
- IF DURING THE CONSTRUCTION ACTIVITIES ANY EVIDENCE OF THE PRESENCE OF STATE AND FEDERALLY PROTECTED PLANT AND/OR ANIMAL SPECIES ARE 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 SITE.
- 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.
- ALL 20'x20' 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.
- 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.
- FUGITIVE DUST EMISSIONS SHALL BE CONTROLLED BY SPRINKLING AS NECESSARY.
- ON-SITE BURNING SHALL NOT BE EMPLOYED WITHOUT APPROVAL FROM THE FIRE MARSHAL.
- THE SOIL EROSION AND SEDIMENT CONTROL DEVICES SHALL BE INSTALLED PRIOR TO CONSTRUCTION AND MAINTAINED THROUGHOUT CONSTRUCTION UNTIL THE SITE IS PERMANENTLY STABILIZED.
- ALL PROJECTS MUST COMPLY WITH PASCO COUNTY FIRE HYDRANT ORDINANCE NO. 46-51.
- FIRE HYDRANTS SHALL BE INSTALLED AND IN SERVICE PRIOR TO THE ACCUMULATION OF COMBUSTIBLES.
- 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 BUILDING CONSTRUCTION WORK.
- PER NFPA-1, 16.4.4: CLEARANCES OF 7.5 FEET IN FRONT OF AND TO THE SIDES OF THE FIRE HYDRANT WITH A FOUR-FOOT CLEARANCE TO THE REAR MUST BE MAINTAINED AT ALL TIMES.
- ALL DEMOLITION DEBRIS SHALL BE REMOVED FROM THE SITE AND LEGALLY DISPOSED OF.
- ANY OFF SITE DISTURBANCE SHALL BE RESTORED TO THE PRE-CONSTRUCTION CONDITION OR BETTER.
- AS APPLICABLE, THE OWNER/DEVELOPER SHALL PROVIDE COPIES OF THE REQUIRED PERMITS FROM THE RESPECTIVE GOVERNING AGENCIES, PRIOR TO ISSUANCE OF THE SITE DEVELOPMENT PERMIT (SDP).
- UNDERDRAINS SHALL BE THE MAINTENANCE RESPONSIBILITY OF THE DEVELOPER'S SUCCESSOR (H.O.A. OR C.D.D.). A MAINTENANCE AND LICENCE AGREEMENT WILL BE ESTABLISHED TO ALLOW THE SUCCESSOR ENTITY TO MAINTAIN THE UNDERDRAINS.
- NO DRIVEWAY CUTS SHALL BE ALLOWED ON COLLECTOR ROADS (TYPE LOW), DRIVEWAYS ARE ONLY ALLOWED ON LOCAL STREETS (TYPES SLOW & YIELD).
- THESE PLANS WERE PREPARED WITH THE BENEFIT OF AND IN CONFORMANCE TO THE GEOTECHNICAL RECOMMENDATIONS IN THE REPORTS BY MORTENSEN ENGINEERING, INC. ENTITLED AS FOLLOWS: "STORMWATER POND AREA SOILS STUDY" (DATED 9/16/13); "ROADWAY SOILS STUDY - RESIDENTIAL/PARCEL ROADWAYS" (DATED 10/29/13); "GEOTECHNICAL ENGINEERING SERVICES/ROADWAY SOILS STUDY - COLLECTOR ROADWAYS/BOULEVARDS" (DATED 6/19/13); AND "STARKEY RANCH - VILLAGE 1 MASS GRADING AREAS: GEOTECHNICAL DATA AND REQUIREMENTS (DATED 8/19/2013)".

PASCO COUNTY DEVELOPMENT REVIEW - SITE PLAN NOTES

- ALL UTILITY CONSTRUCTION SHALL COMPLY WITH THE PASCO COUNTY STANDARDS FOR DESIGN AND CONSTRUCTION OF WATER AND WASTEWATER FACILITIES SPECIFICATIONS, LATEST EDITION.
- INSTALLATION OF FUEL STORAGE TANKS REQUIRES REVIEW AND APPROVAL BY THE FIRE MARSHAL AND THE ISSUANCE OF A SEPARATE BUILDING PERMIT. APPROVAL OF THE SITE PLAN DOES NOT CONSTITUTE APPROVAL OF THE LOCATION OF THE FUEL TANKS.
- 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.
- HANDICAP PARKING SPACES WILL BE PROPERLY SIGNED AND STRIPED IN ACCORDANCE WITH FLORIDA STATUTE 316, THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, OR OTHER APPLICABLE STANDARDS.
- THE ARCHITECT/ENGINEER CERTIFIES THAT THE SITE HAS BEEN DESIGNED IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT.
- ALL ON-SITE PARKING SPACES WILL BE STRIPED AND SIGNED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION. PARKING SPACES, DIRECTIONAL ARROWS, AND STOP BARS SHALL BE STRIPED IN WHITE. IT SHALL BE THE OWNER/DEVELOPER'S RESPONSIBILITY TO PROPERLY SIGN AND STRIPE IN ACCORDANCE WITH APPLICABLE STANDARDS.
- THE OWNER/DEVELOPER ACKNOWLEDGES THAT THIS APPROVAL DOES NOT INCLUDE ANY WORK IN THE COUNTY RIGHT-OF-WAY. ALL RIGHT-OF-WAY WORK SHALL BE A FUNCTION OF AN APPROVED PASCO RIGHT-OF-WAY USE PERMIT.
- 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.
- 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.
- THE OWNER/DEVELOPER ACKNOWLEDGES THAT THE SITE AND ITS SUBSEQUENT BUILDING PERMITS SHALL COMPLY WITH ALL REZONING/MPUD/PUD CONDITIONS.
- All structures, including buffer walls, retaining walls, signage, etc. require building permits.

**RANGELAND BOULEVARD WEST EXTENSION PHASE 1
WETLAND IMPACT SUMMARY TABLE**

WETLAND IDENTIFICATION	ACRES ON SITE	WETLAND IMPACT ACRES	WETLAND CATEGORY	UNIMPACTED WETLAND ACRES
WETLAND C-58	1.88	2.97	II	1.09
WETLAND SW-10	0.04	0.27	III	0.23
WETLAND C-59A	0.12	0.24	III	0.12
WETLAND C-60	3.09	3.67	III	0.58
WETLAND C-82*	2.46	2.46	III	0.00
TOTAL	7.59	9.61		2.02

* PREVIOUSLY IMPACTED WITH STARKEY RANCH VILLAGE 1 PHASES 1-5

WETLAND CATEGORY TABLE

CATEGORY	SIZE (AC)
I	0
II	2.97
III	6.64
TOTAL	9.61

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

5806-B Breckenridge Pkwy.
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Fax: 813-464-7629
www.HeidtDesign.com

**STARKEY RANCH
LAKE BLANCHE DRIVE EXTENSION
PRELIMINARY PLAN**

W5-TSR, LLC

NO.	DATE	DESCRIPTION	DATE	DESCRIPTION
1				
2				
3				
4				
5				
6				
7	08/07/2016	REVIEW SUBMITTAL		

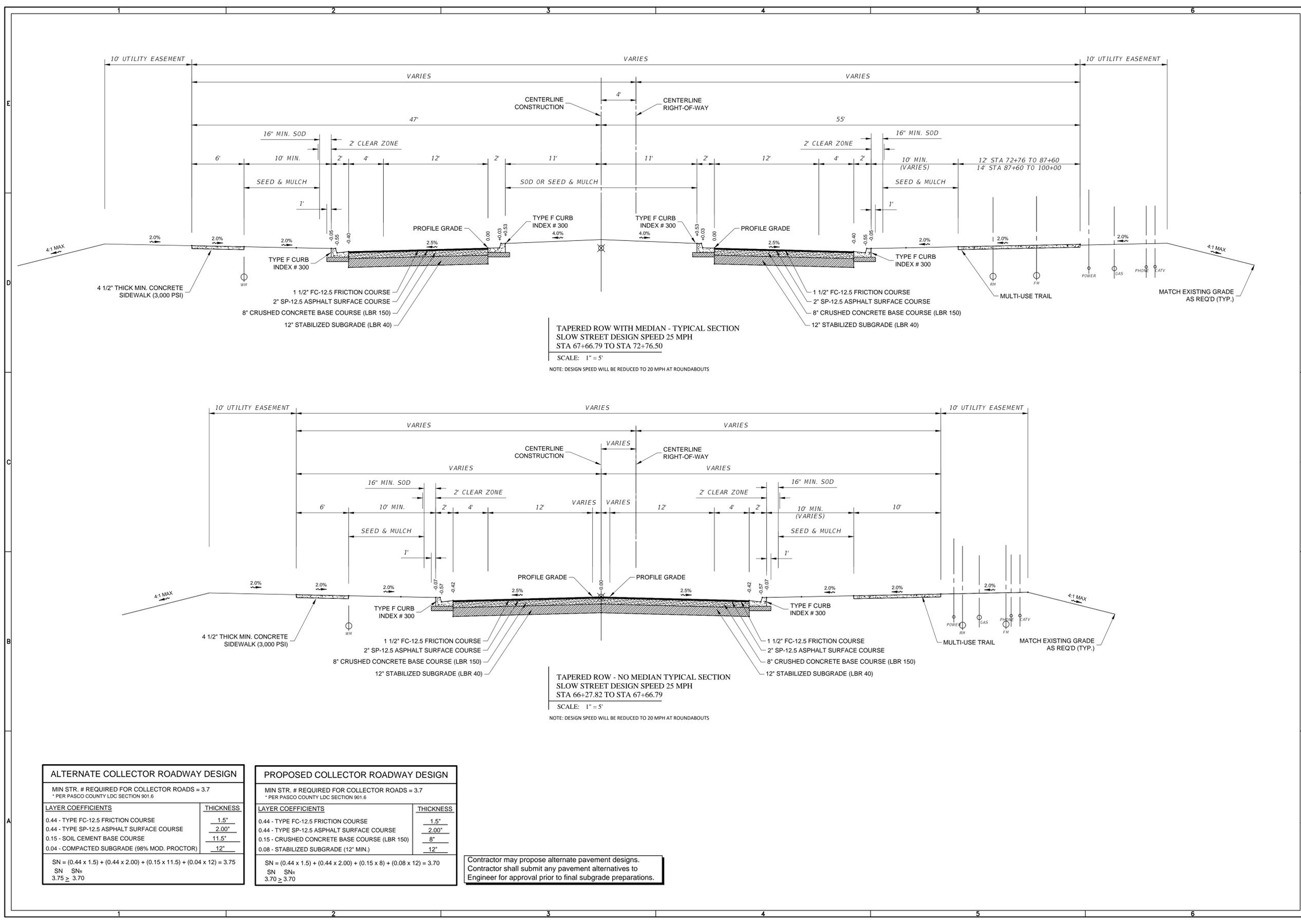
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FILE: PP-01
DESIGN BY: TUCKER
DRAWN BY: MELMS

GARY D. MILLER
DATE: _____
REGISTRATION NO. 52177

C-104

LAKE BLANCHE DRIVE EXTENSION

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Engineering Business Certificate of Authorization No. 23752
 Landscape Architecture Certificate of Authorization No. LC26000405

STARKEY RANCH
 LAKE BLANCHE DRIVE EXTENSION
 TYPICAL ROADWAY SECTION

PREPARED FOR: WS-TSR, LLC

NO.	DATE	DESCRIPTION
1	06/02/2016	REVIEW SUBMITTAL

PROJECT NO: TSR-SR-1020
 FILE: RS
 DESIGN BY: TUCKER
 DRAWN BY: MELMS

FLORIDA PROFESSIONAL ENGINEER

GARY D. MILLER
 DATE: _____
 REGISTRATION NO. 52717

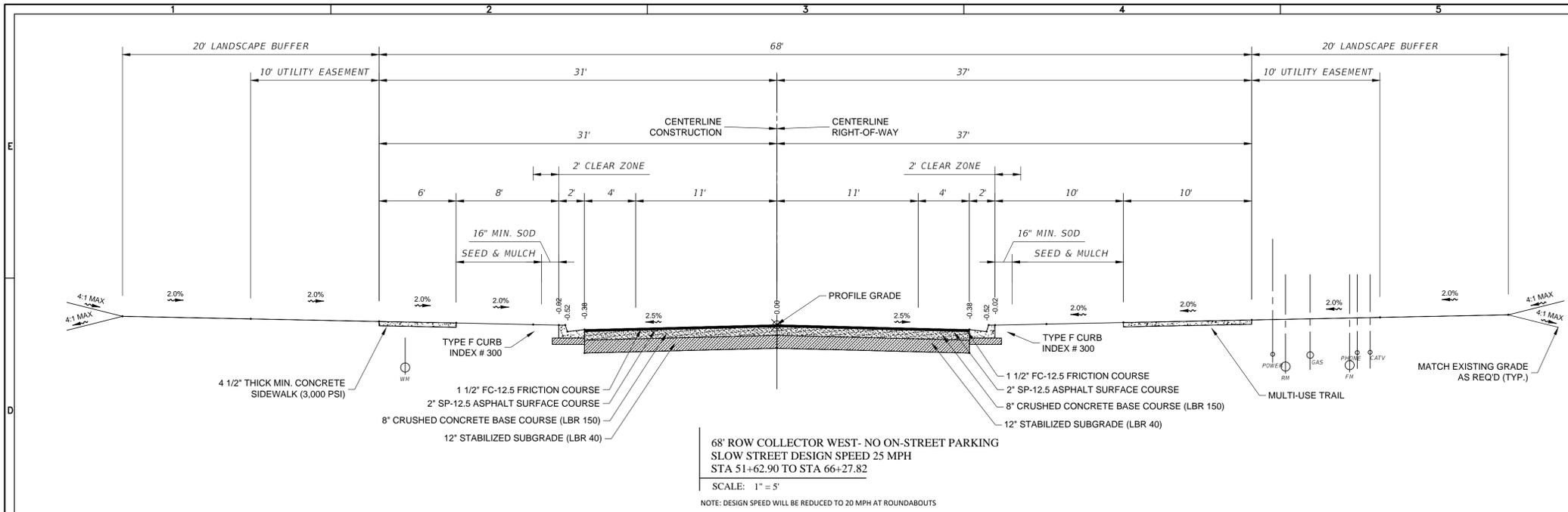
C-201

ALTERNATE COLLECTOR ROADWAY DESIGN	
MIN STR. # REQUIRED FOR COLLECTOR ROADS = 3.7 * PER PASCO COUNTY LDC SECTION 901.6	
LAYER COEFFICIENTS	THICKNESS
0.44 - TYPE FC-12.5 FRICTION COURSE	1.5"
0.44 - TYPE SP-12.5 ASPHALT SURFACE COURSE	2.00"
0.15 - SOIL CEMENT BASE COURSE	11.5"
0.04 - COMPACTED SUBGRADE (98% MOD. PROCTOR)	12"
SN = (0.44 x 1.5) + (0.44 x 2.00) + (0.15 x 11.5) + (0.04 x 12) = 3.75 SN _{req} = 3.75 ≥ 3.70	

PROPOSED COLLECTOR ROADWAY DESIGN	
MIN STR. # REQUIRED FOR COLLECTOR ROADS = 3.7 * PER PASCO COUNTY LDC SECTION 901.6	
LAYER COEFFICIENTS	THICKNESS
0.44 - TYPE FC-12.5 FRICTION COURSE	1.5"
0.44 - TYPE SP-12.5 ASPHALT SURFACE COURSE	2.00"
0.15 - CRUSHED CONCRETE BASE COURSE (LBR 150)	8"
0.08 - STABILIZED SUBGRADE (12" MIN.)	12"
SN = (0.44 x 1.5) + (0.44 x 2.00) + (0.15 x 8) + (0.08 x 12) = 3.70 SN _{req} = 3.70 ≥ 3.70	

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

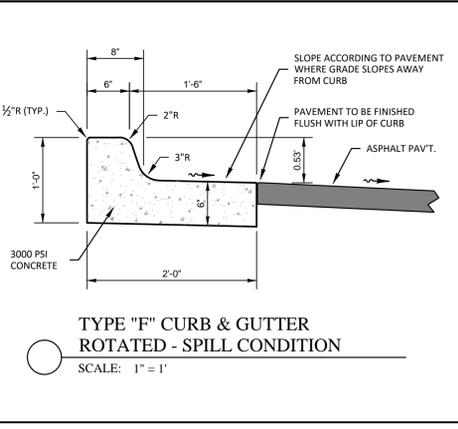
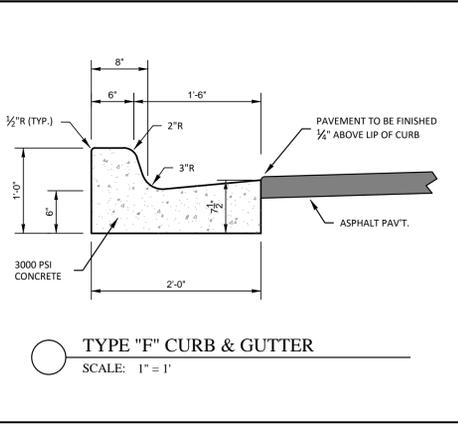
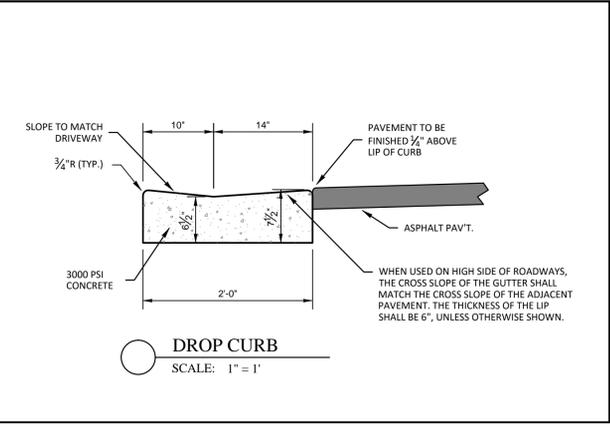
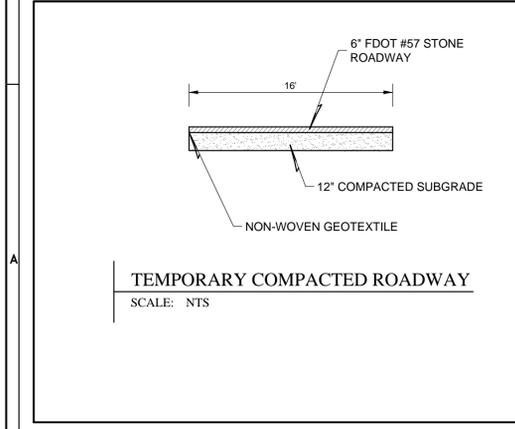
R:STARKEY RANCH/LAKE BLANCHE DRIVE EXTENSION/ENGINEERS DWG-C-201 2016/08/01 2:08 PM JAMES MELMS



- PAVEMENT CONSTRUCTION NOTES:**
- Pavement wearing surface shall be asphaltic concrete of type and thickness shown in detail and shall meet current Department of Transportation Specifications.
 - Pavement base shall be crushed concrete, as designated in plans, and shall be compacted to a minimum thickness as shown.
 - Crushed concrete road base material shall be of uniform quality, free of all organics, steel rebar, asphalt debris, and any other deleterious materials.
 - Crushed concrete road base material shall generally conform to the gradation chart for graded aggregate base, FDOT Section 204 and 901, tested at a frequency required by the Governing Agency having jurisdiction. In addition, crushed concrete shall conform to the applicable specification contained within Pasco County Design Standards, "Crushed Concrete Base Specification - Index 104."
 - Crushed concrete road base material shall have a minimum compacted dry density of 114.0 pcf (per AASHTO T-180), and a minimum Limerock Bearing Ratio (LBR) of 150 (under-tolerance +/- 5%), tested at a frequency required by the Governing Agency having jurisdiction, or in the absence thereof, by minimum FDOT standards.
 - Base single-course lifts shall not exceed 6 inches (compacted, 8 inches loose).
 - Crushed concrete road base shall be compacted to a minimum of 100% of Modified Proctor per AASHTO T-180, tested at a frequency required by the Governing Agency having jurisdiction, or in the absence thereof, by minimum FDOT standards.
 - Crushed concrete base shall have a 12-inch thick stabilized subgrade, Type "B" stabilization in accordance with FDOT Section 160 and shall have a minimum Limerock Bearing Ratio (LBR) of 40 or greater. Subgrade shall be compacted to the minimum thickness as shown. Subgrade shall be compacted to a minimum of 98% Modified Proctor per AASHTO T-180.
 - Compacted subgrade (beneath stabilized subgrade, if required, or beneath base materials) shall be prepared in accordance with FDOT Index 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 (SP) and/or A-2-4) with a maximum 15% fines passing the No. 200 sieve.
 - Crushed concrete base surface shall be inspected and approved by the engineer prior to any paving operation.
 - All curbs and gutters shall be placed on a foundation of Type "B" stabilized subgrade with a minimum LBR value of 40 (or a minimum FBV of 75) which has been compacted to a minimum density of ninety-eight percent (98%) of the maximum density as determined by AASHTO T-180 for a minimum depth of twelve (12) inches.
 - All Portland Cement Concrete shall have a minimum compressive strength of 3000 psi.
 - Roadway underdrain has been located on these plans to ensure adequate base protection. 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.
 - Should no underdrain be specified on the plans, the Contractor shall include 1,000 linear feet of underdrain at unit prices for bid purposes.
 - All testing referenced above shall, at a minimum, be at the frequency required by the Governing Agency having jurisdiction, or in the absence thereof, by minimum FDOT standards.
 - Sidewalks shall be constructed of natural or colored concrete at least 3,000 psi in strength, fiber reinforced on a compacted and non-yielding subgrade with minimum of four inches in thickness. When a sidewalk is crossed by a driveway, the minimum thickness shall be 6 inches.

- ALTERNATIVE SOIL-CEMENT BASE MATERIAL**
- 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.
 - Soil-cement surface shall be inspected and approved by the Engineer prior to any paving operation.
 - Subgrade for soil-cement 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.
 - 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.
 - Subgrade under soil-cement base shall NOT be stabilized unless otherwise directed by Engineer of Record.

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



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**STARKEY RANCH
LAKE BLANCHE DRIVE EXTENSION
TYPICAL ROADWAY SECTION**

PREPARED FOR:
WS-TSR, LLC

NO.	DATE	DESCRIPTION	REVIEW SUBMITTAL
1	06/05/2016		

PROJECT NO: TSR-SR-1020
FILE: RS
DESIGN BY: TUCKER
DRAWN BY: MELMS
FLORIDA PROFESSIONAL ENGINEER
GARY D. MILLER
DATE: _____
REGISTRATION NO. 52717
C-202

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PASCO COUNTY CRUSHED CONCRETE BASE SPECIFICATIONS

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 FM 1-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.

MATERIALS

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.

COMPOSITION

BASE MATERIAL SHALL CONFORM TO THE FOLLOWING GRADATION REQUIREMENTS:

SIZE SIEVE	PERCENT 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

BASE MATERIAL SHALL CONFORM TO THE FOLLOWING PLASTICITY REQUIREMENTS:

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

LIQUID LIMIT (AS DETERMINED BY AASHTO 780) (LESS THAN 25) PER MATERIAL TYPE

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

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 CONCRETE1% BY WEIGHT
BRICKS1% BY WEIGHT
WOOD AND OTHER ORGANIC SUBSTANCES0.5% BY WEIGHT
HEAVY METALS (EXCEPT LEAD)0.1% BY WEIGHT
LEAD5 PARTS PER MILLION
REINFORCED STEEL AND WELDED WIRE FABRIC0.1% BY WEIGHT
PLASTER AND GYPSUM BOARD0.1% BY WEIGHT

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-PLACE 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.

INSPECTION

SUBGRADE AND BASE INSPECTIONS SHALL BE CONDUCTED BY THE ENGINEER OF RECORD AND THE COUNTY INSPECTOR PRIOR TO SURFACE COURSE CONSTRUCTION.

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.

 PASCO COUNTY ENGINEERING SERVICES DESIGN STANDARDS	CRUSHED - CONCRETE BASE SPECIFICATIONS		Sheet No. 1 of 2
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EQUIPMENT, PLACEMENT AND SPREADING OF MATERIAL

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. 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.

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.

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.

COMPACTING, FINISHING AND TESTING REQUIREMENTS

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.

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 IT'S SURFACE TO PRODUCE THE REQUIRED GRADE AND CROSS-SECTION, FREE OF SCABS AND LAMINATIONS, AFTER COMPACTING.

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.

TESTING OF BASE COURSE

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.

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

CORRECTION OF DEFECTS

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.

PRIMING AND MAINTENANCE

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.

EMBANKMENT MATERIAL UNDER CONCRETE PAVEMENT SHALL BE PER FDOT INDEX NO. 505.

PASCO COUNTY TESTING SPECIFICATIONS ON CRUSHED CONCRETE BASE

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 VALVE, GRADATION AND FIELD TEST FOR SIEVE ANALYSIS OF FINE AND COARSE AGGREGATES (ASTM C-136) SHALL BE NO MORE THAN FIVE HUNDRED (500) FEET.

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.

NOTE:
NO DEVIATIONS TO THIS DETAIL WILL BE PERMITTED UNLESS APPROVED BY THE COUNTY ENGINEER.
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 PASCO COUNTY ENGINEERING SERVICES DESIGN STANDARDS	CRUSHED - CONCRETE BASE SPECIFICATIONS		Sheet No. 2 of 2
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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: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 BE 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 REPLACED 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 DIFFERING 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 μm 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 [50 MM] 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.

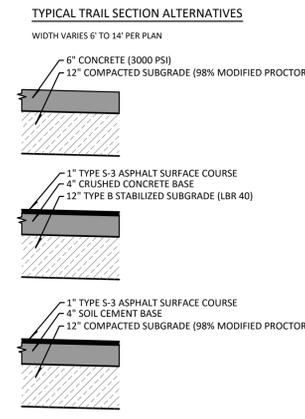
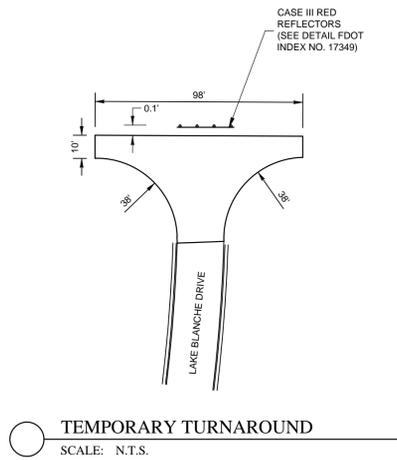
NOTE:

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 REQUIREMENTS SPECIFIED IN DIVISION III (MATERIALS) OF THIS 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:
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 PASCO COUNTY ENGINEERING SERVICES DESIGN STANDARDS	SOIL - CEMENT BASE SPECIFICATIONS		Sheet No. 1 of 1
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STARKEY RANCH
LAKE BLANCHE DRIVE EXTENSION
TYPICAL ROADWAY SECTION

PREPARED FOR:
WS-TSR, LLC

NO.	DATE	DESCRIPTION
1	06/05/2016	REVIEW SUBMITTAL

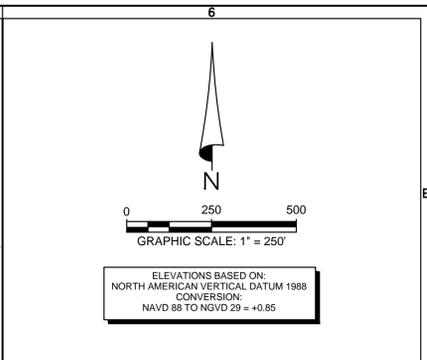
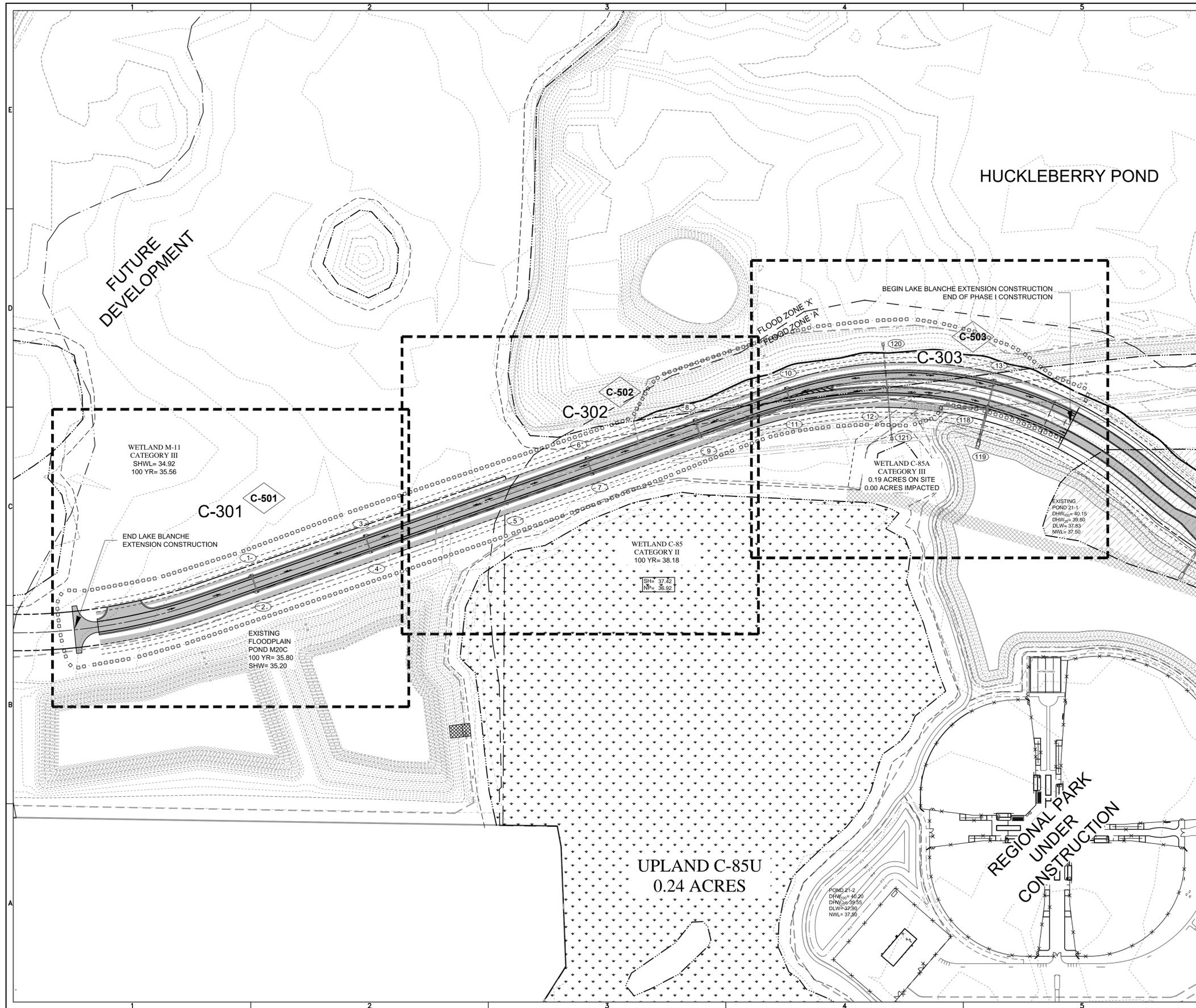
PROJECT NO: **TSR-SR-1020**
FILE: **RS**
DESIGN BY: **TUCKER**
DRAWN BY: **MELMS**

FLORIDA PROFESSIONAL ENGINEER
GARY D. MILLER
DATE: _____
REGISTRATION NO. **52717**

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- DRAINAGE & GRADING NOTES**
- ALL SODDED SLOPES STEEPER THAN 4:1 SHALL BE INSTALLED WITH SOD PEGS.
 - NO EXCAVATION SHALL EXTEND BELOW THE PERMITTED DESIGN DEPTHS/ELEVATIONS SHOWN ON THE DRAWINGS, UNLESS ADDITIONAL TESTING SUPPORTS OTHERWISE; NO LOWER SEMI-CONFINING UNIT CLAYEY SOIL MATERIAL AND/OR NO LIMESTONE MATERIALS SHALL BE EXCAVATED REGARDLESS IF THEY ARE ENCOUNTERED WITHIN THE PERMITTED 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 LOCATION AND THE ENGINEER OF RECORD SHALL BE NOTIFIED IMMEDIATELY.
 - 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:
 - 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.
 - TAKE IMMEDIATE MEASURES TO ENSURE NO SURFACE WATER DRAINS INTO THE AFFECTED AREAS.
 - EXCAVATE AND BACKFILL OR GROUT AS REQUIRED TO FILL THE AFFECTED AREA AND PREVENT FURTHER SUBSIDENCE.
 - USE SOIL REINFORCEMENT MATERIALS IN THE BACKFILLING OPERATION, WHEN APPROPRIATE.
 - 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.
 - 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.
 - DISCHARGE OF STORM-WATER INTO DEPRESSIONS WITH DIRECT OR DEMONSTRATED HYDROLOGIC CONNECTION TO THE FLORIDAN AQUIFER SHALL BE PROHIBITED.
 - UPON COMPLETION OF LAND DEVELOPMENT CONSTRUCTION ACTIVITIES, A PROFESSIONAL ENGINEER SHALL PROVIDE A CERTIFICATION TO PASCO COUNTY THAT THE PROJECT, INCLUDING THE PAD AREA, COMPLIES WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL / GEOLOGICAL ENGINEERING REPORT.
 - THE ENGINEER RESPONSIBLE FOR THE PROJECT SHALL CERTIFY TO PASCO COUNTY 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 ASSURANCES OF COMPLETION AND MAINTENANCE".
 - PROPOSED MAINTENANCE EASEMENTS MUST CONTAIN CLEAR OPERABLE ACCESSIBILITY.
 - THE MAINTENANCE AND CONCESSION BUILDINGS' RUNOFF SHALL BE COLLECTED BY THE STORMWATER CONVEYANCE SYSTEM.
 - ALL SLOPES ALONG THE RIGHT-OF-WAY SHALL BE MAINTAINED.

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**STARKEY RANCH
 LAKE BLANCHE DRIVE EXTENSION
 MASTER GRADING AND DRAINAGE
 PLAN**

WS-TSR, LLC

PREPARED FOR:

NO.	DATE	DESCRIPTION
1	08/02/2016	REVIEW SUBMITTAL

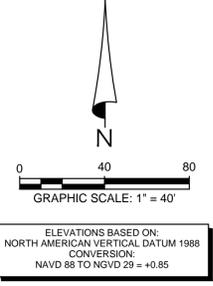
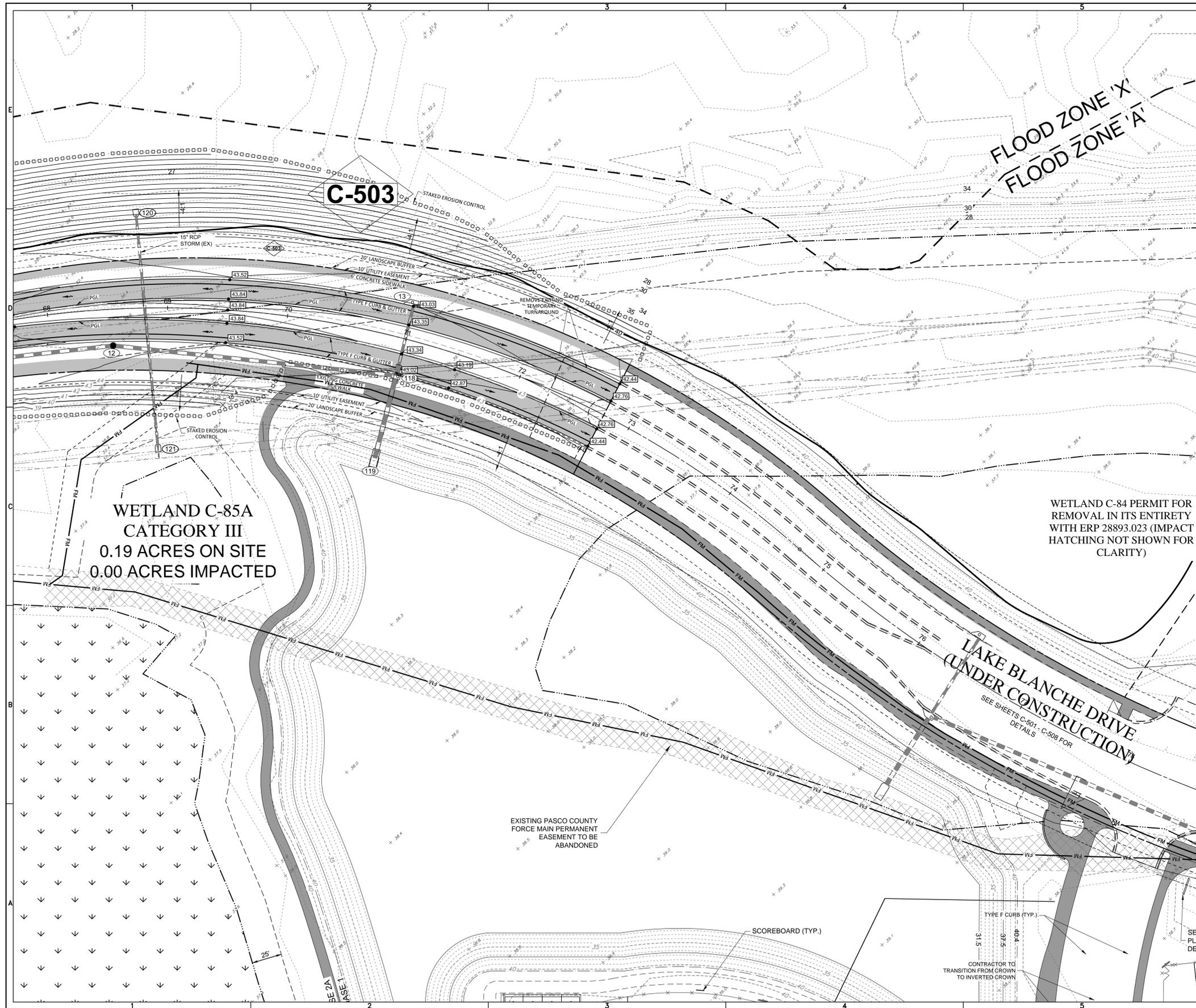
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FLORIDA PROFESSIONAL ENGINEER

GARY D. MILLER
 DATE: _____
 REGISTRATION NO. 52717

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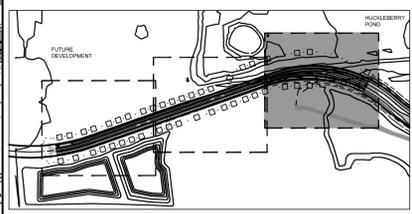


GENERAL LEGEND

- STAKED EROSION CONTROL
- LANDSCAPE BUFFER LINE
- PROJECT LIMIT LINE
- RIGHT-OF-WAY LINE
- UTILITY EASEMENT
- FEMA FLOOD ZONE LINE
- WETLAND LINE
- WETLAND CONS. AREA SETBACK / LANDWARD EXTENT OF UPLAND BUFFER
- █ PROPOSED SIDEWALK

DRAINAGE LEGEND

- | EXISTING | PROPOSED | DESCRIPTION |
|----------|----------|---------------------------|
| — | — | STORM DRAINAGE STRUCTURE |
| ○ S-311 | ○ S-311 | STRUCTURE NO. |
| ○ 15.00 | ○ 15.00 | SPOT ELEVATION |
| ○ 44.98 | ○ 44.48 | TOP OF SIDEWALK ELEVATION |
| --- 15 | --- 15 | CONTOUR |
| → | → | DIRECTION OF SURFACE FLOW |



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**STARKEY RANCH
 LAKE BLANCHE DRIVE EXTENSION
 GRADING AND DRAINAGE PLAN**

PREPARED BY: WS-TSR, LLC

NO.	DATE	DESCRIPTION
1	08/02/2016	REVIEW SUBMITTAL

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 DRAWN BY: MELMS

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www.HeidtDesign.com

**STARKEY RANCH
LAKE BLANCHE DRIVE EXTENSION
STORM STRUCTURE DATA**

PREPARED FOR:
WS-TSR, LLC

NO.	REVIEW SUBMITTAL	DATE	DESCRIPTION
1	08/02/2016		

PROJECT NO: TSR-SR-1020
FILE: GD
DESIGN BY: TUCKER
DRAWN BY: MELMS

FLORIDA PROFESSIONAL ENGINEER
GARY D. MILLER
DATE:
REGISTRATION NO. 52717

C-304

R: STARKEY RANCH LAKE BLANCHE DRIVE EXTENSION ENGINEERING GD DWG-C-304 2016/08/01 2:12 PM JAMES MELMS

STR. NO.	STR. TYPE	TOP ELEV.	COMMENTS
1	CURB INLET TYPE 2 F CURB	41.95	
2	CURB INLET TYPE 2 F CURB	41.95	
3	CURB INLET TYPE 2 F CURB	42.85	
4	CURB INLET TYPE 2	42.85	
5	4'-0" DIA. TYPE P MANHOLE - 4' DIA.	43.72	
6	CURB INLET TYPE 2 F CURB	42.89	
7	CURB INLET TYPE 2 F CURB	42.89	
8	CURB INLET TYPE 2 F CURB	42.04	
9	CURB INLET TYPE 2 F CURB	42.04	
10	CURB INLET TYPE 2 F CURB	42.78	
11	CURB INLET TYPE 2 F CURB	42.78	
12	4'-0" DIA. TYPE P MANHOLE - 4' DIA.	43.72	
13	CURB INLET TYPE 2 F CURB	43.29	
118	CURB INLET TYPE 2 F CURB	43.29	
119	36" RCP MES 36" RCP		EXISTING MES

STR. START	STR. END	PIPE DIMENSION & MATERIAL	LENGTH	SLOPE	START INV.	END INV.	FALL IN FEET
1	2	18" RCP	35	0.14%	38.00	37.95	0.05
2	4	24" RCP	250	0.10%	37.45	37.19	0.26
3	4	18" RCP	35	0.14%	38.80	38.75	0.05
4	5	24" RCP	300	0.10%	37.19	36.88	0.31
5	7	24" RCP	187	0.10%	36.88	36.69	0.19
6	7	18" RCP	35	0.14%	39.00	38.95	0.05
7	9	30" RCP	238	0.08%	36.19	36.00	0.19
8	9	18" RCP	35	0.14%	38.00	37.95	0.05
9	11	30" RCP	199	0.08%	36.00	35.85	0.15
10	11	18" RCP	40	0.15%	39.00	38.94	0.06
11	12	30" RCP	172	0.08%	35.74	35.61	0.13
12	118	30" RCP	236	0.08%	32.23	32.05	0.18
118	119	36" RCP	70	0.07%	34.05	34.00	0.05
118	113	18" RCP	62	0.15%	39.50	39.41	0.09

• CONTRACTOR TO VERIFY EXISTING STRUCTURE TOP & PIPE INVERTS PRIOR TO COMMENCEMENT OF CONSTRUCTION. ADJUST EXIST STRUCTURE AS REQUIRED TO ACCOMMODATE EXISTING OUTFALL PIPE.

• EXISTING: CONTRACTOR TO VERIFY EXISTING INVERTS PRIOR TO CONSTRUCTION.

NOTE:

- ALL INLET AND MANHOLE STRUCTURE BOTTOMS ARE SPECIFIED TYPE 'P' UNLESS OTHERWISE NOTED. REFER TO FDOT DESIGN STANDARDS INDEX #200 & #201.
- ALL FLARED END SECTIONS (FES) ARE SPECIFIED FDOT INDEX #270 UNLESS OTHERWISE NOTED.
- ALL MITERED END SECTIONS (MES) ARE SPECIFIED FDOT INDEX #272 UNLESS OTHERWISE NOTED.
- END SECTION TOP ELEVATION DENOTES THE ELEVATION ON POND SIDE SLOPE AS SHOWN ON DETAIL "MES", THIS SHEET.

SECTION For Manholes TYPE I

SECTION For Curb Inlets Types 1, 2, 3, & 4 TYPE II

SECTION For Curb Inlets Types 7 & 8 TYPE III

WEIGHT OF CASTINGS (lb)

Frame Type	2" OPENING		3" OPENING		Total
	Frame	Cover (Std.)	Frame	2-Piece Cover	
I*	155	190	220	270	410
II	145	190	255	290	410
III	90	190	180	220	410

NOTES (FRAMES, AND COVER)

- The standard cover is to be used for all frames Types I, II, III and the 2-piece cover, and is the replacement cover for all previous frames with 1/2" deep seats (traffic type). The 185 lb. cover (nontraffic type), 1984 Roadway and Traffic Design Standards Index No. 201, is the replacement cover for existing frames with 3/4" deep seats. Installation of frame with 3/4" deep seats is not permitted.
- Use the 2-piece cover, unless the 3-piece cover is called for in the plans, except at inlets and manholes with sump bottoms use the 2-piece cover when the sump depth exceeds 2', unless otherwise noted.

DESIGNER NOTE:
Consider using the 2-piece cover where depths exceed 3' and manual entry may be required for cleaning. Clearly note the requirement for a 2-piece cover, on the Drainage Structure sheets in the plans.

INDEX NO. 201 SHEET NO. 1 of 5

SEPARATE RISER SEGMENTS WITH CONSTRUCTION JOINTS OTHER THAN DOWEL OPTION

WALL JOINTS

OPTIONAL CONSTRUCTION JOINTS

REBAR STRAIGHT END EMBEDMENT FOR TOP AND BOTTOM SLABS

WALL REINFORCING SPLICE DETAILS

DESIGNER NOTE: Use only when round structures are not practical, engineer of record approval required.

NOTE: 1. Submit Shop Drawings of corner openings for approval by the Engineer of Record.
2. h_2 may be less than 1'-0" when a minimum 1'-0" deep segment, 8" slab or curb inlet is provided above the corner opening.
3. For inlet segments at finish grade elevation substitute a #8 Bar for the top corner bar when 1'-0" $\leq h_2 < 2'-0"$.

INDEX NO. 201 SHEET NO. 3 of 5

SECTION TYPE 7 MANHOLE TOPS

SECTION TYPE 8 MANHOLE TOPS

SECTION TYPE 9 MANHOLE TOPS

EYEBOLT AND CHAIN REQUIREMENTS

Index Number	Inlet Type	Eye-Bolts	Length Of Chain	Handling & Remarks
217	(MB) 1	1	4'-0"	Slide & Spin
	(MB) 2	1	4'-0"	Slide & Spin
218	(MB) 3	2	2 @ 4'-0"	Slide & Spin
	(MB) 4	2	2 @ 4'-0"	Slide & Spin
219	(BW, RCG)	1	4'-0"	Slide & Spin
	(MB) 5	2	2 @ 4'-0"	Slide & Spin
220	S	1	4'-0"	Slide & Spin
221	V	1	4'-0"	Slide & Spin
230	A	1	3'-0"	Slide
231	B	1	5'-0"	Slide & Spin
232	C	1	2'-0"	Slide & Spin
	D	1	2'-0"	Slide & Spin
233	F	2	2 @ 2'-0"	Slide & Spin
	G	1	6'-0"	Slide
234	J	1	4'-0"	Lifting Loop

INDEX NO. 201 SHEET NO. 2 of 5

TEMPORARY DRAINS FOR SUBGRADE AND BASE

SECTION TYPE 10 DRAINAGE STRUCTURE INVERT

SECTION TYPE 11 DRAINAGE STRUCTURE INVERT

SECTION TYPE 12 DRAINAGE STRUCTURE INVERT

DETAILS FOR SKEWED PIPES IN RECTANGULAR STRUCTURES

SECTION AA

DESIGNER NOTE: Use only when round structures are not practical, engineer of record approval required.

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INDEX NO. 201 SHEET NO. 5 of 5

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STARKEY RANCH DRAINAGE DETAILS

WS-TSR, LLC

PREPARED FOR:

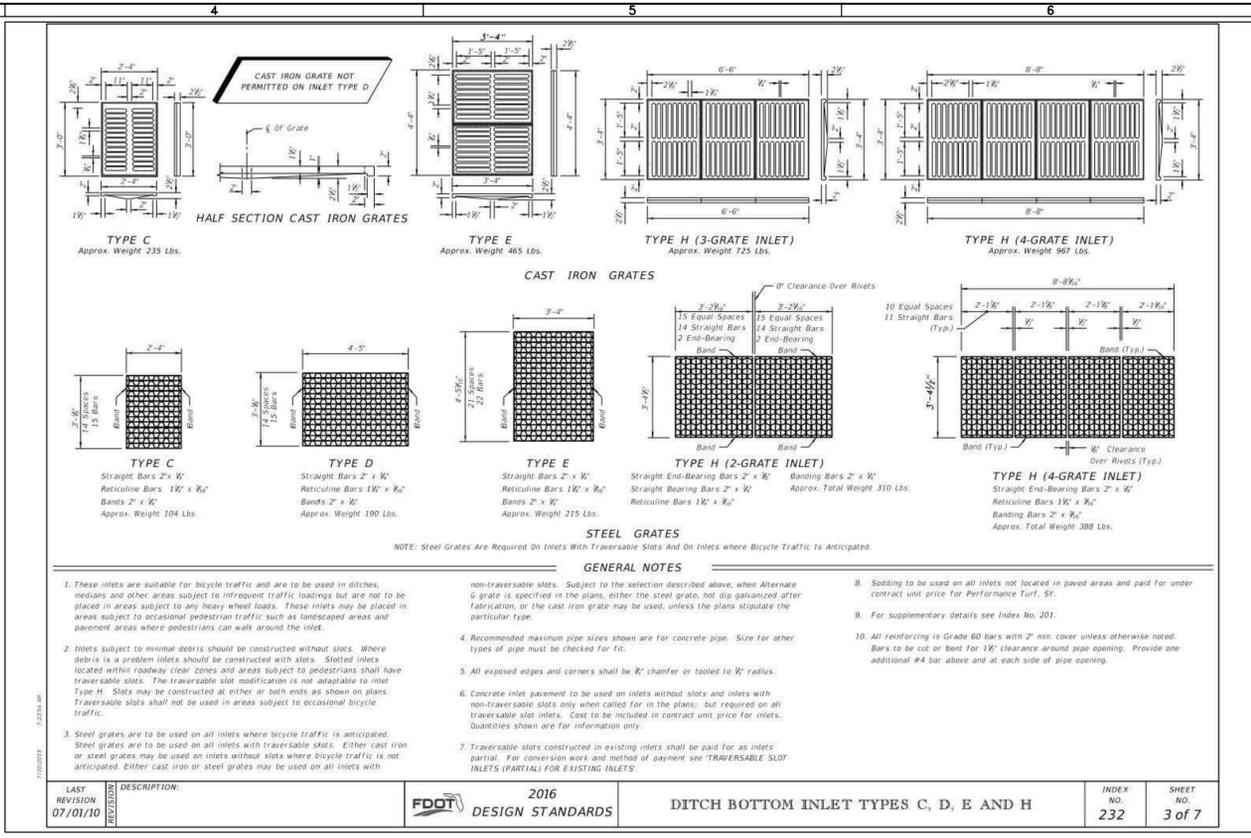
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FLORIDA PROFESSIONAL ENGINEER

GARY D. MILLER
DATE: _____
REGISTRATION NO. 52717

C-306

D	X	A	B	C	E	F	G	H	N				56" CONCRETE SLAB (CY)				SODDING (SY)				
									Single	Double	Triple	Quad	Single	Double	Triple	Quad	Single	Double	Triple	Quad	
18"	2'-0"	1.92	2.16	4.10	2.06	5	1.22	2.9	4.63	7.31	9.79	12.37	1.19	0.38	0.58	0.77	0.96	21	24	27	30
18"	2'-10"	1.92	2.16	4.71	2.56	6	1.41	3.4	4.92	7.75	10.58	13.42	1.21	0.44	0.65	0.87	1.09	25	29	33	37
24"	3'-0"	2.06	2.30	5.01	3.50	7	1.72	3.4	5.50	8.92	12.33	15.75	1.25	0.54	0.83	1.12	1.42	24	28	32	35
30"	4'-0"	2.15	2.40	5.51	4.50	8	2.00	3.4	6.08	10.31	14.58	18.83	1.29	0.66	1.09	1.50	1.91	26	31	35	40
36"	5'-0"	2.25	2.50	6.02	5.50	9	2.24	3.4	6.67	11.75	16.83	21.92	1.33	0.81	1.28	1.85	2.51	28	34	39	45
42"	6'-0"	2.34	2.60	6.53	6.50	10	2.45	3.4	7.25	13.25	19.25	25.25	1.36	0.97	1.50	2.23	3.19	30	37	43	50
48"	6'-6"	2.43	2.70	7.04	7.50	11	2.65	3.4	7.83	14.83	21.33	28.08	1.42	1.11	1.64	2.52	3.64	32	39	47	54
54"	7'-0"	2.52	2.80	7.55	8.50	12	2.83	3.4	8.42	16.08	23.75	31.42	1.46	1.31	1.94	3.08	4.72	34	42	51	59
60"	7'-6"	2.61	2.90	8.06	9.50	13	3.00	4.4	9.00	17.50	26.00	34.50	1.50	1.51	2.29	4.28	5.68	36	45	55	64
66"	8'-0"	2.71	3.00	8.57	10.50	14	3.18	4.4	9.58	18.75	27.92	37.08	1.54	1.68	2.55	4.84	6.43	38	48	58	68
72"	10'-0"	2.89	3.20	9.08	11.50	16	3.30	4.4	10.16	20.16	30.16	40.16	1.58	1.89	3.74	5.59	7.45	40	51	62	73
18"	2'-0"	2.27	2.50	5.36	4.03	8	1.22	4.0	4.63	7.21	9.79	12.37	1.19	0.57	0.87	1.15	1.44	23	26	29	32
18"	2'-10"	2.26	2.50	5.97	4.63	9	1.41	4.0	4.92	7.75	10.58	13.42	1.21	0.66	0.99	1.31	1.65	25	28	31	35
24"	3'-0"	2.35	2.60	6.48	5.50	10	1.72	4.0	5.50	8.92	12.33	15.75	1.25	0.85	1.30	1.75	2.20	28	32	36	40
30"	4'-0"	2.44	2.70	7.00	6.50	11	1.97	4.0	6.08	10.31	14.58	18.83	1.29	1.02	1.50	2.00	2.51	30	34	38	42
36"	5'-0"	2.53	2.80	7.51	7.50	12	2.24	4.0	6.67	11.75	16.83	21.92	1.33	1.32	2.21	3.08	3.4	32	36	40	44
42"	6'-0"	2.62	2.90	8.02	8.50	13	2.45	4.0	7.25	13.25	19.25	25.25	1.36	1.58	2.76	3.91	5.09	34	38	42	46
48"	6'-6"	2.71	3.00	8.53	9.50	14	2.65	4.0	7.83	14.83	21.33	28.08	1.42	1.85	3.20	4.71	6.12	36	40	44	48
54"	7'-0"	2.80	3.10	9.04	10.50	15	2.83	4.0	8.42	16.08	23.75	31.42	1.46	2.14	3.95	5.73	7.58	38	42	46	50
60"	7'-6"	2.89	3.20	9.55	11.50	16	3.00	4.0	9.00	17.50	26.00	34.50	1.50	2.45	4.68	6.87	9.07	40	44	48	52
66"	8'-0"	2.98	3.30	10.06	12.50	17	3.18	4.0	9.58	18.75	27.92	37.08	1.54	2.88	5.54	8.18	10.84	42	46	50	54
72"	10'-0"	3.16	3.50	10.57	14.50	19	3.30	4.0	10.16	20.16	30.16	40.16	1.58	3.54	6.61	9.87	13.13	44	48	52	56



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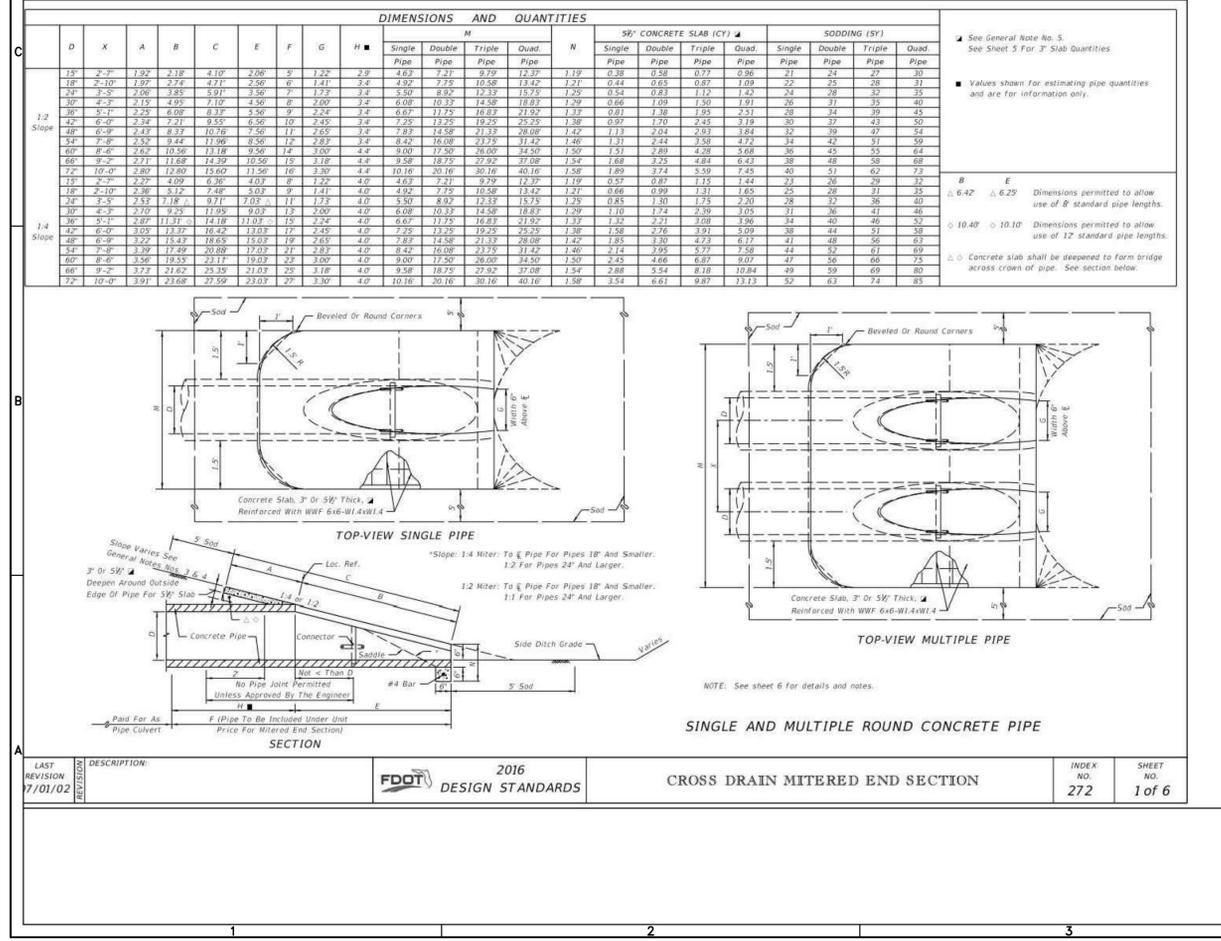
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STARKEY RANCH DRAINAGE DETAILS

PREPARED FOR: **WS-TSR, LLC**

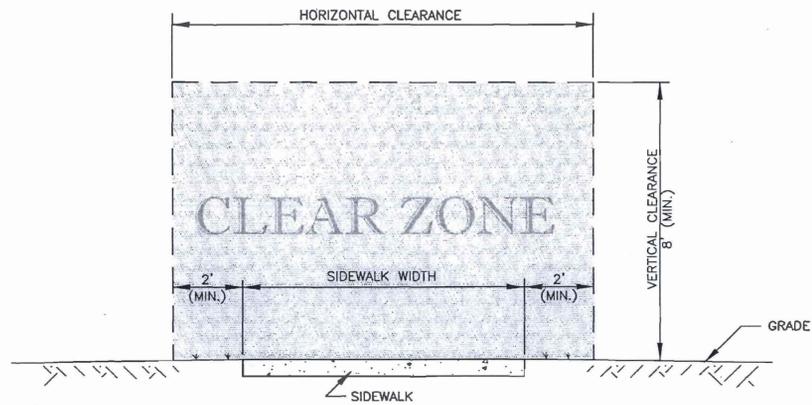
2016 DESIGN STANDARDS

DITCH BOTTOM INLET TYPES C, D, E AND H



STARKEY RANCH LAKE BLANCKE DRIVE EXTENSION ENGINEERING DDWG-C-307 2016/08/01 212 PJM JAMES MELMS

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NOTES:

1. THIS CLEAR ZONE APPLIES TO THE SIDEWALK ONLY. IT IS NOT INTENDED FOR ROADWAY PLACEMENT SET BACKS.
2. THE SIDEWALK CLEAR ZONE SHALL BE AN OPEN WINDOW FREE OF OBSTACLES. THIS INCLUDES SHRUBS, TREES, FENCES, ABOVE GROUND UTILITIES, I.E., POWER POLES, STREET LIGHTS, GUY ANCHORS, FIRE HYDRANTS, BLOW-OFFS, MAIL BOXES, STREET SIGNS, UTILITY MARKERS, ETC.
3. THE SIDEWALK HORIZONTAL CLEAR ZONE CLEARANCE IS MEASURED FROM THE SIDEWALK EDGE AND SHALL BE A MINIMUM OF 2 FEET.
4. THE SIDEWALK VERTICAL CLEAR ZONE CLEARANCE IS MEASURED FROM THE FINISHED GROUND SURFACE AND SHALL BE A MINIMUM OF 8 FEET.

NOTE:
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ANY PROPOSED ALTERATIONS SHALL BE CLEARLY IDENTIFIED AND HIGHLIGHTED ON DETAIL.



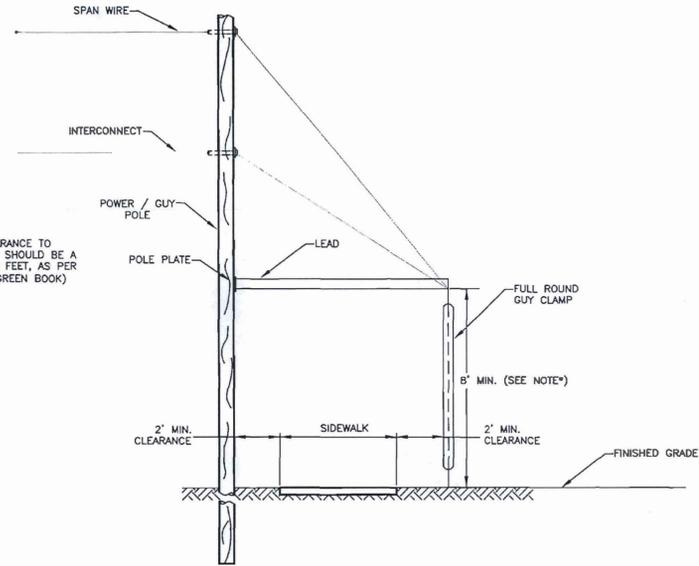
PASCO COUNTY
ENGINEERING SERVICES
DESIGN STANDARDS

SIDEWALK CLEAR ZONE

APPROVED BY _____ BCC APPROVAL _____ DWG. NO. _____
REVISED

***NOTE:**

VERTICAL CLEARANCE TO OBSTRUCTIONS SHOULD BE A MINIMUM OF 8 FEET, AS PER FDOT MUMS (GREEN BOOK) 2007 EDITION.



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PASCO COUNTY
ENGINEERING SERVICES
DESIGN STANDARDS

SIDEWALK POWER POLE ANCHOR DETAIL

APPROVED BY _____ BCC APPROVAL _____ DWG. NO. _____
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STARKEY RANCH

DRAINAGE DETAILS

WS-TSR, LLC

PREPARED FOR:

NO.	DATE	DESCRIPTION

NO.	DATE	REVIEW SUBMITTAL	DESCRIPTION
1	08/09/2016		

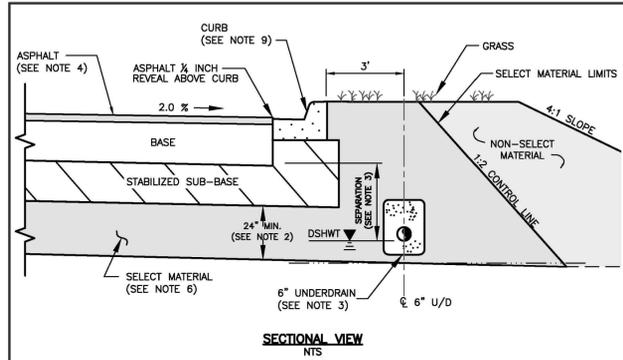
PROJECT NO: TSR-SR-1020
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DESIGN BY: TUCKER
DRAWN BY: MELMS

FLORIDA PROFESSIONAL ENGINEER

GARY D. MILLER
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C-308

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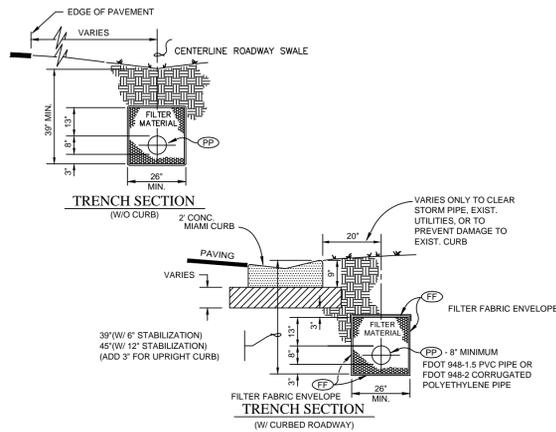
NOTES:

- THE MINIMUM VERTICAL SEPARATION BETWEEN THE DESIGN SEASONAL HIGH WATER TABLE (DSHWIT) AND THE BOTTOM OF THE BASE AT THE LOWEST EDGE OF PAVEMENT SHALL BE AS FOLLOWS:
 - LIMEROCK BASE 24 INCH
 - SOIL CEMENT BASE 12 INCH
 - CRUSHED CONCRETE BASE (IF APPROVED) 12 INCH
 - ASPHALT BASE COURSE (ABC) 12 INCH
- 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
- 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. THE INVERT OF A SIX (6) INCH UNDERDRAIN SHALL BE TWO (2) FEET MINIMUM BELOW THE BOTTOM OF THE BASE.
- TYPE 2 THRU TYPE 5 ROADWAYS SHALL CONTAIN A MINIMUM OF 1.5 INCH OF SP ASPHALTIC CONCRETE. TYPE 1 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.
- 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.
- SELECT MATERIAL SHALL BE PLACED PER FDOT INDEX DRAWINGS 500 & 505.
- THE REQUIRED MINIMUM STRUCTURAL NUMBER (SN) SHALL BE:

2.34 MIN. TYPE 2 ROADWAY
3.50 MIN. TYPE 1 ROADWAYS
3.70 MIN. COUNTY COLLECTOR
4.00 MIN. COUNTY ARTERIAL
- 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.
- CURB DESIGN IS SITE SPECIFIC AND SHALL BE IDENTIFIED ON PLANS.

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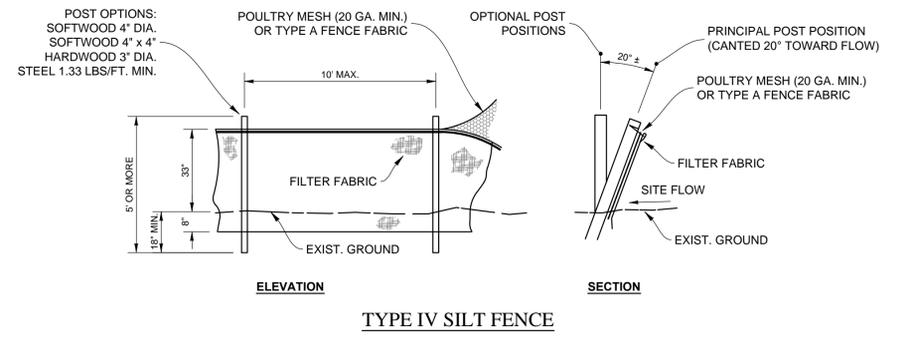
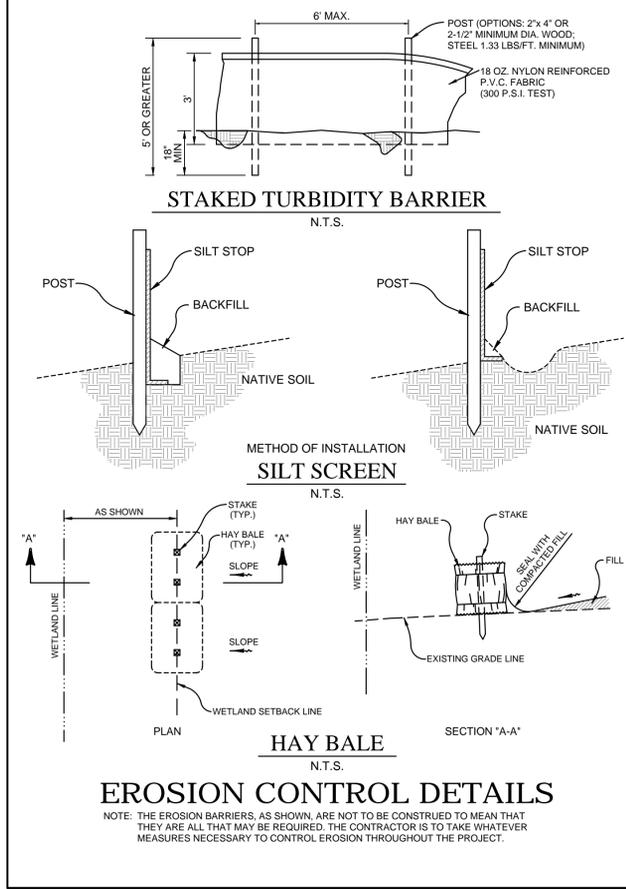
PASCO COUNTY ENGINEERING SERVICES DESIGN STANDARDS	ROADWAY DESIGN CRITERIA		Sheet No. 1 of 1
	APPROVED BY JCW	BCC APPROVAL REVISED	Index No. 100



COARSE AGGREGATE - NOTES

- Minimum grade on underdrain pipe shall be 0.2%.
- Coarse aggregate shall be non-calcareous, non-cementing gravel or stone meeting the requirements of FDOT Standard specifications Section 901-2.1, 901-2.2, or 901-3 respectively. The gradation shall meet Section 901-6, Grades 4, 467, 5, 56 or 57 stone.
- Non-perforated pipe shall be used for all roadway crossings. Perforated pipe shall not be placed under street pavement.
- Filter fabric shall be Type D-3. In accordance with FDOT Index 199.
- All piping shall meet FDOT 948-1.5 Standards for PVC Pipe and FDOT 948-2 for Corrugated Polyethylene Pipe.
- Underdrain shall be in accordance with FDOT standard specifications Section 440.
- FDOT and local governing agencies may have minimum standards which may exceed those referenced above. Contractor shall install underdrain in accordance with FDOT and local governing agencies' minimum standards and regulations.
- Filter material shall be completely wrapped in filter fabric. All filter fabric shall overlap a minimum of 1" (12 inches).
- Embankment material shall consist of Select Soil (S) per FDOT Index 505 shall extend to a minimum of 36 inches (3 feet) behind back of curb except as noted above.
- No irrigation pipelines, plant materials, tree materials or plantings, conduits, etc. should be designed or installed within 3 feet (3) of the back of curb.

**UNDERDRAIN DETAIL
(FOR COARSE AGGREGATE)
(TO BE USED ON TOWN AVENUE)**



HEIDT DESIGN
Civil Engineering • Planning & GIS
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Engineering Business Certificate of Authorization No. 28792
Landscape Architecture Certificate of Authorization No. LC26060405

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WS-TSR, LLC

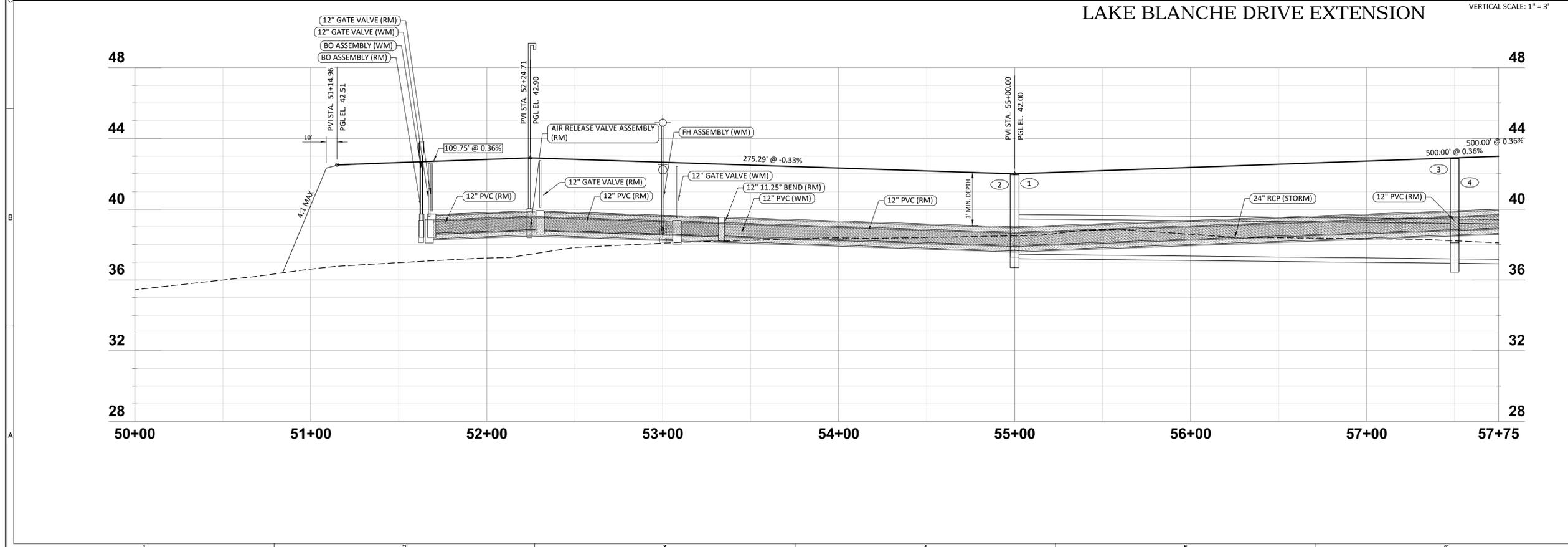
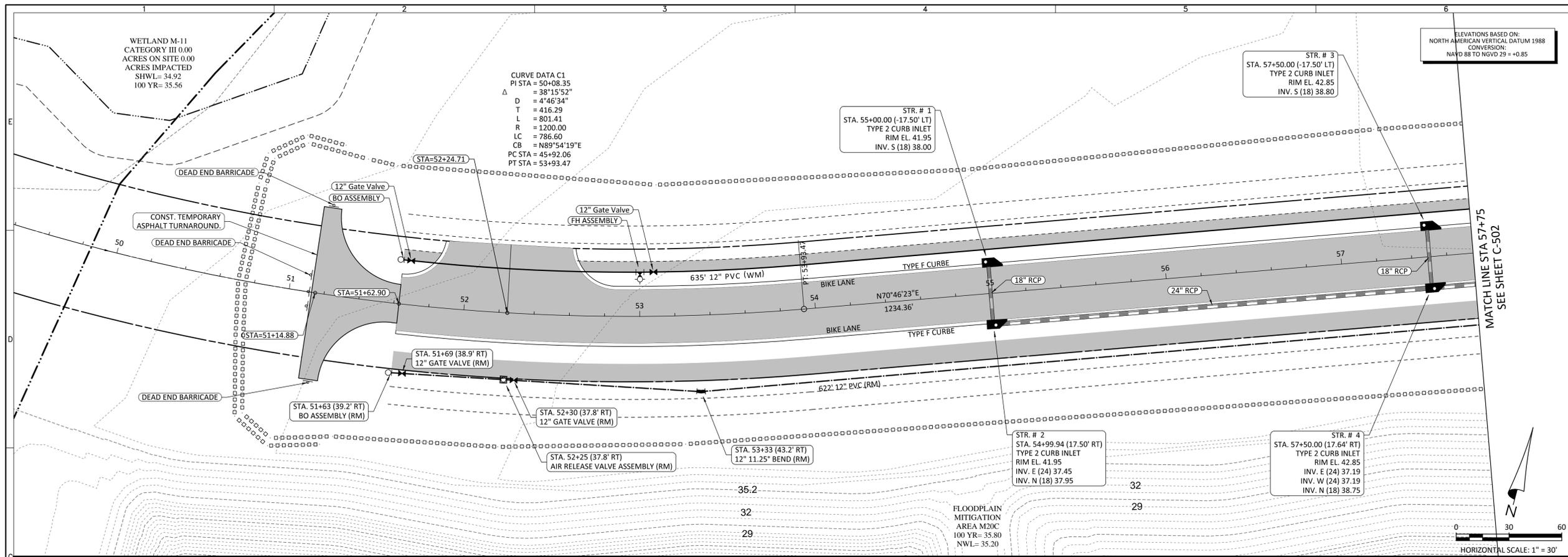
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REGISTRATION NO. 52717

C-310

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 Fax: 813-464-7629
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**STARKEY RANCH
 LAKE BLANCHE DRIVE EXTENSION
 ROADWAY PLAN AND PROFILE**

PREPARED FOR: **WS-TSR, LLC**

NO.	DATE	REVISION SUBMITTAL	DESCRIPTION
1	06/02/2016		

PROJECT NO: **TSR-SR-1020**
 FILE: **RP**
 DESIGN BY: **TUCKER**
 DRAWN BY: **MELMS**

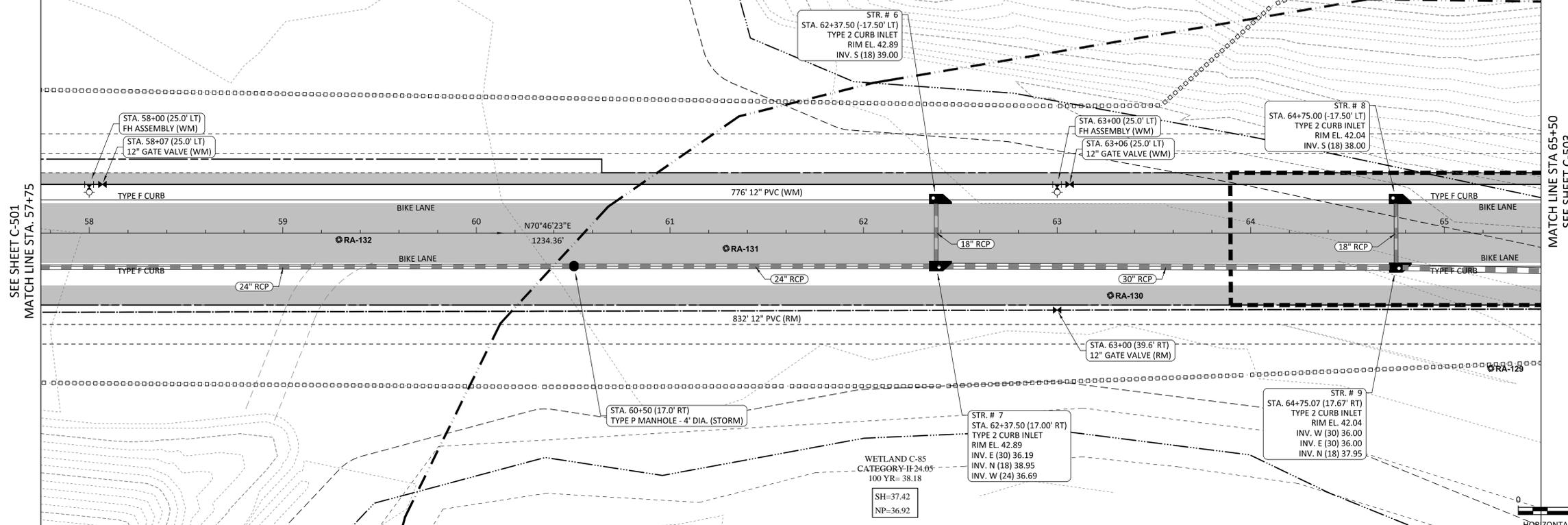
GARY D. MILLER
 DATE: _____
 REGISTRATION NO. **52717**

C-501

ELEVATIONS BASED ON: NORTH AMERICAN VERTICAL DATUM 1988
 CONVERSION: NAVD 88 TO NGVD 29 = +0.85
 WETLAND M-11 CATEGORY III 0.00 ACRES ON SITE 0.00 ACRES IMPACTED SHWL= 34.92 100 YR= 35.56
 CURVE DATA C1
 PI STA = 50+08.35
 $\Delta = 38^{\circ}15'52''$
 $D = 4^{\circ}46'34''$
 $T = 416.29$
 $L = 801.41$
 $R = 1200.00$
 $LC = 786.60$
 $CB = N89^{\circ}54'19''E$
 PC STA = 45+92.06
 PT STA = 53+93.47
 STR. # 1
 STA. 55+00.00 (-17.50' LT)
 TYPE 2 CURB INLET
 RIM EL. 41.95
 INV. S (18) 38.00
 STR. # 2
 STA. 54+99.94 (17.50' RT)
 TYPE 2 CURB INLET
 RIM EL. 41.95
 INV. E (24) 37.45
 INV. N (18) 37.95
 STR. # 3
 STA. 57+50.00 (-17.50' LT)
 TYPE 2 CURB INLET
 RIM EL. 42.85
 INV. S (18) 38.80
 STR. # 4
 STA. 57+50.00 (17.64' RT)
 TYPE 2 CURB INLET
 RIM EL. 42.85
 INV. E (24) 37.19
 INV. W (24) 37.19
 INV. N (18) 38.75
 FLOODPLAIN MITIGATION AREA M20C
 100 YR= 35.80
 NWL= 35.20
 HORIZONTAL SCALE: 1" = 30'
 VERTICAL SCALE: 1" = 3'
 MATCH LINE STA 57+75 SEE SHEET C-502
 PREPARED FOR: WS-TSR, LLC
 PROJECT NO: TSR-SR-1020
 FILE: RP
 DESIGN BY: TUCKER
 DRAWN BY: MELMS
 GARY D. MILLER
 DATE: _____
 REGISTRATION NO. 52717
 C-501
 LAKE BLANCHE DRIVE EXTENSION

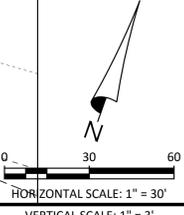
HUCKLEBERRY POND

ELEVATIONS BASED ON:
NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION:
NGVD 29 = +0.85

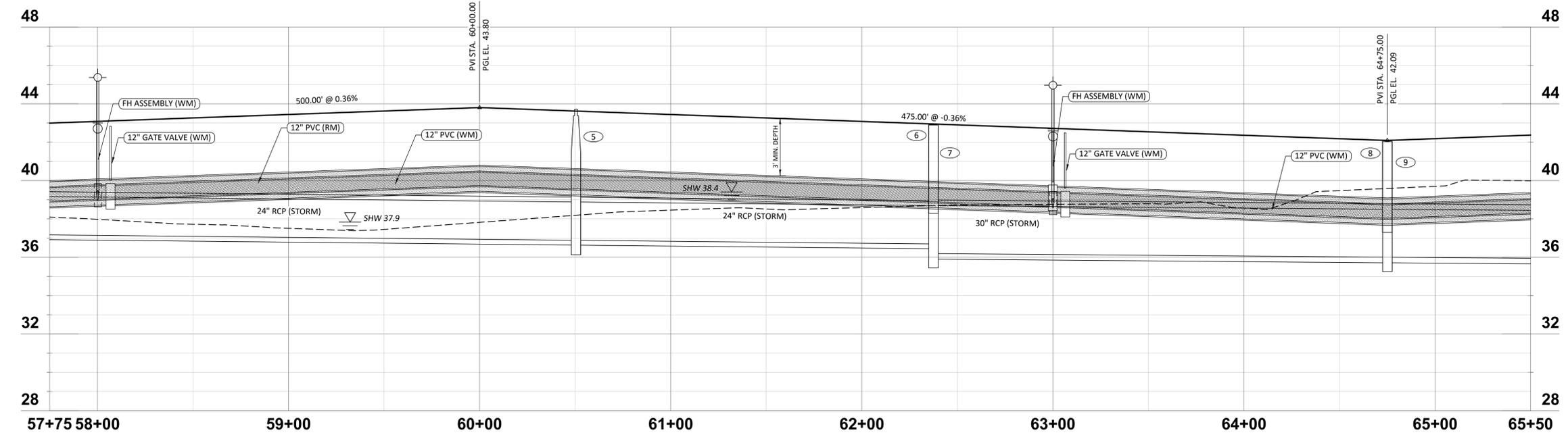


SEE SHEET C-501
MATCH LINE STA. 57+75

MATCH LINE STA 65+50
SEE SHEET C-503



LAKE BLANCHE DRIVE EXTENSION



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**STARKEY RANCH
LAKE BLANCHE DRIVE EXTENSION
ROADWAY PLAN AND PROFILE**

PREPARED FOR:
WS-TSR, LLC

NO.	DATE	DESCRIPTION
1	06/02/2016	REVIEW SUBMITTAL

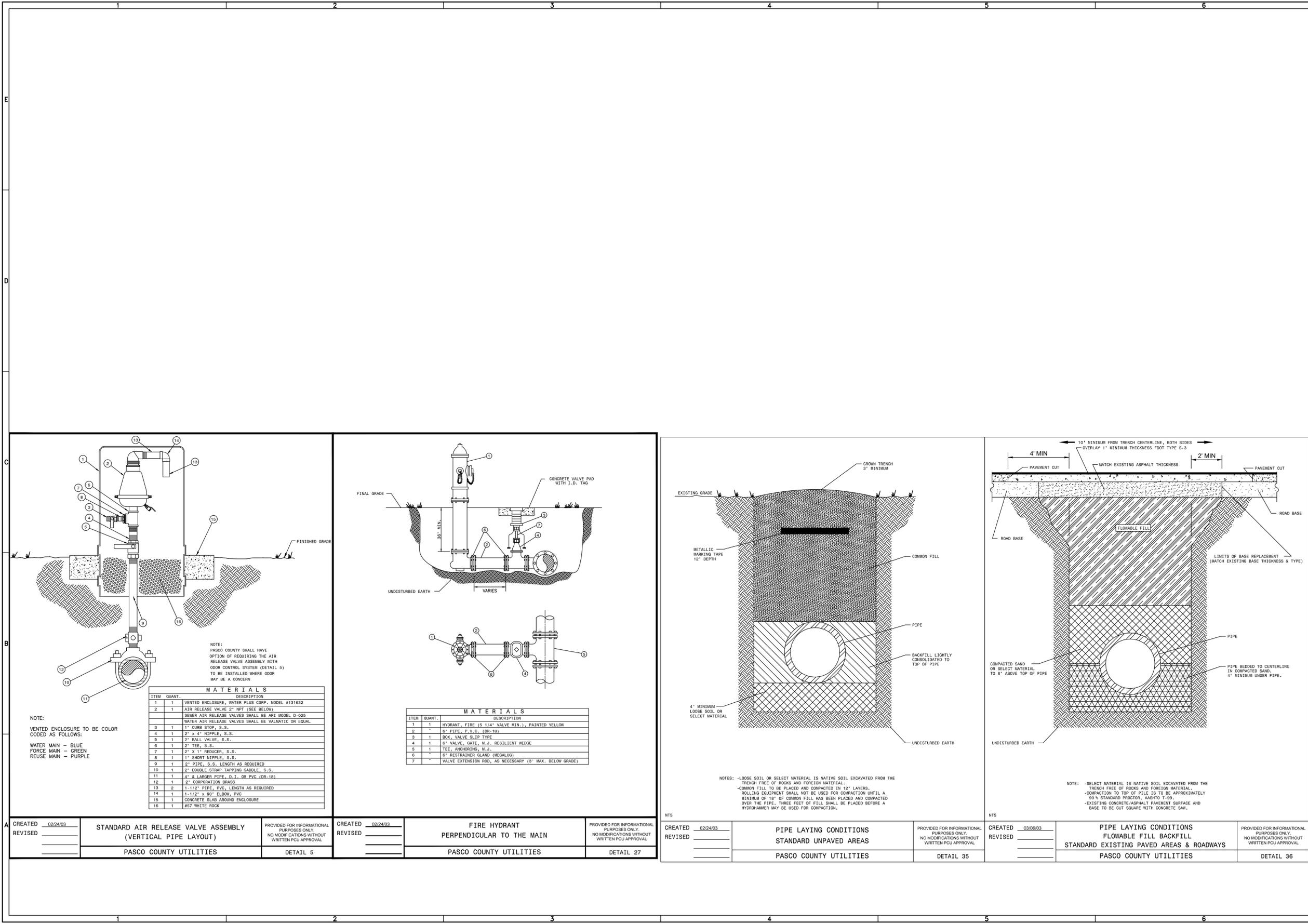
PROJECT NO: TSR-SR-1020
FILE: RP
DESIGN BY: TUCKER
DRAWN BY: MELMS

FLORIDA PROFESSIONAL ENGINEER

GARY D. MILLER
DATE: _____
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C-502

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**STARKEY RANCH
 LAKE BLANCHE DRIVE EXTENSION
 WATER & SEWER DETAILS**

PREPARED FOR:
WS-TSR, LLC

NO.	DATE	DESCRIPTION
1	08/02/2016	REVIEW SUBMITTAL

PROJECT NO: **TSR-SR-1020**
 FILE: **WSD**
 DESIGN BY: **TUCKER**
 DRAWN BY: **MELMS**

FLORIDA PROFESSIONAL ENGINEER
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 DATE: _____
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C-600

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**PIPE RESTRAINT LENGTHS IN FEET
COMMON FITTINGS**

WATER MAINS - TEST PRESSURE 150 PSI					
PIPE SIZE	FITTING TYPE				
	11-1/4°	22-1/2°	45°	90°	DEAD END
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					
PIPE SIZE	FITTING TYPE				
	11-1/4°	22-1/2°	45°	90°	DEAD END
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).

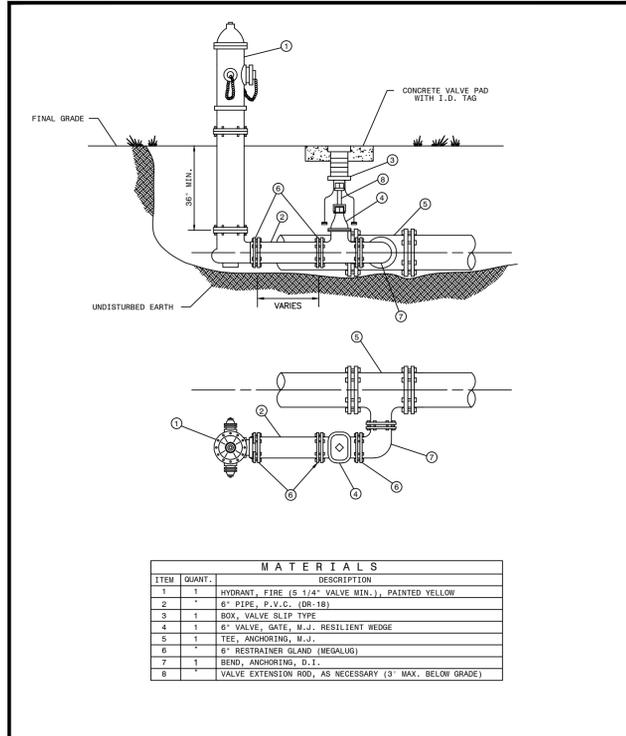
CREATED	02/24/03	RESTRAINED JOINT TABLE COMMON FITTINGS	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL
REVISED			PASCO COUNTY UTILITIES

**PIPE RESTRAINT LENGTHS IN FEET
TEES (BRANCH SIDE)**

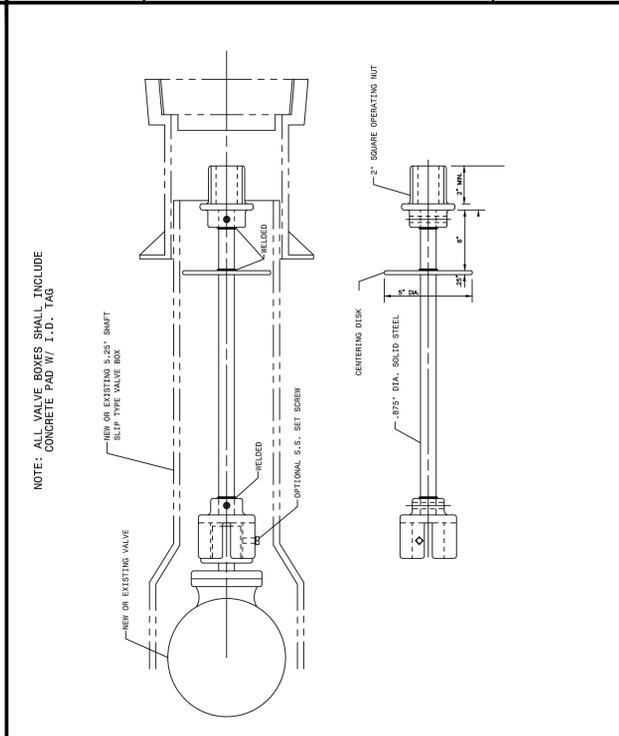
WATER MAINS - TEST PRESSURE 150 PSI									
RUN SIZE	BRANCH SIZE								
	3"	4"	6"	8"	10"	12"	16"	20"	24"
3"	6'	14'	30'	—	—	—	—	—	—
4"	2'	11'	28'	44'	—	—	—	—	—
6"	1'	2'	22'	40'	52'	—	—	—	—
8"	1'	1'	16'	35'	48'	62'	—	—	—
10"	1'	1'	10'	30'	44'	58'	83'	—	—
12"	1'	1'	3'	25'	40'	55'	80'	103'	—
16"	1'	1'	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.

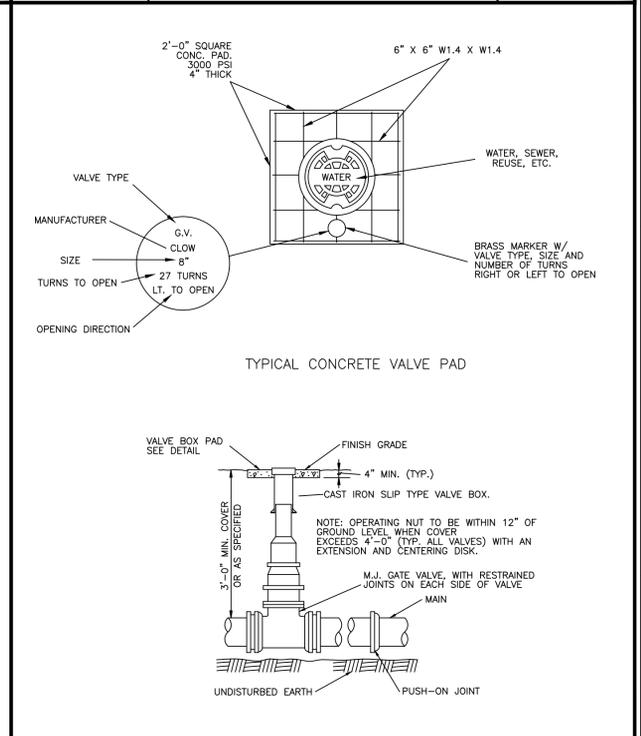
CREATED	02/24/03	RESTRAINED JOINT TABLE TEES (BRANCH SIDE)	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL
REVISED			PASCO COUNTY UTILITIES



CREATED	02/24/03	FIRE HYDRANT PARALLEL TO THE MAIN	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL
REVISED			PASCO COUNTY UTILITIES



CREATED	02/24/03	VALVE EXTENSION RODS	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL
REVISED			PASCO COUNTY UTILITIES



CREATED	02/24/03	VALVE BOX DETAIL SLIP TYPE	PROVIDED FOR INFORMATIONAL PURPOSES ONLY. NO MODIFICATIONS WITHOUT WRITTEN PCU APPROVAL
REVISED			PASCO COUNTY UTILITIES



**STARKEY RANCH
LAKE BLANCHE DRIVE EXTENSION
WATER & SEWER DETAILS**

PREPARED FOR:
WS-TSR, LLC

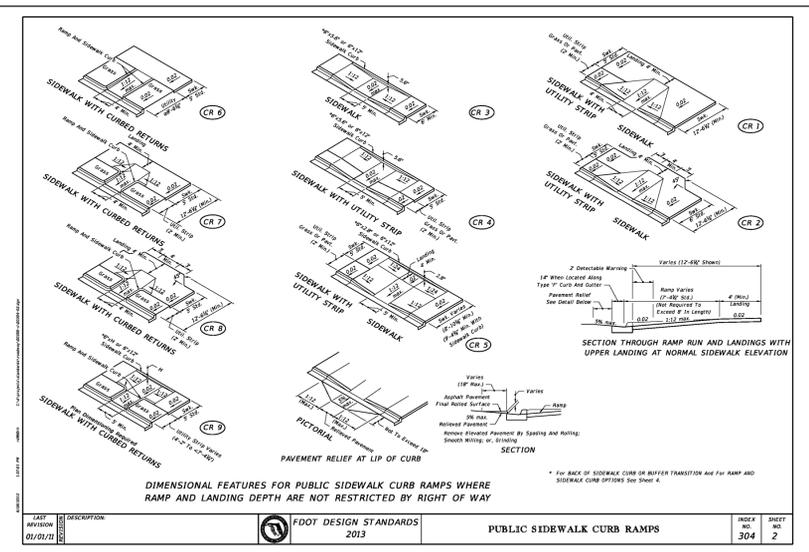
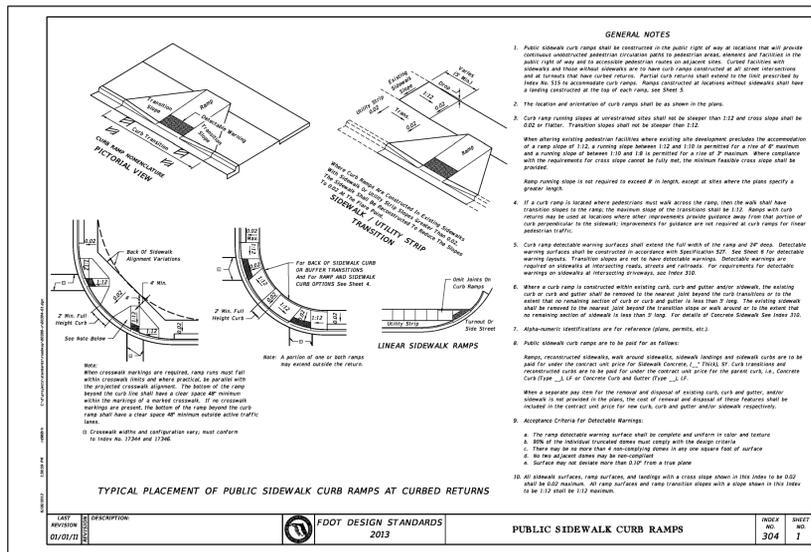
NO.	DATE	DESCRIPTION
1	08/02/2016	REVIEW SUBMITTAL

PROJECT NO: TSR-SR-1020
FILE: WSD
DESIGN BY: TUCKER
DRAWN BY: MELMS

FLORIDA PROFESSIONAL ENGINEER
GARY D. MILLER
DATE: _____
REGISTRATION NO. 52717

C-601

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SIGN QUANTITY TABLE

SIGN NAME	QUANTITY
R2-1	2
W14-1	1
OM1-1	3

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Engineering Business Certificate of Authorization No. 28792
Landscape Architecture Certificate of Authorization No. LC26000405

STARKEY RANCH LAKE BLANCHE DRIVE EXTENSION SIDEWALK, SIGNING AND PAVEMENT MARKING DETAILS

PREPARED FOR: WS-TSR, LLC

NO.	DATE	DESCRIPTION
1	08/02/2016	REVIEW SUBMITTAL

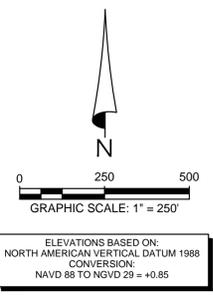
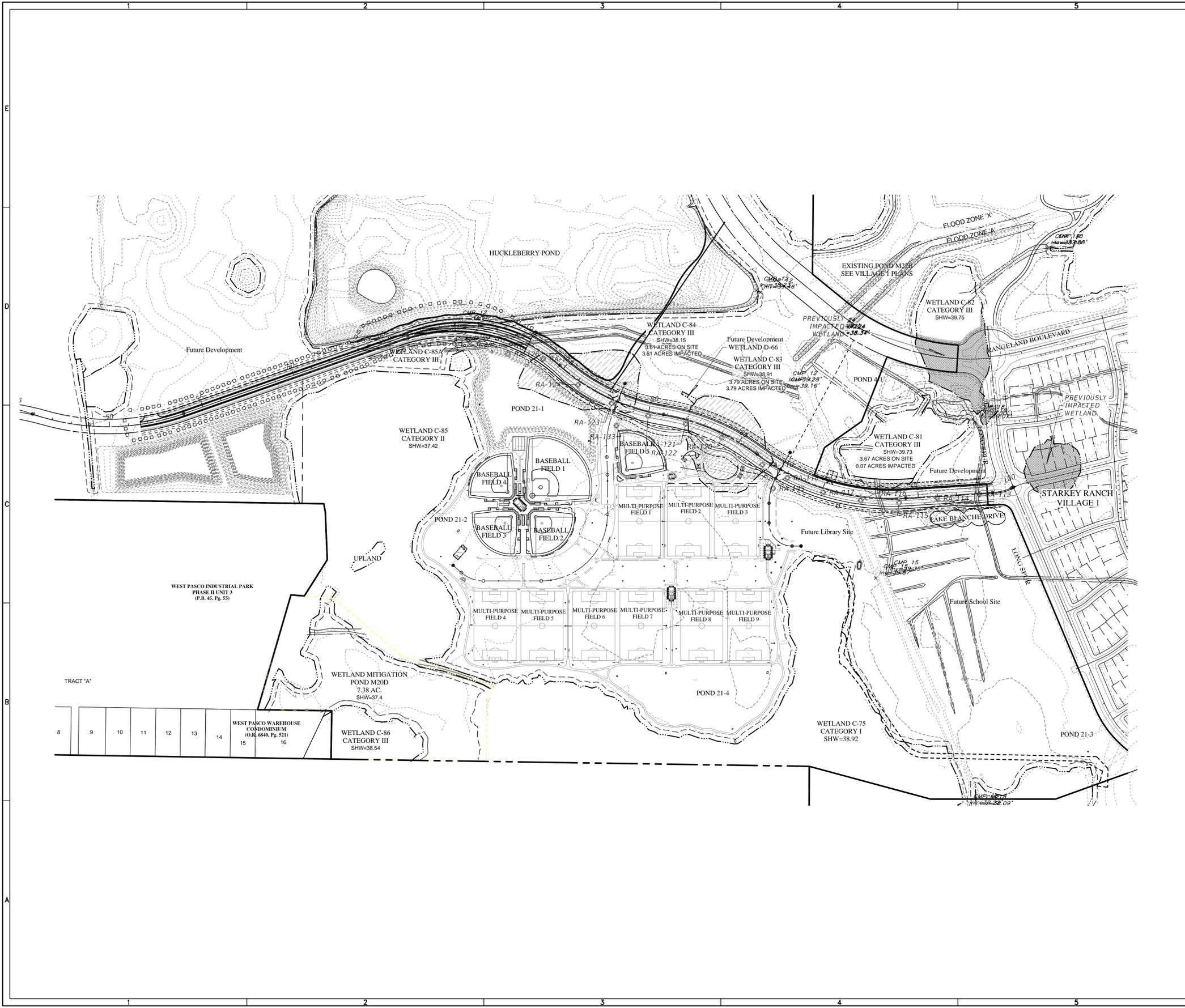
PROJECT NO: TSR-SR-1020
FILE: SPM
DESIGN BY: TUCKER
DRAWN BY: MELMS

FLORIDA PROFESSIONAL ENGINEER

GARY D. MILLER
DATE: _____
REGISTRATION NO. 52717

C-702

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LEGEND

	WETLAND LINE
	WETLAND CONS. AREA SETBACK
	FLOATING TURBIDITY BARRIER
	EXISTING TREE TO BE REMOVED
	EXISTING TREE TO BE PROTECTED
	PROPOSED TREE BARRICADE
	STAKED EROSION CONTROL
	PLAN & PROFILE SHEET NUMBER

EXISTING	PROPOSED	
		STORM DRAINAGE STRUCTURE
		STRUCTURE NO.
		SPOT ELEVATION GROUND
		SPOT ELEVATION PAVEMENT
		CONTOUR
		DIRECTION OF SURFACE FLOW
		UNDERDRAIN WITH CLEANOUT
		STAKED EROSION CONTROL

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 Landscape Architecture Certificate of Authorization No. LC26004005
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**STARKEY RANCH
 LAKE BLANCHE DRIVE EXTENSION
 CONSTRUCTION SURFACE WATER
 MANAGEMENT PLAN**

WS-TSR, LLC
 PREPARED FOR:

NO.	DATE	DESCRIPTION
1	08/02/2016	REVIEW SUBMITTAL
3	01/28/2015	COUNTY COMMENTS

PROJECT NO:	TSR-SR-1020
FILE:	CSWMP
DESIGN BY:	TUCKER
DRAWN BY:	MELMS

FLORIDA PROFESSIONAL ENGINEER
GARY D. MILLER
 DATE: _____
 REGISTRATION NO. 52717

C-900

STARKEY RANCH LAKE BLANCHE DRIVE EXTENSION ENGINEERING SWMP DWG-C-900 20160801 2:17 PM JAMES MELMS

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 HEIDT DESIGN, LLC 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": HEIDT DESIGN, LLC, THE DEVELOPER AS IDENTIFIED IN THE TITLE BOX OF THESE PLANS, AND THE SITE CONTRACTOR AND HIS SUB-CONTRACTORS. EACH TEAM MEMBER HAS SPECIFIC RESPONSIBILITIES AND OBLIGATIONS. IN GENERAL, ALL TEAM MEMBERS, WITH REGARD TO THEIR INVOLVEMENT AND RESPONSIBILITIES ON THE PROJECT, ARE TO IMPLEMENT ALL NECESSARY STORM WATER MANAGEMENT CONTROLS TO ASSURE COMPLIANCE WITH THE NPDES GENERIC PERMIT FOR STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES. THE SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT PERMIT, THE APPLICABLE LOCAL GOVERNING AGENCY (I.E. HILLSBOROUGH COUNTY, CITY OF TAMPA, ETC) AND THE GUIDELINES LISTED IN THE SWPPP. THE DUTIES AND RESPONSIBILITIES OF THE TEAM MEMBERS AS THEY PERTAIN TO THE SWPPP ARE AS FOLLOWS:

HEIDT DESIGN, LLC:

A. DEVELOP SWPPP 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 SWPPMD 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 NOTS 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, GRASS, OR GEOTEXTILES) MAY BE EMPLOYED. THE CLIENT SHALL NOTIFY HEIDT DESIGN, LLC WHEN ONE OF THESE CRITERIA HAS BEEN MET.

CONTRACTOR:

A. SIGN AND RETURN TO HEIDT A CONTRACTORS CERTIFICATION FORM CERTIFYING YOUR UNDERSTANDING OF AND WILLINGNESS TO COMPLY WITH THE STORM WATER POLLUTION PREVENTION PLAN NO LATER THAN 48 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION. ALSO, EACH SUBCONTRACTOR AFFECTED BY THE SWPPP MUST CERTIFY TO THE CONTRACTOR THAT THEY UNDERSTAND AND SHALL COMPLY WITH THE NPDES PERMIT AND SWPPP. A RECORD OF THESE CERTIFICATIONS SHALL BE MAINTAINED BY THE CONTRACTOR ON SITE.

B. DURING CONSTRUCTION, ASSURE COMPLIANCE WITH THE DESIGNED STORM WATER POLLUTION PREVENTION PLANS PREPARED BY HEIDT DESIGN, LLC 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 HEIDT DESIGN, LLC AND THE DEVELOPER IN WRITING OF ANY NON-STORM WATER POLLUTION SOURCES WHICH ARE BEING STORED, OR OTHERWISE USED DURING THE CONSTRUCTION OF THE PROJECT, I.E., FERTILIZERS, FUELS, PESTICIDES, OTHER CHEMICALS. THIS NOTIFICATION SHOULD BE ACCOMPANIED WITH THE CONTRACTOR'S DESIGN AND METHODS TO PREVENT POLLUTION RUN-OFF FROM THESE SOURCES.

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 HEIDT DESIGN, LLC. THE ORIGINAL SHALL BE KEPT ON-SITE AS DOCUMENTATION OF THE CHANGE. IF THE INSPECTION PASSES, A CERTIFICATION THAT THE FACILITY IS IN COMPLIANCE WITH THE SWPPP AND THE NPDES PERMIT MUST BE SIGNED BY A DULY AUTHORIZED REPRESENTATIVE OF THE PRINCIPAL EXECUTIVE OFFICIAL OF THE OPERATOR OF THE SWPPP WITH ONE OF THE FOLLOWING QUALIFICATIONS:

- 1. HAS SUCCESSFULLY COMPLETED THE FLORIDA STORMWATER, EROSION AND SEDIMENT CONTROL INSPECTOR TRAINING PROGRAM.
2. SUCCESSFULLY COMPLETED A SIMILAR TRAINING PROGRAM.
3. HAS ENOUGH PRACTICAL ON THE JOB TRAINING TO BE QUALIFIED TO PERFORM THE INSPECTIONS.
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 32309-2400; 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 HEIDT DESIGN, LLC OF YOUR INTENT TO COMMENCE CONSTRUCTION. SIGN THE NOTICE OF INTENT FORM AS OPERATOR OF THE STORM WATER DISCHARGE FACILITY AND PERMITTEE AND RETURN TO HEIDT DESIGN, LLC.

B. SIGN A CERTIFICATION OF STORM WATER POLLUTION PREVENTION PLAN AND RETURN TO HEIDT DESIGN, LLC.

C. NOTIFY HEIDT DESIGN, LLC WHEN IT IS TIME TO SUBMIT A NOTICE OF TERMINATION AS DEFINED UNDER PART E OF THE HEIDT DESIGN, LLC SECTION OF THE SWPPP. SIGN AND RETURN TO HEIDT DESIGN, LLC FOR SUBMITTAL TO FDEP A NOTICE OF TERMINATION FORM AND CERTIFICATION.

PRE-DEVELOPED SITE INFORMATION:

- 1. TOTAL SITE ACREAGE: .49 AC.
2. LAND USE: UNDEVELOPED - AGRICULTURAL
3. VEGETATION: RANGELAND, BAHIA GRASS PASTURE
4. RECEIVING WATERS OR MUNICIPAL SEPARATE STORM WATER SYSTEM: ANCLOTE RIVER
5. 2 YEAR/24 HOUR RAINFALL DEPTH: .45"
6. SOIL TYPES: MYAKKA, SELLERS, SMYRNA

PROJECT INFORMATION:

- 1. PROJECT TYPE (COMMERCIAL)
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: 1/2017
4. ANTICIPATED COMPLETION DATE: 6/2017
5. TOTAL ACRES DISTURBED: .49 AC.
6. PRE-DEVELOPED 'C' FACTOR: .20
7. POST-DEVELOPED 'C' FACTOR: .070

8. THE STORM WATER MANAGEMENT SYSTEM, UPON COMPLETION OF CONSTRUCTION AND APPROPRIATE CERTIFICATION AND AS-BUILT SUBMITTALS WILL BE OPERATED AND MAINTAINED BY WS-TSR, LLC.

9. THE POTENTIAL SOURCE OF POLLUTION FROM THIS PROJECT IS ON-SITE DEVELOPMENT AND CONSTRUCTION ACTIVITY.

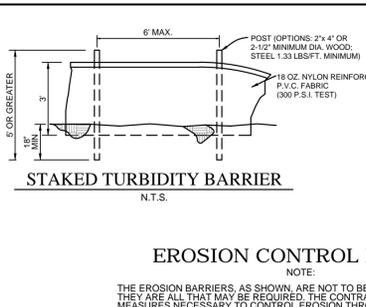
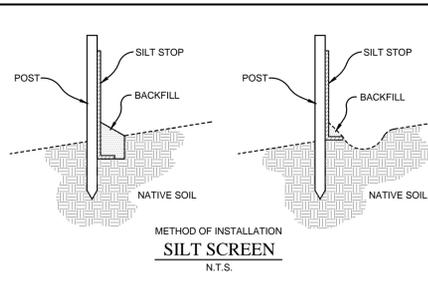
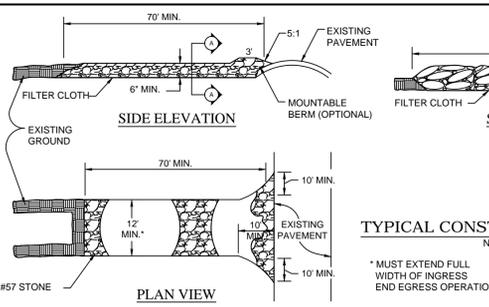
GENERAL EROSION AND TURBIDITY CONTROL NOTES

- 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 PERMEABILITY RATES
B. DEPTH OF CUT IN PONDS, TRENCHES, OR UTILITY LINES
C. ACTUAL RAINFALL AMOUNTS AND TIME OF YEAR RELATIVE TO NORMAL RAINY SEASON
D. PROXIMITY TO WETLANDS, WATER BODIES OR OFFSITE PROPERTIES
E. 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 FILLING 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 25 M.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 & 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.

POND/LAKE EXCAVATION NOTE:

No excavation shall extend below the permitted design depths/elevations shown on the drawings, unless additional testing supports otherwise and the Engineer of Record has received verbal and/or written permission from the Water Management District. 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.

ELEVATIONS BASED ON: NORTH AMERICAN VERTICAL DATUM 1988
CONVERSION: NAVD 88 TO NGVD 29 = +0.85



- 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, 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 MUST BE CONTROLLED OR CONTAINED BY THE USE OF BRUSH BARRIERS, DIVERSION SWALES, INTERCEPTOR DITCHES, OR 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 SOIL, SODDING 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 DISSIPATORS (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, FLOTTING TURBIDITY BARRIERS OR FLOTTING TURBIDITY 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.
28. ONGOING INSPECTIONS AND PERIODIC MAINTENANCE BY THE SITE SUBCONTRACTOR SHALL OCCUR THROUGHOUT CONSTRUCTION AS NECESSARY TO INSURE THE ABOVE METHODS ARE WORKING SUITABLY. THIS MAY BE NEEDED DAILY, IF CONDITIONS SO WARRANT. SITE SUBCONTRACTOR ARE ENCOURAGED TO OBTAIN A 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 HEIDT DESIGN, LLC.
29. THE CONTRACTOR WILL PERFORM DAILY INSPECTIONS OF ALL ON-SITE WETLANDS WITHIN THE CONSTRUCTION AREA TO ENSURE THAT WATER LEVELS WITHIN THESE WETLANDS ARE NOT EXCESSIVELY IMPOUNDED. PRIOR TO THE TIME WHEN THE PERMITTEE CONTROL STRUCTURE OR OUTFALL IS BUILT, WATER LEVELS SIGNIFICANTLY ABOVE NORMAL SHOULD BE CORRECTED AT A FREQUENCY THAT PREVENTS A CHANGE IN THE VEGETATIVE CHARACTER OR HEALTH OF ANY WETLANDS.
30. CONTRACTOR IS RESPONSIBLE FOR EROSION CONTROL (SILT FENCE) REMOVAL AFTER STABILIZATION.

OWNER'S INSTRUCTIONS FOR MAINTENANCE AND INSPECTION OF STORMWATER FILTER FACILITIES

Drainage systems should be inspected on a routine basis to ensure that they are functioning properly. Inspections can be on an annual or semi-annual basis, but should always be conducted following major storms. Systems that incorporate infiltration are most critical since poor maintenance practices can soon render them inefficient. Visual inspections of sand filters, control structures, and outfall pipes are highly recommended. It should be stressed that good records should be kept on all maintenance operations to help plan future work and identify facilities requiring attention.

Sand filter surfaces are sometimes scuffed or break up silt deposits and restore porosity. This should be accomplished after all sediment has been removed from the surface. After removing large debris (rocks, paper, wood, etc.) it is recommended that raking the top 3" will properly scarify the surface or it may be required to replace the sand. Another technique requires removing the sand for washing.

The filter system is designed to have a wet-dry cycle to inhibit algae or bacterial growth. Cleanout frequency of filter beds will depend on whether they are vegetated or non-vegetated and will be a function of their storage capacity, infiltration characteristics, volume of inflow, and sediment load. Filter beds should be inspected closely at least once a year.

Perforated underdrain pipes are located 2" below the sand and cleanouts are located at the end of the system. In the event of sediment build-up in the underdrain pipe, cleaning can be accomplished through the cleanout with several of the techniques outlined below.

Methods and equipment for cleanout of systems various types of equipment are available commercially for maintenance of drainage systems. The most frequently used equipment and technique are listed below.

- 1. Vacuum Pump
This device is normally used to remove sediment from sumps and pipes. The equipment for this system is generally mounted on a vehicle. It requires a 200 - 300 gallon (0.757 - 1.36m) holding tank and a vacuum pump that has a 10" (254mm) diameter flexible hose with a serrated metal end for breaking up cake sediment. A two-man crew can clean a catch basin in 5 to 10 minutes. This system can remove stones, bricks, leaves, filter and sediment deposits. Normal working depth is 0' - 20' (0 to 6m).
2. Water Jet Spray
This equipment is generally mounted on a self-contained vehicle with a high pressure pump and a 200 - 300 gallons (0.760 to 1.140m) water supply. A 3" (76mm) flexible hose line with a metal nozzle that directs jets of water at a reverse angle, which propels the nozzle forward while blasting debris backwards toward the catch basin. As the hose line is reeled in, the jetting action forces all debris to the catch basin where it is removed by the vacuum pump equipment. Normal length of hose is approximately 200' (61m). Because of the energy supplied by the water jet, it should not be used to clean erodible trench walls.

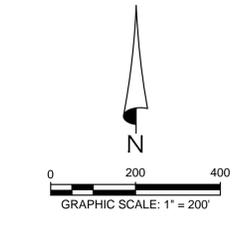
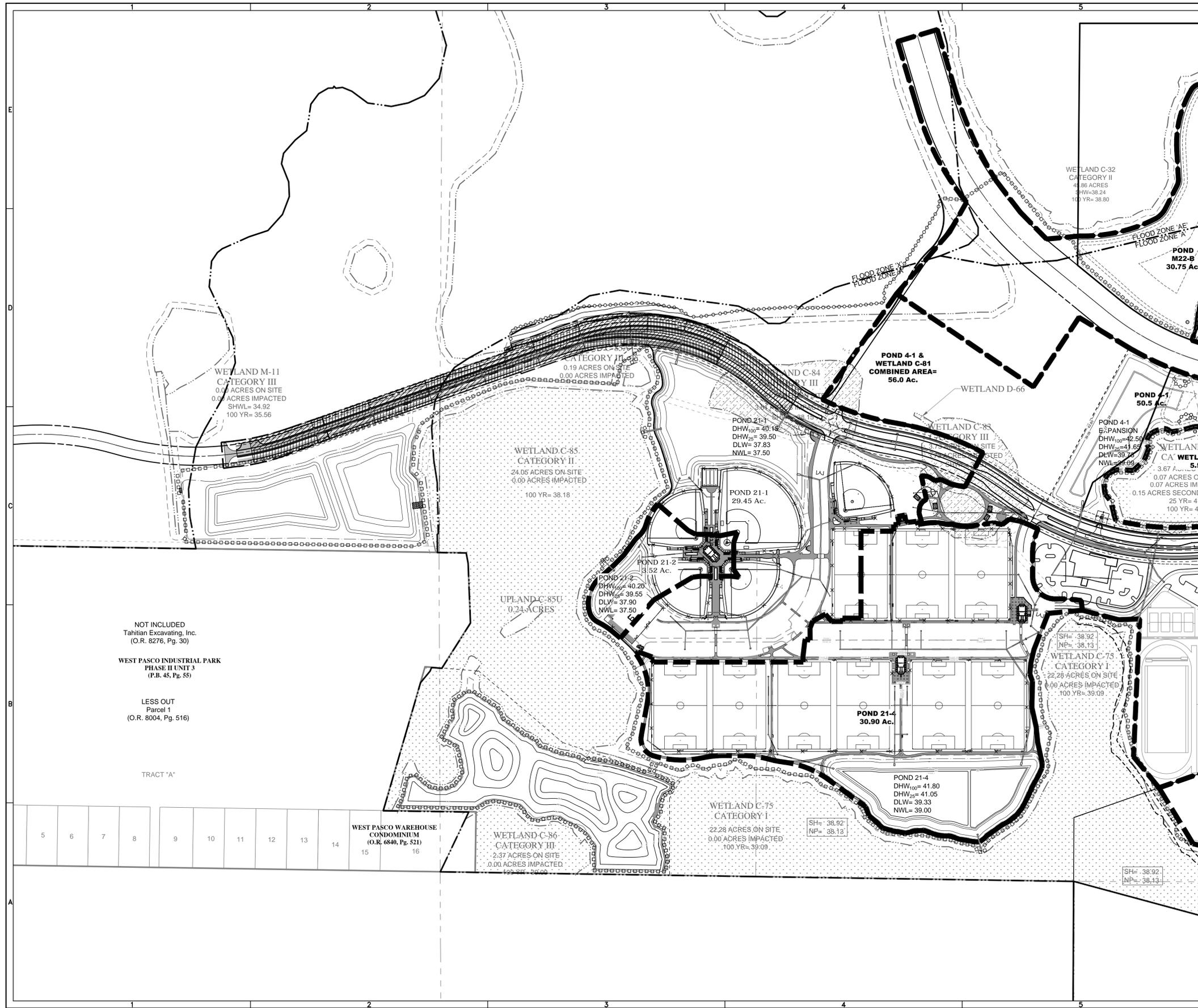
HEIDT DESIGN logo and contact information: 5806-B Breckenridge Pkwy, Tampa, Florida 33610, Office: 813-253-5311, Fax: 813-464-7629, www.HeidtDesign.com

STARKEY RANCH LAKE BLANCHE DRIVE EXTENSION CONSTRUCTION SURFACE WATER MANAGEMENT PLAN logo and WS-TSR, LLC information

Table with columns: PREPARED FOR, DATE, DESCRIPTION, REVIEW SUBMITTAL, DATE

PROJECT NO: TSR-SR-1020, FILE: CSWMP, DESIGN BY: TUCKER, DRAWN BY: MELMS, GARY D. MILLER, DATE, REGISTRATION NO. 52717, C-901

VERTICAL SCALE: 1" = 10' HORIZONTAL SCALE: 1" = 10' DRAWING PREPARED BY HEIDT DESIGN, LLC IN ADVANCE OF THE PERMITTING PROCESS. CONSULT THE PERMITTING AGENCY FOR THE MOST CURRENT AND APPLICABLE REGULATIONS. THE DRAWING IS THE PROPERTY OF HEIDT DESIGN, LLC AND IS NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF HEIDT DESIGN, LLC.



DRAINAGE LEGEND

1.00 AC. MAJOR DRAINAGE AREA ACREAGE

MAJOR DRAINAGE AREA

NOT INCLUDED
Tahtian Excavating, Inc.
(O.R. 8276, Pg. 30)

WEST PASCO INDUSTRIAL PARK
PHASE II UNIT 3
(P.B. 45, Pg. 55)

LESS OUT
Parcel 1
(O.R. 8004, Pg. 516)

TRACT 'A'

WEST PASCO WAREHOUSE
CONDOMINIUM
(O.R. 6840, Pg. 521)

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

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Engineering Business Certificate of Authorization No. 28792
Landscape Architecture Certificate of Authorization No. LC26000405

**STARKEY RANCH
LAKE BLANCHE DRIVE EXTENSION
OVERALL POST-DEVELOPMENT
DRAINAGE AREA MAP**

PREPARED FOR:
WS-TSR, LLC

NO.	DATE	DESCRIPTION
1	08/02/2016	REVIEW SUBMITTAL

PROJECT NO: TSR-SR-1020
FILE: DA-POST
DESIGN BY: TUCKER
DRAWN BY: MELMS

FLORIDA PROFESSIONAL ENGINEER

GARY D. MILLER
DATE: _____
REGISTRATION NO. 52717

C-903

R:\STARKEY RANCH\LAKE BLANCHE DRIVE EXTENSION\ENGINEERING\POST-DWG-C-903 2016\08/01 2:19 PM JAMES MELMS