INSTR #2026005904 BK: 4662 PG: 971 Page 1 of 378
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AMENDED AND RESTATED DEVELOPMENT AGREEMENT

SUNRISE (COMBINED-PLANNED DEVELOPMENT PROJECT) HERNANDO COUNTY, FLORIDA

THIS DEVELOPMENT AGREEMENT is made and entered into on this 2nd day of December, 2025, by and between MAK Family Partnership, Ltd., a Florida limited partnership, TBF Partners, Ltd., a Texas limited partnership, TBF Partners II, LLC, a Florida limited liability company, Robert A. Buckner, as Trustee under that certain Trust Agreement dated March 9, 1989, Robert A. Buckner, individually, Sharon P. McKethan, individually, Haley Dowlen, as Personal Representative of the Estate of John Hale McKethan, whose address is c/o James H. Kimbrough, Jr., P.O. Box 1, Brooksville, Fl 34605-0001, Robert A. Buckner, William M. Buckner and James C. Buckner, as Co-Trustees of the Robert C. Buckner Trust, James C. Buckner, individually, and Robert A. Buckner, James C. Buckner and William M. Buckner, as Co-Trustees of the Celia M. Buckner Trust u/t/a dtd 1/16/03, as amended, and J. Thomas Bronson, as Personal Representative of the Estate of T.E. Bronson, as their interests may appear of record, (hereinafter referred to individually as the "Owner" or collectively as the "Owners"), Hawk Sunrise LLC, a Florida limited liability company, whose address is 2502 N. Rocky Pointe Drive Suite 1050 Tampa, FL 33607, and their respective successors and assigns (the "Developer Owner"), and Hernando County, a political subdivision of the State of Florida, whose address is 20 North Main Street, Brooksville, Florida 34601 (the "County" or "Hernando County") (all collectively referred to herein as the "Parties" or individually as "Party"), regarding the Developer Owner's proposed development known as Sunrise (the "Development" or "Sunrise Development").

RECITALS:

WHEREAS, the Owners, as tenants-in-common, together with any respective successors and assigns, collectively own approximately 1,385 acres located in Hernando County, Florida, lying south of S.R. 50, east of Interstate 75, west of Kettering Road, and north of potential future Dashback Street (the "Property"), and which is legally described in EXHIBIT A attached hereto and made a part hereof; and

WHEREAS, on September 12, 2007, the Board of County Commissioners of Hernando County, Florida (the "BOCC") approved that certain Development Order (the "DRI DO") for the Sunrise Development of Regional Impact (the "DRI"), pursuant to Section 380.06, Florida Statutes, which governed the Property at that time, and was recorded on September 20, 2007, at O.R. Book 2491, Page 1770, of the Official Records of Hernando County, Florida; and

WHEREAS, on December 10, 2008, the BOCC approved a Rezoning (File Number H08-I3) to Combined-Planned Development Project (C-PDP) for the Property (as may be amended, the "C-PDP Rezoning"), with a companion Master Plan (as may be amended, the "Master Plan"), with Deviations, as described therein; and

WHEREAS, pursuant to the DRI approval, the entitlements for the Property remain vested as set forth in the approved C-PDP Rezoning, Master Plan, and DRI DO; and

WHEREAS, pursuant to Chapter 380, Florida Statutes, the Development, as previously approved, is not required to be a Development of Regional impact anymore, and the Owners and Developer Owner have elected, concurrent with the approval of this Development Agreement and the concurrent modification of the C-PDP Rezoning and Master Plan by the BOCC, to abandon the DRI and to terminate the DRI DO, as authorized by applicable Florida law; and

WHEREAS, on September 12th, 2023, the County approved a Development Agreement recognizing the abandonment of the DRI, terminating the DRI DO, and setting forth the terms and conditions of the development of the Property (the "Development Agreement"); and

WHEREAS, on March 28th, 2024, the Developer Owner purchased a portion of the Property from the Owners; and

WHEREAS, on December 12th, 2024, the Hernando County Planning & Zoning Commission approved the Conditional Plat for Sunrise Phase 1; and

WHEREAS, the Hernando County School District ("HCSD") raised concerns about the revisions to the mitigation for Schools in the previously approved Development; and

WHEREAS, it is the intent of this Amended and Restated Development Agreement, as defined below, to re-affirm that the Property is fully vested from School Concurrency; and

WHEREAS, the Owners and Developer Owner have agreed to amend the Development Agreement to modify the School Mitigation section of the Development Agreement and otherwise simply to restate the Development Agreement (the "Amended and Restated Development Agreement");

NOW, THEREFORE, in consideration of the sum of $10.00, and other good and valuable consideration, in hand paid by the Parties hereto, each to the other, simultaneously with the execution and delivery of these presents, and in consideration of the mutual understandings and agreements hereinafter set forth and contained, the Parties agree as follows:

SECTION 1 - FINDINGS OF FACT; INCORPORATED DOCUMENTS

1.1 The above recitals are incorporated herein by reference and made a part hereof.

1.2 The County shall monitor the Development to ensure compliance with the terms, general provisions, and conditions of this Amended and Restated Development Agreement. The County Administrator or his/her designee shall monitor the Development through the review of the site plans, building permits, certificates of occupancy, plats, if applicable, and any other relevant and factual information.

1.3 In each instance where the Developer Owner is responsible for construction, operation, and/or ongoing maintenance of privately owned facilities or infrastructure, the Developer Owner may assign any or all of its responsibilities regarding those facilities to an appropriate entity, which may include a designated Homeowner's Association ("HOA") or

Community Development District ("CDD"), authorized by law and able to fulfill such responsibilities consistent with statutory requirements.

1.4 The BOCC specifically finds that the Development is consistent with the County's adopted Comprehensive Plan and with the County's Land Development Regulations, subject to the terms of the C-PDP Rezoning and Master Plan, and this Amended and Restated Development Agreement, all as approved by the BOCC.

1.5 The approved Master Plan, pursuant to the approved C-PDP Rezoning (approved on September 12, 2023 by the BOCC), is attached as EXHIBIT B and made a part hereof; provided, however, that any subsequent revision to the C-PDP Rezoning and/or Master Plan approved by the BOCC shall be deemed automatically incorporated herein, unless an amendment to this Amended and Restated Development Agreement is required based upon the terms of the approved Amended and Restated Development Agreement.

1.6 The Sunrise Development Water and Sewer Service Agreement, upon its execution by the Owners/Developer Owner and the County (executing as the Hernando County Water and Sewer District), shall be incorporated into this Amended and Restated Development Agreement by reference and made a part hereof.

1.7 As used herein, the term "Developer Owner" shall include any HOA or CDD organized by the Developer Owner and approved by the County and/or other agencies having jurisdiction, to the extent the Developer Owner elects to delegate any design, permitting, construction, operation, and/or maintenance responsibilities of the Developer Owner under this Amended and Restated Development Agreement, and to the extent such HOA and/or CDD delegation is authorized by applicable law.

1.8 As used herein, the term "Development" or "Sunrise Development" shall mean the Property as developed pursuant to the approved C-PDP Rezoning and Master Plan, as both may be amended from time to time.

SECTION 2 - EFFECTIVE DATE AND DURATION; VESTED ENTITLEMENTS

2.1 This Amended and Restated Development Agreement shall take effect as to Section 3.15.4 and Section 3.15.5 upon the date of execution hereof by the last Party hereto but otherwise shall remain in effect as to all its other provisions from and after its original effective date of September 12, 2023 (the "Effective Date"). The term of this Amended and Restated Development Agreement shall expire on December 31, 2044 (the "Term") unless modified in writing and executed by the Parties. The Term of this Amended and Restated Development Agreement shall also vest the C-PDP Rezoning and Master Plan for the same length of time in accordance with Section 1 of Article VIII, Appendix A (Zoning) of the Code of Ordinances, Hernando County, Florida; however, all other terms and conditions of the County's Land Development Regulations shall apply, except where inconsistent with the express terms of this Amended and Restated Development Agreement, or the C-PDP Rezoning or Master Plan.

2.2 Notwithstanding any other provision of the County's Land Development Regulations, or other laws or regulations, the Development's entitlements as set forth in the C-PDP Rezoning and Master Plan approved concurrently herewith, shall be vested for the Term of this Amended and Restated Development Agreement, including any extensions of this Amended and Restated Development Agreement approved pursuant to Paragraph 2.1 above.

2.3 Except as specifically set forth in this Amended and Restated Development Agreement, the C-PDP Rezoning (including any modifications approved by the County from time to time), or the Master Plan (including any modifications approved by the County from time to time), and the standard provisions of the County's Land Development Regulations shall apply, which are in effect at the time of the conditional plat, master plan, development permit or other applicable approval required to commence with the development for each phase of the Development; provided, however, that in the event of any conflict, the terms and conditions of this Amended and Restated Development Agreement shall control.

2.4 The requirements and deadlines for all terms of mitigation required for the Development shall be as set forth in this Amended and Restated Development Agreement, which shall prevail over any other existing or future Hernando County Land Development Regulations provisions, or other requirements for pursuit of the Development as vested and authorized in this Amended and Restated Development Agreement.

2.5 "Commence Development" for purposes of this Amended and Restated Development Agreement shall mean that the Developer Owner shall have constructed, or cause to be constructed, any site grading or clearing, infrastructure, roadways, or vertical development.

2.6 This Amended and Restated Development Agreement constitutes final approval for the Developer Owner to develop the Property, as described in EXHIBIT A, subject to all required land development and permitting regulations and in accordance with the terms of this Amended and Restated Development Agreement, and in accordance with the C-PDP Rezoning and Master Plan, as follows (collectively the "Development Entitlements"):

2.6.1 4,200 Single Family Units (which may be detached or attached single-family units, for-sale and build-for-rent single-family units)

2.6.2 600 Multi-Family Dwelling Units (which may include Senior Adult Attached Housing Units)

2.6.3 75 Motel Units

2.6.4 325,000 square feet of Retail/Commercial uses approved by the C-PDP Rezoning and Master Plan

2.6.5 50,000 square feet of Office uses approved by the C-PDP Rezoning and Master Plan

2.6.6 40,000 square feet of Mini-Warehouse Use

2.6.7 Recreational Amenities and Residential Ancillary Uses approved by the C-PDP Rezoning and Master Plan

2.6.8 Public or Semi-Public Uses approved by the C-PDP Rezoning and Master Plan

2.7 Land Use Exchange Matrix ("LUEM") Conversions. The foregoing uses may be exchanged to their trip-equivalent uses pursuant to the LUEM set forth in EXHIBIT C, attached hereto and made a part hereof, and in accordance with Paragraph 3.19 below.

2.8 Transportation Approval. The Traffic Impact Study ("TIS") submitted by Lincks & Associates, Inc., Tampa, Florida, Project No. 21131, for the Project Entitlements above has been approved by the County as last revised in March 2023, subject to the transportation mitigation requirements of this Amended and Restated Development Agreement.

SECTION 3 - SPECIFIC CONDITIONS AND REQUIREMENTS

3.1. General Environmental Matters. The Developer Owner shall comply with all Hernando County Land Development Regulations environmental requirements, and those of other regulatory agencies having jurisdiction over the Development, to the extent applicable to the Property.

3.2. Subsurface Features, Surface Waters and Ground Waters.

3.2.1. Geotechnical Analysis. A geotechnical report prepared by a Florida Registered Geotechnical Professional Engineer shall be used in the design and layout of the Development, and shall be submitted to the County at the time of, and in connection with, the conditional plat, or functional equivalent, of each phase in order to ascertain that the Developer Owner has used its best efforts to avoid adverse impacts to sensitive karst and subsurface features in the overall design and layout of the Development. All construction shall be in accordance with the County's Facility Design Guidelines.

3.2.2. Best Management Practices ("BMPs"). In addition to being in compliance with all applicable requirements of the regulatory agencies (such as the Florida Department of Environmental Protection ("FDEP") and the Southwest Florida Water Management District ("SWFWMD"), without limitation, the Developer Owner shall utilize BMPs to control siltation and prevent turbidity during construction activities. These standards can be achieved by utilizing the best available construction techniques for erosion and sedimentation control, as well as meeting the minimum standards for National Pollution Discharge Elimination System ("NPDES") permitting.

3.3. Drainage, Stormwater and Groundwater.

3.3.1 Stormwater Pollution Prevention ("SWPP"). The Developer Owner shall implement SWPP methods for each set of construction plans for the Development, incorporating requirements such as: (1) clearing and grading areas only as they are being prepared for construction; (2) stabilizing areas immediately after construction completion; (3) potential limiting of watering for dust control at the time of construction due to hydrologic conditions; and (4) meeting SWFWMD compliance standards.

3.3.2 Stormwater/Drainage Retention Areas ("DRAs"). DRAs, including either "wet" or "dry" DRAs, shall be designed and constructed according to accepted engineering practices, and all applicable regulatory standards of SWFWMD and the Hernando County Facility Design Guidelines.

3.3.3 Low Impact Development ("LID"). Stormwater management facilities shall adhere to SWFWMD criteria for the design, construction, operation and maintenance of such facilities in karst sensitive areas, as determined by SWFWMD. Where feasible, the Development shall utilize LID methods to reduce the impact of nutrients on natural wetlands systems. These LID methods may include low impact stormwater design consisting of vegetated swales and buffers, where reasonably feasible, prior to discharge of treated stormwater, tree cluster-rain gardens, pervious pavement, conserving natural areas and wetlands, minimizing development impacts, attempting to maintain site runoff rates, the use of integrated management practices, the implementation of pollution prevention, proper maintenance, and public education.

3.3.4 Karst Cover. Soil boring(s) shall be used to verify that suitable soil cover is maintained between each DRA bottom and any subsurface limestone rock strata, limestone pinnacles, or potential karst connections, consistent with applicable regulatory criteria.

3.3.5 Periodic Inspections. Once the on-site surface water management system is constructed in accordance with SWFWMD permit requirements, the Developer Owner's engineer shall certify that the on-site surface water management system is in substantial conformity with the local and state regulations. Thereafter, periodic inspections shall be conducted to ensure that the system is being properly maintained in keeping with its permitted design and is capable of accomplishing the permitted level of stormwater storage/treatment for which it was designed and intended.

3.4 Wetlands and Invasive Species.

3.4.1 The Developer Owner shall protect wetland areas through a combination of (1) BMPs; (2) SWFWMD and FDEP Environmental

Resource Program ("ERP") permitting criteria; (3) compliance with the rules and regulations of the U.S. Environmental Protection Agency ("EPA"); (4) NPDES compliance; (5) compliance with applicable mitigation requirements for any wetland impacts approved by the County and applicable permitting agencies; (6) conservation easements in favor of the HOA or CDD, as applicable, which shall include a third-party right of enforcement in favor of the County pursuant to Section 704.06(8), Florida Statutes, where required by the C-PDP Rezoning, the Master Plan, or this Amended and Restated Development Agreement; and (7) wetland/upland buffers as specified in this Development Agreement.

3.4.2 The Developer Owner shall protect on-site surface waters from construction impacts through various measures, including the use of staked hay bales and silt screen fences, to protect wetlands from erosion and sediment transport.

3.4.3 Invasive exotic species shall be removed from all wetlands, designated open spaces, and other areas as required by the County's Land Development Regulations or the approved C-PDP Rezoning or Master Plan during horizontal site development construction. These areas shall also be maintained as needed by the HOA or CDD, as applicable, with invasive plant management techniques approved by any applicable agency development permit(s).

3.5 Flood Plains. The Developer Owner shall comply with the County's Flood Damage Prevention and Protection Ordinance, the County's Buildings and Building Regulations Ordinance, Federal Emergency Management Agency ("FEMA") regulations and SWFWMD regulations, and shall use the best available data regarding flood plains/flood-prone areas, as authorized by law and accepted by SWFWMD and the County at the time of construction plans approval.

3.6 Common Area Maintenance and Resident Education.

3.6.1 The Developer Owner agrees to include in its HOA Covenants, Conditions and Restrictions ("CC&Rs") a requirement that where the use of pesticides and/or chemicals are necessary for grounds maintenance within the Development (specifically including open spaces and common areas), such pesticides and chemicals shall be used sparingly and only in accordance with BMPs and provisions of the Florida Yards and Neighborhoods Program. The CC&Rs shall be recorded at the time of approval of each final subdivision plat against those portions of the Development subject to such plat. Furthermore, the Developer Owner agrees that during the period of ownership or control of all portions of the Development where the use of pesticides and/or chemicals are necessary for grounds maintenance, within those portions of the Development it continues to own or control, such

pesticides and chemicals shall be used sparingly and only in accordance with BMPs and the provisions in this Paragraph.

3.6.2 The Developer Owner (or its designated builders) shall provide new residential property owners with materials and information regarding the Florida-Friendly Landscaping Program, a University of Florida/IFAS Extension program in cooperation with the Hernando County Utilities Department ("Florida-Friendly Landscaping Program"), and the County's Fertilizer Ordinance, and encourage use of the principles, techniques, and landscaping recommendations within such materials and information. Such guidelines shall be included in the HOA CC&Rs for the Property as well.

3.7 Soils and Erosion.

3.7.1 Grading Plan. The Developer Owner shall develop a grading plan that utilizes the pre-development topography to the maximum extent reasonably feasible. The grading plan shall be provided to the County at the time of, and in connection with, each conditional plat, or functional equivalent, application.

3.7.2 Site Disturbance/Erosion.

a) The Development shall be designed to complement the topography and minimize site disturbance and erosion by construction phasing, limiting site clearance while maximizing retention of existing vegetation, timely revegetation of cleared areas, and preservation of existing grades and slopes in Development design and construction.

b) The Developer Owner shall use BMPs (i.e., those BMPs generated by FDEP and SWFWMD) to control soil erosion.

c) The Developer Owner shall protect on-site surface waters from construction impacts through various measures, including the use of staked hay bales and silt screen fences to reduce both erosion and sediment transport into wetland areas.

d) The Developer Owner shall minimize wind erosion from clearing and grubbing operations by performing such operations only on individual parcels of land where construction is scheduled to proceed.

e) The Developer Owner shall minimize fugitive dust through sodding, water sprinkling, seeding, mulching or planting of landscaped material in cleared and disturbed areas.

f) The Developer Owner shall conduct geotechnical testing for development areas consistent with County and/or SWFWMD adopted regulations to identify and address any areas of soil raveling/slumping. Should any noticeable soil slumping or sinkhole formation become evident before or during construction activities, the Developer Owner shall comply with the permit conditions of SWFWMD to develop a plan of action and corrective measures to correct the problem. Once a plan of action and corrective measures are determined, the Developer Owner shall complete the required actions/measures in accordance with any permit requirements.

g) A geotechnical report prepared by a Florida Registered Geotechnical Professional Engineer shall be provided for review by the County Engineer at the time of construction plans review to identify and recommend BMPs and professionally recognized engineering practices that address the identification of unsuitable soils, if present, to include the following:

(i) The stripping of existing topsoil and vegetation/roots and undercutting pockets of organic soils and/or deleterious material, if encountered.

(ii) The backfilling and compaction with structural fill in required lifts.

(iii) The compaction and densification of the ground surface to recommended standards and depths.

3.8 Buffers and Open Space.

3.8.1. Open space shall meet the minimum requirements of the Code of Ordinances, Hernando County, Florida, and shall generally include the Oak Hammock Preservation Area and the I-75 Buffer Area as identified in the approved C-PDP Rezoning and Master Plan, other jurisdictional wetland buffers, neighborhood park sites, vegetated (both natural and any enhanced) buffers, pedestrian trails that provide for connectivity, and areas of open space preservation, as ultimately approved in conjunction with the C-PDP Rezoning, Master Plan, conditional plat, construction plans review and/or site development review.

3.8.2. As part of the above open space, the Developer Owner shall provide the following preservation and/or buffer areas:

a) A 40-foot-wide open space corridor/perimeter buffer along the Development's western common boundary with the I-75 right-of-way (the "I-75 Buffer Area"). This buffer shall preserve existing natural, native vegetation as set forth below but may contain passive trails, picnic areas and/or educational viewing areas for passive use. This open space shall be maintained by the HOA or CDD. In areas where the development parcels directly abut the existing I-75 drainage retention areas, the required natural buffer area shall be reduced from 40 feet to 20 feet in width. In locations where the natural vegetation in the I-75 Buffer Area does not have 80% opacity, the natural buffer shall be enhanced such that 80% opacity can be achieved within three (3) years after planting. If disturbance of a natural area within the I-75 buffer is required for adjacent development purposes, then re-planting shall be required such that 80% opacity can be achieved within three (3) years. The Developer Owner shall have the option, at its election, to install a perimeter wall on the development side of the I-75 Buffer Area, in whole or in part, for any portion thereof. In the event the Developer Owner elects to construct such wall, the natural buffer shall remain on the I-75 side of the wall, but the obligation to enhance the natural buffer to achieve 80% opacity shall not apply to such segment of the I-75 Buffer Area where a perimeter wall is constructed by the Developer Owner.

b) The approximate 17-acre existing oak hammock area identified on the Master Plan (the "Oak Hammock Preservation Area"), the uses for which shall be limited as set forth in the C-PDP Rezoning. A neighborhood park may be co-located adjacent to the Oak Hammock Preservation Area, to facilitate parking and/or pedestrian access for passive use of the Oak Hammock Preservation Area as set forth in the CPDP Rezoning and Master Plan. This open space corridor shall be maintained by the HOA or CDD. No listed plant species shall be removed from the Oak Hammock Preservation Area or other natural vegetative buffers or natural preservation areas identified on the Master Plan.

c) A 15-foot buffer along the north side of the future right-of-way for Dashback Road adjacent to the Development; provided, however, that the buffer shall not be required where such future right-of-way is adjacent to wetlands, drainage retention areas, or flood plain mitigation areas.

d) All other neighborhood park and perimeter buffer requirements shall be as set forth in the Land Development Regulations at the time of conditional plat for such portions of the Development. The I-75 Buffer Area and the Oak Hammock Preservation Area shall be counted toward the open space requirements for the Development, and if such areas contain trails or other access, or other passive use facilities for Development residents, also shall count toward the neighborhood park requirements for the Development.

3.8.3. The Developer Owner shall provide the County an accounting upon each application for conditional plat for each phase of development, of the allocation of open space (as to both park space and other open spaces) for that conditional plat and an accounting of the total cumulative park space and other open space at that point in the development process. Conservation easement areas in favor of the HOA or CDD, which shall include a third-party right of enforcement in favor of the County pursuant to Section 704.06(8), Florida Statutes, as applicable, shall be identified at each conditional plat, where applicable under this Amended and Restated Development Agreement, to protect wetland preservation areas and designated conservation areas (including any which contain designated wildlife habitat).

3.8.4. Pedestrian trails, including but not limited to boardwalks, previous and impervious trails, and pedestrian access, may be permitted in passive open space areas as designated at the time of conditional plat review. Active recreational activities shall not be permitted in areas designated for buffers and passive open space; however, passive uses such as trails, picnic areas, and educational viewing shall be allowed. The Development's internal multipurpose trail system shall connect (as development phases are constructed) to the paths currently being constructed by FDOT in the SR 50 right-of-way adjacent to the Development, which then will facilitate the ultimate connection via SR 50 (by FDOT or others) to the Withlacoochee River State Trail.

3.8.5. The Developer Owner shall prepare, or cause to be prepared, a comprehensive wildlife survey, prepared by a qualified professional, prior to any development occurring on the Property. Furthermore, copies of any permits shall be provided prior to site alteration or the commencement of construction and the issuance of building permits by the County.

3.8.6. The Developer Owner shall incorporate into its HOA and/or CDD documents, at a minimum: management provisions for all conservation areas, wetland buffers, perimeter natural buffers, open

spaces and pedestrian trails; identification and protection of any listed animal and plant species in the designated open space/buffer/preservation areas; provisions for the distribution of educational materials to the Development's residents; a habitat management plan for the designated preservation areas; and a pet management plan.

3.8.7. The use of pesticides within conservation areas shall be consistent with Florida Fish and Wildlife Conservation Commission ("FWC") requirements. Pesticides with a high toxicity to wildlife, wetlands or surface waters shall not be permitted. In the event the Developer Owner elects to construct a golf course amenity for the Development, the Developer Owner shall provide a Pest Management/Chemical Management Plan including implementation, management and operational control procedures, including the responsible party for such management.

3.9 Native Habitat Within Designated Buffer Areas and Open Spaces. To the extent there is existing, native vegetation identified for preservation by this Amended and Restated Development Agreement in the designated wetland buffers, conservation easement areas, and perimeter buffers maintained by the HOA and/or CDD which attract pollinators or provide food, shelter or habitat for wildlife, such native vegetation shall be preserved, to the extent reasonably feasible.

3.10 Water Supply and Conservation.

3.10.1 Water Supply. The Hernando County Utilities Department ("HCUD") shall provide water supply for the Development, as required in Section 4 below, subject to the following terms and conditions:

a) No individual resident wells shall be allowed; however, non-potable wells or reclaim water service shall be allowed for multi-family or commercial parcel sites under a single ownership, and common area irrigation managed by the HOA or CDD, as applicable.

b) The Developer Owner shall provide HCUD with a phasing schedule for the projected delivery of occupied residential units and non-residential square footage anticipated on an annual basis for a 5-year forecast period, which projections shall be updated annually by the Developer Owner to enable HCUD to plan and to construct capital improvements to its water treatment facilities, as required to meet the service commitment to the Development set forth in Section 4 below.

c) In consideration for the County's commitment to reserve utility service capacity for the Development pursuant to Section 4 below, the Developer Owner has agreed to reserve an approximate five (5) acre site in the northwest portion of the Development as conceptually identified on the Master Plan (the "Water Plant Site") for potential acquisition by HCUD as part of its regional potable water supply system, subject to the following terms and conditions:

(i) The County shall commence immediately and then complete its feasibility analysis for the Water Plant Site prior to the Developer Owner's request for approval of its conditional plat for the first phase of development within the Development, including, without limitation, any soils composition, water quantity, or water quality analysis (as the Water Plant Site location impacts the development locations within the Master Plan).

(ii) In the event the initial proposed site does not satisfy the County's soils composition or water quality requirements, the Parties shall cooperate in good faith to locate an alternative location for the Water Plant Site, which in any event shall be determined prior to the Developer Owner's requested conditional plat approval for the first phase of development of the Development, such that the development plan schedule is not adversely impacted by such County feasibility process. Any mutually agreed relocation of the Water Plant Site shall not require any Master Plan amendment, C-PDP Rezoning amendment, or Development Agreement amendment for the Development.

(iii) The County shall not delay, impede, or condition the Developer Owner's conditional plat approval for the first phase of development within the Development by reason of any County delay in completing its feasibility analysis for the Water Plant Site.

(iv) Once the location is approved by the County, the Water Plant Site reservation shall be automatically released ten (10) years after the Effective Date of this Amended and Restated Development Agreement as an administrative minor modification of the approved C-PDP Rezoning or Master Plan if HCUD has not elected to acquire and has closed upon same.

(v) In exchange for the conveyance, the Developer Owner shall be compensated as required by Florida law for the fair market value of the site, in cash, at the time of such conveyance.

(vi) Effective immediately upon execution and approval of this Amended and Restated Development Agreement, the Owners and Developer Owner shall grant HCUD access to the site to perform soil, water quantity and water quality testing to verify adequacy for public water use.

(vii) The Developer Owner shall disclose the Water Plant Site location in the HOA Documents for the residential portions of the Development, so that residents are aware of such future plant location.

(viii) In the event HCUD elects to acquire, close upon and construct the Water Plant Site facilities, and in the event there is not public roadway access to the Water Plant Site, the Developer Owner shall provide the County with permanent, non-exclusive access easements over applicable private roadways within the adjacent portion(s) of the Development, for ingress-egress for operation and maintenance of the Water Plant Site facilities.

d) As further consideration for the County's commitment to reserve utility service capacity for the Development pursuant to Section 4 below, and to connect the Development to the County's water service, the Developer Owner at the Developer Owner's expense, shall design and construct the Development's water distribution piping to include a 12-inch diameter transmission system with three (3) points of connection to the County's water distribution system: (i) at the 12-inch diameter water main at the eastern end of Old Trilby Road west of Interstate 75; (ii) at the 12-inch diameter water main in the road right of way, north of the Development; and (iii) at the 12 or 16-inch diameter water main in Kettering Road, as depicted on EXHIBIT D. These improvements shall be installed during the first phase of development.

e) The Developer Owner and HCUD shall enter into a Water and Sewer Service Agreement (the "W&S Agreement") pursuant to standard terms and conditions applicable within

Hernando County; provided, however, that the service commitment shall be consistent with the foregoing terms herein and Section 4 below.

f) The Developer Owner (or its designated builders) shall be liable for all water connection fees and other standard fees and costs in accordance with the terms of the W&S Agreement.

3.10.2 Water Conservation. The Development shall utilize the following water conservation techniques:

a) Minimum flush volume toilets shall be standard in residential and non-residential construction.

b) "WaterSense" fixtures shall be used on interior plumbing for residential construction and used where applicable in non-residential construction.

c) Automatic shut-off faucets shall be used where applicable in nonresidential construction.

d) "WaterSense" irrigation controllers shall be installed on all residential and non-residential irrigation systems.

e) Low-volume irrigation spray heads, as well as drip systems, shall be used where appropriate for both residential and non-residential landscaping. Residents shall be encouraged to use water-conserving devices for additions they might make to their irrigation systems.

f) Drought tolerant landscaping shall be utilized for common areas. The Developer Owner shall ensure that all landscape design and maintenance throughout the Development on Developer Owner maintained property conforms to the Florida-Friendly Landscaping Program.

g) Residential lot landscaping requirements shall comply with LDC Section 10-29. The Developer Owner will ensure that no HOA rules, covenants, or other mechanisms of directives for the residential portions of the Development require homeowners to utilize high-water-use turfgrass on individual lots.

h) The Developer Owner shall ensure that irrigation systems operated for Developer Owner common or controlled areas

utilize and maintain computerized irrigation based on weather station information, moisture sensing systems to determine existing soil moisture, evapotranspiration rates, and zone control, to ensure water conservation.

i) The Developer Owner shall encourage that irrigation systems installed for single-family residences in the Development, and fertilizer and pesticides practices, conform to the Florida-Friendly Landscaping Program standards at the time of initial installation of the irrigation system.

j) The Developer Owner shall establish restrictions on the percentage of high maintenance landscape areas.

k) The Developer Owner shall ensure that the Development's grounds maintenance staff and/or landscape installation/maintenance firms are trained and educated in the practices mandated by the Florida-Friendly Landscaping Program. The staff and/or firms shall ensure that ongoing landscape maintenance activities shall continue to adhere to such Program.

l) The Developer Owner (or its designated builders) shall provide water use education materials to Development residents and highlight the role of residents in the protection of the ground and surface water resources. The program shall be coordinated with the Florida-Friendly Landscaping Program.

m) The Developer Owner shall require/install low volume laundry machines and dishwashers where hook-ups are provided in individual units, and in all common laundry rooms.

3.11 Wastewater. HCUD shall provide wastewater service to the Development as required in Section 4 below, subject to the following terms and conditions:

3.11.1. The Developer Owner's obligations regarding wastewater will be contained in the standard W&S Agreement referenced above, which shall be consistent with the terms of this Amended and Restated Development Agreement.

3.11.2. HCUD's commitment for wastewater service capacity for the Development pursuant to Section 4 below is based upon the County's prior, vested commitments to the Development in the DRI DO and the adopted I-75/SR 50 PDD Area Plan. However, to meet its commitments,

the County is required to undertake a capacity expansion for the Water Reclamation Facility ("Ridge Manor WRF") adjacent to the Development. Based on the prior vested commitments to the Development, the County shall program and implement such Ridge Manor WRF capacity expansion and/or other system improvements when and as required to meet the Development demands for such utilities service. To facilitate such planning and expansion process, the Developer Owner shall annually provide to HCUD the 5-year utilities demand projections for wastewater, as also required for projected potable water demand pursuant to Section 3.10.1.b, above.

3.11.3. The Developer Owner shall be liable for all sewer connection fees and other fees and costs in accordance with the standard terms of the W&S Agreement.

3.11.4. The Developer Owner shall disclose the Ridge Manor WRF location in the HOA Documents for the residential portions of the Development, so that future residents are aware of the Ridge Manor WRF location.

3.11.5. The Developer Owner shall provide a twenty (20) foot natural/enhanced buffer with 80% opacity achieved within three (3) years along the north and west boundary line of the Ridge Manor WRF where adjacent to the boundary, when and as each adjacent phase of the Development is developed. At the Developer Owner's option, the Developer Owner may elect to install a buffer wall on the development side of the buffer area, for any segment of the required buffer, in which event any natural vegetation shall remain within the buffer, but the enhancement requirement to 80% opacity shall not apply for such segment where such buffer wall is constructed.

3.12 Fire Suppression and EMS Services.

3.12.1. The Developer Owner shall pay all applicable Fire Protection and Emergency Medical Services Capital Facilities Impact Fees for the Development.

3.12.2. The Developer Owner also shall pay the Public Capital Facilities Impact Fee Surcharge(s) for the Development within the I-75/SR 50 PDD.

3.13 Emergency Management.

3.13.1 Hurricane Preparedness. The Developer Owner shall mitigate potential hurricane preparedness impacts by either (i) providing an on-site or adjacent facility (which may be a portion of a community recreation facility, a public services building, or a public, private or charter school), or (ii) payment to the County public shelter fund in the amount of

$106,638.00. This required hurricane preparedness mitigation payment shall occur prior to the issuance of a building permit for the 601st residential building and shall relieve the Developer Owner of the obligation to construct an on-site facility. In the event the County at any time has a countywide hurricane preparedness impact fee ordinance, the Developer Owner shall receive impact fee credits for the amount of any cash mitigation payment that has been, or is made, pursuant to this Paragraph.

3.13.2 Pursuant to the Florida Building Code, builders in the Development shall equip new homes with impact resistant windows and doors, or hurricane storm shutters that comply with the requirements of the Florida Building Code.

3.13.3 The Development's HOA or CDD shall provide and maintain a public information program for the purpose of educating the Development's residents regarding the potential hurricane threat.

3.13.4 The Development's HOA or CDD shall work with the Hernando County Emergency Management Department to develop and maintain training for a Community Emergency Response Team ("CERT Training") for the Development.

3.14 Affordable Housing.

3.14.1 In the event Hernando County adopts a countywide ordinance providing for contributions to a housing trust fund by residential development projects, the Development shall comply with such countywide ordinance subsequent to the effective date and applicability of such ordinance.

3.14.2 In the event the Developer Owner (or its designated builders) construct multifamily rental units, which include affordable or workforce housing within the Development, the applicable builder shall designate a minimum of 30 multi-family rental units within such multifamily portion for those residents making less than 80% of the area median income for the Tampa-St. Petersburg-Clearwater Metropolitan Statistical Area, as identified by the Florida Housing Finance Corporation. Based upon available funding, program requirements and subject to the approvals by associated agencies, the County shall provide up to $150,000.00 in State Housing Initiatives Partnership ("SHIP") financing for construction of these units. Financing shall be provided as a 0% interest loan, forgivable after the 30-year affordability period expires.

3.15 Parks and Recreation.

3.15.1 The Developer Owner shall provide the minimum neighborhood park acreage as required by the County's Land Development Regulations subject to credit for the qualified areas designated in this Amended and Restated Development Agreement.

3.15.2 The above on-site park site requirements are in addition to, and not in lieu of, the payment of Parks Impact Fees. Such Fees shall be paid at the prevailing rate.

3.15.3 The Developer Owner also shall pay the Parks Impact Fee Surcharge(s) required for the Development within the I-75/SR 50 PDD.

3.16 Schools.

3.16.1 School Site Reservation. For the "School Site Reservation Period" set forth below, the Owners have agreed to reserve a school site located on Kettering Road adjacent to the Development, containing approximately 49 gross acres of land, as more particularly described in EXHIBIT D attached hereto (the "School Site").

a) Accept School Site. Should HCSD elect to proceed with the conveyance of the School Site, the School Site will be conveyed at fair market value as mutually agreed by HCSD and the Owners (the "School Site Value"). Pursuant to the Owners and HCSD successfully negotiating and agreeing upon a Purchase and Sale Agreement, except as otherwise provided in Paragraph 3.15.5 below, at Closing the Owners shall accept dollar-for-dollar school impact/surcharge fee credits in the full amount of the School Site Value, which credits shall be fully assignable to any developer/builder for use in any school concurrency service area, in any Hernando County project, pursuant to the Florida Impact Fee Act. Credits issued will be non-refundable. The Purchase and Sale Agreement shall also provide for an expedited third-party dispute process to resolve any disagreement about the School Site Value, based upon independent MAI appraisals. Notwithstanding any other terms or conditions of the Purchase and Sale Agreement, HCSD must close on the School Site on or before December 31, 2026 (the "School Site Reservation Period").

b) Decline School Site. Should HCSD decline to proceed with the conveyance of the School Site, the Developer Owner will make a cash payment, or credit from escrow to the extent credits are available, to HCSD in an amount equal to ten percent (10%) of the total amount of the Educational Impact

Fee Surcharges for the Phase One Conditional Plat, not later than prior to the issuance of the first building permit in the Phase One Conditional Plat in the amount of $102,945.30 (the "Mitigation Payment"). The Mitigation Payment obligation may be satisfied by utilizing Escrowed Impact Fees. The entirety of the Development shall be vested for purposes of school concurrency, subject to the Developer Owner or its respective successors interest paying an amount equal to ten percent (10%) of the total amount of the Educational Impact Fee Surcharges for each subsequent phase of the Development, prior to the issuance of the first (1st) building permit for each approved subsequent conditional plat for the Development. The Developer Owner shall be awarded and will accept dollar-for-dollar school impact/surcharge fee credits in exchange for the cash payment, which credits shall be fully assignable to any developer/builder for use in any school concurrency service area, in any Hernando County project, pursuant to the Florida Impact Fee Act. Credits issued will be non-refundable.

3.16.2 Impact Fee Credit Escrow Account. HCSD will establish an impact fee credit escrow account for all Educational Facilities Impact Fees and Educational Facilities Impact Fee Surcharges paid by the Developer Owner for any of its affiliated or related developments located in Hernando County from December 1, 2024, (the "Escrowed Impact Fees") until such time that HCSD decides whether to accept or reject the School Site. The Developer Owner shall provide written notice to the County and HCSD of any "affiliated or related developments" impact fees which are to be attributed towards the Escrowed Impact Fees. The Escrowed Impact Fees will be held for the benefit of this Development. If HCSD accepts the School Site, at closing HCSD shall utilize the Escrowed Impact Fees to pay the Owners for such portion of the School Site Value in cash, with the remainder to be paid in school impact and surcharge fee credits as set forth above, and subject to the terms and conditions of the Purchase and Sale Agreement between HCSD and the Owners. If HCSD elects to reject the School Site, the Escrowed Impact Fees will be released to HCSD for their use, provided that they have established an Impact Fee Credit account for the benefit of each development in an amount equal to the Escrowed Impact Fees as of the date of the rejection received associated with each development. Any such school fee credits awarded for the School Site Value shall be immediately assignable by the Owners to Developer Owner, pursuant to separate agreement, at the time of closing on the School Site.

3.16.3 Credits. Impact Fee credits issued, regardless of whether HCSD elects to accept or decline the School Site donation, shall be issued by HCSD to the Developer Owner/Owners at a rate of dollar-for-dollar. Impact Fee Credits

will be assignable and transferable pursuant to Section 163.31801(10), Florida Statutes. All credits issued will be non-refundable.

3.16.4 PDD Multiplier. Pursuant to Section 23-157(a)(1)(e) of the Hernando County Code, the Amended and Restated Development Agreement is intended to provide for the full mitigation of impacts as to Schools by the enforcement of this Amended and Restated Development Agreement and the multiplier set forth in Section 23-157 (b) shall not apply.

3.16.5 Capacity Reservation; School Concurrency. The entire Sunrise Development will remain vested as to school concurrency, subject to the payment of school impact fees and school impact fee surcharges and the terms and conditions of this Amended and Restated Development Agreement. The School Board agrees to reserve school students' stations for the Development, subject to the Developer Owner complying with the terms and conditions of this Amended and Restated Development Agreement. Subject to the payment of Impact Fees and the Mitigation Payment, the Developer Owner shall be entitled to rely on the School Concurrency Determination and the capacity reservation for the Development, as set forth in this Amended and Restated Development Agreement, and such right of reliance shall survive the expiration of this Amended and Restated Development Agreement.

3.16.6 Impact Fees and Impact Surcharges. Notwithstanding anything contained herein, the Development shall pay all applicable countywide educational facilities impact fees and educational facilities impact fee surcharges at the then current rate, without offset or exemption, except as provided for in this Amended and Restated Development Agreement.

3.17 Public Services Government Center Site. The Development shall reserve for a period of five (5) years within the mixed-use portion of the Development up to five (5) acres of land for the County potentially to establish an East Side Government Center, or in such acreage and at such location as otherwise mutually agreed by the parties. Once the location is approved by the County, the East Side Government Center site shall be automatically released five (5) years after the Effective Date of this Amended and Restated Development Agreement as an administrative minor modification of the approved C-PDP Rezoning or Master Plan if the County has not elected to acquire and close upon same. If the County elects to acquire such site, the land valuation shall be at fair market value (pursuant to appraisal performed in accordance with Uniform Standards of Professional Appraisal Practice); provided, however, that the parties may negotiate such compensation in the form of cash consideration or impact fee/PDD Area Plan surcharge fee credits applicable against the "buildings" portion of the County's public capital facilities impact fees and public capital facilities impact fee surcharges, or a combination thereof. If the County accepts the land, the County acknowledges that the East Side Government Center shall be deemed a "public facility" and, therefore, not part of the retail, commercial, or office development entitlements authorized for the Development (in other words, the square footage in the public facility shall not be counted against the Development's approved entitlements).

3.18 Trails and Bicycle/Pedestrian Connectivity. The Development shall provide the following:

3.18.1 A 10-foot-wide paved multi-purpose pathway along one side of Sunrise Parkway from the primary entrance to the residential portion of the Development on Sunrise Parkway at Cracker Crossing Boulevard, southward along such primary collector roadway through the residential portion of the Development to its southernmost residential community entrance on Sunrise Parkway. This multi-purpose pathway shall include a sidewalk in accordance with the Hernando County Facility Design Guidelines on the opposite side of the primary collector roadway and shall be constructed in phases as the primary collector roadway (Sunrise Parkway) is extended through the Development to meet the Development's access requirements.

3.18.2 All other streets within the Development shall meet the current Hernando County Facility Design guidelines for sidewalks.

3.18.3 The Developer Owner shall provide a network of trails, sidewalks, and bicycle/pedestrian facilities to interconnect the Oak Hammock Preservation Area, neighborhood parks, commercial areas, the school site (as applicable), buffers, and conservation areas throughout the Development. A conceptual connectivity plan shall be provided with each conditional plat or phase of development, and further defined during the construction plans process. Connectivity may use open/recreation space, upland buffers, and perimeter buffer areas, as permitted by this Amended and Restated Development Agreement, in the Developer Owner's discretion. Trails may be designed to be pervious or impervious, as determined appropriate by the Development's characteristics, and as determined by the Developer Owner.

3.19 Transportation Mitigation Requirements.

3.19.1 Required Right-of-Way Dedications. The Owners or Developer Owner (as applicable) shall convey to the County for public use, by plat or warranty deed (in such form and with such legal description and sketch as approved by the County) those lands within the Development related to the rights-of-way specified below as required by the I-75/SR 50 PDD Road Network and as conceptually depicted on the Master Plan:

a) Sunrise Parkway. The right-of-way (to the extent not previously conveyed to the County) for Sunrise Parkway, at a width of 120 feet, from S.R. 50 south to the southernmost boundary of the Development. The affected portion or portions of this right-of-way shall be donated prior to each

final subdivision plat which covers, abuts or joins the affected portion or portions of Sunrise Parkway.

b) Parallel Collector Road (to SR 50) a/k/a Cracker Crossing Blvd. Extension. The right-of-way for the extension of the Parallel Collector Road (to SR 50) identified in the I-75/SR 50 PDD, n/k/a Cracker Crossing Blvd., from its existing terminus at Sunrise Parkway, eastward to its intersection with Kettering Road, at a right-of-way width of 80 feet (the "Cracker Crossing Blvd. Extension"). Depending on the proposed uses and access plan for the mixed-use parcel, the foregoing Cracker Crossing Extension may be deemed to satisfy the County's Frontage Road Ordinance and Facility Design Guidelines, as applicable to the portion of the Development's mixed-use area which is bordered by SR 50, Sunrise Parkway, Cracker Crossing Blvd. Extension, and Kettering Road; however, the County reserves the right to require an additional frontage road (in whole or in part) in the discretion of the County Engineer, based upon the functional requirements for the final site plan within said mixed-use area. The Cracker Crossing Blvd. Extension right-of-way shall be donated prior to final subdivision plat (if platted) which covers, abuts, or adjoins the Parallel Collector Road, or prior to issuance of the first non-residential building permit for vertical construction in this mixed-use area, whichever occurs first.

c) Kettering Road. The right-of-way for any portion of Kettering Road contiguous with and adjacent to the Development's eastern boundary, to the extent necessary to provide a right of way width of 80 feet from the existing centerline of Kettering Road adjacent to the Development. This right-of-way shall be donated prior to final subdivision plat (if platted) which covers, abuts, or adjoins the affected portion of Kettering Road, or prior to issuance of the first building permit for vertical construction in this area, whichever occurs first.

d) Dashback Street. A right-of-way for potential future construction (by others) of Dashback Street, along the southern boundary of the Development, as follows: (i) from the southeastern project boundary to a point 500 feet east of the I-75 right-of-way boundary (the "Transition Point"), a width of 80 feet, and from the Transition Point to the I-75 right-of-way boundary, a width of 160 feet. The affected portion or portions of this right-of-way shall be donated prior to each final subdivision plat which covers, abuts, or adjoins

the affected portion or portions of Dashback Street, or when such right-of-way is required for construction of Dashback Street by others, whichever occurs first.

3.19.2 Terms for Right-of-Way Conveyances. The foregoing rights-of-way conveyances are collectively referred to in this Amended and Restated Development Agreement as the "Right-of-Way Dedications," as identified in Section 3.19.1.a-d above. Where required, the Right-of-Way Dedications also shall include retention/detention areas for any adjacent roadway segment; provided, however, that such roadway drainage may be commingled with Development drainage. Any required roadway drainage for adjacent roadway segments shall be determined not later than the conditional plat, or functional equivalent, approval for the adjacent Development phase. Unless required sooner by the County for roadway improvements to be made by the County or others (for Kettering Road or Dashback Street), the Right-of-Way Dedications shall be made as each adjacent land phase is platted for the Development, or as such roadway segment otherwise is required for access to the Development. Based upon the original terms of the Sunrise DRI/DO and the requirements of the adopted I-75/SR 50 PDD Area Plan, none of the foregoing right-of-way land dedications shall be impact fee creditable; however, the donation of this substantial right-of-way without cash or impact fee/surcharge fee credit compensation constitutes a material part of the transportation mitigation provided by this Development.

3.19.3 I-75/SR 50 PDD Pipeline Improvements; Site-Related Access Improvements; Fee Credits. To the extent not first constructed by others, the Developer Owner shall design, permit and construct the improvements for (i) Sunrise Parkway and (ii) Cracker Crossing Blvd. Extension, in development phases when and as required to provide access to the Development (collectively Sunrise Parkway and Cracker Crossing Blvd. Extension are referred to herein as the "Road Segment Pipeline Improvements"), and (iii) the intersection improvements (Dual NBL, NBT, NBR, and Dual WBL) for Cortez Blvd. and Sherman Hills Blvd. Realignment/Sunrise Blvd. when the Development connects to such intersection (the foregoing intersection improvements are referred to herein as the "Sunrise Parkway/SR 50 Intersection Improvements"). In addition, the Developer Owner shall signalize the Sunrise Blvd./Sherman Hills Blvd Realignment/Cortez Blvd. intersection when the signal warrant requirements are triggered by the Sunrise Development traffic impacts and FDOT approves installation of such signalization, provided such signalization has not previously been provided by others (referred to herein as the "Sunrise Parkway/SR 50 Intersection Signalization". In the event more than one development project has site impacts which trigger such signalization warrants, then the County shall require a fair, proportionate share contribution from each such contributing project. The Sunrise

Parkway/SR 50 Intersection Improvements and the Sunrise Parkway/SR 50 Intersection Signalization both are deemed to be "site-related" transportation mitigation requirements and therefore shall not be eligible for any impact fee credits. However, as provided in the adopted I-75/SR 50 PDD Area Plan, the Developer Owner's design, permitting and construction costs for the Road Segment Pipeline Improvements (Sunrise Parkway and Cracker Crossing Blvd. Extension) are designated as part of the regional roadway network and therefore shall be credited against the applicable roads impact fees and roads impact fee surcharges payable by the Development pursuant to the Impact Fee Surcharge and Planning Overlay Ordinance for the Greater I-75/SR 50 Planned Development District Area, as adopted on September 12, 2007. To summarize the Development's transportation mitigation requirements: (i) the Development shall pay the roads impact fees and roads impact fee surcharges pursuant to the PDD Area Plan; (ii) the Development shall donate the required rights-of-way as specified in this Amended and Restated Development Agreement, without cash compensation or impact fee credits; (iii) the Development shall provide the Sunrise Parkway/SR 50 Intersection Improvements and Sunrise Parkway/SR 50 Intersection Signalization as "site-related" mitigation which shall not be eligible for impact fee credits; and (iv) the Development shall receive roads impact fee and roads impact fee surcharge credits for the Road Segment Pipeline Improvements (Sunrise Parkway and Cracker Crossing Blvd. Extension),

3.19.4 Transportation Mitigation Fund Account; Use of Impound Funds; Constructing Entity. The Development shall pay all customary Roads Impact Fees pursuant to the countywide impact fee ordinances and the Roads Impact Fee Surcharges pursuant to the I-75/SR 50 PDD Area Plan as each fee schedule may be amended from time to time, including any future countywide mobility fee replacement for roads impact fees and/or roads impact fee surcharges, subject to the fee credits which shall be provided by the County for the Road Segment Pipeline Improvements. The Development's Roads Impact Fees and Roads Impact Fee Surcharges paid from inception of the Development shall be segregated by Hernando County and accrued in a separate sub-account designated as the "Sunrise Roadway Impound Account." Hernando County and the Developer Owner shall be deemed joint beneficiaries of the Sunrise Roadway Impound Account, to the extent permitted by law. The accrued funds in the Sunrise Roadway Impound Account shall be used exclusively to fund the design, permitting, construction, testing and inspection costs for Road Segment Pipeline Improvements, and once they have been fully funded, for any of the "Additional Pipeline Road Improvements" as defined below. At the discretion of the County, the Developer Owner may be designated as the "Constructing Entity" for one or more of the Additional Pipeline Road Improvements. In such event, the Developer Owner shall not receive any management fee, overhead or profit for acting as the Constructing Entity;

however, all third-party contractor/consultant expenses incurred for the design, permitting, construction, testing and inspection costs for the Additional Pipeline Road Improvements shall be paid from the Sunrise Roadway Impound Account. In the event the Developer Owner is not designated as the Constructing Entity, Hernando County shall contract for and manage the Additional Pipeline Road Improvements and shall use the Sunrise Roadway Impound Account to fund the costs for same. Nothing in this Section shall waive any procurement laws, rules and regulations.

3.19.5 Transportation Impact Study & Proportionate Cost Share Approval; Designated Pipeline Road Improvements. The Developer Owner has completed the required Transportation Impact Study ("TIS") which is referenced on EXHIBIT E, and made a part hereof, pursuant to the methodology required by Hernando County, and has provided the proportionate cost share calculations for the Development based upon the County's required proportionate share formula, which TIS and proportionate cost share amount have been approved by the County. The approved proportionate cost share amount for the Development is $1,380,790.00, which is less than the projected Roads Impact Fees for the Development, based upon current rates. Based upon the approved TIS, the County has identified the proportionate share transportation mitigation improvements necessary to vest the Development entitlements, which proportionate share transportation mitigation improvements are set forth on EXHIBIT F, attached hereto and made a part hereof ("Additional Pipeline Road Improvements"). Hernando County reserves the right to (1) budget and allocate additional County funds to expedite the completion of any of the Additional Pipeline Road Improvements set forth on EXHIBIT F; or (2) to add additional projects to be funded by the County from the Sunrise Roadway Impound Account; provided, however, that the Developer Owner's total obligation for all transportation mitigation improvements related to the Development entitlements shall not exceed the Developer Owner's aggregate amount of all Roads Impact Fees and Roads Impact Fee Surcharges to be paid in the normal course of development for the Development, less the fee credits earned by the Developer Owner for the Road Segment Pipeline Improvements (Sunrise Parkway and Cracker Crossing Blvd. Extension) under this Development Agreement. Hernando County reserves the right to alter, modify or otherwise revise the Additional Pipeline Road Improvements from time to time, in its discretion, subject to the following requirements:

a) No designated Additional Pipeline Road Improvement shall be modified or deleted by Hernando County after a contract has been awarded for construction thereof, and any previously incurred design or permitting expenses incurred with respect to such modified or deleted Additional Pipeline

Road Improvement shall be paid or reimbursed, as applicable, from the Sunrise Roadway Impound Account.

b) The designated Additional Pipeline Road Improvements are scheduled to commence as sufficient Development Roads Impact Fees and Roads Impact Fee Surcharges are paid into and accrued in the Sunrise Roadway Impound Account, on a sequential basis for each designated Additional Pipeline Road Improvement set forth on EXHIBIT F, and based upon the estimated project costs for each designated project.

c) EXHIBIT F may be revised by Hernando County administratively to account for any new or replacement Pipeline Road Improvement subsequently identified by Hernando County without formal amendment of this Amended and Restated Development Agreement; provided, however, that such adjustments must conform to the scheduled accrual of paid Roads Impact Fees and Roads Impact Fee Surcharges into the Sunrise Roadway Impound Account to cover the estimated costs for such project (unless the County elects to supplement such Sunrise Roadway Impound Account funds as set forth above). In such event the updated and revised EXHIBIT F shall be deemed incorporated by reference into this Amended and Restated Development Agreement.

d) Notwithstanding EXHIBIT F (including any subsequent amendment of EXHIBIT F by Hernando County), the Development's financial obligation for all transportation mitigation improvements required for the Development shall not exceed the aggregate amount of all Roads Impact Fees (as may be subsequently amended by countywide impact fee ordinance) and Roads Impact Fee Surcharges when and as paid by the Development through buildout of the Development, less the amount of the fee credits awarded to the Developer Owner under this Amended and Restated Development Agreement for the Road Segment Pipeline Improvements constructed by the Developer Owner pursuant to Section 3.19.3 above.

e) The Additional Pipeline Road Improvements shall be commenced not later than the date that sufficient funds have been accrued in the Sunrise Roadway Impound Account for each respective proportionate share transportation mitigation project (subject to discretionary earlier funding by the County) set forth on EXHIBIT F, and thereafter pursued

diligently to conclusion by either Hernando County or the Developer Owner (as Constructing Entity) subject to force majeure, agency permitting delays, availability of contractors, materials and supplies, or other events beyond the reasonable control of the Constructing Entity. The order of the Additional Pipeline Road Improvements shall be subject to revision by Hernando County, in its discretion, or at the request of the Developer Owner, subject to an updated traffic analysis related to the specific Pipeline Road Improvement. However, any modified list and/or timing for Additional Pipeline Road Improvement projects shall follow the pace of accrual of paid Roads Impact Fees into the Sunrise Roadway Impound Account, as the sole source to fund the design, permitting, and construction of said Additional Pipeline Road Improvements, unless the County elects to provide supplemental funding, in its sole discretion.

f) All design and construction plans for the Road Segment Pipeline Improvements (by the Developer Owner) and the Additional Pipeline Road Improvements (by the County or the Developer Owner as Constructing Entity) shall be in accordance with Hernando County standards and requirements and, if/where applicable, FDOT requirements.

3.19.6 The Developer Owner shall provide updated trip generation rates commencing five (5) years from the initial Effective Date of this Amended and Restated Development Agreement, and at subsequent intervals at each additional 600 dwelling units, when requested by the County. The Developer Owner's interim Development traffic generation reports shall include (i) traffic monitoring on Kettering Road and (ii) traffic monitoring for potential signalization at Cortez Blvd./Sherman Hills Blvd. Realignment, based upon monitoring criteria to be provided by the County to the Developer Owner's traffic consultant. The County will use the interim traffic reports to monitor the status of Kettering Road and Cortez Blvd./Sherman Hills Blvd. Realignment signalization as potential Additional Pipeline Road Improvements hereunder.

3.20 Land Use Exchange Matrix ("LUEM").

3.20.1 LUEM Conversions. The Parties agree that this Amended and Restated Development Agreement constitutes final approval for the Developer Owner to develop the Property as described in the approved C-PDP Rezoning and Master Plan. The Parties further agree that the Developer Owner may increase certain land uses, with corresponding reductions in other land uses, pursuant to the LUEM under the C-PDP Rezoning and Master Plan, and subject to the limitations set forth therein, without requiring any amendment to this Amended and Restated Development Agreement.

3.20.2 Allowed Land Use Exchanges. The LUEM attached hereto as EXHIBIT C, and made a part hereof, contains the only land use exchanges recognized under this Amended and Restated Development Agreement.

3.20.3 No Waiver of Zoning or Master Plan Review or Approval. The Parties agree that the land use exchanges identified above do not grant the Developer Owner any Zoning or Master Plan entitlement as a matter of right, but are merely to avoid the amendment of this Amended and Restated Development Agreement where there are no resulting increases in external vehicle trips per the LUEM.

3.21 Historic and Archeological Resources. In the event any archaeological artifacts are discovered during construction, the Developer Owner shall stop construction in that area and immediately notify the County and the Division of Historical Resources of the Florida Department of State. Proper protection measures, under the supervision of a qualified professional, shall be undertaken to the satisfaction of the County and the Division of Historical Resources of the Florida Department of State, and shall be provided by the Developer Owner.

3.22 Street Lighting Alternative and Requirements.

3.22.1 Lighting throughout the Development shall be designed to shield the night sky. Shielding means that fixtures, either directly from the lamp or indirectly from a fixture, are projected below a horizontal plane running through the lowest point on the fixture where light is emitted. All street lighting within the Development shall be owned and maintained by the Developer Owner, or its CDD, HOA, or other designated entity.

3.22.2 Solar street lighting shall be allowed within public or private road rights-of-way areas and shall be privately owned and/or operated by the HOA, CDD, or the Developer Owner, at the Developer Owner's discretion.

3.22.3 Street and parking lot lighting shall be oriented downward with cut-off fixtures. Fifty percent (50%) of all lighting fixtures within parking lots shall be turned off within one hour after closing or between 10:00 p.m. and sunrise, whichever occurs first.

3.22.4 Neighborhood/Retail, Office, Recreation/Clubhouse and public or private recreational facility lighting within any residential development parcel shall not exceed twenty-five (25) feet in height, shall be full cut-off fixtures, and shall only be illuminated while they are in use. The illumination must be extinguished by an automatic shutoff device between the hours of 11:00 p.m. and sunrise, or one hour after the termination of the event and/or use, whichever occurs first. This provision shall not apply to any mixed-use or non-residential use areas within the Development.

3.22.5 Searchlights used for advertising purposes are prohibited.

3.23 Solid Waste Collection. The Development shall be deemed a Universal Collection Service Area, pursuant to Section 14-46(d) of the Code of Ordinances, Hernando County, Florida (as the same may be amended or renumbered from time to time), for purposes of the pick-up and disposal of solid waste and recyclables.

3.24 Transit. The Developer Owner agrees to provide an appropriate transit stop location on Sunrise Parkway or Cracker Crossing Boulevard Extension, adjacent to a mixed-use, amenity, or other non-residential use area within the Development. The transit location shall be mutually agreed by the County and the Developer Owner and shall include a pull-out lane, protective shelter, and such other appurtenances as mutually agreed by the County and the Developer Owner.

SECTION 4 – CONCURRENCY

Based upon the vesting provided in the prior DRI DO, and subject to the terms and conditions of this Amended and Restated Development Agreement, the Development shall remain vested for concurrency as to the following matters:

4.1 Potable Water. Pursuant to the County's Adequate Public Facilities Ordinance, the County hereby deems that concurrency for potable water to serve the Development Entitlements, with an estimated demand of:

a) 1,680,000 GPD for Residential
b) 88,200 GPD for Non-Residential
(*i.e.*, Retail Commercial & Office)

has been satisfied, subject to full compliance with the W&S Agreement and the terms of this Amended and Restated Development Agreement (including the provisions regarding the Water Plant Site), and assuming that no substantial deviation occurs which would require concurrency under this Paragraph to be reevaluated, or would require additional mitigation.

4.2 Sewage Treatment (Wastewater). Pursuant to the County's Adequate Public Facilities Ordinance, the County hereby deems that concurrency for sewage treatment (wastewater) for the Development Entitlements, with an estimated demand of:

a) 816,000 GPD for Residential
b) 58,800 GPD for Non-Residential
(*i.e.*, Retail Commercial & Office)

has been satisfied, subject to full compliance with the W&S Agreement and the terms of this Amended and Restated Development Agreement, and assuming that no substantial deviation occurs which would require concurrency under this Paragraph to be reevaluated, or would require additional mitigation.

4.3 Drainage/Stormwater Management Facilities. Pursuant to the County's Adequate Public Facilities Ordinance, the County hereby deems that concurrency for stormwater management to serve the Development Entitlements, together with the proposed construction of the necessary drainage/stormwater management facilities and DRAs, has been satisfied, conditioned upon the Developer Owner obtaining all applicable state and local permits and further subject to full compliance with the terms of this Amended and Restated Development Agreement, and assuming that no substantial deviation occurs which would require concurrency under this Paragraph to be reevaluated, or would require additional mitigation. Notwithstanding the foregoing, no building permit shall be issued for development unless and until the Developer Owner provides evidence to the satisfaction of the County that adequate drainage/stormwater management facilities shall be available concurrent with the impacts of the Development at the levels of service adopted in the Hernando County Comprehensive Plan and all applicable County codes and regulations.

4.4 Solid Waste. Pursuant to the County's Adequate Public Facilities Ordinance, the County hereby deems that concurrency for solid waste for the Development Entitlements, with an estimated demand of:

a) 54,050 Pounds Per Day – Residential
b) 7,015 Pounds Per Day – Non-Residential
(*i.e.*, Retail Commercial & Office)

has been satisfied, subject to full compliance with the terms of this Amended and Restated Development Agreement, and assuming that no substantial deviation occurs which would require concurrency under this Paragraph to be reevaluated, or would require additional mitigation.

4.5 Parks and Open Space. Pursuant to the County's Adequate Public Facilities Ordinance, the County hereby deems that concurrency for parks and open space for the Development and/or their aggregate equivalent on the Property, with an estimated demand of:

a) 22.76 acres User-Oriented Parks
(2.0 acres/1,000 persons x 2.37 persons/dwelling unit x 4,800 dwelling units)
b) 22.76 acres Open Space
(2.0 acres/1,000 persons x 2.37 persons/dwelling unit x 4,800 dwelling units)

has been satisfied, subject to full compliance with the terms of this Amended and Restated Development Agreement, and assuming that no substantial deviation occurs which would require concurrency under this Paragraph to be reevaluated, or would require additional mitigation.

4.6 Transportation. Pursuant to the County's Adequate Public Facilities Ordinance, the County hereby deems that concurrency for transportation (roads) for the Development is satisfied by the Developer Owner's compliance with this Amended and Restated Development Agreement.

4.7 Substantial Modification. In the event a substantial modification (in accordance with the County's Land Development Regulations) occurs in the course of developing the Development necessitating an amendment to this Amended and Restated Development Agreement (see Section 5 below), then the County reserves the right to reevaluate its concurrency approvals under this Section, and to require additional data, analysis, studies, and mitigation, without limitation, from the Developer Owner, pursuant to applicable laws, ordinances and regulations.

SECTION 5 - FURTHER PROVISIONS

BE IT FURTHER RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF HERNANDO COUNTY, FLORIDA, AS FOLLOWS:

5.1 This Amended and Restated Development Agreement shall run with the land and shall be binding upon all affected persons, including the successors and assigns of the Owners and/or Developer Owner. The prior DRI DO simultaneously has been abandoned, rescinded, terminated, and cancelled by the BOCC, and this Amended and Restated Development Agreement shall supersede in its entirety and replace the prior DRI DO in all respects, and shall govern the future Development.

5.2 The Developer Owner shall record (1) the BOCC Resolution abandoning the DRI and its associated DRI DO; and (2) this Amended and Restated Development Agreement, in the Official Records of Hernando County, Florida, within thirty (30) days after the adoption date hereof by the BOCC, and shall provide a copy of the recorded documents to the County.

5.3 In the event any portion or section of this Amended and Restated Development Agreement is determined to be invalid, illegal or unconstitutional by a court of competent jurisdiction, such decision shall in no manner affect the remaining portions or sections of this Amended and Restated Development Agreement, which shall remain in full force and effect.

5.4 Absent the County demonstrating that substantial changes in the conditions underlying the approval of this Amended and Restated Development Agreement have occurred, or that this Amended and Restated Development Agreement was based on substantially inaccurate information provided by the Developer Owner, or that the change is clearly established by the County to be essential to the public health, safety, or welfare, the Development (as approved under this Amended and Restated Development Agreement) shall not be subject to down-zoning, unit density reduction, or intensity reduction from the Effective Date of this Amended and Restated Development Agreement until the development approvals granted hereunder terminate pursuant to this Amended and Restated Development Agreement, or applicable law.

5.5 This Amended and Restated Development Agreement shall expire as provided in Section 2 above.

5.6 The approval of this Amended and Restated Development Agreement shall not exempt any portion or unit of the Development from the payment of all required impact fees or impact fee surcharges at the prevailing rate. Impact fees and impact fee surcharges shall be due in

full without credit or offset, except as expressly provided for in this Amended and Restated Development Agreement.

5.7 The Chairman of the BOCC is authorized to execute this Amended and Restated Development Agreement on behalf of Hernando County, Florida.

5.8 Nothing herein shall be construed as prohibiting the Developer Owner from requesting that the BOCC review the interpretation, implementation or enforcement of this Amended and Restated Development Agreement.

5.9 The Parties may execute this Amended and Restated Development Agreement in duplicate originals, with separate signature pages, all of which shall constitute and comprise the same original Amended and Restated Development Agreement. The fully executed original Amended and Restated Development Agreement shall be recorded in the Official Records of Hernando County, Florida, as provided herein.

[SIGNATURES ON FOLLOWING PAGES]

ADOPTED IN REGULAR SESSION THIS 2nd **DAY OF** December **, 2025.**

ACCEPTED AND AGREED TO BY HERNANDO COUNTY, FLORIDA:

BOARD OF COUNTY COMMISSIONERS HERNANDO COUNTY, FLORIDA

Attest: Heidi Prause, Deputy Clerk
Douglas A. Chorvat, Jr.
Clerk of Circuit Court & Comptroller

By: Jerry Campbell, Chairman

(SEAL)

APPROVED AS TO FORM AND LEGAL SUFFICIENCY

By: _____
County Attorney's Office

ACCEPTED AND AGREED
TO BY THE OWNER/DEVELOPER OWNER:

The Owner/Developer Owner (by and through its Agent and/or Trustee named below) hereby accepts and agrees to all terms, conditions and restrictions contained in the Development Agreement set forth above and further agrees to be bound by the same for itself, and its heirs, successors and/or assigns as long as this Development Agreement remains effective. Notwithstanding anything herein, the terms, conditions and restrictions above shall terminate when this Development Agreement expires, unless the Development Agreement expressly provides for the term, condition or restriction to remain in effect following the expiration of the Development Agreement.

"DEVELOPER OWNER"

HAWK SUNRISE LLC, a Florida limited liability company

By: _____

Print Name: John Ryan

Title: Manager

Date: 11/21/25

STATE OF Florida
COUNTY OF Hillsborough

The foregoing instrument was acknowledged before me by means of ☑ physical presence or ☐ online notarization, this 21st day of November, 2025, by John Ryan, as Manager of Hawk Sunrise LLC, a Florida limited liability company, on behalf of the company.

☑ Personally Known OR ☐ Produced Identification

Type of Identification Produced:

_____

NOTARY PUBLIC:

Signature: _____

Print Name: Lori Price

Serial/Commission Number: HH670842

My Commission Expires: 4/29/2029

Notary Public State of Florida
Lori Kay Price
My Commission HH 670842
Expires 4/29/2029

"OWNER"

MAK FAMILY PARTNERSHIP, LTD., a Florida limited partnership

By: _____

Print Name: James H. Kimbrough, Jr.

Title: Partner

Date: 11/17/2025

STATE OF FLORIDA
COUNTY OF HERNANDO

The foregoing instrument was acknowledged before me by means of ☒ physical presence or ☐ online notarization, this 17 day of NOVEMBER, 2025, by James H. Kimbrough, Jr., as Partner of MAK Family Partnership, LTD., a Florida limited partnership, on behalf of the partnership.

NOTARY PUBLIC:

☐ Personally Known OR ☒ Produced Identification

Type of Identification Produced:
A VALID FLORIDA D/L.

Signature: _____

Print Name: RICHARD P. CARUANA

Serial/Commission Number: HH 624786

My Commission Expires: 02-17-2029

RICHARD P. CARUANA
Commission # HH 624786
Expires February 17, 2029

TBF PARTNERS, LTD., a Texas limited partnership

By: TBF MANAGEMENT, LLC, its General Partner

By: _____

Print Name: J. Thomas Bronson

Title: Managing Partner

Date: 11-13-25

STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online notarization, this ____ day of _____, 2025, by _____, as _____ of TBF Management, LLC, a Florida limited liability company, General Partner of TBF Partners, LTD., a Texas limited partnership, on behalf of the partnership.

NOTARY PUBLIC:

☒ Personally Known OR ☐ Produced Identification

Type of Identification Produced:

_____

Signature: _____

Print Name: Andrew Black

Serial/Commission Number: HH 610356

My Commission Expires: 11-6-2028

Notary Public State of Florida
Andrew Black
My Commission HH 610356
Expires 11/6/2028

TBF PARTNERS II, LLC, a Florida limited liability company

By: _____

Print Name: J. Thomas Bronson

Title: Manager

Date: 11-13-25

STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online notarization, this ____ day of _____, 2025, by J. Thomas Bronson, as Manager of TBF Partners II, LLC, a Florida limited liability company, on behalf of the company.

NOTARY PUBLIC:

☒ Personally Known OR ☐ Produced Identification

Signature: _____

Type of Identification Produced:

_____

Print Name: Andrew Black

Serial/Commission Number: HH 610356

My Commission Expires: 11-6-2028

Notary Public State of Florida
Andrew Black
My Commission HH 610356
Expires 11/6/2028

Robert A. Buckner, as Trustee under that certain Trust Agreement dated March 9, 1989

By: _____

Print Name: Robert A. Buckner

Title: Trustee

Date: 11/12/2025

STATE OF Florida
COUNTY OF Hernando

The foregoing instrument was acknowledged before me by means of ☑ physical presence or ☐ online notarization, this 12th day of November, 2025, by Robert A. Buckner, as Trustee under that certain Trust Agreement dated March 9, 1989.

NOTARY PUBLIC:

☑ Personally Known OR ☐ Produced Identification

Type of Identification Produced:

_____

Signature: _____

Print Name: Jennifer Marie Schmidt

Serial/Commission Number: _____

My Commission Expires: 6-26-26

JENNIFER MARIE SCHMIDT
MY COMMISSION # HH 280676
EXPIRES: June 26, 2026

Robert A. Buckner, individually

Date: 11/12/2025

STATE OF Florida
COUNTY OF Hernando

The foregoing instrument was acknowledged before me by means of ☑ physical presence or ☐ online notarization, this 12th day of November, 2025, by Robert A. Buckner.

NOTARY PUBLIC:

☑ Personally Known OR ☐ Produced Identification

Type of Identification Produced:

Signature: Jennifer Marie Schmidt

Print Name: Jennifer Marie Schmidt

Serial/Commission Number: _____

My Commission Expires: 6-26-26

NOTARY PUBLIC STATE OF FLORIDA
JENNIFER MARIE SCHMIDT
MY COMMISSION # HH 280676
EXPIRES: June 26, 2026

Sharon P. McKethan

Sharon P. McKethan, individually

Date: 11/17/25

STATE OF Hernando
COUNTY OF Florida

The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online notarization, this 17 day of November, 2025, by Sharon P. McKethan.

NOTARY PUBLIC:

☑ Personally Known OR ☐ Produced Identification

Signature: W Whitehead III

Type of Identification Produced:

Print Name: William Whitehead III

Serial/Commission Number: _____

My Commission Expires: _____

Notary Public State of Florida
William Whitehead III
My Commission HH 735417
Expires 11/18/2029

Haley Dowlen, as Personal Representative of the Estate of John Hale McKethan

By: _____

Print Name: Haley Dowlen

Title: Personal Representative

Date: 11/17/25

STATE OF Florida
COUNTY OF Hernando

The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online notarization, this 17 day of November, 2025, by Haley Dowlen, as Personal Representative of the Estate of John Hale McKethan.

☑ Personally Known OR ☐ Produced Identification

Type of Identification Produced:

_____

NOTARY PUBLIC:

Signature: _____

Print Name: William Whitehead III

Serial/Commission Number: _____

My Commission Expires: _____

Notary Public State of Florida
William Whitehead III
My Commission HH 735417
Expires 11/18/2029

Robert A. Buckner, as Co-Trustee of the Robert C. Buckner Trust

By: _____

Print Name: Robert A. Buckner

Title: Co-Trustee

Date: 11/12/2025

STATE OF Florida
COUNTY OF Hernando

The foregoing instrument was acknowledged before me by means of ☑ physical presence or ☐ online notarization, this 12th day of November, 2025, by Robert A. Buckner, as Co-Trustee of the Robert C. Buckner Trust.

NOTARY PUBLIC:

☑ Personally Known OR ☐ Produced Identification

Type of Identification Produced:

_____

Signature: _____

Print Name: Jennifer Marie Schmidt

Serial/Commission Number: _____

My Commission Expires: 6.26.26

JENNIFER MARIE SCHMIDT
MY COMMISSION # HH 280676
EXPIRES: June 26, 2026

William M. Buckner, as Co-Trustee of the Robert C. Buckner Trust

By: _____

Print Name: William M. Buckner

Title: Co-Trustee

Date: 24 NOV 25

STATE OF TEXAS
COUNTY OF HARRIS

The foregoing instrument was acknowledged before me by means of ☒ physical presence or ☐ online notarization, this 24 day of NOVEMBER, 2025, by William M. Buckner, as Co-Trustee of the Robert C. Buckner Trust.

NOTARY PUBLIC:

☐ Personally Known OR ☒ Produced Identification

Type of Identification Produced:
TEXAS DRIVER LICENSE

Signature: _____

Print Name: EIMAN SIDDIK

Serial/Commission Number: 134608566

My Commission Expires: OCTOBER 18, 2027

EIMAN SIDDIK
Notary ID #134608566
My Commission Expires
October 18, 2027

James C. Buckner, as Co-Trustee of the Robert C. Buckner Trust

By: _____

Print Name: James C. Buckner

Title: Co-Trustee

Date: 10/31/25

STATE OF Tenn
COUNTY OF Knox

The foregoing instrument was acknowledged before me by means of ☑ physical presence or ☐ online notarization, this 31 day of October, 2025, by James C. Buckner, as Co-Trustee of the Robert C. Buckner Trust.

NOTARY PUBLIC:

☑ Personally Known OR ☐ Produced Identification

Type of Identification Produced:

_____

Signature: _____

Print Name: Nathan Floyd Yearout

Serial/Commission Number: _____

My Commission Expires: 5-3-28

NATHAN JAMES FLOYD-YEAROUT
STATE OF TENNESSEE NOTARY PUBLIC
Exp. 5-3-2028
KNOX COUNTY

James C. Buckner, individually

Date: 10/31/25

STATE OF Tenn
COUNTY OF Knox

The foregoing instrument was acknowledged before me by means of ☑ physical presence or ☐ online notarization, this 31 day of October, 2025, by James C. Buckner.

NOTARY PUBLIC:

☑ Personally Known OR ☐ Produced Identification

Type of Identification Produced:

Signature:

Print Name: Nathan James Floyd Yearout

Serial/Commission Number:

My Commission Expires: 5-3-28

NATHAN JAMES FLOYD YEAROUT
STATE OF TENNESSEE NOTARY PUBLIC
Comm. Exp. 5-3-2028
KNOX COUNTY

Robert A. Buckner, as Co-Trustee of the Celia M. Buckner Trust u/t/a dtd 1/16/03, as amended

By: _____

Print Name: Robert A. Buckner

Title: Co-Trustee

Date: 11/12/2025

STATE OF Florida
COUNTY OF Hernando

The foregoing instrument was acknowledged before me by means of ☑ physical presence or ☐ online notarization, this 12th day of November, 2025, by Robert A. Buckner, as Co-Trustee of the Celia M. Buckner Trust u/t/a dtd 1/16/03, as amended.

NOTARY PUBLIC:

☑ Personally Known OR ☐ Produced Identification

Type of Identification Produced:

_____

Signature: _____

Print Name: Jennifer Marie Schmidt

Serial/Commission Number: _____

My Commission Expires: 6-26-26

James C. Buckner, as Co-Trustee of the Celia M. Buckner Trust u/t/a dtd 1/16/03, as amended

By: _____

Print Name: James C. Buckner

Title: Co-Trustee

Date: 10/31/25

STATE OF Tenn
COUNTY OF Knox

The foregoing instrument was acknowledged before me by means of ☑ physical presence or ☐ online notarization, this 31 day of October, 2025, by James C. Buckner, as Co-Trustee of the Celia M. Buckner Trust u/t/a dtd 1/16/03, as amended.

NOTARY PUBLIC:

☑ Personally Known OR ☐ Produced Identification

Type of Identification Produced:

_____

Signature: _____

Print Name: _____

Serial/Commission Number: _____

My Commission Expires: 5-3-28

NATHAN JAMES FLOYD-YEAROUT
STATE OF TENNESSEE NOTARY PUBLIC
Comm. Exp. 5-3-2028
KNOX COUNTY

William M. Buckner, as Co-Trustee of the Celia M. Buckner Trust u/t/a dtd 1/16/03, as amended

By: _____

Print Name: William M. Buckner

Title: Co-Trustee

Date: 24 NOV 25

STATE OF TEXAS
COUNTY OF HARRIS

The foregoing instrument was acknowledged before me by means of ☒ physical presence or ☐ online notarization, this 24 day of NOVEMBER, 2025, by William M. Buckner, as Co-Trustee of the Celia M. Buckner Trust u/t/a dtd 1/16/03, as amended.

NOTARY PUBLIC:

☐ Personally Known OR ☒ Produced Identification

Signature: _____

Type of Identification Produced:
TEXAS DRIVER LICENSE

Print Name: EIMAN SIDDIK

Serial/Commission Number: 134608566

My Commission Expires: OCTOBER 18, 2027

EIMAN SIDDIK
Notary ID #134608566
My Commission Expires
October 18, 2027

J. Thomas Bronson, as Personal Representative of the Estate of T.E. Bronson

By: _____

Print Name: J. Thomas Bronson

Title: Personal Representative

Date: 11-13-25

STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online notarization, this ___ day of _____, 2025, by J. Thomas Bronson, as Personal Representative of the Estate of T.E. Bronson.

NOTARY PUBLIC

☒ Personally Known OR ☐ Produced Identification

Signature: _____

Type of Identification Produced:

_____

Print Name: Andrew Black

Serial/Commission Number: HH 610356

My Commission Expires: 11-6 2028

Notary Public State of Florida
Andrew Black
My Commission HH 610356
Expires 11/6/2028

SCHEDULE OF EXHIBITS

EXHIBIT A	Legal Description of the Property/Development
EXHIBIT B	Approved Master Plan per Approved C-PDP Rezoning (BOCC Approved on June 13, 2023)
EXHIBIT C	Land Use Exchange Matrix ("LUEM")
EXHIBIT D	Graphic Depiction for Reserved School Site Location & Points of Connection for Water Service
EXHIBIT E	Approved Transportation Impact Study ("TIS")
EXHIBIT F	Additional Roadway Pipeline Projects/Proportionate Share Improvements

EXHIBIT A

Legal Description

A parcel of land lying within Sections 5, 6, 7 and 8, Township 23 South, Range 21 East, Hernando County, Florida, being more particularly described as follows:

For a POINT OF BEGINNING commence at the Southwest corner of the Southeast 1/4 of said Section 8; thence N89°05'38"W, along the South boundary of the Southwest 1/4 of said Section 8, 2670.54 feet to the Southwest corner of said section 8; thence N89°16'50"W, along the South boundary of the Southeast 1/4 of said Section 7, 2655.16 feet to the Southwest corner of the Southeast 1/4 of said Section 7; thence N89°16'33"W, along the South boundary of the Southwest 1/4 of said Section 7, a distance of 949.57 feet to the Easterly right-of-way of Interstate No. 75; thence along said Easterly right-of-way of Interstate No. 75 the following twenty six (26) courses and distances: (1) N00°04124"E, 100.01 feet; thence (2) S89°16'33"E, 500.84 feet; thence (3) N00°21'45"E, 833.29 feet; thence (4) N36°3015"W, 278.06 feet; thence (5) N04°371 9"w, 266.47 feet; thence (6) N79°47'40"W, 310.01 feet to a non-tangent point of curvature; thence (7) Northerly 1892.11 feet along the arc of a curve to the right, said curve having a radius of 5579.58 feet, a central angle of 19'25'47", and a chord bearing and distance of N17°55'51"E, 1883.06 feet; thence (8) N27°38'44"E, 666.59 feet; thence (9) S62'17'56"E, 39.91 feet; thence (10) N27°42'04"E, 158.00 feet; thence (11) N27°43'58"E, 805.72 feet; thence (12) N74°21'19"E, 490.92 feet; thence (13) N35°47'35"E, 764.07 feet; thence (14) N16°21'19"E, 204.80 feet; thence (15) N57°44'06"W, 343.20 feet; thence (16) N32°15'54"E, 814.49 feet to a point of curvature; thence (17) Northeasterly 794.94 feet along the arc of a curve to the left, said curve having a radius of 9277.00 feet, a central angle of 4°54'35", and a chord bearing and distance of N29°48'37"E, 794.70 feet; thence (18) S65°34'45"E, 219.30 feet; thence (19) N39°04'36"E, 329.47 feet; thence (20) N24°25'15"E, 768.24 feet; thence (21) N19°45'08"E, 546.02 feet; thence (22) N00°24128"E, 358.35 feet; thence (23) N77°16"08"W, 217.28 feet to a non-tangent point of curvature; thence (24) Northeasterly 156.72 feet along the arc of a curve to the left, said curve having a radius of 9277.00 feet, a central angle of 00°58'05", and a chord bearing and distance of N15°00'36"E, 156.72 feet to a point of compound curvature; thence (25) Northeasterly 460.30 feet along the arc of a curve to the left, said curve having a radius of 4693.00 feet, a central angle of 5°3711", and a chord bearing and distance of N11°42'58"E, 460.12 feet to a point of compound curvature; thence (26) Northeasterly 241.78 feet along the arc of a curve to the left, said curve having a radius of 2401.00 feet, a central angle of 5°46'11", and a chord bearing and distance of N06°1 1'37"E, 241.68 feet to the South boundary line of the map or plat of SUNRISE COMMERCIAL PLAZA, per Plat Book 31, Page 11, of the Public Records of Hernando County, Florida; thence along the South boundary of said map or plat of SUNRISE COMMERCIAL PLAZA the following eleven (11) courses and distances: (1) S74°23'51"E, 171.91 feet; thence (2) N15°36121"E, 127.32 feet; thence (3) S89°43'43"E, 490.94 feet to a point of curvature; thence (4) Southeasterly 39.27 feet along the arc of a curve to the right, said curve having a radius of 25.00 feet, a central angle of 89°59'34", and a chord bearing and distance of S44°43'41"E, 35.36 feet; thence (5) S89°43'41"E, 140.45 feet; thence (6) N00°16143"E, 25.00 feet; thence (7) S89°43'46"E, 108.45 feet to a point of curvature; thence (8) Easterly 147.45 feet along the arc of a curve to the left, said curve having a radius of 499.77 feet, a central angle of 16°54'14", and a chord bearing and distance of N81°49'27"E., 146.91 feet; thence (9) N73°22'34"E, 138.62 feet to a point of curvature; thence (10) Easterly 123.85 feet along the arc of a curve to the right, said curve having a radius of 420.11 feet, a central angle of 16°53'30", and a chord bearing and distance of N81°49'27"E, 123.41 feet; thence (11) S89°43'41 "E, 170.00 feet; thence leaving the South line of said plat, run S00°17'12"W, 23.50 feet to the Southwest corner of "Parcel 3.25" as described in Official Records Book 3742, Page 848, of the Public Records of Hernando County; Florida; thence S89°43'41"E, along the South boundary of said "Parcel 3.25", 1739.73 feet; thence N00°16119"E, 103.50 feet to a point of curvature: thence Northerly 365.53 feet along the arc of a

curve to the left, said curve having a radius of 2655.77 feet, a central angle of 7°53'10", and a chord bearing and distance of N04°17152"E, 365.24 feet to a point of reverse curvature; thence Northerly 270.75 feet along the arc of a curve to the right, said curve having a radius of 1883.73 feet. a central angle of 8°14'07", and a chord bearing and distance of N04°07'24"w, 270.52 feet; thence NOO°00120"W, 35.95 feet to the South right-of-way of State Road No. 50; thence along said South right-of-way of State Road No. 50 the following four (4) courses and distances: (1) S89°45'44"E, 634.36 feet; thence (2) S89°49'37"E, 508.97 feet to a point of curvature; thence (3) Easterly 743.51 feet along the arc of a curve to the right, said curve having a radius of 5597.65 feet, a central angle of 07°36'37", and a chord bearing and distance of S86°01'19"E, 742.97 feet; thence (4) S44".55'59"E, a distance of 33.03 feet to the Westerly right-of-way of Kettering Road; thence along said Westerly right-of-way of Kettering Road SOO°26'27"W, 1425.34 feet to the Northeast corner of lands described in Official Records Book 868, Page 602, of the Public Records of Hernando County, Florida; thence along the North, West and South boundaries, respectively, of said lands described in Official Records Book 868, Page 602 the following three (3) courses and distances: (1) N8994'01"W, 285.22 feet; thence (2) S00°25'.59"W, 655.00 feet; thence (3) S89°34'01"E, 285.13 feet to the aforementioned Westerly right-of-way of Kettering Road; thence along said Westerly right-of-way of Kettering Road, SOO°26'27"W, 3231.94 feet to a point on the North boundary of the Northeast 1/4 of said Section 8; thence S89°56'22"W, along said the North boundary of the Northeast 1/4 of said Section 8, a distance of 2588.19 feet to the West boundary of the Northeast 1/4 of said Section 8; thence SOO°00119"W, along said the West boundary of the Northeast 1/4 of Section 8, 2710.84 feet to the Southwest corner of the Northeast 1/4 of said Section 8; thence S00°00118"W, along the West boundary of the Southeast 1/4 of said Section 8, 2702.26 feet to the POINT OF BEGINNING.

Containing 1,312.63 acres more or less.

EXHIBIT B

Approved Master Plan per Approved C-PDP Rezoning
(BOCC Approved on June 13, 2023)

EXHIBIT C

Land Use Exchange Matrix ("LUEM")

EXHIBIT C

SUNRISE
LAND USE EQUIVALENCY MATRIX
4/19/2023

Converion From	Converion To								
	Single Family (DU)	Townhomes (DU)	Multi-Family (DU)	Senior Adult Detached (DU)	Senior Adult Attached (DU)	Motel (RMS)	Retail (KSF)	Office (KSF)	Mini-Warehouse (KSF)
Single Family (DU)	-	1.6491	2.4103	3.1333	3.7600	-	-	-	-
Multi-Family (DU)	0.4149	0.6842	-	1.3000	1.5600	-	-	-	-
Motel (RMS)	-	-	-	-	-	-	0.0953	0.2079	2.5780
Retail (KSF)	-	-	-	-	-	10.4952	-	2.1820	27.0567
Office (KSF)	-	-	-	-	-	4.8099	0.4583	-	12.4000
Mini-Warehouse (KSF)	-	-	-	-	-	0.3879	0.0370	0.0806	-

(1) Source - ITE Trip Generation Manual, 11th Edition.
(2) Trip Rates

Single Family	0.9400 TE/DU
Multi-Family	0.3900 TE/DU
Motel	0.3867 TE/RM
Retail	4.0585 TE/KSF
Office	1.8600 TE/KSF
Mini-Warehouse	0.1500 TE/KSF
Townhomes	0.5700 TE/DU
Senior Adult Detached	0.3000 TE/DU
Senoir Adult Attached	0.2500 TE/DU

(3) Example: Convert Single-Family to Townhomes
100 DUs = 100 x 1.6491 = 164.91 Townhomes
(4) For land uses not specifically identified a trip equivalency analysis will be required.

EXHIBIT D

Graphic Depiction for Reserved School Site Location & Points of Connection for Water Service

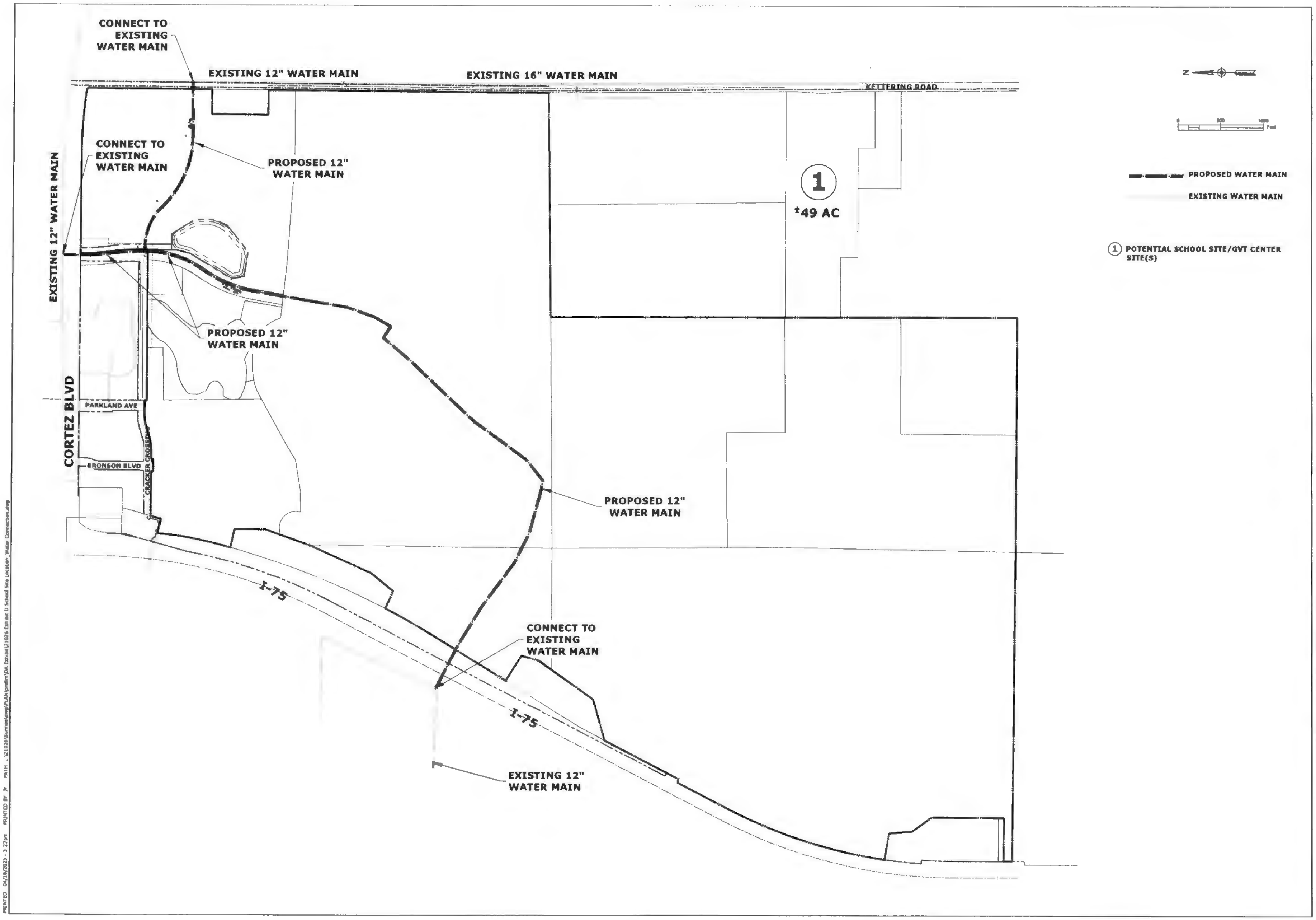

EXHIBIT D

GRAPHIC DEPICTION FOR THREE (3) POC'S FOR POTABLE WATER SERVICE AND RESERVED POTENTIAL SCHOOL/GOVERNMENT CENTER SITES

Coastal Engineering Associates, Inc
986 Candlelight Boulevard - Brooksville - Florida 34601
(352) 799-9423 - Fax (352) 799-8359
EB-0000142

REUSE OF DOCUMENT

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EXHIBIT E

Approved Transportation Impact Study ("TIS")

TRANSPORTATION ANALYSIS

SUNRISE

Prepared For

D.R. HORTON, INC.

Prepared By

LINCKS & ASSOCIATES, INC.
Engineers - Planners
Tampa, Florida

TRANSPORTATION ANALYSIS

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Prepared By

LINCKS & ASSOCIATES, INC.
5023 West Laurel Street
Tampa, Florida 33607
813-289-0039
State of Florida Authorization No. EB0004638

Revised March, 2023
Revised January, 2023
December, 2022

Project No. 21132

ali atefi:A01410D000000177CF8D3C2600012EAA
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Ali Atefi, P.E.
Florida Registration Number 43854
5023 West Laurel Street
Tampa, Florida 33607

This item has been electronically signed and sealed by Ali Altefi, P.E. on the time and date stamp using the digital signature. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

INTRODUCTION

The purpose of this report is to provide a Transportation Analysis in conjunction with the development of the property located south of Cortez Boulevard (SR 50) and east of I-75 in Hernando County, as shown in Figure 1. The subject property is proposed to be developed for the following land uses:

- Single Family Homes – 4, 200 Dwelling Units
- Townhomes – 600 Dwelling Units
- Motel – 75 Rooms
- Retail – 325,000 Square Feet
- Office – 50,000 Square Feet
- Self Storage – 40,000 Square Feet

This analysis was conducted in conformance with the approved Traffic Methodology Statement dated June 9, 2022. A copy of the Methodology Statement is included in the Appendix of this report.

Tables 1 and 2 provide the AM peak hour and PM peak hour trip generation for the proposed project. The analysis was based on ITE land use code 150 instead of 151. Since the net difference in the new external trip ends is 14 less trip ends than utilized in the analysis for the AM peak hour and 13 less for the PM peak hour the analysis was not updated. The trip generation utilized in the analysis is contained in Tables A-1 and A-2 in the Appendix of this report.

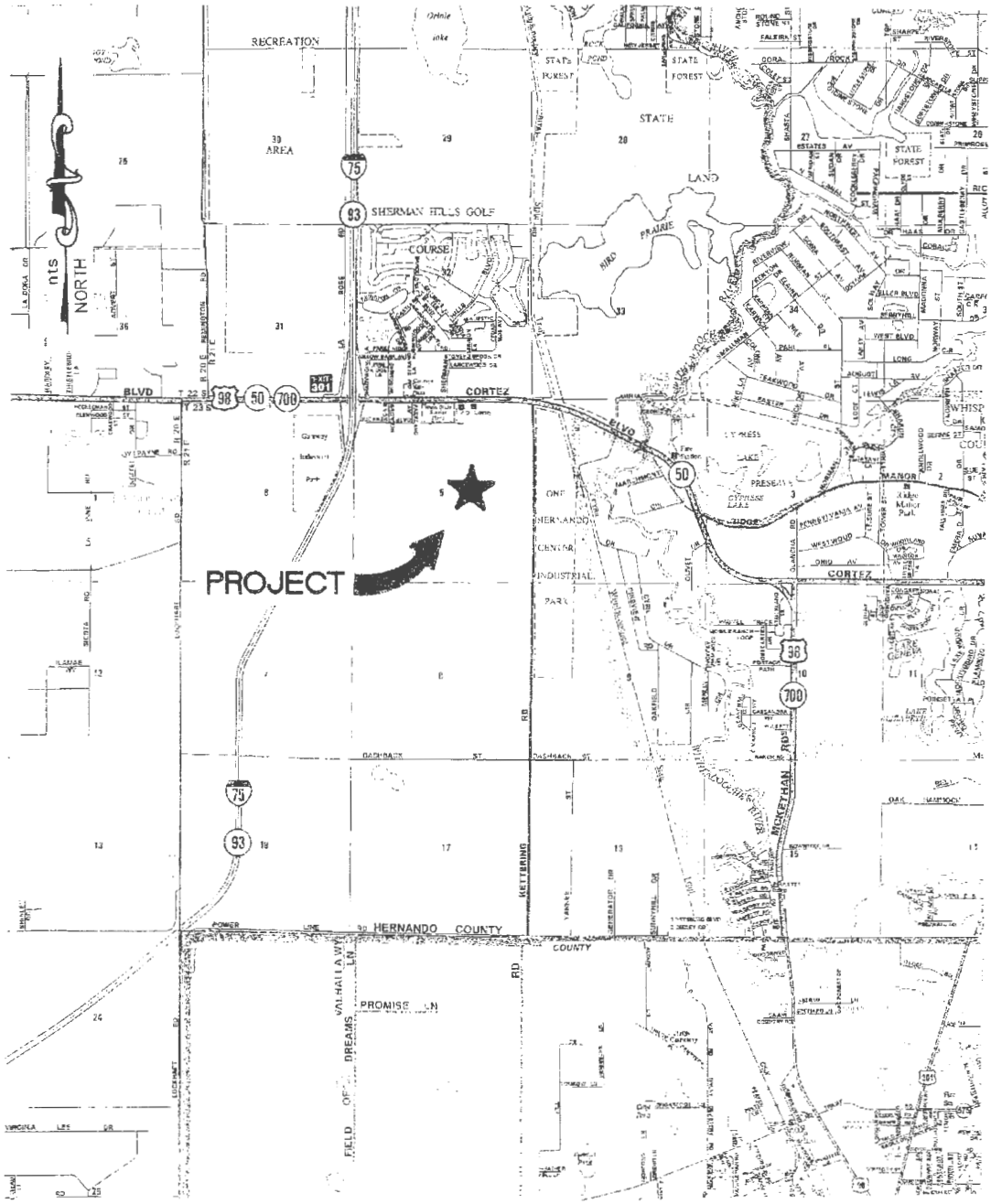

FIGURE 1
PROJECT LOCATION

TABLE 1

AM PEAK HOUR TRIP GENERATION

Land Use	ITE LUC	Size	AM Peak Hour Trip Ends (1)			Internal Trip Ends (2)			Passerby Trip Ends (3)			New External AM Peak Hour Trip Ends		
			In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Single Family	210	4,200 DU's	764	2,176	2,940	15	23	38	0	0	0	749	2,153	2,902
Multi-Family	221	600 DU's	51	171	222	1	2	3	0	0	0	50	169	219
Motel	320	75 Rooms	10	16	26	0	4	4	0	0	0	10	12	22
Retail	820	325,000 SF	202	123	325	28	19	47	33	20	53	141	84	225
Office	710	50,000 SF	81	11	92	7	3	10	0	0	0	74	8	82
Mini-Warehouse	151	40,000 SF	2	2	4	0	0	0	0	0	0	2	2	4
		Total	1,110	2,499	3,609	51	51	102	33	20	53	1,026	2,428	3,454

(1) Source - ITE Trip Generation Manual, 11th Edition.
(2) Source - ITE Trip Generation Handbook, 3rd Edition. (NCHRP 684)
(3) Source - ITE Trip Generation Manual, 11th Edition.
- Passerby Trips
  Retail - 19%
  In - (202-28) x 0.19 = 33
  Out - (123-19) x 0.19 = 20

TABLE 2

PM PEAK HOUR TRIP GENERATION

Land Use	ITE LUC	Size	PM Peak Hour Trip Ends (1)			Internal Trip Ends (2)			Passerby Trip Ends (3)			New External PM Peak Hour Trip Ends		
			In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Single Family	210	4,200 DU's	2,487	1,461	3,948	170	59	229	0	0	0	2,317	1,402	3,719
Multi-Family	221	600 DU's	143	91	234	10	4	14	0	0	0	133	87	220
Motel	320	75 Rooms	16	13	29	5	2	7	0	0	0	11	11	22
Retail	820	325,000 SF	633	686	1,319	80	186	266	105	95	200	448	405	853
Office	710	50,000 SF	16	77	93	3	17	20	0	0	0	13	60	73
Mini-Warehouse	151	40,000 SF	3	3	6	0	0	0	0	0	0	3	3	6
		Total	3,298	2,331	5,629	268	268	536	105	95	200	2,925	1,968	4,893

(1) Source - ITE Trip Generation Manual, 11th Edition.
(2) Source - ITE Trip Generation Handbook, 3rd Edition. (NCHRP 684)
(3) Source - ITE Trip Generation Manual, 11th Edition.

- Passerby Trips
  - Retail - 19%
    - In - (633-80) x 0.19 = 105
    - Out - (686-186) x 0.19 = 95
- Passerby traffic should not exceed 10% of the adjacent street background traffic
  - 2,625 x 0.10 = 262 > 200
  - (a) PM peak hour background traffic at the intersection of Cortez Blvd and Parkland Ave

ESTIMATED AM PEAK HOUR PROJECT TRAFFIC

Based on data contained in the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 11th Edition, 2021, the land uses are estimated to generate/attract 3,633 trip ends during the AM peak hour with 1,130 inbound and 2,503 outbound, as shown in Table A-1.

Given the development is to consist of residential, office and retail land uses, there is a potential for trips to originate at one land use within the project and have a destination at another use within the project – internal capture. The internal capture was based on the data contained in the ITE Trip Generation Handbook, 3rd Edition (NCHRP 684).

In addition, studies contained in the ITE Trip Generation Manual, 11th Edition, indicate that a percentage of the retail trips already exist on the adjacent roadways – passerby capture. Therefore, the proposed land uses are estimated to generate/attract approximately 3,468 new external AM peak hour trip ends, with 1,041 inbound and 2,427 outbound, as shown in Table A-1.

ESTIMATED PM PEAK HOUR PROJECT TRAFFIC

Based on data contained in the ITE Trip Generation Manual, 11th Edition, 2021, the land uses are estimated to generate/attract 5,654 trip ends during the PM peak hour with 3,304 inbound and 2,350 outbound, as shown in Table A-2.

Given the development is to consist of residential, office and retail land uses, there is a potential for trips to originate at one land use within the project and have a destination at

another use within the project – internal capture. The internal capture was based on the data contained in the ITE Trip Generation Handbook, 3rd Edition (NCHRP 684).

In addition, studies contained in the ITE Trip Generation Handbook, 11th Edition, indicate that a percentage of the retail trips already exist on the adjacent roadways – passerby capture. Therefore, the proposed land uses are estimated to generate/attract approximately 4,906 new external PM peak hour trip ends, with 2,925 inbound and 1,981 outbound, as shown in Table A-2.

PROJECT TRIP DISTRIBUTION

The distribution of the project traffic was estimated based on existing traffic and development in the vicinity of the project and the 2045 Tampa Bay Regional Transportation Model (TBRPM) provided in the Appendix of this report.

Figures 2 and 2A illustrates the assignment of the PM peak hour project trip ends on the adjacent transportation network.

ADJACENT ROADWAYS

As stated previously, the project is located south of Cortez Boulevard (SR 50) Road and east of I-75, in Hernando County, Florida. Cortez Boulevard (SR 50) is currently under construction as a six (6)/four (4) lane divided roadway in the vicinity of the project.

In addition, as part of SR 50 widening, Sherman Hills Boulevard will be realigned with a full median opening at SR 50 and aligned with the project access to be located south of

FIGURE 2
PM PEAK HOUR
PROJECT TRAFFIC

LINCKS & ASSOCIATES, INC.

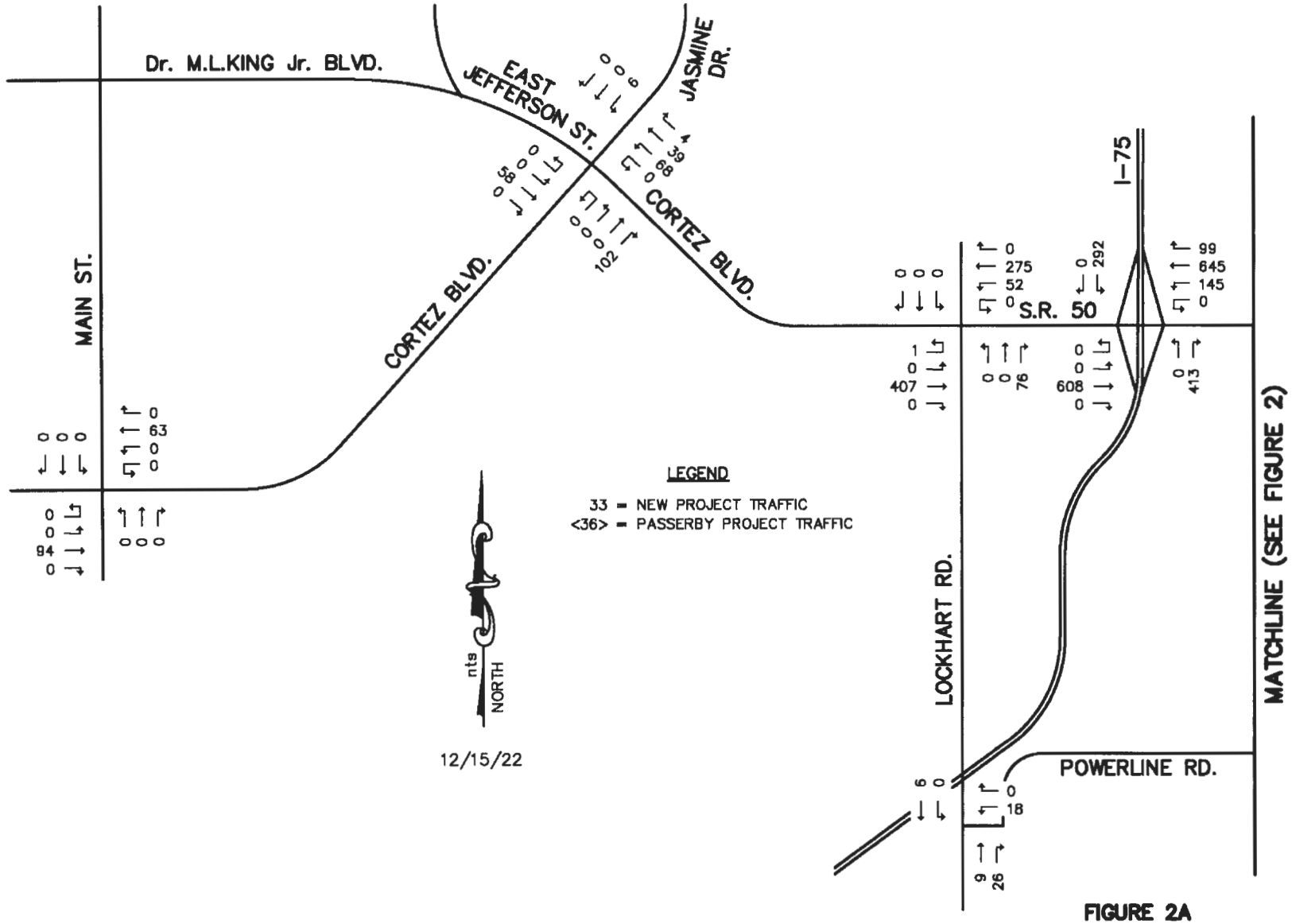

FIGURE 2A
PM PEAK HOUR
PROJECT TRAFFIC

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SR 50. The existing Sherman Hills Boulevard full access to SR 50 will be modified to right-in/right-out.

According to the Hernando County CIP or FDOT work Program, there are no other capacity adding improvements budgeted within the study network.

STUDY AREA

The study network includes those roadways in which the PM peak hour project traffic consumes 5% of the peak hour adopted Level of Service capacity for the roadways within the vicinity of the project.

Based on the results shown in Table 3, the study network will include the following roadways:

- SR 50/US 98 (Cortez Blvd)
  Jasmine Drive to Treiman Boulevard (US 301)
- SR 50/US 98 (Cortez Blvd)
  Main Street to Jefferson Street
- Kettering Road
  Cortez Boulevard to Powerline Road
- Lockhart Road
  I-75 to Cortez Boulevard
- McKethan Road
  Cortez Boulevard to Pasco County Line

TABLE 3
STUDY NETWORK

Roadway Link	Geomtery	LOS Standard / Area Type	LOS Capacity(1)	% Project Traffic	PM Peak Hour Project Traffic	% LOS Consumed	Study Network
SR 50 / US 98 (Cortez Blvd)							
Jasmine Dr to Spring Lake Hwy	4LD	C/U	3,420	5.8%	284	8.3%	YES
Spring Lake Hwy to Lockhart Rd	4LD	C/U	3,420	13.9%	682	19.9%	YES
Lockhart Rd to I-75 (SR93) Frontage (W)	6LD	C/U	5,250	17.2%	844	16.1%	YES
I-75 (SR93) Frontage (W) to I-75 SB Ramps	6LD	C/U	5,250	20.8%	1,020	19.4%	YES
I-75 NB Ramps to Windmere Rd	6LD	C/U	5,250	44.9%	2,203	42.0%	YES
Windmere Rd to Parkland Ave	6LD	C/U	5,250	55.8%	2,738	52.2%	YES
Parkland Ave to Kettering Rd	6LD	C/U	5,250	14.3%	702	13.4%	YES
Kettering Rd to Ridge Manor Blvd	6LD	C/U	5,250	20.9%	1,025	19.5%	YES
Ridge Manor Blvd to Mckethan Rd (US98/SR700)	4LD	C/U	3,420	20.3%	996	29.1%	YES
Mckethan Rd (US98/SR700) to Treiman Blvd (US301/SR35)	4LD	C/U	3,420	12.3%	603	17.6%	YES
Treiman Blvd (US301/SR35) to Burwell Rd	4LD	C/U	3,420	2.3%	113	3.3%	NO
SR 50 / US 98 (Cortez Blvd)							
West Jefferson St to Broad St (US41/SR45)	4LD	C/U	3,420	0.8%	39	1.1%	NO
Broad St (US41/SR45) to Main St	4LD	C/U	3,420	3.2%	157	4.6%	NO
Main St to East Jefferson St (SR50)	4LD	C/U	3,420	3.5%	172	5.0%	YES
KETTERING RD							
Cortez Blvd (SR50) to Cracker Crossing	2LU	D/U	1,197	11.2%	549	45.9%	YES
Cracker Crossing to Powerline Rd	2LU	D/U	1,197	12.4%	608	50.8%	YES
Lockhart Rd							
I-75 (SR93) to Cortez Blvd (SR50)	2LU	D/U	2,180	2.6%	128	5.9%	YES
McKethan Rd (US98/SR700)							
Pasco County Line to Cortez Blvd (SR50)	2LU	C/U	1,620	6.9%	338	20.9%	YES
Treiman Blvd (US301/SR35)							
Pasco County Line to Cortez Blvd(SR 50)	2 LU	C/U	1,620	0.8%	39	2.4%	NO
Cortez Blvd(SR 50) to Ridge Manor Blvd	2 LU	C/U	1,620	1.3%	64	4.0%	NO
Ridge Manor Blvd to Sumter County Line	2 LU	C/U	1,620	1.3%	64	4.0%	NO
Jefferson St (SR 50A)							
Cortez Blvd to MLK	2 LU	C/U	1,510	2.0%	98	6.5%	YES
MLK to N. Broad St	2 LU	C/U	1,510	1.5%	74	4.9%	NO
N. Broad St to Main St	2 O	C/U	786	0.6%	29	3.7%	NO
Powerline Rd							
Kettering Rd to Lockhart Rd	2LU	C/U	1,620	2.5%	123	7.6%	YES
MLK							
Jefferson St to Main St	2LU	C/U	594	0.4%	20	3.4%	NO
Main St							
Cortez Blvd to MLK	2LU	D/U	1,197	0.0%	0	0.0%	NO
MLK to Broad St	2LU	D/U	1,197	0.3%	15	1.2%	NO

(1) Based on FDOT 202 Generalized Capacity Tables.

- Jefferson Street (SR 50A)

  Cortez Boulevard to Martin Luther King Jr.

- Powerline Road

  Kettering Road to Lockhart Road

BUILDOUT

Buildout of the project is anticipated to be 2035.

BACKGROUND TRAFFIC

The 2035 background traffic utilized in this analysis were calculated as follows:

1) PM (4:00 to 6:00) peak hour turning movement counts were conducted at the intersections within the study network which are as follows:

   - SR 50 (Cortez Boulevard) and East Jefferson Street
   - SR 50 (Cortez Boulevard) and Lockhart Road
   - SR 50 (Cortez Boulevard) and I-75 Ramps
   - SR 50 (Cortez Boulevard) and Windmere Road
   - SR 50 (Cortez Boulevard) and Parkland Avenue
   - SR 50 (Cortez Boulevard) and Kettering Road
   - SR 50 (Cortez Boulevard) and Ridge Manor Boulevard
   - SR 50 (Cortez Boulevard) and McKethan Road
   - SR 50 (Cortez Boulevard) and US 301
   - SR 50 (Cortez Boulevard) and Main Street
   - Kettering Road and Powerline Road
   - Powerline Road and Lockhart Road

FIGURE 3
PM PEAK HOUR
EXISTING TRAFFIC

LINCKS & ASSOCIATES, INC.

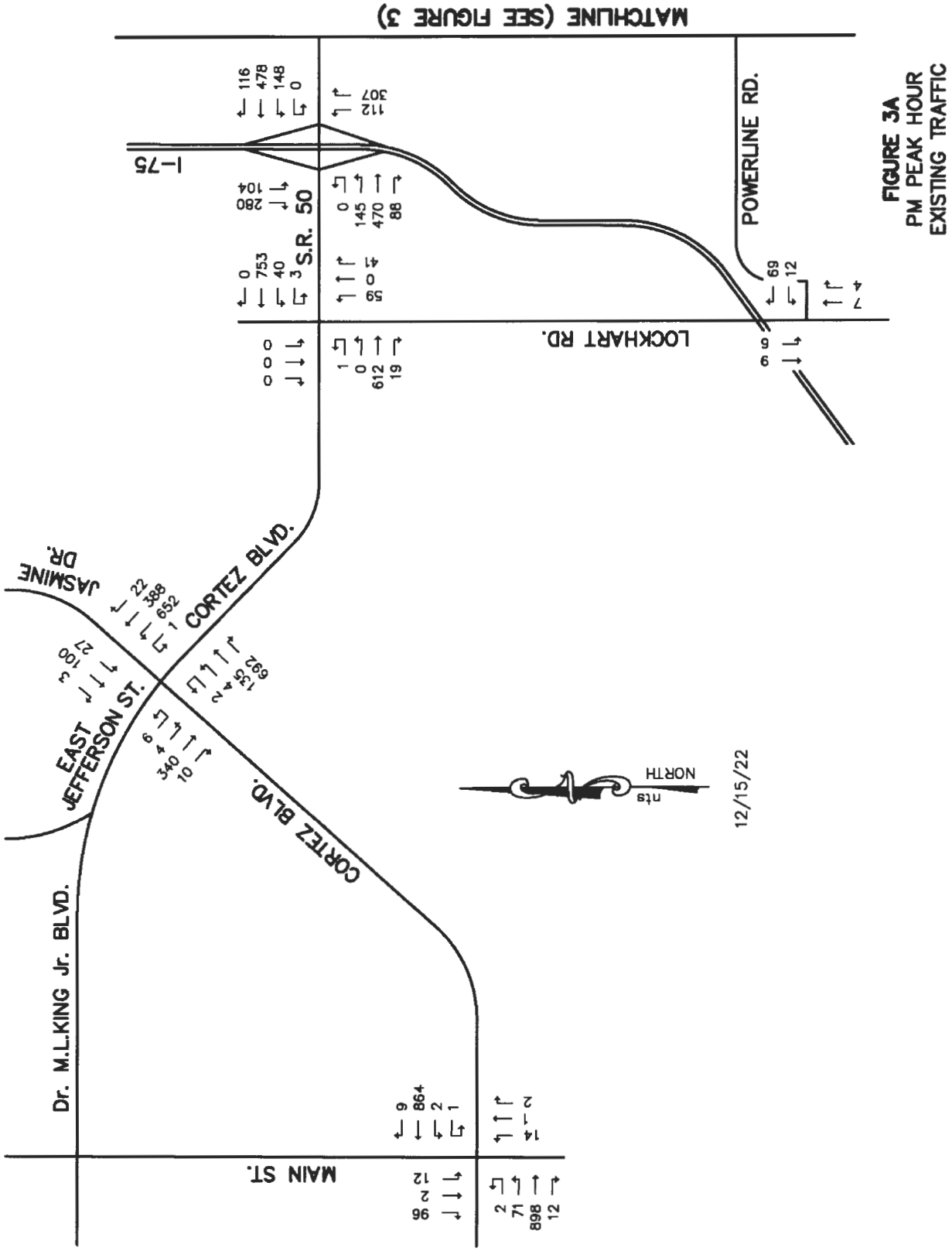

FIGURE 3A
PM PEAK HOUR
EXISTING TRAFFIC

12/15/22

Figures 3 and 3A illustrates the existing traffic.

1) The existing counts were adjusted to the peak season based on the 2021 FDOT Peak Season Adjustment Factors for Hernando County.

Figures 4 and 4A illustrates the peak season traffic.

2) The peak season traffic was increased by the annual growth rate for each segment contained in the Hernando County Tier I spreadsheet.

3) The traffic generated by the following proposed developments along Kettering Road was added to #3:

    a. Statewide Logistics Center
    b. Benton Hill Estates
    c. Kettering Industrial

4) The traffic volume at the intersection of realigned Sherman Hills Boulevard and SR 50 were estimated based on existing and future development in the vicinity of the project and added to #3.

Figure 5 and 5A illustrates the 2035 background traffic and Figures 6 and 6A illustrates the 2035 background plus project traffic.

ARTERIAL ANALYSIS

An arterial analysis was conducted for the roadways within the study network for the following scenarios:

FIGURE 4
PM PEAK HOUR
PEAK SEASON TRAFFIC

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FIGURE 4A
PM PEAK HOUR
PEAK SEASON TRAFFIC

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FIGURE 5
PM PEAK HOUR
2035 BACKGROUND TRAFFIC

FIGURE 5A
PM PEAK HOUR
2035 BACKGROUND TRAFFIC

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FIGURE 6
PM PEAK HOUR
2035 BACKGROUND PLUS
PROJECT TRAFFIC

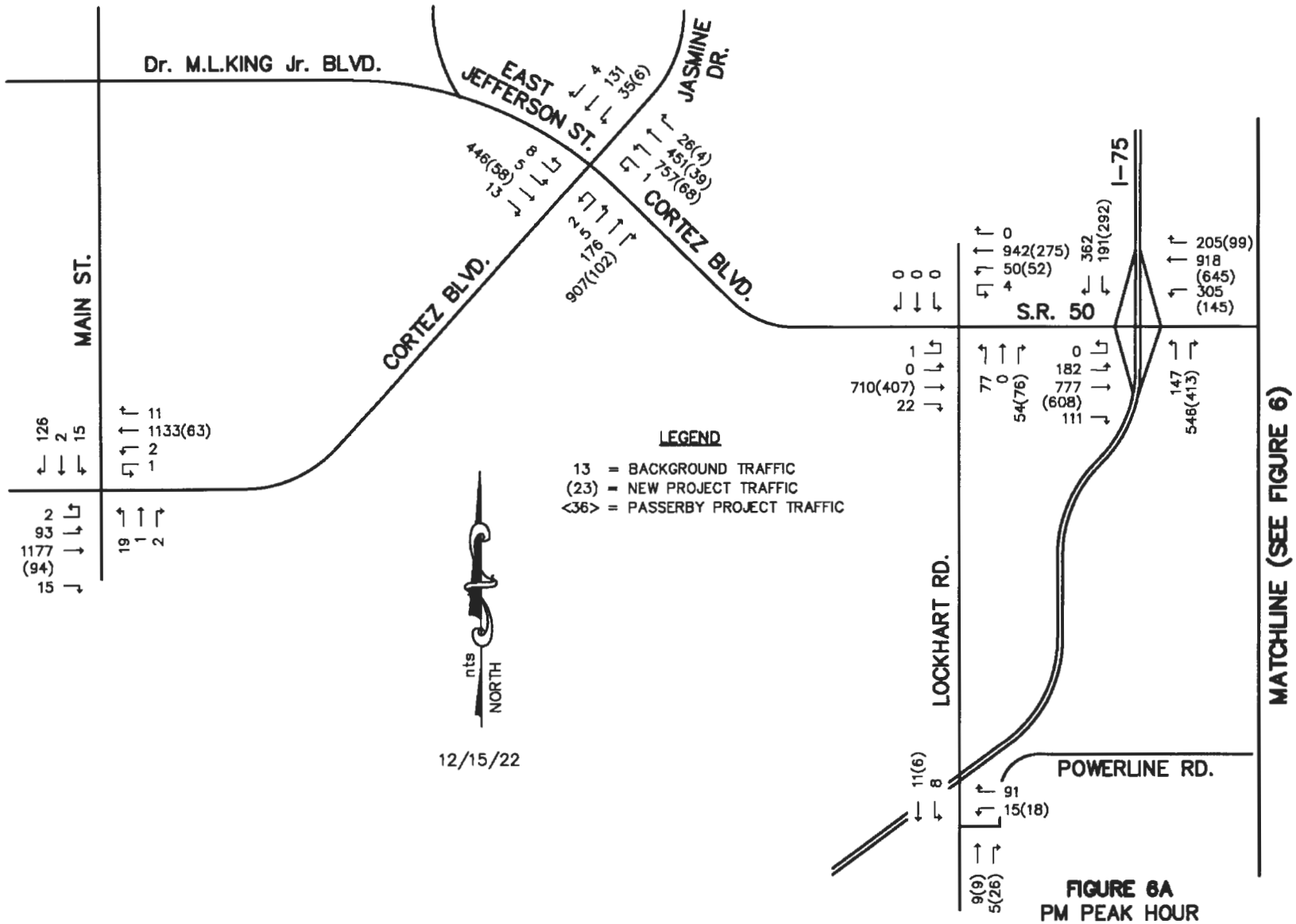

FIGURE 6A
PM PEAK HOUR
2035 BACKGROUND PLUS
PROJECT TRAFFIC

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- Peak season traffic
- 2035 Background traffic with existing/budgeted improvements
- 2035 Background traffic with the required improvements
- 2035 Background plus project traffic with background improvements
- 2035 Background plus project traffic with additional improvements required beyond the background improvements

Peak Season Traffic Condition

Table 4 provides the arterial analysis with the peak season traffic and with the existing/budgeted improvements. Based on the results, all roadway segments within the study area should operate within the acceptable level of service with peak season traffic, as shown in Table 4.

Background Traffic Condition

Table 4 provides the results of the arterial analysis with the 2035 background traffic and with existing/budgeted improvements. Based on the results, all roadway segments within the study area should operate within the acceptable level of service with the 2035 background traffic, except for the segment of Kettering Road from project access to SR 50, as shown in Table 4.

Background Traffic with Required Improvements

Table 4 provides arterial analysis with the background traffic and with improvements required for background traffic. Based on the results, all roadway segments within the study area should operate within the acceptable level of service with background traffic, as shown in Table 4.

TABLE 4

ARTERIAL ANALYSIS (PM PEAK HOUR)
EXISTING AND BUDGETED GEOMETRY

Segment	From	To	No of Lanes	LOS STD	Capacity(1)	Peak Season Traffic (2)	Remaining Capacity	2035 Background Traffic (2)	Remaining Capacity	Required Improvements	Capacity(1)	Remaing Capacity	2035 Background Plus Project Traffic (2)	Remaining Capacity
SR 50	Main St	Jasmine Dr	4LD	C	3,420	1,777	1,643	2,237	1,183	None	3,420	1,183	2,402	1,018
	Jasmine Dr	Lockhart Rd	4LD	C	3,420	1,763	1,657	1,968	1,452	None	3,420	1,452	2,486	934
	Lockhart Rd	I-75	6LD	C	5,250	1,560	3,690	2,066	3,184	None	5,250	3,184	3,001	2,249
	I75	Windmere Rd	6LD	C	5,250	1,684	3,566	2,955	2,295	None	5,250	2,295	5,091	159
	Windmere Rd	Parkland Ave	6LD	C	5,250	1,388	3,862	2,504	2,746	None	5,250	2,746	4,469	781
	Parkland Ave	Sherman Hills Realignment/Access	6LD	C	5,250	1,451	3,799	2,753	2,497	None	5,250	2,497	4,921	329
	Sherman Hills Realignment/Access	Kettering Rd	6LD	C	5,250	1,451	3,799	2,489	2,761	None	5,250	2,761	3,332	1,918
	Kettering Rd	Ridge Manor Blvd	6LD	C	5,250	1,285	3,965	1,721	3,529	None	5,250	3,529	2,746	2,504
	Ridge Manor Blvd	Mckeatan Rd	4LD	C	3,420	1,129	2,291	1,398	2,022	None	3,420	2,022	2,372	1,048
	Mckeaton Rd	US 301	4LD	C	3,420	631	2,789	774	2,646	None	3,420	2,646	1,221	2,199
Kettering Rd	Powerline Rd	Project Access	2LU	D	1,197	120	1,077	712	485	None	1,197	485	1,077	120
	Project Access	SR 50	2LU	D	1,197	120	1,077	1,200	-3	4LD	3,222	2,022	1,791	1,431
Lockhart Rd	Powerline Rd	SR 50	2LU	D	2,180	119	2,061	150	2,030	None	2,180	2,030	232	1,948
McKeaton Rd	Pasco Co Line	SR 50	2LU	C	1,620	583	1,037	700	920	None	1,620	920	1,039	581
E.Jefferson St	SR 50	MLK Blvd	2LU	C	1,510	785	725	932	578	None	1,510	578	1,029	481
Powerline Rd	Kettering Rd	Lockhart Rd	2LU	C	1,620	115	1,505	192	1,428	None	1,620	1,428	283	1,337

1) Based on FDOT Capacity Tables and Tier Spreadsheet
2) Based on Figures 2, 2A , 5,5A , 6, 6A , of this Report

Background Plus Project Traffic Condition

Table 4 provides the results of the arterial analysis with the 2035 background plus project traffic and required improvements for background traffic. Based on the results of the analysis, all roadway segments should operate within acceptable level of service with the 2035 background plus project traffic, as shown in Table 4.

INTERSECTION ANALYSIS

A capacity analysis was conducted for the PM peak hours at the following intersections:

- SR 50 (Cortez Boulevard) and East Jefferson Street
- SR 50 (Cortez Boulevard) and Lockhart Road
- SR 50 (Cortez Boulevard) and I-75 Ramps
- SR 50 (Cortez Boulevard) and Windmere Road
- SR 50 (Cortez Boulevard) and Parkland Avenue
- SR 50 (Cortez Boulevard) and Sherman Hills Boulevard Realignment/Project Access
- SR 50 (Cortez Boulevard) and Kettering Road
- SR 50 (Cortez Boulevard) and Ridge Manor Boulevard
- SR 50 (Cortez Boulevard) and McKethan Road
- SR 50 (Cortez Boulevard) and US 301
- SR 50 (Cortez Boulevard) and Main Street
- Kettering Road and Powerline Road
- Powerline Road and Lockhart Road

These calculations were performed utilizing the methodology described in Chapter 18 and 19, Signalized and Unsignalized Intersections of Transportation Research Board

(TRB) Special Report, the 2010 Highway Capacity Manual, for unsignalized intersections and SYNCHRO for signalized intersections.

This section describes the intersection analysis with the three analysis scenarios; existing peak season, background, and background plus project traffic.

Existing Peak Season Traffic Condition

Table 5 provides the results of the intersection analysis with peak season traffic. As shown in Table 5, all intersections are expected to meet the level of service and V/C criteria during the PM peak hour with the existing peak season traffic and the budgeted improvements.

Background Traffic

Table 6 provides the results of the intersection analysis with 2035 background traffic and with budgeted improvements. In addition, Table 6 provides the required improvements for each intersection that exceeds level of service or V/C ratio of 1.0.

Table 7 provides a summary of the analysis with the required improvements due to the background traffic.

Background Plus Project Traffic

Table 8 provides a summary of the intersection analysis with the 2035 background plus project traffic with the improvements required for the background traffic. In addition, the Table 8 provides the additional improvements required due to the project traffic.

TABLE 5

ESTIMATED INTERSECTION LEVEL OF SERVICE
EXISTING AND BUDGETED IMPROVEMENTS

Intersection	Intersection Control	Overall LOS (1)	Direction	PM Peak Hour Peak Season Traffic (V/C) Left	Through	Right
Cortez Blvd and Jefferson St	Signalized	B	EB	0.08	0.23	0.01
			WB	0.77	0.16	0.02
			NB	0.04	0.57	0.47
			SB	0.22	0.43	0.43
Cortez Blvd and Lockhart Rd	Unsignalized	-	EB	0.0	*	*
			WB	0.05	*	*
			NB	0.24	0.07	0.07
Cortez Blvd and I-75 Ramps	Signalized	C	EB	0.43	0.55	0.18
			WB	0.43	0.55	0.23
			NB	0.21	-	0.54
			SB	0.20	-	0.51
Cortez Blvd and Windermere Rd	Signalized	B	EB	0.40	0.33	0.27
			WB	0.19	0.33	0.33
			NB	0.55	0.31	0.31
			SB	0.15	0.14	0.14
Cortez Blvd and Parkland Avenue	Unsignalized	-	EB	0.03	*	*
			WB	0.17	*	*
			NB	-	-	0.05
			SB	-	-	0.04
Cortez Blvd and Sherman Hills Blvd Realignment	Unsignalized	-	EB			
			WB			
			NB			
			SB			
Cortez Blvd and Kettering Rd	Signalized	B	EB	0.16	0.22	0.05
			WB	0.15	0.20	0.02
			NB	0.31	0.31	0.13
			SB	0.06	0.06	0.06
Cortez Blvd and Ridge Manor Blvd	Unsignalized	-	EB	0.03	0.03	0.03
			WB	0.11	0.11	0.11
			NB	0.0	*	*
			SB	0.20	*	*
Cortez Blvd and McKethan Rd	Signalized	C	EB	0.04	0.18	0.32
			WB	0.07	0.25	0.01
			NB	0.28	0.27	0.01
			SB	0.01	0.06	0.06
Cortez Blvd and US 301	Signalized	C	EB	0.10	0.17	0.08
			WB	0.12	0.20	0.20
			NB	0.14	0.52	0.06
			SB	0.04	0.51	0.08
Cortez Blvd and Main St	Signalized	A	EB	0.16	0.37	0.01
			WB	0.01	0.40	0.01
			NB	0.11	0.02	0.02
			SB	0.08	0.39	0.39
Kettering Rd and Powerline Rd	Unsignalized	-	EB	0.03	0.03	-
			SB	0.03	-	0.03
Powerline Rd and Lockhart Rd	Unsignalized	-	WB	0.17	-	0.17
			SB	0.01	0.01	-

(1) Not calculated for unsignalized intersections.
(2) *Free flow, V/C not calculated.

TABLE 6

ESTIMATED INTERSECTION LEVEL OF SERVICE
EXISTING AND BUDGETED IMPROVEMENTS

Intersection	Intersection Control	Overall LOS (1)	Direction	PM Peak Hour 2035 Background Traffic (V/C) Left	Through	Right	Required Improvements
Cortez Blvd and Jefferson St	Signalized	B	EB	0.11	0.31	0.02	
			WB	0.79	0.18	0.02	-
			NB	0.04	0.63	0.60	
			SB	0.29	0.48	0.48	
Cortez Blvd and Lockhart Rd	Unsignalized	-	EB	0.0	*	*	
			WB	0.07	*	*	
			NB	0.36	0.09	0.09	-
Cortez Blvd and I-75 Ramps	Signalized	C	EB	0.58	0.72	0.20	
			WB	0.68	0.72	0.33	-
			NB	0.30	-	0.76	
			SB	0.39	-	0.57	
Cortez Blvd and Windermere Rd	Signalized	C	EB	0.59	0.54	0.29	
			WB	0.32	0.54	0.54	-
			NB	0.64	0.36	0.36	
			SB	0.18	0.15	0.15	
Cortez Blvd and Parkland Avenue	Unsignalized	-	EB	0.07	*	*	
			WB	0.40	*	*	
			NB	-	-	0.10	-
			SB	-	-	0.07	
Cortez Blvd and Sherman Hills Blvd Realignment	Unsignalized	-	EB	0.62	*	*	
			WB	0.00	*	*	Signalize
			SB	1.16	-	0.01	
Cortez Blvd and Kettering Rd	Signalized	C	EB	0.35	0.52	0.56	
			WB	0.92	0.36	0.02	Dual NBL and Dual WBL
			NB	1.05	1.05	0.26	
			SB	0.04	0.04	0.04	
Cortez Blvd and Ridge Manor Blvd	Unsignalized	-	EB	0.06	0.06	0.06	
			WB	0.16	0.16	0.16	
			NB	0.00	*	*	-
			SB	0.29	*	*	
Cortez Blvd and McKethan Rd	Signalized	C	EB	0.05	0.22	0.37	
			WB	0.08	0.29	0.01	
			NB	0.35	0.33	0.01	-
			SB	0.02	0.07	0.07	
Cortez Blvd and US 301	Signalized	C	EB	0.14	0.23	0.10	
			WB	0.16	0.26	0.26	
			NB	0.16	0.57	0.08	-
			SB	0.05	0.54	0.09	
Cortez Blvd and Main St	Signalized	A	EB	0.26	0.47	0.01	
			WB	0.01	0.53	0.01	
			NB	0.14	0.02	0.02	-
			SB	0.10	0.45	0.45	
Kettering Rd and Powerline Rd	Unsignalized	-	EB	0.10	0.10	-	
			SB	0.17	-	0.17	-
Powerline Rd and Lockhart Rd	Unsignalized	-	WB	0.21	-	0.21	
			SB	0.01	0.01	-	-

(1) Not calculated for unsignalized intersections.
(2) *Free flow, V/C not calculated.

TABLE 7

ESTIMATED INTERSECTION LEVEL OF SERVICE
REQUIRED IMPROVEMENTS FOR BACKGROUND TRAFFIC

Intersection	Intersection Control	Overall LOS	Direction	PM Peak Hour 2035 Background Traffic (V/C) Left	Through	Right
Cortez Blvd and Sherman Hills Blvd Realignment	Signalized	B	EB	0.53	0.40	-
			WB	-	0.64	0.06
			SB	0.34	-	0.01
Cortez Blvd and Kettering Rd	Signalized	C	EB	0.30	0.45	0.53
			WB	0.50	0.32	0.02
			NB	0.74	0.0	0.32
			SB	0.09	-	0.09

TABLE 8

ESTIMATED INTERSECTION LEVEL OF SERVICE
REQUIRED IMPROVEMENTS FOR BACKGROUND TRAFFIC PLUS PROJECT TRAFFIC

Intersection	Intersection Control	Overall LOS (1)	Direction	PM Peak Hour 2035 Background Plus Project Traffic (V/C) Left	Through	Right	Required Improvements
Cortez Blvd and Jefferson St	Signalized	B	EB	0.11	0.37	0.02	-
			WB	0.80	0.20	0.03	
			NB	0.04	0.63	0.66	
			SB	0.34	0.48	0.48	
Cortez Blvd and Lockhart Rd	Unsignalized	-	EB	0.00	*	*	-
			WB	0.21	*	*	
			NB	0.70	0.30	0.30	
Cortez Blvd and I-75 Ramps	Signalized	F	EB	0.85	1.13	0.18	Additional EB shared through/right, WB through/right and NBR
			WB	1.46	1.14	0.48	
			NB	0.33	-	1.33	
			SB	1.08	-	0.47	
Cortez Blvd and Windermere Rd	Signalized	D	EB	0.78	0.98	0.36	-
			WB	0.77	0.63	0.63	
			NB	0.97	0.50	0.50	
			SB	0.34	0.20	0.20	
Cortez Blvd and Parkland Avenue	Unsignalized	-	EB	0.19	*	*	-
			WB	(1)	*	*	
			NB	-	-	1.24	
			SB	-	-	0.14	
Cortez Blvd and Sherman Hills Blvd Realignment/ Project Access A	Signalized	-	EB	-	-	-	Dual NBL, NBT, NBR and Dual WBL
			WB	-	-	-	
			NB	-	-	-	
			SB	-	-	-	
Cortez Blvd and Kettering Rd	Signalized	C	EB	0.45	0.76	0.65	-
			WB	0.80	0.50	0.02	
			NB	0.84	0.0	0.40	
			SB	0.36	0.36	0.36	
Cortez Blvd and Ridge Manor Blvd	Unsignalized	-	EB	0.20	0.20	0.20	-
			WB	0.32	0.32	0.32	
			NB	0.01	*	*	
			SB	0.61	*	*	
Cortez Blvd and McKethan Rd	Signalized	C	EB	0.08	0.35	0.50	-
			WB	0.10	0.53	0.01	
			NB	0.53	0.52	0.01	
			SB	0.02	0.07	0.07	
Cortez Blvd and US 301	Signalized	C	EB	0.19	0.23	0.11	-
			WB	0.15	0.28	0.28	
			NB	0.27	0.63	0.09	
			SB	0.06	0.62	0.17	
Cortez Blvd and Main St	Signalized	A	EB	0.27	0.51	0.01	-
			WB	0.01	0.56	0.01	
			NB	0.14	0.02	0.02	
			SB	0.10	0.45	0.45	
Kettering Rd and Powerline Rd	Unsignalized	-	EB	0.20	0.20	-	-
			SB	0.30	-	0.30	
Powerline Rd and Lockhart Rd	Unsignalized	-	WB	0.27	-	0.27	-
			SB	0.01	0.01	-	

(1) Not calculated for unsignalized intersections.
(2) *Free flow, V/C not calculated.

TABLE 9

ESTIMATED INTERSECTION LEVEL OF SERVICE
REQUIRED IMPROVEMENTS FOR PROJECT TRAFFIC

Intersection	Intersection Control	Overall LOS	Direction	PM Peak Hour 2035 Background Plus Project Traffic (V/C) Left	Through	Right
Cortez Blvd and I-75 Ramps	Signalized	D	EB	0.70	0.94	0.94
			WB	0.81	0.88	0.88
			NB	0.33	-	0.92
			SB	0.35	-	0.63
Cortez Blvd and Sherman Hills Blvd Realignment/Project Access A	Signalized	D	EB	0.95	0.87	0.71
			WB	0.82	0.97	0.07
			NB	0.92	0.03	0.47
			SB	0.56	0.33	0.33

Table 9 provides the summary of the intersection analysis with the additional improvements required due to the project traffic.

CONCLUSION

Based on the results of the analysis, all roadway segments within the study area should operate within acceptable level of service with 2035 background traffic plus the addition of project traffic and required improvements for the background traffic, as shown in Table 4.

Based on the results of the intersection analysis the improvements required due to background traffic were identified in Table 6. Table 7 illustrates that all intersections should operate within acceptable level of service and V/C criteria with the background traffic and with the improvements identified due to background traffic. Consistent with Chapter 2011 – 139, Laws of Florida and Chapter 163.3180 of the Florida Statue as amend by HB 319 improvements required to mitigate backlogged facilities is the responsibility of the local government.

Based on the results of the intersection analysis the improvements required due to project traffic and beyond the improvements required for background traffic were identified in Table 8. Table 9 illustrates the level of service and V/C criteria with the addition of project traffic and with the improvements identified due to project traffic.

PROPORTIONATE SHARE

The following methodology was utilized to determine the project's proportionate share cost of the required improvements for the intersection of Cortez Boulevard and I-75 Ramps. Access improvements were not included in the proportionate share calculations.

1. The following formula was utilized to determine the proportionate share of the required improvements:

   Proportionate share = (New Project Traffic/LOS D capacity) x (Improvement Cost)

Table 10 summarizes the proportionate share cost of the project which totals $1,380,790.

TABLE 10

INTERSECTION PROPORTIONATE SHARE DETERMINATION

Intersection	Improvement	Improvement Cost (1)	Percentage of LOS D Capacity Consumed by Project Traffic (2)	Proportionate Share
Cortez Blvd and I-75 Ramps	Add EBT/R, WBT/R, NBR	$4,256,443	32.44%	$1,380,790

(1) Source: FDOT Roadway Cost Per Centerline Mile, Revised June, 2022 - See Table A-2 in the Appendix.
(2) % Capacity Consumed -See Table A-1 In the Appendix

APPENDIX

APPROVED METHODOLOGY STATEMENT

DEPARTMENT OF PUBLIC WORKS

1525 EAST JEFFERSON STREET · BROOKSVILLE, FLORIDA 34601
P 352.754.4060 F 352.754.4423 W www.HernandoCounty.us

October 21, 2022

Mr. Steven J. Henry, PE
LINCKS & Associates, Inc.
5023 West Laurel Street
Tampa, Florida 33607

SUBJECT: Sunrise Development
Transportation Analysis Methodology Statement

Dear Mr. Henry:

Staff has reviewed your revised Methodology Statement (dated October 19, 2022) for the Sunrise Development project. The methodology statement is in the format shown in the Hernando County guidelines. Staff can accept the methodology with a couple of items that can be done with Analysis.

Distribution – Provide a legible copy of the 2021 FDOT Regional Model.

Analysis Scenario – Add AM Peak Hour to study timeframe.

These comments are not intended to be inclusive of any or all errors or omissions within the subject analysis. It remains the responsibility of the consulting engineer to thoroughly check the analysis and make necessary corrections.

Please provide the Synchro files with the Analysis submittal.

Please contact me with any questions or comments.

Sincerely,

D. Todd Crosby, P.E.
Assistant County Engineer

EL:DTC

Attachments: Hernando County Facility Design Guideline's sheet IV-18.

cc: Laura A. Borgesi P.E., Traffic Engineer
Kandi McCorkel, Engineering Development Coordinator
File

Engineers
Planners

LINCKS & ASSOCIATES, INC.

October 19, 2022

Todd Crosby, P.E.
Hernando County Department of Public Works
1525 E. Jefferson Street
Brooksville, FL 34601

Re: Project Name: Sunrise Development
Lincks Project No: 21132

Dear Mr. Crosby,

The purpose of this letter is to provide a response to your comments for the above referenced project. The comments and our responses are as follows:

1. Distribution -Add "current" in front of "FDOT Regional Model".
   Response:
   Comment noted. Methodology is revised to add "current" in front of FDOT Regional Model.

2. Table 2 PM Peak Hour Trip Generation -Why was the "Fitted Curve Equation" not used?
   Response:
   The Fitted Curve Equation was not used because the proposed number of dwelling units are not within the range of the sample data size used for developing the Fitted Curve Equations. In addition, utilization of the Fitted Curve Equation will yield lower or equal number of trip ends compared to trip ends generated utilizing average rates. The trip ends generated utilizing Fitted Curve Equation are attached to this letter.

3. Background Traffic - Provide the proposed growth rate that will be used.
   Response:
   The Methodology is revised to include Table 4 illustrating proposed growth rates for each segment with the study area.

5023 West Laurel Street
Tampa, FL 33607
813 289 0039 Telephone
8133 287 0674 Telefax
www.Lincks.com Website

4. Site Access- Include the possible signalization for the intersection of Sunrise Boulevard at Cortez Boulevard.
   Response:
   Comment noted. Intersection analysis at Sunrise Boulevard and Cortez Boulevard, will be provided.

5. Project Distribution - This page can not be read, provide a cleaner sheet. Verify the next page and show it's relevance for this document.
   Response:
   An electronic copy of the model distribution is included with the Methodology.

6. These comments are not intended to be inclusive of any or all errors or omissions within the subject analysis. Itremains the responsibility of the consulting engineer to thoroughly check the analysis and make necessary corrections.
   Response:
   Comment noted.

7. Please provide the Synchro files with the Analysis submittal.
   Response:
   Comment noted.

If you have any questions regarding the responses to these comments, please do not hesitate to contact me at shenry@lincks.com or 813-559-9589.

LINCKS & ASSOCIATES, INC.

Steven Henry, PE
President

PM PEAK HOUR TRIPS – FITTED CURVE EQUATION

Analysis Name :	New Analysis		
Project Name :	Sunrise-Test	**No :**	
Date:	10/17/2022	**City:**	
State/Province:		**Zip/Postal Code:**	
Country:		**Client Name:**	
Analyst's Name:		**Edition:**	Trip Generation Manual, 11th Ed

Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
210 - Single-Family Detached Housing (General Urban/Suburban)	Dwelling Units	4200	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Best Fit (LOG) Ln(T) = 0.94Ln(X) +0.27	2101 63%	1234 37%	3335
221 - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit (General Urban/Suburban)	Dwelling Units	600	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Best Fit (LIN) T = 0.39 (X)+0.34	143 61%	91 39%	234

(0): indicates size out of range.

Land Use	Entry Reduction	Adjusted Entry	Exit Reduction	Adjusted Exit
210 - Single-Family Detached Housing	0 %	2101	0 %	1234
221 - Multifamily Housing (Mid-Rise)	0 %	143	0 %	91

INTERNAL TRIPS

210 - Single-Family Detached Housing

221 - Multifamily Housing (Mid-Rise)

Exit	1234	Demand Exit: 0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry**	143
Entry	2101	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit**	91

210 - Single-Family Detached Housing

	Total Trips	Internal Trips 221 - Multifamily Housing (Mid-Rise)	Internal Trips Total	External Trips
Entry	2101 (100%)	0 (0%)	0 (0%)	2101 (100%)

Engineers
Planners

LINCKS & ASSOCIATES, INC.

Revised October 19, 2022
June 9, 2022

Mr. Ernie Lane
Hernando County
1400 North Boulevard
Tampa, FL 33607

Re: Sunrise
Lincks Project No. 21132

Dear Mr. Lane,

The purpose of this letter is to establish the methodology to be utilized for the Transportation Analysis for the proposed development located south of SR 50 and east of I-75 in Hernando County, as shown in Figure 1.

The subject property is proposed to be developed for the following land uses:

- Single Family Homes – 4,200 Dwelling Units
- Townhomes – 600 Dwelling Units
- Motel – 75 Rooms
- Retail – 325,000 Square Feet
- Office – 50,000 Square Feet
- Self Storage – 40,000 Square Feet

The access to serve the project is proposed to be via the following roadways:

- Branson Boulevard
- Parkland Ave
- Sunrise Boulevard
- Kettering Road

The site plan for the project is included in the appendix of this letter.

5023 West Laurel Street
Tampa, FL 33607
813 289 0039 Telephone
8133 287 0674 Telefax
www.Lincks.com Website

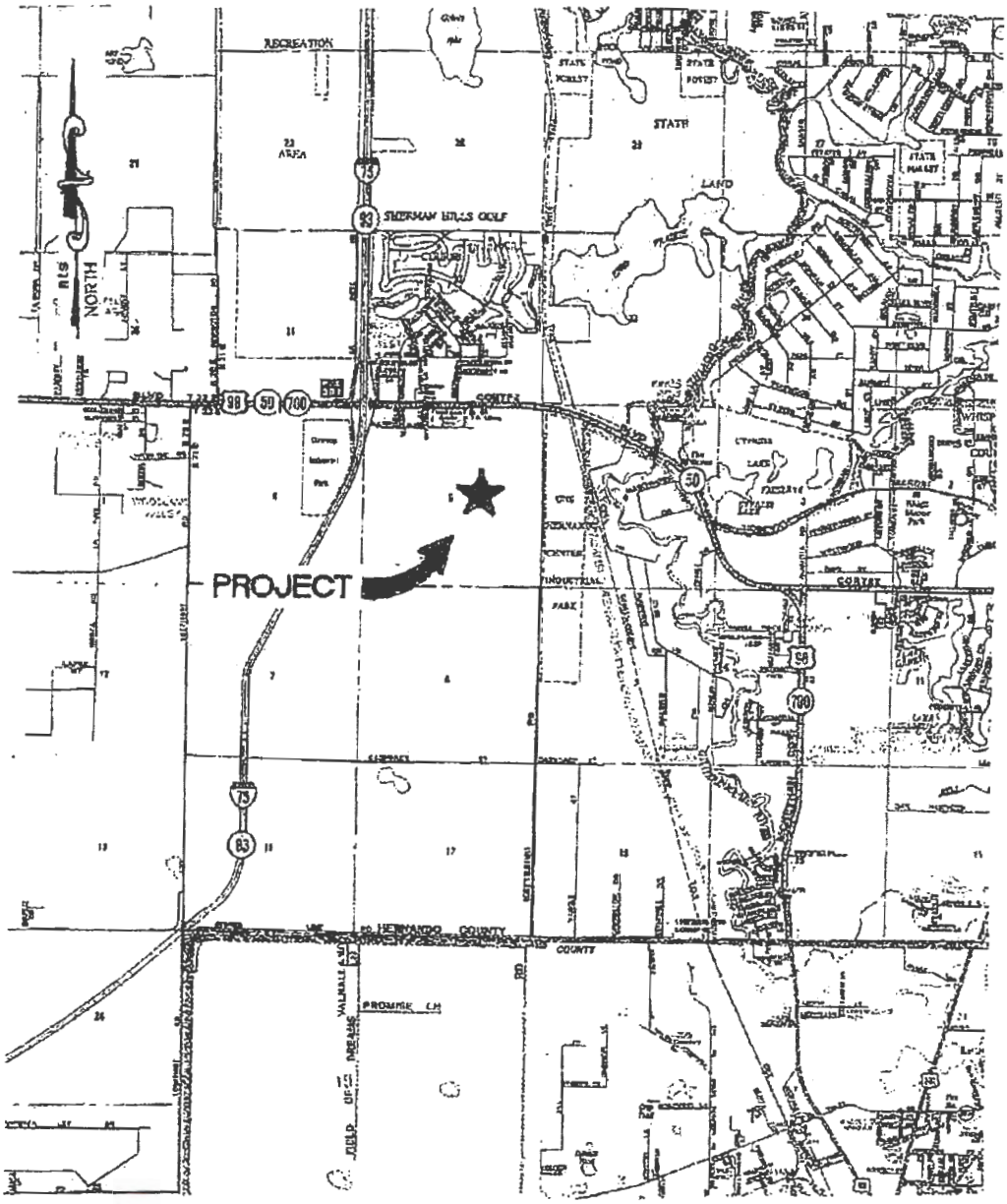


FIGURE 1
PROJECT LOCATION

Trip Generation

The trip rates to be utilized in the analysis will be based on the data contained in the Institute of Transportation Engineers' (ITE) Trip Generation Manual, 11th Edition, 2021.

Internal Capture

The internal capture between the land uses within the project will be calculated based on the methodology outlined in ITE Trip Generation Handbook, 3rd Edition (NCHRP 694).

Passerby Capture

The passerby capture will be calculated based on the methodology outlined in ITE Trip Generation Manual, 11th Edition, 2021.

Tables 1 and 2 provide the AM and PM peak hour trip generation for the project.

Distribution

The distribution will be based on the current FDOT Regional Model. A copy of the model plot is included in the appendix of the letter.

Study Network

The study network will include those roadways in which the PM peak hour project traffic consumes 5.0% of the peak hour adopted Level of Service capacity for the roadways within the vicinity of the project. The roadway capacities were based on 2020 FDOT generalized capacity tables.

Based on the results shown in Table 3, the study network will include the following roadways:

- SR 50/US 98 (Cortez Blvd)
  Jasmine Drive to Treiman Boulevard (US 301)

- SR 50/US 98 (Cortez Blvd)
  Main Street to Jefferson Street

- Kettering Road
  Cortez Boulevard to Powerline Road

- Lockhart Road
  Cortez Boulevard to Powerline Road

TABLE 1

AM PEAK HOUR TRIP GENERATION

Land Use	ITE LUC	Size	AM Peak Hour Trip Ends (1)			Internal Trip Ends (2)			Passerby Trip Ends (3)			New External AM Peak Hour Trip Ends		
			In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Single Family	210	4,200 DU's	764	2,176	2,940	15	24	39	0	0	0	749	2,152	2,901
Multi-Family	221	600 DU's	51	171	222	1	2	3	0	0	0	50	169	219
Motel	320	75 Rooms	10	16	26	0	5	5	0	0	0	10	11	21
Retail	820	325,000 SF	202	123	325	30	20	50	33	20	53	139	83	222
Office	710	50,000 SF	81	11	92	8	3	11	0	0	0	73	8	81
Warehouse	150	40,000 SF	22	6	28	2	2	4	0	0	0	20	4	24
		Total	1,130	2,503	3,633	56	56	112	33	20	53	1,041	2,427	3,468

(1) Source - ITE Trip Generation Manual, 11th Edition.
(2) Source - ITE Trip Generation Handbook, 3rd Edition. (NCHRP 684)
(3) Source - ITE Trip Generation Manual, 11th Edition.
- Passerby Trips
  Retail - 19%
  In - (202-30) x 0.19 = 33
  Out - (123-20) x 0.19 = 20

TABLE 2

PM PEAK HOUR TRIP GENERATION

Land Use	ITE LUC	Size	PM Peak Hour Trip Ends (1)			Internal Trip Ends (2)			Passerby Trip Ends (3)			New External PM Peak Hour Trip Ends		
			In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Single Family	210	4,200 DU's	2,487	1,461	3,948	170	58	228	0	0	0	2,317	1,403	3,720
Multi-Family	221	600 DU's	143	91	234	10	4	14	0	0	0	133	87	220
Motel	320	75 Rooms	16	13	29	5	2	7	0	0	0	11	11	22
Retail	820	325,000 SF	633	686	1,319	85	189	274	104	94	198	444	403	847
Office	710	50,000 SF	16	77	93	3	17	20	0	0	0	13	60	73
Warehouse	150	40,000 SF	9	22	31	2	5	7	0	0	0	7	17	24
		Total	3,304	2,350	5,654	275	275	550	104	94	198	2,925	1,981	4,906

(1) Source - ITE Trip Generation Manual, 11th Edition.
(2) Source - ITE Trip Generation Handbook, 3rd Edition. (NCHRP 684)
(3) Source - ITE Trip Generation Manual, 11th Edition.
- Passerby Trips
  Retail - 19%
  In - (633-85) x 0.19 = 104
  Out - (686-189) x 0.19 = 94

TABLE 3
STUDY NETWORK

Roadway Link	Geometry	LOS Standard / Area Type	LOS Capacity(1)	% Project Traffic	PM Peak Hour Project Traffic	% LOS Consumed	Study Network
SR 50 / US 98 (Cortez Blvd)							
Jasmine Dr to Spring Lake Hwy	4LD	C/U	3,420	5.8%	284	8.3%	YES
Spring Lake Hwy to Lockhart Rd	4LD	C/U	3,420	13.9%	882	19.9%	YES
Lockhart Rd to I-75 (SR93) Frontage (W)	6LD	C/U	5,250	17.2%	844	18.1%	YES
I-75 (SR93) Frontage (W) to I-75 SB Ramps	6LD	C/U	5,250	20.8%	1020	19.4%	YES
I-75 NB Ramps to Windmere Rd	6LD	C/U	5,250	44.9%	2203	42.0%	YES
Windmere Rd to Parkland Ave	8LD	C/U	5,250	55.8%	2738	52.2%	YES
Parkland Ave to Kettering Rd	6LD	C/U	5,250	14.3%	702	13.4%	YES
Kettering Rd to Ridge Manor Blvd	8LD	C/U	5,250	20.9%	1,025	19.5%	YES
Ridge Manor Blvd to Mckethan Rd (US98/SR700)	4LD	C/U	3,420	20.3%	996	29.1%	YES
Mckethan Rd (US98/SR700) to Treiman Blvd (US301/SR35)	4LD	C/U	3,420	12.3%	603	17.6%	YES
Treiman Blvd (US301/SR35) to Burwell Rd	4LD	C/U	3,420	2.3%	113	3.3%	NO
SR 50 / US 98 (Cortez Blvd)							
West Jefferson St to Broad St (US41/SR45)	4LD	C/U	3,420	0.8%	39	1.1%	NO
Broad St (US41/SR45) to Main St	4LD	C/U	3,420	3.2%	157	4.6%	NO
Main St to East Jefferson St (SR50)	4LD	C/U	3,420	3.5%	172	5.0%	YES
KETTERING RD							
Cortez Blvd (SR50) to Cracker Crossing	2LU	D/U	1,197	11.2%	549	45.9%	YES
Cracker Crossing to Powerline Rd	2LU	D/U	1,197	12.4%	608	50.8%	YES
Lockhart Rd							
I-75 (SR93) to Cortez Blvd (SR50)	2LU	D/U	2,180	2.6%	128	5.9%	YES
McKethan Rd (US98/SR700)							
Pasco County Line to Cortez Blvd (SR50)	2LU	C/U	1,620	6.9%	338	20.1%	YES
Treiman Blvd (US301/SR35)							
Pasco County Line to Cortez Blvd(SR 50)	2 LU	C/U	1,620	0.8%	39	2.4%	NO
Cortez Blvd(SR 50) to Ridge Manor Blvd	2 LU	C/U	1,620	1.3%	64	4.0%	NO
Ridge Manor Blvd.to Sumter County Line	2 LU	C/U	1,620	1.3%	64	4.0%	NO
Jefferson St (SR 50A)							
Cortez Blvd to MLK	2 LU	C/U	1,510	2.0%	98	6.5%	YES
MLK to N. Broad St	2 LU	C/U	1,510	1.5%	74	4.9%	NO
N. Broad St to Main St	2 O	C/U	786	0.6%	29	3.7%	NO
Powerline Rd							
Kettering Rd to Lockhart Rd	2LU	C/U	1,620	2.5%	123	7.6%	YES
MLK							
Jefferson St to Main St	2LU	C/U	594	0.4%	20	3.4%	NO
Main St							
Cortez Blvd to MLK	2LU	D/U	1,197	0.0%	0	0.0%	NO
MLK to Broad St	2LU	D/U	1,197	0.3%	15	1.2%	NO

- McKethan Road
  Cortez Boulevard to Pasco County Line

- Jefferson Street (SR 50A)
  Cortez Boulevard to Martin Luther King Jr.

- Powerline Road
  Kettering Road to Lockhart Road

Figure 2 illustrates the study network.

Background Traffic

The buildout of the project is anticipated to be 2035. Therefore the 2035 background traffic utilized in this analysis will be calculated as follows:

1. PM peak hour turning movements counts will be obtained at the following intersections:
   - SR 50 (Cortez Boulevard) and East Jefferson Street
   - SR 50 (Cortez Boulevard) and Lockhart Road
   - SR 50 (Cortez Boulevard) and I-75 Ramps
   - SR 50 (Cortez Boulevard) and Windmere Road
   - SR 50 (Cortez Boulevard) and Parkland Avenue
   - SR 50 (Cortez Boulevard) and Kettering Road
   - SR 50 (Cortez Boulevard) and Ridge Manor Boulevard
   - SR 50 (Cortez Boulevard) and McKethan Road
   - SR 50 (Cortez Boulevard) and US 301
   - SR 50 (Cortez Boulevard) and Main Street
   - Jefferson Street (SR 50A) and Main Street
   - Kettering Road and Powerline Road
   - Powerline Road and Lockhart Road

2. The existing counts will be factored to peak season based on the FDOT Peak Season Adjustment Factors for Hernando County.

3. An annual growth rate for each segment contained in the Hernando County Tier 1 spreadsheet will be utilized to factor the peak season traffic to 2035. The annual growth rates are provided in Table 4.

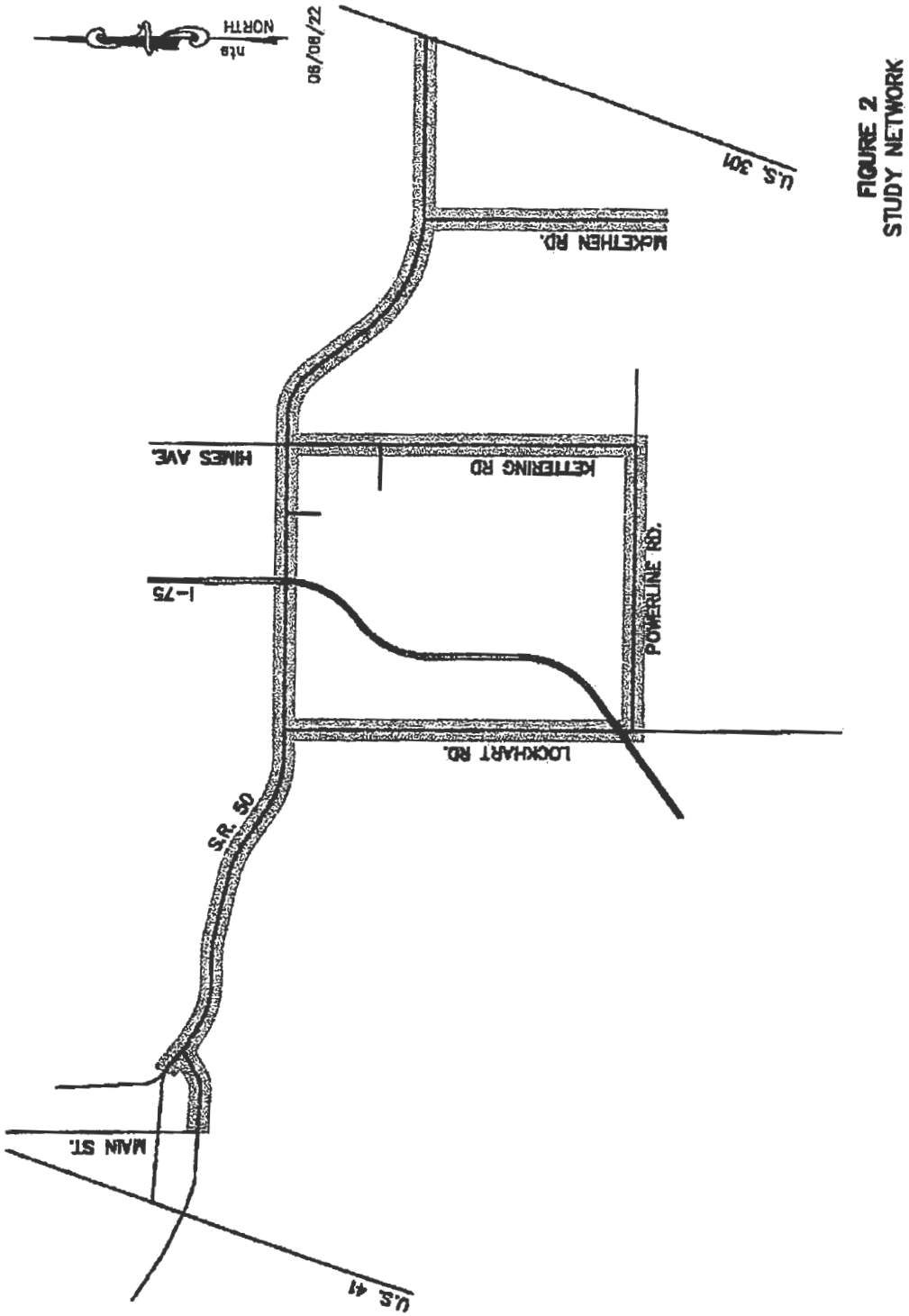


FIGURE 2
STUDY NETWORK

Table 4

Proposed Annual Growth Rates

Segment	From	To	Growth Rate
SR 50	West of Mains St	Main St	2.00%
	Main St	Jasmine Dr	2.00%
	Jasmine Dr	Lockhart Rd	0.90%
	Lockhart Rd	I 75	1.56%
	I 75	Windmere Rd	1.93%
	Windmere Rd	Parkland Ave	1.93%
	Parkland Ave	Sherman Hills Realignment/Access	1.93%
	Sherman Hills Realignment/Access	Kettering Rd	1.93%
	Kettering Rd	Ridge Manor Blvd	1.93%
	Ridge Manor Blvd	Mckeaton Rd	1.84%
	Mckeaton Rd	US 301	1.76%
Kettering Rd	Powerline Rd	Project Access	2.00%
	Project Access	SR 50	2.00%
Lockhart Rd	Powerline Rd	SR 50	2.00%
McKeaton Rd	Pasco Co Line	SR 50	1.36%
E.Jefferson St	SR 50	MLK Blvd	2.00%
Powerline Rd	Kettering Rd	Lockhart Rd	2.00%

1) Based on Tier One Spreadsheet

Analysis Scenario

A roadway segment analysis for the PM peak hour shall be performed for roadway segments within the study network. The analysis shall be based on the capacities contained in the 2020 FDOT generalized capacity tables.

In addition, intersection analysis shall be conducted for the following intersections:

- SR 50 (Cortez Boulevard) and Jefferson Street
- SR 50 (Cortez Boulevard) and Lockhart Road
- SR 50 (Cortez Boulevard) and I-75 Ramps
- SR 50 (Cortez Boulevard) and Windmere Road
- SR 50 (Cortez Boulevard) and Parkland Avenue
- SR 50 (Cortez Boulevard) and Kettering Road
- SR 50 (Cortez Boulevard) and Ridge Manor Boulevard
- SR 50 (Cortez Boulevard) and McKethan Road
- SR 50 (Cortez Boulevard) and US 301
- SR 50 (Cortez Boulevard) and Main Street
- Jeferson Street (SR 50A) and Main Street
- Kettering Road and Cracker Crossing
- Kettering Road and Powerline Road
- Powerline Road and Lockhart Road

The following scenarios shall be considered in the analysis:

1) Existing peak season traffic with budgeted improvements
2) Year 2035 background traffic with budgeted improvements
3) Year 2035 background traffic with improvements required to maintain the adopted Level of Service
4) Year 2035 background plus project traffic with background improvements
5) Year 2035 background plus project traffic with background improvements and any additional improvements required due to project traffic

Intersection Level of Service Criteria

The Level of Service for the intersections shall be as follows:

- The overall intersection should operate at the adopted Level of Service
- All movements within the intersection should operate with a V/C ratio of 1.0 or less.

Site Access

The access for the project will be evaluated to determine if right and left turn lanes are warranted based on AM and PM peak hour volumes.

Please indicate your acceptance of the proposed methodology for the project by signing on the line provided below.

Sincerely,

LINCKS & ASSOCIATES, INC.

Steven J. Henry, P.E.
President

I concur:

_____

Mr. Ernie Lane Date

SJH/TSF/EJG

Enclosures

APPENDIX

ITE – TRIP GENERATION

PERIOD SETTING

Analysis Name :	New Analysis		
Project Name :	Sunrise - DRH	**No :**	
Date:	12/9/2021	**City:**	
State/Province:		**Zip/Postal Code:**	
Country:		**Client Name:**	
Analyst's Name:		**Edition:**	Trip Generation Manual, 11th Ed

Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
210 - Single-Family Detached Housing (General Urban/Suburban)	Dwelling Units	4200(0)	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Average 0.7	764 26%	2176 74%	2940
221 - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit (General Urban/Suburban)	Dwelling Units	600(0)	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Average 0.37	51 23%	171 77%	222
320 - Motel (General Urban/Suburban)	Rooms	75	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Average 0.35	10 38%	16 62%	26
820 - Shopping Center (>150k) (General Urban/Suburban)	1000 Sq. Ft. GLA	325	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Best Fit (LIN) T = 0.59 (X)+133.55	202 62%	123 38%	325
710 - General Office Building (General Urban/Suburban)	1000 Sq. Ft. GFA	50	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Best Fit (LOG) Ln(T) = 0.86Ln(X) +1.16	81 88%	11 12%	92
150 - Warehousing (General Urban/Suburban)	1000 Sq. Ft. GFA	40	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Best Fit (LIN) T = 0.12 (X)+23.62	22 79%	6 21%	28

(0) indicates size out of range.

TRAFFIC REDUCTIONS

Land Use	Entry Reduction	Adjusted Entry	Exit Reduction	Adjusted Exit
210 - Single-Family Detached Housing	0 %	764	0 %	2176
221 - Multifamily Housing (Mid-Rise)	0 %	51	0 %	171

Land Use	Entry Reduction	Adjusted Entry	Exit Reduction	Adjusted Exit
320 - Motel	0 %	10	0 %	16
820 - Shopping Center (>150k)	0 %	202	0 %	123
710 - General Office Building	0 %	81	0 %	11
150 - Warehousing	0 %	22	0 %	6

INTERNAL TRIPS

210 - Single-Family Detached Housing

Exit 2176 Demand Exit: 0 % (0) Balanced: 0 Demand Entry: 0 % (0) **Entry** 51

Entry 764 Demand Entry: 0 % (0) Balanced: 0 Demand Exit: 0 % (0) **Exit** 171

210 - Single-Family Detached Housing

Exit 2176 Demand Exit: 0 % (0) Balanced: 0 Demand Entry: 0 % (0) **Entry** 10

Entry 764 Demand Entry: 0 % (0) Balanced: 0 Demand Exit: 0 % (0) **Exit** 16

210 - Single-Family Detached Housing

Exit 2176 Demand Exit: 0 % (0) Balanced: 0 Demand Entry: 0 % (0) **Entry** 202

Entry 764 Demand Entry: 0 % (0) Balanced: 0 Demand Exit: 0 % (0) **Exit** 123

210 - Single-Family Detached Housing

Exit 2176 Demand Exit: 0 % (0) Balanced: 0 Demand Entry: 0 % (0) **Entry** 81

Entry 764 Demand Entry: 0 % (0) Balanced: 0 Demand Exit: 0 % (0) **Exit** 11

210 - Single-Family Detached Housing

Exit 2176 Demand Exit: 0 % (0) Balanced: 0 Demand Entry: 0 % (0) **Entry** 22

Entry 764 Demand Entry: 0 % (0) Balanced: 0 Demand Exit: 0 % (0) **Exit** 6

221 - Multifamily Housing (Mid-Rise)

Exit 171 Demand Exit: 0 % (0) Balanced: 0 Demand Entry: 0 % (0) **Entry** 10

Entry 51 Demand Entry: 0 % (0) Balanced: 0 Demand Exit: 0 % (0) **Exit** 16

221 - Multifamily Housing (Mid-Rise)

Exit 171 Demand Exit: 0 % (0) Balanced: 0 Demand Entry: 0 % (0) **Entry** 202

Entry 51 Demand Entry: 0 % (0) Balanced: 0 Demand Exit: 0 % (0) **Exit** 123

221 - Multifamily Housing (Mid-Rise)

Exit 171 Demand Exit: 0 % (0) Balanced: 0 Demand Entry: 0 % (0) **Entry** 81

Entry 51 Demand Entry: 0 % (0) Balanced: 0 Demand Exit: 0 % (0) **Exit** 11

221 - Multifamily Housing (Mid-Rise) — **150 - Warehousing**

Exit	171	Demand Exit: 0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry**	22
Entry	51	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit**	6

320 - Motel — **820 - Shopping Center (>150k)**

Exit	16	Demand Exit: 0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry**	202
Entry	10	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit**	123

320 - Motel — **710 - General Office Building**

Exit	16	Demand Exit: 0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry**	81
Entry	10	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit**	11

320 - Motel — **150 - Warehousing**

Exit	16	Demand Exit: 0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry**	22
Entry	10	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit**	6

820 - Shopping Center (>150k) — **710 - General Office Building**

Exit	123	Demand Exit: 0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry**	81
Entry	202	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit**	11

820 - Shopping Center (>150k) — **150 - Warehousing**

Exit	123	Demand Exit: 0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry**	22
Entry	202	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit**	6

710 - General Office Building — **150 - Warehousing**

Exit	11	Demand Exit: 0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry**	22
Entry	81	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit**	6

210 - Single-Family Detached Housing

		Internal Trips						
	Total Trips	**221 - Multifamily Housing (Mid-Rise)**	**320 - Motel**	**820 - Shopping Center (>150k)**	**710 - General Office Building**	**150 - Warehousing**	**Total**	**External Trips**
Entry	764 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	764 (100%)
Exit	2176 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2176 (100%)
Total	2940 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2940 (100%)

221 - Multifamily Housing (Mid-Rise)

		Internal Trips						
	Total Trips	**210 - Single-Family Detached Housing**	**320 - Motel**	**820 - Shopping Center (>150k)**	**710 - General Office Building**	**150 - Warehousing**	**Total**	**External Trips**
Entry	51 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	51 (100%)

Exit	171 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	171 (100%)
Total	222 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	222 (100%)

320 - Motel

	Total Trips	Internal Trips						External Trips
		210 - Single-Family Detached Housing	221 - Multifamily Housing (Mid-Rise)	820 - Shopping Center (>150k)	710 - General Office Building	150 - Warehousing	Total	
Entry	10 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	10 (100%)
Exit	16 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	16 (100%)
Total	26 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	26 (100%)

820 - Shopping Center (>150k)

	Total Trips	Internal Trips						External Trips
		210 - Single-Family Detached Housing	221 - Multifamily Housing (Mid-Rise)	320 - Motel	710 - General Office Building	150 - Warehousing	Total	
Entry	202 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	202 (100%)
Exit	123 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	123 (100%)
Total	325 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	325 (100%)

710 - General Office Building

	Total Trips	Internal Trips						External Trips
		210 - Single-Family Detached Housing	221 - Multifamily Housing (Mid-Rise)	320 - Motel	820 - Shopping Center (>150k)	150 - Warehousing	Total	
Entry	81 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	81 (100%)
Exit	11 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	11 (100%)
Total	92 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	92 (100%)

150 - Warehousing

	Total Trips	Internal Trips						External Trips
		210 - Single-Family Detached Housing	221 - Multifamily Housing (Mid-Rise)	320 - Motel	820 - Shopping Center (>150k)	710 - General Office Building	Total	
Entry	22 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	22 (100%)
Exit	6 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	6 (100%)
Total	28 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	28 (100%)

EXTERNAL TRIPS

Land Use	External Trips	Pass-by%	Pass-by Trips	Non-pass-by Trips

Land Use	External Trips	Pass-by%	Pass-by Trips	Non-pass-by Trips
210 - Single-Family Detached Housing	2940	0	0	2940
221 - Multifamily Housing (Mid-Rise)	222	0	0	222
320 - Motel	26	0	0	26
820 - Shopping Center (>150k)	325	0	0	325
710 - General Office Building	92	0	0	92
150 - Warehousing	28	0	0	28

ITE DEVIATION DETAILS

Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.

Landuse — No deviations from ITE.

Methods — No deviations from ITE.

External Trips

210 - Single-Family Detached Housing (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

221 - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

320 - Motel (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

820 - Shopping Center (>150k) (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

710 - General Office Building (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

150 - Warehousing (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

SUMMARY

Total Entering	1130
Total Exiting	2503
Total Entering Reduction	0
Total Exiting Reduction	0
Total Entering Internal Capture Reduction	0
Total Exiting Internal Capture Reduction	0
Total Entering Pass-by Reduction	0
Total Exiting Pass-by Reduction	0
Total Entering Non-Pass-by Trips	1130
Total Exiting Non-Pass-by Trips	2503

PERIOD SETTING

Analysis Name :	New Analysis		
Project Name :	Sunrise - DRH	**No :**	
Date:	12/9/2021	**City:**	
State/Province:		**Zip/Postal Code:**	
Country:		**Client Name:**	
Analyst's Name:		**Edition:**	Trip Generation Manual, 11th Ed

Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
210 - Single-Family Detached Housing (General Urban/Suburban)	Dwelling Units	4200(0)	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Average 0.94	2487 63%	1461 37%	3948
221 - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit (General Urban/Suburban)	Dwelling Units	600(0)	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Average 0.39	143 61%	91 39%	234
320 - Motel (General Urban/Suburban)	Rooms	75	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Best Fit (LIN) T = 0.24 (X)+11.16	16 55%	13 45%	29
820 - Shopping Center (>150k) (General Urban/Suburban)	1000 Sq. Ft. GLA	325	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Best Fit (LOG) Ln(T) = 0.72Ln(X) +3.02	633 48%	686 52%	1319
710 - General Office Building (General Urban/Suburban)	1000 Sq. Ft. GFA	50	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Best Fit (LOG) Ln(T) = 0.83Ln(X) +1.29	16 17%	77 83%	93
150 - Warehousing (General Urban/Suburban)	1000 Sq. Ft. GFA	40	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Best Fit (LIN) T = 0.12 (X)+26.48	9 29%	22 71%	31

(0) indicates size out of range.

TRAFFIC REDUCTIONS

Land Use	Entry Reduction	Adjusted Entry	Exit Reduction	Adjusted Exit
210 - Single-Family Detached Housing	0 %	2487	0 %	1461
221 - Multifamily Housing (Mid-Rise)	0 %	143	0 %	91

Land Use	Entry Reduction	Adjusted Entry	Exit Reduction	Adjusted Exit
320 - Motel	0 %	16	0 %	13
820 - Shopping Center (>150k)	0 %	633	0 %	686
710 - General Office Building	0 %	16	0 %	77
150 - Warehousing	0 %	9	0 %	22

INTERNAL TRIPS

210 - Single-Family Detached Housing

Exit	1461	Demand Exit: 0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry** 143
Entry	2487	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit** 91

210 - Single-Family Detached Housing

320 - Motel

Exit	1461	Demand Exit: 0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry** 16
Entry	2487	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit** 13

210 - Single-Family Detached Housing

820 - Shopping Center (>150k)

Exit	1461	Demand Exit: 0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry** 633
Entry	2487	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit** 686

210 - Single-Family Detached Housing

710 - General Office Building

Exit	1461	Demand Exit: 0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry** 16
Entry	2487	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit** 77

210 - Single-Family Detached Housing

150 - Warehousing

Exit	1461	Demand Exit: 0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry** 9
Entry	2487	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit** 22

221 - Multifamily Housing (Mid-Rise)

320 - Motel

Exit	91	Demand Exit: 0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry** 16
Entry	143	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit** 13

221 - Multifamily Housing (Mid-Rise)

820 - Shopping Center (>150k)

Exit	91	Demand Exit: 0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry** 633
Entry	143	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit** 686

221 - Multifamily Housing (Mid-Rise)

710 - General Office Building

Exit	91	Demand Exit: 0 % (0)	Balanced: 0	Demand Entry: 0 % (0)	**Entry** 16
Entry	143	Demand Entry: 0 % (0)	Balanced: 0	Demand Exit: 0 % (0)	**Exit** 77

221 - Multifamily Housing (Mid-Rise)

Exit	91	Demand Exit:	0 %	(0)	Balanced: 0	Demand Entry: 0 % (0)	Entry 9
Entry	143	Demand Entry:	0 %	(0)	Balanced: 0	Demand Exit: 0 % (0)	Exit 22

320 - Motel

820 - Shopping Center (>150k)

Exit	13	Demand Exit:	0 %	(0)	Balanced: 0	Demand Entry: 0 % (0)	Entry 633
Entry	16	Demand Entry:	0 %	(0)	Balanced: 0	Demand Exit: 0 % (0)	Exit 686

320 - Motel

710 - General Office Building

Exit	13	Demand Exit:	0 %	(0)	Balanced: 0	Demand Entry: 0 % (0)	Entry 16
Entry	16	Demand Entry:	0 %	(0)	Balanced: 0	Demand Exit: 0 % (0)	Exit 77

320 - Motel

150 - Warehousing

Exit	13	Demand Exit:	0 %	(0)	Balanced: 0	Demand Entry: 0 % (0)	Entry 9
Entry	16	Demand Entry:	0 %	(0)	Balanced: 0	Demand Exit: 0 % (0)	Exit 22

820 - Shopping Center (>150k)

710 - General Office Building

Exit	686	Demand Exit:	0 %	(0)	Balanced: 0	Demand Entry: 0 % (0)	Entry 16
Entry	633	Demand Entry:	0 %	(0)	Balanced: 0	Demand Exit: 0 % (0)	Exit 77

820 - Shopping Center (>150k)

150 - Warehousing

Exit	686	Demand Exit:	0 %	(0)	Balanced: 0	Demand Entry: 0 % (0)	Entry 9
Entry	633	Demand Entry:	0 %	(0)	Balanced: 0	Demand Exit: 0 % (0)	Exit 22

710 - General Office Building

150 - Warehousing

Exit	77	Demand Exit:	0 %	(0)	Balanced: 0	Demand Entry: 0 % (0)	Entry 9
Entry	16	Demand Entry:	0 %	(0)	Balanced: 0	Demand Exit: 0 % (0)	Exit 22

210 - Single-Family Detached Housing

	Total Trips	Internal Trips						External Trips
		221 - Multifamily Housing (Mid-Rise)	320 - Motel	820 - Shopping Center (>150k)	710 - General Office Building	150 - Warehousing	Total	
Entry	2487 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2487 (100%)
Exit	1461 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1461 (100%)
Total	3948 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	3948 (100%)

221 - Multifamily Housing (Mid-Rise)

	Total Trips	Internal Trips						External Trips
		210 - Single-Family Detached Housing	320 - Motel	820 - Shopping Center (>150k)	710 - General Office Building	150 - Warehousing	Total	
Entry	143 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	143 (100%)

Exit	91 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	91 (100%)
Total	234 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	234 (100%)

320 - Motel

		Internal Trips						
	Total Trips	210 - Single-Family Detached Housing	221 - Multifamily Housing (Mid-Rise)	820 - Shopping Center (>150k)	710 - General Office Building	150 - Warehousing	Total	External Trips
Entry	16 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	16 (100%)
Exit	13 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	13 (100%)
Total	29 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	29 (100%)

820 - Shopping Center (>150k)

		Internal Trips						
	Total Trips	210 - Single-Family Detached Housing	221 - Multifamily Housing (Mid-Rise)	320 - Motel	710 - General Office Building	150 - Warehousing	Total	External Trips
Entry	633 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	633 (100%)
Exit	686 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	686 (100%)
Total	1319 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1319 (100%)

710 - General Office Building

		Internal Trips						
	Total Trips	210 - Single-Family Detached Housing	221 - Multifamily Housing (Mid-Rise)	320 - Motel	820 - Shopping Center (>150k)	150 - Warehousing	Total	External Trips
Entry	16 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	16 (100%)
Exit	77 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	77 (100%)
Total	93 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	93 (100%)

150 - Warehousing

		Internal Trips						
	Total Trips	210 - Single-Family Detached Housing	221 - Multifamily Housing (Mid-Rise)	320 - Motel	820 - Shopping Center (>150k)	710 - General Office Building	Total	External Trips
Entry	9 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	9 (100%)
Exit	22 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	22 (100%)
Total	31 (100%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	31 (100%)

EXTERNAL TRIPS

Land Use	External Trips	Pass-by%	Pass-by Trips	Non-pass-by Trips

Land Use	External Trips	Pass-by%	Pass-by Trips	Non-pass-by Trips
210 - Single-Family Detached Housing	3948	0	0	3948
221 - Multifamily Housing (Mid-Rise)	234	0	0	234
320 - Motel	29	0	0	29
820 - Shopping Center (>150k)	1319	0	0	1319
710 - General Office Building	93	0	0	93
150 - Warehousing	31	0	0	31

ITE DEVIATION DETAILS

Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.

Landuse — No deviations from ITE.

Methods — No deviations from ITE.

External Trips

210 - Single-Family Detached Housing (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

221 - Multifamily Housing (Mid-Rise) - Not Close to Rail Transit (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

320 - Motel (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

820 - Shopping Center (>150k) (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

710 - General Office Building (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

150 - Warehousing (General Urban/Suburban)
ITE does not recommend a particular pass-by% for this case.

SUMMARY

Total Entering	3304
Total Exiting	2350
Total Entering Reduction	0
Total Exiting Reduction	0
Total Entering Internal Capture Reduction	0
Total Exiting Internal Capture Reduction	0
Total Entering Pass-by Reduction	0
Total Exiting Pass-by Reduction	0
Total Entering Non-Pass-by Trips	3304
Total Exiting Non-Pass-by Trips	2350

INTERNAL CAPTURE

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Sunrise	Organization:	
Project Location:		Performed By:	
Scenario Description:		Date:	
Analysis Year:		Checked By:	
Analysis Period:	AM Street Peak Hour	Date:	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710, 150	90.000	SF	120	103	17
Retail	820	325.000	SF	325	202	123
Restaurant				0		
Cinema/Entertainment				0		
Residential	210, 221	4,800	DU's	3,162	815	2,347
Hotel	320	75	RM	26	10	16
All Other Land Uses[2]				0		
				3,633	1,130	2,503

Table 2-A: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix[5]						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		5	0	0	0	0
Retail	4		0	0	16	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	3	23	0	0		0
Hotel	3	2	0	0	0	

Table 5-A: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	3,633	1,130	2,503
Internal Capture Percentage	3%	5%	2%
External Vehicle-Trips[6]	3,521	1,074	2,447
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	10%	29%
Retail	15%	16%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	2%	1%
Hotel	0%	31%

[1] Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2] Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3] Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4] Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

[5] Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

[6] Person-Trips

[7] Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

Project Name:	Sunrise
Analysis Period:	AM Street Peak Hour

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	103	103	1.00	17	17
Retail	1.00	202	202	1.00	123	123
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	815	815	1.00	2347	2347
Hotel	1.00	10	10	1.00	16	16

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		5	11	0	0	0
Retail	36		16	0	17	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	47	23	469	0		0
Hotel	12	2	1	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		55	0	0	0	0
Retail	4		0	0	16	0
Restaurant	14	16		0	41	0
Cinema/Entertainment	0	0	0		0	0
Residential	3	34	0	0		0
Hotel	3	8	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	10	93	103	93	0	0
Retail	30	172	202	172	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	16	799	815	799	0	0
Hotel	0	10	10	10	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	5	12	17	12	0	0
Retail	20	103	123	103	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	26	2321	2347	2321	0	0
Hotel	5	11	16	11	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:	Sunrise	Organization:	
Project Location:		Performed By:	
Scenario Description:		Date:	
Analysis Year:		Checked By:	
Analysis Period:	PM Street Peak Hour	Date:	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)						
Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[2]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710, 150	90,000	SF	124	25	99
Retail	820	325,000	SF	1,319	633	686
Restaurant				0		
Cinema/Entertainment				0		
Residential	210, 221	4,800	DU	4,182	2,630	1,552
Hotel	320	75	RM	29	16	13
All Other Land Uses[2]				0		
				5,654	3,304	2,350

Table 2-P: Mode Split and Vehicle Occupancy Estimates						
Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*						
Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		20	0	0	2	0
Retail	8		0	0	178	3
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	14	63	0	0		2
Hotel	0	2	0	0	0	

Table 5-P: Computations Summary			
	Total	Entering	Exiting
All Person-Trips	5,654	3,304	2,350
Internal Capture Percentage	10%	9%	12%
External Vehicle-Trips[5]	5,070	3,012	2,058
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use		
Land Use	Entering Trips	Exiting Trips
Office	88%	22%
Retail	13%	28%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	7%	5%
Hotel	31%	15%

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*)

[4]Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Project Name:	Sunrise
Analysis Period:	PM Street Peak Hour

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	25	25	1.00	99	99
Retail	1.00	633	633	1.00	686	686
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	2630	2630	1.00	1552	1552
Hotel	1.00	16	16	1.00	13	13

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		20	4	0	2	0
Retail	14		199	27	178	34
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	62	652	328	0		47
Hotel	0	2	9	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		51	0	0	105	0
Retail	8		0	0	1210	3
Restaurant	8	317		0	421	11
Cinema/Entertainment	2	25	0		105	0
Residential	14	63	0	0		2
Hotel	0	13	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	~~22~~ 5	3	25	3	0	0
Retail	85	548	633	548	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	180	2450	2630	2450	0	0
Hotel	5	11	16	11	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	22	77	99	77	0	0
Retail	189	497	686	497	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	~~79~~ 179	1473	1652	1473	0	0
Hotel	2	11	13	11	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

*Indicates computation that has been rounded to the nearest whole number.

Table 7.1a Adjusted Internal Trip Capture Rates for Trip Origins within a Multi-Use Development			
Land Use Pairs		Weekday	
		AM Peak Hour	PM Peak Hour
From OFFICE	To Office	0.0%	0.0%
	To Retail	28.0%	20.0%
	To Restaurant	63.0%	4.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	1.0%	2.0%
	To Hotel	0.0%	0.0%
From RETAIL	To Office	29.0%	2.0%
	To Retail	0.0%	0.0%
	To Restaurant	13.0%	29.0%
	To Cinema/Entertainment	0.0%	4.0%
	To Residential	14.0%	26.0%
	To Hotel	0.0%	5.0%
From RESTAURANT	To Office	31.0%	3.0%
	To Retail	14.0%	41.0%
	To Restaurant	0.0%	0.0%
	To Cinema/Entertainment	0.0%	8.0%
	To Residential	4.0%	18.0%
	To Hotel	3.0%	7.0%
From CINEMA/ENTERTAINMENT	To Office	0.0%	2.0%
	To Retail	0.0%	21.0%
	To Restaurant	0.0%	31.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	0.0%	8.0%
	To Hotel	0.0%	2.0%
From RESIDENTIAL	To Office	2.0%	4.0%
	To Retail	1.0%	42.0%
	To Restaurant	20.0%	21.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	0.0%	0.0%
	To Hotel	0.0%	3.0%
From HOTEL	To Office	75.0%	0.0%
	To Retail	14.0%	16.0%
	To Restaurant	9.0%	68.0%
	To Cinema/Entertainment	0.0%	0.0%
	To Residential	0.0%	2.0%
	To Hotel	0.0%	0.0%

Table 7.2a Adjusted Internal Trip Capture Rates for Trip Destinations within a Multi-Use Development			
Land Use Pairs		Weekday	
		AM Peak Hour	PM Peak Hour
To OFFICE	From Office	0.0%	0.0%
	From Retail	4.0%	31.0%
	From Restaurant	14.0%	30.0%
	From Cinema/Entertainment	0.0%	6.0%
	From Residential	3.0%	57.0%
	From Hotel	3.0%	0.0%
To RETAIL	From Office	32.0%	8.0%
	From Retail	0.0%	0.0%
	From Restaurant	8.0%	50.0%
	From Cinema/Entertainment	0.0%	4.0%
	From Residential	17.0%	10.0%
	From Hotel	4.0%	2.0%
To RESTAURANT	From Office	23.0%	2.0%
	From Retail	50.0%	29.0%
	From Restaurant	0.0%	0.0%
	From Cinema/Entertainment	0.0%	3.0%
	From Residential	20.0%	14.0%
	From Hotel	6.0%	5.0%
To CINEMA/ENTERTAINMENT	From Office	0.0%	1.0%
	From Retail	0.0%	26.0%
	From Restaurant	0.0%	32.0%
	From Cinema/Entertainment	0.0%	0.0%
	From Residential	0.0%	0.0%
	From Hotel	0.0%	0.0%
To RESIDENTIAL	From Office	0.0%	4.0%
	From Retail	2.0%	46.0%
	From Restaurant	5.0%	16.0%
	From Cinema/Entertainment	0.0%	4.0%
	From Residential	0.0%	0.0%
	From Hotel	0.0%	0.0%
To HOTEL	From Office	0.0%	0.0%
	From Retail	0.0%	17.0%
	From Restaurant	4.0%	71.0%
	From Cinema/Entertainment	0.0%	1.0%
	From Residential	0.0%	12.0%
	From Hotel	0.0%	0.0%

PASSERBY PERCENT

Vehicle Pass-By Rates by Land Use

Source: ITE *Trip Generation Manual*, 11th Edition

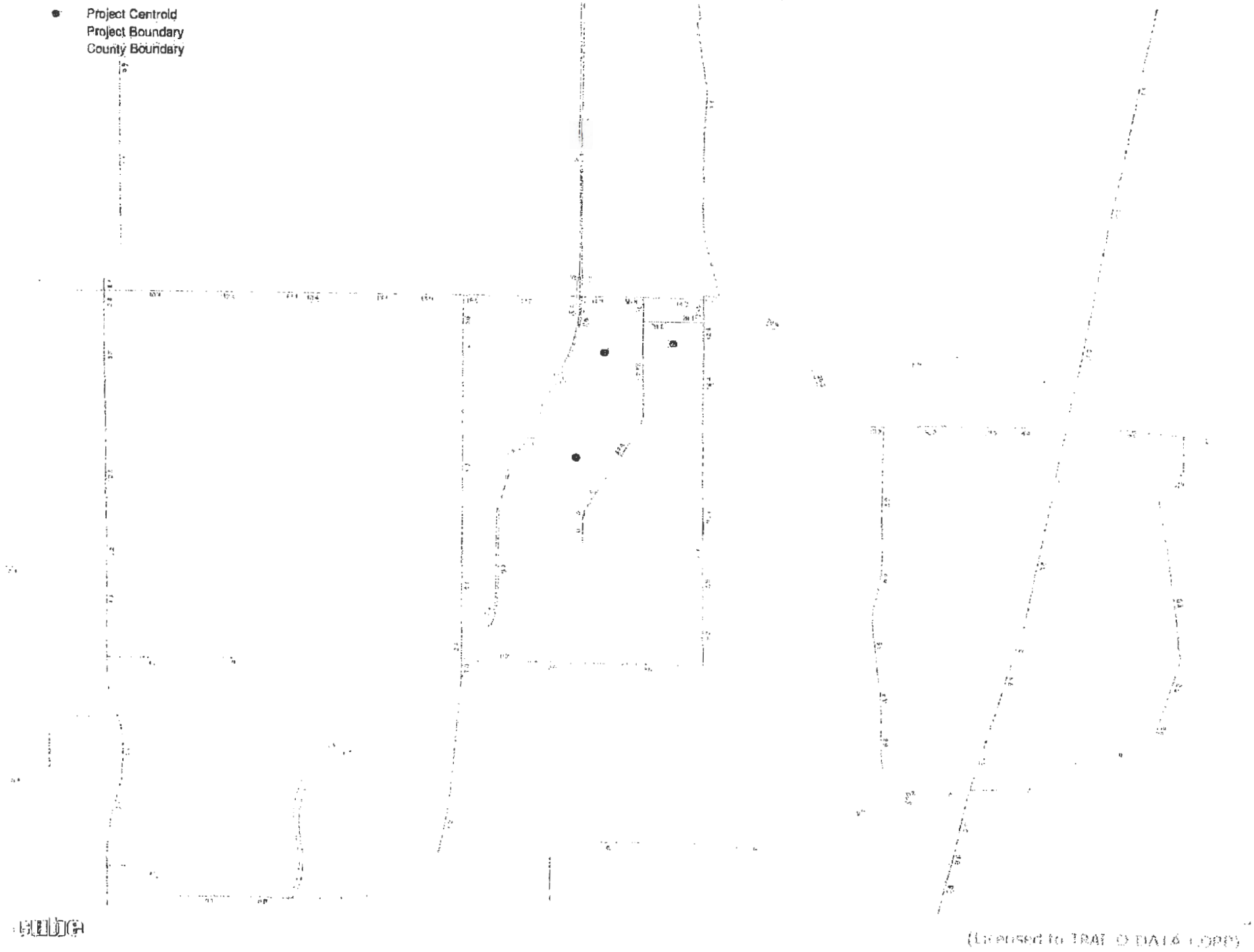
Land Use Code	820	
Land Use	Shopping Center (> 150k)	
Setting	General Urban/Suburban	
Time Period	Weekday PM Peak Period	
# Data Sites	8 Sites with GLA between 150 and 300k	16 Sites with GLA between 300 and 900k
Average Pass-By Rate	29% for Sites with GLA between 150 and 300k	19% for Sites with GLA between 300 and 900k

Pass-By Characteristics for Individual Sites

GLA (000)	State or Province	Survey Year	# Interviews	Pass-By Trip (%)	Non-Pass-By Trips			Adj Street Peak Hour Volume	Source
					Primary (%)	Diverted (%)	Total (%)		
213	Florida	1990	312	28	31	41	72	—	33
225	Illinois	1994	264	35	32	33	65	1970	24
227.9	Kentucky	1993	—	34	35	31	66	—	34
235	Kentucky	1993	211	35	29	36	65	2593	2
255	Iowa	1994	222	23	38	39	77	3706	24
256	Connecticut	1994	208	27	51	22	73	3422	24
293	Illinois	1994	282	24	70	6	76	4606	13
294	Pennsylvania	1994	213	24	48	18	76	4055	24
350	Massachusetts	1994	224	18	45	37	82	2112	24
361	Virginia	1994	315	17	54	29	83	2034	24
375	North Carolina	1994	214	29	48	23	71	2053	24
413	Texas	1994	228	28	51	21	72	589	24
418	Maryland	1994	281	20	50	30	80	5610	24
450	California	1994	321	23	49	28	77	2787	24
476	Washington	1994	234	25	53	22	75	3427	24
488	Texas	1994	257	12	75	13	88	1094	13
560	Virginia	1994	437	19	49	32	81	3051	24
581	Colorado	1994	296	18	53	29	82	2939	24
598	Colorado	1994	205	17	55	28	83	3840	24
633	Texas	1994	257	10	64	26	90	—	24
667	Illinois	1994	200	16	53	31	84	2770	24
738	New Jersey	1994	283	13	75	12	87	8059	24
800	California	1994	205	21	51	28	79	7474	24
808	California	1994	240	13	73	14	87	4035	24

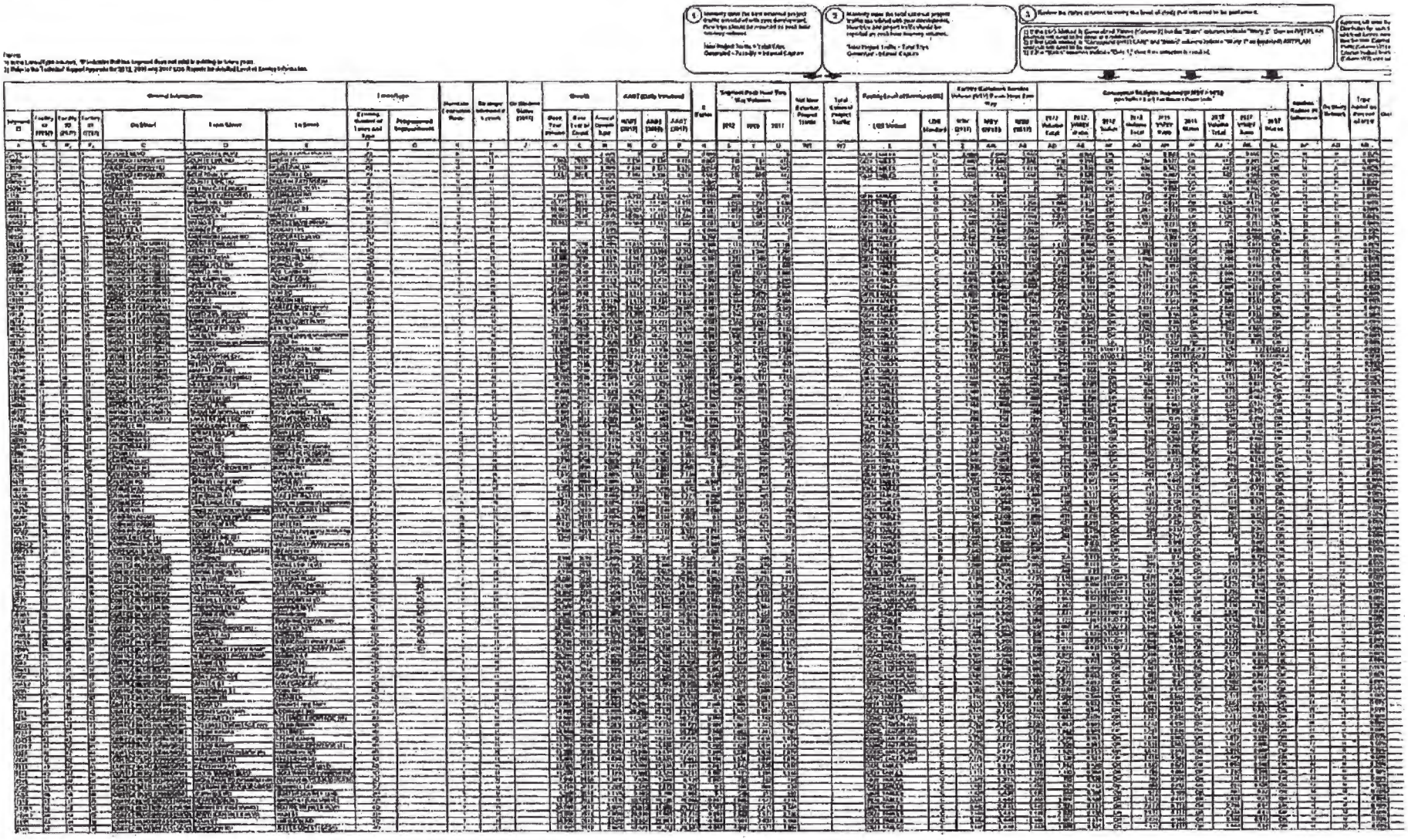
PROJECT TRAFFIC DISTRIBUTION

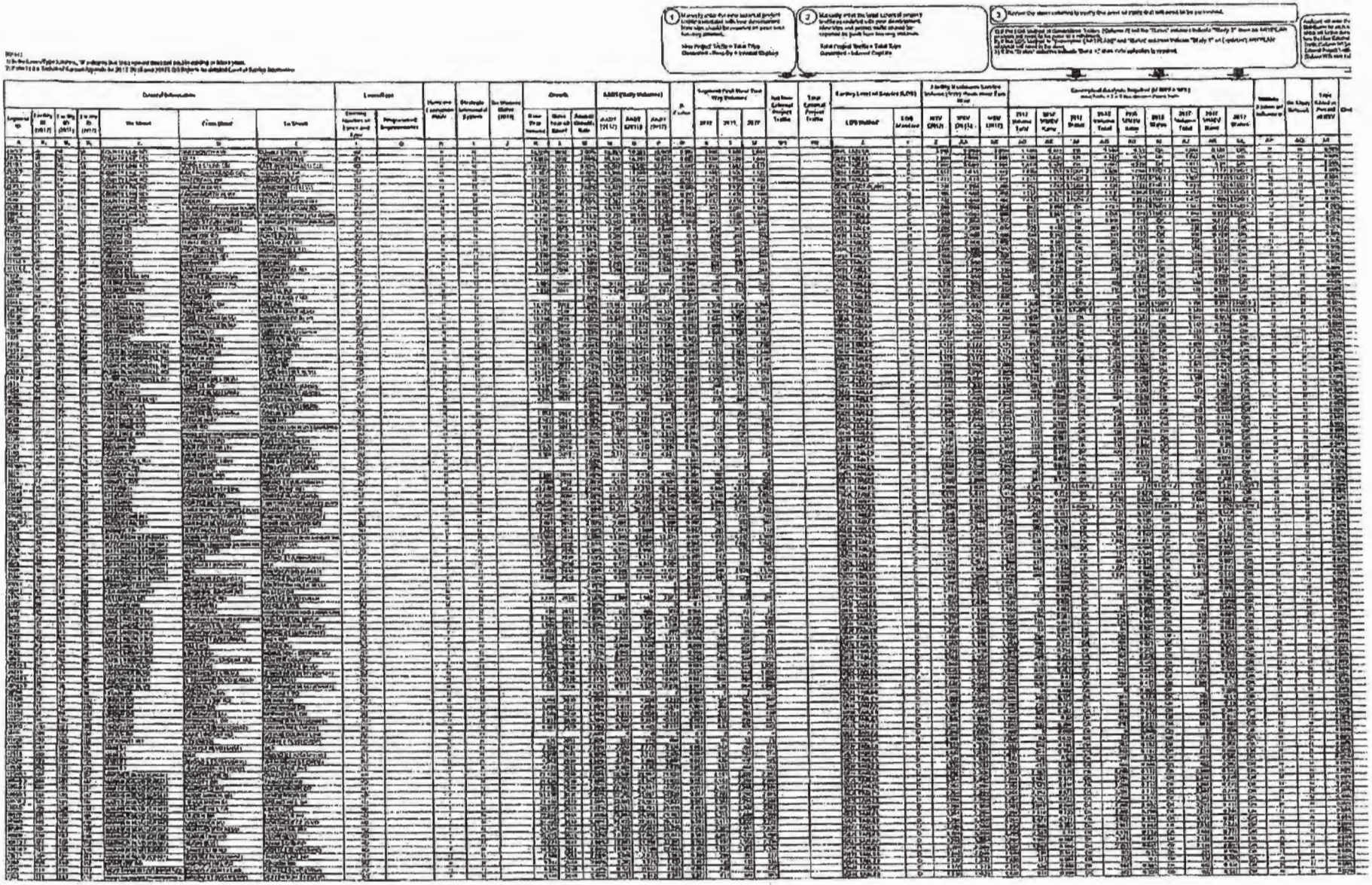
TBRPMv9.2 - 2024 E+C Network with 2045 SE Data - External Project Traffic Percent Distribution

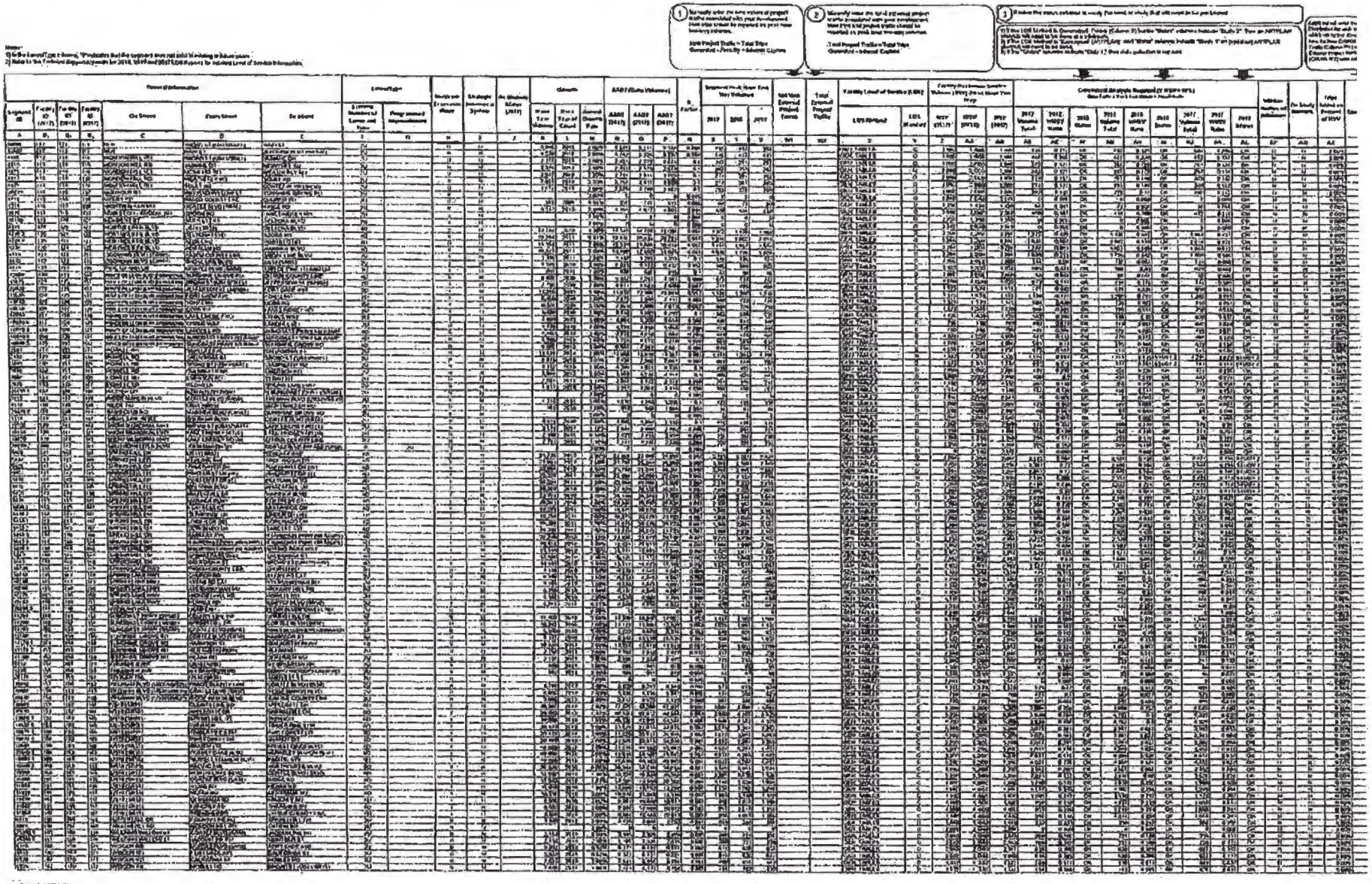


HERNANDO CO.
CONCURRENCY MANAGEMENT SYSTEM
TIER 1 TEST SPREADSHEETS

Harris County Concurrency Management System
Tier 1 Test: To Determine Concurrency or Need for Additional Analysis







FDOT GENERALIZED CAPACITY TABLES

TABLE 4 Generalized **Peak Hour Two-Way** Volumes for Florida's Urbanized Areas[1]

January 2020

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Class I (40 mph or higher posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	1,510	1,600	**
4	Divided	*	3,420	3,580	**
6	Divided	*	5,250	5,390	**
8	Divided	*	7,090	7,210	**

Class II (35 mph or slower posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	660	1,330	1,410
4	Divided	*	1,310	2,920	3,040
6	Divided	*	2,090	4,500	4,590
8	Divided	*	2,880	6,060	6,130

Non-State Signalized Roadway Adjustments

(Alter corresponding state volumes by the indicated percent.)

Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
2	Divided	Yes	No	+5%
2	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment

Multiply the corresponding two-directional volumes in this table by 0.6

BICYCLE MODE[2]

(Multiply vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	260	680	1,770
50-84%	190	600	1,770	>1,770
85-100%	830	1,700	>1,770	**

PEDESTRIAN MODE[2]

(Multiply vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	250	850
50-84%	*	150	780	1,420
85-100%	340	960	1,560	>1,770

BUS MODE (Scheduled Fixed Route)[3]

(Buses in peak hour in peak direction)

Sidewalk Coverage	B	C	D	E
0-84%	> 5	≥ 4	≥ 3	≥ 2
85-100%	> 4	≥ 3	≥ 2	≥ 1

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Core Urbanized

Lanes	B	C	D	E
4	4,050	5,640	6,800	7,420
6	5,960	8,310	10,220	11,150
8	7,840	10,960	13,620	14,850
10	9,800	13,510	17,040	18,580
12	11,600	16,350	20,930	23,200

Urbanized

Lanes	B	C	D	E
4	4,130	5,640	7,070	7,690
6	6,200	8,450	10,510	11,530
8	8,270	11,270	13,960	15,380
10	10,350	14,110	17,310	19,220

Freeway Adjustments

Auxiliary Lanes Present in Both Directions	Ramp Metering
+ 1,800	+ 5%

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Median	B	C	D	E
2	Undivided	1,050	1,620	2,180	2,930
4	Divided	3,270	4,730	5,960	6,780
6	Divided	4,910	7,090	8,950	10,180

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
2	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

[1] Values shown are presented as peak hour directional volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the HCM and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes in this table is based on number of vehicles, not number of bicyclists or pedestrians using the facility.

[3] Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Implementation Office
https://www.fdot.gov/planning/systems/

TABLE 4
(continued)

Generalized **Peak Hour Two-Way** Volumes for Florida's Urbanized Areas

January 2020

INPUT VALUE ASSUMPTIONS	Uninterrupted Flow Facilities				Interrupted Flow Facilities					
					State Arterials				Class I	
	Freeways	Core Freeways	Highways		Class I		Class II		Bicycle	Pedestrian
ROADWAY CHARACTERISTICS										
Area type (urban, rural)	urban	urban								
Number of through lanes (both dir.)	4-10	4-12	2	4-6	2	4-8	2	4-8	4	4
Posted speed (mph)	70	65	50	50	45	50	30	30	45	45
Free flow speed (mph)	75	70	55	55	50	55	35	35	50	50
Auxiliary Lanes (n,y)	n	n								
Median (d, twlt, n, nr, r)				d	n	r	n	r	r	r
Terrain (l,r)	l	l	l	l	l	l	l	l	l	l
% no passing zone			80							
Exclusive left turn lane impact (n, y)			[n]	y	y	y	y	y	y	y
Exclusive right turn lanes (n, y)					n	n	n	n	n	n
Facility length (mi)	3	3	5	5	2	2	1.9	1.8	2	2
TRAFFIC CHARACTERISTICS										
Planning analysis hour factor (K)	0.090	0.085	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
Directional distribution factor (D)	0.55	0.55	0.55	0.55	0.550	0.560	0.565	0.560	0.565	0.565
Peak hour factor (PHF)	0.95	0.95	0.95	0.95	1.000	1.000	1.000	1.000	1.000	1.000
Base saturation flow rate (pcphpl)	2,400	2,400	1,700	2,200	1,950	1,950	1,950	1,950	1,950	1,950
Heavy vehicle percent	4.0	4.0	2.0	2.0	1.0	1.0	1.0	1.0	2.5	2.0
Speed Adjustment Factor (SAF)	0.975	0.975		0.975						
Capacity Adjustment Factor (CAF)	0.968	0.968		0.968						
% left turns					12	12	12	12	12	12
% right turns					12	12	12	12	12	12
CONTROL CHARACTERISTICS										
Number of signals					4	4	10	10	4	6
Arrival type (1-6)					3	3	4	4	4	4
Signal type (z, c, p)					c	c	c	c	c	c
Cycle length (C)					120	150	120	120	120	120
Effective green ratio (g/C)					0.44	0.45	0.44	0.44	0.44	0.44
MULTIMODAL CHARACTERISTICS										
Paved shoulder/bicycle lane (n, y)									n, 50%, y	n
Outside lane width (n, t, w)									t	t
Pavement condition (d, t, u)									t	
On-street parking (n, y)										
Sidewalk (n, y)										n, 50%, y
Sidewalk/roadway separation(a, t, w)										t
Sidewalk protective barrier (n, y)										n

LEVEL OF SERVICE THRESHOLDS

Level of Service	Freeways	Highways		Arterials		Bicycle	Ped	Bus
	Density	Two-Lane %ffs	Multilane Density	Class I ars	Class II ats	Score	Score	Buses/hr.
B	≤ 17	> 83.3	≤ 17	> 31 mph	> 22 mph	≤ 2.75	≤ 2.75	≤ 6
C	≤ 24	> 75.0	≤ 24	> 23 mph	> 17 mph	≤ 3.50	≤ 3.50	≤ 4
D	≤ 31	> 66.7	≤ 31	> 18 mph	> 13 mph	≤ 4.25	≤ 4.25	< 3
E	≤ 39	> 58.3	≤ 35	> 15 mph	> 10 mph	≤ 5.00	≤ 5.00	< 2

% ffs = Percent free flow speed ats = Average travel speed

TABLE 5

Generalized **Peak Hour Two-Way** Volumes for Florida's Transitioning Areas and Areas Over 5,000 Not in Urbanized Areas[1]

January 2020

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Class I (40 mph or higher posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	1,300	1,460	**
4	Divided	*	3,060	3,200	**
6	Divided	*	4,690	4,820	**

Class II (35 mph or slower posted speed limit)

Lanes	Median	B	C	D	E
2	Undivided	*	580	1,200	1,280
4	Divided	*	890	2,590	2,850
6	Divided	*	1,440	4,040	4,280

Non-State Signalized Roadway Adjustments

(Alter corresponding state volumes by the indicated percent.)

Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
2	Divided	Yes	No	+5%
2	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
-	-	-	Yes	+ 5%

One-Way Facility Adjustment

Multiply the corresponding two-directional volumes in this table by 0.6

BICYCLE MODE[2]

(Multiply vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	140	550	1,760
50-84%	170	500	1,650	>1,760
85-100%	670	1,760	>1,760	**

PEDESTRIAN MODE[2]

(Multiply vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	250	850
50-84%	*	150	780	1,410
85-100%	340	950	1,540	>1,760

BUS MODE (Scheduled Fixed Route)[3]

(Buses in peak hour in peak direction)

Sidewalk Coverage	B	C	D	E
0-84%	> 5	≥ 4	≥ 3	≥ 2
85-100%	> 4	≥ 3	≥ 2	≥ 1

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Lanes	B	C	D	E
4	4,420	5,780	6,890	7,110
6	6,400	8,490	10,200	10,670
8	8,420	11,220	13,530	14,240
10	9,960	13,290	15,870	17,820

Freeway Adjustments

Auxiliary Lanes Present in Both Directions	Ramp Metering
+ 1,800	+ 5%

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Median	B	C	D	E
2	Undivided	1,020	1,560	2,110	2,840
4	Divided	3,110	4,490	5,670	6,450
6	Divided	4,650	6,730	8,510	9,670

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
2	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

[1] Values shown are presented as peak hour directional volumes for level of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the HCM and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes on this table is based on number of vehicles, not number of bicyclists or pedestrians using the facility.

[3] Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Implementation Office
https://www.fdot.gov/planning/systems

TABLE 5
(continued)

Generalized **Peak Hour Two-Way** Volumes for Florida's Transitioning Areas and Areas Over 5,000 Not In Urbanized Areas

January 2020

INPUT VALUE ASSUMPTIONS	Uninterrupted Flow Facilities			Interrupted Flow Facilities					
				State Arterials				Class I	
	Freeways	Highways		Class I		Class II		Bicycle	Pedestrian
ROADWAY CHARACTERISTICS									
Area type (urban, rural)	urban								
Number of through lanes (both dir.)	4-10	2	4-6	2	4-6	2	4-6	4	4
Posted speed (mph)	70	50	50	45	50	30	30	45	45
Free flow speed (mph)	75	55	55	50	55	35	35	50	50
Auxiliary lanes (n,y)	n								
Median (d, n, nr, r)			d	n	y	n	y	r	r
Terrain (l,r)	l	l	l	l	l	l	l	l	l
% no passing zone		60							
Exclusive left turn lane impact (n, y)		[n]	y	y	y	y	y	y	y
Exclusive right turn lanes (n, y)				n	n	n	n	n	n
Facility length (mi)	6	5	5	1.8	2	2	2	2	2
TRAFFIC CHARACTERISTICS									
Planning analysis hour factor (K)	0.098	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
Directional distribution factor (D)	0.55	0.55	0.55	0.550	0.570	0.570	0.565	0.570	0.570
Peak hour factor (PHF)	0.92	0.92	0.92	1.000	1.000	1.000	1.000	1.000	1.000
Base saturation flow rate (pcphpl)	2,400	1,700	2,200	1,950	1,950	1,950	1,950	1,950	1,950
Heavy vehicle percent	9.0	4.0	4.0	2.0	3.0	2.0	3.0	3.0	3.0
Speed Adjustment Factor (SAF)	0.975		0.975						
Capacity Adjustment Factor (CAF)	0.968		0.968						
% left turns				12	12	12	12	12	12
% right turns				12	12	12	12	12	12
CONTROL CHARACTERISTICS									
Number of signals				5	4	10	10	4	6
Arrival type (1-6)				4	3	4	4	4	4
Signal type (a, c, p)				c	c	c	c	c	c
Cycle length (C)				120	150	120	150	120	120
Effective green ratio (g/C)				0.44	0.45	0.44	0.45	0.44	0.44
MULTIMODAL CHARACTERISTICS									
Paved shoulder/bicycle lane (n, y)								n, 50%, y	n
Outside lane width (n, t, w)								t	t
Pavement condition (d, t, u)								t	
On-street parking (n, y)								n	n
Sidewalk (n, y)									n, 50%, y
Sidewalk/roadway separation (n, t, w)									t
Sidewalk protective barrier (n, y)									n

LEVEL OF SERVICE THRESHOLDS

Level of Service	Freeways	Highways		Arterials		Bicycle	Ped	Bus
	Density	Two-Lane %ffs	Multilane Density	Class I ats	Class II ats	Score	Score	Buses/hr
B	≤ 17	> 83.3	≤ 17	> 31 mph	> 22 mph	≤ 2.75	≤ 2.75	≤ 6
C	≤ 24	> 75.0	≤ 24	> 23 mph	> 17 mph	≤ 3.50	≤ 3.50	≤ 4
D	≤ 31	> 66.7	≤ 31	> 18 mph	> 13 mph	≤ 4.25	≤ 4.25	< 3
E	≤ 39	> 58.3	≤ 35	> 15 mph	> 10 mph	≤ 5.00	≤ 5.00	< 2

% ffs = Percent free flow speed ats = Average travel speed

TABLE 6

Generalized **Peak Hour Two-Way** Volumes for Florida's Rural Undeveloped Areas **and** Developed Areas Less Than 5,000 Population[1]

January 2020

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Lanes	Median	B	C	D	E
2	Undivided	*	1,220	1,350	**
4	Divided	*	2,790	2,890	**
6	Divided	*	4,300	4,350	**

Non-State Signalized Roadway Adjustments

(Alter corresponding state volumes by the indicated percent)

Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
2	Divided	Yes	No	+5%
2	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
-	-	-	Yes	+ 5%

One-Way Facility Adjustment

Multiply the corresponding two-directional volumes in this table by 0.6

BICYCLE MODE[2]

(Multiply vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes)

Rural Undeveloped

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	120	190	300
50-84%	100	200	310	1,010
85-100%	250	370	1,760	>1,760

Developed Areas

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	220	460	1,480
50-84%	170	430	1,270	>1,760
85-100%	560	1,760	>1,760	**

PEDESTRIAN MODE[2]

(Multiply vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	220	840
50-84%	*	120	780	1,390
85-100%	320	940	1,560	>1,820

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Lanes	B	C	D	E
4	3,650	5,040	5,950	6,640
6	5,130	7,250	8,670	9,950
8	6,600	9,490	11,380	13,270

Freeway Adjustments

Auxiliary Lanes Present in Both Directions

+ 1,800

UNINTERRUPTED FLOW HIGHWAYS

Rural Undeveloped

Lanes	Median	B	C	D	E
2	Undivided	440	820	1,330	2,710
4	Divided	2,960	4,270	5,290	5,960
6	Divided	4,450	6,420	7,930	8,950

Developed Areas

Lanes	Median	B	C	D	E
2	Undivided	980	1,490	2,020	2,710
4	Divided	2,780	4,020	5,130	5,850
6	Divided	4,180	6,040	7,710	8,780

Passing Lane Adjustments

Alter LOS B-D volumes in proportion to the passing lane length to the highway segment length

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
2	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

[1] Values shown are presented as peak hour directional volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the HCM and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes in this table is based on number of vehicles, not number of bicyclists or pedestrians using the facility.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade including F is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Implementation Office
https://www.fdot.gov/planning/systems

TABLE 6
(continued)

Generalized **Peak Hour Two-Way** Volumes for Florida's Rural Undeveloped Areas **and** Developed Areas Less Than 5,000 Population

January 2020

INPUT VALUE ASSUMPTIONS	Uninterrupted Flow Facilities					Interrupted Flow Facilities				
	Freeways	Highways				Arterials		Bicycle		Pedestrian
		Undeveloped		Developed						
ROADWAY CHARACTERISTICS										
Area type (urban, rural)	rural									
Number of through lanes (both dir.)	4-8	2	4-6	2	4-6	2	4-6	4	4	2
Posted speed (mph)	70	55	55	50	50	45	45	55	45	45
Free flow speed (mph)	75	60	60	55	55	50	50	60	50	50
Auxiliary lanes (n,y)	n									
Median (d, n, nr, r)			d		d	n	r	r	r	n
Terrain (l,r)	l	l	l	l	l	l	l	l	l	l
% no passing zone		20		60						
Exclusive left turn lanes (n, y)		[n]	y	[n]	y	y	y	y	y	y
Exclusive right turn lanes (n, y)						n	n	n	n	n
Facility length (mi)	18	10	10	5	5	1.9	2.2	4	2	2
TRAFFIC CHARACTERISTICS										
Planning analysis hour factor (K)	0.105	0.095	0.095	0.095	0.095	0.095	0.095	0.095	0.095	0.095
Directional distribution factor (D)	0.55	0.55	0.55	0.55	0.55	0.550	0.550	0.570	0.570	0.550
Peak hour factor (PHF)	0.88	0.88	0.88	0.88	0.88	1.000	1.000	1.000	1.000	1.000
Base saturation flow rate (pcphpl)	2,400	1,700	2,200	1,700	2,200	1,950	1,950	1,950	1,950	1,950
Heavy vehicle percent	12.0	5.0	12.0	5.0	8.0	3.0	3.0	6.0	3.5	3.0
Speed Adjustment Factor (SAF)	0.975		0.975		0.975					
Capacity Adjustment Factor (CAF)	0.968		0.968		0.968					
% left turns						12	12		12	12
% right turns						12	12		12	12
CONTROL CHARACTERISTICS										
Number of signals						5	6	2	4	4
Arrival type (1-6)						3	3	3	3	3
Signal type (a, c, p)						c	c	a	a	a
Cycle length (C)						90	90	60	90	90
Effective green ratio (g/C)						0.44	0.44	0.37	0.44	0.44
MULTIMODAL CHARACTERISTICS										
Paved shoulder/bicycle lane (n, y)								n,50%,y	n,50%,y	n
Outside lane width (n, t, w)								t	t	t
Pavement condition (d, t, u)								t	t	
Sidewalk (n, y)										n,50%,y
Sidewalk/roadway separation(a, t,w)										t
Sidewalk protective barrier (n, y)										n

LEVEL OF SERVICE THRESHOLDS

Level of Service	Freeways	Highways				
		Two-Lane ru		Two-Lane rd	Multilane ru	Multilane rd
	Density	%tsf	ats	%ffs	Density	Density
B	≤ 14	≤ 50	≥ 55	> 83.3	≤ 14	≤ 14
C	≤ 22	≤ 65	≥ 50	> 75.0	≤ 22	≤ 22
D	≤ 29	≤ 80	≥ 45	> 66.7	≤ 29	≤ 29
E	≤ 36	> 80	≥ 40	> 58.3	≤ 34	≤ 34

Level of Service	Arterials	Bicycle	Pedestrian
	Major City/Co.(ats)	Score	Score
B	> 31 mph	≤ 2.75	≤ 2.75
C	> 23 mph	≤ 3.50	≤ 3.50
D	> 18 mph	≤ 4.25	≤ 4.25
E	> 15 mph	≤ 5.00	≤ 5.00

%tsf = Percent time spent following %ffs = Percent of free flow speed ats = Average travel speed ru = Rural undeveloped rd = Rural developed

TABLE 7 Generalized **Peak Hour Directional** Volumes for Florida's Urbanized Areas

January 2020

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Class I (40 mph or higher posted speed limit)

Lanes	Median	B	C	D	E
1	Undivided	*	830	880	**
2	Divided	*	1,910	2,000	**
3	Divided	*	2,940	3,020	**
4	Divided	*	3,970	4,040	**

Class II (35 mph or slower posted speed limit)

Lanes	Median	B	C	D	E
1	Undivided	*	370	750	800
2	Divided	*	730	1,630	1,700
3	Divided	*	1,170	2,520	2,560
4	Divided	*	1,610	3,390	3,420

Non-State Signalized Roadway Adjustments

(Alter corresponding state volumes by the indicated percent.)

Non-State Signalized Roadways -10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
1	Divided	Yes	No	+5%
1	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
–	–	–	Yes	+ 5%

One-Way Facility Adjustment

Multiply the corresponding directional volumes in this table by 1.2

BICYCLE MODE[2]

(Multiply vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	150	390	1,000
50-84%	110	340	1,000	>1,000
85-100%	470	1,000	>1,000	**

PEDESTRIAN MODE[2]

(Multiply vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	140	480
50-84%	*	80	440	800
85-100%	200	540	880	>1,000

BUS MODE (Scheduled Fixed Route)[3]

(Buses in peak hour in peak direction)

Sidewalk Coverage	B	C	D	E
0-84%	> 5	≥ 4	≥ 3	≥ 2
85-100%	> 4	≥ 3	≥ 2	≥ 1

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Core Urbanized

Lanes	B	C	D	E
2	2,230	3,100	3,740	4,080
3	3,280	4,570	5,620	6,130
4	4,310	6,030	7,490	8,170
5	5,390	7,430	9,370	10,220
6	6,380	8,990	11,510	12,760

Urbanized

Lanes	B	C	D	E
2	2,270	3,100	3,890	4,230
3	3,410	4,650	5,780	6,340
4	4,550	6,200	7,680	8,460
5	5,690	7,760	9,520	10,570

Freeway Adjustments

Auxiliary Lane	Ramp Metering
+ 1,000	+ 5%

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Median	B	C	D	E
1	Undivided	580	890	1,200	1,610
2	Divided	1,800	2,600	3,280	3,730
3	Divided	2,700	3,900	4,920	5,600

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
1	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

[1] Values shown are presented as peak hour directional volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the HCM and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes in this table is based on number of vehicles, not number of bicyclists or pedestrians using the facility.

[3] Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode volumes greater than level of service D become F because interruption capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Implementation Office
http://www.fdot.gov/planning/systems

TABLE 7
(continued)

Generalized **Peak Hour Directional** Volumes for Florida's Urbanized Areas

January 2020

INPUT VALUE ASSUMPTIONS	Uninterrupted Flow Facilities				Interrupted Flow Facilities					
					State Arterials				Class I	
	Freeways	Core Freeways	Highways		Class I		Class II		Bicycle	Pedestrian
ROADWAY CHARACTERISTICS										
Area type (urban, rural)	urban	urban								
Number of through lanes (both dir.)	4-10	4-12	2	4-6	2	4-8	2	4-8	4	4
Posted speed (mph)	70	65	50	50	45	50	30	30	45	45
Free flow speed (mph)	75	70	55	55	50	55	35	35	50	50
Auxiliary Lanes (n,y)	n	n								
Median (d, fwlt, n, nr, r)				d	n	r	n	r	r	r
Terrain (l,r)	l	l	l	l	l	l	l	l	l	l
% no passing zone			80							
Exclusive left turn lane impact (n, y)			[n]	y	y	y	y	y	y	y
Exclusive right turn lanes (n, y)					n	n	n	n	n	n
Facility length (mi)	3	3	5	5	2	2	1.9	1.8	2	2
TRAFFIC CHARACTERISTICS										
Planning analysis hour factor (K)	0.090	0.085	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
Directional distribution factor (D)	0.55	0.55	0.55	0.55	0.550	0.560	0.565	0.560	0.565	0.565
Peak hour factor (PHF)	0.95	0.95	0.95	0.95	1.000	1.000	1.000	1.000	1.000	1.000
Base saturation flow rate (pcphpl)	2,400	2,400	1,700	2,200	1,950	1,950	1,950	1,950	1,950	1,950
Heavy vehicle percent	4.0	4.0	2.0	2.0	1.0	1.0	1.0	1.0	2.5	2.0
Speed Adjustment Factor (SAF)	0.975	0.975		0.975						
Capacity Adjustment Factor (CAF)	0.968	0.968		0.968						
% left turns					12	12	12	12	12	12
% right turns					12	12	12	12	12	12
CONTROL CHARACTERISTICS										
Number of signals					4	4	10	10	4	6
Arrival type (1-6)					3	3	4	4	4	4
Signal type (a, c, p)					c	c	c	c	c	c
Cycle length (C)					120	150	120	120	120	120
Effective green ratio (g/C)					0.44	0.45	0.44	0.44	0.44	0.44
MULTIMODAL CHARACTERISTICS										
Paved shoulder/bicycle lane (n, y)									n, 50%, y	n
Outside lane width (n, t, w)									t	t
Pavement condition (d, f, o)									f	
On-street parking (n, y)										
Sidewalk (n, y)										n, 50%, y
Sidewalk/roadway separation(a, t, w)										t
Sidewalk protective barrier (n, y)										n

LEVEL OF SERVICE THRESHOLDS

Level of Service	Freeways	Highways		Arterials		Bicycle	Ped	Bus
	Density	Two-Lane %ffs	Multilane Density	Class I ats	Class II ats	Score	Score	Buses/hr.
B	≤ 17	> 83.3	≤ 17	> 31 mph	> 22 mph	≤ 2.75	≤ 2.75	≤ 6
C	≤ 24	> 75.0	≤ 24	> 23 mph	> 17 mph	≤ 3.50	≤ 3.50	≤ 4
D	≤ 31	> 66.7	≤ 31	> 18 mph	> 13 mph	≤ 4.25	≤ 4.25	< 3
E	≤ 39	> 58.3	≤ 35	> 15 mph	> 10 mph	≤ 5.00	≤ 5.00	< 2

% ffs = Percent free flow speed ats = Average travel speed

TABLE 8

Generalized **Peak Hour Directional** Volumes for Florida's Transitioning Areas and Areas Over 5,000 Not In Urbanized Areas[1]

January 2020

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Class I (40 mph or higher posted speed limit)

Lanes	Median	B	C	D	E
1	Undivided	*	710	800	**
2	Divided	*	1,740	1,820	**
3	Divided	*	2,670	2,740	**

Class II (35 mph or slower posted speed limit)

Lanes	Median	B	C	D	E
1	Undivided	*	330	680	720
2	Divided	*	500	1,460	1,600
3	Divided	*	810	2,280	2,420

Non-State Signalized Roadway Adjustments

(Alter corresponding state volumes by the indicated percent.)

Non-State Signalized Roadways - 10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
1	Divided	Yes	No	+5%
1	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
-	-	-	Yes	+ 5%

One-Way Facility Adjustment

Multiply the corresponding directional volumes in this table by 1.2

BICYCLE MODE[2]

(Multiply vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	140	320	1,000
50-84%	100	280	940	>1,000
85-100%	380	1,900	>1,000	**

PEDESTRIAN MODE[2]

(Multiply vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	140	480
50-84%	*	80	440	800
85-100%	200	540	880	>1,000

BUS MODE (Scheduled Fixed Route)[3]

(Buses in peak hour in peak direction)

Sidewalk Coverage	B	C	D	E
0-84%	> 5	≥ 4	≥ 3	≥ 2
85-100%	> 4	≥ 3	≥ 2	≥ 1

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Lanes	B	C	D	E
2	2,430	3,180	3,790	3,910
3	3,520	4,670	5,610	5,870
4	4,630	6,170	7,440	7,830
5	5,480	7,310	8,730	9,800

Freeway Adjustments

Auxiliary Lane	Ramp Metering
+ 1,000	+ 5%

UNINTERRUPTED FLOW HIGHWAYS

Lanes	Median	B	C	D	E
1	Undivided	560	860	1,160	1,560
2	Divided	1,710	2,470	3,120	3,550
3	Divided	2,560	3,700	4,680	5,320

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
1	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

[1] Values shown are presented as peak hour directional volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the HCM and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes in this table is based on number of vehicles, not number of bicyclists or pedestrians, using the facility.

[3] Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Implementation Office
https://www.fdot.gov/planning/systems

TABLE 8
(continued)

Generalized **Peak Hour Directional** Volumes for Florida's Transitioning Areas and Areas Over 5,000 Not In Urbanized Areas

January 2020

INPUT VALUE ASSUMPTIONS	Uninterrupted Flow Facilities			Interrupted Flow Facilities					
				State Arterials				Class I	
	Freeways	Highways		Class I		Class II		Bicycle	Pedestrian
ROADWAY CHARACTERISTICS									
Area type (urban, rural)	urban								
Number of through lanes (both dir.)	4-10	2	4-6	2	4-6	2	4-6	4	4
Posted speed (mph)	70	50	50	45	50	30	30	45	45
Free flow speed (mph)	75	55	55	50	55	35	35	50	50
Auxiliary lanes (n,y)	n								
Median (d, n, nr, r)			d	n	y	n	y	r	r
Terrain (l,r)	l	l	l	l	l	l	l	l	l
% no passing zone		60							
Exclusive left turn lane impact (n, y)		[n]	y	y	y	y	y	y	y
Exclusive right turn lanes (n, y)				n	n	n	n	n	n
Facility length (mi)	6	5	5	1.8	2	2	2	2	2
TRAFFIC CHARACTERISTICS									
Planning analysis hour factor (K)	0.098	0.090	0.090	0.090	0.090	0.090	0.090	0.090	0.090
Directional distribution factor (D)	0.55	0.55	0.55	0.550	0.570	0.570	0.565	0.570	0.570
Peak hour factor (PHF)	0.92	0.92	0.92	1.000	1.000	1.000	1.000	1.000	1.000
Base saturation flow rate (pcphpl)	2,400	1,700	2,200	1,950	1,950	1,950	1,950	1,950	1,950
Heavy vehicle percent	9.0	4.0	4.0	2.0	3.0	2.0	3.0	3.0	3.0
Speed Adjustment Factor (SAF)	0.975		0.975						
Capacity Adjustment Factor (CAF)	0.968		0.968						
% left turns				12	12	12	12	12	12
% right turns				12	12	12	12	12	12
CONTROL CHARACTERISTICS									
Number of signals				5	4	10	10	4	6
Arrival type (1-6)				4	3	4	4	4	4
Signal type (a, c, p)				c	c	c	c	c	c
Cycle length (C)				120	150	120	150	120	120
Effective green ratio (g/C)				0.44	0.45	0.44	0.45	0.44	0.44
MULTIMODAL CHARACTERISTICS									
Paved shoulder/bicycle lane (n, y)								n, 50%, y	n
Outside lane width (n, t, w)								t	t
Pavement condition (d, f, u)								f	
On-street parking (n, y)								n	n
Sidewalk (n, y)									n, 50%, y
Sidewalk/roadway separation (a, t, w)									t
Sidewalk protective barrier (n, y)									n

LEVEL OF SERVICE THRESHOLDS

Level of Service	Freeways	Highways		Arterials		Bicycle	Ped	Bus
	Density	Two-Lane %ffs	Multilane Density	Class I ats	Class II ats	Score	Score	Buses/hr
B	≤ 17	> 83.3	≤ 17	> 31 mph	> 22 mph	≤ 2.75	≤ 2.75	≤ 6
C	≤ 24	> 75.0	≤ 24	> 23 mph	> 17 mph	≤ 3.50	≤ 3.50	≤ 4
D	≤ 31	> 66.7	≤ 31	> 18 mph	> 13 mph	≤ 4.25	≤ 4.25	< 3
E	≤ 39	> 58.3	≤ 35	> 15 mph	> 10 mph	≤ 5.00	≤ 5.00	< 2

% ffs = Percent free flow speed ats = Average travel speed

TABLE 9

Generalized **Peak Hour Directional** Volumes for Florida's Rural Undeveloped Areas and Developed Areas Less Than 5,000 Population[1]

January 2020

INTERRUPTED FLOW FACILITIES

STATE SIGNALIZED ARTERIALS

Lanes	Median	B	C	D	E
1	Undivided	*	670	740	**
2	Divided	*	1,530	1,580	**
3	Divided	*	2,360	2,400	**

Non-State Signalized Roadway Adjustments

(Alter corresponding state volumes by the indicated percent)

Non-State Signalized Roadways -10%

Median & Turn Lane Adjustments

Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors
1	Divided	Yes	No	+5%
1	Undivided	No	No	-20%
Multi	Undivided	Yes	No	-5%
Multi	Undivided	No	No	-25%
--	--	--	Yes	+5%

One-Way Facility Adjustment

Multiply the corresponding directional volumes in this table by 1.2

BICYCLE MODE[2]

(Multiply vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes)

Rural Undeveloped

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	70	110	170
50-84%	60	120	180	580
85-100%	140	210	1,000	>1,000

Developed Areas

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	120	260	840
50-84%	100	240	720	1,000
85-100%	320	1,000	>1,000	**

PEDESTRIAN MODE[2]

(Multiply vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	120	460
50-84%	*	80	430	770
85-100%	180	520	860	>1,000

UNINTERRUPTED FLOW FACILITIES

FREEWAYS

Lanes	B	C	D	E
2	2,010	2,770	3,270	3,650
3	2,820	3,990	4,770	5,470
4	3,630	5,220	6,260	7,300

Freeway Adjustments

Auxiliary Lane
+ 1,000

UNINTERRUPTED FLOW HIGHWAYS

Rural Undeveloped

Lanes	Median	B	C	D	E
1	Undivided	240	450	730	1,490
2	Divided	1,630	2,350	2,910	3,280
3	Divided	2,450	3,530	4,360	4,920

Developed Areas

Lanes	Median	B	C	D	E
1	Undivided	540	820	1,110	1,490
2	Divided	1,530	2,210	2,820	3,220
3	Divided	2,300	3,320	4,240	4,830

Passing Lane Adjustments

Alter LOS B-D volumes in proportion to the passing lane length to the highway segment length

Uninterrupted Flow Highway Adjustments

Lanes	Median	Exclusive left lanes	Adjustment factors
1	Divided	Yes	+5%
Multi	Undivided	Yes	-5%
Multi	Undivided	No	-25%

[1] Values shown are presented as peak hour directional volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the HCM and the Transit Capacity and Quality of Service Manual.

[2] Level of service for the bicycle and pedestrian modes in this table is based on number of vehicles, not number of bicyclists or pedestrians using the facility.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Implementation Office
https://www.fdot.gov/planning/systems

TABLE 9
(continued)

Generalized **Peak Hour Directional** Volumes for Florida's Rural Undeveloped Areas **and** Developed Areas Less Than 5,000 Population

January 2020

INPUT VALUE ASSUMPTIONS	Uninterrupted Flow Facilities					Interrupted Flow Facilities				
	Freeways	Highways				Arterials		Bicycle		Pedestrian
		Undeveloped		Developed						
ROADWAY CHARACTERISTICS										
Area type (urban, rural)	rural									
Number of through lanes (both dir.)	4-8	2	4-6	2	4-6	2	4-6	4	4	2
Posted speed (mph)	70	55	55	50	50	45	45	55	45	45
Free flow speed (mph)	75	60	60	55	55	50	50	60	50	50
Auxiliary lanes (n,y)	n									
Median (d, n, nr, r)			d		d	n	r	r	r	n
Terrain (l,r)	l	l	l	l	l	l	l	l	l	l
% no passing zone		20		60						
Exclusive left turn lanes (n, y)		[n]	y	[n]	y	y	y	y	y	y
Exclusive right turn lanes (n, y)						n	n	n	n	n
Facility length (mi)	18	10	10	5	5	1.9	2.2	4	2	2
TRAFFIC CHARACTERISTICS										
Planning analysis hour factor (K)	0.105	0.095	0.095	0.095	0.095	0.095	0.095	0.095	0.095	0.095
Directional distribution factor (D)	0.55	0.55	0.55	0.55	0.55	0.550	0.550	0.570	0.570	0.550
Peak hour factor (PHF)	0.88	0.88	0.88	0.88	0.88	1.000	1.000	1.000	1.000	1.000
Base saturation flow rate (pcphpl)	2,400	1,700	2,200	1,700	2,200	1,950	1,950	1,950	1,950	1,950
Heavy vehicle percent	12.0	5.0	12.0	5.0	8.0	3.0	3.0	6.0	3.5	3.0
Speed Adjustment Factor (SAF)	0.975		0.975		0.975					
Capacity Adjustment Factor (CAF)	0.968		0.968		0.968					
% left turns						12	12		12	12
% right turns						12	12		12	12
CONTROL CHARACTERISTICS										
Number of signals						5	6	2	4	4
Arrival type (1-6)						3	3	3	3	3
Signal type (a, c, p)						c	c	a	a	a
Cycle length (C)						90	90	60	90	90
Effective green ratio (g/C)						0.44	0.44	0.37	0.44	0.44
MULTIMODAL CHARACTERISTICS										
Paved shoulder/bicycle lane (n, y)								n,50%,y	n,50%,y	n
Outside lane width (n, t, w)								t	t	t
Pavement condition (d, t, u)								t	t	
Sidewalk (n, y)										n,50%,y
Sidewalk/roadway separation(a, t,w)										t
Sidewalk protective barrier (n, y)										n

LEVEL OF SERVICE THRESHOLDS

Level of Service	Freeways	Highways				
		Two-Lane ru		Two-Lane rd	Multilane ru	Multilane rd
	Density	%tsf	ats	%ffs	Density	Density
B	≤ 14	≤ 50	≤ 55	> 83.3	≤ 14	≤ 14
C	≤ 22	≤ 65	≤ 50	> 75.0	≤ 22	≤ 22
D	≤ 29	≤ 80	≤ 45	> 66.7	≤ 29	≤ 29
E	≤ 36	> 80	≤ 40	> 58.3	≤ 34	≤ 34

Level of Service	Arterials	Bicycle	Pedestrian
	Major City/Co.(ats)	Score	Score
B	> 31 mph	≤ 2.75	≤ 2.75
C	> 23 mph	≤ 3.50	≤ 3.50
D	> 18 mph	≤ 4.25	≤ 4.25
E	> 15 mph	≤ 5.00	≤ 5.00

%tsf = Percent time spent following %ffs = Percent of free flow speed ats = Average travel speed ru = Rural undeveloped rd = Rural developed

ITE TRIP GENERATION WITH THE MINI-WAREHOUSE

PERIOD SETTING

Analysis Name :	New Analysis		
Project Name :	Sunrise Alt	**No :**	
Date:	1/18/2023	**City:**	
State/Province:		**Zip/Postal Code:**	
Country:		**Client Name:**	
Analyst's Name:		**Edition:**	Trip Generation Manual 11.1 Ed

Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
151 - Mini-Warehouse (General Urban/Suburban)	1000 Sq. Ft. GFA	40	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Average 0.09	2 50%	2 50%	4

TRAFFIC REDUCTIONS

Land Use	Entry Reduction	Adjusted Entry	Exit Reduction	Adjusted Exit
151 - Mini-Warehouse	0 %	2	0 %	2

EXTERNAL TRIPS

Land Use	External Trips	Pass-by%	Pass-by Trips	Non-pass-by Trips
151 - Mini-Warehouse	4	0	0	4

ITE DEVIATION DETAILS

Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.

Landuse	No deviations from ITE.
Methods	No deviations from ITE.
External Trips	151 - Mini-Warehouse (General Urban/Suburban) ITE does not recommend a particular pass-by% for this case.

SUMMARY

Total Entering	2
Total Exiting	2
Total Entering Reduction	0
Total Exiting Reduction	0
Total Entering Internal Capture Reduction	0
Total Exiting Internal Capture Reduction	0
Total Entering Pass-by Reduction	0
Total Exiting Pass-by Reduction	0
Total Entering Non-Pass-by Trips	2
Total Exiting Non-Pass-by Trips	2

PERIOD SETTING

Analysis Name :	New Analysis		
Project Name :	Sunrise Alt	**No :**	
Date:	1/18/2023	**City:**	
State/Province:		**Zip/Postal Code:**	
Country:		**Client Name:**	
Analyst's Name:		**Edition:**	Trip Generation Manual 11.1 Ed

Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
151 - Mini-Warehouse (General Urban/Suburban)	1000 Sq. Ft. GFA	40	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Average 0.15	3 50%	3 50%	6

TRAFFIC REDUCTIONS

Land Use	Entry Reduction	Adjusted Entry	Exit Reduction	Adjusted Exit
151 - Mini-Warehouse	0 %	3	0 %	3

EXTERNAL TRIPS

Land Use	External Trips	Pass-by%	Pass-by Trips	Non-pass-by Trips
151 - Mini-Warehouse	6	0	0	6

ITE DEVIATION DETAILS

Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.

Landuse	No deviations from ITE.
Methods	No deviations from ITE.
External Trips	151 - Mini-Warehouse (General Urban/Suburban) ITE does not recommend a particular pass-by% for this case.

SUMMARY

Total Entering	3
Total Exiting	3
Total Entering Reduction	0
Total Exiting Reduction	0
Total Entering Internal Capture Reduction	0
Total Exiting Internal Capture Reduction	0
Total Entering Pass-by Reduction	0
Total Exiting Pass-by Reduction	0
Total Entering Non-Pass-by Trips	3
Total Exiting Non-Pass-by Trips	3

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:		**Organization:**	
Project Location:		**Performed By:**	
Scenario Description:		**Date:**	
Analysis Year:		**Checked By:**	
Analysis Period:	**AM Street Peak Hour**	**Date:**	

Table 1-A: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	50,000		92	81	11
Retail	820	325,000		325	202	123
Restaurant						
Cinema/Entertainment						
Residential	210,221	4,800		3,162	815	2,347
Hotel	320	75		26	10	16
All Other Land Uses[2]				0		
				3,605	1,108	2,497

Table 2-A: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-A: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-A: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		3	0	0	0	0
Retail	3		0	0	16	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	2	23	0	0		0
Hotel	2	2	0	0	0	

Table 5-A: Computations Summary

	Total	Entering	Exiting
All Person-Trips	3,605	1,108	2,497
Internal Capture Percentage	3%	5%	2%
External Vehicle-Trips[5]	3,503	1,057	2,446
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[5]	0	0	0

Table 6-A: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	9%	27%
Retail	14%	15%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	2%	1%
Hotel	0%	25%

[1] *Land Use Codes (LUCs)* from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2] Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3] Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4] Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

[5] Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

[6] Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Project Name:	0
Analysis Period:	**AM Street Peak Hour**

Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-A (D): Entering Trips			Table 7-A (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	81	81	1.00	11	11
Retail	1.00	202	202	1.00	123	123
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	815	815	1.00	2347	2347
Hotel	1.00	10	10	1.00	16	16

Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		3	7	0	0	0
Retail	36		16	0	17	0
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	47	23	469	0		0
Hotel	12	2	1	0	0	

Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		65	0	0	0	0
Retail	3		0	0	16	0
Restaurant	11	16		0	41	0
Cinema/Entertainment	0	0	0		0	0
Residential	2	34	0	0		0
Hotel	2	8	0	0	0	

Table 9-A (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	7	74	81	74	0	0
Retail	28	174	202	174	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	16	799	815	799	0	0
Hotel	0	10	10	10	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-A (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	3	8	11	8	0	0
Retail	19	104	123	104	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	25	2322	2347	2322	0	0
Hotel	4	12	16	12	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

NCHRP 684 Internal Trip Capture Estimation Tool			
Project Name:		Organization:	
Project Location:		Performed By:	
Scenario Description:		Date:	
Analysis Year:		Checked By:	
Analysis Period:	PM Street Peak Hour	Date:	

Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate)

Land Use	Development Data (*For Information Only*)			Estimated Vehicle-Trips[3]		
	ITE LUCs[1]	Quantity	Units	Total	Entering	Exiting
Office	710	50.000		93	16	77
Retail	820	325.000		1,319	633	686
Restaurant						
Cinema/Entertainment				0		
Residential	210,221	4,800		4,182	2,630	1,552
Hotel	320	75		29	16	13
All Other Land Uses[2]				0		
				5,623	3,295	2,328

Table 2-P: Mode Split and Vehicle Occupancy Estimates

Land Use	Entering Trips			Exiting Trips		
	Veh. Occ.[4]	% Transit	% Non-Motorized	Veh. Occ.[4]	% Transit	% Non-Motorized
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						
All Other Land Uses[2]						

Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office						
Retail						
Restaurant						
Cinema/Entertainment						
Residential						
Hotel						

Table 4-P: Internal Person-Trip Origin-Destination Matrix*

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		15	0	0	2	0
Retail	5		0	0	178	3
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	9	63	0	0		2
Hotel	0	2	0	0	0	

Table 5-P: Computations Summary

	Total	Entering	Exiting
All Person-Trips	5,623	3,295	2,328
Internal Capture Percentage	10%	8%	12%
External Vehicle-Trips[5]	5,065	3,016	2,049
External Transit-Trips[6]	0	0	0
External Non-Motorized Trips[6]	0	0	0

Table 6-P: Internal Trip Capture Percentages by Land Use

Land Use	Entering Trips	Exiting Trips
Office	88%	22%
Retail	13%	27%
Restaurant	N/A	N/A
Cinema/Entertainment	N/A	N/A
Residential	7%	5%
Hotel	31%	15%

[1]Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

[2]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

[3]Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

[4]Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be

[5]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

[6]Person-Trips

*Indicates computation that has been rounded to the nearest whole number.

Project Name:	0
Analysis Period:	PM Street Peak Hour

Table 7-P: Conversion of Vehicle-Trip Ends to Person-Trip Ends

Land Use	Table 7-P (D): Entering Trips			Table 7-P (O): Exiting Trips		
	Veh. Occ.	Vehicle-Trips	Person-Trips*	Veh. Occ.	Vehicle-Trips	Person-Trips*
Office	1.00	16	16	1.00	77	77
Retail	1.00	633	633	1.00	686	686
Restaurant	1.00	0	0	1.00	0	0
Cinema/Entertainment	1.00	0	0	1.00	0	0
Residential	1.00	2630	2630	1.00	1552	1552
Hotel	1.00	16	16	1.00	13	13

Table 8-P (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		15	3	0	2	0
Retail	14		199	27	178	34
Restaurant	0	0		0	0	0
Cinema/Entertainment	0	0	0		0	0
Residential	62	652	326	0		47
Hotel	0	2	9	0	0	

Table 8-P (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination)

Origin (From)	Destination (To)					
	Office	Retail	Restaurant	Cinema/Entertainment	Residential	Hotel
Office		51	0	0	105	0
Retail	5		0	0	1210	3
Restaurant	5	317		0	421	11
Cinema/Entertainment	1	25	0		105	0
Residential	9	63	0	0		2
Hotel	0	13	0	0	0	

Table 9-P (D): Internal and External Trips Summary (Entering Trips)

Destination Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	3 14	2	16	2	0	0
Retail	80	553	633	553	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	180	2450	2630	2450	0	0
Hotel	5	11	16	11	0	0
All Other Land Uses[3]	0	0	0	0	0	0

Table 9-P (O): Internal and External Trips Summary (Exiting Trips)

Origin Land Use	Person-Trip Estimates			External Trips by Mode*		
	Internal	External	Total	Vehicles[1]	Transit[2]	Non-Motorized[2]
Office	17	60	77	60	0	0
Retail	186	500	686	500	0	0
Restaurant	0	0	0	0	0	0
Cinema/Entertainment	0	0	0	0	0	0
Residential	167 74	1478	1552	1478	0	0
Hotel	2	11	13	11	0	0
All Other Land Uses[3]	0	0	0	0	0	0

[1]Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P

[2]Person-Trips

[3]Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator

*Indicates computation that has been rounded to the nearest whole number.

ITE TRIP GENERATION TABLE
WITH WAREHOUSE
(TABLES A-1 AND A-2)

LINCKS & ASSOCIATES, INC.

TABLE A-1

AM PEAK HOUR TRIP GENERATION

Land Use	ITE LUC	Size	AM Peak Hour Trip Ends (1)			Internal Trip Ends (2)			Passerby Trip Ends (3)			New External AM Peak Hour Trip Ends		
			In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Single Family	210	4,200 DU's	764	2,176	2,940	15	24	39	0	0	0	749	2,152	2,901
Multi-Family	221	600 DU's	51	171	222	1	2	3	0	0	0	50	169	219
Motel	320	75 Rooms	10	16	26	0	5	5	0	0	0	10	11	21
Retail	820	325,000 SF	202	123	325	30	20	50	33	20	53	139	83	222
Office	710	50,000 SF	81	11	92	8	3	11	0	0	0	73	8	81
Warehouse	150	40,000 SF	22	6	28	2	2	4	0	0	0	20	4	24
		Total	1,130	2,503	3,633	56	56	112	33	20	53	1,041	2,427	3,468

(1) Source - ITE Trip Generation Manual, 11th Edition.
(2) Source - ITE Trip Generation Handbook, 3rd Edition. (NCHRP 684)
(3) Source - ITE Trip Generation Manual, 11th Edition.

- Passerby Trips
  - Retail - 19%
    - In - (202-30) x 0.19 = 33
    - Out - (123-20) x 0.19 = 20

LINCKS & ASSOCIATES, INC.

TABLE A-2

PM PEAK HOUR TRIP GENERATION

Land Use	ITE LUC	Size	PM Peak Hour Trip Ends (1) In	Out	Total	Internal Trip Ends (2) In	Out	Total	Passerby Trip Ends (3) In	Out	Total	New External PM Peak Hour Trip Ends In	Out	Total
Single Family	210	4,200 DU's	2,487	1,461	3,948	170	58	228	0	0	0	2,317	1,403	3,720
Multi-Family	221	600 DU's	143	91	234	10	4	14	0	0	0	133	87	220
Motel	320	75 Rooms	16	13	29	5	2	7	0	0	0	11	11	22
Retail	820	325,000 SF	633	686	1,319	85	189	274	104	94	198	444	403	847
Office	710	50,000 SF	16	77	93	3	17	20	0	0	0	13	60	73
Warehouse	150	40,000 SF	9	22	31	2	5	7	0	0	0	7	17	24
		Total	3,304	2,350	5,654	275	275	550	104	94	198	2,925	1,981	4,906

(1) Source - ITE Trip Generation Manual, 11th Edition.
(2) Source - ITE Trip Generation Handbook, 3rd Edition. (NCHRP 684)
(3) Source - ITE Trip Generation Manual, 11th Edition.

- Passerby Trips
  Retail - 19%
  In - (633-85) x 0.19 = 104
  Out - (686-189) x 0.19 = 94
- Passerby traffic should not exceed 10% of the adjacent street background traffic
  2,625 x 0.10 = 262 > 198
  (a) PM peak hour background traffic at the intersection of Cortez Blvd and Parkland Ave

TRAFFIC COUNTS

National Data & Surveying Services

N↑ | N/S Street: **SR 50/Cortez Blvd/Jasmine Dr** | Speed: **35 MPH**

E/W Street: **U 98/SR 50/E Jefferson St/Cortez Blvd** | Speed: **45 MPH**

Site Code: **22-120304-001**

Date: **6/21/2022**

Weather: **Sunny**

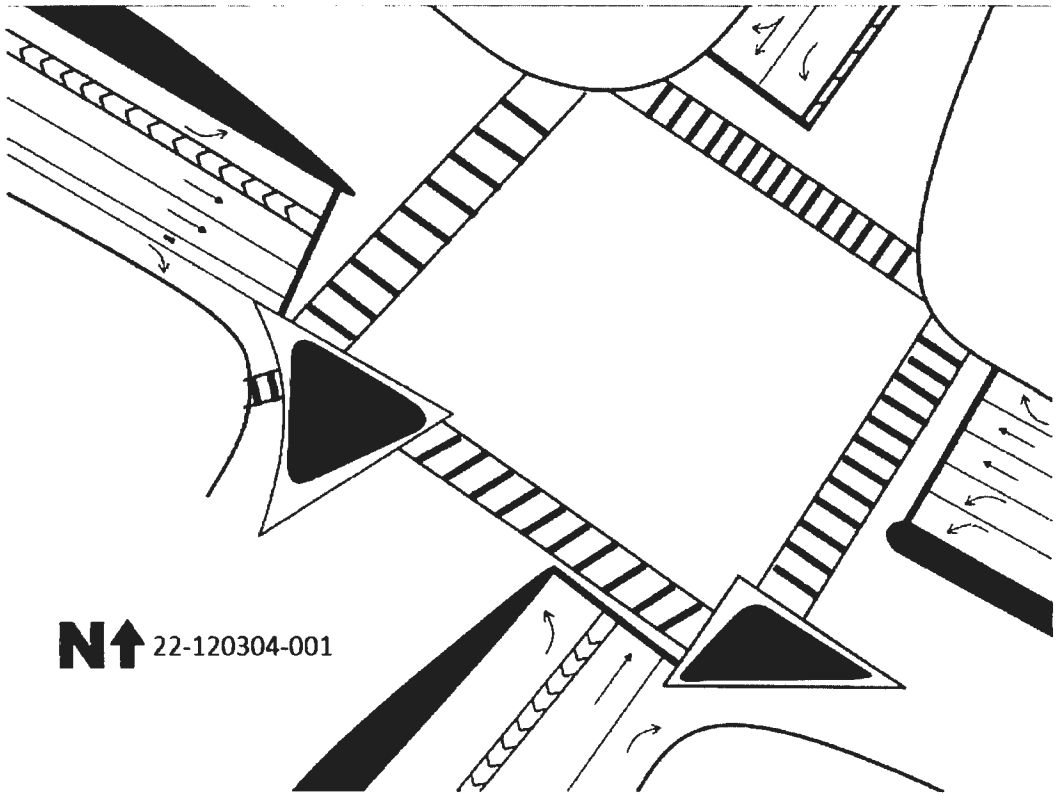
City: **Brooksville**

County: **Hernando**

Count Times: **16:00 – 18:00**

Control: **Signalized**

Phase	1	2	3
NT/ST	00:28	00:27	00:25
WL	00:17	-	-
WT/WL	00:25	00:44	00:36
WT/ET	00:23	00:20	00:23



Prepared by National Data & Surveying Services

SR 50/Cortez Blvd/Jasmine Dr & U 98/SR 50/E Jefferson St/Cortez Blvd

Peak Hour Turning Movement Count

ID: 22-120304-001
City: Brooksville

Day: Tuesday
Date: 6/21/2022

PEAK HOURS	COUNT PERIODS
NONE	NONE
NONE	NONE
04:45 PM - 05:45 PM	4:00 PM - 06:00 PM

SOUTHBOUND — SR 50/Cortez Blvd/Jasmine Dr

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	3	100	27	0	161	PM

EASTBOUND — U 98/SR 50/E Jefferson St/Cortez Blvd

AM	NOON	PM	
0	0	401	⇦
0	0	6	↶ 0
0	0	4	↱ 0
0	0	340	→ 0
0	0	10	↳ 0

WESTBOUND — U 98/SR 50/E Jefferson St/Cortez Blvd

PM	NOON	AM	
22	0	0	↰ 0
388	0	0	← 0
652	0	0	↰ 0
1	0	0	↰ 0
1060	0	0	⇨

CONTROL

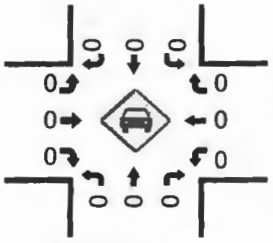
Signalized

	AM	NOON	PM
TEV	0	0	2386
PHF			0.96

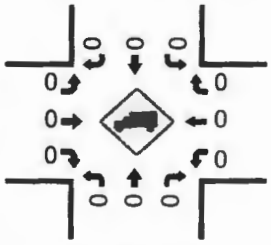
NORTHBOUND — SR 50/Cortez Blvd/Jasmine Dr

PM	764	2	4	135	692	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

Cars (AM)



HT (AM)



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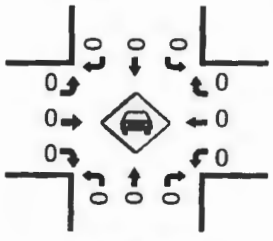

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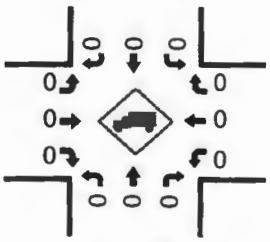
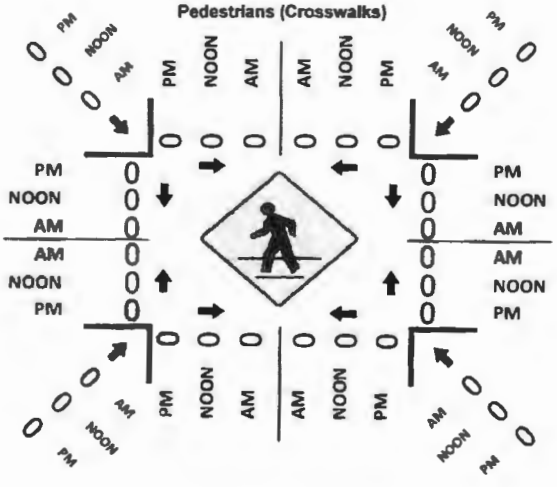
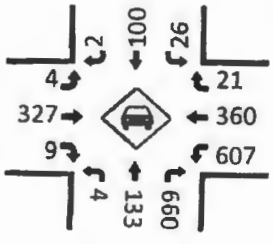


Pedestrians (Crosswalks)



Cars (PM)



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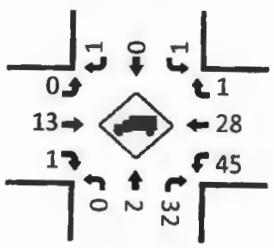
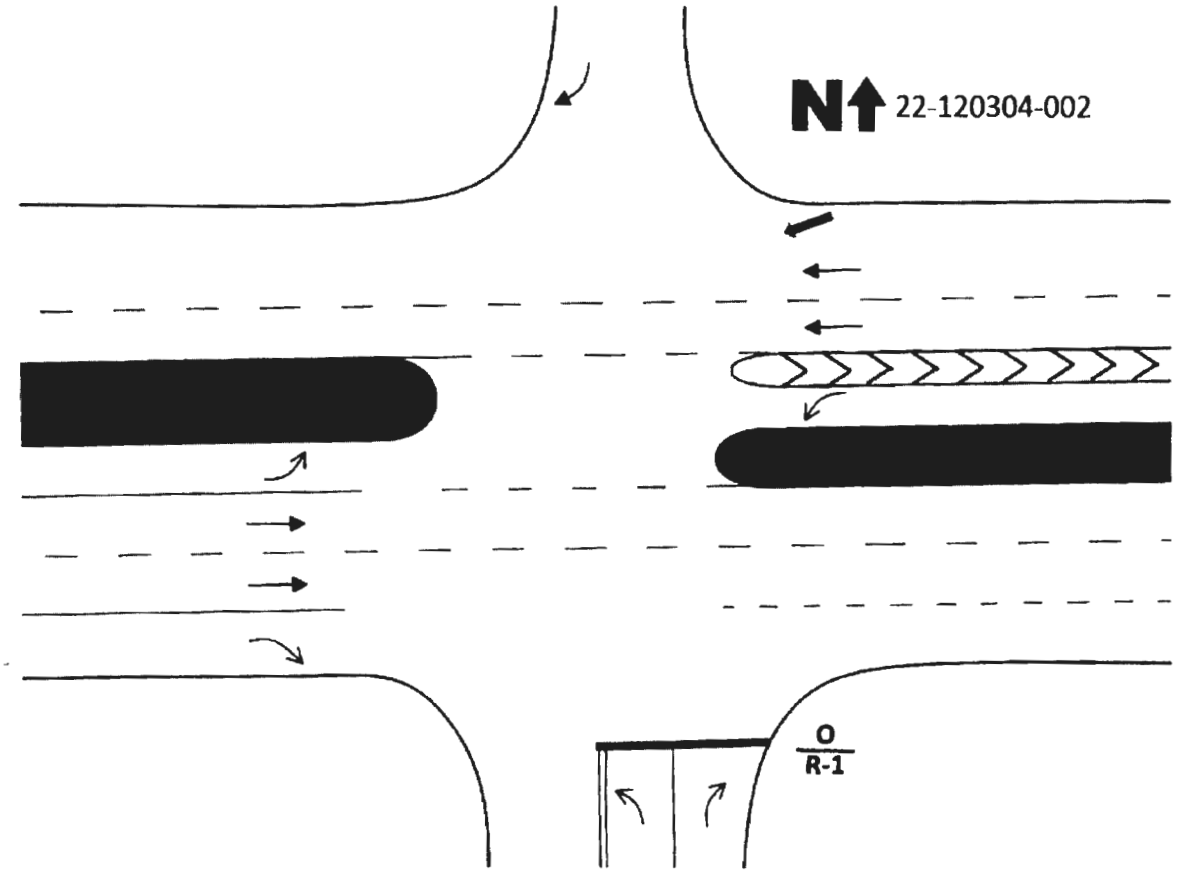


National Data & Surveying Services

Site Code:	**22-120304-002**
Date:	**6/21/2022**
Weather:	**Sunny**
City:	**Brooksville**
County:	**Hernando**
Count Times:	**16:00 – 18:00**
Control:	**1-Way Stop(NB)**

N↑ | N/S Street: **Lockhart Rd** | Speed: **55 MPH**



E/W Street: **US 98/SR 50/Cortez Blvd**

Speed: **60 MPH**

Prepared by National Data & Surveying Services

Lockhart Rd & US 98/SR 50/Cortez Blvd

Peak Hour Turning Movement Count

ID: 22-120304-002
City: Brooksville

Day: Tuesday
Date: 6/21/2022

PEAK HOURS	
AM	NONE
NOON	NONE
PM	04:30 PM - 05:30 PM

COUNT PERIODS	
AM	NONE
NOON	NONE
PM	4:00 PM - 06:00 PM

SOUTHBOUND — Lockhart Rd

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	0	0	0	0	PM

EASTBOUND — US 98/SR 50/Cortez Blvd

AM	NOON	PM	
0	0	813	⇦
0	0	1	↶ 0
0	0	0	↱ 0
0	0	612	→ 0
0	0	19	↳ 0

WESTBOUND — US 98/SR 50/Cortez Blvd

PM	NOON	AM	
0	0	0	0 ↰
753	0	0	0 ←
40	0	0	0 ↰
3	0	0	0 ↶
656	0	0	⇨

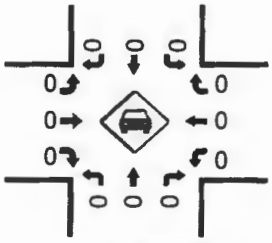
CONTROL: 1-Way Stop(NB)

	AM	NOON	PM
TEV	0	0	1528
PHF			0.96

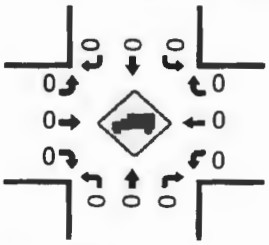
NORTHBOUND — Lockhart Rd

PM	59	0	59	0	41	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

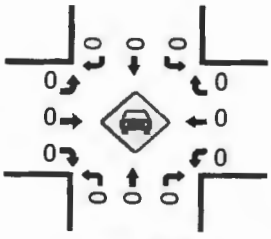
Cars (AM)



HT (AM)



Cars (NOON)



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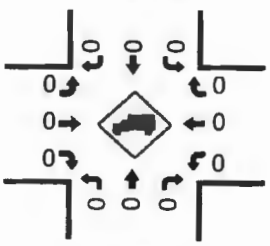
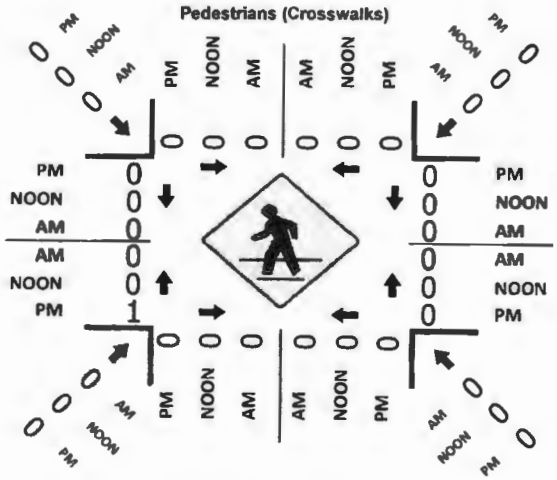
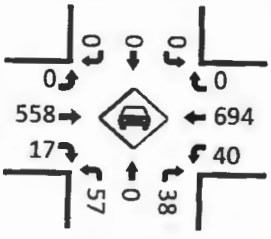


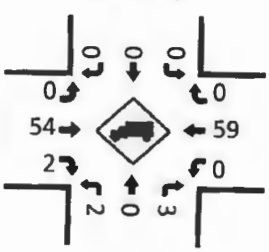
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)

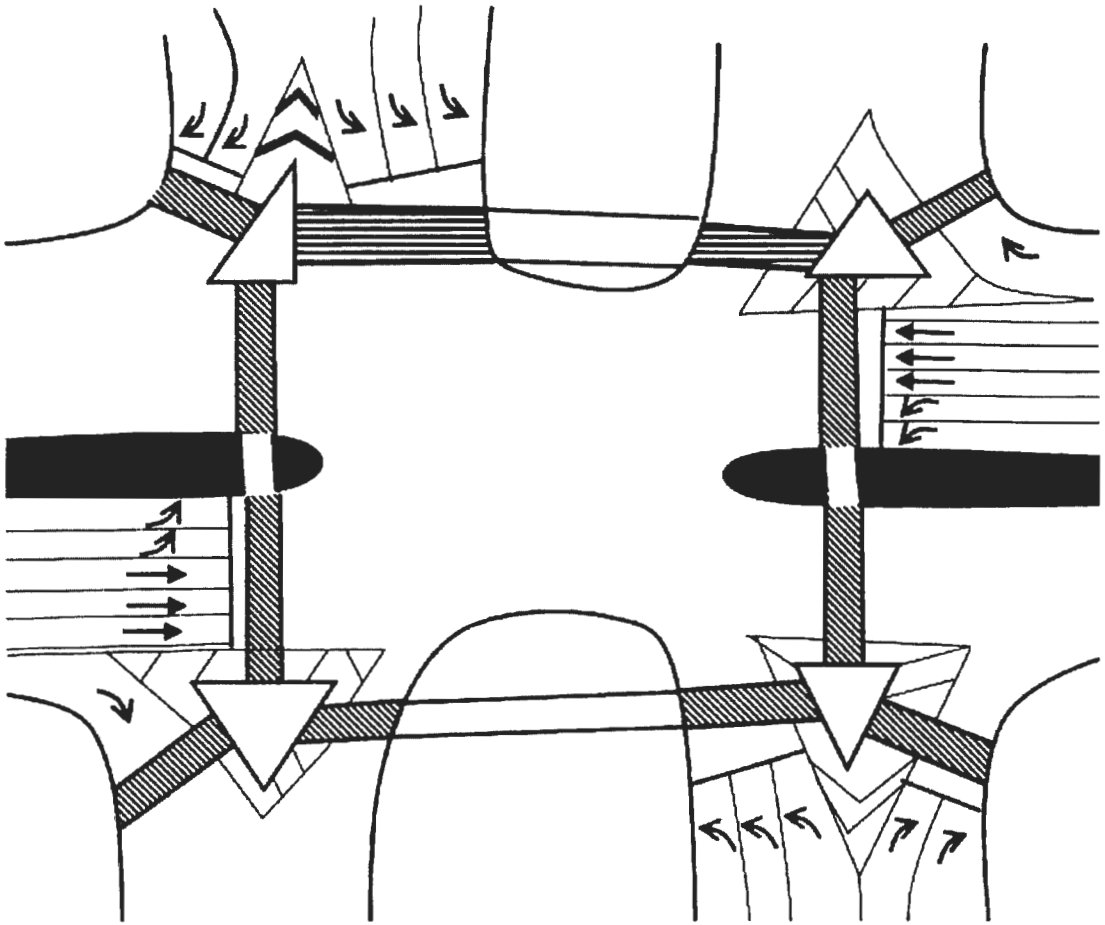


National Data & Surveying Services

N↑ | N/S Street: **I-75/SR 93 NB & SB Ramps** | Speed: **45 MPH**

E/W Street: **US 98/SR 50/Cortez Blvd** | Speed: **60 MPH**

N↑ 22-120304-003



Site Code: **22-120304-003**

Date: **6/21/2022**

Weather: **Sunny**

City: **Brooksville**

County: **Hernando**

Count Times: **16:00 – 18:00**

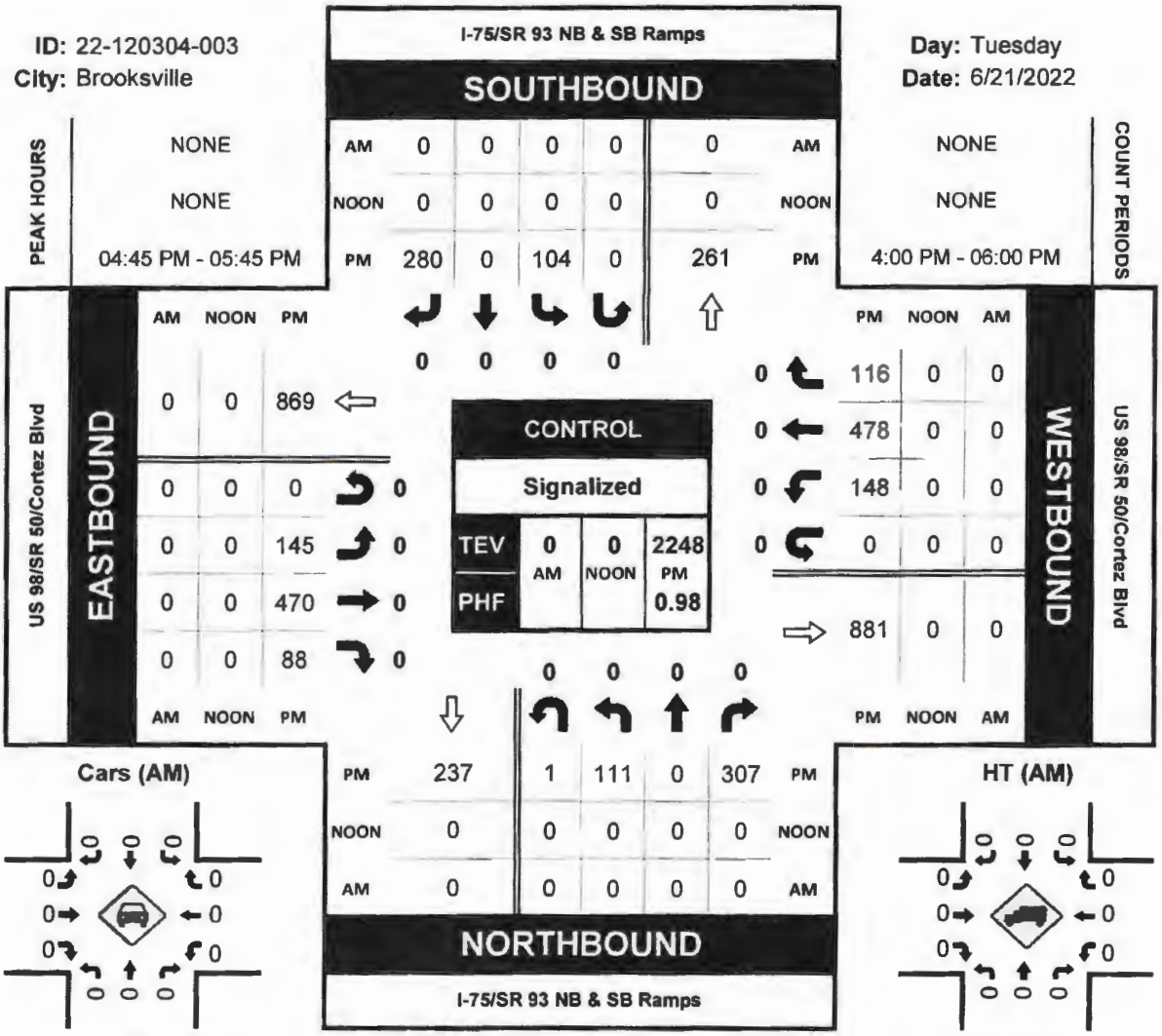
Control: **Signalized**

Phase	1	2	3
NL/NR	00:21	00:25	00:28
SL/SR	00:28	00:30	00:38
EL/WL	00:24	00:34	00:24
ET/WT	00:50	00:40	00:47

Prepared by National Data & Surveying Services

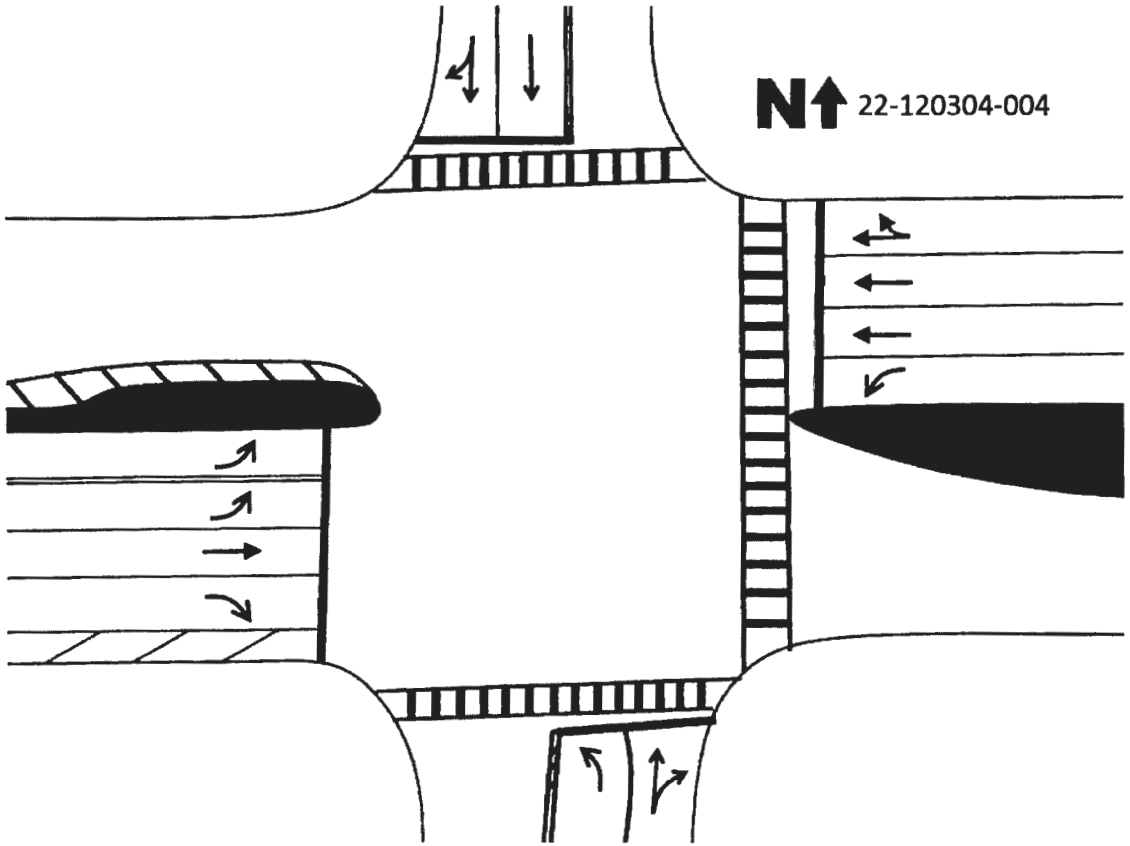
I-75/SR 93 NB & SB Ramps & US 98/SR 50/Cortez Blvd

Peak Hour Turning Movement Count



National Data & Surveying Services

N/S Street: **Bronson Blvd/Windmere Rd**	Speed: **N/A**



E/W Street: **US 98/SR 50/Cortez Blvd**

Speed: **45 MPH**

Site Code: **22-120304-004**

Date: **6/21/2022**

Weather: **Sunny**

City: **Brooksville**

County: **Hernando**

Count Times: **16:00 – 18:00**

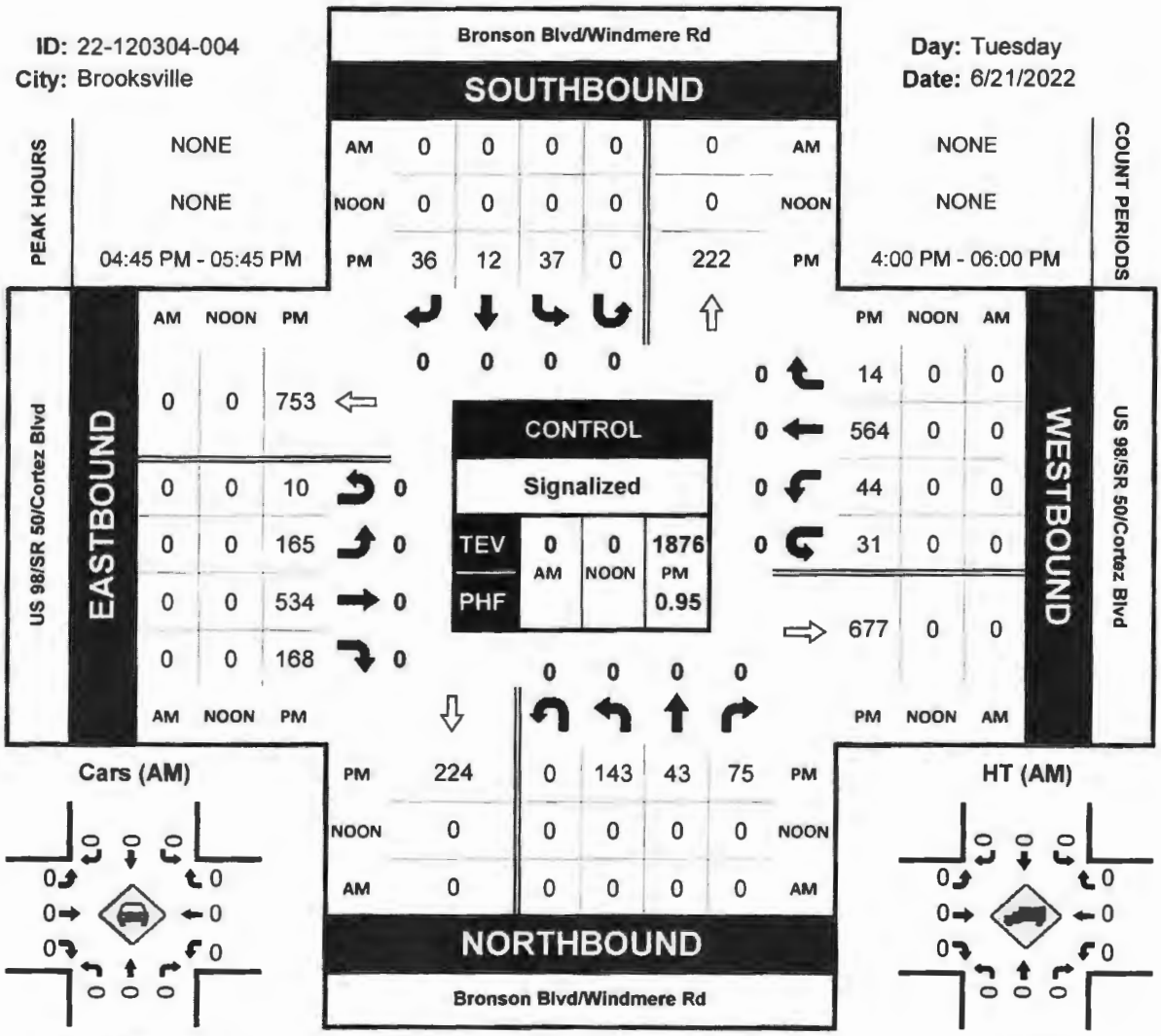
Control: **Signalized**

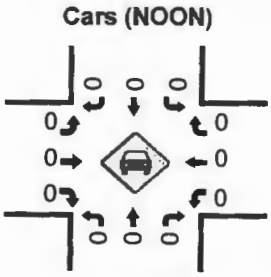
Phase	1	2	3
NT/NL	00:38	-	-
NL/SL	-	00:25	00:24
ET/EL	00:22	-	-
ET/WT	00:53	00:40	00:41

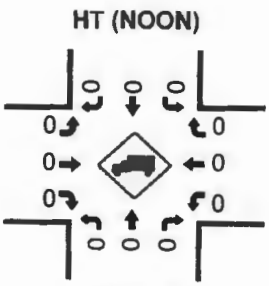
Prepared by National Data & Surveying Services

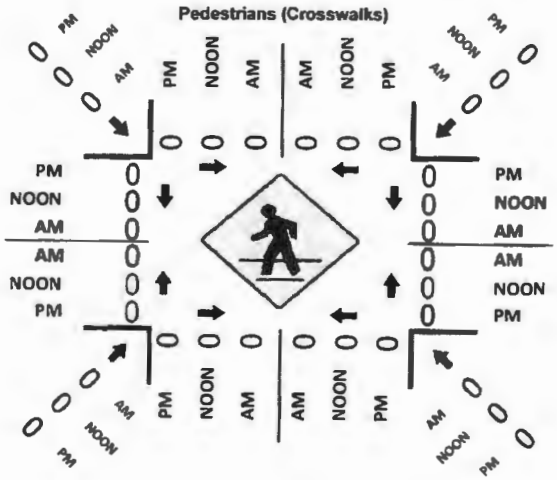
Bronson Blvd/Windmere Rd & US 98/SR 50/Cortez Blvd

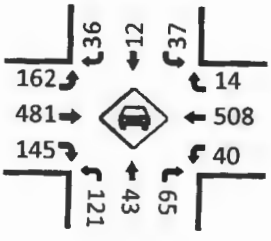
Peak Hour Turning Movement Count

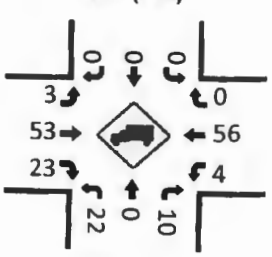












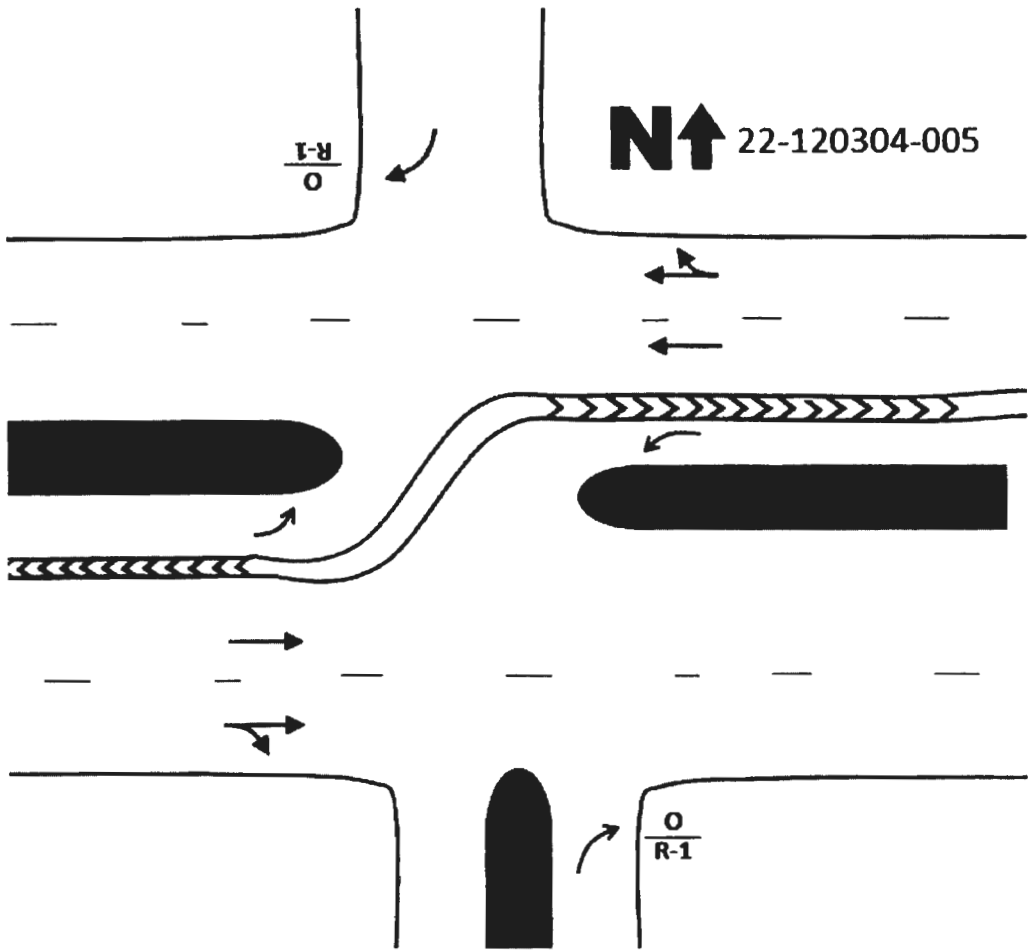
National Data & Surveying Services

Site Code:	**22-120304-005**
Date:	**6/21/2022**
Weather:	**Sunny**
City:	**Brooksville**
County:	**Hernando**
Count Times:	**16:00 – 18:00**
Control:	**2-Way Stop(NB/SB)**

N

N/S Street: **Parkland Ave**

Speed: **30 MPH**



E/W Street: **US 98/SR 50/Cortez Blvd/Parkland Ave**

Speed: **45 MPH**

Prepared by National Data & Surveying Services

Parkland Ave & US 98/SR 50/Cortez Blvd

Peak Hour Turning Movement Count

ID: 22-120304-005
City: Brooksville

Day: Tuesday
Date: 6/21/2022

PEAK HOURS

AM	NONE
NOON	NONE
PM	04:45 PM - 05:45 PM

COUNT PERIODS

AM	NONE
NOON	NONE
PM	4:00 PM - 06:00 PM

SOUTHBOUND (Parkland Ave)

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	19	0	0	0	49	PM

EASTBOUND (US 98/SR 50/Cortez Blvd)

AM	NOON	PM	
0	0	599	⇦
0	0	6	↶ 0
0	0	12	↱ 0
0	0	628	→ 0
0	0	36	↴ 0

WESTBOUND (US 98/SR 50/Cortez Blvd)

PM	NOON	AM	
37	0	0	0 ↰
574	0	0	0 ←
56	0	0	0 ↶
34	0	0	0 ↴
689	0	0	⇨

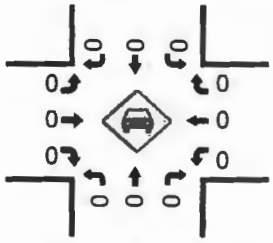
NORTHBOUND (Parkland Ave)

PM	92	0	0	0	27	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

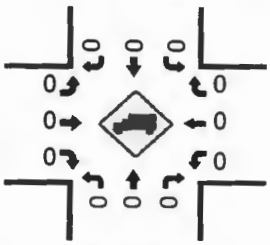
CONTROL: 2-Way Stop(NB)

	AM	NOON	PM
TEV	0	0	1429
PHF			0.94

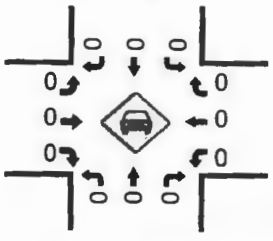
Cars (AM)



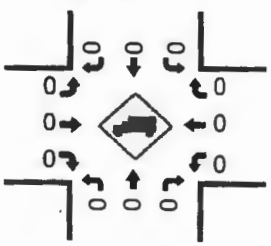
HT (AM)



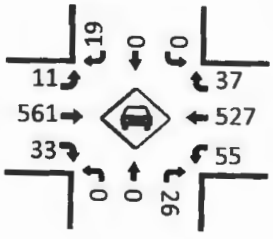
Cars (NOON)



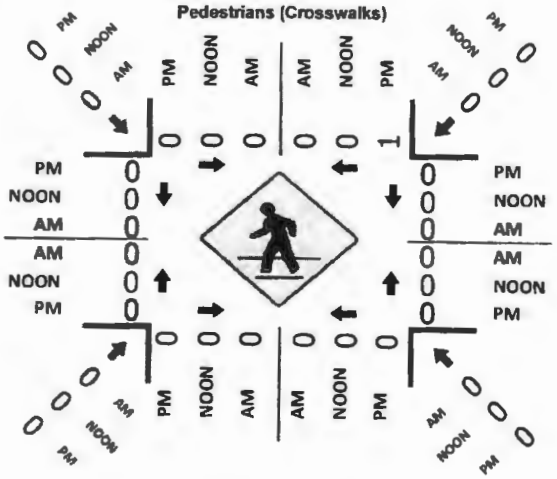
HT (NOON)



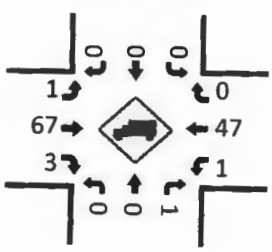
Cars (PM)



Pedestrians (Crosswalks)



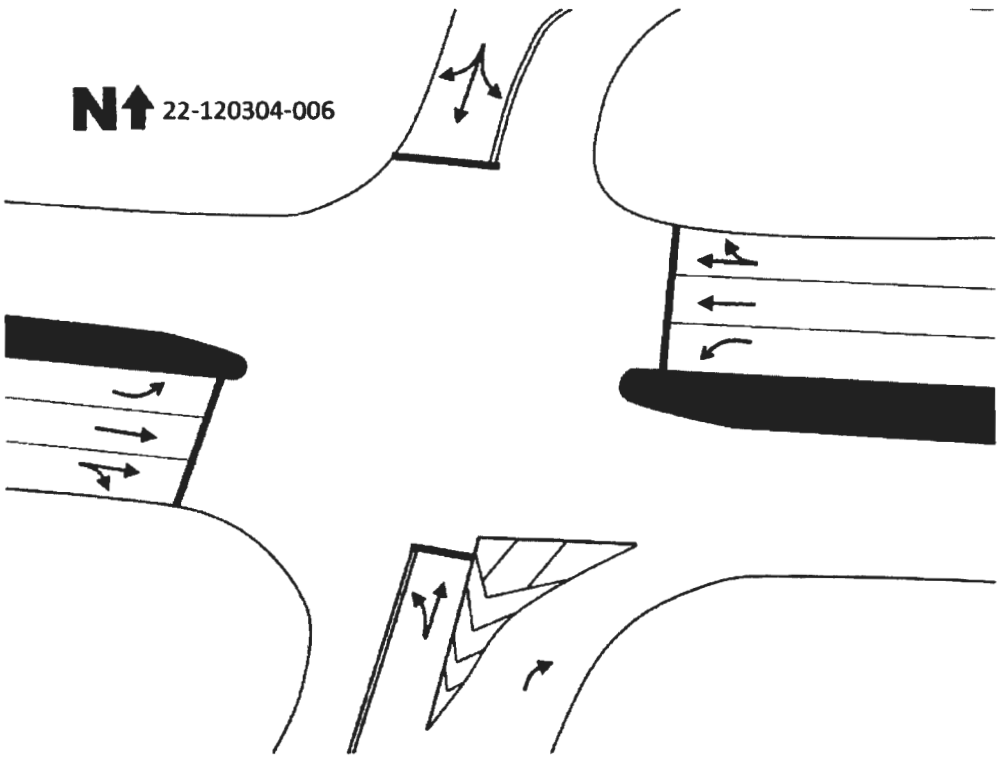
HT (PM)



National Data & Surveying Services

N↑ | N/S Street: **Kettering Rd/Croom Rital Rd** | Speed: **55 MPH**

E/W Street: **US 98/SR 50/Cortez Blvd** | Speed: **50 MPH**



Site Code: **22-120304-006**

Date: **6/21/2022**

Weather: **Sunny**

City: **Brooksville**

County: **Hernando**

Count Times: **16:00 – 18:00**

Control: **Signalized**

Phase	1	2	3
NL	00:33	00:19	00:45
ET/WT	01:13	01:17	00:56

Prepared by National Data & Surveying Services

Kettering Rd/Croom Rital Rd & US 98/SR 50/Cortez Blvd

Peak Hour Turning Movement Count

ID: 22-120304-006
City: Brooksville

Day: Tuesday
Date: 6/21/2022

Kettering Rd/Croom Rital Rd

SOUTHBOUND

PEAK HOURS							COUNT PERIODS
NONE	AM	0	0	0	0	0	AM	NONE
NONE	NOON	0	0	0	0	0	NOON	NONE
04:15 PM - 05:15 PM	PM	5	2	7	0	27	PM	4:00 PM - 06:00 PM

EASTBOUND (US 98/SR 50/Cortez Blvd)

AM	NOON	PM		
0	0	629	⇦	
0	0	18	↶	0
0	0	12	↱	0
0	0	623	→	0
0	0	42	↳	0

CONTROL: Signalized

	AM	NOON	PM
TEV	0	0	1400
PHF			0.96

WESTBOUND (US 98/SR 50/Cortez Blvd)

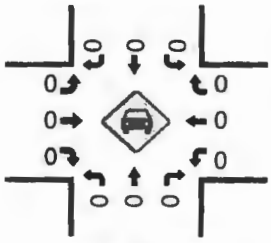
	PM	NOON	AM
0 ↱	13	0	0
0 ←	549	0	0
0 ↰	17	0	0
0 ↶	10	0	0
⇨	683	0	0

PM	61	0	57	2	43	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

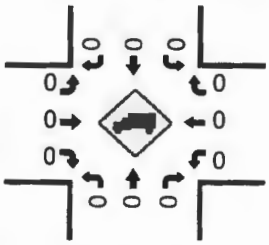
NORTHBOUND

Kettering Rd/Croom Rital Rd

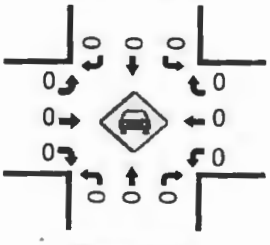
Cars (AM)



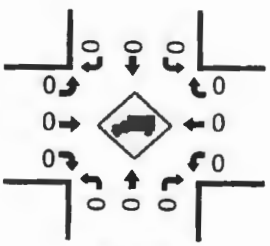
HT (AM)



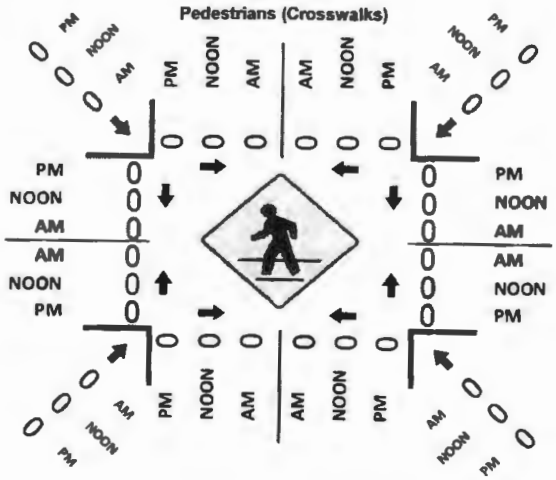
Cars (NOON)



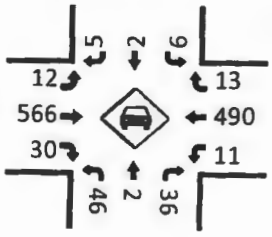
HT (NOON)



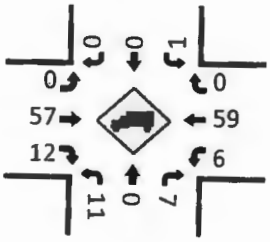
Pedestrians (Crosswalks)



Cars (PM)



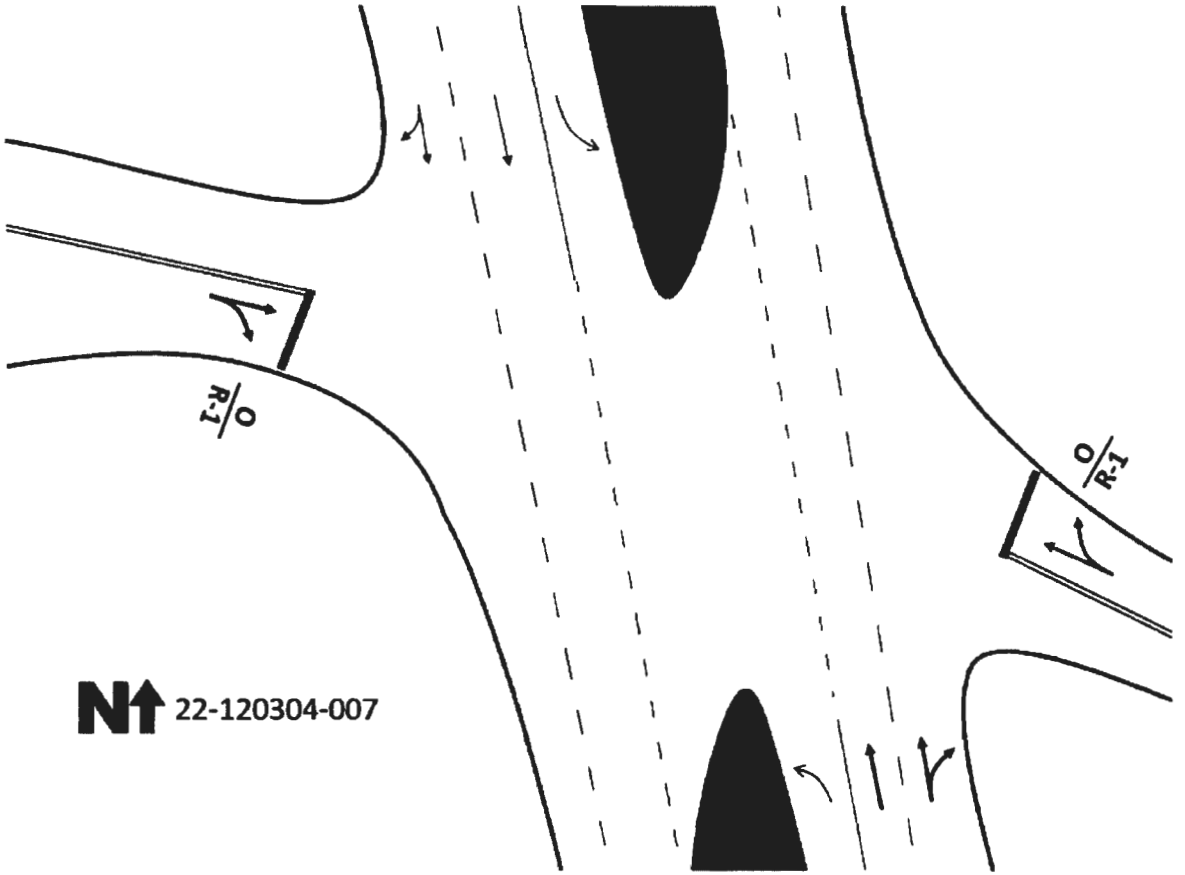
HT (PM)



National Data & Surveying Services

Site Code:	**22-120304-007**
Date:	**6/21/2022**
Weather:	**Sunny**
City:	**Brooksville**
County:	**Hernando**
Count Times:	**16:00 – 18:00**
Control:	**2-Way Stop(EB/WB)**

N/S Street: **US 98/SR 50/Cortez Blvd** | Speed: **50 MPH**



E/W Street: **Ridge Manor Blvd** | Speed: **45 MPH**

Prepared by National Data & Surveying Services

US 98/SR 50/Cortez Blvd & Ridge Manor Blvd

Peak Hour Turning Movement Count

ID: 22-120304-007
City: Brooksville

Day: Tuesday
Date: 6/21/2022

PEAK HOURS

AM	NONE
NOON	NONE
PM	04:30 PM - 05:30 PM

COUNT PERIODS

AM	NONE
NOON	NONE
PM	4:00 PM - 06:00 PM

SOUTHBOUND — US 98/SR 50/Cortez Blvd

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	535	112	0	604	PM

EASTBOUND — Ridge Manor Blvd

AM	NOON	PM	
0	0	1	⇦
0	0	0	↶ 0
0	0	3	↱ 0
0	0	2	→ 0
0	0	4	↴ 0

WESTBOUND — Ridge Manor Blvd

	PM	NOON	AM
0 ↰	56	0	0
0 ←	0	0	0
0 ↶	3	0	0
0 ↰	0	0	0
⇨	120	0	0

CONTROL

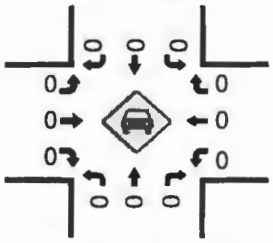
2-Way Stop(EB/WB)

	AM	NOON	PM
TEV	0	0	1268
PHF			0.97

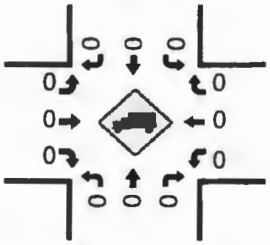
NORTHBOUND — US 98/SR 50/Cortez Blvd

PM	543	1	1	545	6	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

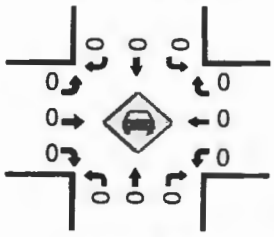
Cars (AM)



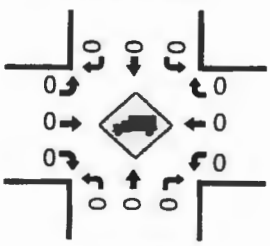
HT (AM)



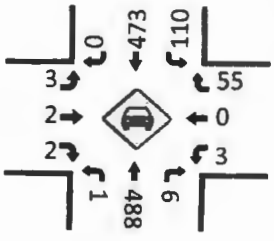
Cars (NOON)



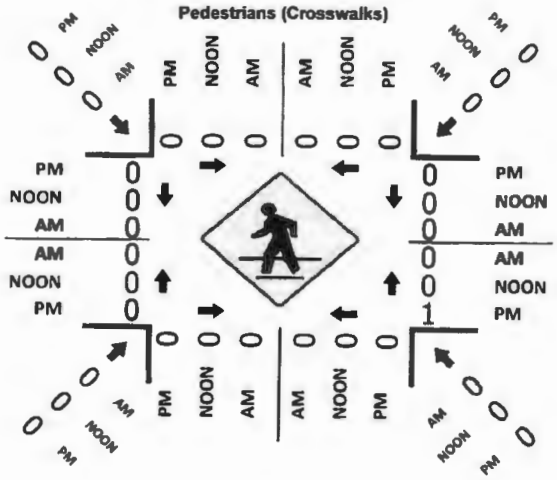
HT (NOON)



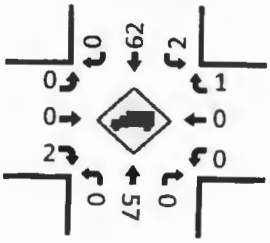
Cars (PM)



Pedestrians (Crosswalks)



HT (PM)



Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: McKethan Road/Olancha Road -- Cortez Boulevard

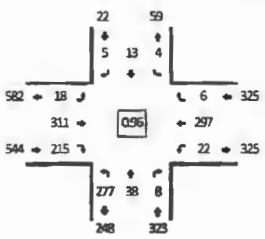
QC JOB #: 15729306

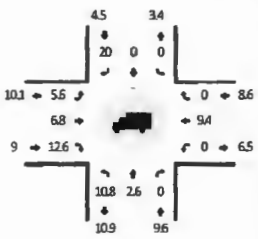
CITY/STATE: Ridge Manor, FL

DATE: Tue, Mar 8 2022

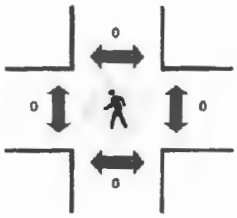
Peak-Hour: 4:30 PM – 5:30 PM

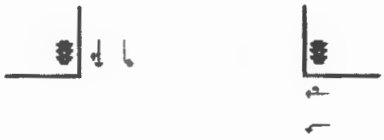
Peak 15-Min: 4:45 PM – 5:00 PM

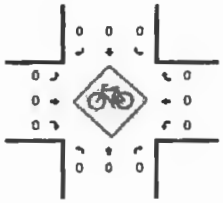


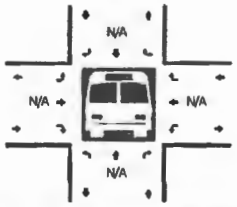


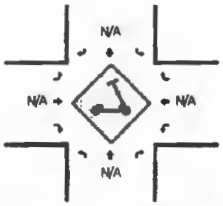
Quality Counts











15-Min Count Period Beginning At	McKethan Road/Olancha Road (Northbound)				McKethan Road/Olancha Road (Southbound)				Cortez Boulevard (Eastbound)				Cortez Boulevard (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	62	6	1	0	0	4	1	0	5	77	57	1	2	68	2	0	286	
4:15 PM	55	14	3	0	1	9	0	0	5	88	64	1	0	63	1	0	304	
4:30 PM	69	12	4	0	1	6	1	0	4	58	56	1	6	64	1	0	283	
4:45 PM	72	12	1	0	0	3	1	0	6	81	52	0	3	84	2	0	317	1190
5:00 PM	60	6	2	0	1	1	2	0	2	83	54	1	5	77	3	1	298	1202
5:15 PM	76	8	1	0	2	3	1	0	3	89	53	1	6	72	0	1	316	1214
5:30 PM	53	9	0	0	0	4	0	0	3	80	58	0	4	69	1	0	281	1212
5:45 PM	54	5	8	0	0	6	1	0	1	77	40	0	3	56	2	0	253	1148

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	288	48	4	0	0	12	4	0	24	324	208	0	12	336	8	0	1268
Heavy Trucks	56	4	0		0	0	0		4	20	24		0	48	0		156
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments.

Report generated on 3/14/2022 1:51 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

National Data & Surveying Services

N↑ | N/S Street: **US 301/SR 35/Treiman Blvd** | Speed: **N/A**

E/W Street: **SR 50/Cortez Blvd** | Speed: **60 MPH**

Site Code: **22-120304-009**

Date: **6/21/2022**

Weather: **Sunny**

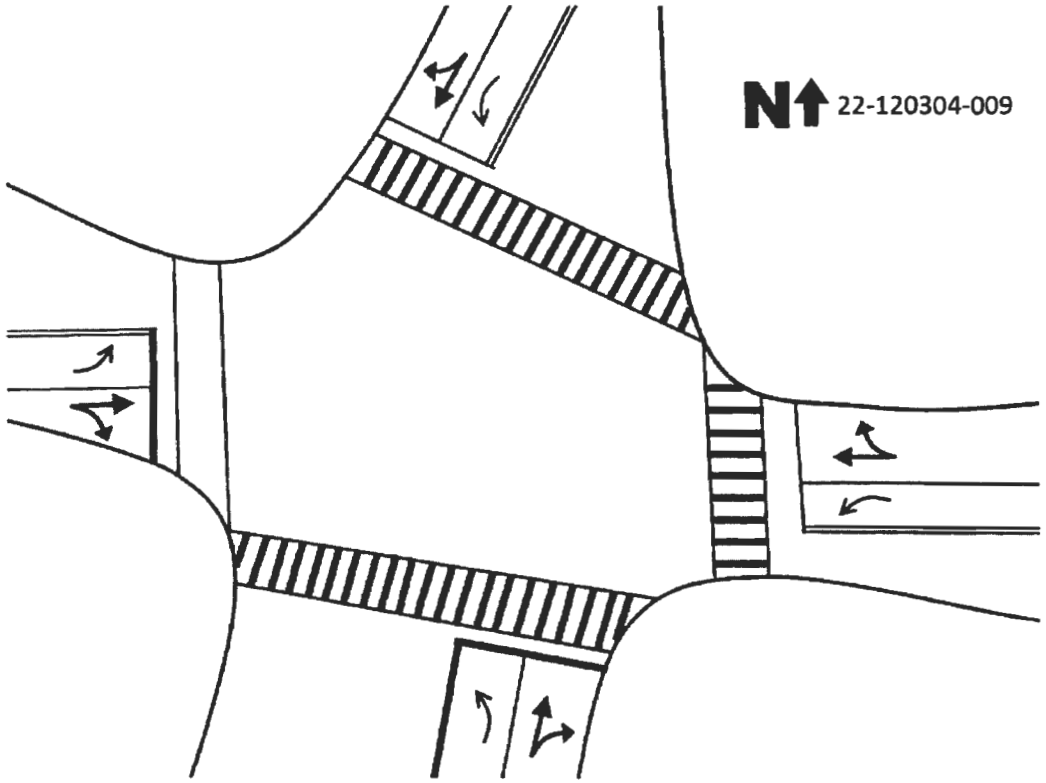
City: **Brooksville**

County: **Hernando**

Count Times: **16:00 – 18:00**

Control: **Signalized**

Phase	1	2	3
ST/NT	00:34	01:03	00:41
NT/NL	00:16	-	00:23
ET/WT	01:03	00:28	00:33
ET/EL	-	00:13	00:27
WL/WT	-	00:40	00:18



Prepared by National Data & Surveying Services

US 301/SR 35/Treiman Blvd & SR 50/Cortez Blvd

Peak Hour Turning Movement Count

ID: 22-120304-009
City: Brooksville

Day: Tuesday
Date: 6/21/2022

PEAK HOURS	COUNT PERIODS
NONE	NONE
NONE	NONE
04:30 PM - 05:30 PM	4:00 PM - 06:00 PM

CONTROL: Signalized

	AM	NOON	PM
TEV	0	0	1070
PHF			0.89

SOUTHBOUND — US 301/SR 35/Treiman Blvd

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	43	146	10	1	270	PM

EASTBOUND — SR 50/Cortez Blvd

AM	NOON	PM	
0	0	304	⇦
0	0	0	↶ 0
0	0	48	↱ 0
0	0	196	→ 0
0	0	44	↴ 0

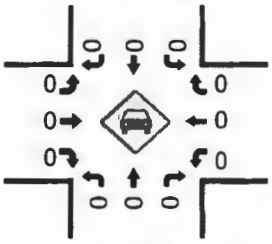
WESTBOUND — SR 50/Cortez Blvd

PM	NOON	AM	
15	0	0	0 ↰
219	0	0	0 ←
60	0	0	0 ↶
0	0	0	0 ↷
246	0	0	⇨

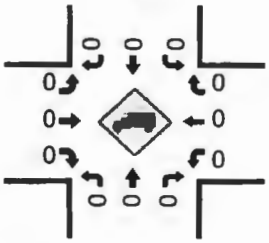
NORTHBOUND — US 301/SR 35/Treiman Blvd

PM	250	0	42	206	40	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

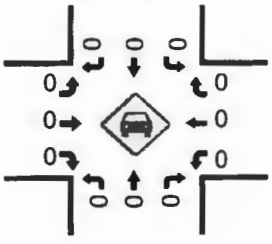
Cars (AM)



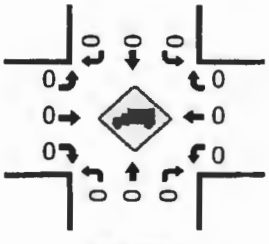
HT (AM)



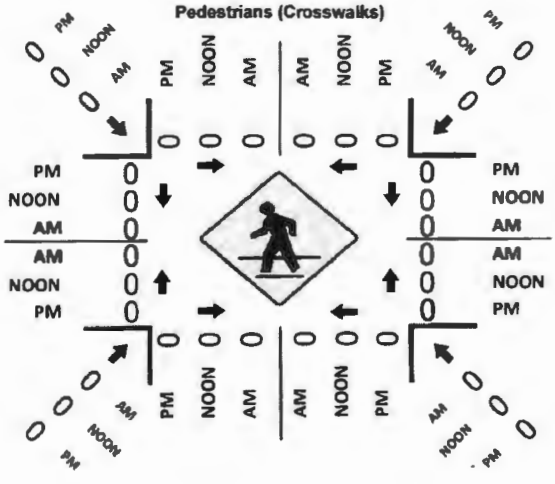
Cars (NOON)



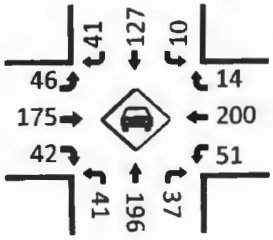
HT (NOON)



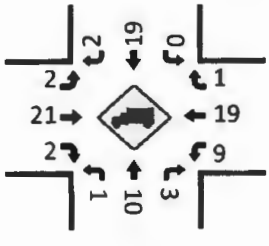
Pedestrians (Crosswalks)



Cars (PM)



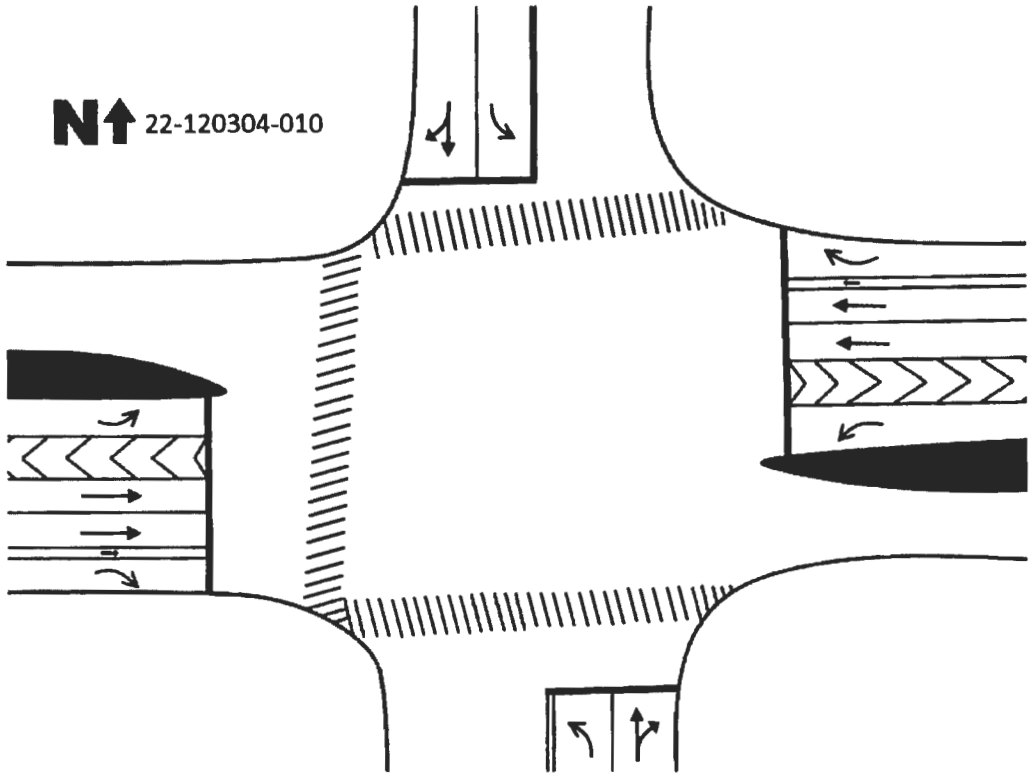
HT (PM)



National Data & Surveying Services

N↑ | N/S Street: **SR 581/S Main St/Mitchell Rd** | Speed: **35 MPH**

E/W Street: **SR 50/Cortez Blvd/Melendez Rd** | Speed: **50 MPH**



Site Code:	**22-120304-010**
Date:	**6/21/2022**
Weather:	**Sunny**
City:	**Brooksville**
County:	**Hernando**
Count Times:	**16:00 – 18:00**
Control:	**Signalized**

Phase	1	2	3
ST	00:15	-	-
ET/WT	02:47	01:46	00:47
NL	-	00:11	00:14

Prepared by National Data & Surveying Services

SR 581/S Main St/Mitchell Rd & SR 50/Cortez Blvd/Melendez Rd

Peak Hour Turning Movement Count

ID: 22-120304-010
City: Brooksville

Day: Tuesday
Date: 6/21/2022

PEAK HOURS

AM	NONE
NOON	NONE
PM	04:45 PM - 05:45 PM

COUNT PERIODS

AM	NONE
NOON	NONE
PM	4:00 PM - 06:00 PM

SOUTHBOUND — SR 581/S Main St/Mitchell Rd

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	96	2	12	0	81	PM

EASTBOUND — SR 50/Cortez Blvd/Melendez Rd

AM	NOON	PM	
0	0	976	
0	0	2	0
0	0	71	0
0	0	898	0
0	0	12	0

WESTBOUND — SR 50/Cortez Blvd/Melendez Rd

PM	NOON	AM	
9	0	0	0
864	0	0	0
2	0	0	0
1	0	0	0
913	0	0	

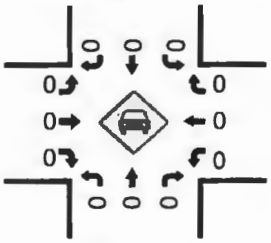
CONTROL: Signalized

TEV	0 AM	0 NOON	1986 PM
PHF			0.95

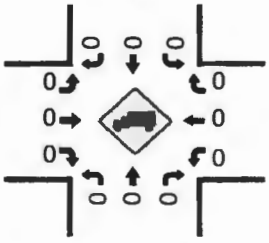
NORTHBOUND — SR 581/S Main St/Mitchell Rd

PM	16	0	14	1	2
NOON	0	0	0	0	0
AM	0	0	0	0	0

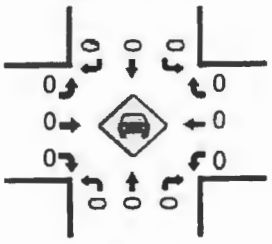
Cars (AM)



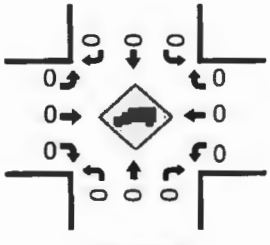
HT (AM)



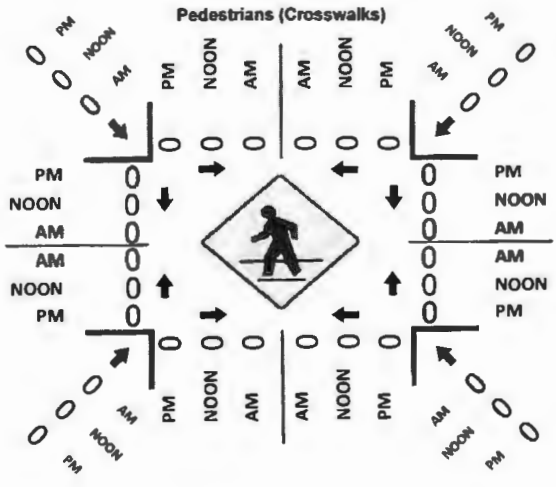
Cars (NOON)



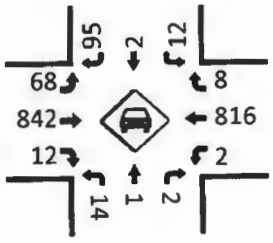
HT (NOON)



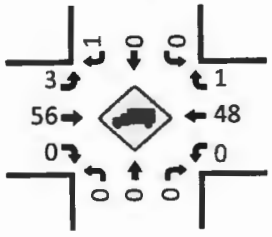
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



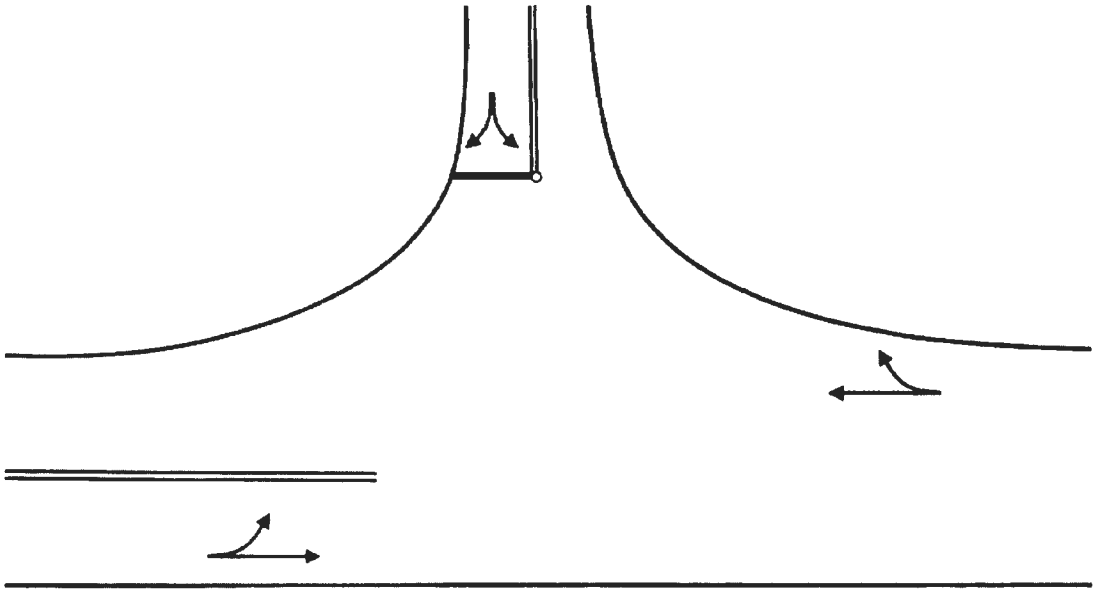
National Data & Surveying Services

Site Code:	**22-120304-012**
Date:	**6/21/2022**
Weather:	**Sunny**
City:	**Brooksville**
County:	**Hernando**
Count Times:	**16:00 – 18:00**
Control:	**No Control**

N

N/S Street: **Kettering Rd**

Speed: **30 MPH**



E/W Street: **Power Line Rd**

Speed: **N/A**

N 22-120304-012

Prepared by National Data & Surveying Services

Kettering Rd & Power Line Rd

Peak Hour Turning Movement Count

ID: 22-120304-012
City: Brooksville

Day: Tuesday
Date: 6/21/2022

PEAK HOURS

AM: NONE
NOON: NONE
PM: 04:15 PM - 05:15 PM

COUNT PERIODS

AM: NONE
NOON: NONE
PM: 4:00 PM - 06:00 PM

SOUTHBOUND (Kettering Rd)

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	12	0	2	1	30	PM

EASTBOUND (Power Line Rd)

AM	NOON	PM	
0	0	14	⇦
0	0	0	↶ 0
0	0	26	↱ 0
0	0	4	→ 0
0	0	0	↴ 0
AM	NOON	PM	

WESTBOUND (Power Line Rd)

PM	NOON	AM	
3	0	0	↰ 0
2	0	0	← 0
0	0	0	↶ 0
0	0	0	↰ 0
6	0	0	⇨
PM	NOON	AM	

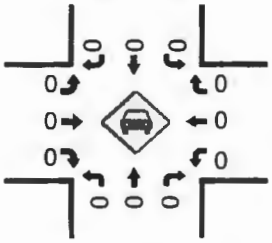
CONTROL: No Control

TEV	0 AM	0 NOON	50 PM
PHF			0.50

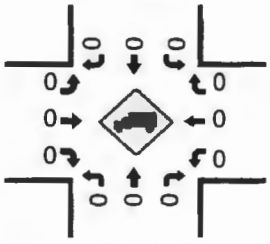
NORTHBOUND (Kettering Rd)

PM	0	0	0	0	0	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

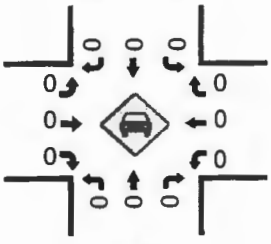
Cars (AM)



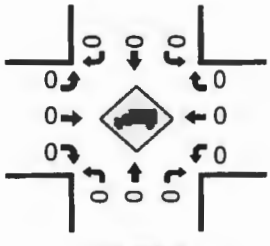
HT (AM)



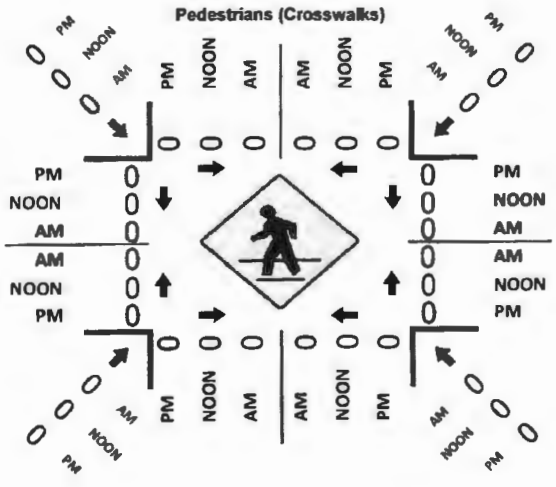
Cars (NOON)



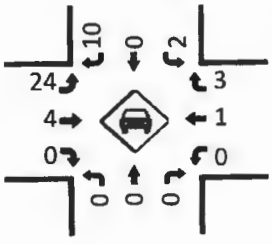
HT (NOON)



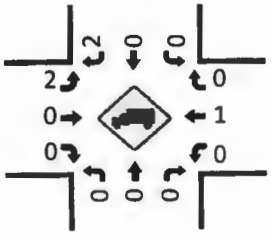
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)

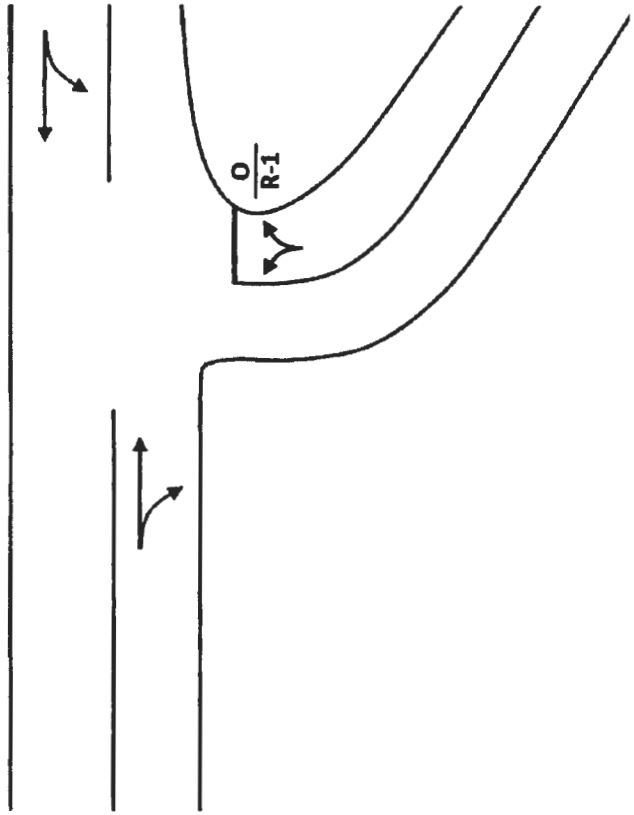


National Data & Surveying Services

Site Code:	**22-120304-013**
Date:	**6/21/2022**
Weather:	**Sunny**
City:	**Brooksville**
County:	**Hernando**
Count Times:	**16:00 – 18:00**
Control:	**1-Way Stop(WB)**

N↑ N/S Street: **Lockhart Rd** | Speed: **30 MPH**

N↑ 22-120304-013



E/W Street: **Power Line Rd** | Speed: **N/A**

Prepared by National Data & Surveying Services

Lockhart Rd & Power Line Rd

Peak Hour Turning Movement Count

ID: 22-120304-013
City: Brooksville

Day: Tuesday
Date: 6/21/2022

PEAK HOURS

AM	NONE
NOON	NONE
PM	04:30 PM - 05:30 PM

COUNT PERIODS

AM	NONE
NOON	NONE
PM	4:00 PM - 06:00 PM

Lockhart Rd

SOUTHBOUND

AM	0	0	0	0	0	AM
NOON	0	0	0	0	0	NOON
PM	0	9	6	0	76	PM

EASTBOUND

AM	NOON	PM	
0	0	0	⇦
0	0	0	↶ 0
0	0	0	↱ 0
0	0	0	→ 0
0	0	0	↴ 0
AM	NOON	PM	

CONTROL

1-Way Stop(WB)

TEV	0 AM	0 NOON	107 PM
PHF			0.48

WESTBOUND

PM	NOON	AM	
69	0	0	↰ 0
0	0	0	← 0
12	0	0	↰ 0
0	0	0	↰ 0
10	0	0	⇨
PM	NOON	AM	

NORTHBOUND

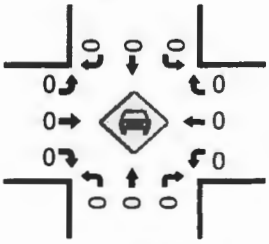
PM	21	0	0	7	4	PM
NOON	0	0	0	0	0	NOON
AM	0	0	0	0	0	AM

Lockhart Rd

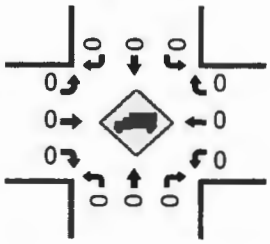
Power Line Rd (left)

Power Line Rd (right)

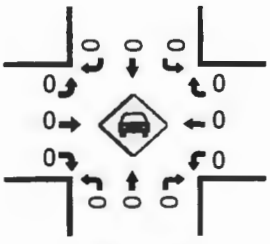
Cars (AM)



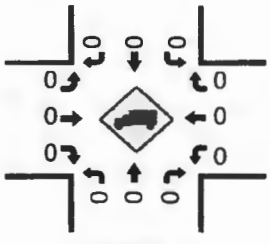
HT (AM)



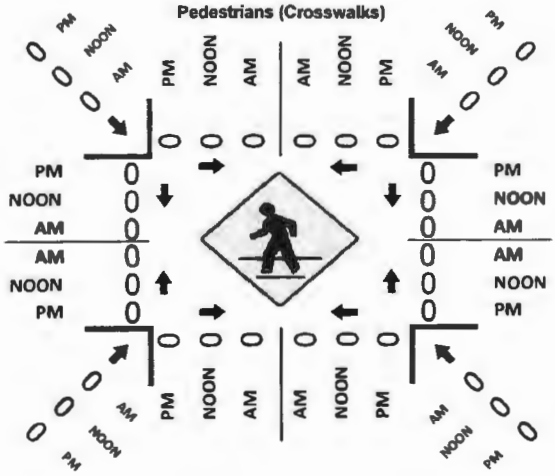
Cars (NOON)



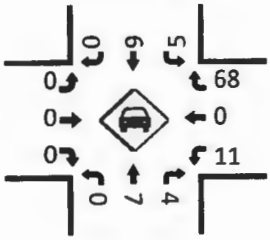
HT (NOON)



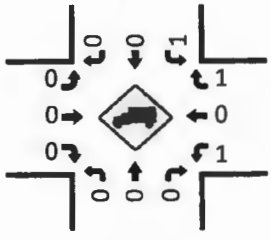
Pedestrians (Crosswalks)



Cars (PM)



HT (PM)



FDOT PEAK SEASON ADJUSTMENT FACTORS

2021 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
CATEGORY: 0800 HERNANDO COUNTYWIDE

MOCF: 0.97

WEEK	DATES	SF	PSCF
1	01/01/2021 - 01/02/2021	0.95	0.98
2	01/03/2021 - 01/09/2021	1.02	1.05
3	01/10/2021 - 01/16/2021	1.08	1.11
4	01/17/2021 - 01/23/2021	1.07	1.10
5	01/24/2021 - 01/30/2021	1.06	1.09
6	01/31/2021 - 02/06/2021	1.06	1.09
7	02/07/2021 - 02/13/2021	1.05	1.08
8	02/14/2021 - 02/20/2021	1.04	1.07
9	02/21/2021 - 02/27/2021	1.02	1.05
10	02/28/2021 - 03/06/2021	1.01	1.04
11	03/07/2021 - 03/13/2021	0.99	1.02
12	03/14/2021 - 03/20/2021	0.98	1.01
13	03/21/2021 - 03/27/2021	0.98	1.01
14	03/28/2021 - 04/03/2021	0.98	1.01
15	04/04/2021 - 04/10/2021	0.98	1.01
16	04/11/2021 - 04/17/2021	0.98	1.01
17	04/18/2021 - 04/24/2021	0.98	1.01
18	04/25/2021 - 05/01/2021	0.98	1.01
19	05/02/2021 - 05/08/2021	0.98	1.01
20	05/09/2021 - 05/15/2021	0.98	1.01
21	05/16/2021 - 05/22/2021	0.98	1.01
22	05/23/2021 - 05/29/2021	0.99	1.02
23	05/30/2021 - 06/05/2021	0.99	1.02
24	06/06/2021 - 06/12/2021	0.99	1.02
25	06/13/2021 - 06/19/2021	1.00	1.03
26	06/20/2021 - 06/26/2021	1.01	1.04
27	06/27/2021 - 07/03/2021	1.02	1.05
28	07/04/2021 - 07/10/2021	1.04	1.07
29	07/11/2021 - 07/17/2021	1.05	1.08
30	07/18/2021 - 07/24/2021	1.05	1.08
31	07/25/2021 - 07/31/2021	1.05	1.08
32	08/01/2021 - 08/07/2021	1.05	1.08
33	08/08/2021 - 08/14/2021	1.05	1.08
34	08/15/2021 - 08/21/2021	1.05	1.08
35	08/22/2021 - 08/28/2021	1.05	1.08
36	08/29/2021 - 09/04/2021	1.04	1.07
37	09/05/2021 - 09/11/2021	1.04	1.07
38	09/12/2021 - 09/18/2021	1.03	1.06
39	09/19/2021 - 09/25/2021	1.02	1.05
*40	09/26/2021 - 10/02/2021	1.00	1.03
*41	10/03/2021 - 10/09/2021	0.99	1.02
*42	10/10/2021 - 10/16/2021	0.97	1.00
*43	10/17/2021 - 10/23/2021	0.97	1.00
*44	10/24/2021 - 10/30/2021	0.97	1.00
*45	10/31/2021 - 11/06/2021	0.96	0.99
*46	11/07/2021 - 11/13/2021	0.96	0.99
*47	11/14/2021 - 11/20/2021	0.96	0.99
*48	11/21/2021 - 11/27/2021	0.95	0.98
*49	11/28/2021 - 12/04/2021	0.95	0.98
*50	12/05/2021 - 12/11/2021	0.95	0.98
*51	12/12/2021 - 12/18/2021	0.95	0.98
*52	12/19/2021 - 12/25/2021	1.02	1.05
53	12/26/2021 - 12/31/2021	1.08	1.11

* PEAK SEASON

CORTEZ BOULEVARD PAVEMENT MAKING PLANS

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

CONTRACT PLANS

FINANCIAL PROJECT ID 416732-4-52-01

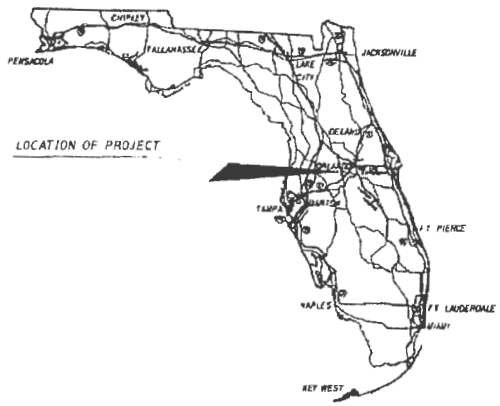
(FEDERAL FUNDS)

HERNANDO COUNTY (08070 & 08120)

STATE ROAD NO. 50

FROM WINDMERE ROAD/BRONSON BOULEVARD TO EAST OF US 98/MCKETHAN RD

SIGNING AND PAVEMENT MARKING PLANS



LOCATION OF PROJECT

INDEX OF SIGNING AND PAVEMENT MARKING PLANS

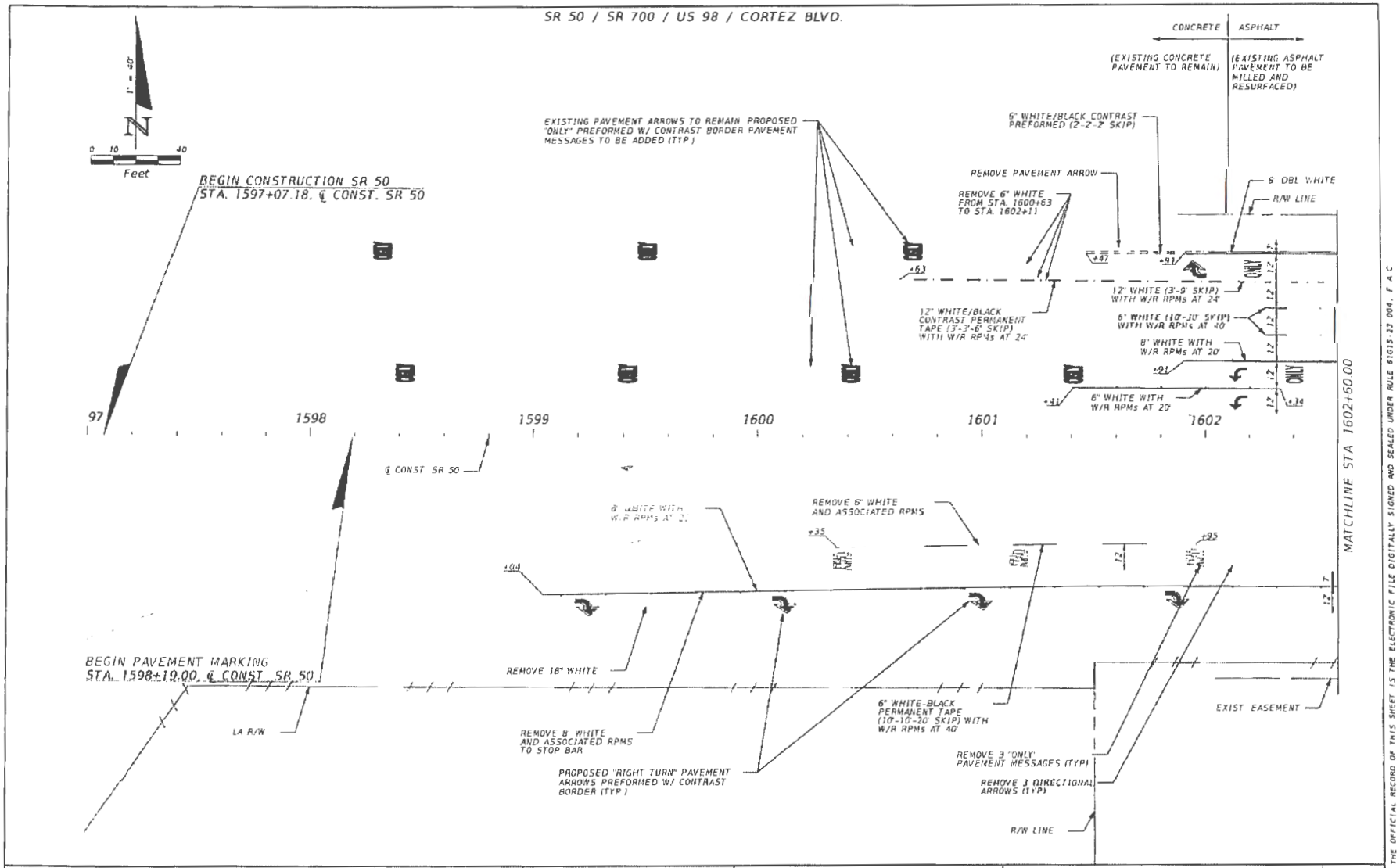
SIGNING AND PAVEMENT MARKING PLANS

MICHAEL J. OATES, P.E.
P.E. NO. 49202
HDR ENGINEERING, INC.
4830 W KENNEDY BLVD.
SUITE 400
TAMPA, FL 33609-2548
(813) 282-2300
CONTRACT NO. C-9F51
VENDOR NO. VF-470690569
CERTIFICATE OF AUTHORIZATION 4213

FDOT PROJECT MANAGER:
KEVIN LEE

KEY SHEET REVISIONS	
DATE	DESCRIPTION
6/16/21	(5) ADDED SHEET NUMBER S-2A TO INDEX.

CONSTRUCTION CONTRACT NO.	FISCAL YEAR	SHEET NO
T7396	20	S-1



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

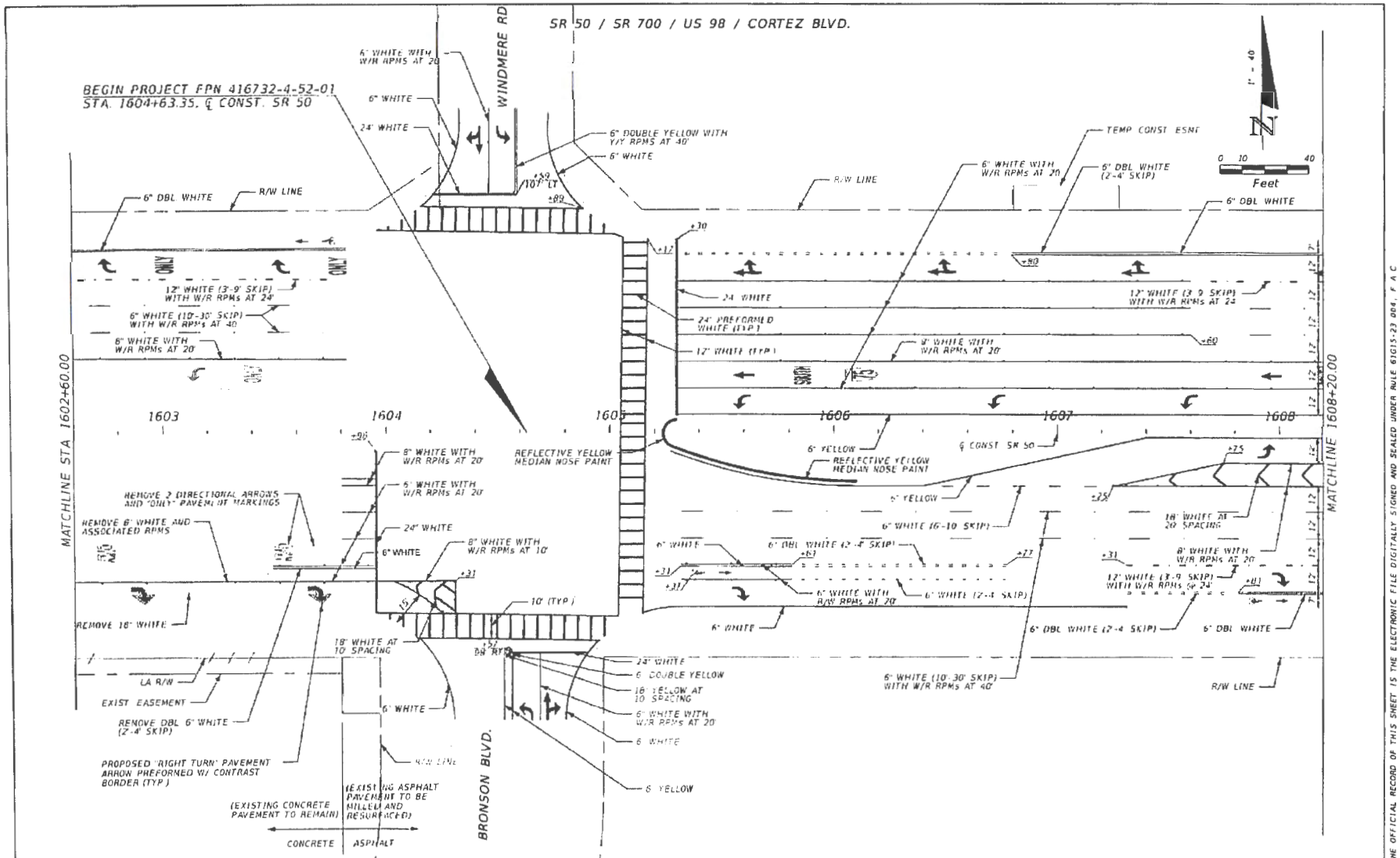
MICHAEL J. OATES, P.E.
P.E. LICENSE NUMBER 49282
HDR Engineering, Inc.
4830 West Kennedy Blvd. Suite 400
Tampa, FL 33609-2548
CERTIFICATE OF AUTHORIZATION NO. 4213

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLAN (1)

SHEET NO. S-14



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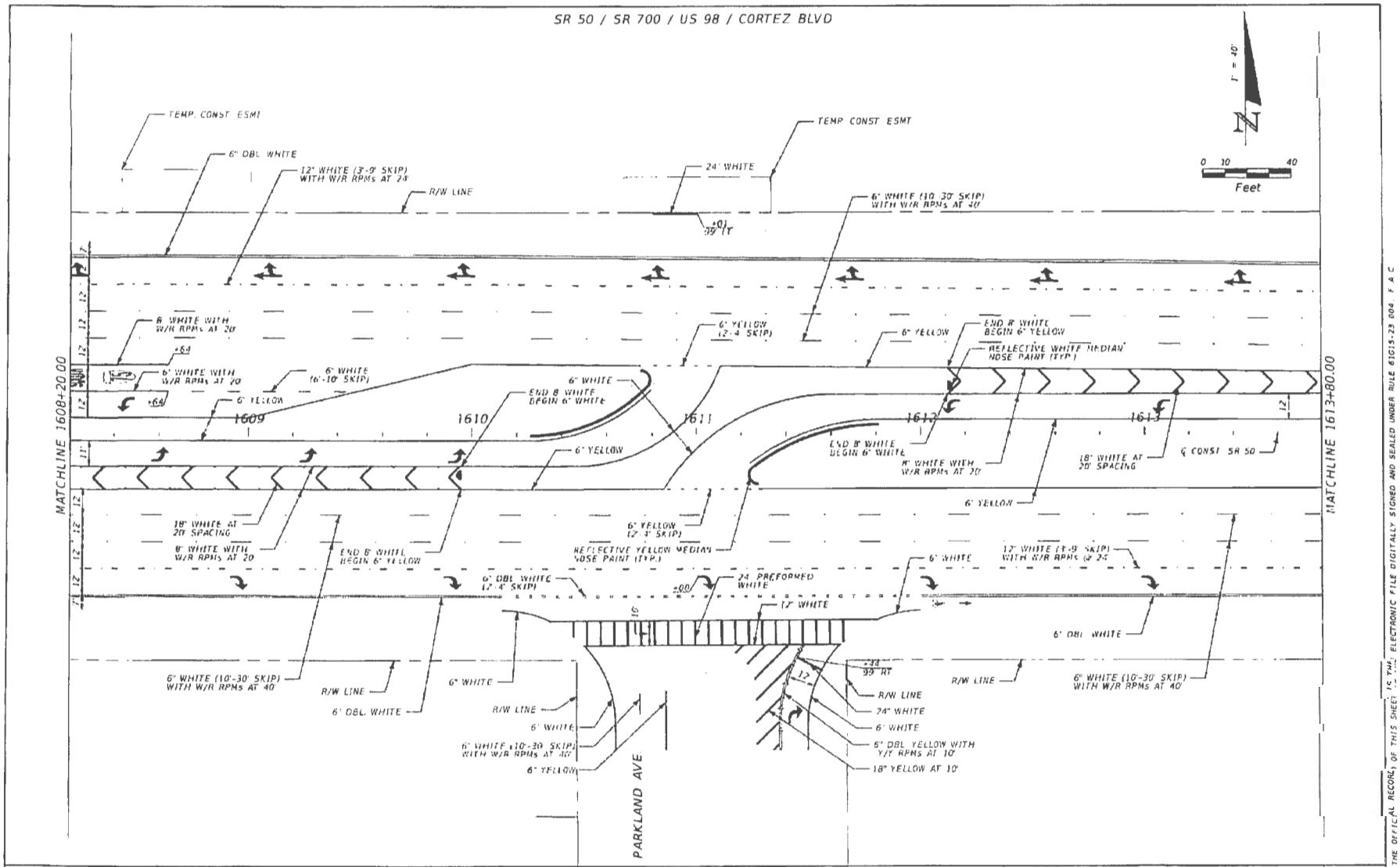
Tampa, FL 33609-2548
CERTIFICATE OF AUTHORIZATION NO. 4213

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLAN (2)

SHEET NO. 5-15



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HDR Engineering, Inc.
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CERTIFICATE OF AUTHORIZATION NO. 4213

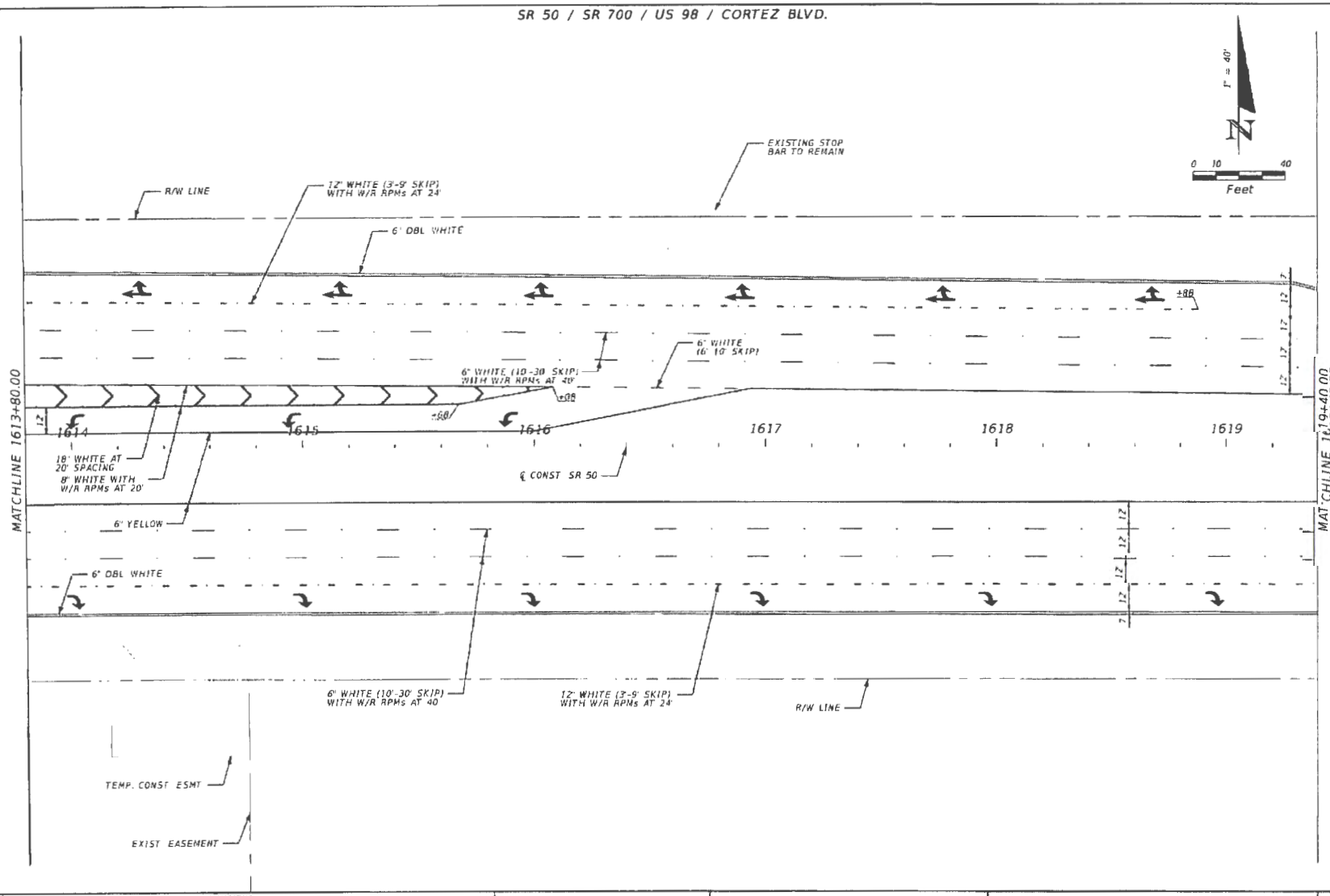
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLAN (3)

SHEET NO. S-16

SR 50 / SR 700 / US 98 / CORTEZ BLVD.



REVISIONS			
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CERTIFICATE OF AUTHORIZATION NO. 4213

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLAN (4)

SHEET NO. S-17

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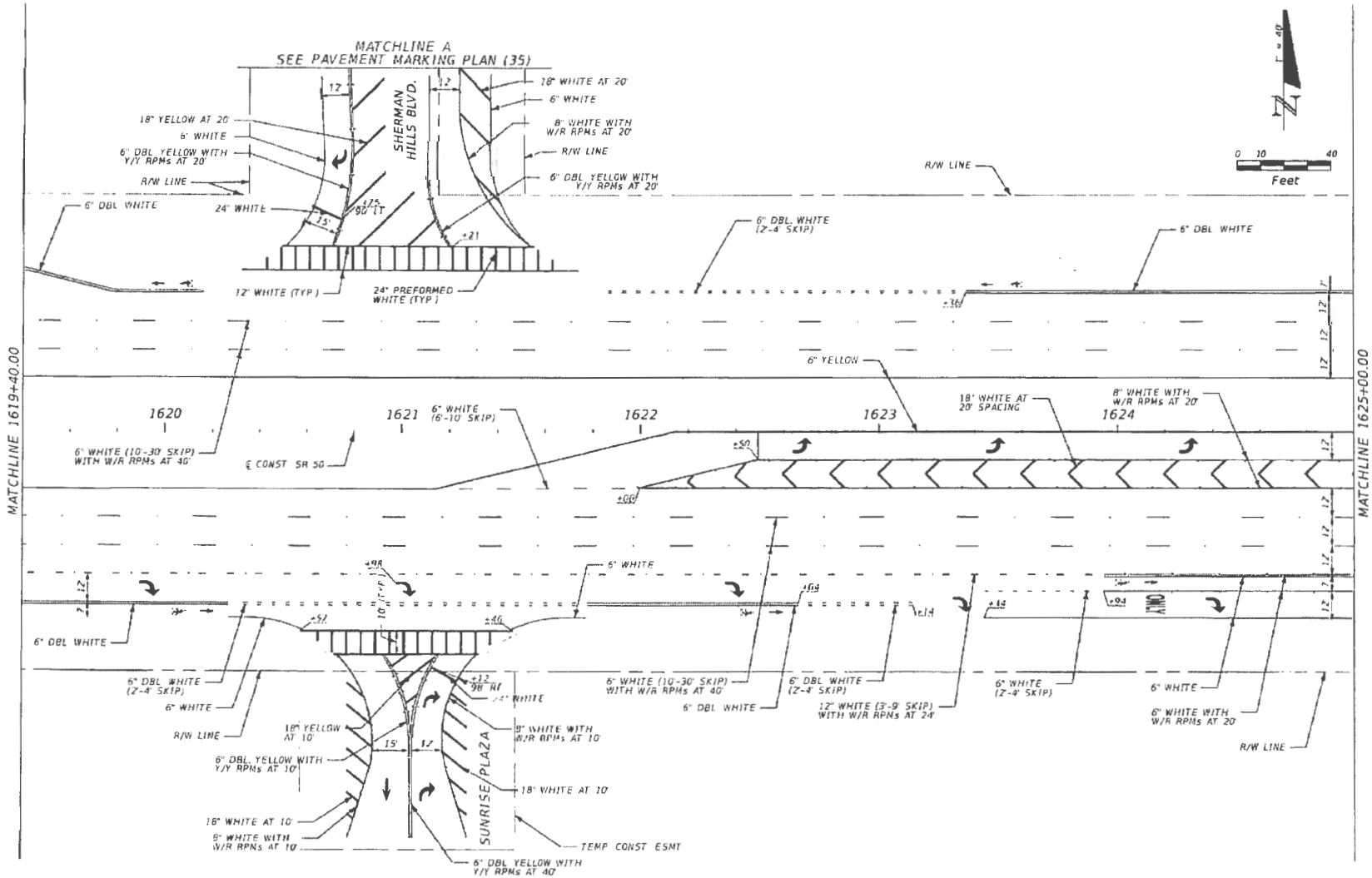

REVISIONS			
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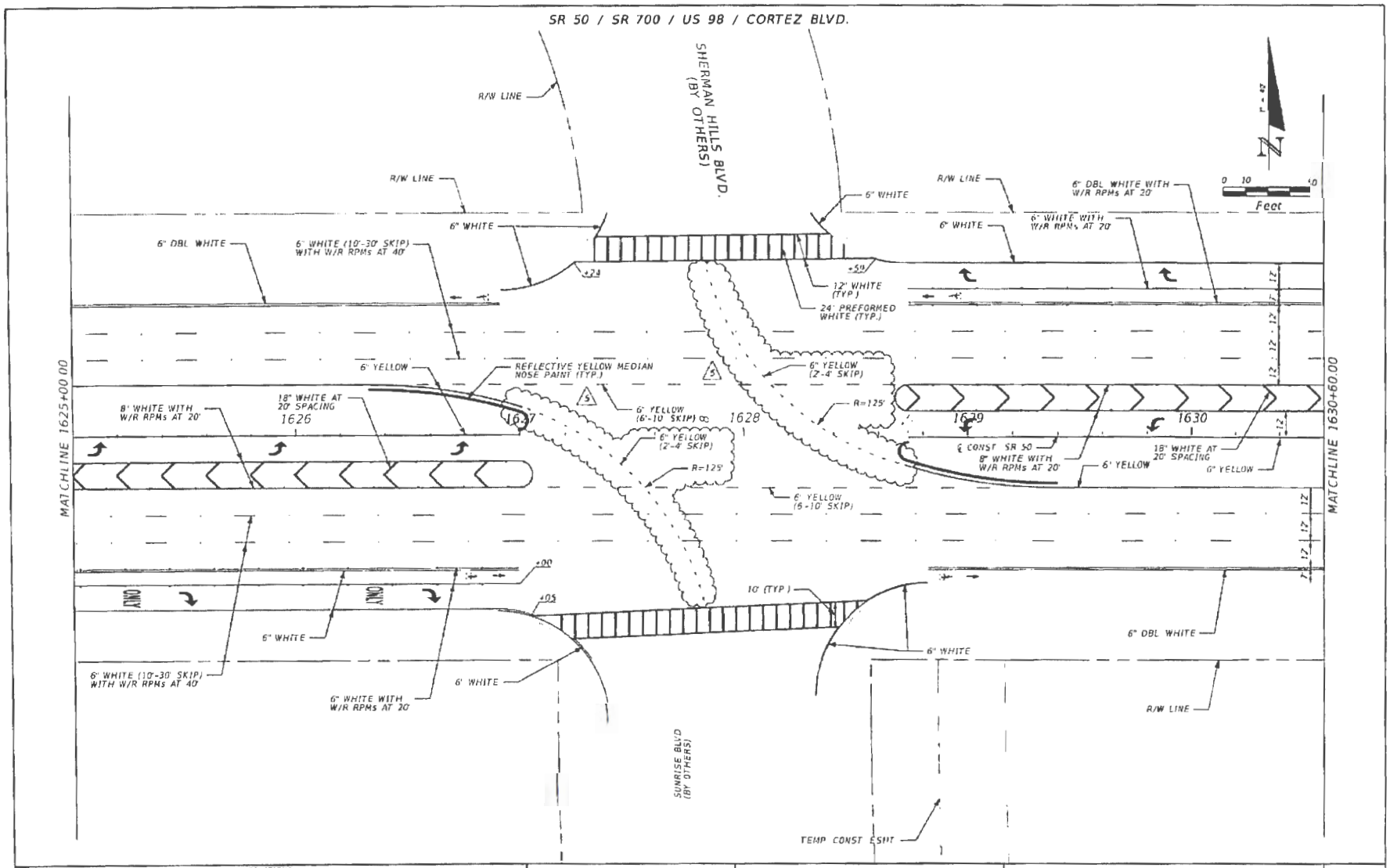
CERTIFICATE OF AUTHORIZATION NO. 4313

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLAN (5)

SHEET NO. 5-18



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
6/16/21	5 ADDED SKIP LINE		

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P.E. LICENSE NUMBER 49282
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CERTIFICATE OF AUTHORIZATION NO. 4213

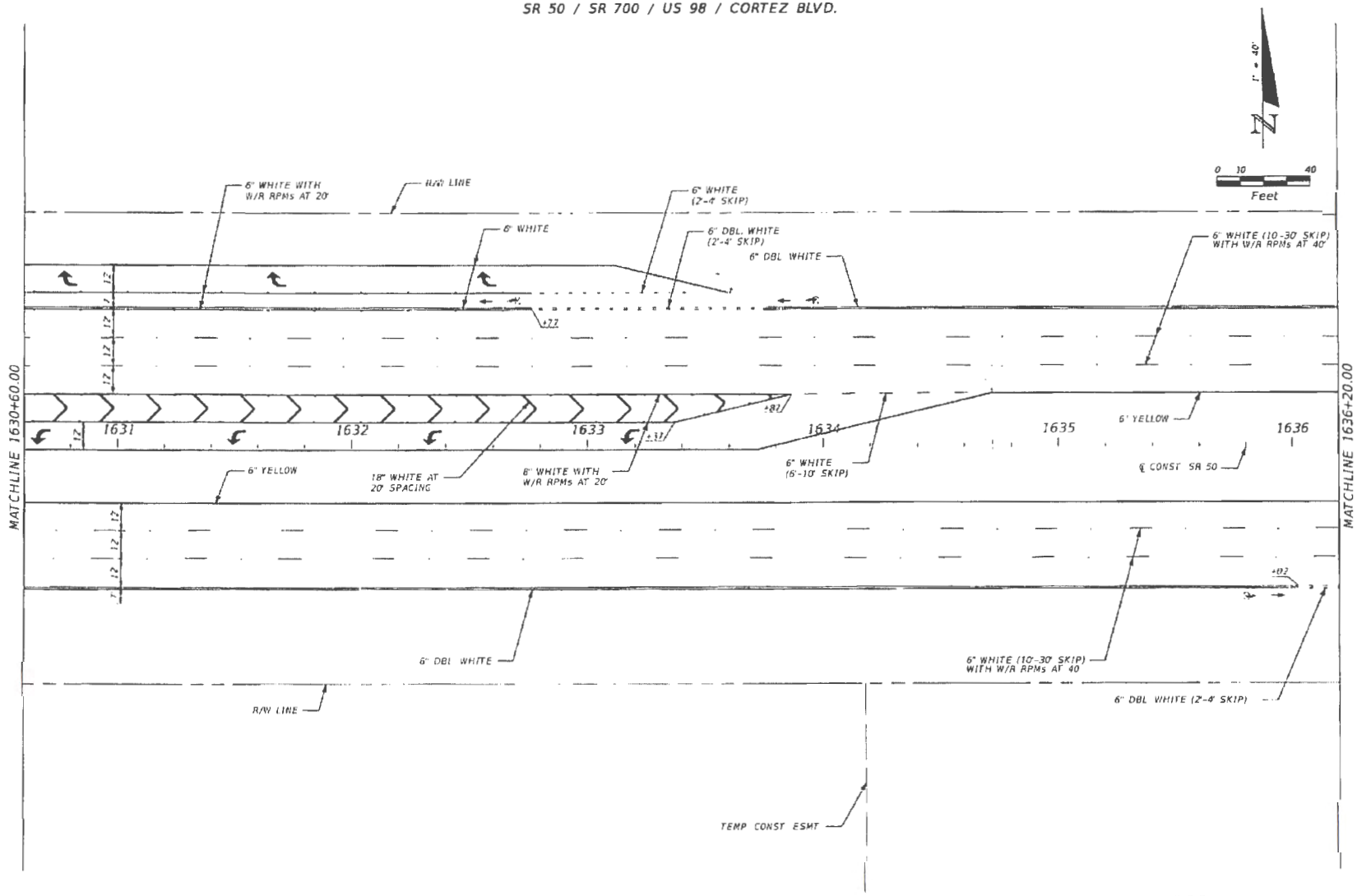
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLAN (6)

SHEET NO. 5-19

SR 50 / SR 700 / US 98 / CORTEZ BLVD.



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

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HDR Engineering, Inc
4830 West Kennedy Blvd. Suite 400
Tampa, FL 33609-2548
CERTIFICATE OF AUTHORIZATION NO 4213

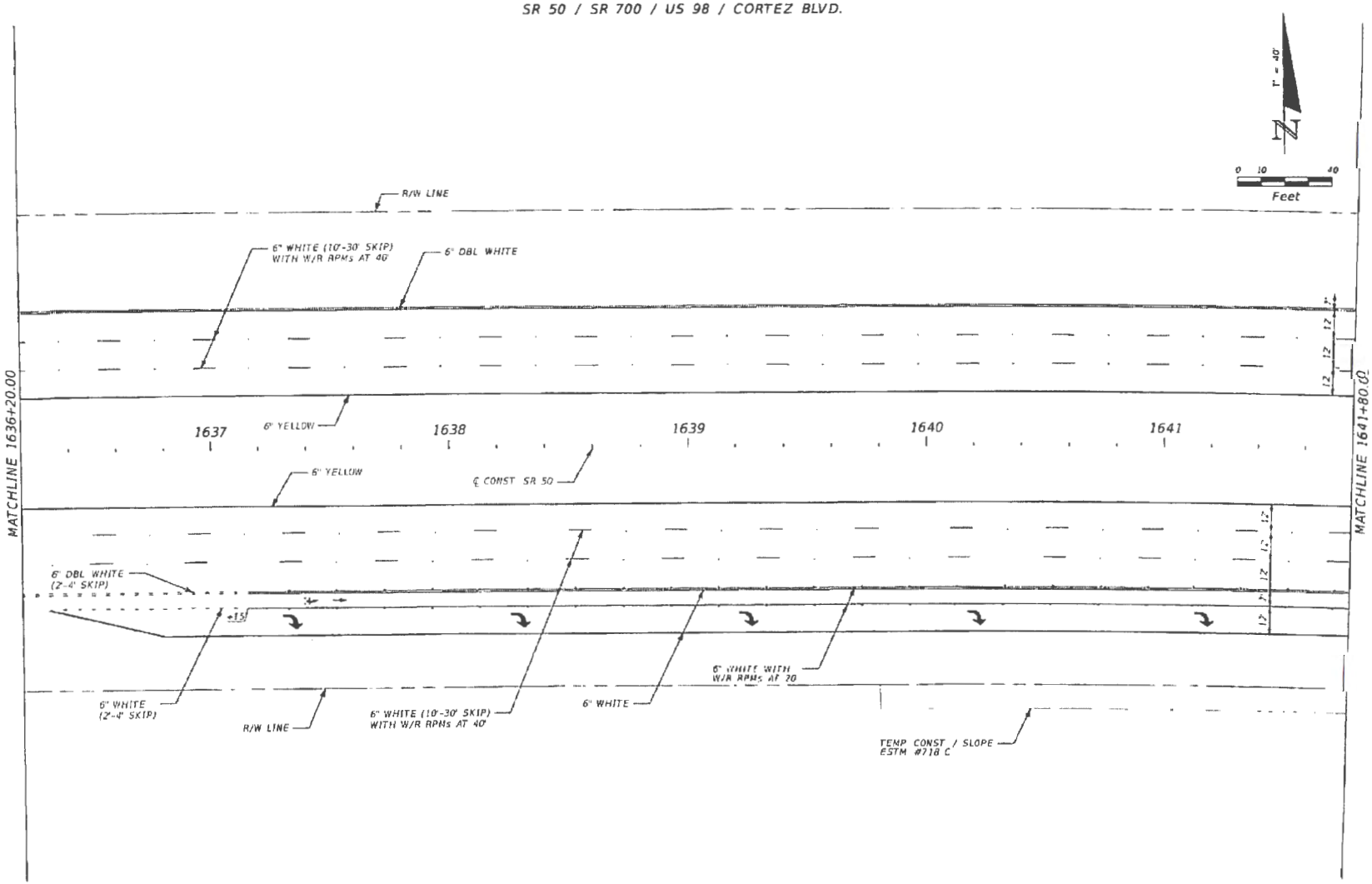
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLAN (7)

SHEET NO
S-20

SR 50 / SR 700 / US 98 / CORTEZ BLVD.



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

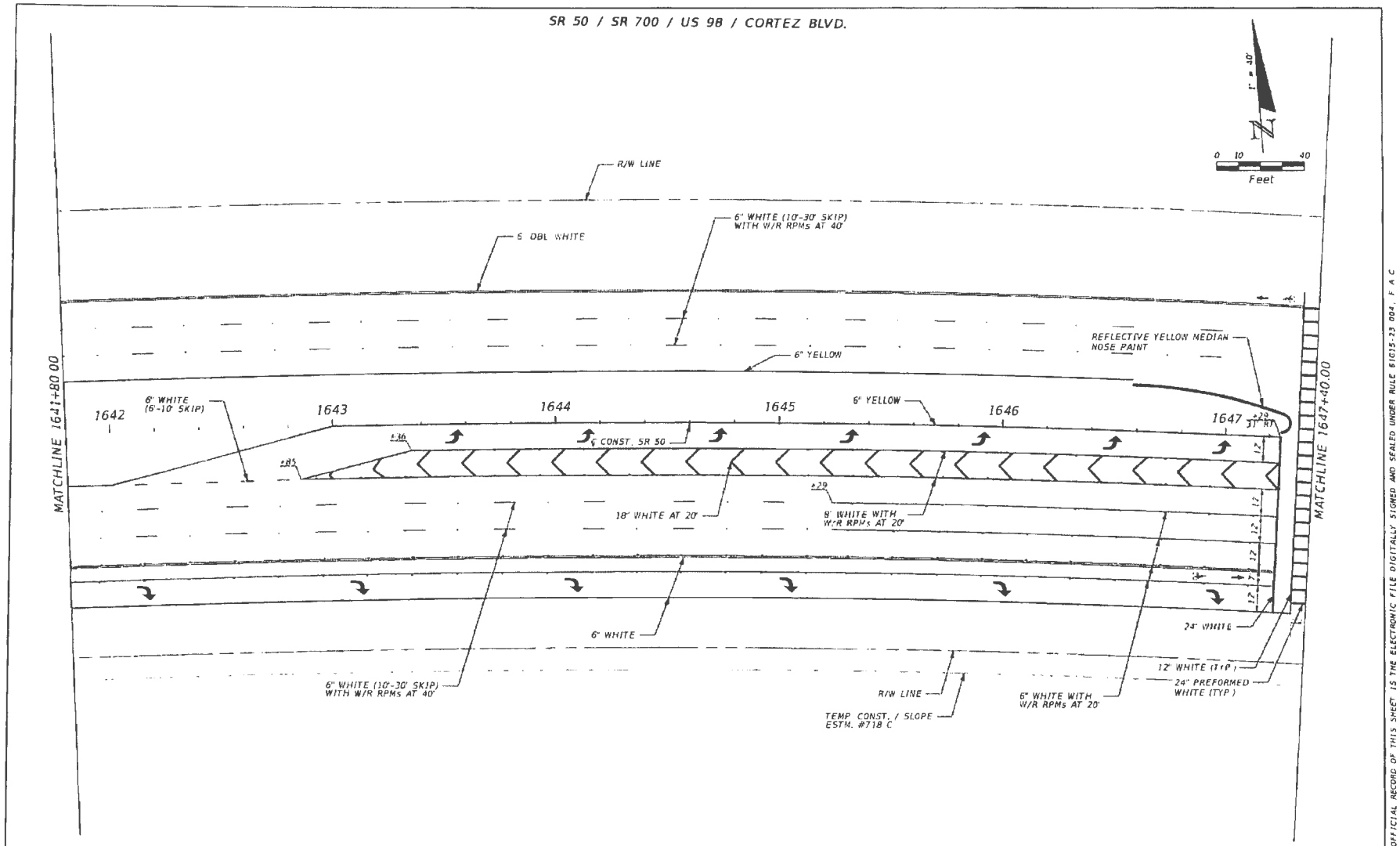
MICHAEL J. OATES, P.E.
P.E. LICENSE NUMBER 49282
HDR Engineering, Inc
4830 West Kennedy Blvd, Suite 400
Tampa, FL 33609-2548
CERTIFICATE OF AUTHORIZATION NO 4213

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLAN (8)

SHEET NO. S-21



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Tampa, FL 33609-2548
CERTIFICATE OF AUTHORIZATION NO. 4213

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLAN (9)

SHEET NO
S-22

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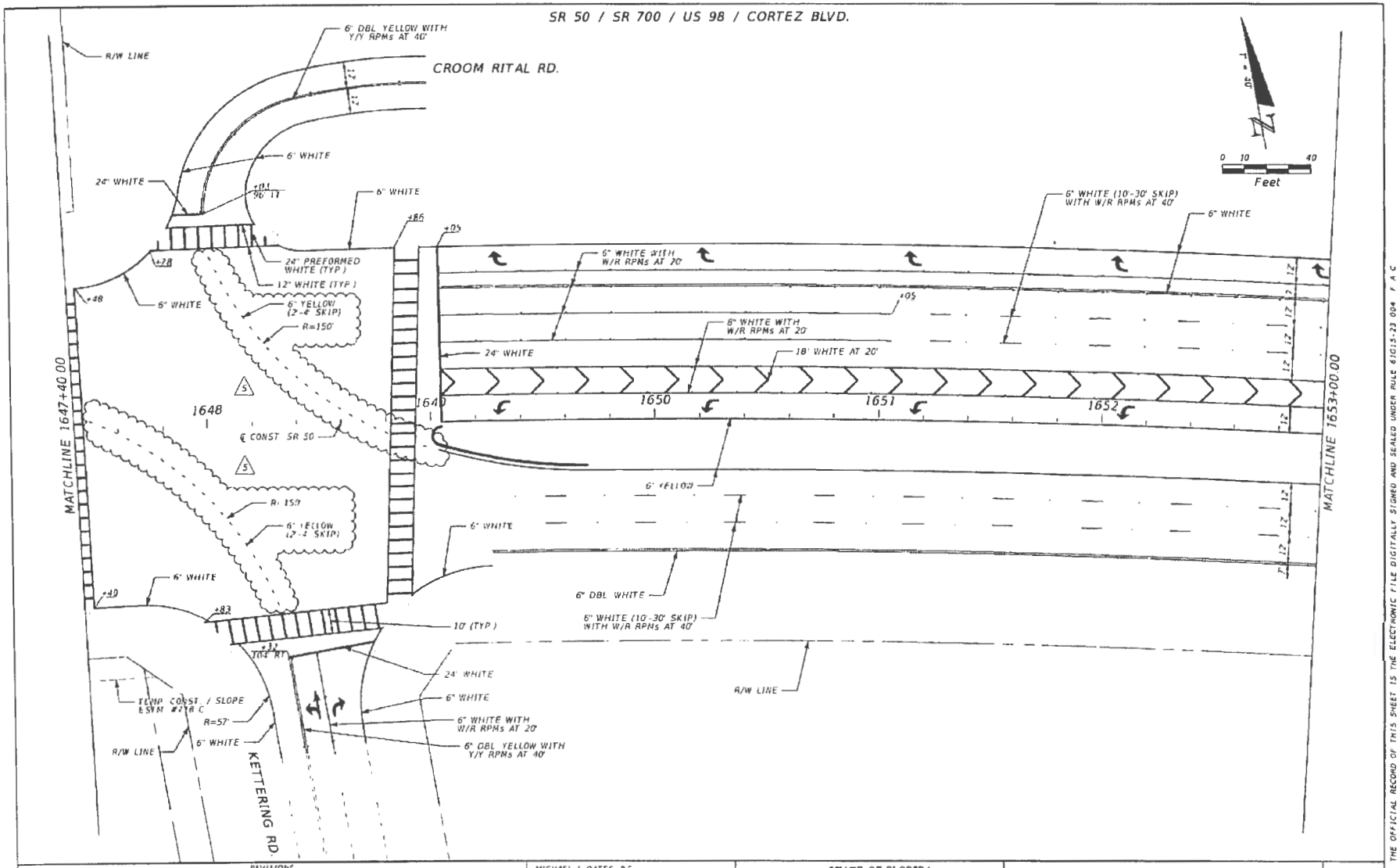

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
6/16/21	5 ADDED SKIP LINE		

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P.E. LICENSE NUMBER 49282
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Tampa, FL 33609-2548
CERTIFICATE OF AUTHORIZATION NO. 4213

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLAN (10)

SHEET NO. S-23

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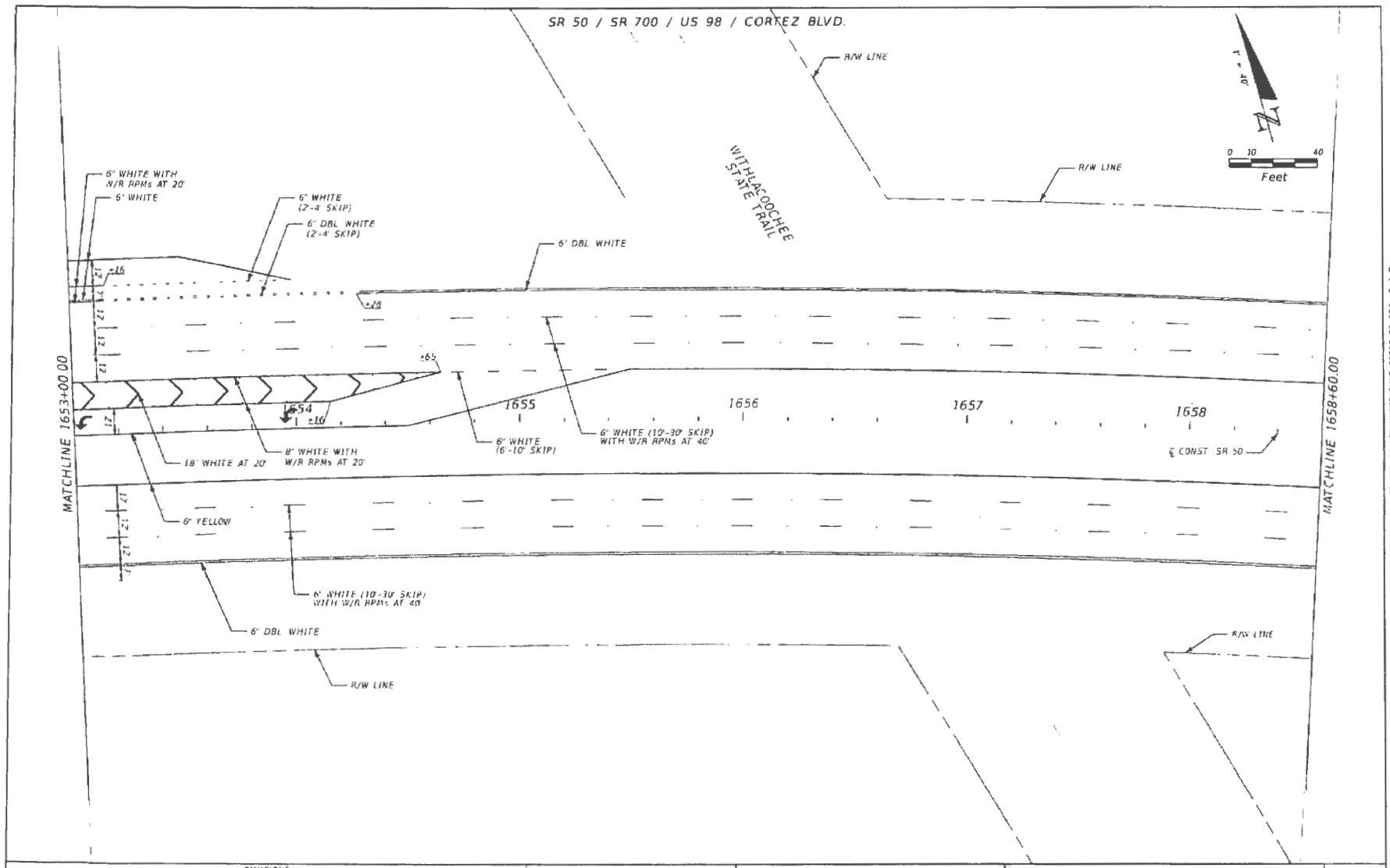


REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

MICHAEL J. OATES, P.E.
P.E. LICENSE NUMBER 49282
HDR Engineering, Inc.
4830 West Kennedy Blvd., Suite 400
Tampa, FL 33609-2349
CERTIFICATE OF AUTHORIZATION NO. 4213

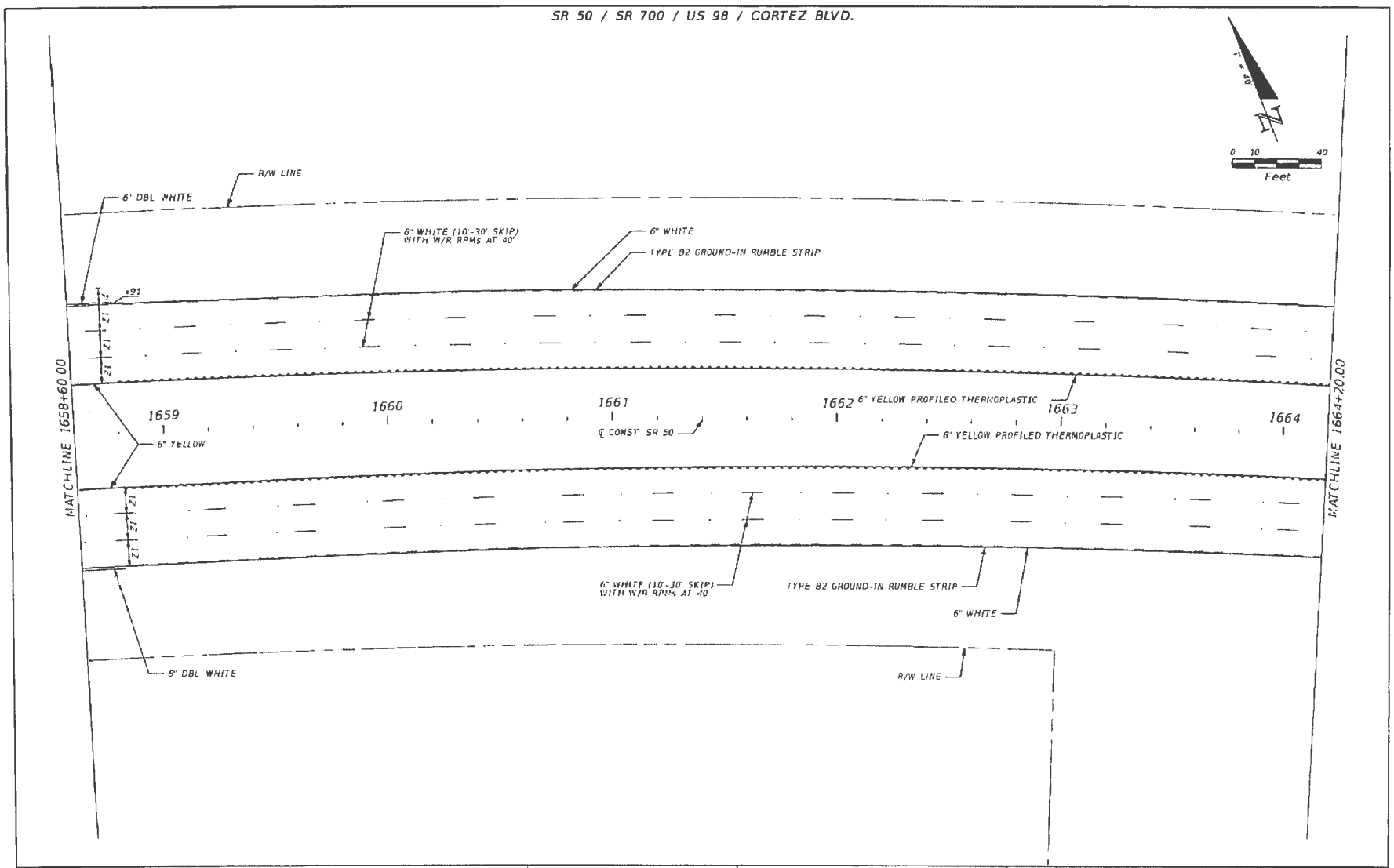
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLAN (11)

SHEET NO. 5-24

SR 50 / SR 700 / US 98 / CORTEZ BLVD.



REVISIONS			
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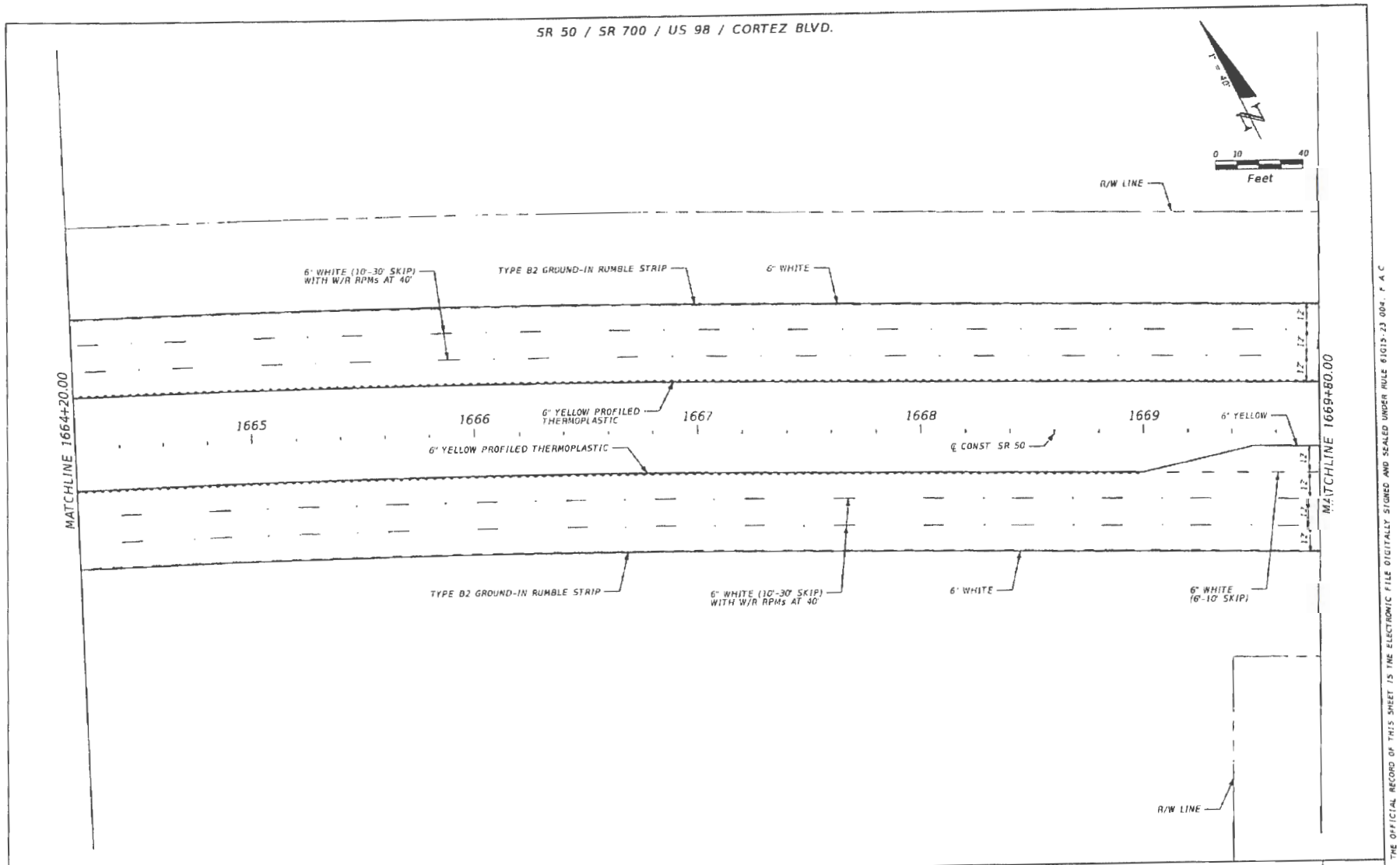
P.E. LICENSE NUMBER 49282
HDR Engineering, Inc.
4830 West Kennedy Blvd, Suite 400
Tampa, FL 33609-2548
CERTIFICATE OF AUTHORIZATION NO. 4215

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLAN (12)

SHEET NO. S-25



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

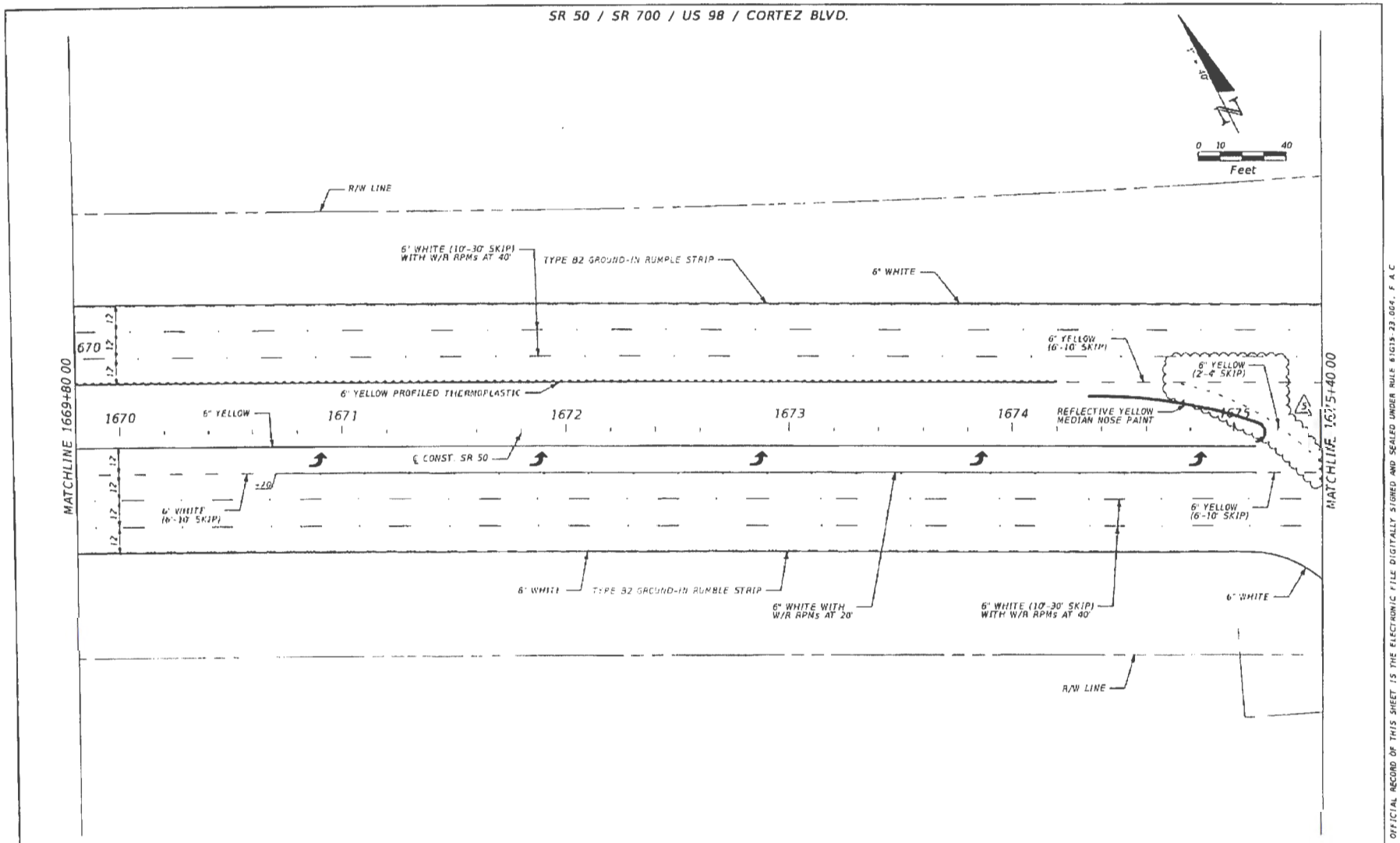
MICHAEL J. OATES, P.E.
P.E. LICENSE NUMBER 49282
HDR Engineering, Inc.
4830 West Kennedy Blvd. Suite 400
Tampa, FL 33609-2548
CERTIFICATE OF AUTHORIZATION NO. 4213

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLAN (13)

SHEET NO. S-26



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
6/16/21	5 ADDED SKIP LINE		

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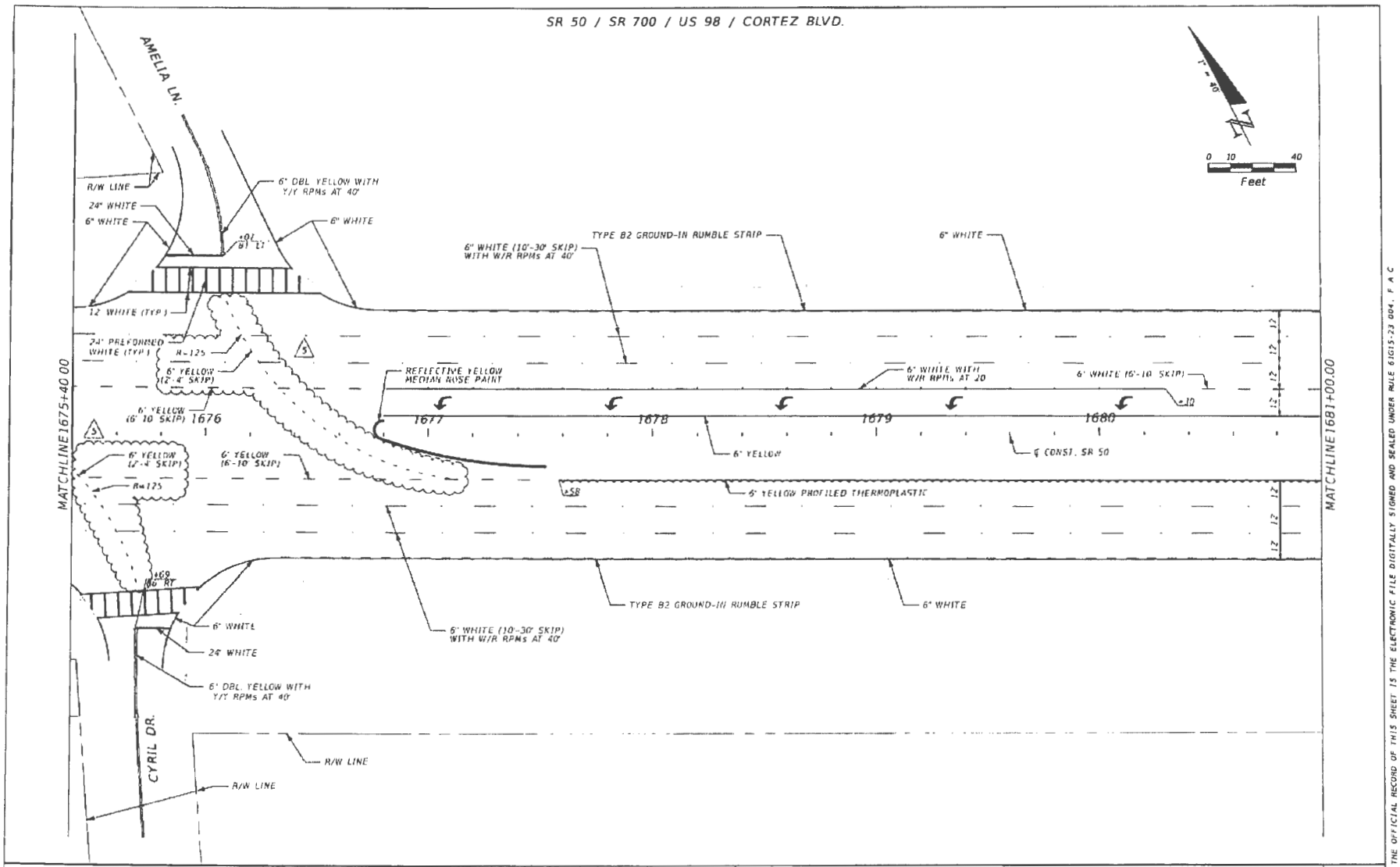
P.E. LICENSE NUMBER 49282
NDR Engineering, Inc.
4830 West Kennedy Blvd. Suite 400
Tampa, FL 33609-2548
CERTIFICATE OF AUTHORIZATION NO. 4213

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLAN (14)

SHEET NO. 5-27



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
6/16/21	5 ADDED SKIP LINE		

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P.E. LICENSE NUMBER 49282
HDR Engineering, Inc
4830 West Kennedy Blvd, Suite 400
Tampa, FL 33609-2548
CERTIFICATE OF AUTHORIZATION NO. 4213

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	415732-4-52-01

PAVEMENT MARKING PLAN (16)

SHEET NO. 5-28

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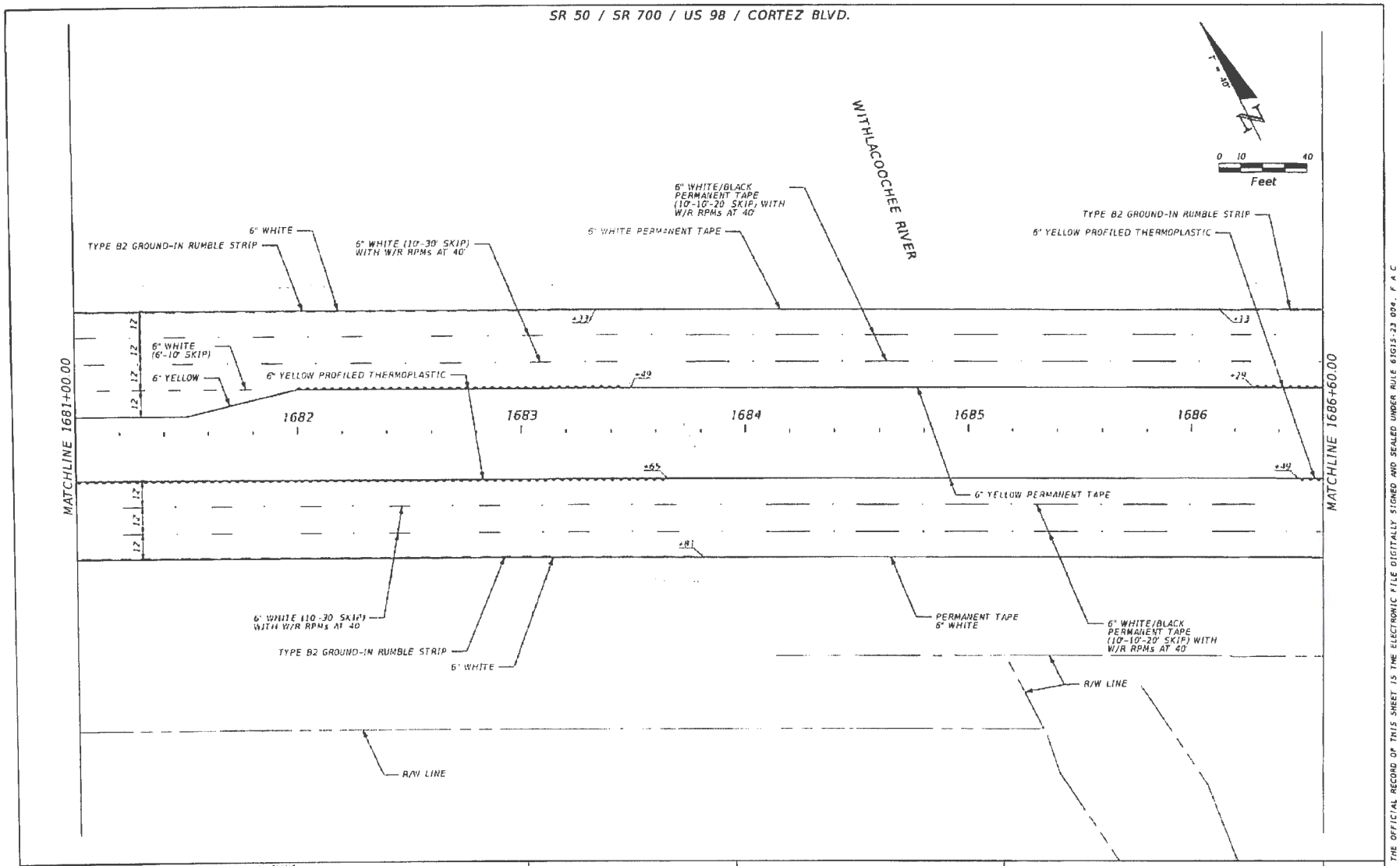

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MICHAEL J. OATES, P.E.
P.E. LICENSE NUMBER 49282
HDR Engineering, Inc
4830 West Kennedy Blvd, Suite 400
Tampa, FL 33609-2548
CERTIFICATE OF AUTHORIZATION NO 4213

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLAN (16)

SHEET NO
S-29

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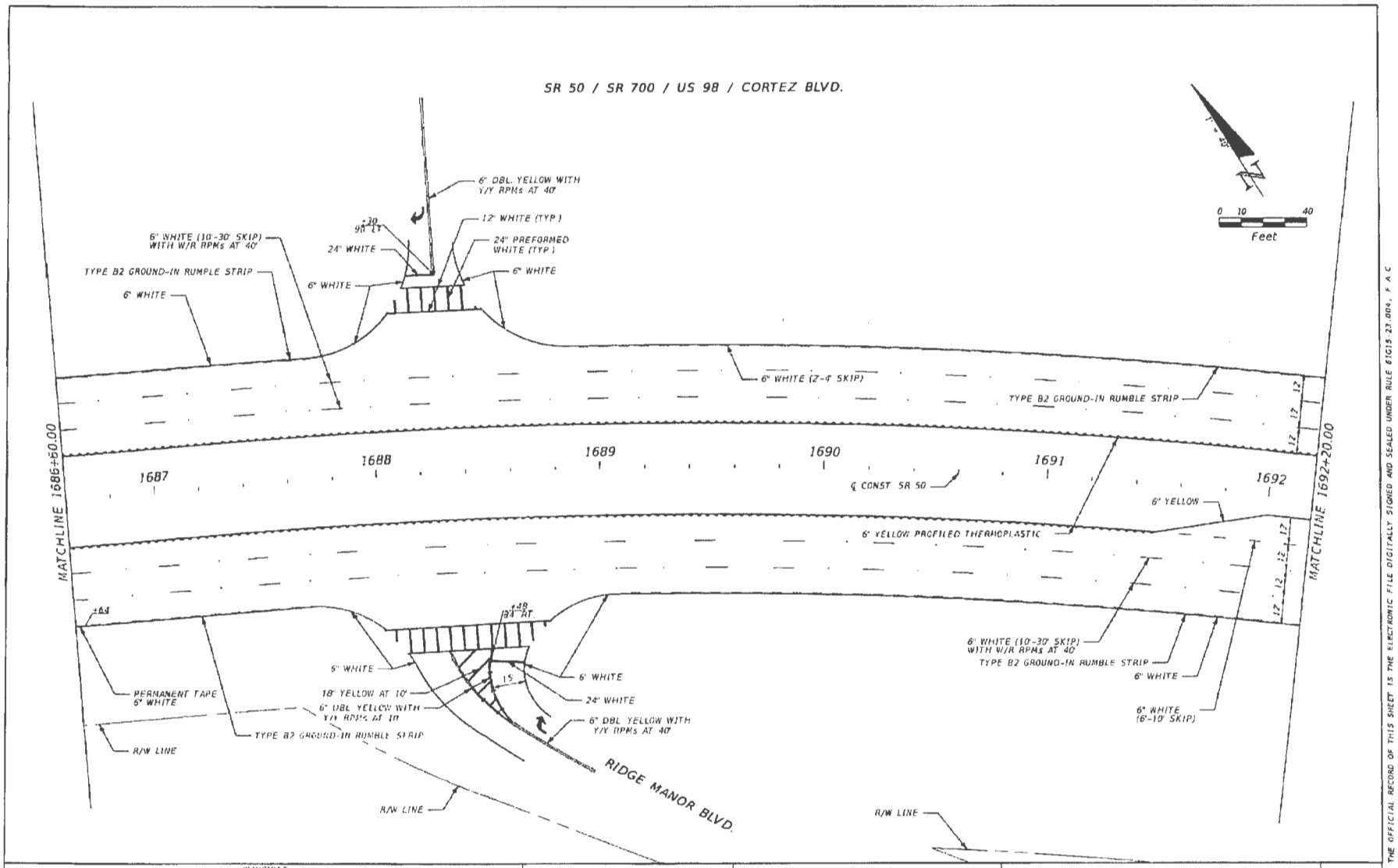

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DATE	DESCRIPTION	DATE	DESCRIPTION

MICHAEL J. OATES, P.E.
P.E. LICENSE NUMBER 49282
HDR Engineering, Inc
4830 West Kennedy Blvd, Suite 400
Tampa, FL 33609-2548
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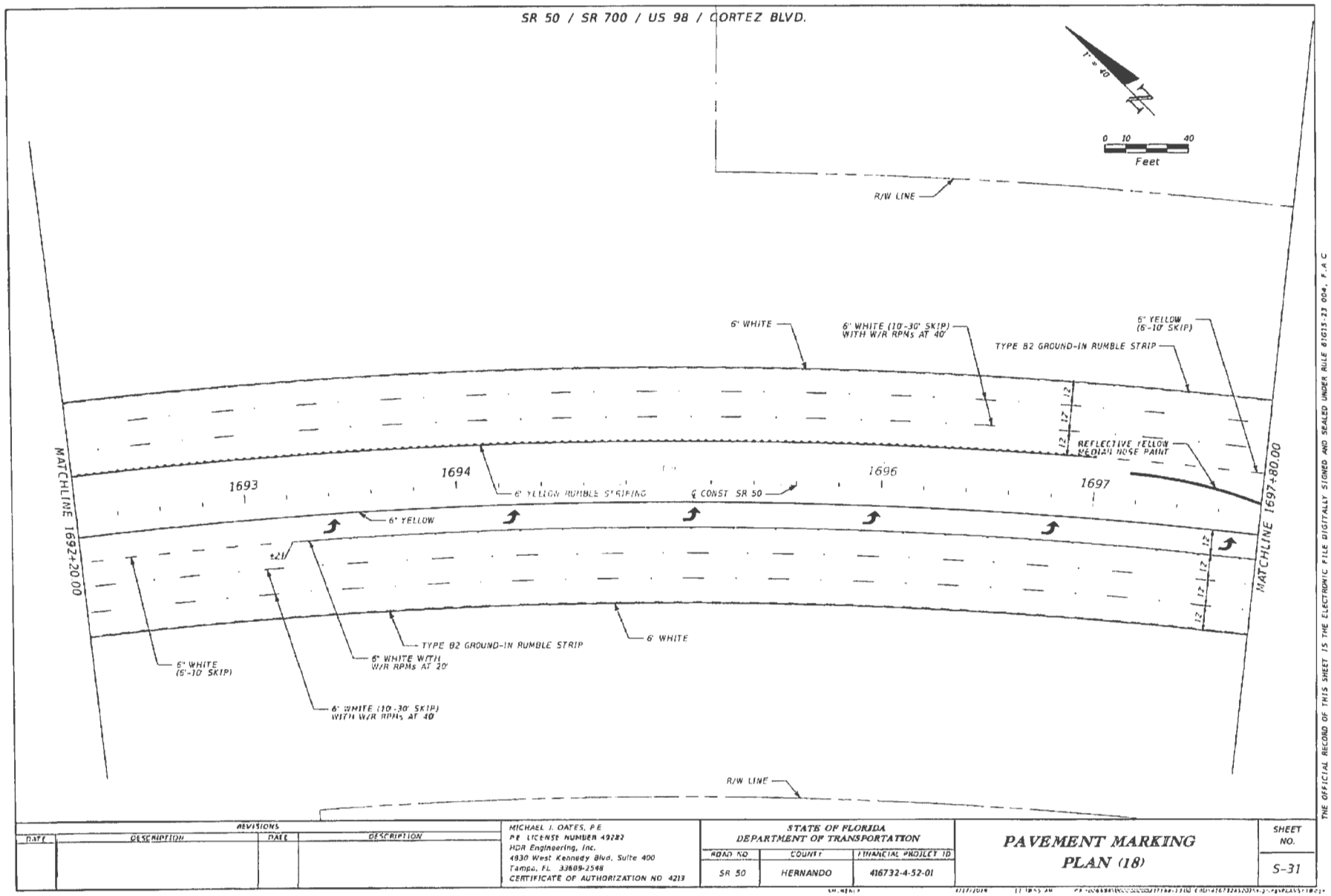
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLAN (17)

SHEET NO. S-30



REVISIONS			
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HDR Engineering, Inc.
4830 West Kennedy Blvd, Suite 400
Tampa, FL 33609-2548
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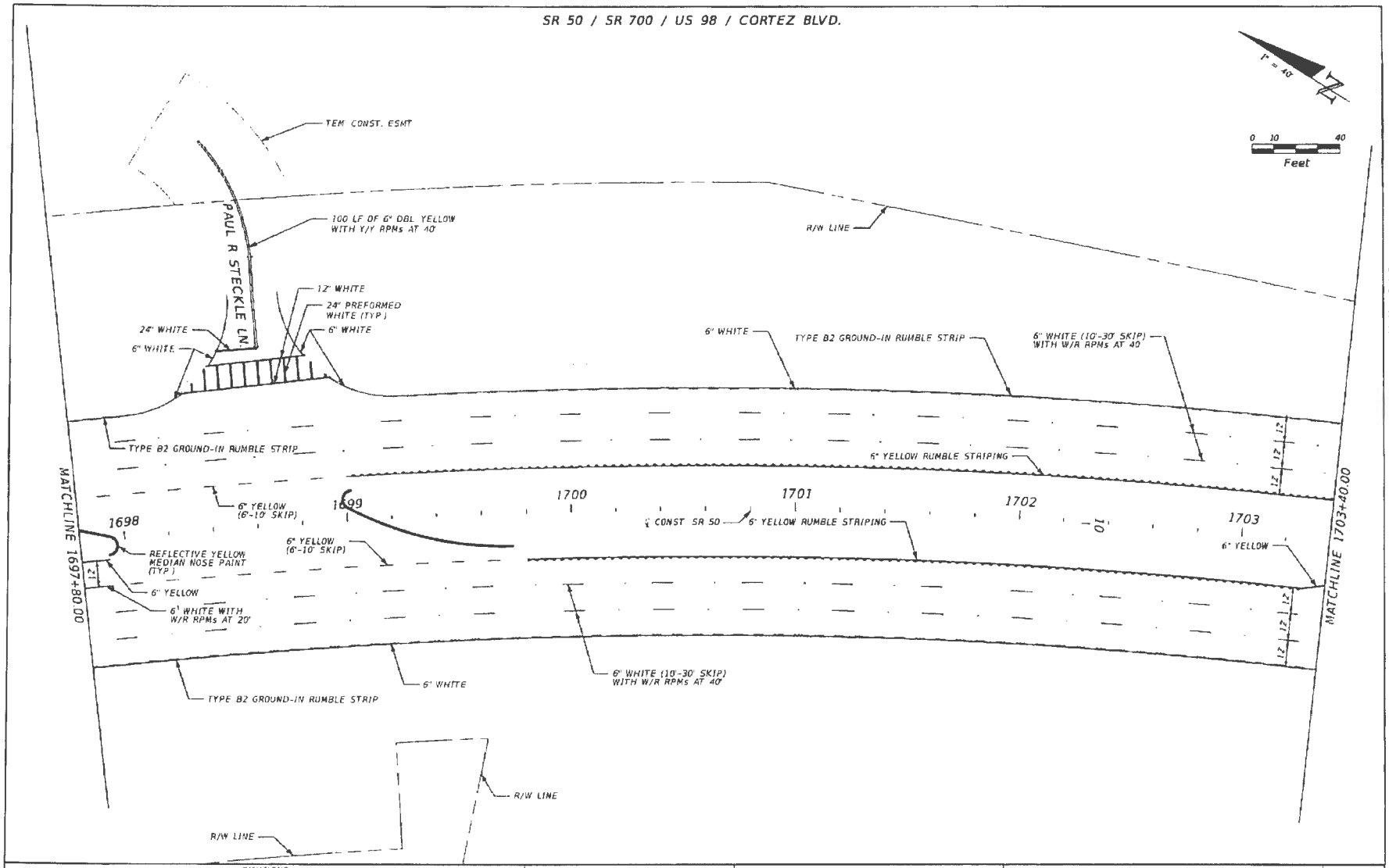
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLAN (18)

SHEET NO. S-31



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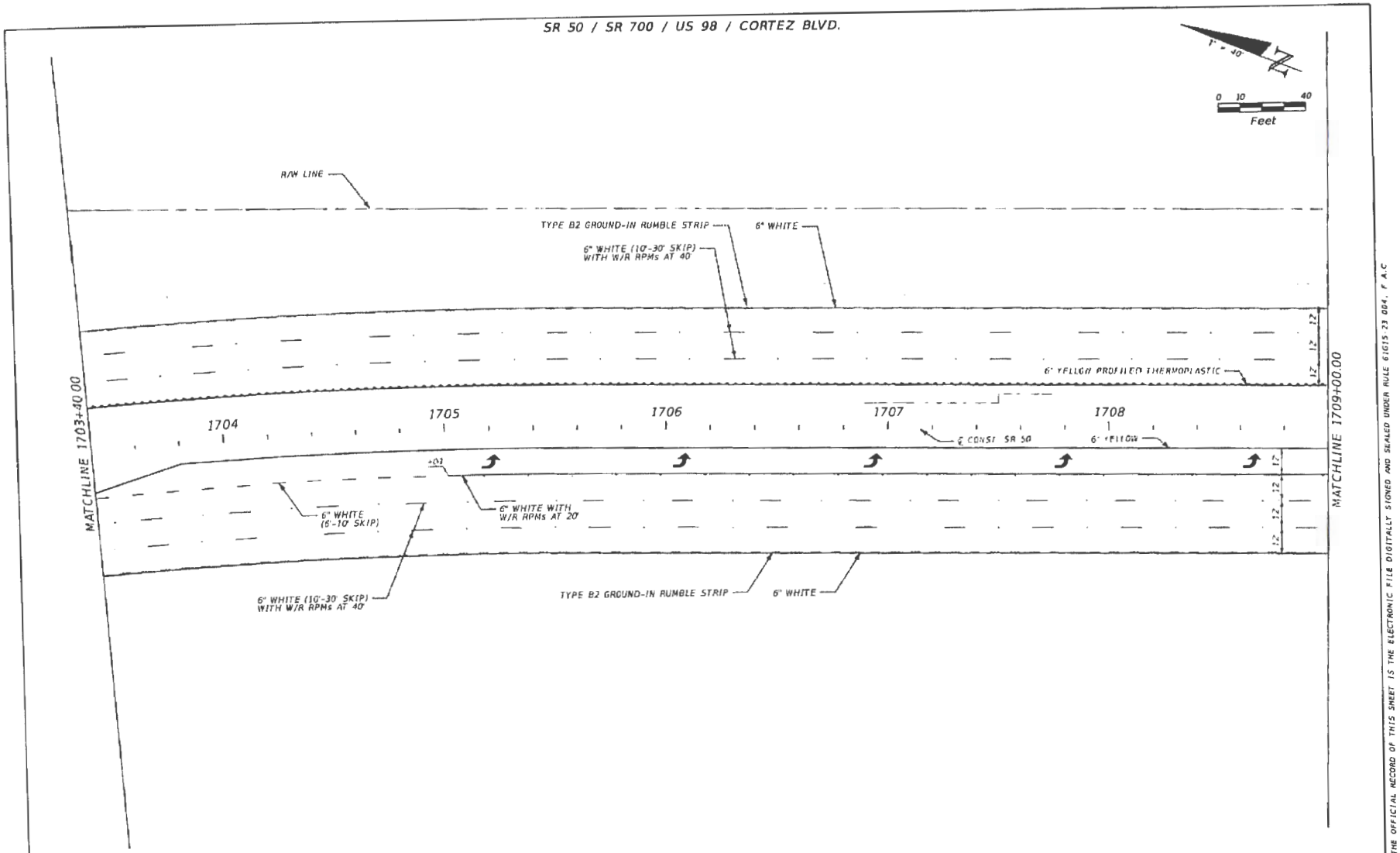
CERTIFICATE OF AUTHORIZATION NO. 4213

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLAN (19)

SHEET NO. S-32



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

MICHAEL J. OATES, P.E.
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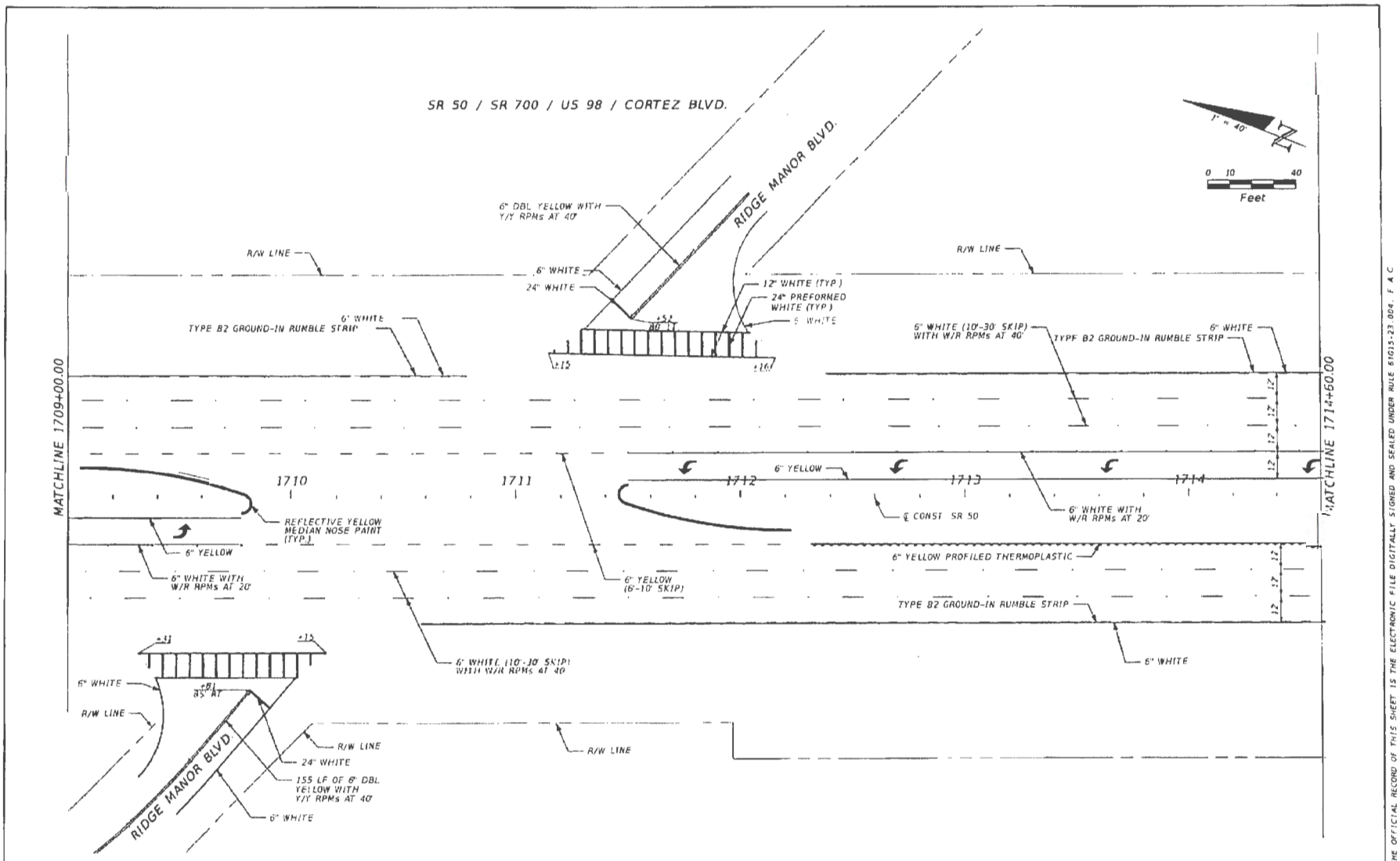
CERTIFICATE OF AUTHORIZATION NO. 4213

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLAN (20)

SHEET NO. S-33



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

MICHAEL J. OATES P.E.
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HDR Engineering, Inc
4830 West Kennedy Blvd, Suite 400
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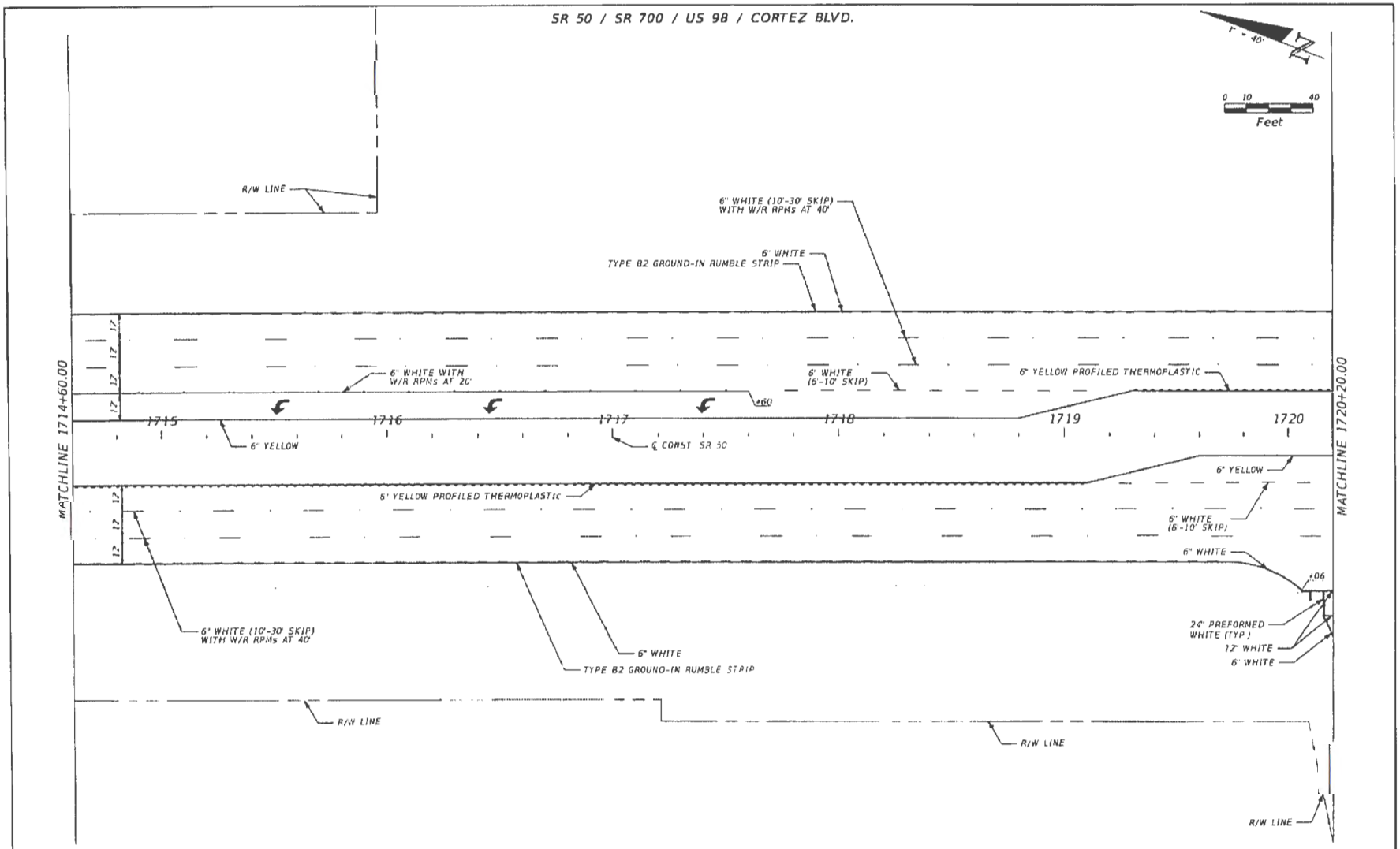
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLAN (21)

SHEET NO. 5-34



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HDR Engineering, Inc.
4830 West Kennedy Blvd, Suite 400
Tampa, FL 33609-2548
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STATE OF FLORIDA
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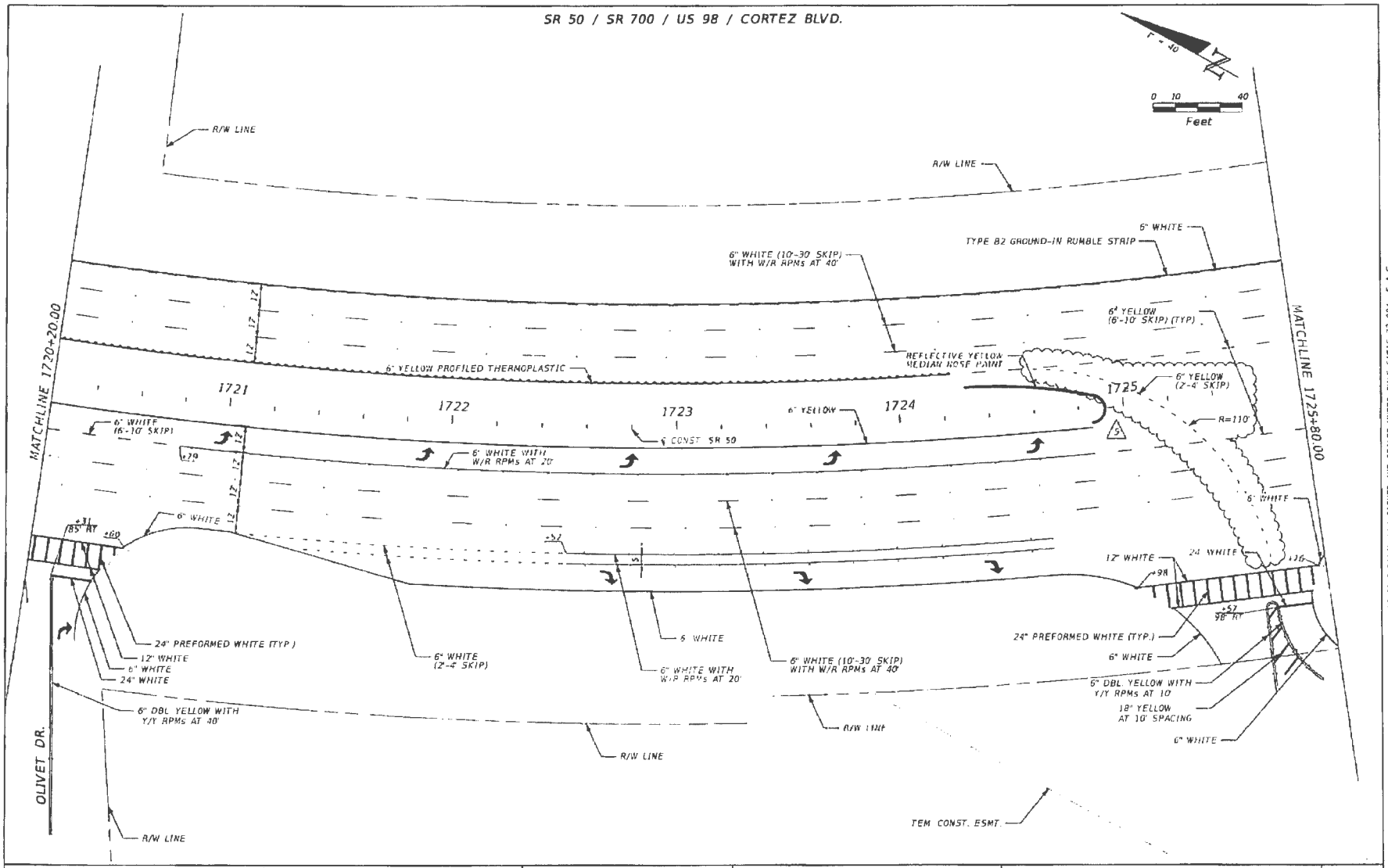
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLAN (22)

SHEET NO. 5-35



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
6/15/23	5 ADDED SKIP LINE		

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P.E. LICENSE NUMBER 49282
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4830 West Kennedy Blvd, Suite 400
Tampa, FL 33609-2548
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLAN (23)

SHEET NO. S-36

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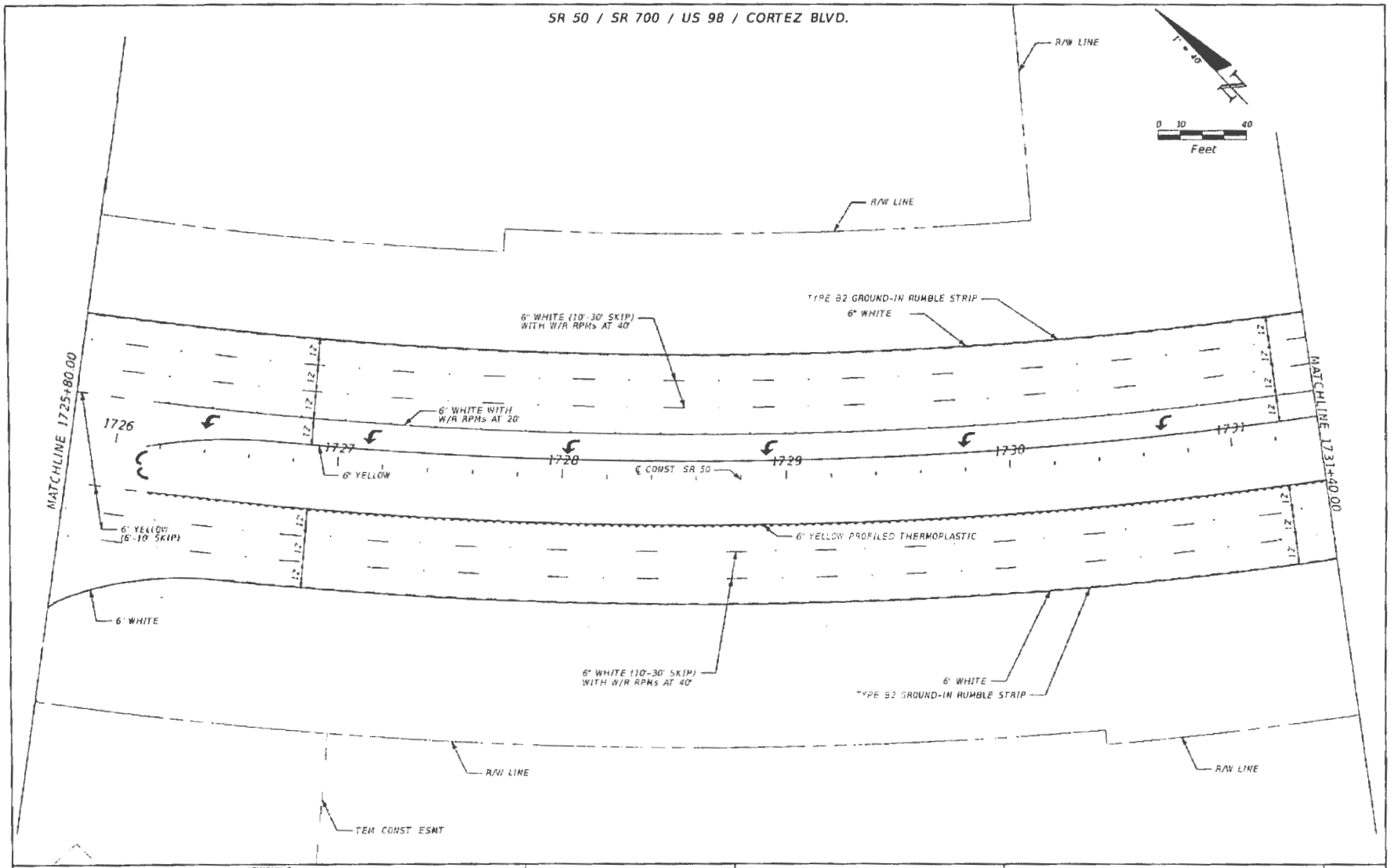

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

MICHAEL J. DATES, P.E.
P.E. LICENSE NUMBER 49282
HDR Engineering, Inc
4830 West Kennedy Blvd, Suite 400
Tampa, FL 33609-2548
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STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLAN (24)

SHEET NO. 5-37

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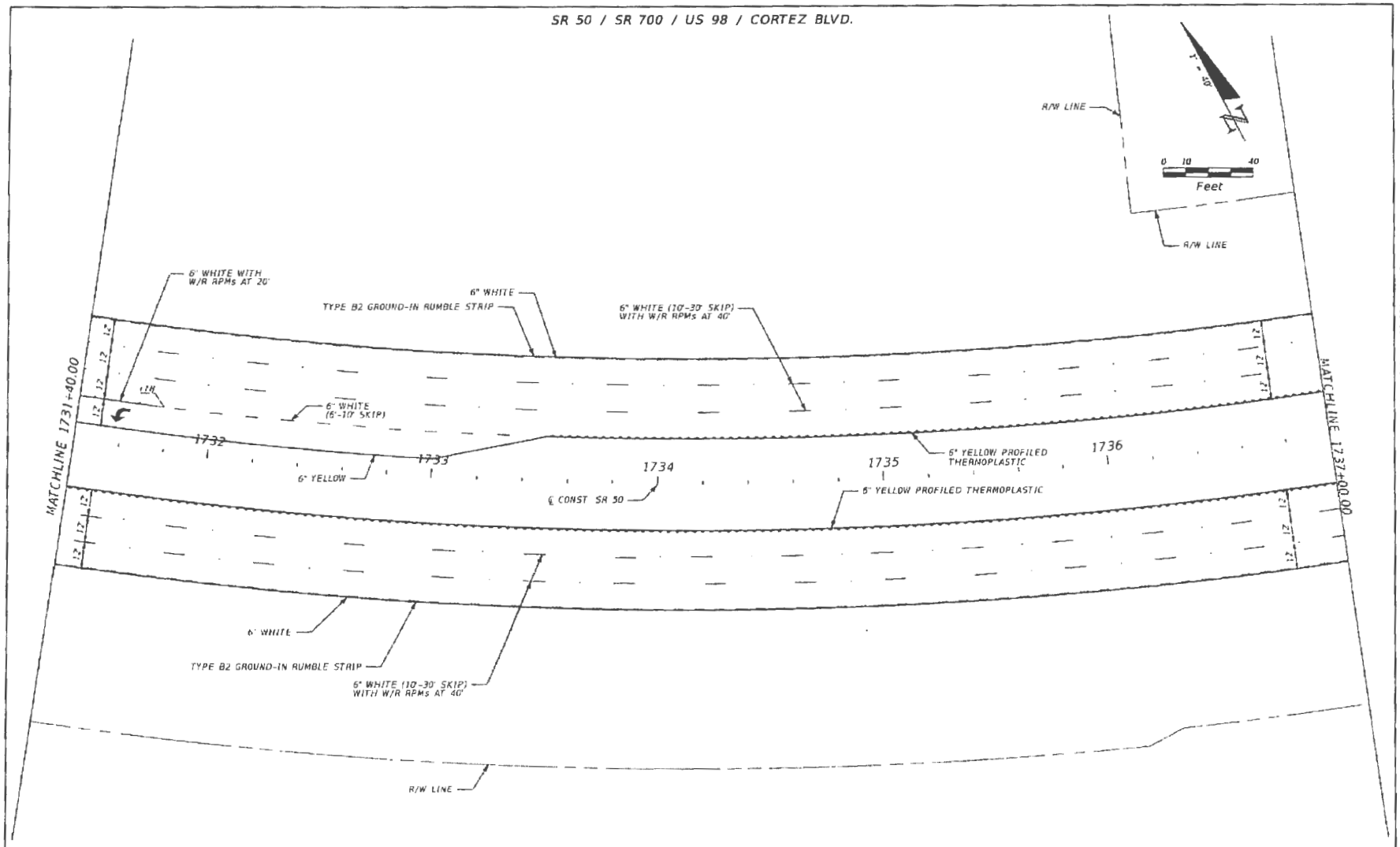

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

MICHAEL J. OATES, P.E.
P.E. LICENSE NUMBER 49282
WDR Engineering, Inc
4810 West Kennedy Blvd. Suite 400
Tampa, FL 33609-2548
CERTIFICATE OF AUTHORIZATION NO. 4213

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLAN (26)

SHEET NO. S-38

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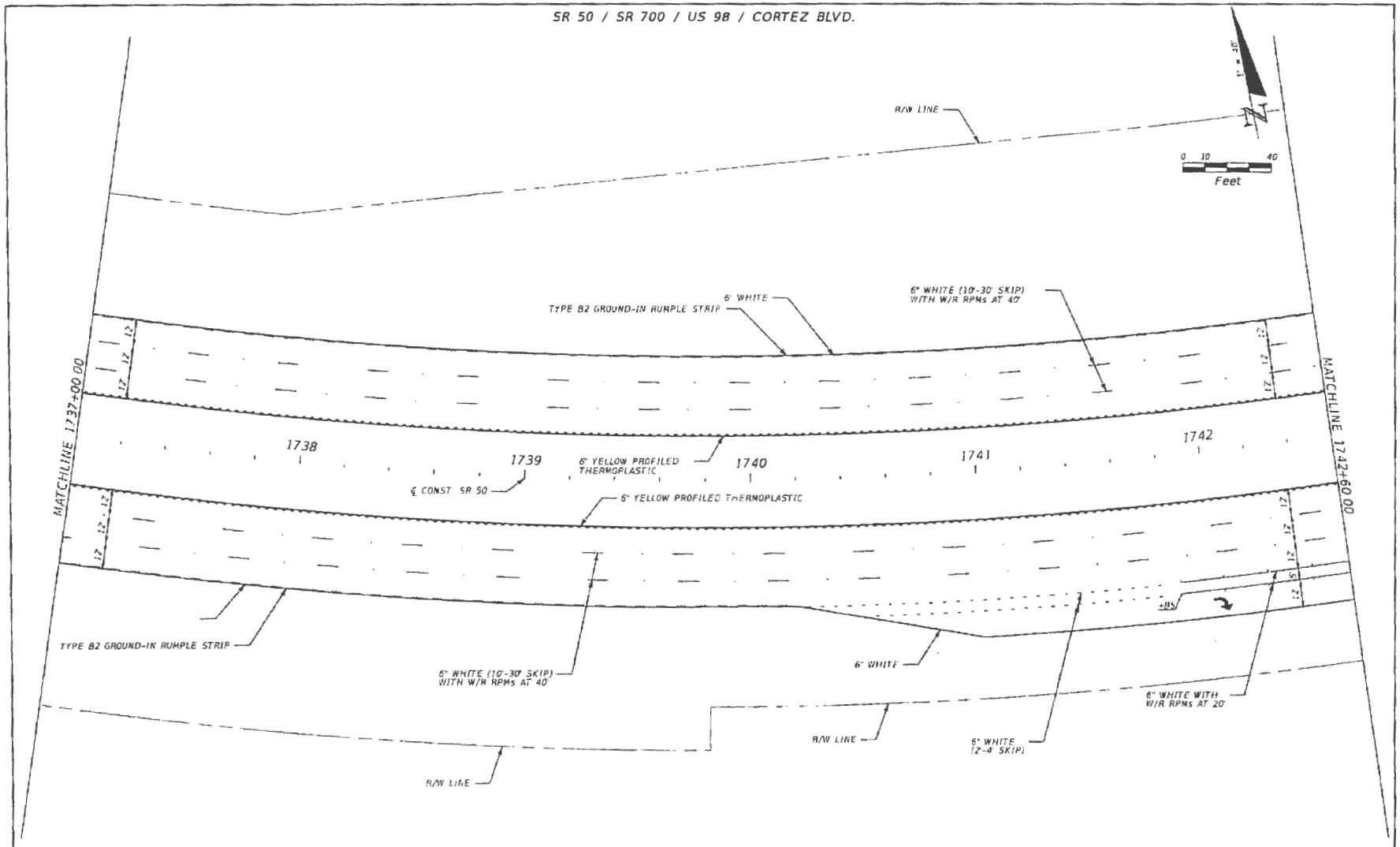

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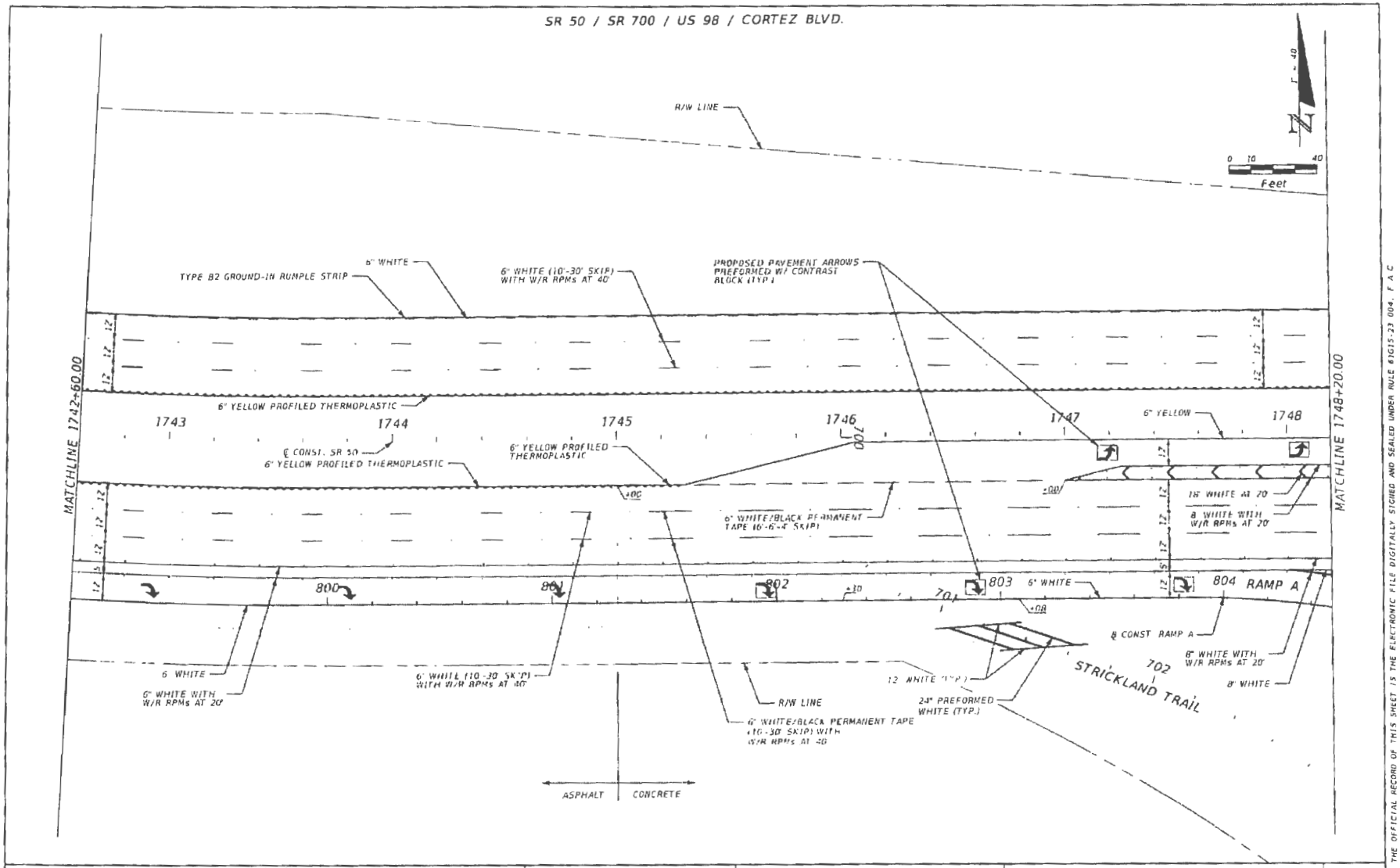
HDR Engineering, Inc
4830 West Kennedy Blvd, Suite 400
Tampa, FL 33609-2548
CERTIFICATE OF AUTHORIZATION NO 4213

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	415732-4-52-01

PAVEMENT MARKING PLAN (26)

SHEET NO
S-39



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

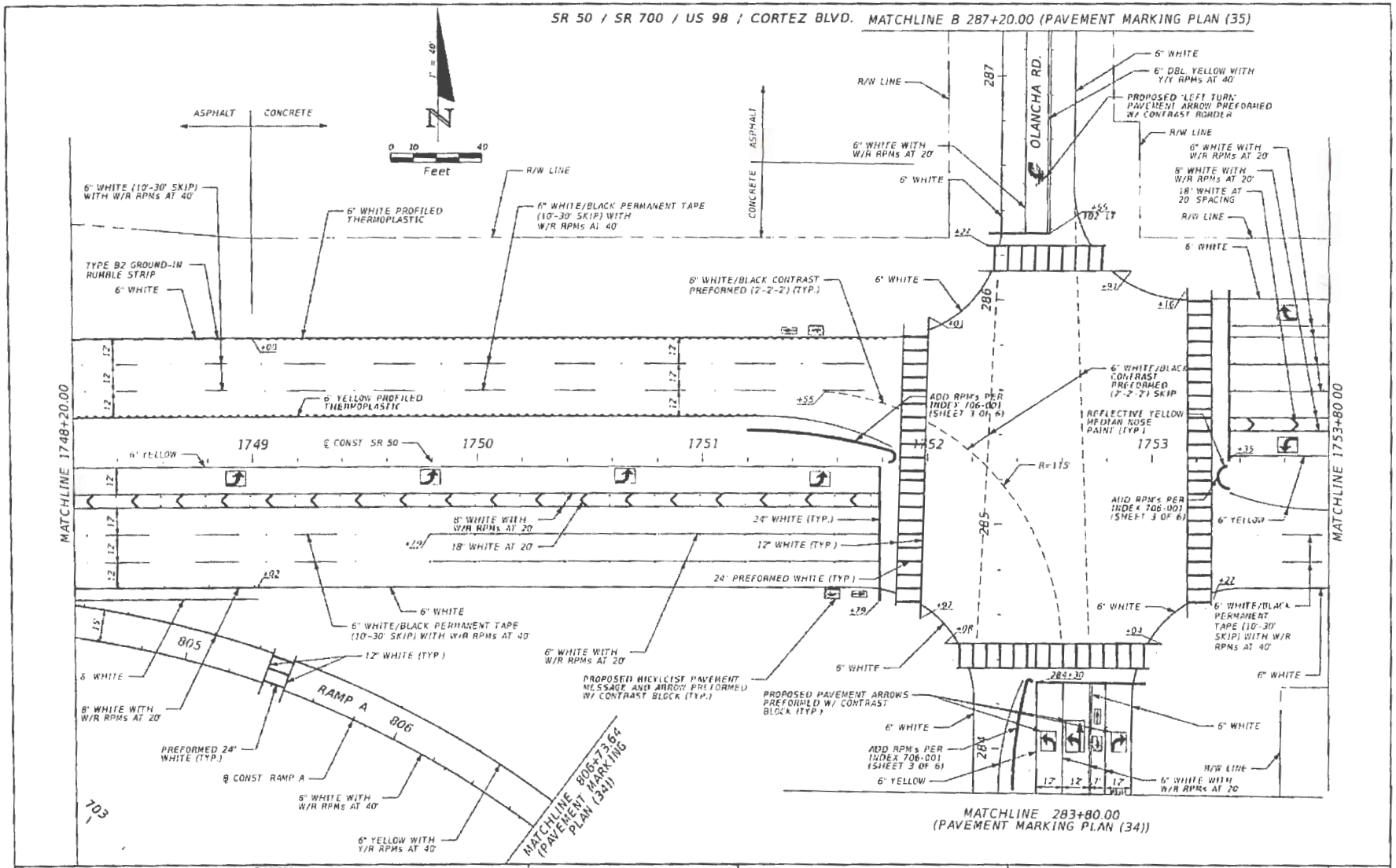
MICHAEL J. OATES, P.E.
P.E. LICENSE NUMBER 49282
HDR Engineering, Inc.
4830 West Kennedy Blvd, Suite 400
Tampa, FL 33609-2548
CERTIFICATE OF AUTHORIZATION NO. 4213

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLANS (27)

SHEET NO. S-40



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

MICHAEL J. OATES, P.E.
P.E. LICENSE NUMBER 49287
HDR Engineering, Inc.
4830 West Kennedy Blvd Suite 400
Tampa, FL 33609-2548
CERTIFICATE OF AUTHORIZATION NO 4213

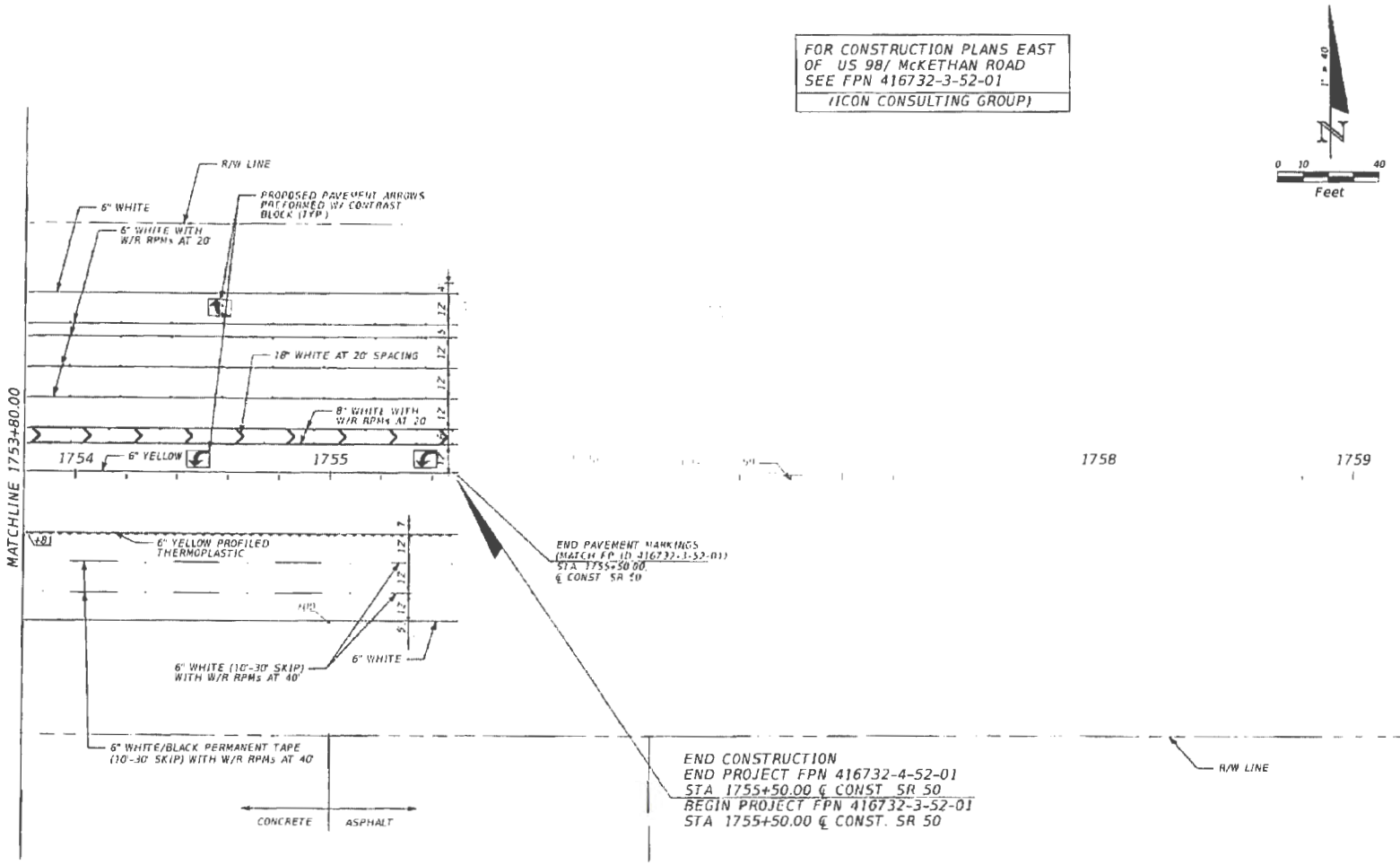
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLAN (28)

SHEET NO
S-41

FOR CONSTRUCTION PLANS EAST
OF US 98/ McKETHAN ROAD
SEE FPN 416732-3-52-01
(ICON CONSULTING GROUP)



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

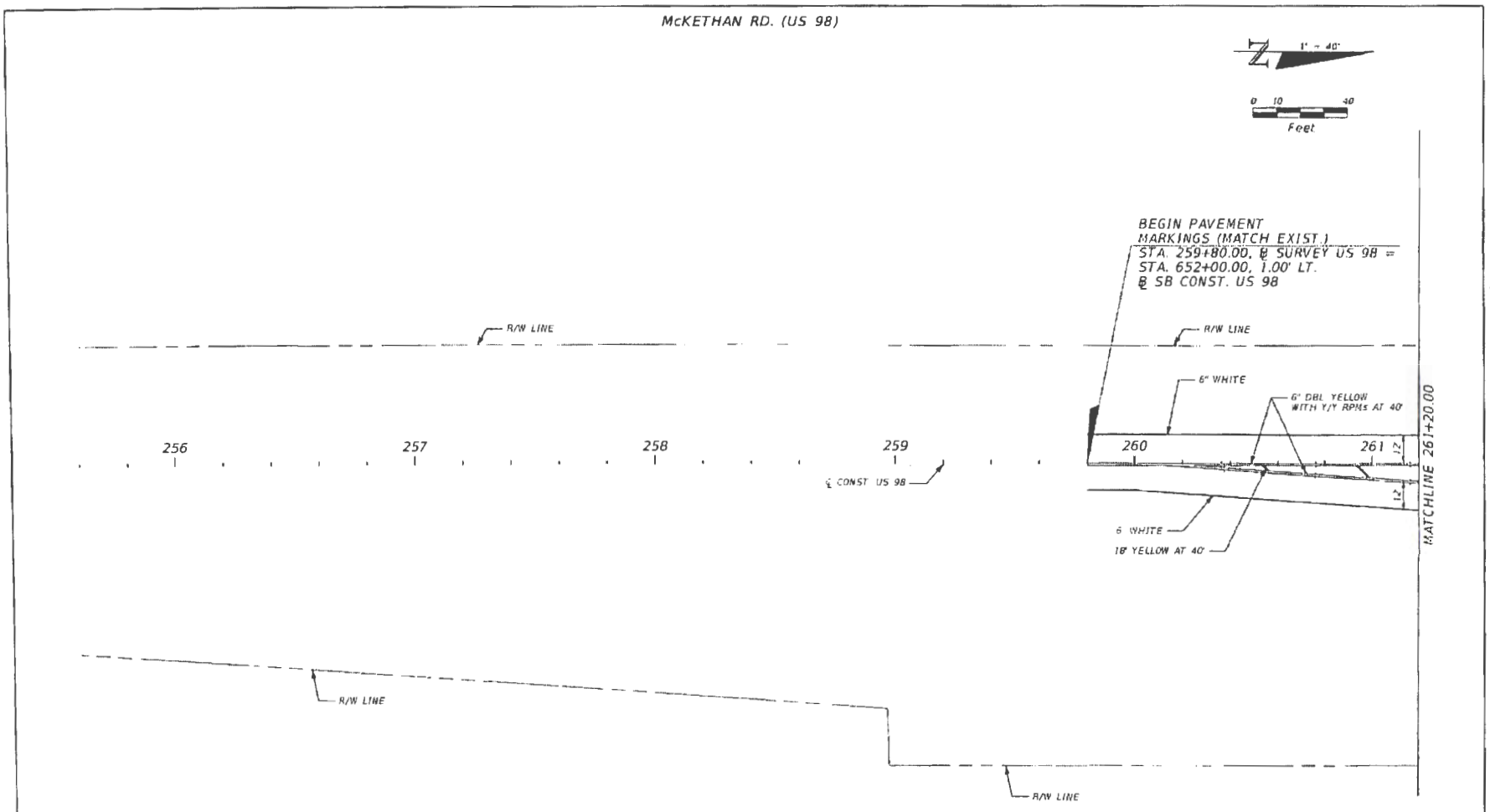
MICHAEL I. DAVIS, P.E.
P.E. LICENSE NUMBER 49282
HDR Engineering, Inc
4830 West Kennedy Blvd, Suite 400
Tampa, FL 33609-2548
CERTIFICATE OF AUTHORIZATION NO. 4213

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLAN (29)

SHEET NO
S-42



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

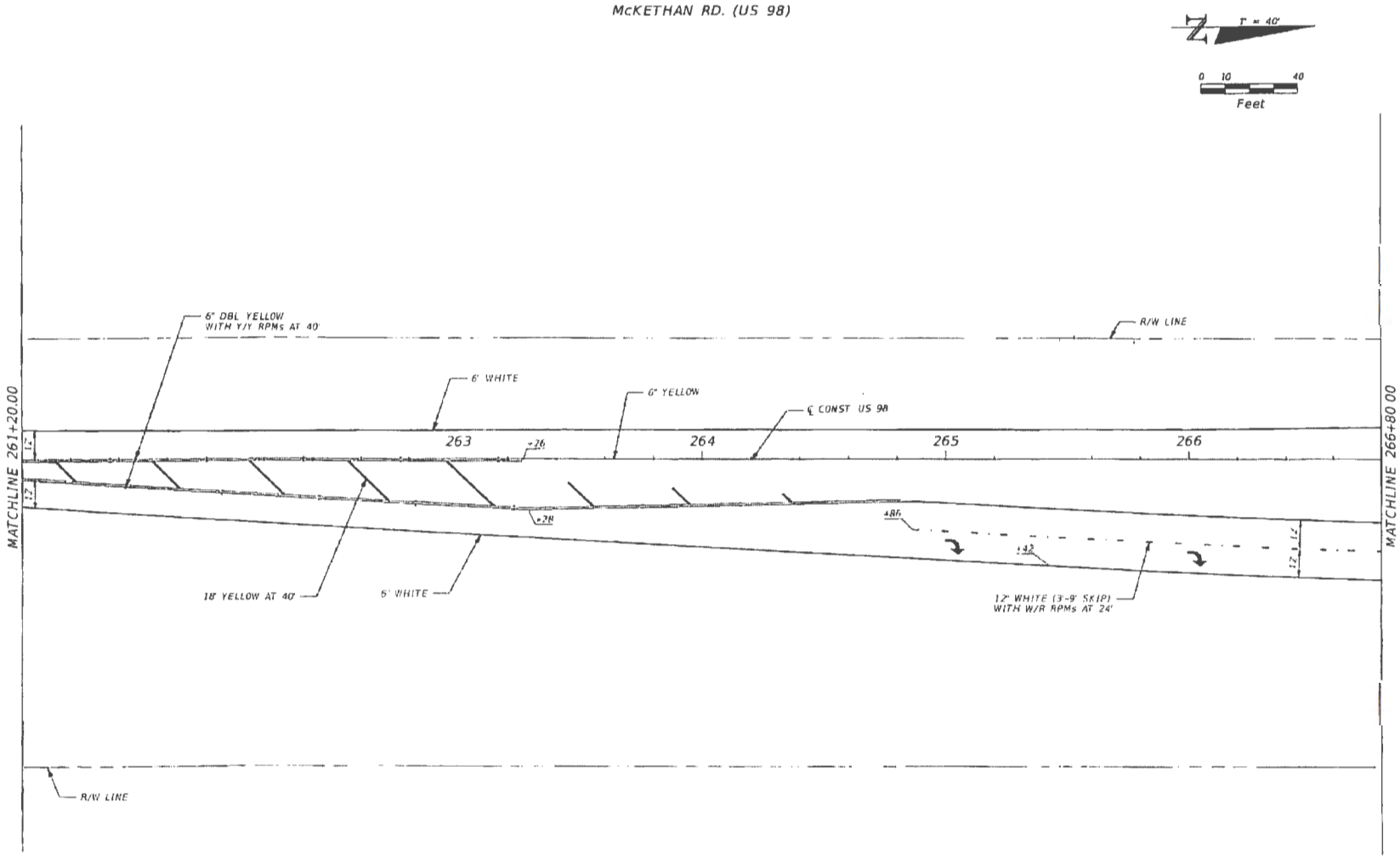
MICHAEL J. OATES, P.E.
P.E. LICENSE NUMBER 49282
HDR Engineering, Inc
4830 West Kennedy Blvd. Suite 400
Tampa, FL 33609-2548
CERTIFICATE OF AUTHORIZATION NO. 4213

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLAN (30)

SHEET NO. S-43



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

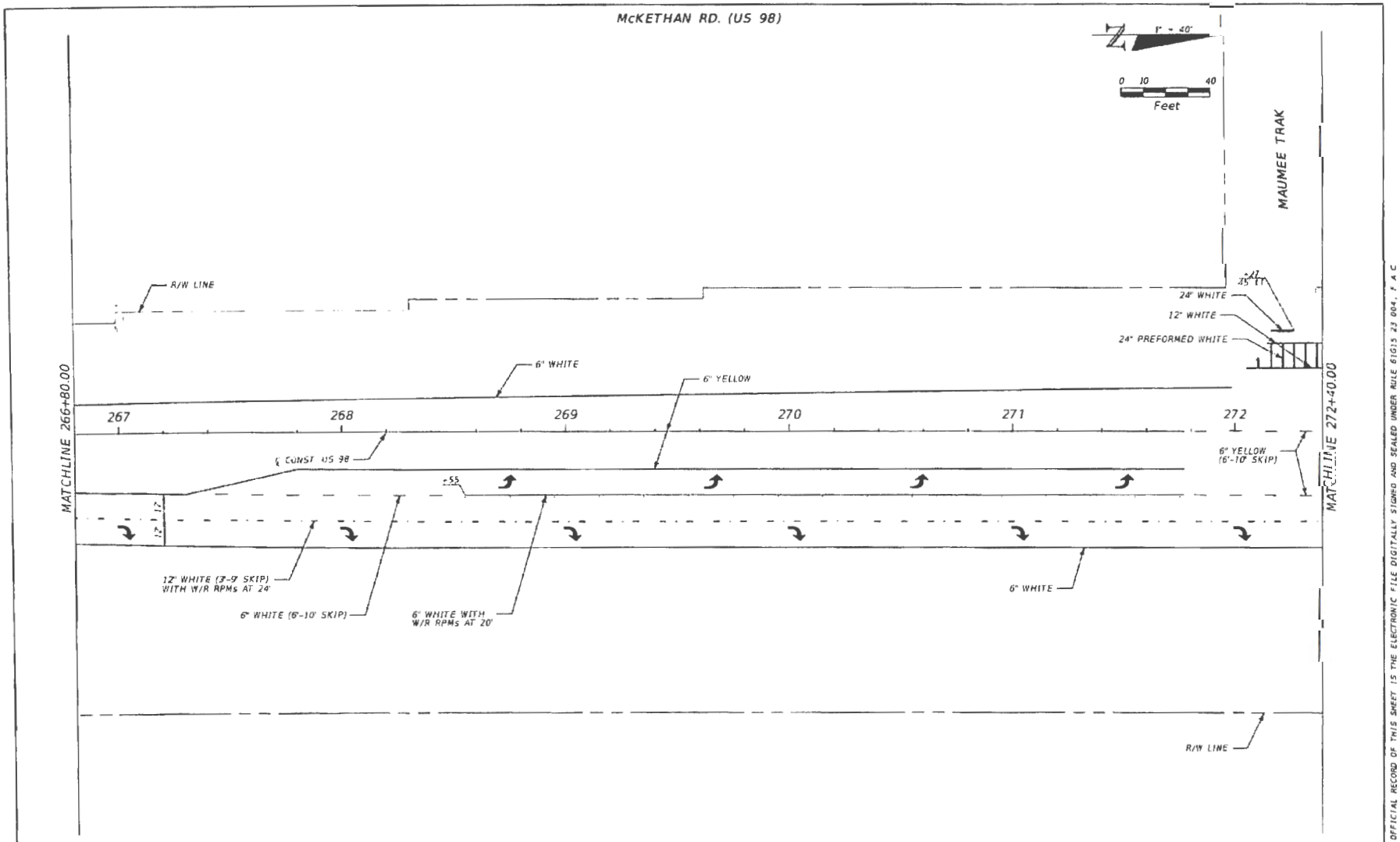
MICHAEL J. GATES, P.E.
P.E. LICENSE NUMBER 49282
HDR Engineering, Inc.
4830 West Kennedy Blvd. Suite 400
Tampa, FL 33609-2548
CERTIFICATE OF AUTHORIZATION NO. 4213

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLAN (31)

SHEET NO. S-44



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

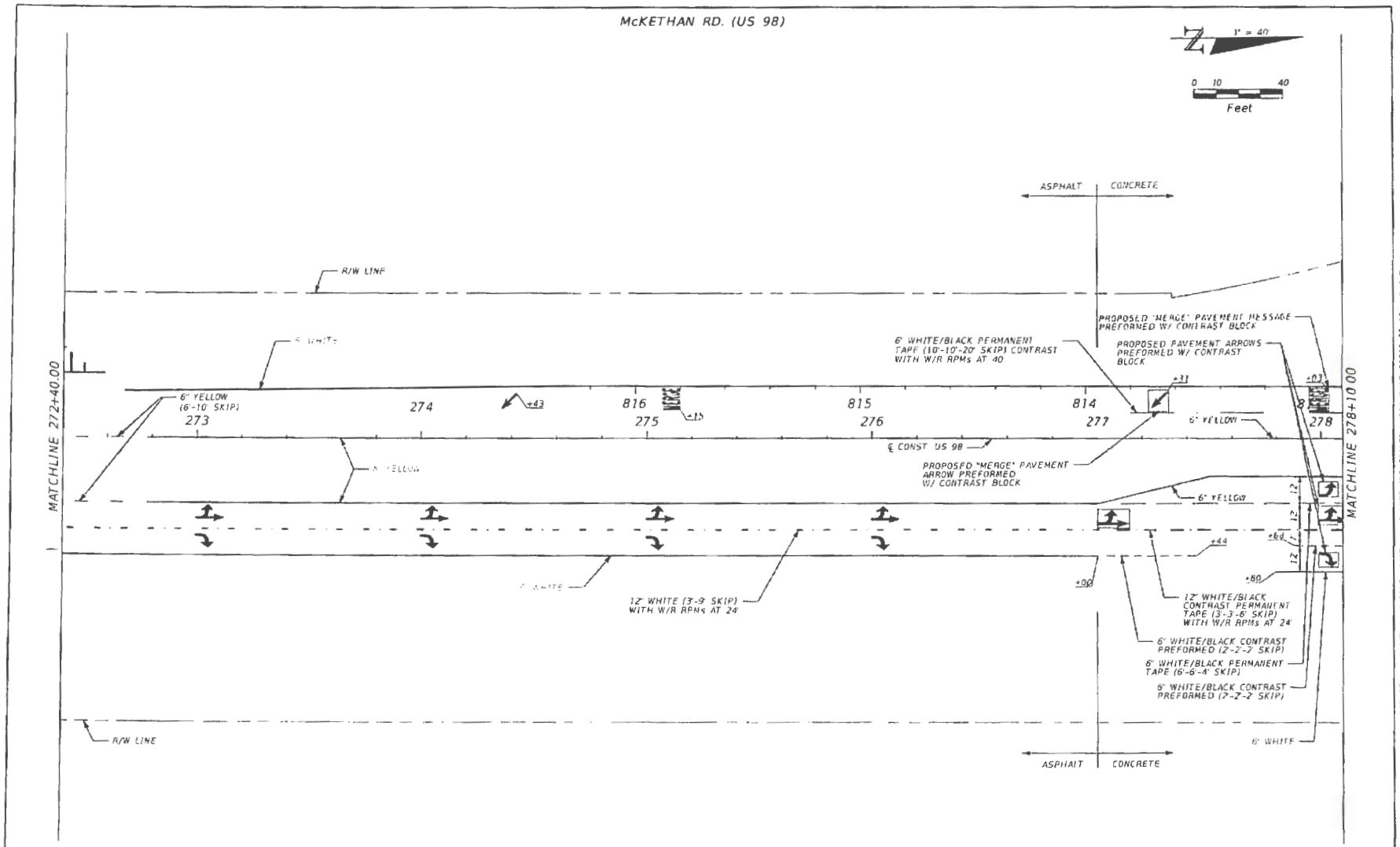
MICHAEL I. OATES, P.E.
P.E. LICENSE NUMBER 49282
HDR Engineering, Inc.
4830 West Kennedy Blvd. Suite 400
Tampa, FL 33609-2548
CERTIFICATE OF AUTHORIZATION NO. 4213

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLAN (32)

SHEET NO. S-45



THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

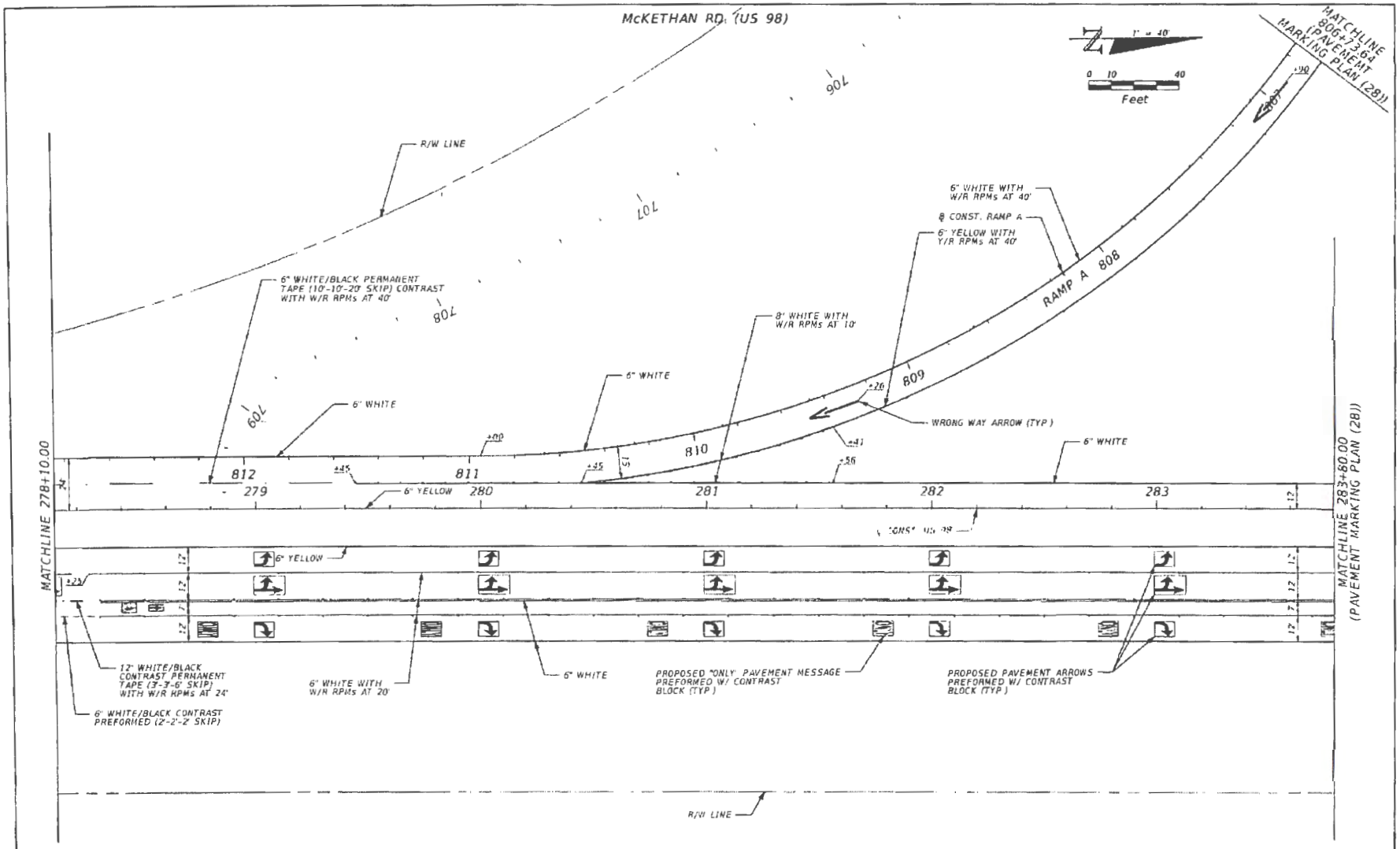
MICHAEL J. OATES, P.E.
P.E. LICENSE NUMBER 49282
HDR Engineering, Inc
4830 West Kennedy Blvd, Suite 400
Tampa, FL 33609-2548
CERTIFICATE OF AUTHORIZATION NO. 4313

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLAN (33)

SHEET NO. S-46



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

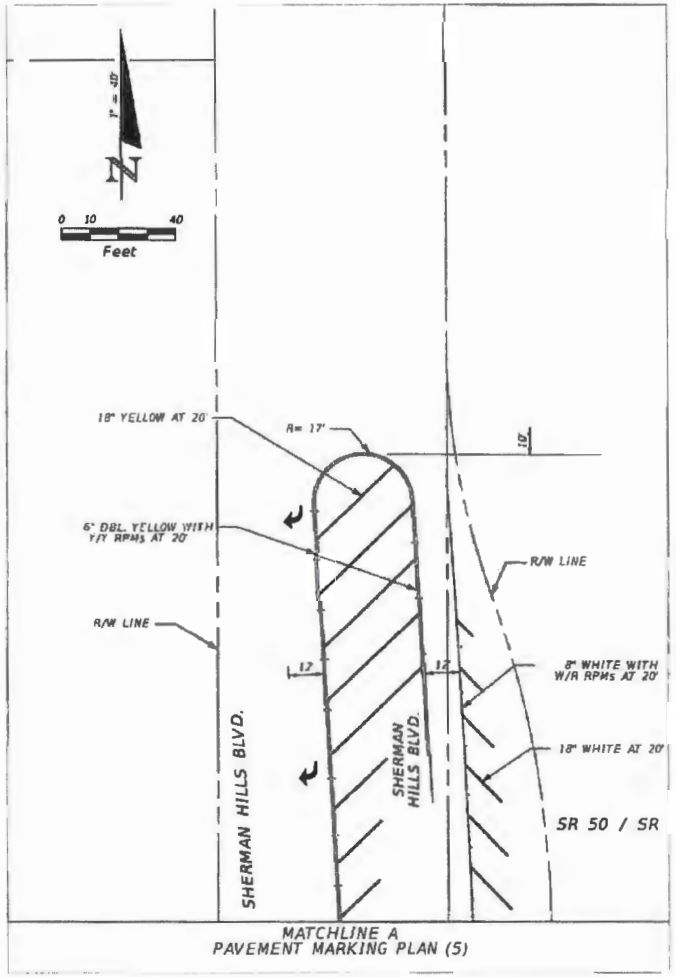
MICHAEL J. OATES, P.E.
P.E. LICENSE NUMBER 49282
HDR Engineering, Inc.
4830 West Kennedy Blvd, Suite 400
Tampa, FL 33609-2548
CERTIFICATE OF AUTHORIZATION NO. 4213

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

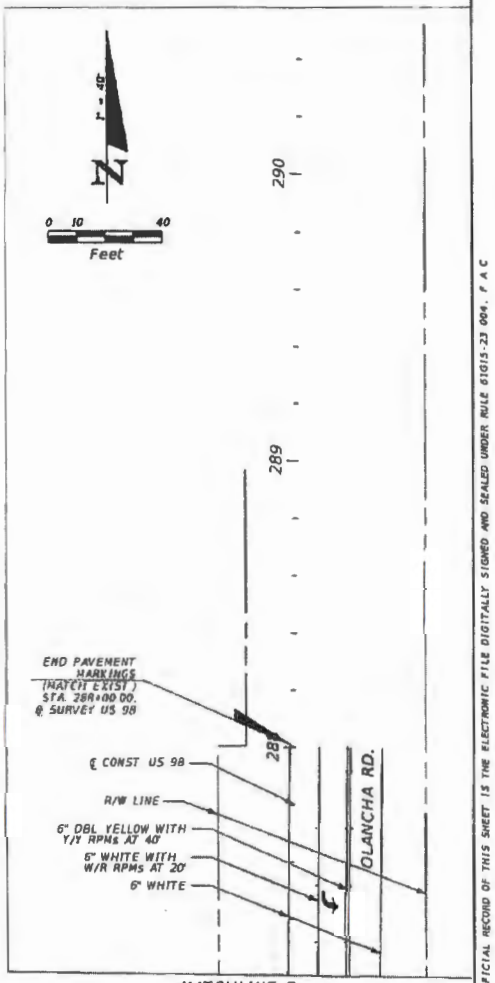
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLAN (34)

SHEET NO
S-47



MATCHLINE A
PAVEMENT MARKING PLAN (5)



MATCHLINE B
PAVEMENT MARKING PLAN (28)

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

MICHAEL J. OATES, P.E.
P.E. LICENSE NUMBER 49282
HDR Engineering, Inc.
4830 West Kennedy Blvd, Suite 400
Tampa, FL 33609-2548
CERTIFICATE OF AUTHORIZATION NO. 4213

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

PAVEMENT MARKING PLAN (35)

SHEET NO
S-48

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

CONTRACT PLANS

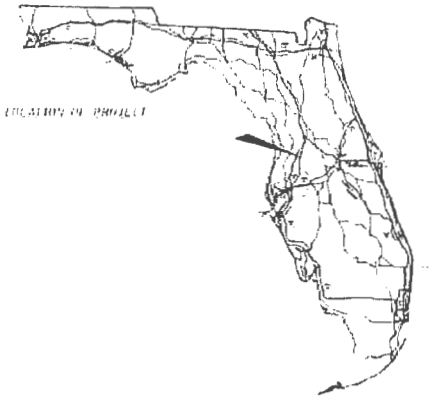
FINANCIAL PROJECT ID 416732-3-52-01
(FEDERAL FUNDS)

HERNANDO COUNTY (08070)

STATE ROAD NO. 50 (CORTEZ BLVD.)

FROM EAST OF US 98/MCKETHAN RD TO EAST OF US 301

SIGNING AND PAVEMENT MARKING PLANS



INDEX OF SIGNING AND PAVEMENT MARKING PLANS

△1 SIGNING AND PAVEMENT MARKING PLANS ENGINEER OF RECORD:

JANEY B. WALLS, P.E.
P.E. NO.: 76169
BURGESS & NIPLE, INC.
10008 N. DALE MABRY HIGHWAY, SUITE 201
TAMPA, FL 33618
CONTRACT NO.: C-9F66
VENDOR NO.: 59-3576100001
CERTIFICATE OF AUTHORIZATION NO.: 9853

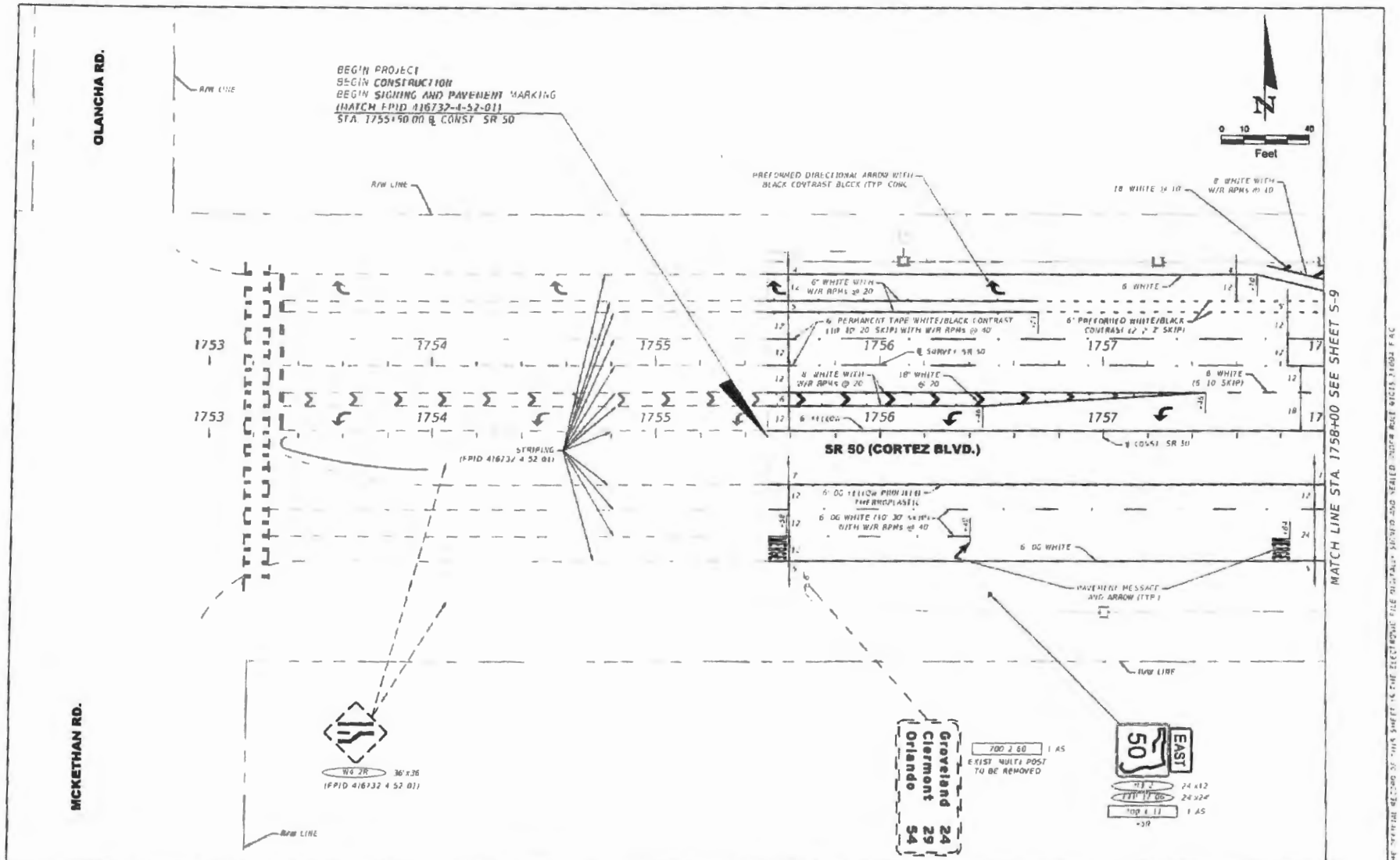
KEY SHEET REVISIONS

DATE	DESCRIPTION
06/2020	△1 ADDED SHEET 5-2A AND UPDATED ENGINEER OF RECORD INFORMATION
07/2021	△2 ADDED SHEET 5-2B

FDOT PROJECT MANAGER:

KEVIN LEE

CONSTRUCTION CONTRACT NO.	FISCAL YEAR	SHEET NO.
T7396	20	S-1



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

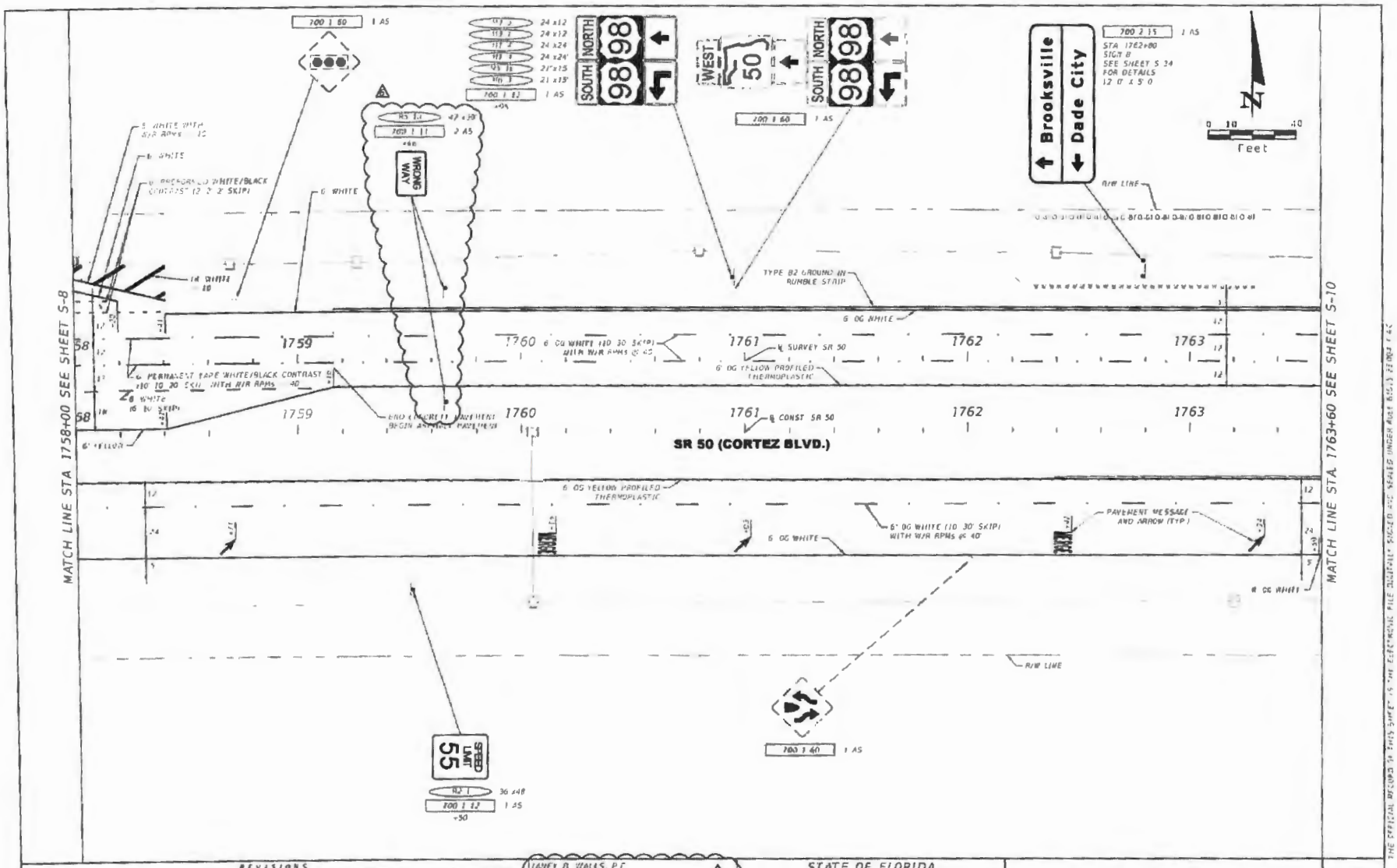
RANEY B. WALLS, P.E.
P.E. NO.: 76169
ICON CONSULTANT GROUP, INC.
10008 N. DALE MABRY HIGHWAY SUITE 201
TAMPA, FL 33618
CERTIFICATE OF AUTHORIZATION: 8230

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

DISTRICT	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-3-52-01

SIGNING AND PAVEMENT MARKING PLAN (1)

SHEET NO.
S-8



REVISIONS				
DATE	DESCRIPTION	DATE	DESCRIPTION	
4/30/21	⚠ ADDED WRONG-WAY SIGNING AND UPDATED ENGINEER OF RECORD INFORMATION			

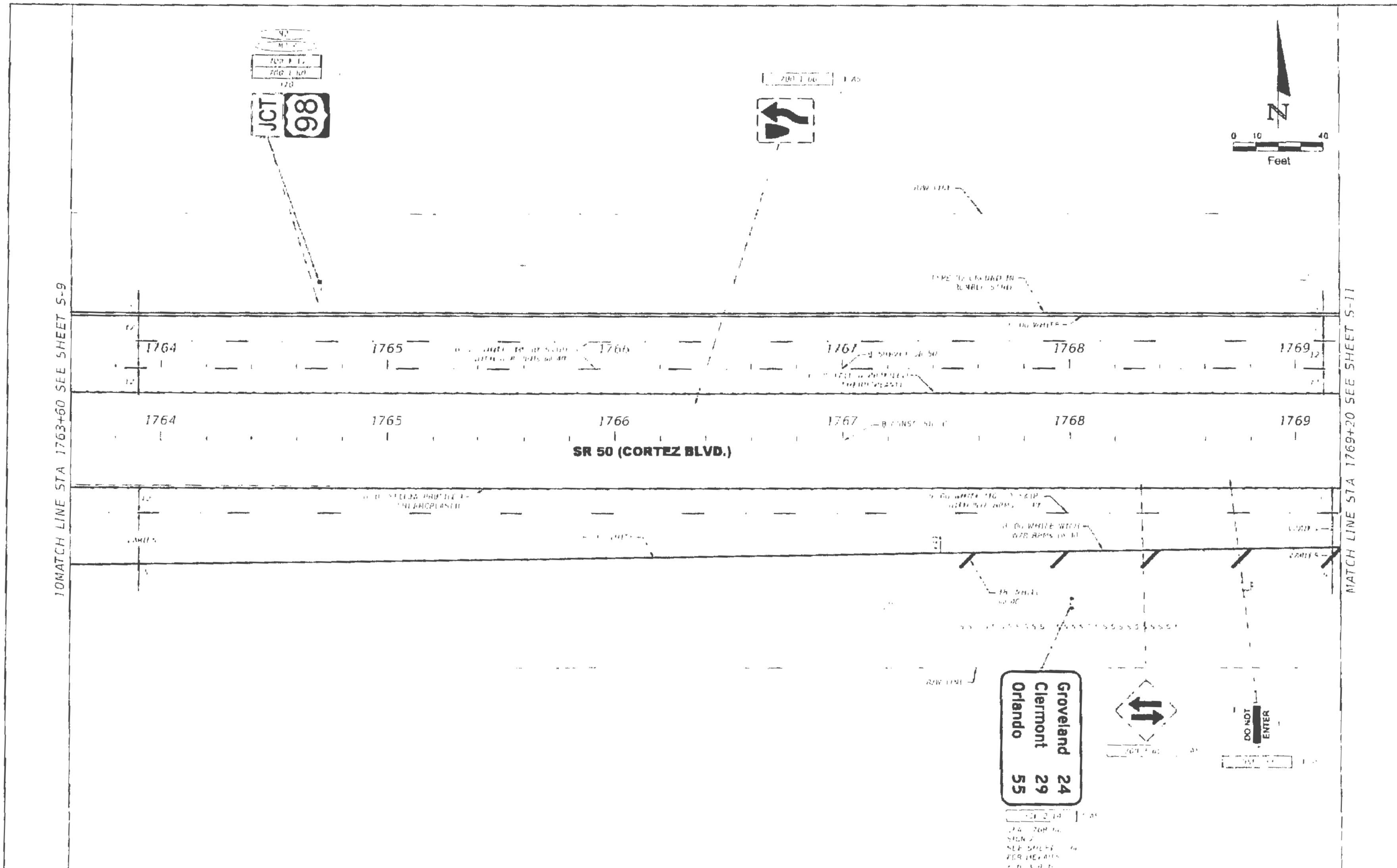
JANEY B. WALLS, P.E.
P.E. NO.: 76169
BURGESS & NIPLE, INC.
10006 N. DALE MABRY HIGHWAY, SUITE 201
TAMPA, FL 33618
CERTIFICATE OF AUTHORIZATION: 9853

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

RD. NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-3-52-01

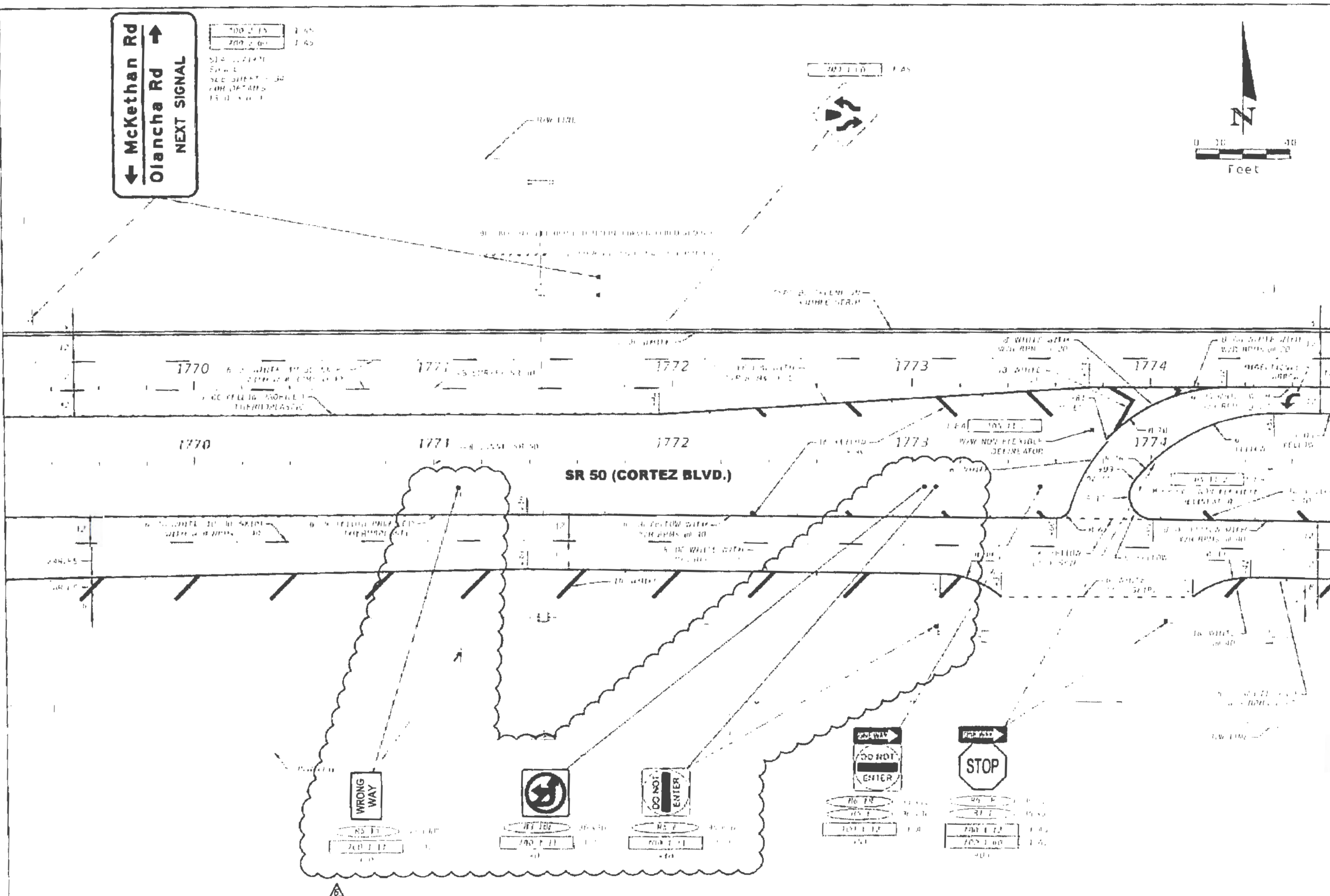
SIGNING AND PAVEMENT MARKING PLAN (2)

SHEET NO. S-9



REVISIONS					STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION			SIGNING AND PAVEMENT MARKING PLAN (3)
					SR 50	HERNANDO		

MATCH LINE STA 1769+20 SEE SHEET S-10



MATCH LINE STA 1774+80 SEE SHEET S-12

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
4/30/21	⚠ ADDED WRONG WAY SIGNING AND UPDATED ENGINEER OF RECORD INFORMATION		

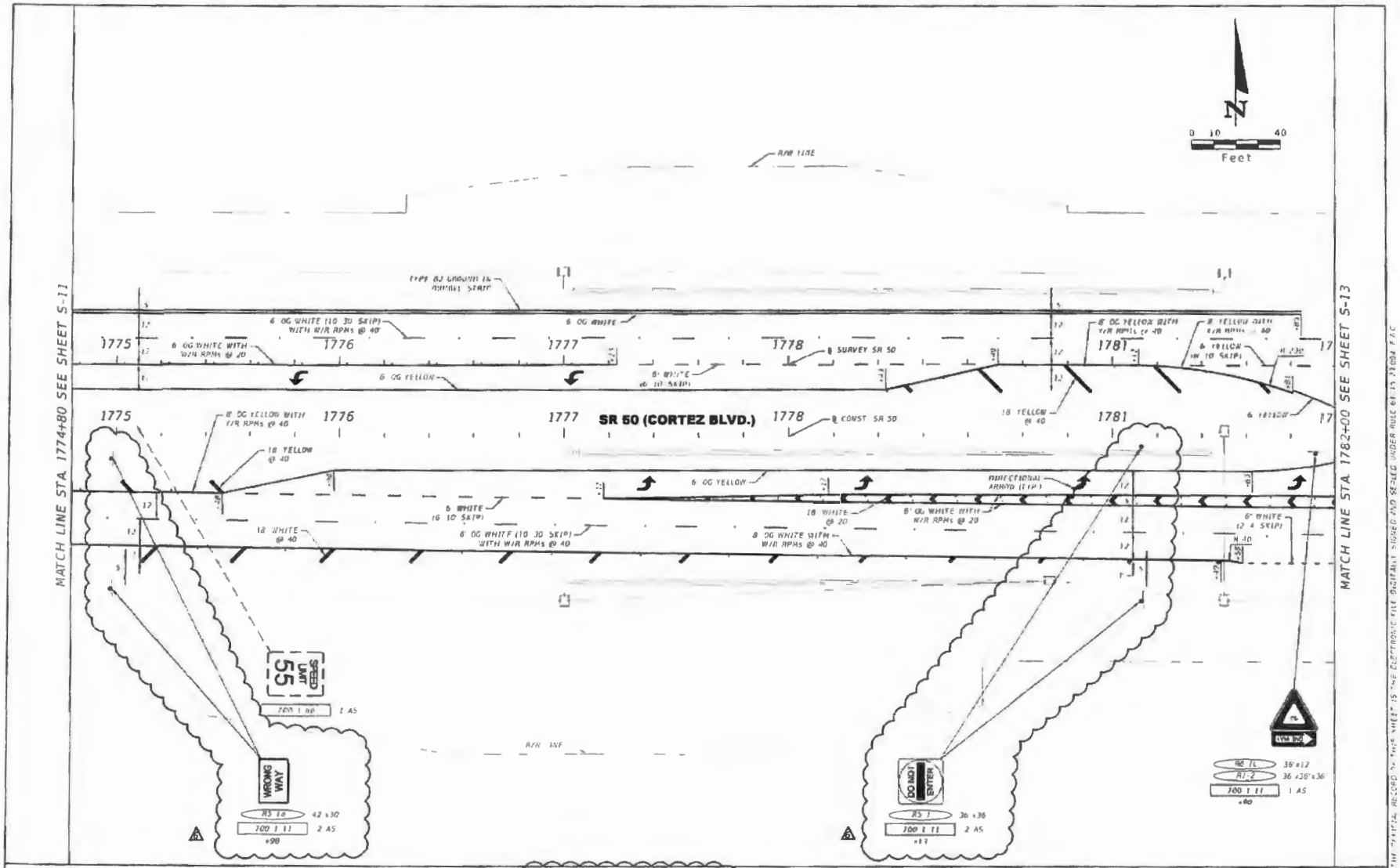
JAMES B. WALLS, P.E.
P.E. NO. 26709
BURGESS & NIPLE, INC.
10006 N. DALE MABRY HIGHWAY, SUITE 201
TAMPA, FL 33618
CERTIFICATE OF AUTHORIZATION 9853

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-4-52-01

SIGNING AND PAVEMENT MARKING PLAN (4)

SHEET NO. S-11



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
4/30/21	ADDED WRONG-WAY SIGNING AND UPDATED ENGINEER OF RECORD INFORMATION		

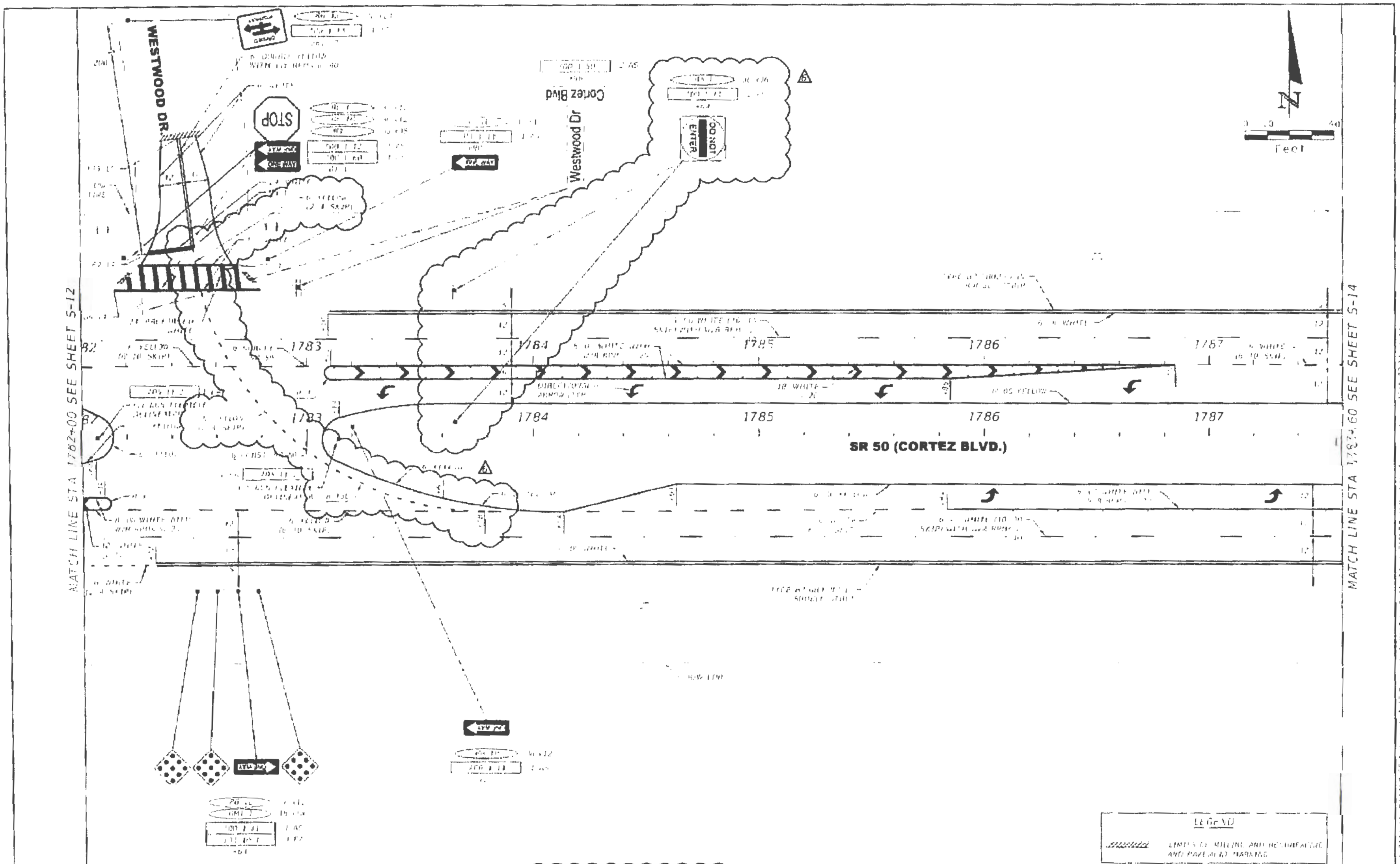
JANEY B. WALLS, P.E.
P.E. NO. 76169
QUADRISS & NIPLE, INC.
10008 N DALE MABRY HIGHWAY, SUITE 201
TAMPA, FL 33618
CERTIFICATE OF AUTHORIZATION: 9853

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID.
SR 50	HERNANDO	416732-3-52-01

SIGNING AND PAVEMENT MARKING PLAN (6)

SHEET NO. S-12



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
12/09/21	⚠ ADDED WRONG-WAY SIGNING AND PAVEMENT MARKING AND UPDATED ENGINEER OF RECORD INFORMATION		

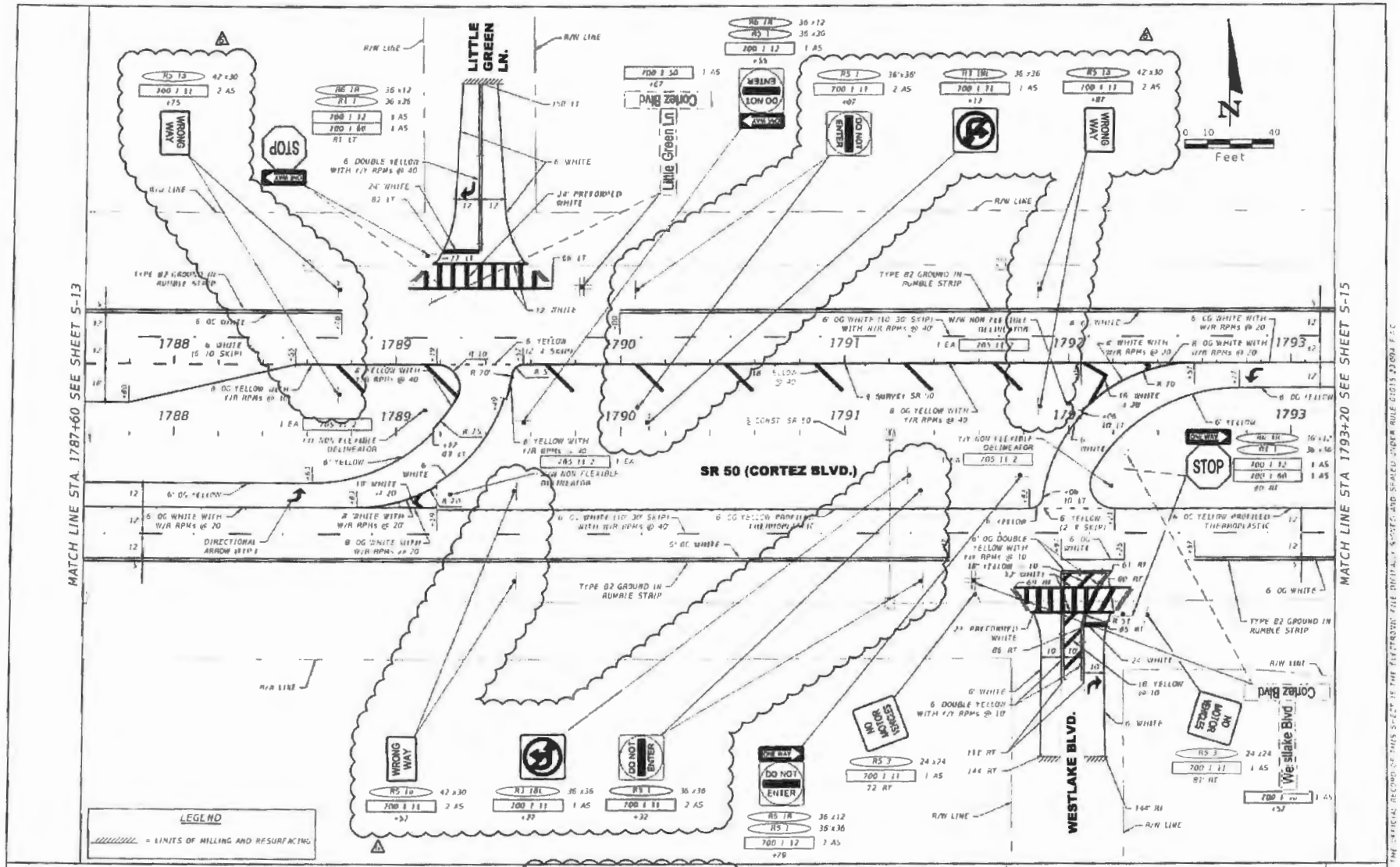
JANET B. RALLS P.E.
BURGESS & NIPLE, INC
TAMPA FL 33618
CERTIFICATE OF AUTHORIZATION 9853

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732 3 52 01

SIGNING AND PAVEMENT MARKING PLAN (6)

SHEET NO. S-13



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
4/30/21	⚠ ADDED WRONG WAY SIGNING AND UPDATED ENGINEER OF RECORD INFORMATION		

⚠

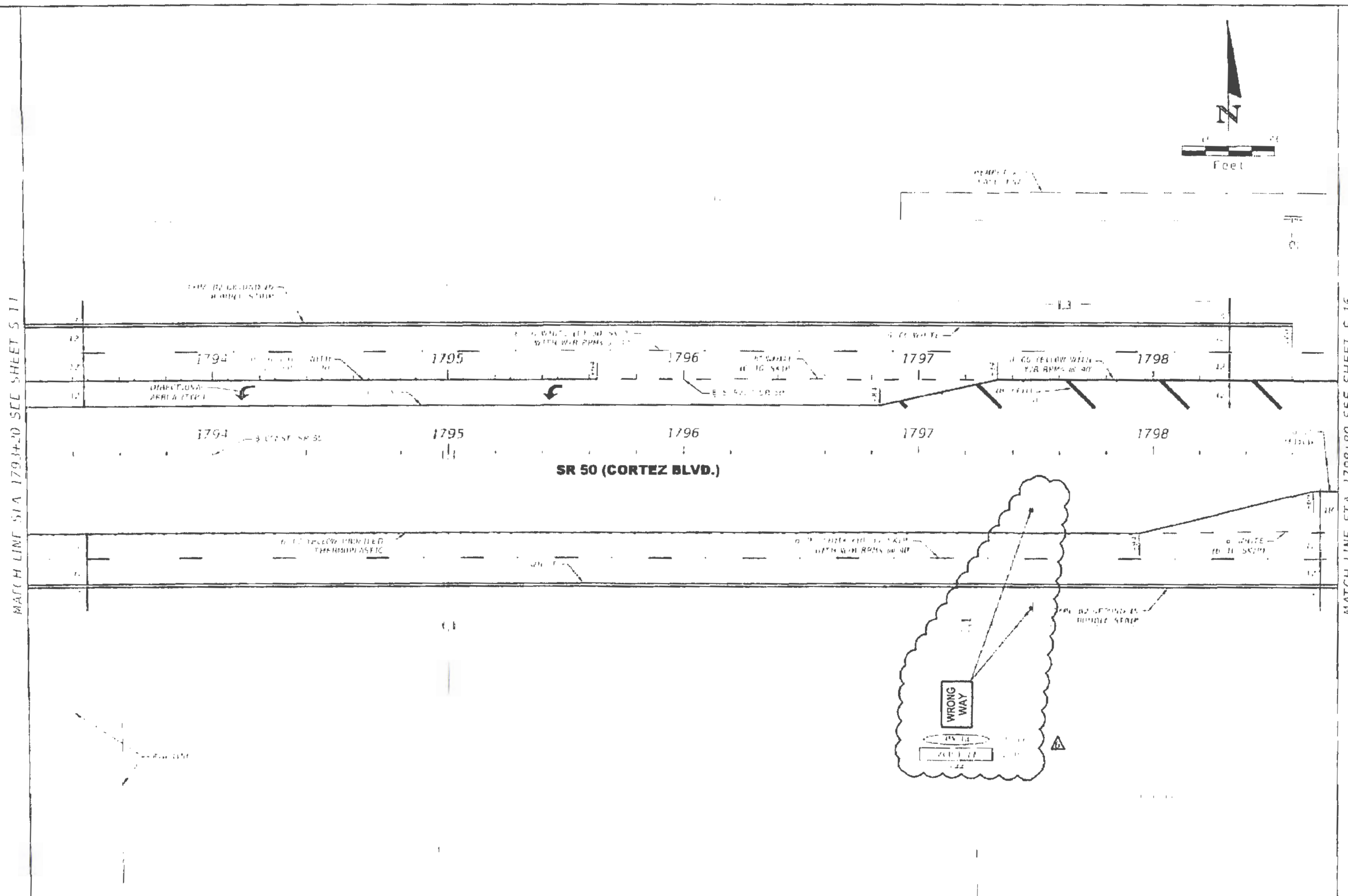
JANEY B. WALLS, P.E.
P.E. NO.: 76169
BURGESS & NIPLE, INC.
10006 N. DALE MABRY HIGHWAY, SUITE 201
TAMPA, FL 33618
CERTIFICATE OF AUTHORIZATION: 9853

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

RD. NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732 3-52-01

SIGNING AND PAVEMENT MARKING PLAN (7)

SHEET NO. S-14



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
4/30/21	⚠ ADDED WRONG-WAY SIGNING AND UPDATED ENGINEER OF RECORD INFORMATION		

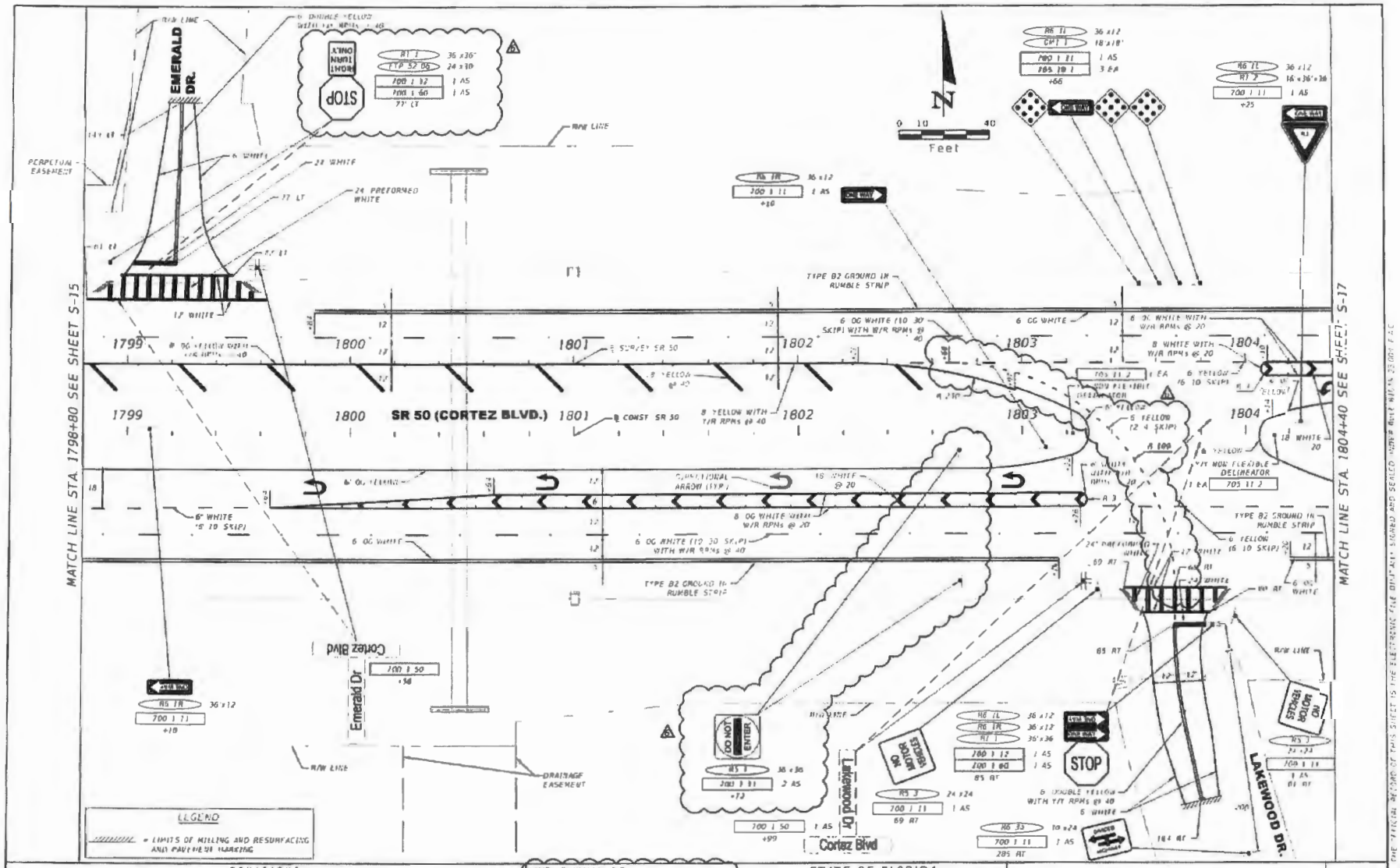
BURGESS & NIPLE, INC.
10006 N. DALE MABRY HIGHWAY, SUITE 201
TAMPA, FL 33618

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	410732-3-52-01

SIGNING AND PAVEMENT MARKING PLAN (8)

S-15



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
4/30/21	⚠ ADDED WRONG-WAY SIGNING AND PAVEMENT MARKING AND UPDATED ENGINEER OF RECORD INFORMATION		

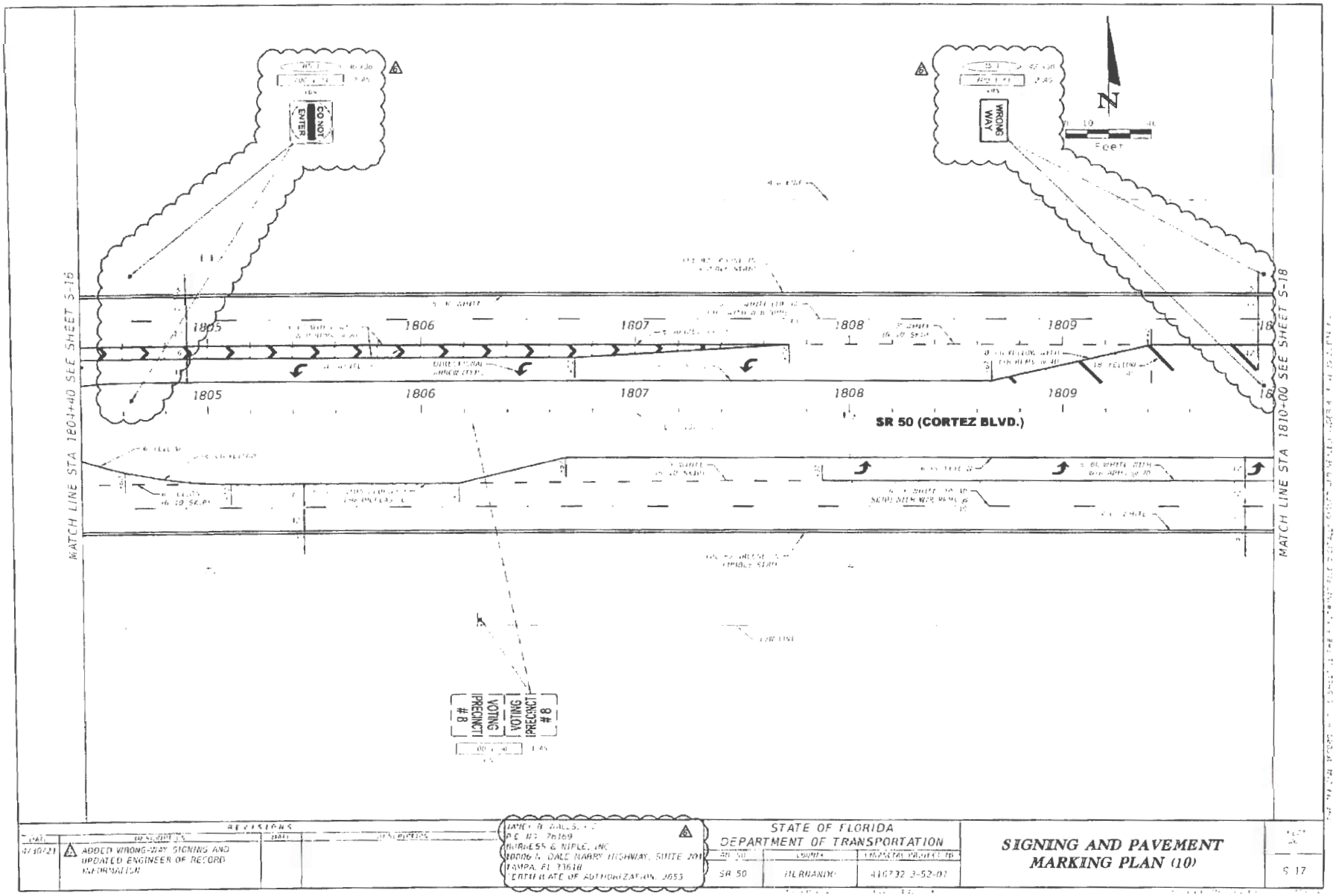
⚠
JANEY B. WALLS, P.E.
P.E. NO. 76169
BURGESS & NIPLE, INC
10006 N. DALE MABRY HIGHWAY, SUITE 201
TAMPA, FL 33618
CERTIFICATE OF AUTHORIZATION: 9853

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-3-52-01

SIGNING AND PAVEMENT MARKING PLAN (9)

SHEET NO. S-16



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
4/30/21	ADDED WRONG-WAY SIGNING AND UPDATED ENGINEER OF RECORD INFORMATION		

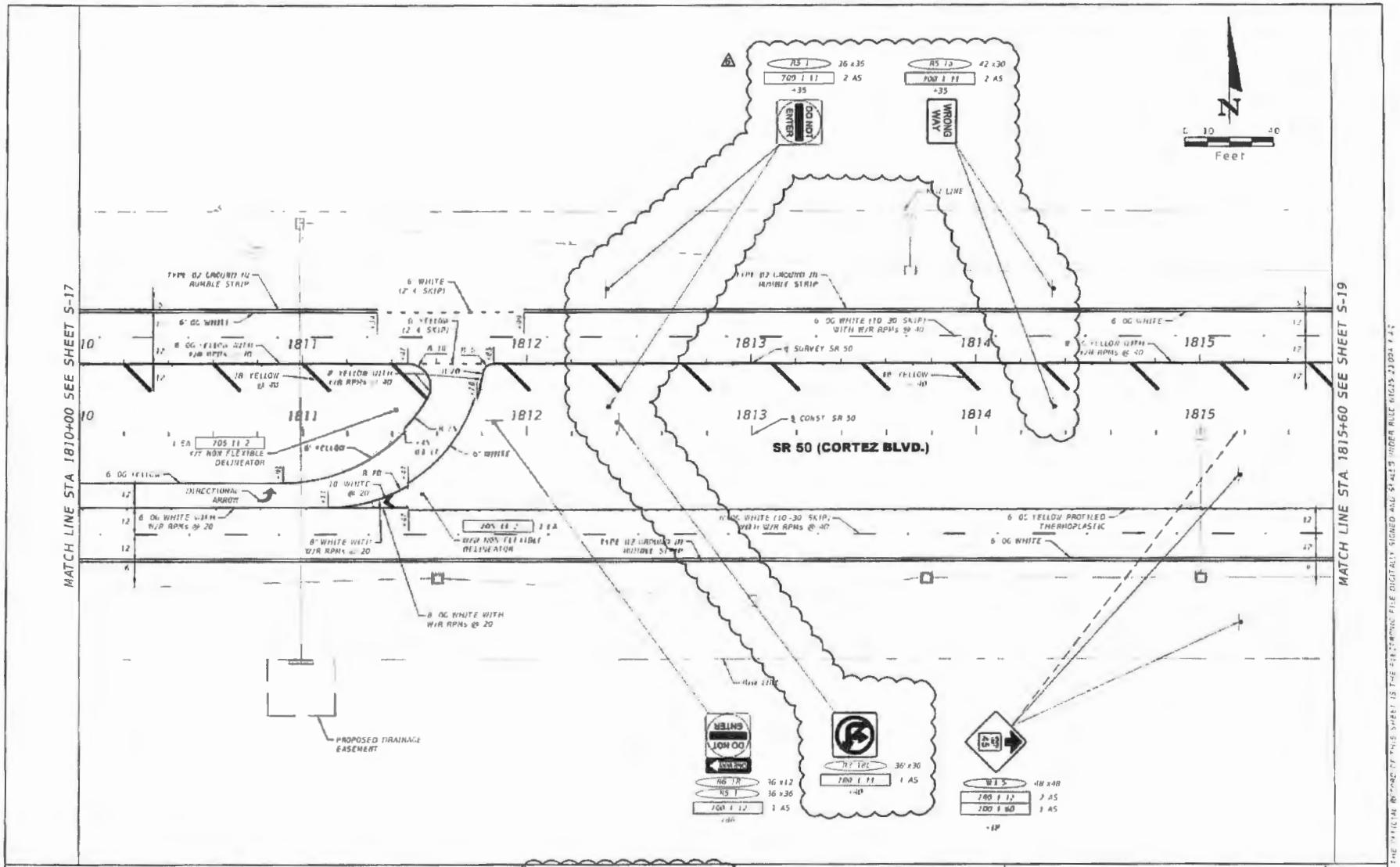
JAMES B. DALLS, P.E. NO. 76169
BURGESS & NIPLE, INC
10008 N. DALE MABRY HIGHWAY, SUITE 201
TAMPA, FL 33618
CERTIFICATE OF AUTHORIZATION, 0653

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

SR NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	410732 3-52-01

SIGNING AND PAVEMENT MARKING PLAN (10)

SHEET NO. S-17



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
12/30/21	⚠ ADDED WRONG-WAY SIGNING AND UPDATED ENGINEER OF RECORD INFORMATION		

JANET B. WALLS, P.E.
P.E. NO. 76169
BURGESS & NIPLE, INC.
10002 N. DALE MABRY HIGHWAY, SUITE 201
TAMPA, FL 33618
CERTIFICATE OF AUTHORIZATION: 9853

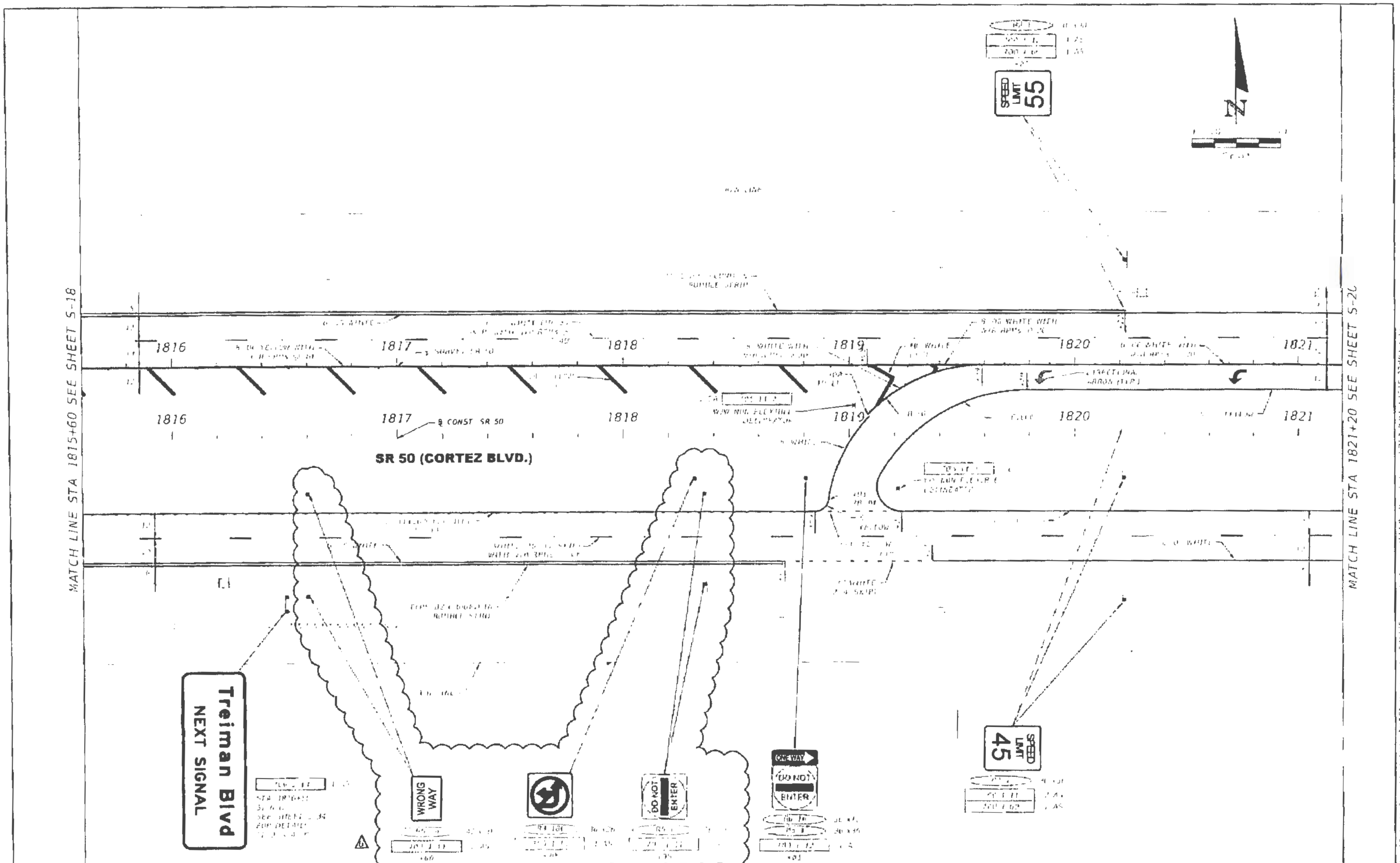
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

RD. NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732 3-52-01

SIGNING AND PAVEMENT MARKING PLAN (11)

SHEET NO. S 18

THE ORIGINAL RECORD OF THIS SHEET IS THE FDOT STANDARD FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004 F.A.C.



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
	ADDED WRONG-WAY SIGNING AND UPDATED ENGINEER OF RECORD INFORMATION		

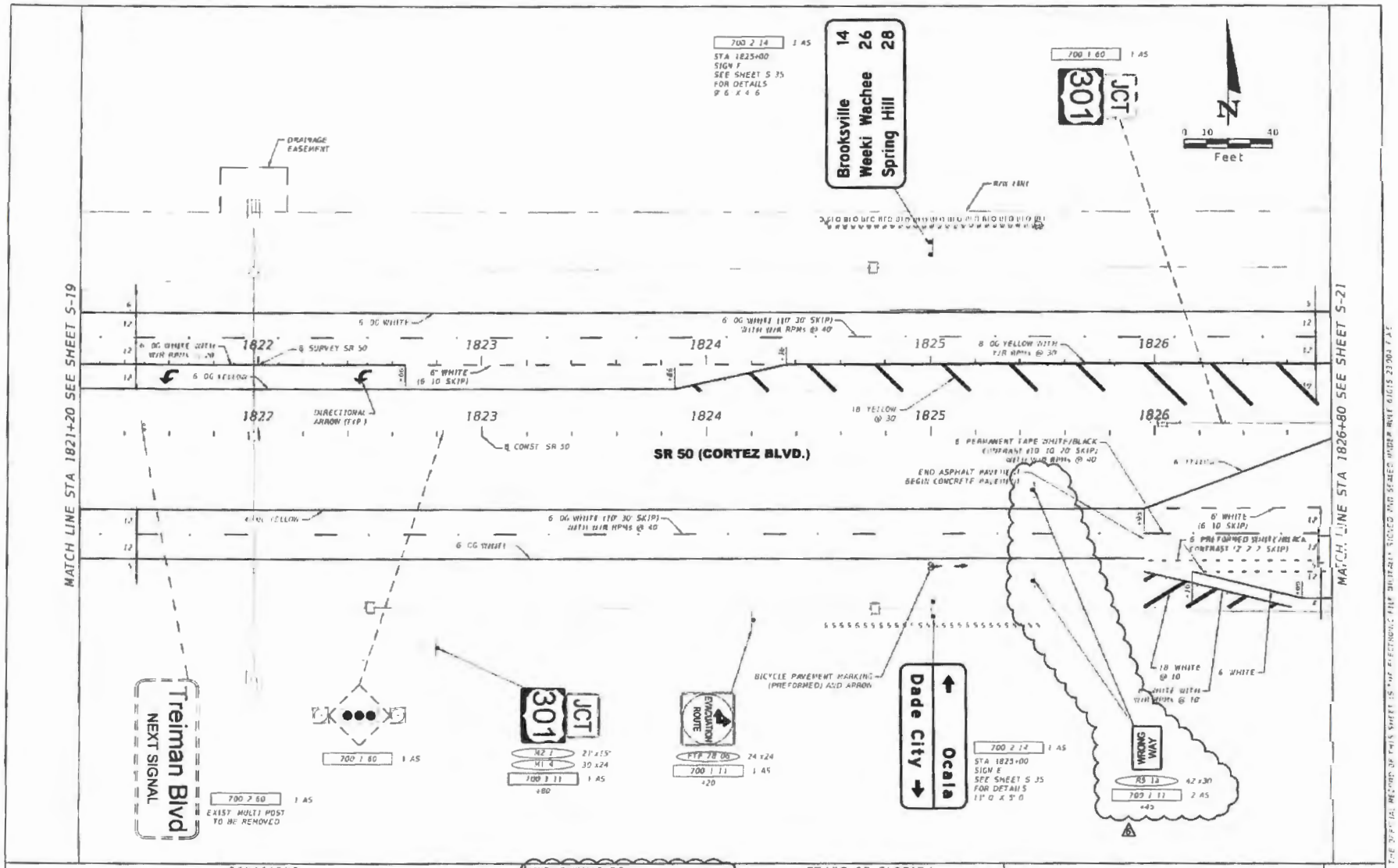
JANET B. WALLS, P.E.
P.E. NO. 26169
BURGESS & NIPLE, INC.
10006 N. DALE MABRY HIGHWAY, SUITE 201
TAMPA, FL 33618
CERTIFICATE OF AUTHORIZATION 9652

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-3-52-01

SIGNING AND PAVEMENT MARKING PLAN (12)

SHEET NO. S-19



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
4/30/21	⚠ ADDED WRONG-WAY SIGNING AND UPDATED ENGINEER OF RECORD INFORMATION		

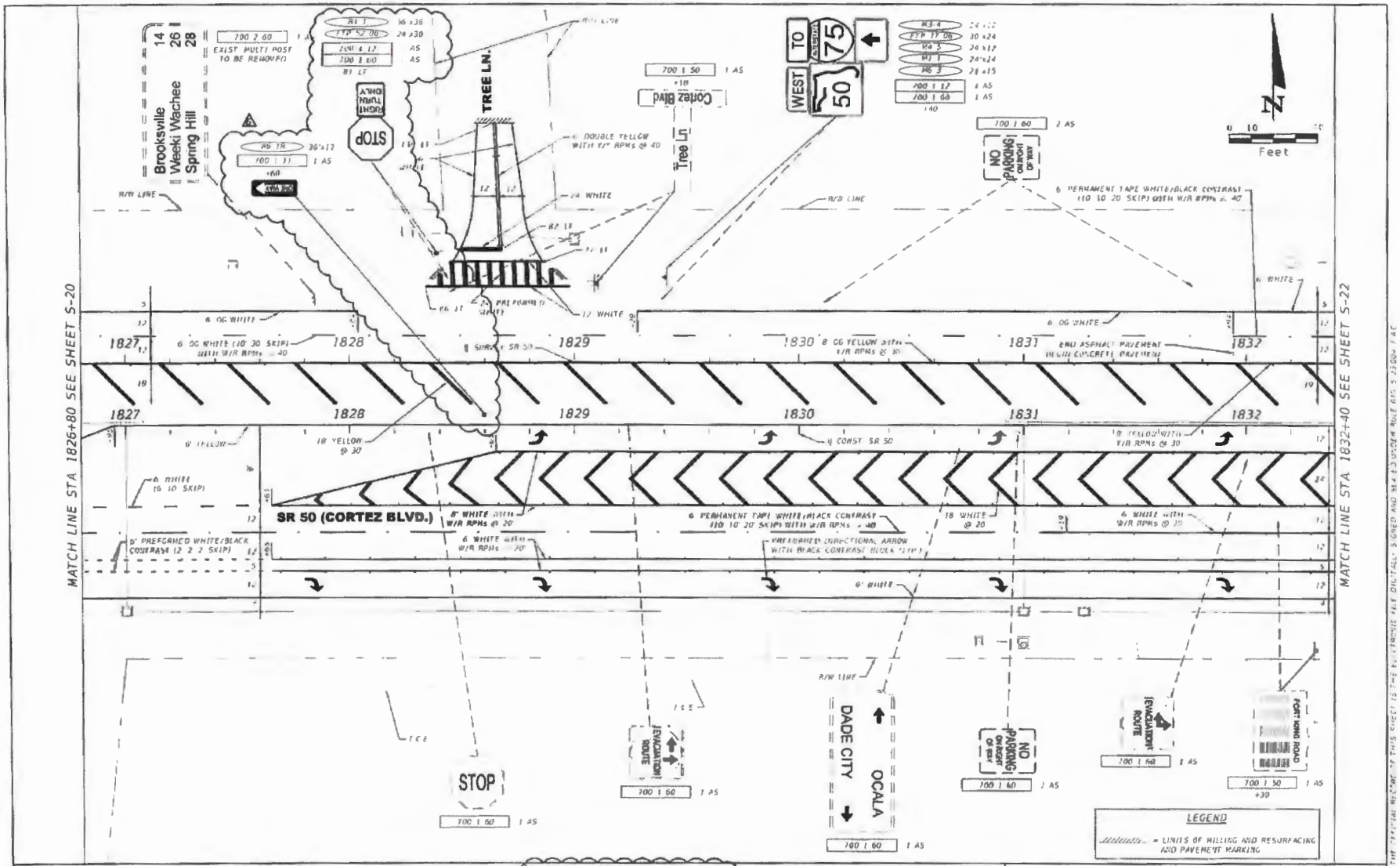
JANEY B WALLS, P.E.
P.E. NO.: 75169
BURGESS & NIPLE, INC
10006 N DALE MABRY HIGHWAY SUITE 201
TAMPA, FL 33618
CERTIFICATE OF AUTHORIZATION: 9853

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

RD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732 3-52-01

SIGNING AND PAVEMENT MARKING PLAN (13)

SHEET NO. S-20



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
4/30/21	ADDED WRONG-WAY SIGNING AND UPDATED ENGINEER OF RECORD INFORMATION		

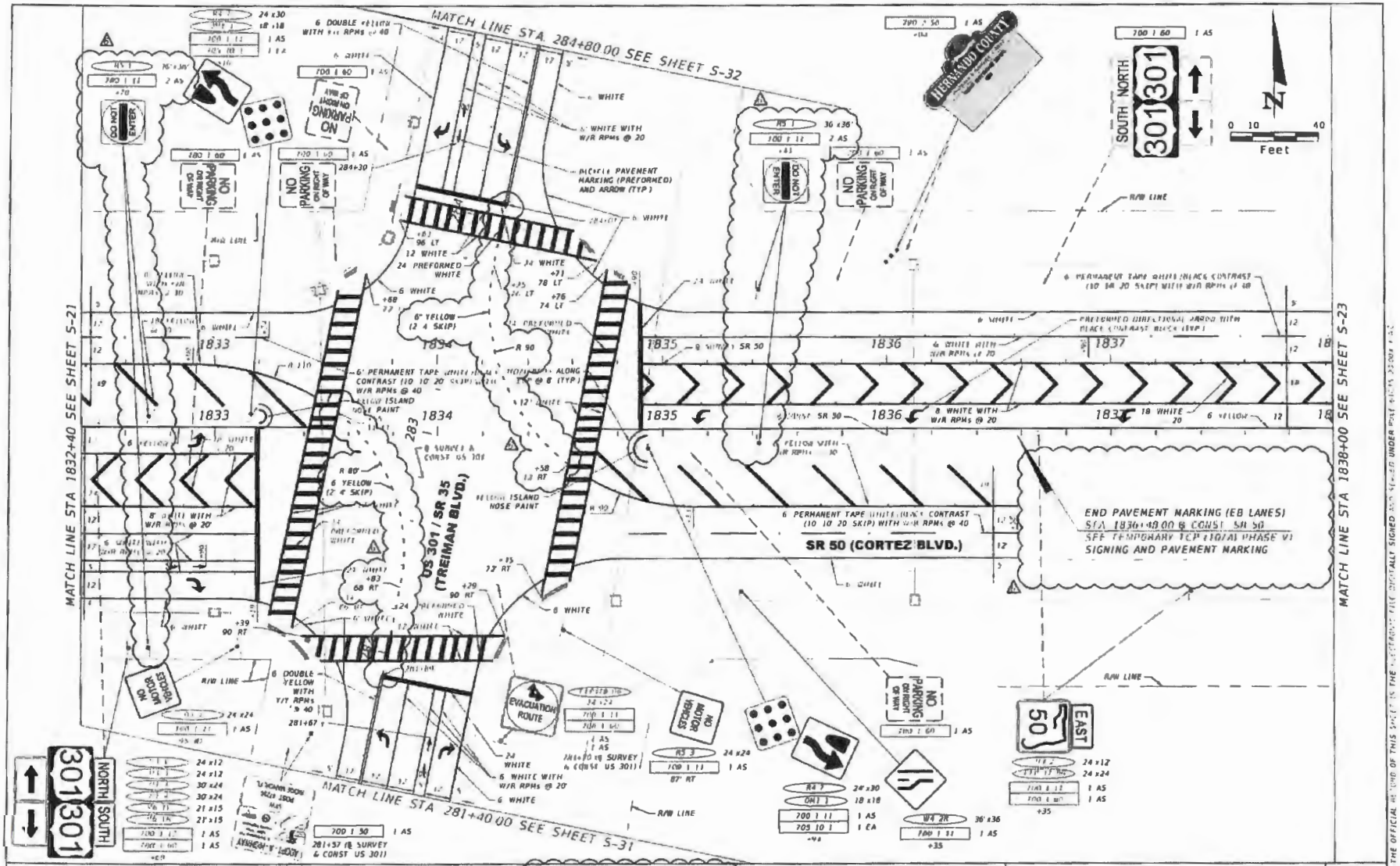
JAMES B. WALLS, P.E.
P.E. NO. 76169
ARDAMAN & ASSOCIATES, INC
10006 N. DALE MABRY HIGHWAY, SUITE 201
TAMPA, FL 33618
CERTIFICATE OF AUTHORIZATION: 9853

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

SR 50	COUNTY: HERNANDO	FINANCIAL PROJECT ID: 416732-3-52-01

SIGNING AND PAVEMENT MARKING PLAN (14)

SHEET NO. S 21



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
4/30/21	DELETED PAVEMENT MARKINGS AND ADDED NEW EB END PAVEMENT MARKING CALLOUT	4/30/21	ADDED WRONG-WAY SIGNING AND MARKING AND UPDATED ENGINEER OF RECORD INFORMATION

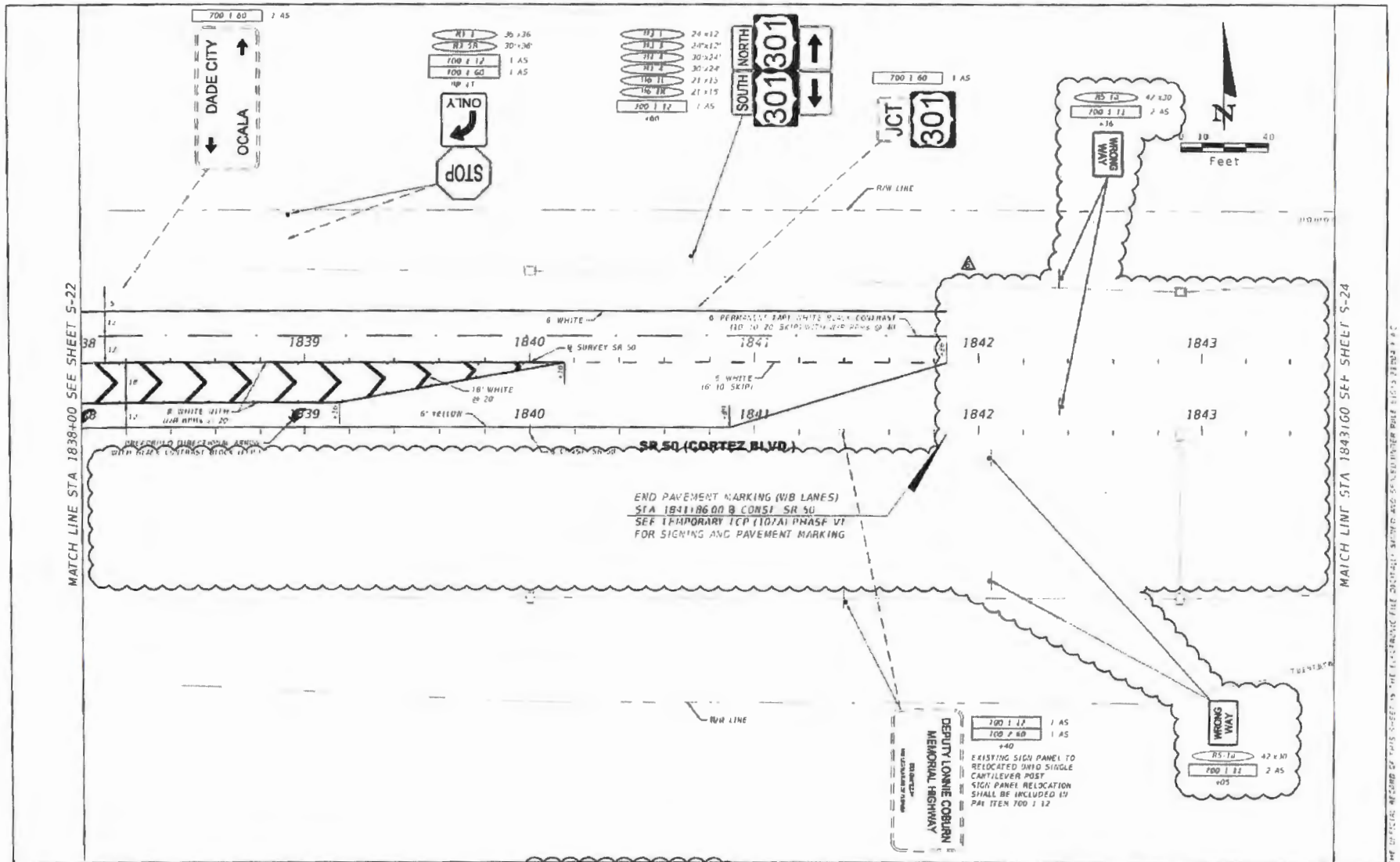
DANEY B WALLS, P.E.
P.E. NO: 76169
BURGESS & NIPLE INC
10006 N DALE MABRY HIGHWAY, SUITE 201
TAMPA FL 33618
CERTIFICATE OF AUTHORIZATION: 9853

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

FED. NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-3-52-01

SIGNING AND PAVEMENT MARKING PLAN (15)

SHEET NO: S-22



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
4/30/21	DELETED PAVEMENT MARKINGS AND ADDED NEW WB END PAVEMENT MARKING CALLOUT	4/30/21	ADDED WRONG-WAY SIGNING AND UPDATED ENGINEER OF RECORD INFORMATION

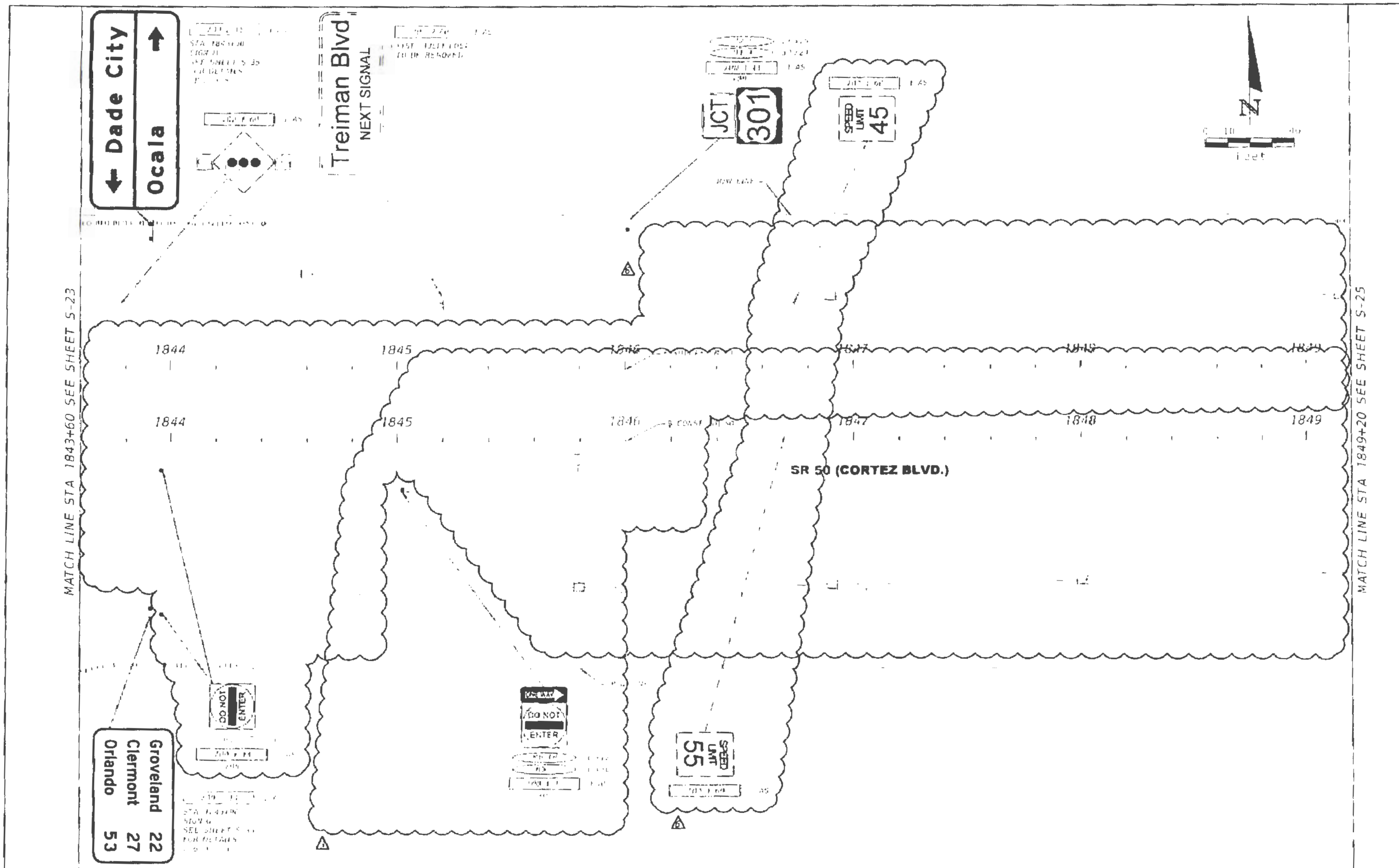
JANET R. WALLS, P.E.
P.E. NO: 76169
BURGESS & NIPLE, INC.
10014 N. DALE MABRY HIGHWAY, SUITE 201
TAMPA, FL 33618
CERTIFICATE OF AUTHORIZATION: 9853

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-3-52-01

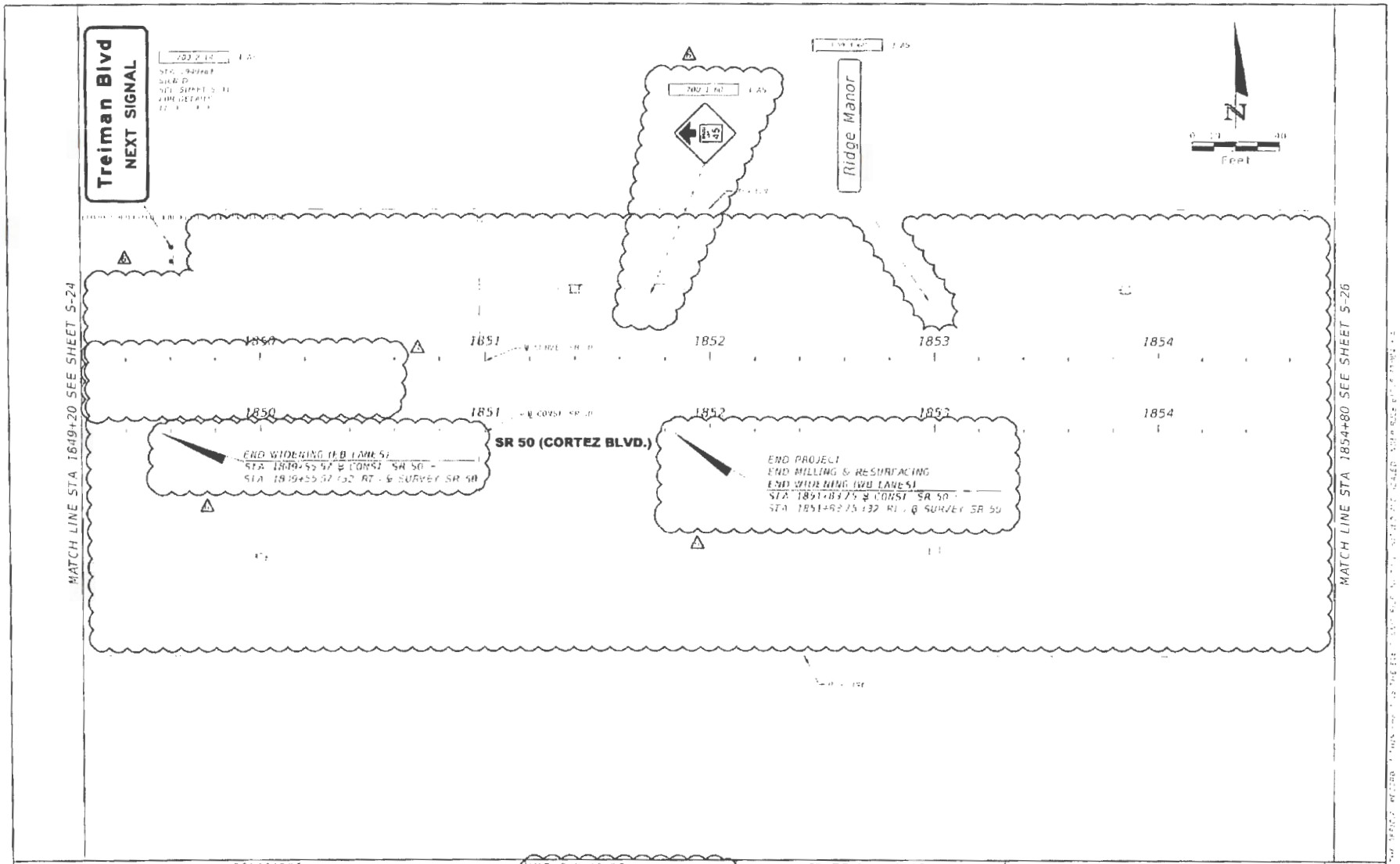
SIGNING AND PAVEMENT MARKING PLAN (16)

SHEET NO. S-23



STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

SIGNING AND PAVEMENT MARKING PLAN (17)



REVISIONS						
DATE	DESCRIPTION	DATE	DESCRIPTION			
8/5/20	UPDATED DESIGN FOR NEW LEFT TURN LANE AND ENGINEER OF RECORD INFORMATION	11/30/21	DELETED SIGNING AND PAVEMENT MARKINGS AND ADDED NOTE ADDED NEW EB & WB END PROJECT LIMITS			

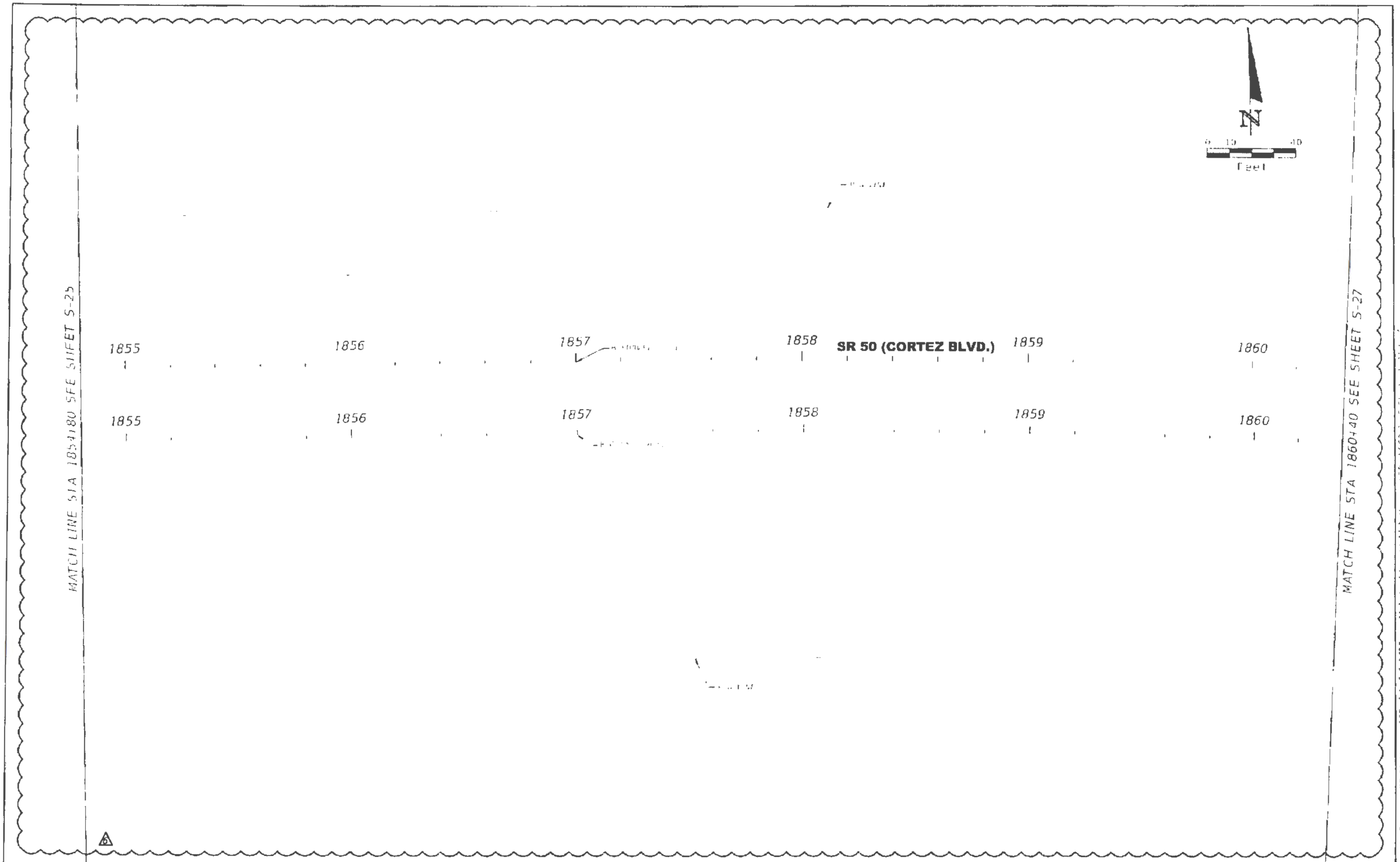
JAMES G. WALLS, P.E.
P.E. NO. 76109
BURGESS & NIPLE, INC.
10000 N. DALE MABRY HIGHWAY, SUITE 201
TAMPA, FL 33618
CERTIFICATE OF AUTHORIZATION: 9853

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

RD. NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-3 52-01

SIGNING AND PAVEMENT MARKING PLAN (18)

SHEET NO. S 25



REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION
4/30/21	DELETED SIGNING AND PAVEMENT MARKINGS THIS SHEET. UPDATED ENGINEER OF RECORD INFORMATION		

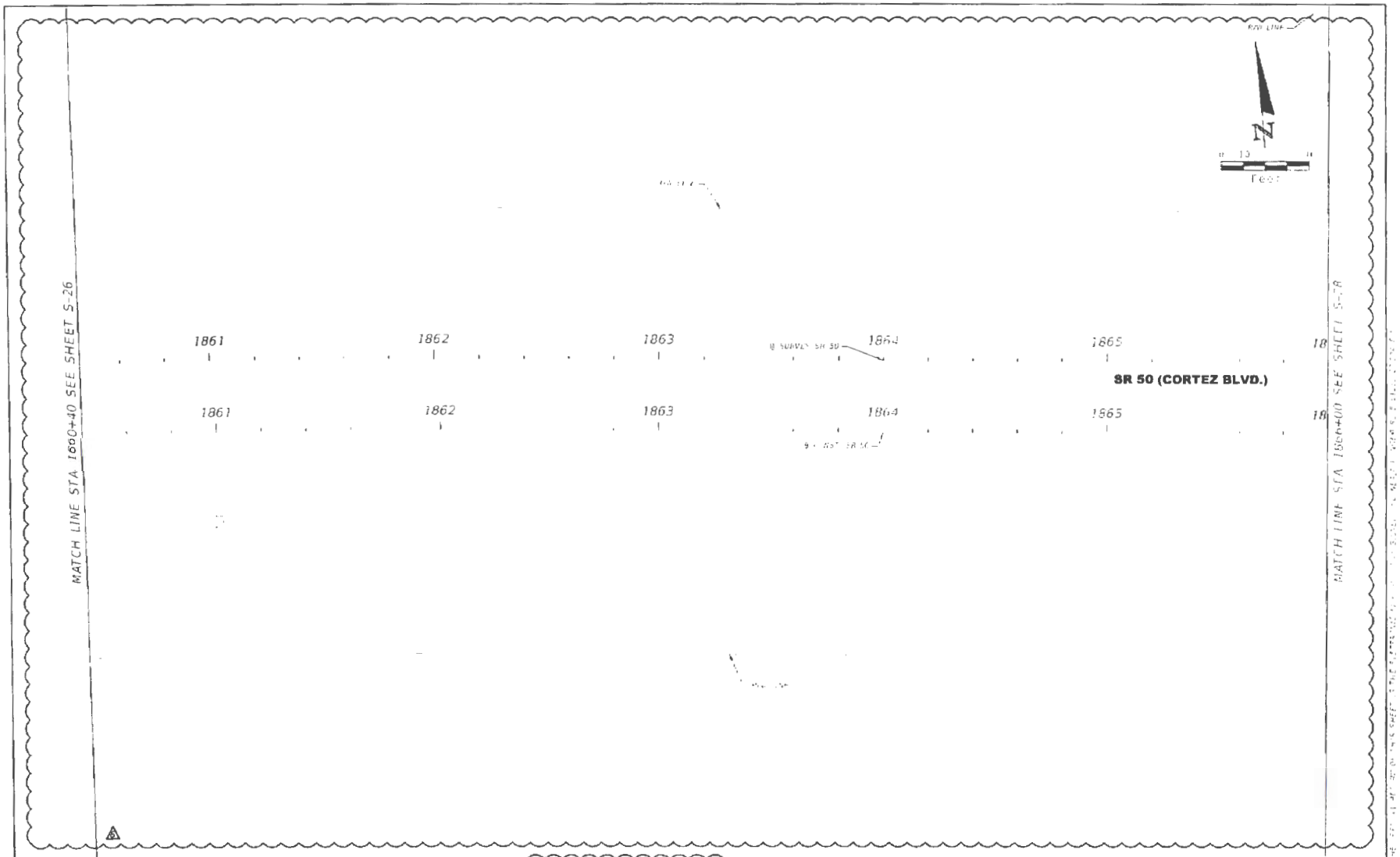
JAMES B. WALLS P.E.
P.E. NO.: 26169
BURGESS & NIPLE, INC.
10006 N. DALE MABRY HIGHWAY, SUITE 201
TAMPA, FL 33618
CERTIFICATE OF AUTHORIZATION 5853

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	418733-2-52-01

SIGNING AND PAVEMENT MARKING PLAN (19)

SHEET NO. S-26



DATE	REVISIONS DESCRIPTION	DATE	APPROVED
1/30/21	⚠ DELETED SIGNING AND PAVEMENT MARKINGS THIS SHEET UPDATED UNDERGROUND RECORD INFORMATION		

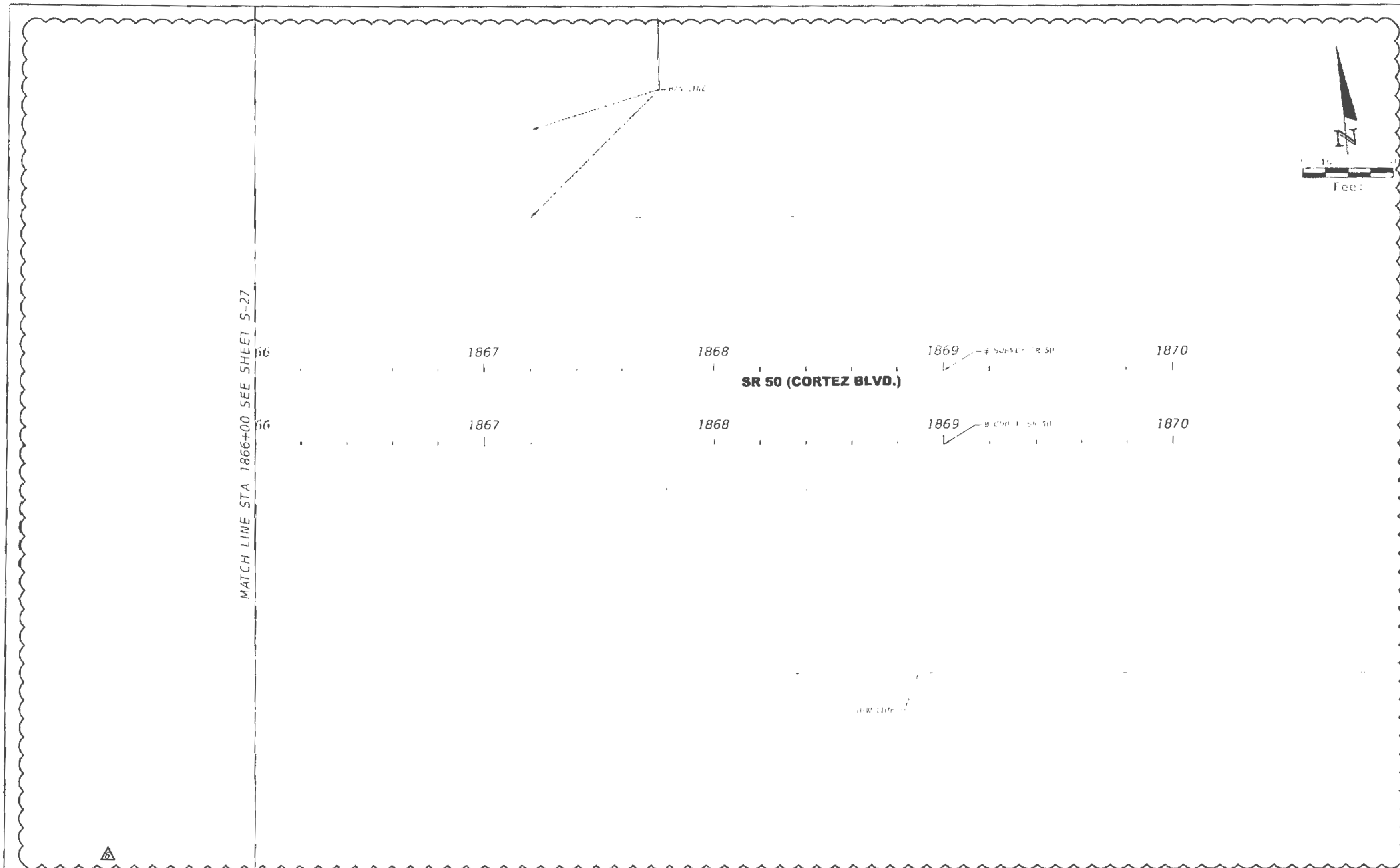
JAMES B. GALES, P.E.
P.E. NO. 79109
BURGESS & NIPLE, INC.
10008 N. DALE MABRY HIGHWAY, SUITE 201
TAMPA, FL 33618
CERTIFICATE OF AUTHORIZATION #854

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

F.P. NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732 1 52-01

SIGNING AND PAVEMENT MARKING PLAN (20)

SHEET NO.
S-27



REVISIONS

DATE	DESCRIPTION	DATE	DESCRIPTION
4/30/21	DELETED SIGNING AND PAVEMENT MARKINGS THIS SHEET UPDATED ENGINEER OF RECORD INFORMATION		

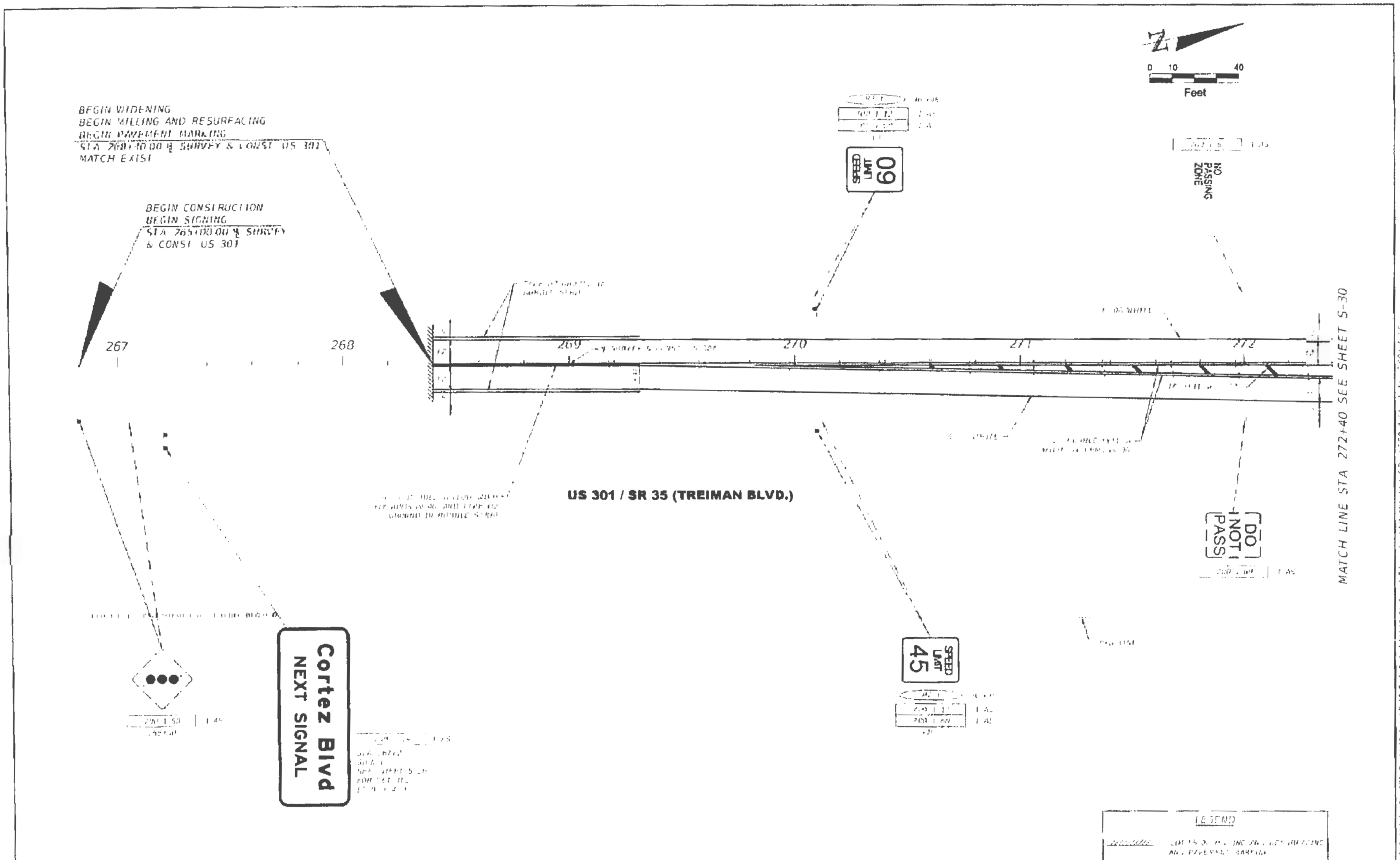
LANCE S. WALLS, P.E.
P.E. NO. 76166
BURGESS & NIPLE, INC.
1000 N. DALE MABRY HIGHWAY, SUITE 201
TAMPA, FL 33618
CERTIFICATE OF AUTHORIZATION 9853

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-3-52-01

SIGNING AND PAVEMENT MARKING PLAN (21)

SHEET NO.
S-26



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

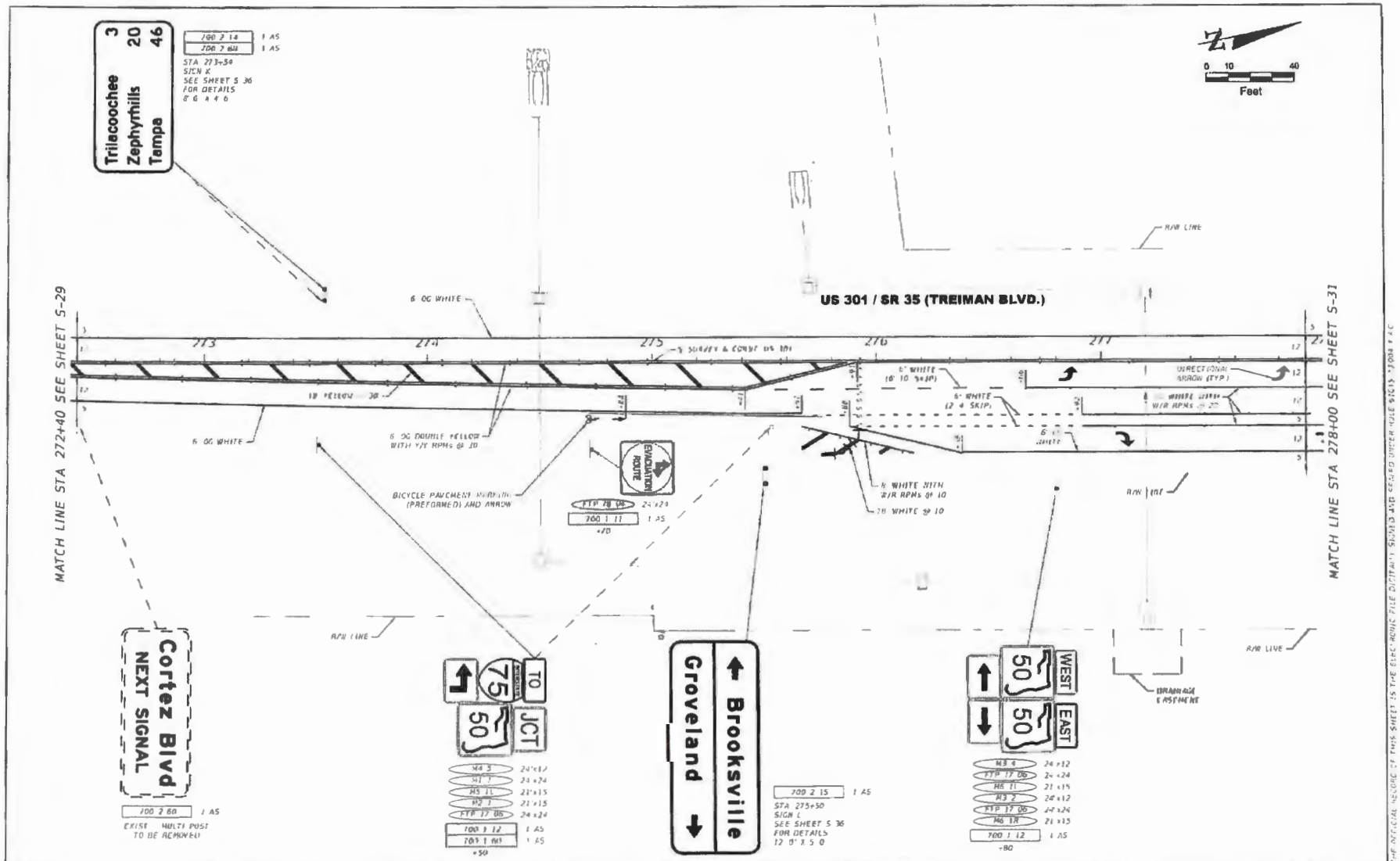
JAMES B. WALLS, P.E.
P.E. NO. 76?7?
... CONSULTANT GROUP INC
10006 N. DALE MABRY HIGHWAY, SUITE 201
TAMPA, FL 33618
CERTIFICATE OF AUTHORIZATION 8730

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-3-52-01

SIGNING AND PAVEMENT MARKING PLAN (22)

SHEET NO. S-29



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

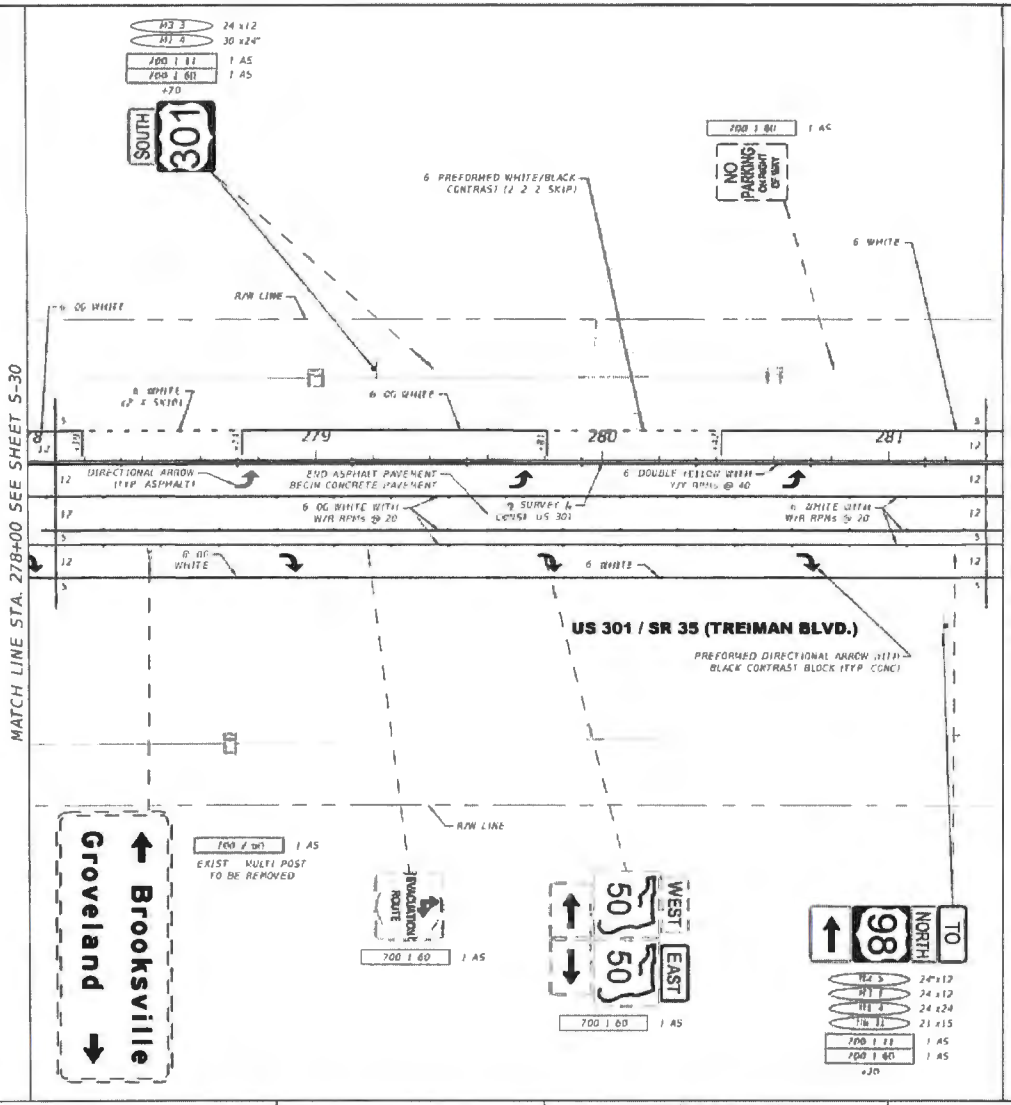
JAMES B. WALLS, P.E.
P.E. NO. 76169
ICON CONSULTANT GROUP, INC.
10006 N. DALE MABRY HIGHWAY, SUITE 201
TAMPA, FL 33618
CERTIFICATE OF AUTHORIZATION: 8230

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-3 52 01

SIGNING AND PAVEMENT MARKING PLAN (23)

SHEET NO. S-30



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

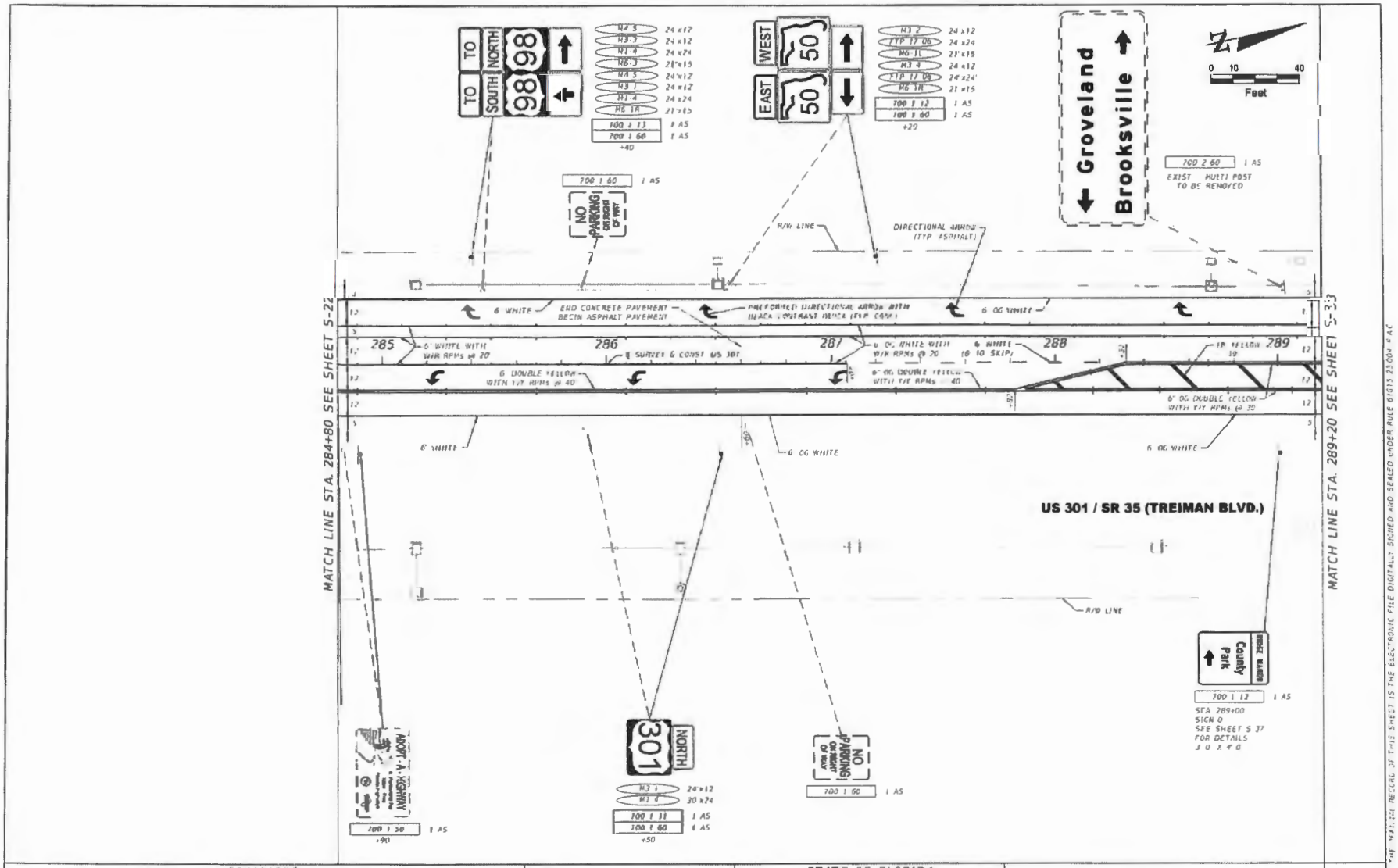
JANEY B WALLS, P.E
P.E. NO: 76169
ICON CONSULTANT GROUP, INC
10006 N DALE MABRY HIGHWAY, SUITE 201
TAMPA FL 33618
CERTIFICATE OF AUTHORIZATION: 8230

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

RTE NO	COUNTY	FINANCIAL PROJECT NO
SR 50	HERNANDO	416732-3-52-01

SIGNING AND PAVEMENT MARKING PLAN (24)

SHEET NO
S 31



REVISIONS			
NO.	DESCRIPTION	DATE	DESCRIPTION

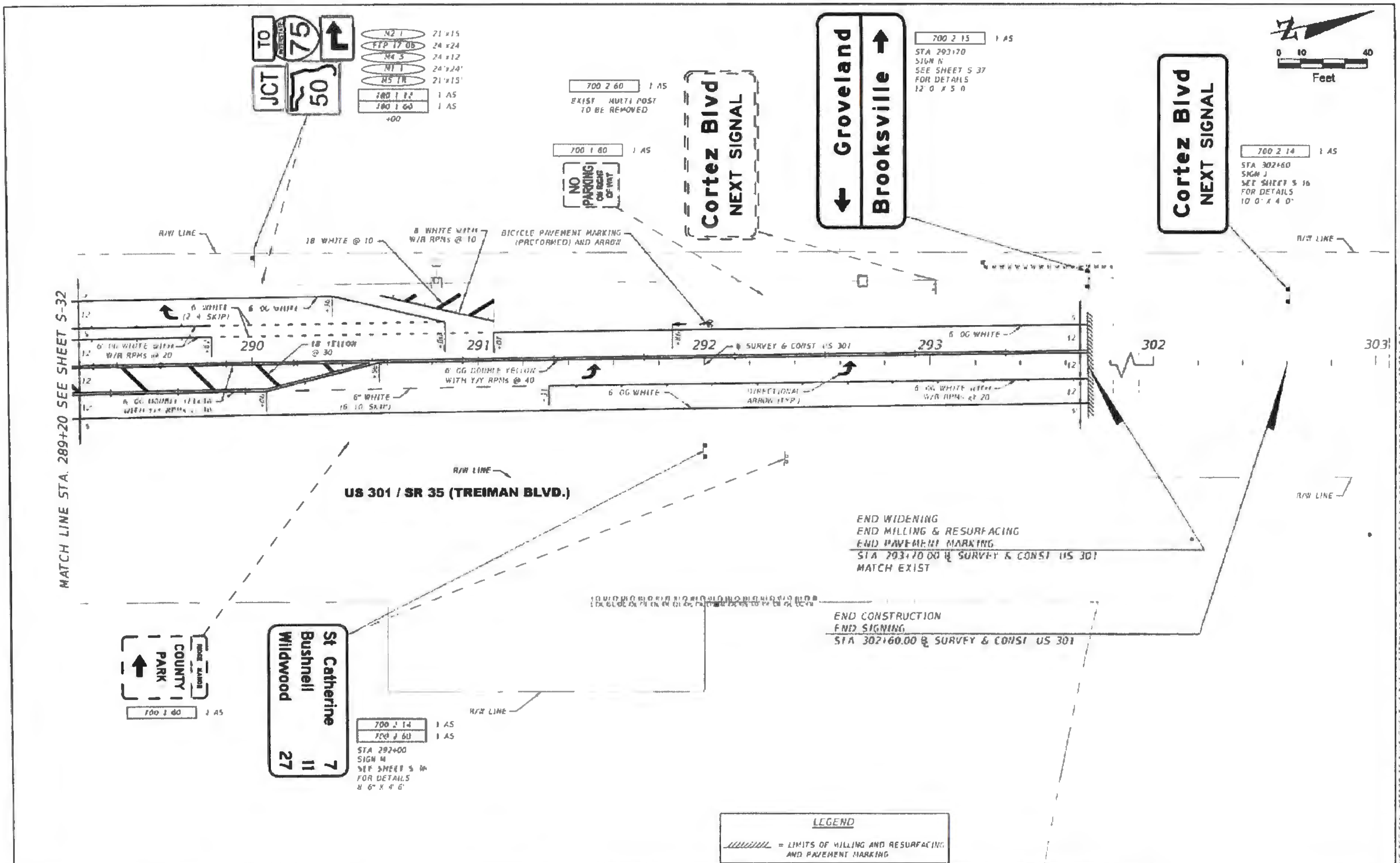
JAMES B WALLS, P.E.
P.E. NO: 76169
ICON CONSULTANT GROUP, INC
10006 N DALE MABRY HIGHWAY SUITE 201
TAMPA, FL 33618
CERTIFICATE OF AUTHORIZATION: 6230

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-3-52-01

SIGNING AND PAVEMENT MARKING PLAN (26)

SHEET NO. S-32



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

JANEY B WALLS, P.E.
P.E. NO.: 76169
ICON CONSULTANT GROUP, INC
10006 N. DALE MABRY HIGHWAY, SUITE 201
TAMPA, FL 33618
CERTIFICATE OF AUTHORIZATION 8230

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-3-52-01

SIGNING AND PAVEMENT MARKING PLAN (26)

SHEET NO.
S-33

ADDITIONAL BACKGROUND TRAFFIC

TRANSPORTATION ANALYSIS

STATEWIDE LOGISTICS CENTER

Prepared For

CENTRAL FLORIDA DEVELOPMENT

Prepared By

LINCKS & ASSOCIATES, INC.
Engineers - Planners
Tampa, Florida

FIGURE 3
PROJECT TRAFFIC

TRANSPORTATION ANALYSIS

BENTON HILL ESTATES

Prepared For

MERITAGE HOMES

Prepared By

LINCKS & ASSOCIATES, INC.
Engineers - Planners
Tampa, Florida

TRANSPORTATION ANALYSIS

BENTON HILLS ESTATES

Prepared For

MERITAGE HOMES

Prepared By

LINCKS & ASSOCIATES, INC.
5023 West Laurel Street
Tampa, Florida 33607
813-289-0039
State of Florida Authorization No. EB0004638

January, 2022

Project No. 21130

Steven J. Henry, P.E.
P.E. No. 51555

_____
Date

TABLE 1

ESTIMATED PROJECT TRIP ENDS (1)

Land Use	ITE LUC	Size	Daily Trip Ends	AM Peak Hour Trip Ends			PM Peak Hour Trip Ends		
				In	Out	Total	In	Out	Total
Single Family	210	660 DU's	5,727	108	307	415	369	217	586

(1) Source: ITE Trip Generation Manual, 11th Edition, 2021

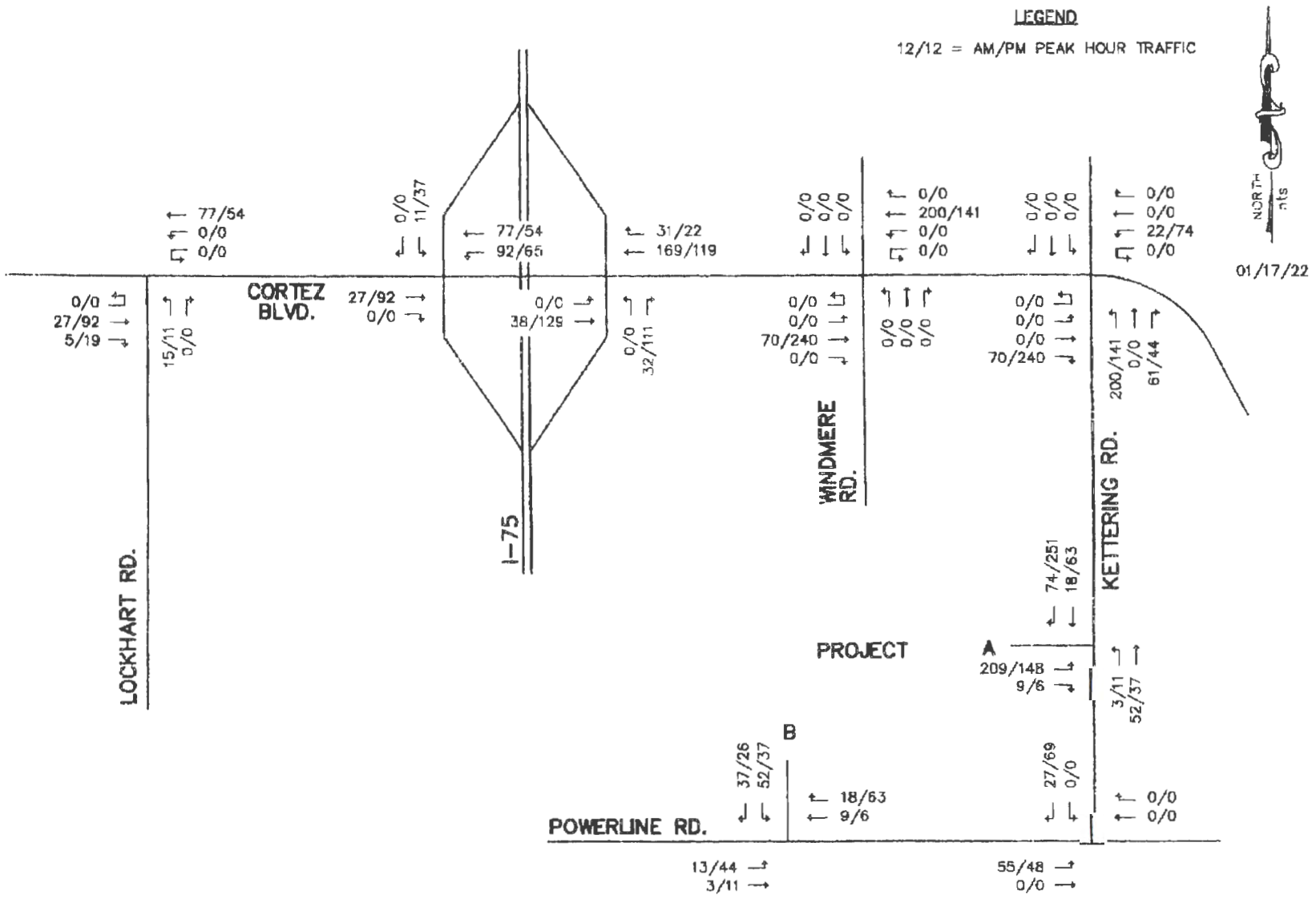


FIGURE 3
PROJECT TRAFFIC

TRANSPORTATION ANALYSIS

KETTERING INDUSTRIAL

Prepared For

JDC PROPERTY GROUP, L.L.C

Prepared By

LINCKS & ASSOCIATES, INC.
Engineers - Planners
Tampa, Florida

TRANSPORTATION ANALYSIS

KETTERING INDUSTRIAL

Prepared For

JDC PROPERTY GROUP, L.L.C

Prepared By

LINCKS & ASSOCIATES, INC.
5023 West Laurel Street
Tampa, Florida 33607
813-289-0039
State of Florida Authorization No. EB0004638

January, 2022

Project No. 21241

Steven J. Henry, P.E.
P.E. No. 51555

_____
Date

TABLE 1

ESTIMATED STREET PROJECT TRIP ENDS (1)

Land Use	Size	Daily Trip Ends	AM Peak Hour Trip Ends			PM Peak Hour Trip Ends		
			In	Out	Total	In	Out	Total
Warehouse/ Distribution Facility	337,137 SF	3,052	141	195	336	118	116	234

(1) Source: Data provided by End User

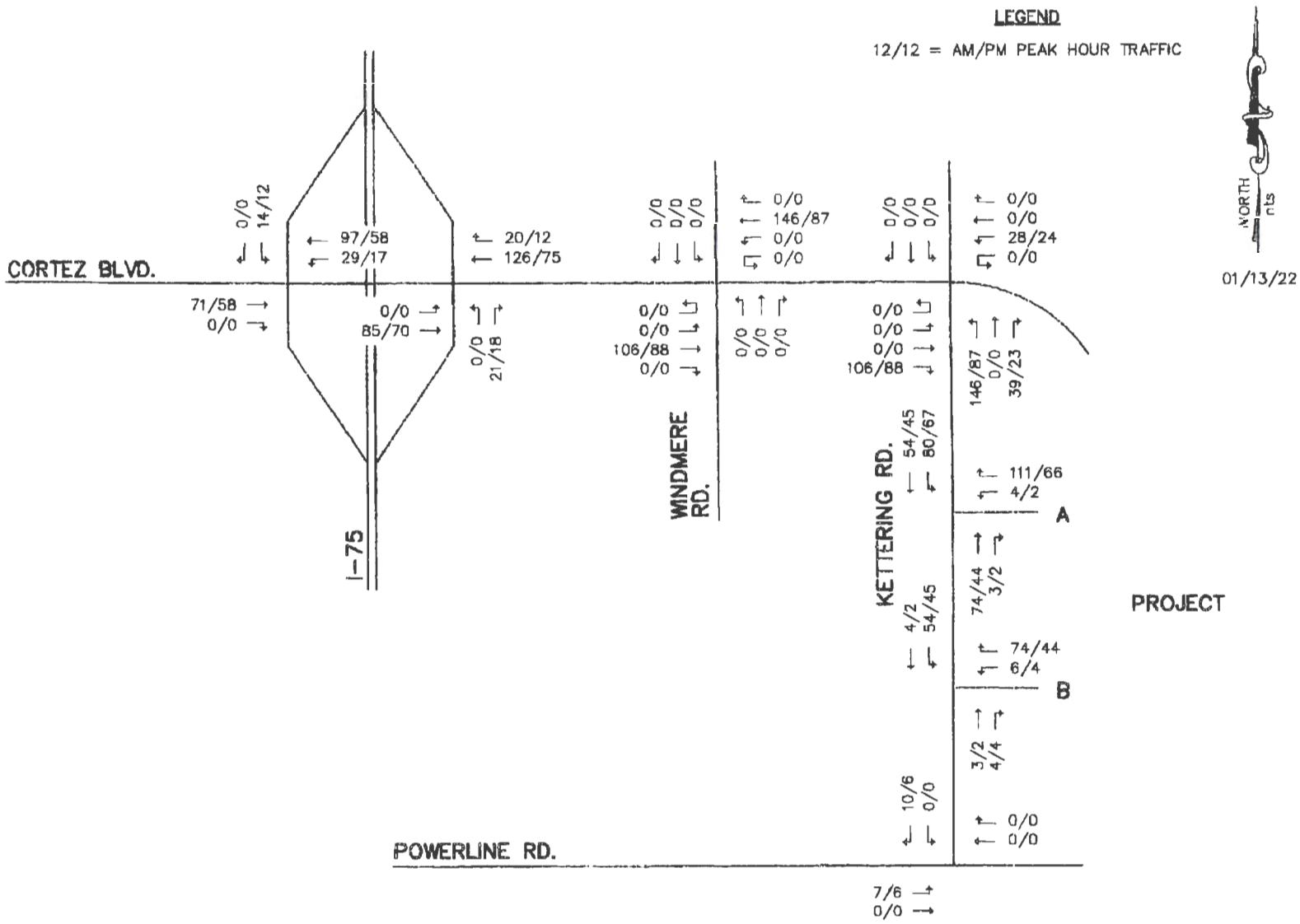


FIGURE 3
PROJECT TRAFFIC

SIGNAL TIMINGS

CONTROLLER OPERATION NOTES

1. MAJOR STREETS ARE
   - SR 50 (CORTEZ BOULEVARD) MOVEMENTS 2 AND 6
2. MINOR STREETS ARE:
   - US 98 (MCKETHAN ROAD), MOVEMENT 8
   - OLANCHA ROAD, MOVEMENT 4
3. PROGRAM SPECIAL SIGNAL OPERATING PLAN WITH THE FOLLOWING:
   - CONCURRENT/ACTUATED PEDESTRIANS FOR MOVEMENTS 2 (P2), 4 (P4), 6 (P6), AND 8 (P8)
   - WHEN THE SIGNAL IS IN FLASHING MODE, MOVEMENTS 2 AND 6 FLASH YELLOW. ALL OTHER MOVEMENTS FLASH RED.
   - WIRE EACH PHASE/MOVEMENT FROM THE SIGNAL DISPLAY TO THE CONTROLLER AS A SEPARATE PHASE/MOVEMENT. THIS INCLUDES LEFT TURN MOVEMENTS. EACH LEFT TURN MOVEMENT SHALL HAVE CONDUCTORS AVAILABLE FOR PROTECTED AND PERMISSIVE OPERATION
4. PROGRAM MOVEMENT 6R AS OVERLAP A TO COME UP WITH MOVEMENT 4 AND MATCH YELLOW AND ALL RED INTERVALS
5. PROGRAM ALL DETECTION ZONES AS 6' X 30' AND LOCATED 2' AHEAD OF THE STOP BAR

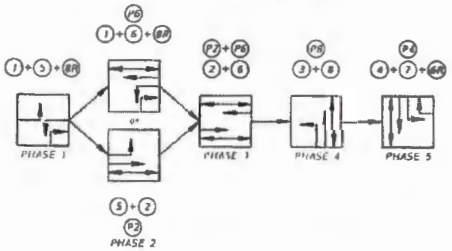
INTERSECTION NOTES:

1. THE POSTED SPEED LIMIT IS AS FOLLOWS:
   - SR 50 (CORTEZ BOULEVARD) = 55 MPH
   - MCKETHAN ROAD = 35 MPH
   - OLANCHA ROAD = 35 MPH
2. STREET LIGHTING LUMINAIRE BRACKET ARMS WILL BE ADDED TO ALL FOUR STEEL SIGNAL STRAIN POLES AT THIS INTERSECTION. SEE THE STRAIN POLE SCHEDULE FOR BRACKET ARM DETAILS. ALSO, SEE THE LIGHTING PLANS FOR THE LUMINAIRES TO BE ATTACHED AND THE ASSOCIATED DETAILS.

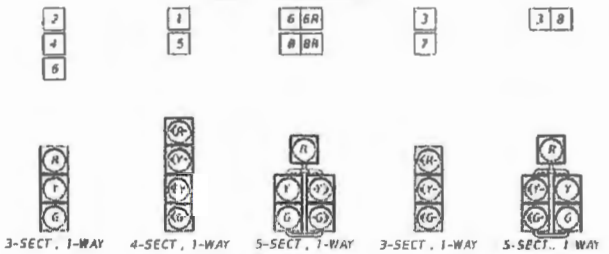
REMOVAL PAY ITEMS

632-7-6	1 PI
641-2-80	2 EA
670-5-600	2 AS

SPECIAL SOP

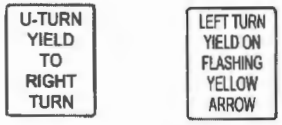


SIGNAL HEAD DETAILS



3-SECT., 1-WAY	4-SECT., 1-WAY	5-SECT., 1-WAY	3-SECT., 1-WAY	5-SECT., 1 WAY
8 AS	2 AS	3 AS	4 AS	1 AS
650-1-14	650-1-16	650-1-19	650-1-14	650-1-19

REGULATORY SIGNS



SIGN (1)
R10-16
30" x 36"

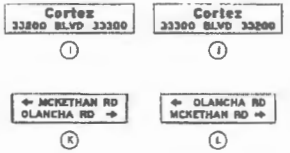
SIGN (2)
FTP-85-13
30" x 36"

700-3-201 3 AS

PEDESTRIAN HEAD DETAILS

PED. SIGNAL
COUNT-DOWN
1-SECT., 1-WAY
8 AS
653-1-11

INTERNALLY ILLUMINATED STREET NAME SIGNS



CONTROLLER TIMINGS

TIMING FUNCTION	MOVEMENT NUMBER	1	2	3	4	5	6	7	8
	MINIMUM GREEN	5	20	10	10	5	20	10	10
	EXTENSION	2.5	6.0	5.0	5.0	2.5	6.0	5.0	5.0
	MAXIMUM GREEN 1	20	50	30	30	20	50	30	30
	MAXIMUM GREEN 2	40	40	40	40	40	40	40	40
	YELLOW CLEARANCE	5.5	5.5	5.5	4.0	5.5	5.5	4.0	5.5
	ALL RED	2.2	2.2	2.7	4.2	2.2	2.2	4.2	2.7
	PEDESTRIAN WALK		7		7		7		7
	PED CLEARANCE		24		37		15		42
	RECALL		MIN				MIN		

TIMINGS ARE INITIAL AND MAY REQUIRE FIELD ADJUSTING AS DIRECTED BY THE ENGINEER. INSTALL CONCURRENT TIMING OF INITIAL AND EXTENSION INTERVALS

VIDEO VEHICLE DETECTION ASSIGNMENTS

VIDEO DETECTION	DETECTION ZONE	DELAY (SEC)
V-1	DZ-5	
	DZ-2	
V-2	DZ-7	
	DZ-4	
V-3	DZ-1	
	DZ-6	
	DZ-6R	
V-4	DZ-3	
	DZ-8	
	DZ-8R	

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

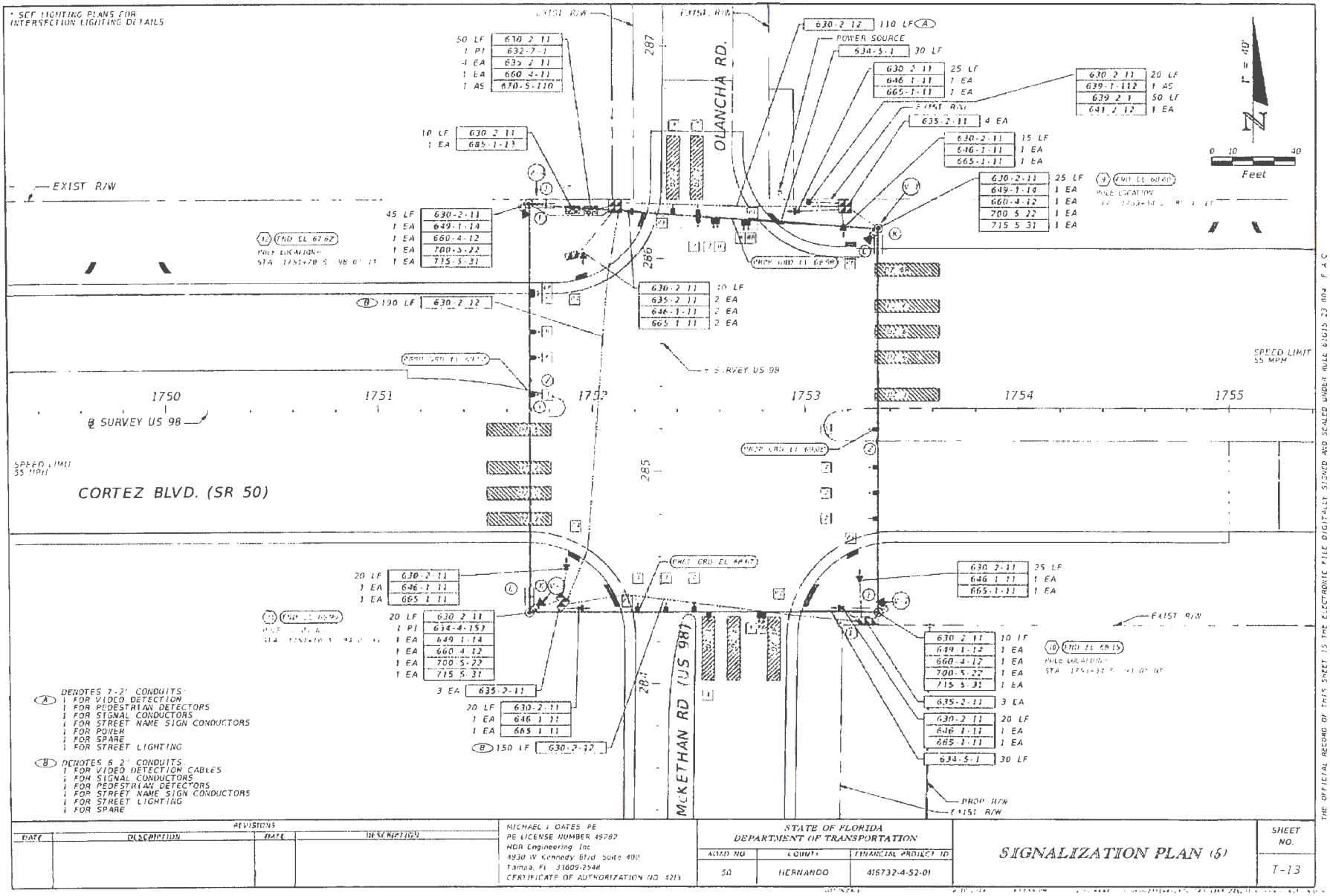
MICHAEL J. OATES, PE
PE LICENSE NUMBER 49282
HDR Engineering, Inc
4830 W Kennedy Blvd, Suite 400
Tampa, FL 33609-2548
CERTIFICATE OF AUTHORIZATION NO 4213

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
50	HERNANDO	415732-4-52-01

SIGNALIZATION PLAN (6)

SHEET NO
T-14



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REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

MICHAEL T. OATES, PE
PE LICENSE NUMBER 49282
HDR Engineering, Inc.
4930 W. Kennedy Blvd. Suite 400
Tampa, FL 33609-2548
CERTIFICATE OF AUTHORIZATION NO. 4215

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
50	HERNANDO	416732-4-52-01

SIGNALIZATION PLAN (6)

SHEET NO. T-13

Windamer

CONTROLLER OPERATION NOTES:

1 MAJOR STREET IS SR 50 (CORTEZ BOULEVARD). MOVEMENTS 2 AND 6

2 MINOR STREETS ARE
- BRONSON BOULEVARD, MOVEMENT 4
- WINDMERE ROAD, MOVEMENT 8

3 PROGRAM SIGNAL OPERATING PLAN NO. 7 WITH THE FOLLOWING
CONCURRENT/NON-CONCURRENT PEDESTRIANS FOR MOVEMENTS 2 (P2), 4 (P4) AND 6 (P6).
WHEN THE SIGNAL IS IN FLASHING MODE, MOVEMENTS 2 AND 6 FLASH YELLOW, ALL OTHER SIGNALS FLASH RED.
WIRE EACH PHASE/MOVEMENT FROM THE SIGNAL DISPLAY TO THE CONTROLLER AS A SEPARATE PHASE/MOVEMENT. THIS INCLUDES LEFT TURN MOVEMENTS. EACH LEFT TURN MOVEMENT SHALL HAVE CONDUCTORS AVAILABLE FOR PROTECTED AND PERMISSIVE OPERATION.

4 WIRE THE CABINET FOR SOP 10 BUT THE INITIAL OPERATION IS SOP 7

CONSTRUCTION NOTES

1 ALL DETECTION ZONES ARE 6' X 30' AND PLACED 2' AHEAD OF THE STOP BAR

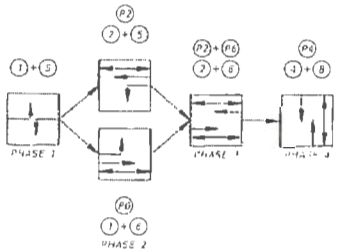
INTERSECTION NOTES:

1 THE POSTED SPEED LIMIT IS AS FOLLOWS.
- SR 50 (CORTEZ BOULEVARD) = 45 MPH
- WINDMERE ROAD = 30 MPH
- BRONSON BOULEVARD = 30 MPH

REMOVAL PAY ITEMS

632 7-6	1 PI
641-2-80	2 EA
646-1-60	2 EA
670 5-600	2 AS

SOP 7



CONTROLLER TIMINGS

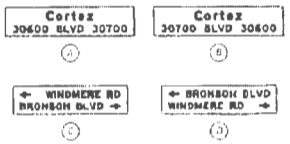
TIMING FUNCTION	MOVEMENT NUMBER	1	2	3	4	5	6	7	8
	MINIMUM GREEN	7	20		5	5	20		5
	EXTENSION	5.0	4.5		4.5	3.0	4.5		4.5
	MAXIMUM GREEN 1	30	50		30	15	50		20
	MAXIMUM GREEN 2	40	140		50	40	140		50
	YELLOW CLEARANCE	4.6	4.8		3.7	4.6	4.8		3.7
	ALL RED	2.6	2.6		3.0	2.5	2.6		5.0
	PEDESTRIAN WALK		7			7	7		
	PED CLEARANCE		24			50	24		
	PED CALL		MIN				MIN		

TIMINGS ARE INITIAL AND MAY REQUIRE FIELD ADJUSTING AS DIRECTED BY THE ENGINEER. INSTALL CONFIRMATION TIMING OF INITIAL AND EXTENSION INTERVALS.

VIDEO VEHICLE DETECTION ASSIGNMENTS

VIDEO DETECTION	DETECTION ZONE	DELAY (SEC)
V-1	DZ-1	
	DZ-5	
	DZ 6R	
V-2	DZ-5	
	DZ-2	
V-3	DZ-6	
V-4	DZ-4	

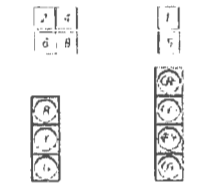
INTERNALLY ILLUMINATED STREET NAME SIGNS



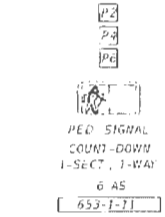
REGULATORY SIGNS

SIGN (3)
FYF-95-13
30" x 36"
700-3-201 3 AS

SIGNAL HEAD DETAILS



PEDESTRIAN HEAD DETAILS



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REVISIONS DATE	DESCRIPTION	DATE	DESCRIPTION

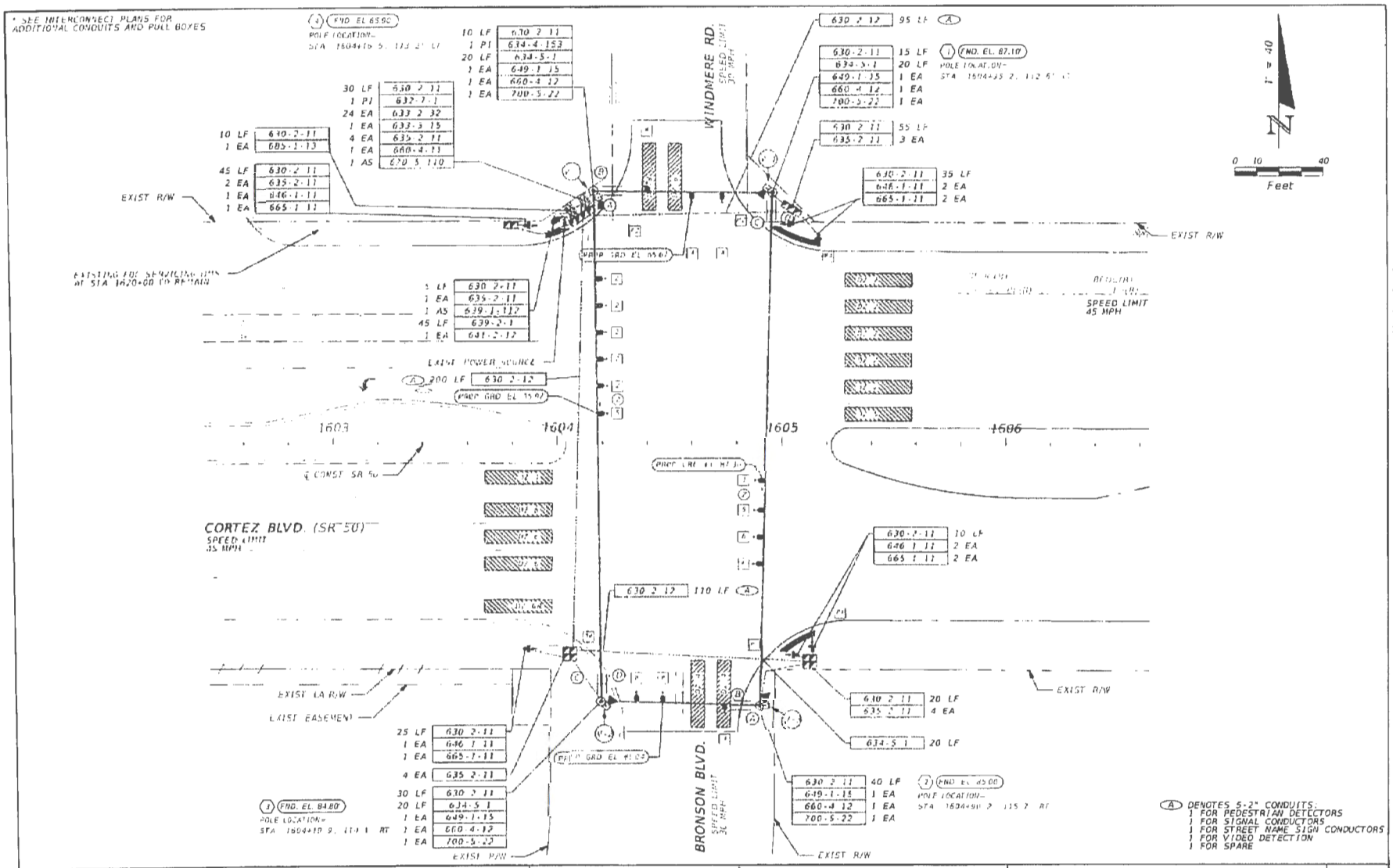
MICHAEL J. GATES, PE
PE LICENSE NUMBER 49282
HDR Engineering, Inc.
4830 W. Kennedy Blvd., Suite 400
Tampa, FL 33609-2548
CERTIFICATE OF AUTHORIZATION NO. 1213

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
50	HERNANDO	416732-4-52-01

SIGNALIZATION PLAN (2)

SHEET NO. T-10



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

MICHAEL J. OATES, PE
PE LICENSE NUMBER 49282
HDR Engineering, Inc
4830 W. Kennedy Blvd, Suite 400
Tampa, FL 33609-2548
CERTIFICATE OF AUTHORIZATION NO. 4213

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
50	HERNANDO	416732-4-52-01

SIGNALIZATION PLAN (1)

SHEET NO. T-9

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

Hernando County, FL

ECONOLITE

SR 50 - SR 50 @ I 75 - Econolite Type - Cobalt

Controller Timing Plan (MM) 2-1

Plan 1 - ""

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Min Green	7	15	0	10	7	15	0	10	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	7	0	7	0	0	7	7	0	0	0	0
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	32	0	24	0	29	0	22	0	0	11	12	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	0.0	5.0	5.0	5.0	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	25	35	0	25	25	35	0	25	0	0	0	0	0	0	0	0
Max2	25	35	0	25	25	35	0	25	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Schedule (MM) 5-4

Schedule Number - 1

Day Plan No.: 1

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
	X	X	X	X	X	X	X

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 2

Day Plan No.: 2

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
							X

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 3

Day Plan No.: 3

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
	X						

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

District Seven Traffic Signal Retiming Continuing Contract - Hernando County

FM: 433391-3-32-01

SR 50 (US 98) at Kettering Road/Croom Rital Road [3]				Prepared By:	BMH	Date:	04/30/20
East-West Roadway	SR 50 (US 98)		North-South Roadway	Kettering Road/Croom Rital Road			

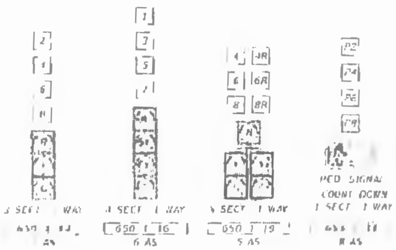
PHASE TIMES

PHASE	1	2		4	5	6		8
MOVEMENT	EBL	WB		NB	WBL	EB		SB
LEFT TURN	Prot	Prot		Perm	Prot	Prot		Perm
MIN GRN	5	30		8	5	30		8
GAP EXT	3.0	5.0		4.0	3.0	5.0		4.0
YEL CLR	5.5	5.5		5.5	5.5	5.5		5.5
RED CLR	2.0	2.0		2.6	2.0	2.0		2.6
MAX 1	10	50		25	20	50		25
MAX 2	10	70		20	20	70		20
MAX 3				45				
MAX GREEN EXT				5				
WALK								
PED CLR								

	ACTION PLAN				COORDINATION PATTERN TABLES			
All Week	Plan	Start	End	Action Plan	Cycle Length	Offset	Pattern	Alt Sequence
	FREE	0:00	24:00	100	FREE			

NOTES

1. Controller Type: Econolite ASC/2S-2100
2. Force-off Mode: Floating
3. Maximum Mode: Inhibit Max

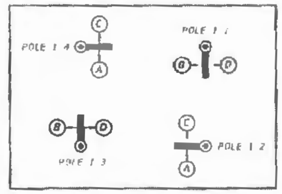


INTERNALLY ILLUMINATED STREET NAME SIGNS

SEE GUIDE SIGN WORK SHEET FOR DETAILS

4 EA 700-5-22 (A)(B)(C)(D)

STREET NAME SIGN ASSEMBLIES SHALL BE INTERNALLY ILLUMINATED AND SHALL BE DOUBLE PANEL TWO WAY

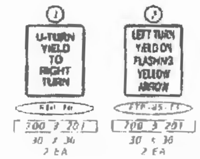


(A) **Cortez** 34900 BLVD 35000

(B) **Treiman** 5225 BLVD 5220

(C) **Cortez** 35000 BLVD 34900

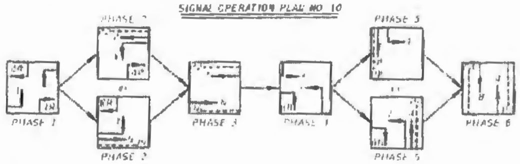
(D) **Treiman** 5220 BLVD 5225



CONTROLLER OPERATIONS

1. THE MAJOR STREET IS SR 50 (CORTEZ BLVD) (MOVEMENTS 2 AND 6)
2. THE MINOR STREET SR 35 (US 301) (MOVEMENTS 4 AND 8)
3. SIGNAL OPERATING PLAN IS SOP 10
4. CONCURRENT/ACTUATED PEDESTRIAN TIMING FOR MOVEMENTS 2 (P2), 4 (P4), 6 (P6) AND 8 (P8)
5. EACH PHASE MOVEMENT SHALL BE WIRED FROM THE SIGNAL DISPLAY TO THE CONTROLLER AS A SEPARATE PHASE/OVERLAP. THIS INCLUDES LEFT TURN MOVEMENTS. EACH LEFT TURN MOVEMENT SHALL HAVE CONNECTIONS AVAILABLE FOR PROTECTED AND PERMISSIVE OPERATION
6. DURING FLASHING OPERATION, SIGNAL HEADS 2 AND 6 TO FLASH YELLOW AND ALL OTHER MOVEMENTS SHALL FLASH RED

SIGNAL OPERATION PLAN NO 10



VIDEO VEHICLE DETECTION ASSIGNMENTS

VIDEO DETECTOR	DETECTION ZONE	CONNECT TO TIMING FUNCTION	DELAY TIME (SECS)
CD16	DZ 1		
	DZ 6 AR		
	DZ 6R		5
CD25	DZ 2 AR		
	DZ 5		
CD47	DZ 7		
	DZ 4		
	DZ 4R		
CD38	DZ 3		
	DZ 8		
	DZ 8R		5

CONTROLLER TIMINGS

TIMING FUNCTION								
MOVEMENT NUMBER	1	2	3	4	5	6	7	8
MINIMUM GREEN	[illegible]	15	[illegible]	[illegible]	[illegible]	15	[illegible]	[illegible]
EXTENSION	[illegible]	5	[illegible]	[illegible]	[illegible]	5	[illegible]	5
MAXIMUM GREEN 1	[illegible]	35	[illegible]	[illegible]	[illegible]	35	[illegible]	35
MAXIMUM GREEN 2	20	40	[illegible]	40	40	[illegible]	20	[illegible]
YELLOW CLEARANCE	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
ALL RED	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PEDESTRIAN WALK		7		7		7		7
PED CLEARANCE		22		40		33		32
RECALL		MIN				MIN		

EXISTING TO REMAIN

SPECIAL SYMBOLOGY

VIDEO DETECTOR (ON POLES)

DZ5 — DETECTION ZONE

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

JAMES B. WALLS, P.E.
P.E. NO. 76169
[illegible] CONSULTANT GROUP, INC.
10006 N. DALE MABRY HIGHWAY, SUITE 201
TAMPA, FL 33618
CERTIFICATE OF AUTHORIZATION 9230

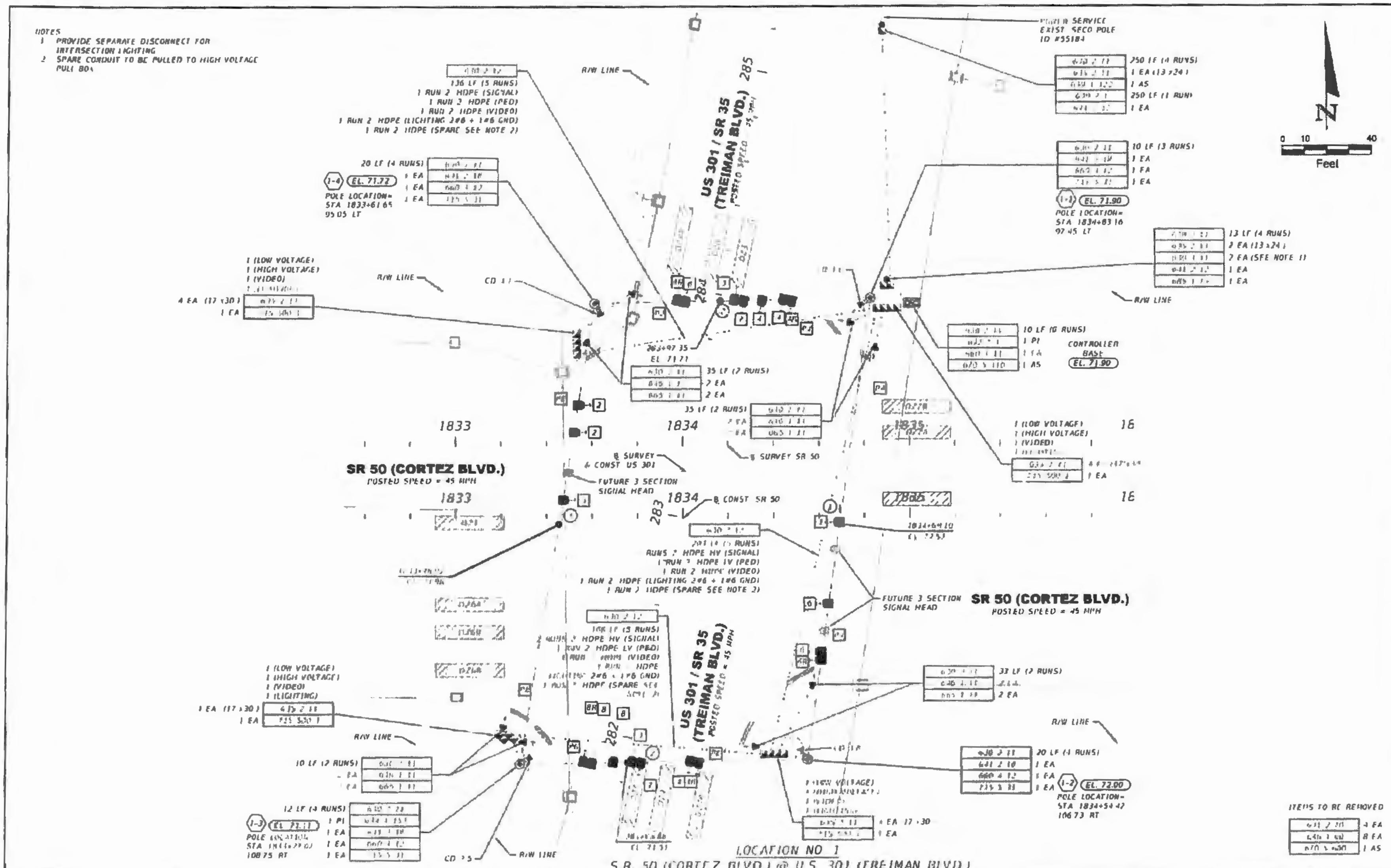
STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-3-52-01

SIGNALIZATION PLAN (2)

SHEET NO. T-6

US301



REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION

RANDY B. WALLS, P.E.
P.E. NO. 26169
ICON CONSULTANT GROUP, INC.
10000 N. DALE MABRY HIGHWAY, SUITE 201
TAMPA, FL 33618
CERTIFICATE OF AUTHORIZATION 8730

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
SR 50	HERNANDO	416732-3-52-01

SIGNALIZATION PLAN (1)

SHEET NO
T-5

Hernando County, FL

ECONOLITE

1-Cortez Blvd @ Jasmine St - 192.168.150.83 - Econolite Type - ASC/3

Time Base Day Plan/Schedule
Day Plan (MM) 5-3

Day Plan #1

Event	Action Plan	Start Time
1	2	00:00
2	2	07:00
3	2	07:45
4	2	09:00
5	2	15:00
6	2	15:45
7	2	21:30

Day Plan #2

Event	Action Plan	Start Time
1	99	00:00
2	2	09:00
3	99	18:00

Schedule (MM) 5-4

Schedule Number - 1

Day Plan No : 1

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
		X	X	X	X	X	

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 2

Day Plan No : 2

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
	X						X

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Coordinator Pattern # 2

Split Pattern	2	TS2 (Pat-Off)	0-2	Splits In	Seconds
Cycle	90	Std (COS)	73	Offsets In	Seconds
Offset Value	55s	Dwell/Add Time	0		
Actuated Coord	No	Timing Plan	1		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	2		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Splits (Split Pat 2)	10	25	0	30	35	25	0	30	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	65s	90s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X			X											
Vehicle Recall																
Pedestrian Recall																
Recall to Max Time																
Omit Phase													X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 3

Split Pattern	3	TS2 (Pat-Off)	0-3	Splits In	Seconds
Cycle	60	Std (COS)	10	Offsets In	Seconds
Offset Value	45s	Dwell/Add Time	0		
Actuated Coord	No	Timing Plan	1		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	3		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Splits (Split Pat 3)	15	20	0	20	20	20	0	20	0	0	0	0	0	0	0	0

Hernando County, FL

ECONOLITE

1-Cortez Blvd @ Jasmine St - 192.168.150.83 - Econolite Type - ASC/3

Coordination Split Pattern
Split Pattern Data (MM) 3-3

Split Pattern # 1

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Split (seconds)	15	25	0	30	35	25	0	30	0	0	0	0	0	0	0	0
Coord Phase		X			X											
Vehicle Recall																
Pedestrian Recall																
Recall to Max Time																
Omit Phase													X	X	X	X

Ring	1	2	3	4
Split Sum	70s	90s	0s	0s

Split Pattern # 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Split (seconds)	10	25	0	30	35	25	0	30	0	0	0	0	0	0	0	0
Coord Phase		X			X											
Vehicle Recall																
Pedestrian Recall																
Recall to Max Time																
Omit Phase													X	X	X	X

Ring	1	2	3	4
Split Sum	65s	90s	0s	0s

Split Pattern # 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Split (seconds)	15	20	0	20	20	20	0	20	0	0	0	0	0	0	0	0
Coord Phase		X			X											
Vehicle Recall																
Pedestrian Recall																
Recall to Max Time																
Omit Phase													X	X	X	X

Hernando County, FL

ECONOLITE

1-Cortez Blvd @ Jasmine St - 192.168.150.83 - Econolite Type - ASC/3

Preempt Plan

Preempt Plan (MM) 4-1

No Enabled Preempts

Plan 2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction																
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5 0	5.0	5 0	5.0	5 0	5.0	5 0	5 0	5.0	5.0	5.0	5 0	5 0	5 0	5.0	5 0
Vehicle Ext 2	0 0	0 0	0.0	0.0	0 0	0 0	0 0	0 0	0 0	0.0	0 0	0 0	0 0	0 0	0.0	0 0
Max1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0 0	0 0	0.0	0 0	0.0	0 0	0 0	0 0	0 0	0.0	0.0	0 0	0 0	0.0	0.0
Yellow	3 0	3 0	3 0	3.0	3 0	3 0	3.0	3 0	3 0	3 0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1 0	1 0	1.0	1.0	1 0	1 0	1 0	1 0	1 0	1.0	1 0	1 0	1 0	1 0	1.0	1.0
Red Max	0 0	0 0	0.0	0.0	0 0	0.0	0.0	0 0	0 0	0 0	0 0	0 0	0 0	0.0	0.0	0.0
Red Revert	2.0	2 0	2.0	2.0	2 0	2 0	2 0	2 0	2 0	2 0	2 0	2 0	2 0	2 0	2.0	2 0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0 0	0 0	0 0	0 0	0.0	0 0	0.0	0 0	0 0	0 0	0 0	0 0	0 0	0 0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0 0	0 0	0 0	0.0	0 0	0.0	0 0	0 0	0 0	0.0	0 0	0.0	0 0	0 0	0 0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0 0	0 0	0 0	0 0	0.0	0 0	0 0	0 0	0 0	0 0	0.0	0.0	0.0	0 0	0.0	0 0

Hernando County, FL

ECONOLITE

3 - Cortez Blvd @ Main St - 192.168.150.79 - Econolite Type - ASC/3

Configuration Controller Sequence

Phase Ring Sequence and Assignment (MM) 1-1-1

Hardware Alternate Sequence Enable: No

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	B		B		B		B									
Sequence 1																
Ring 1	1	2	3	4	9	10	.	.	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	11	12	.	.	.	.	.	.	.	.	.	.

Phases In Use/Exclusive Ped (MM) 1-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases In Use	X	X		X	X	X		X								
Exclusive Ped																

Phase Compatibility (MM) 1-1-2

Phase	
n/a	Barrier Mode

Phase and Overlap Descriptions

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Overlap	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**
Description																

Administration (MM) 1-7-1

Enable Controller/Cabinet Interlock CRC	No
CRC (16 bit)	2471
Enable Automatic Backup to Datakey	No

Plan 3

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction																
Min Green	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	10	0	10	0	10	0	10	0	10	0	10	0	10	0	10
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	16	0	16	0	16	0	16	0	16	0	16	0	16	0	16
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
Max2	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Coordinator Pattern # 2

Split Pattern	2	TS2 (Pat-Off)	0-2	Splits In	Seconds
Cycle	90	Std (COS)	73	Offsets In	Seconds
Offset Value	62s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	1		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	2		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Splits (Split Pat 2)	15	45	0	20	15	45	0	20	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	80s	80s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase													X	X	X	X
Special Funciton Outputs																

Coordinator Pattern # 3

Split Pattern	3	TS2 (Pat-Off)	0-3	Splits In	Seconds
Cycle	60	Std (COS)	10	Offsets In	Seconds
Offset Value	50s	Dwell/Add Time	0		
Actuated Coord	Yes	Timing Plan	1		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	3		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description																
Splits (Split Pat 3)	15	25	0	20	15	25	0	20	0	0	0	0	0	0	0	0

Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	60s	60s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase													X	X	X	X
Special Funciton Outputs																

Hernando County, FL

ECONOLITE

3 - Cortez Blvd @ Main St - 192.168.150.79 - Econolite Type - ASC/3

Time Base Day Plan/Schedule
Day Plan (MM) 5-3

Day Plan #1

Event	Action Plan	Start Time
1	99	00:00
2	3	07:00
3	2	07:45
4	3	09:00
5	2	15:00
6	3	15:45
7	99	21:30

Day Plan #2

Event	Action Plan	Start Time
1	99	06:00
2	2	09:00
3	99	18:00

Schedule (MM) 5-4

Schedule Number - 1

Day Plan No.: 1

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
		X	X	X	X	X	

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 2

Day Plan No.: 1

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
	X						X

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

INTERSECTION ANALYSIS

PEAK SEASON WITH EXISTING/BUDGETED IMPROVEMENTS

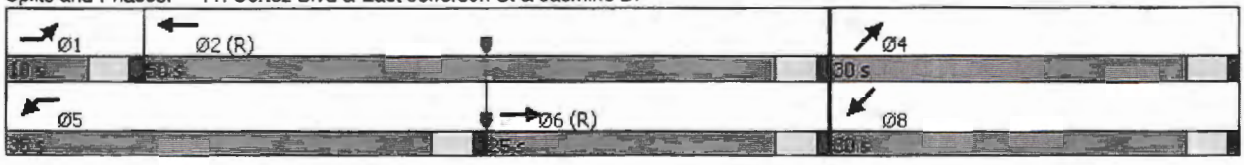
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	10	354	10	679	404	23	6	140	720	28	104	3
Future Volume (vph)	10	354	10	679	404	23	6	140	720	28	104	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		300	400		400	400		0	300		0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	1770	1863	1583	1770	1855	0
Flt Permitted	0.950			0.950			0.625			0.511		
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	1164	1863	1583	952	1855	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			61			750		2	
Link Speed (mph)		45			45			45			30	
Link Distance (ft)		2005			1665			2021			1421	
Travel Time (s)		30.4			25.2			30.6			32.3	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	10	369	10	707	421	24	6	146	750	29	108	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	10	369	10	707	421	24	6	146	750	29	111	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Free	Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases			6			2	4		Free	8		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	1	6	6	5	2	2	4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (s)	10.0	25.0	25.0	35.0	50.0	50.0	30.0	30.0		30.0	30.0	
Total Split (%)	11.1%	27.8%	27.8%	38.9%	55.6%	55.6%	33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	6.0	21.0	21.0	31.0	46.0	46.0	26.0	26.0		26.0	26.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effct Green (s)	6.1	41.5	41.5	24.1	67.4	67.4	12.4	12.4	90.0	12.4	12.4	
Actuated g/C Ratio	0.07	0.46	0.46	0.27	0.75	0.75	0.14	0.14	1.00	0.14	0.14	
v/c Ratio	0.08	0.23	0.01	0.77	0.16	0.02	0.04	0.57	0.47	0.22	0.43	
Control Delay	40.4	16.8	0.0	36.2	4.4	0.2	31.7	44.4	1.0	37.0	39.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	40.4	16.8	0.0	36.2	4.4	0.2	31.7	44.4	1.0	37.0	39.2	
LOS	D	B	A	D	A	A	C	D	A	D	D	
Approach Delay		17.0			23.8			8.2			38.7	
Approach LOS		B			C			A			D	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 55 (61%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.77
Intersection Signal Delay: 18.1 Intersection LOS: B
Intersection Capacity Utilization 54.0% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 11: Cortez Blvd & East Jefferson St & Jasmine Dr



HCS7 Two-Way Stop-Control Report

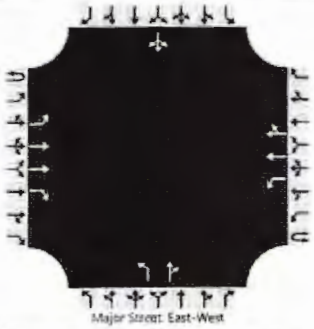
General Information

Analyst	
Agency/Co.	
Date Performed	9/23/2022
Analysis Year	2022
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Peakseason Traffic and Existing/Budgeted Geometry

Site Information

Intersection	
Jurisdiction	
East/West Street	Cortez Blvd
North/South Street	Lockhart Rd
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	1	0	1	2	0		1	1	0		0	1	0
Configuration		L	T	R		L	T	TR		L		TR			LTR	
Volume (veh/h)	1	0	636	20	3	42	783	0		61	0	43		0	0	0
Percent Heavy Vehicles (%)	3	3			3	3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No														
Median Type | Storage		Left + Thru								1						

Critical and Follow-up Headways

Base Critical Headway (sec)	6.4	4.1			6.4	4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)	6.46	4.16			6.46	4.16				7.56	6.56	6.96		7.56	6.56	6.96
Base Follow-Up Headway (sec)	2.5	2.2			2.5	2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)	2.53	2.23			2.53	2.23				3.53	4.03	3.33		3.53	4.03	3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		1				47				64		45			0	
Capacity, c (veh/h)		433				855				268		662				
v/c Ratio		0.00				0.05				0.24		0.07				
95% Queue Length, Q_{95} (veh)		0.0				0.2				0.9		0.2				
Control Delay (s/veh)		13.3				9.5				22.6		10.8				
Level of Service (LOS)		B				A				C		B				
Approach Delay (s/veh)		0.0				0.5				17.7						
Approach LOS										C						

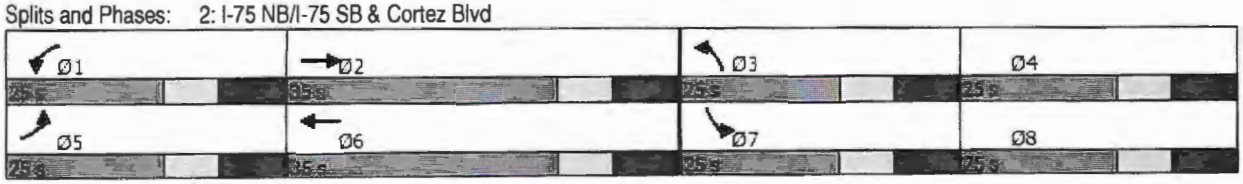
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	151	489	92	154	497	121	116	0	319	108	0	291
Future Volume (vph)	151	489	92	154	497	121	116	0	319	108	0	291
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	435		0	620		0	0		545	0		650
Storage Lanes	2		1	1		1	3		2	3		2
Taper Length (ft)	50			100			25			25		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.94	1.00	0.88	0.94	1.00	0.88
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	4990	0	2787	4990	0	2787
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	4990	0	2787	4990	0	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			295			295			326			297
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		1000			840			750			850	
Travel Time (s)		15.2			12.7			17.0			19.3	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	154	499	94	157	507	123	118	0	326	110	0	297
Shared Lane Traffic (%)												
Lane Group Flow (vph)	154	499	94	157	507	123	118	0	326	110	0	297
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			36			36	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1		1	1		1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left		Right	Left		Right
Leading Detector (ft)	20	100	20	20	100	20	20		20	20		20
Trailing Detector (ft)	0	0	0	0	0	0	0		0	0		0
Detector 1 Position(ft)	0	0	0	0	0	0	0		0	0		0
Detector 1 Size(ft)	20	6	20	20	6	20	20		20	20		20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Detector 2 Position(ft)		94			94							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3			7		
Permitted Phases			2			6			8			4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	6	3		8	7		4
Switch Phase												
Minimum Initial (s)	7.0	15.0	15.0	7.0	15.0	15.0	10.0		5.0	10.0		10.0
Minimum Split (s)	17.9	28.9	28.9	17.9	28.9	28.9	20.9		25.0	20.9		20.9
Total Split (s)	25.0	35.0	35.0	25.0	35.0	35.0	25.0		25.0	25.0		25.0
Total Split (%)	22.7%	31.8%	31.8%	22.7%	31.8%	31.8%	22.7%		22.7%	22.7%		22.7%
Maximum Green (s)	14.1	24.1	24.1	14.1	24.1	24.1	14.1		14.1	14.1		14.1
Yellow Time (s)	4.9	4.9	4.9	4.9	4.9	4.9	4.9		4.9	4.9		4.9
All-Red Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	10.9	10.9	10.9	10.9	10.9	10.9	10.9		10.9	10.9		10.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead		Lag	Lead		Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0
Recall Mode	None	Min	Min	None	Min	Min	None		None	None		None
Act Effct Green (s)	9.4	16.1	16.1	9.5	16.2	16.2	10.0		10.1	10.0		10.1
Actuated g/C Ratio	0.11	0.18	0.18	0.11	0.18	0.18	0.11		0.11	0.11		0.11
v/c Ratio	0.43	0.55	0.18	0.43	0.55	0.23	0.21		0.54	0.20		0.51
Control Delay	41.5	36.0	0.7	41.5	36.0	1.0	38.1		8.3	38.0		8.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	41.5	36.0	0.7	41.5	36.0	1.0	38.1		8.3	38.0		8.3
LOS	D	D	A	D	D	A	D		A	D		A
Approach Delay		32.7			31.6			16.2			16.3	
Approach LOS		C			C			B			B	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 89.4
Natural Cycle: 95
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 26.5 Intersection LOS: C
Intersection Capacity Utilization 48.7% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 2: I-75 NB/I-75 SB & Cortez Blvd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	182	555	175	78	587	15	149	45	78	38	12	37
Future Volume (vph)	182	555	175	78	587	15	149	45	78	38	12	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	485		0	350		0	105		0	115		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	100			50			50			50		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.996			0.905			0.887	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	1583	1770	7514	0	1770	1686	0	1770	1652	0
Flt Permitted	0.299			0.421			0.723			0.674		
Satd. Flow (perm)	557	5085	1583	784	7514	0	1347	1686	0	1255	1652	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			184		6			72			39	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		840			700			700			800	
Travel Time (s)		12.7			10.6			15.9			18.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	192	584	184	82	618	16	157	47	82	40	13	39
Shared Lane Traffic (%)												
Lane Group Flow (vph)	192	584	184	82	634	0	157	129	0	40	52	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		10			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6			8			4		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0	15.0	7.0	15.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	14.0	25.0	25.0	14.0	25.0		17.4	17.4		17.4	17.4	
Total Split (s)	30.0	50.0	50.0	30.0	50.0		30.0	30.0		30.0	30.0	
Total Split (%)	27.3%	45.5%	45.5%	27.3%	45.5%		27.3%	27.3%		27.3%	27.3%	
Maximum Green (s)	23.0	43.0	43.0	23.0	43.0		22.6	22.6		22.6	22.6	
Yellow Time (s)	4.9	4.9	4.9	4.9	4.9		3.7	3.7		3.7	3.7	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1		3.7	3.7		3.7	3.7	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0		7.4	7.4		7.4	7.4	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min	Min	None	Min		None	None		None	None	
Walk Time (s)		7.0	7.0		7.0							
Flash Dont Walk (s)		11.0	11.0		11.0							
Pedestrian Calls (#/hr)		0	0		0							
Act Effct Green (s)	28.8	20.6	20.6	22.6	15.1		12.6	12.6		12.6	12.6	
Actuated g/C Ratio	0.49	0.35	0.35	0.38	0.26		0.21	0.21		0.21	0.21	
v/c Ratio	0.40	0.33	0.27	0.19	0.33		0.55	0.31		0.15	0.14	
Control Delay	10.4	16.6	4.6	9.3	19.1		29.0	12.4		20.7	10.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	10.4	16.6	4.6	9.3	19.1		29.0	12.4		20.7	10.2	
LOS	B	B	A	A	B		C	B		C	B	
Approach Delay		13.1			18.0			21.5			14.8	
Approach LOS		B			B			C			B	

Intersection Summary

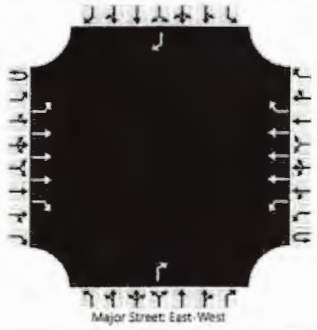
Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 59.1
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.55
Intersection Signal Delay: 16.0 Intersection LOS: B
Intersection Capacity Utilization 63.2% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 3: Bronson Blvd./Windmere Rd. & Cortez Blvd

HCS7 Two-Way Stop-Control Report

General Information		Site Information	
Analyst		Intersection	
Agency/Co.		Jurisdiction	
Date Performed	9/23/2022	East/West Street	Cortez Blvd
Analysis Year	2022	North/South Street	Parkland Ave
Time Analyzed	PM Peak	Peak Hour Factor	0.94
Intersection Orientation	East-West	Analysis Time Period (hrs)	0.25
Project Description	Peakseason Traffic and Existing/Budgeted Geometry		

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	3	1	0	1	3	1		0	0	1		0	0	1
Configuration		L	T	R		L	T	R				R				R
Volume (veh/h)	6	12	653	37	35	58	597	38				28				20
Percent Heavy Vehicles (%)	3	3			3	3						3				3
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No				No				No				No		
Median Type | Storage		Left + Thru								1						

Critical and Follow-up Headways

Base Critical Headway (sec)	5.6	5.3			5.6	5.3						7.1				7.1
Critical Headway (sec)	5.66	5.36			5.66	5.36						7.16				7.16
Base Follow-Up Headway (sec)	2.3	3.1			2.3	3.1						3.9				3.9
Follow-Up Headway (sec)	2.33	3.13			2.33	3.13						3.93				3.93

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		19				99						30				21
Capacity, c (veh/h)		625				594						552				576
v/c Ratio		0.03				0.17						0.05				0.04
95% Queue Length, Q_{95} (veh)		0.1				0.6						0.2				0.1
Control Delay (s/veh)		10.9				12.3						11.9				11.5
Level of Service (LOS)		B				B						B				B
Approach Delay (s/veh)		0.3				1.6				11.9				11.5		
Approach LOS										B				B		

Lanes, Volumes, Timings
1: Kettering Rd./Croom Rital Rd. & Cortez Blvd 10/28/2022

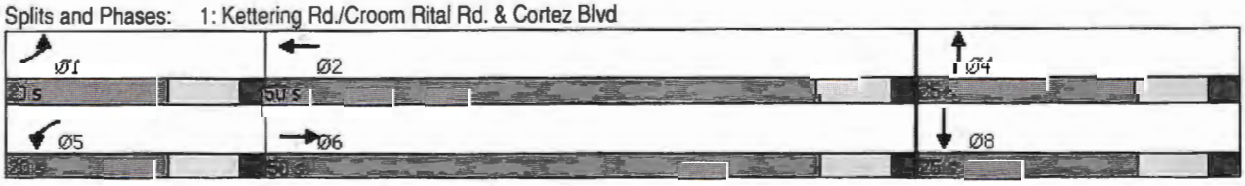
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	31	648	44	28	571	14	59	2	45	7	2	5
Future Volume (vph)	31	648	44	28	571	14	59	2	45	7	2	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	430		1000	540		440	0		470	0		0
Storage Lanes	1		1	1		1	0		1	0		0
Taper Length (ft)	100			100			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.952	
Flt Protected	0.950			0.950				0.954			0.976	
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	0	1777	1583	0	1731	0
Flt Permitted	0.950			0.950				0.723			0.809	
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	0	1347	1583	0	1435	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			145			145			138		5	
Link Speed (mph)		45			45			55			35	
Link Distance (ft)		2695			10277			1000			500	
Travel Time (s)		40.8			155.7			12.4			9.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	32	675	46	29	595	15	61	2	47	7	2	5
Shared Lane Traffic (%)												
Lane Group Flow (vph)	32	675	46	29	595	15	0	63	47	0	14	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Perm	Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases			6			2	4		4	8		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6	6	5	2	2	4	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	30.0	30.0	5.0	30.0	30.0	8.0	8.0	8.0	8.0	8.0	
Minimum Split (s)	12.5	37.5	37.5	12.5	37.5	37.5	16.1	16.1	16.1	16.1	16.1	
Total Split (s)	20.0	50.0	50.0	20.0	50.0	50.0	25.0	25.0	25.0	25.0	25.0	
Total Split (%)	21.1%	52.6%	52.6%	21.1%	52.6%	52.6%	26.3%	26.3%	26.3%	26.3%	26.3%	
Maximum Green (s)	12.5	42.5	42.5	12.5	42.5	42.5	16.9	16.9	16.9	16.9	16.9	
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.6	2.6	2.6	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	
Total Lost Time (s)	7.5	7.5	7.5	7.5	7.5	7.5		8.1	8.1		8.1	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0	7.0						
Flash Dont Walk (s)		11.0	11.0		11.0	11.0						
Pedestrian Calls (#/hr)		0	0		0	0						
Act Effct Green (s)	6.8	36.0	36.0	6.7	35.9	35.9		9.3	9.3		9.3	
Actuated g/C Ratio	0.11	0.59	0.59	0.11	0.59	0.59		0.15	0.15		0.15	
v/c Ratio	0.16	0.22	0.05	0.15	0.20	0.02		0.31	0.13		0.06	
Control Delay	29.6	9.9	0.1	29.6	9.8	0.0		29.8	0.8		21.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	
Total Delay	29.6	9.9	0.1	29.6	9.8	0.0		29.8	0.8		21.9	
LOS	C	A	A	C	A	A		C	A		C	
Approach Delay		10.1			10.5			17.4			21.9	
Approach LOS		B			B			B			C	

Intersection Summary

Area Type: Other
Cycle Length: 95
Actuated Cycle Length: 60.9
Natural Cycle: 70
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.31
Intersection Signal Delay: 10.9 Intersection LOS: B
Intersection Capacity Utilization 58.1% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 1: Kettering Rd./Croom Rital Rd. & Cortez Blvd



HCS7 Two-Way Stop-Control Report

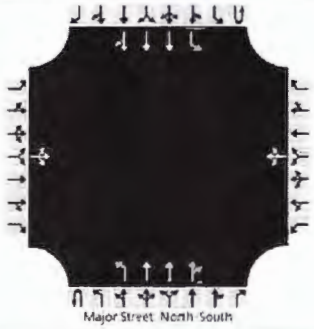
General Information

Analyst	
Agency/Co.	
Date Performed	9/23/2022
Analysis Year	2022
Time Analyzed	PM Peak
Intersection Orientation	North-South
Project Description	Peakseason Traffic and Existing/Budgeted Geometry

Site Information

Intersection	
Jurisdiction	
East/West Street	Ridge Manor Blvd
North/South Street	Cortez Blvd
Peak Hour Factor	0.97
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	1	3	0	0	1	3	0
Configuration			LTR				LTR			L	T	TR		L	T	TR
Volume (veh/h)		3	2	4		3	0	58	0	2	567	6	0	116	556	0
Percent Heavy Vehicles (%)		3	3	3		3	3	3	3	3			3	3		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized																
Median Type | Storage		Left + Thru								1						

Critical and Follow-up Headways

Base Critical Headway (sec)		6.4	6.5	7.1		6.4	6.5	7.1		5.3				5.3		
Critical Headway (sec)		6.46	6.56	7.16		6.46	6.56	7.16		5.36				5.36		
Base Follow-Up Headway (sec)		3.8	4.0	3.9		3.8	4.0	3.9		3.1				3.1		
Follow-Up Headway (sec)		3.83	4.03	3.93		3.83	4.03	3.93		3.13				3.13		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			9				63			2				120		
Capacity, c (veh/h)			281				561			622				610		
v/c Ratio			0.03				0.11			0.00				0.20		
95% Queue Length, Q_{95} (veh)			0.1				0.4			0.0				0.7		
Control Delay (s/veh)			18.2				12.2			10.8				12.3		
Level of Service (LOS)			C				B			B				B		
Approach Delay (s/veh)		18.2				12.2				0.0				2.1		
Approach LOS		C				B										

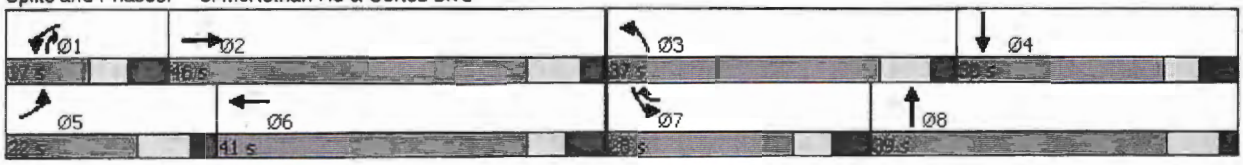
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	317	219	22	303	6	282	39	8	4	13	5
Future Volume (vph)	18	317	219	22	303	6	282	39	8	4	13	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500		800	500		400	400		200	400		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.961	
Flt Protected	0.950			0.950			0.950	0.964		0.950		
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1681	1706	1583	1770	1790	0
Flt Permitted	0.450			0.545			0.545	0.561		0.950		
Satd. Flow (perm)	838	5085	1583	1015	5085	1583	964	993	1583	1770	1790	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			250			181			112		5	
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		10277			1013			1273			1001	
Travel Time (s)		155.7			23.0			28.9			22.8	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	19	330	228	23	316	6	294	41	8	4	14	5
Shared Lane Traffic (%)							43%					
Lane Group Flow (vph)	19	330	228	23	316	6	168	167	8	4	19	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6	7	3	8	1	7	4	
Permitted Phases	2		2	6		6	8		8			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	7	3	8	1	7	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	20.0	27.7	27.7	13.2	26.2	26.2	27.7	25.7	13.2	26.2	26.2	
Total Split (s)	22.0	46.0	46.0	17.0	41.0	28.0	37.0	39.0	17.0	28.0	30.0	
Total Split (%)	16.9%	35.4%	35.4%	13.1%	31.5%	21.5%	28.5%	30.0%	13.1%	21.5%	23.1%	
Maximum Green (s)	13.8	37.8	37.8	8.8	32.8	19.8	28.8	31.3	8.8	19.8	21.8	
Yellow Time (s)	5.5	5.5	5.5	4.0	4.0	4.0	5.5	5.5	4.0	4.0	4.0	
All-Red Time (s)	2.7	2.7	2.7	4.2	4.2	4.2	2.7	2.2	4.2	4.2	4.2	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	8.2	8.2	8.2	8.2	8.2	8.2	8.2	7.7	8.2	8.2	8.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	Max	Max	None	Max	Max	Max	None	None	Max	Max	
Act Effct Green (s)	53.9	45.6	45.6	39.3	32.8	60.8	58.8	59.3	45.5	19.8	21.8	
Actuated g/C Ratio	0.41	0.35	0.35	0.30	0.25	0.47	0.45	0.46	0.35	0.15	0.17	
v/c Ratio	0.04	0.18	0.32	0.07	0.25	0.01	0.28	0.27	0.01	0.01	0.06	
Control Delay	22.4	31.1	4.1	23.5	39.4	0.0	23.2	22.7	0.0	47.2	37.5	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	22.4	31.1	4.1	23.5	39.4	0.0	23.2	22.7	0.0	47.2	37.5	
LOS	C	C	A	C	D	A	C	C	A	D	D	
Approach Delay		20.1			37.6			22.4			39.2	
Approach LOS		C			D			C			D	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Natural Cycle: 105
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.32
Intersection Signal Delay: 25.8 Intersection LOS: C
Intersection Capacity Utilization 45.9% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 8: McKethan Rd & Cortez Blvd



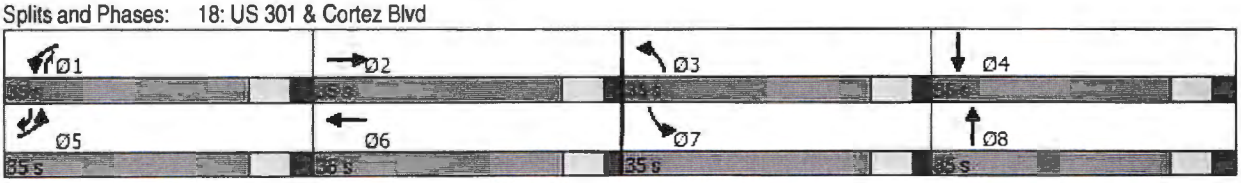
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	204	46	62	228	16	44	214	42	11	152	45
Future Volume (vph)	50	204	46	62	228	16	44	214	42	11	152	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	300		0	200		300	300		300
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.990				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3504	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.583			0.603			0.549			0.610		
Satd. Flow (perm)	1086	3539	1583	1123	3504	0	1023	1863	1583	1136	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			146		5				83			83
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		6987			1760			1365			907	
Travel Time (s)		105.9			26.7			20.7			13.7	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	56	229	52	70	256	18	49	240	47	12	171	51
Shared Lane Traffic (%)												
Lane Group Flow (vph)	56	229	52	70	274	0	49	240	47	12	171	51
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	5	2		1	6		3	8	1	7	4	5
Permitted Phases	2		2	6			8		8	4		4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	12.3	24.8	24.8	12.3	24.8		11.8	25.7	12.3	11.8	25.7	12.3
Total Split (s)	35.0	35.0	35.0	35.0	35.0		35.0	35.0	35.0	35.0	35.0	35.0
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%		25.0%	25.0%	25.0%	25.0%	25.0%	25.0%
Maximum Green (s)	27.7	28.2	28.2	27.7	28.2		28.2	27.3	27.7	28.2	27.3	27.7
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8		4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	2.5	2.0	2.0	2.5	2.0		2.0	2.9	2.5	2.0	2.9	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	6.8	6.8	7.3	6.8		6.8	7.7	7.3	6.8	7.7	7.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max		None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	
Flash Dont Walk (s)		11.0	11.0		11.0			11.0			11.0	
Pedestrian Calls (#/hr)		0	0		0			0			0	
Act Effct Green (s)	34.6	29.6	29.6	35.2	29.9		21.8	19.5	35.1	18.2	14.0	29.3
Actuated g/C Ratio	0.44	0.38	0.38	0.45	0.38		0.28	0.25	0.45	0.23	0.18	0.38
v/c Ratio	0.10	0.17	0.08	0.12	0.20		0.14	0.52	0.06	0.04	0.51	0.08
Control Delay	12.9	20.8	0.2	12.9	20.3		20.5	30.7	1.4	19.3	37.5	1.9
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.9	20.8	0.2	12.9	20.3		20.5	30.7	1.4	19.3	37.5	1.9
LOS	B	C	A	B	C		C	C	A	B	D	A
Approach Delay		16.3			18.8			25.1			28.8	
Approach LOS		B			B			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 77.8
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.52
Intersection Signal Delay: 21.7 Intersection LOS: C
Intersection Capacity Utilization 50.2% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 18: US 301 & Cortez Blvd



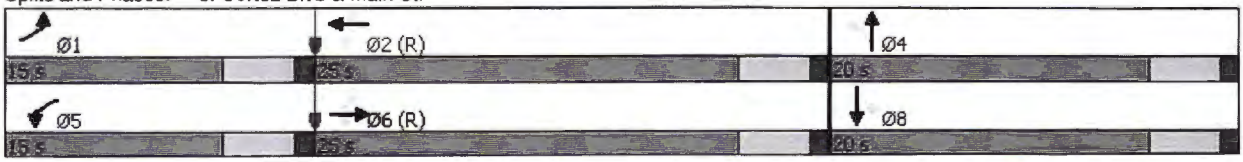
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	934	12	3	899	9	15	1	2	12	2	100
Future Volume (vph)	76	934	12	3	899	9	15	1	2	12	2	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		300	300		300	300		0	300		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.900			0.853	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1676	0	1770	1589	0
Flt Permitted	0.247			0.285			0.702			0.756		
Satd. Flow (perm)	460	3539	1583	531	3539	1583	1308	1676	0	1408	1589	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			109		2			105	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		862			2594			709			741	
Travel Time (s)		13.1			39.3			16.1			16.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	80	983	13	3	946	9	16	1	2	13	2	105
Shared Lane Traffic (%)												
Lane Group Flow (vph)	80	983	13	3	946	9	16	3	0	13	107	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6		6	2		2	4			8		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6	6	5	2	2	4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	20.0	20.0		20.0	20.0	
Total Split (s)	15.0	25.0	25.0	15.0	25.0	25.0	20.0	20.0		20.0	20.0	
Total Split (%)	25.0%	41.7%	41.7%	25.0%	41.7%	41.7%	33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	10.5	20.5	20.5	10.5	20.5	20.5	15.5	15.5		15.5	15.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	45.7	45.1	45.1	42.8	40.4	40.4	6.8	6.8		6.8	6.8	
Actuated g/C Ratio	0.76	0.75	0.75	0.71	0.67	0.67	0.11	0.11		0.11	0.11	
v/c Ratio	0.16	0.37	0.01	0.01	0.40	0.01	0.11	0.02		0.08	0.39	
Control Delay	3.3	4.9	0.0	3.0	7.6	0.0	24.5	18.3		23.9	10.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	3.3	4.9	0.0	3.0	7.6	0.0	24.5	18.3		23.9	10.8	
LOS	A	A	A	A	A	A	C	B		C	B	
Approach Delay		4.7			7.5			23.6			12.2	
Approach LOS		A			A			C			B	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 50 (83%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 55
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.40
Intersection Signal Delay: 6.5 Intersection LOS: A
Intersection Capacity Utilization 48.7% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 3: Cortez Blvd & Main Str



HCS7 Two-Way Stop-Control Report

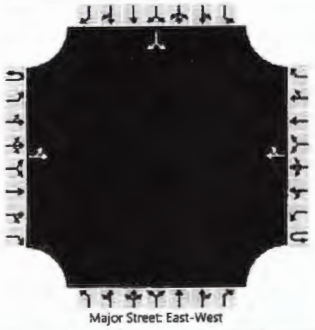
General Information

Analyst	
Agency/Co.	
Date Performed	9/23/2022
Analysis Year	2022
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Peakseason Traffic and Existing/Budgeted Geometry

Site Information

Intersection	
Jurisdiction	
East/West Street	Powerline Rd
North/South Street	Kettering Rd
Peak Hour Factor	0.50
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		27	4				2	3						2		12
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		54													28	
Capacity, c (veh/h)		1603													1032	
v/c Ratio		0.03													0.03	
95% Queue Length, Q_{95} (veh)		0.1													0.1	
Control Delay (s/veh)		7.3													8.6	
Level of Service (LOS)		A													A	
Approach Delay (s/veh)	6.4												8.6			
Approach LOS													A			

HCS7 Two-Way Stop-Control Report

General Information

Analyst	
Agency/Co.	
Date Performed	9/23/2022
Analysis Year	2022
Time Analyzed	PM Peak
Intersection Orientation	North-South
Project Description	Peakseason Traffic and Existing/Budgeted Geometry

Site Information

Intersection	
Jurisdiction	
East/West Street	Powerline Rd
North/South Street	Lockhart Rd
Peak Hour Factor	0.48
Analysis Time Period (hrs)	0.25

Lanes

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						12		72			7	4		6	9	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.43		6.23						4.13		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							175							13		
Capacity, c (veh/h)							1037							1586		
v/c Ratio							0.17							0.01		
95% Queue Length, Q_{95} (veh)							0.6							0.0		
Control Delay (s/veh)							9.2							7.3		
Level of Service (LOS)							A							A		
Approach Delay (s/veh)					9.2								3.0			
Approach LOS					A											

BACKGROUND WITH EXISTING/BUDGETED IMPROVEMENTS

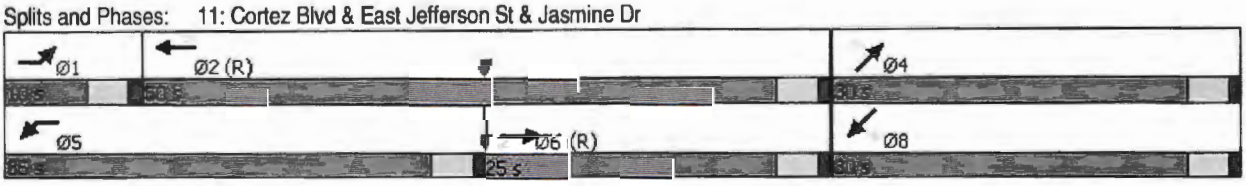
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	13	446	13	758	451	26	7	176	907	35	131	4
Future Volume (vph)	13	446	13	758	451	26	7	176	907	35	131	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		300	400		400	400		0	300		0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	1770	1863	1583	1770	1855	0
Flt Permitted	0.950			0.950			0.554			0.433		
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	1032	1863	1583	807	1855	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			61			747		2	
Link Speed (mph)		45			45			45			30	
Link Distance (ft)		2005			1665			2021			1421	
Travel Time (s)		30.4			25.2			30.6			32.3	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	14	465	14	790	470	27	7	183	945	36	136	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	465	14	790	470	27	7	183	945	36	140	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Free	Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases			6			2	4		Free	8		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	1	6	6	5	2	2	4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (s)	10.0	25.0	25.0	35.0	50.0	50.0	30.0	30.0		30.0	30.0	
Total Split (%)	11.1%	27.8%	27.8%	38.9%	55.6%	55.6%	33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	6.0	21.0	21.0	31.0	46.0	46.0	26.0	26.0		26.0	26.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effct Green (s)	6.3	37.6	37.6	26.2	65.5	65.5	14.1	14.1	90.0	14.1	14.1	
Actuated g/C Ratio	0.07	0.42	0.42	0.29	0.73	0.73	0.16	0.16	1.00	0.16	0.16	
v/c Ratio	0.11	0.31	0.02	0.79	0.18	0.02	0.04	0.63	0.60	0.29	0.48	
Control Delay	40.8	20.2	0.1	35.3	5.2	0.5	30.1	44.5	1.7	37.7	38.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	40.8	20.2	0.1	35.3	5.2	0.5	30.1	44.5	1.7	37.7	38.6	
LOS	D	C	A	D	A	A	C	D	A	D	D	
Approach Delay		20.2			23.6			8.7			38.4	
Approach LOS		C			C			A			D	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 55 (61%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.79
Intersection Signal Delay: 18.4 Intersection LOS: B
Intersection Capacity Utilization 60.7% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 11: Cortez Blvd & East Jefferson St & Jasmine Dr



HCS7 Two-Way Stop-Control Report

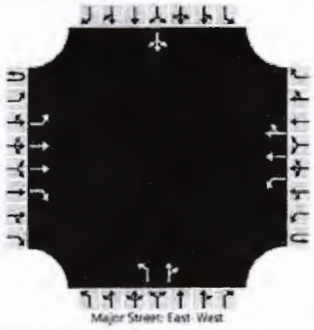
General Information

Analyst	
Agency/Co.	
Date Performed	9/23/2022
Analysis Year	2035
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Background Traffic and Existing/Budgeted Geometry

Site Information

Intersection	
Jurisdiction	
East/West Street	Cortez Blvd
North/South Street	Lockhart Rd
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	1	0	1	2	0		1	1	0		0	1	0
Configuration		L	T	R		L	T	TR		L		TR			LTR	
Volume (veh/h)	1	0	710	22	4	50	942	0		77	0	54		0	0	0
Percent Heavy Vehicles (%)	3	3			3	3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No														
Median Type | Storage		Left + Thru								1						

Critical and Follow-up Headways

Base Critical Headway (sec)	6.4	4.1			6.4	4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)	6.46	4.16			6.46	4.16				7.56	6.56	6.96		7.56	6.56	6.96
Base Follow-Up Headway (sec)	2.5	2.2			2.5	2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)	2.53	2.23			2.53	2.23				3.53	4.03	3.33		3.53	4.03	3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		1				56				80		56			0	
Capacity, c (veh/h)		339				786				226		624				
v/c Ratio		0.00				0.07				0.36		0.09				
95% Queue Length, Q_{95} (veh)		0.0				0.2				1.5		0.3				
Control Delay (s/veh)		15.7				9.9				29.5		11.3				
Level of Service (LOS)		C				A				D		B				
Approach Delay (s/veh)		0.0				0.5				22.0						
Approach LOS										C						

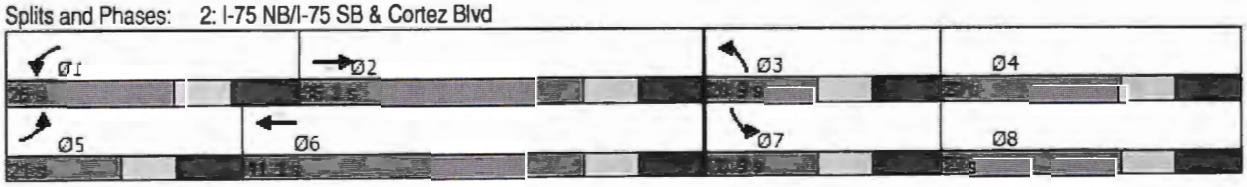
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	182	777	111	305	918	205	147	0	546	191	0	362
Future Volume (vph)	182	777	111	305	918	205	147	0	546	191	0	362
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	435		0	620		0	0		545	0		650
Storage Lanes	2		1	1		1	3		2	3		2
Taper Length (ft)	50			100			25			25		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.94	1.00	0.88	0.94	1.00	0.88
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	4990	0	2787	4990	0	2787
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	4990	0	2787	4990	0	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			295			295			461			369
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		1000			840			750			850	
Travel Time (s)		15.2			12.7			17.0			19.3	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	186	793	113	311	937	209	150	0	557	195	0	369
Shared Lane Traffic (%)												
Lane Group Flow (vph)	186	793	113	311	937	209	150	0	557	195	0	369
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			36			36	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1		1	1		1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left		Right	Left		Right
Leading Detector (ft)	20	100	20	20	100	20	20		20	20		20
Trailing Detector (ft)	0	0	0	0	0	0	0		0	0		0
Detector 1 Position(ft)	0	0	0	0	0	0	0		0	0		0
Detector 1 Size(ft)	20	6	20	20	6	20	20		20	20		20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Detector 2 Position(ft)		94			94							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3			7		
Permitted Phases			2			6			8			4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	6	3		8	7		4
Switch Phase												
Minimum Initial (s)	7.0	15.0	15.0	7.0	15.0	15.0	10.0		5.0	10.0		10.0
Minimum Split (s)	17.9	28.9	28.9	17.9	28.9	28.9	20.9		25.0	20.9		20.9
Total Split (s)	21.0	36.1	36.1	26.0	41.1	41.1	20.9		27.0	20.9		27.0
Total Split (%)	19.1%	32.8%	32.8%	23.6%	37.4%	37.4%	19.0%		24.5%	19.0%		24.5%
Maximum Green (s)	10.1	25.2	25.2	15.1	30.2	30.2	10.0		16.1	10.0		16.1
Yellow Time (s)	4.9	4.9	4.9	4.9	4.9	4.9	4.9		4.9	4.9		4.9
All-Red Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	10.9	10.9	10.9	10.9	10.9	10.9	10.9		10.9	10.9		10.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead		Lag	Lead		Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0
Recall Mode	None	Min	Min	None	Min	Min	None		None	None		None
Act Effct Green (s)	9.5	22.0	22.0	13.4	25.9	25.9	10.0		11.7	10.0		11.7
Actuated g/C Ratio	0.09	0.22	0.22	0.13	0.26	0.26	0.10		0.12	0.10		0.12
v/c Ratio	0.58	0.72	0.20	0.68	0.72	0.33	0.30		0.76	0.39		0.57
Control Delay	52.7	41.0	0.8	50.7	37.8	2.0	45.6		16.3	46.6		8.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	52.7	41.0	0.8	50.7	37.8	2.0	45.6		16.3	46.6		8.2
LOS	D	D	A	D	D	A	D		B	D		A
Approach Delay		38.8			35.4			22.5			21.5	
Approach LOS		D			D			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 101
Natural Cycle: 95
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.76
Intersection Signal Delay: 31.9 Intersection LOS: C
Intersection Capacity Utilization 59.2% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 2: I-75 NB/I-75 SB & Cortez Blvd



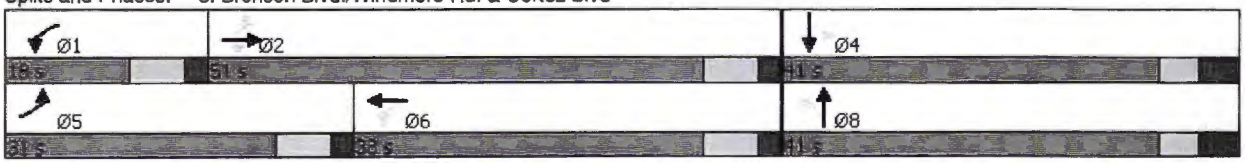
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	227	1081	219	98	1114	19	186	56	98	48	15	46
Future Volume (vph)	227	1081	219	98	1114	19	186	56	98	48	15	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	485		0	350		0	105		0	115		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	100			50			50			50		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.997			0.905			0.887	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	1583	1770	7521	0	1770	1686	0	1770	1652	0
Flt Permitted	0.130			0.238			0.715			0.654		
Satd. Flow (perm)	242	5085	1583	443	7521	0	1332	1686	0	1218	1652	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			231		3			82			48	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		840			700			700			800	
Travel Time (s)		12.7			10.6			15.9			18.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	239	1138	231	103	1173	20	196	59	103	51	16	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	239	1138	231	103	1193	0	196	162	0	51	64	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		10			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6			8			4		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0	15.0	7.0	15.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	14.0	25.0	25.0	14.0	25.0		17.4	17.4		17.4	17.4	
Total Split (s)	31.0	51.0	51.0	18.0	38.0		41.0	41.0		41.0	41.0	
Total Split (%)	28.2%	46.4%	46.4%	16.4%	34.5%		37.3%	37.3%		37.3%	37.3%	
Maximum Green (s)	24.0	44.0	44.0	11.0	31.0		33.6	33.6		33.6	33.6	
Yellow Time (s)	4.9	4.9	4.9	4.9	4.9		3.7	3.7		3.7	3.7	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1		3.7	3.7		3.7	3.7	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0		7.4	7.4		7.4	7.4	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min	Min	None	Min		None	None		None	None	
Walk Time (s)		7.0	7.0		7.0							
Flash Dont Walk (s)		11.0	11.0		11.0							
Pedestrian Calls (#/hr)		0	0		0							
Act Effct Green (s)	41.2	30.8	30.8	30.1	21.9		17.2	17.2		17.2	17.2	
Actuated g/C Ratio	0.55	0.41	0.41	0.40	0.29		0.23	0.23		0.23	0.23	
v/c Ratio	0.59	0.54	0.29	0.32	0.54		0.64	0.36		0.18	0.15	
Control Delay	19.2	19.5	3.8	12.8	23.9		37.8	16.1		26.7	11.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	19.2	19.5	3.8	12.8	23.9		37.8	16.1		26.7	11.9	
LOS	B	B	A	B	C		D	B		C	B	
Approach Delay		17.2			23.0			28.0			18.4	
Approach LOS		B			C			C			B	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 74.7
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 20.6 Intersection LOS: C
Intersection Capacity Utilization 69.4% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Bronson Blvd./Windmere Rd. & Cortez Blvd



HCS7 Two-Way Stop-Control Report

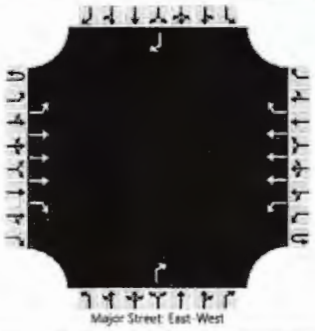
General Information

Analyst	
Agency/Co.	
Date Performed	9/23/2022
Analysis Year	2035
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Background Traffic and Existing/Budgeted Geometry

Site Information

Intersection	
Jurisdiction	
East/West Street	Cortez Blvd
North/South Street	Parkland Ave
Peak Hour Factor	0.94
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	3	1	0	1	3	1		0	0	1		0	0	1
Configuration		L	T	R		L	T	R				R				R
Volume (veh/h)	8	15	1204	46	44	73	1127	48				35				25
Percent Heavy Vehicles (%)	3	3			3	3						3				3
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No				No				No				No		
Median Type | Storage		Left + Thru								1						

Critical and Follow-up Headways

Base Critical Headway (sec)	5.6	5.3			5.6	5.3						7.1				7.1
Critical Headway (sec)	5.66	5.36			5.66	5.36						7.16				7.16
Base Follow-Up Headway (sec)	2.3	3.1			2.3	3.1						3.9				3.9
Follow-Up Headway (sec)	2.33	3.13			2.33	3.13						3.93				3.93

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		24				124						37				27
Capacity, c (veh/h)		338				311						356				379
v/c Ratio		0.07				0.40						0.10				0.07
95% Queue Length, Q_{95} (veh)		0.2				1.9						0.3				0.2
Control Delay (s/veh)		16.5				24.1						16.3				15.2
Level of Service (LOS)		C				C						C				C
Approach Delay (s/veh)		0.3				2.2				16.3				15.2		
Approach LOS										C				C		

HCS7 Two-Way Stop-Control Report

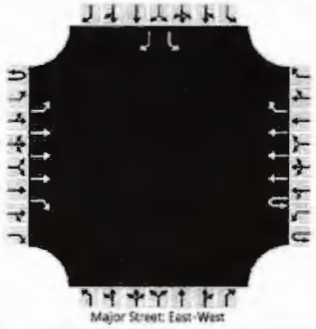
General Information

Analyst	
Agency/Co.	
Date Performed	9/23/2022
Analysis Year	2035
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Background Traffic and Existing/Budgeted Geometry

Site Information

Intersection	
Jurisdiction	
East/West Street	Cortez Blvd
North/South Street	Shman Hills Realigment
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	3	1	1	0	3	1		0	0	0		1	0	1
Configuration		L	T	R	U		T	R						L		R
Volume (veh/h)	0	170	1291	0	0		1161	37						72		2
Percent Heavy Vehicles (%)	3	3			3									3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized		No				No								No		
Median Type | Storage		Left + Thru								1						

Critical and Follow-up Headways

Base Critical Headway (sec)		5.3			5.6									6.4		7.1
Critical Headway (sec)		5.36			5.66									6.46		7.16
Base Follow-Up Headway (sec)		3.1			2.3									3.8		3.9
Follow-Up Headway (sec)		3.13			2.33									3.83		3.93

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		179			0									76		2
Capacity, c (veh/h)		290			440									66		372
v/c Ratio		0.62			0.00									1.16		0.01
95% Queue Length, Q_{95} (veh)		3.8			0.0									6.0		0.0
Control Delay (s/veh)		35.6			13.2									267.4		14.7
Level of Service (LOS)		E			B									F		B
Approach Delay (s/veh)		4.1				0.0								260.6		
Approach LOS														F		

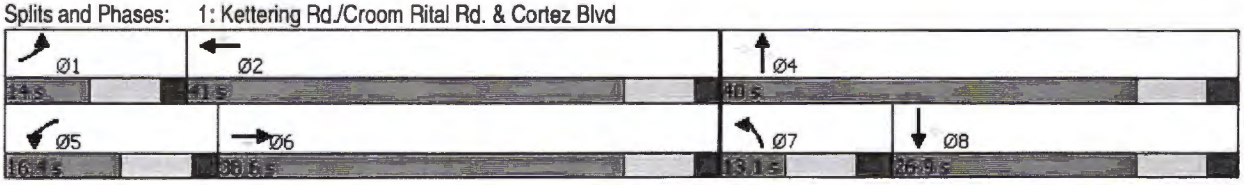
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	810	442	148	714	18	454	2	164	9	2	6
Future Volume (vph)	39	810	442	148	714	18	454	2	164	9	2	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	430		1000	540		440	0		470	0		0
Storage Lanes	1		1	1		1	0		1	0		0
Taper Length (ft)	100			100			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.952	
Flt Protected	0.950			0.950				0.953			0.974	
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	0	1775	1583	0	1727	0
Flt Permitted	0.950			0.950				0.715			0.763	
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	0	1332	1583	0	1353	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			460			238			171		6	
Link Speed (mph)		45			45			55			35	
Link Distance (ft)		2060			10277			1000			500	
Travel Time (s)		31.2			155.7			12.4			9.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	41	844	460	154	744	19	473	2	171	9	2	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	844	460	154	744	19	0	475	171	0	17	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	pm+pt	NA	Perm	Perm	NA	
Protected Phases	1	6		5	2		7	4			8	
Permitted Phases			6			2	4		4	8		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6	6	5	2	2	7	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	30.0	30.0	5.0	30.0	30.0	5.0	8.0	8.0	8.0	8.0	
Minimum Split (s)	12.5	37.5	37.5	12.5	37.5	37.5	13.1	16.1	16.1	16.1	16.1	
Total Split (s)	14.0	38.6	38.6	16.4	41.0	41.0	13.1	40.0	40.0	26.9	26.9	
Total Split (%)	14.7%	40.6%	40.6%	17.3%	43.2%	43.2%	13.8%	42.1%	42.1%	28.3%	28.3%	
Maximum Green (s)	6.5	31.1	31.1	8.9	33.5	33.5	5.0	31.9	31.9	18.8	18.8	
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.6	2.6	2.6	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	
Total Lost Time (s)	7.5	7.5	7.5	7.5	7.5	7.5		8.1	8.1		8.1	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0	7.0						
Flash Dont Walk (s)		11.0	11.0		11.0	11.0						
Pedestrian Calls (#/hr)		0	0		0	0						
Act Effct Green (s)	6.3	30.2	30.2	8.9	38.2	38.2		31.9	31.9		31.9	
Actuated g/C Ratio	0.07	0.32	0.32	0.09	0.41	0.41		0.34	0.34		0.34	
v/c Ratio	0.35	0.52	0.56	0.92	0.36	0.02		1.05	0.26		0.04	
Control Delay	50.4	27.4	5.3	96.9	21.2	0.1		89.5	4.8		16.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	
Total Delay	50.4	27.4	5.3	96.9	21.2	0.1		89.5	4.8		16.8	
LOS	D	C	A	F	C	A		F	A		B	
Approach Delay		20.5			33.5			67.0			16.8	
Approach LOS		C			C			E			B	

Intersection Summary

Area Type: Other
Cycle Length: 95
Actuated Cycle Length: 94.1
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.05
Intersection Signal Delay: 34.8 Intersection LOS: C
Intersection Capacity Utilization 84.4% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 1: Kettering Rd./Croom Rital Rd. & Cortez Blvd



HCS7 Two-Way Stop-Control Report

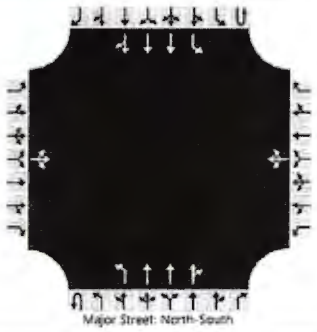
General Information

Analyst	
Agency/Co.	
Date Performed	9/23/2022
Analysis Year	2035
Time Analyzed	PM Peak
Intersection Orientation	North-South
Project Description	Background Traffic and Existing/Budgeted Geometry

Site Information

Intersection	
Jurisdiction	
East/West Street	Ridge Manor Blvd
North/South Street	Cortez Blvd
Peak Hour Factor	0.97
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	1	3	0	0	1	3	0
Configuration			LTR				LTR			L	T	TR		L	T	TR
Volume (veh/h)		4	2	5		4	0	70	0	2	703	7	0	145	696	0
Percent Heavy Vehicles (%)		3	3	3		3	3	3	3	3			3	3		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized																
Median Type | Storage		Left + Thru								1						

Critical and Follow-up Headways

Base Critical Headway (sec)		6.4	6.5	7.1		6.4	6.5	7.1		5.3				5.3		
Critical Headway (sec)		6.46	6.56	7.16		6.46	6.56	7.16		5.36				5.36		
Base Follow-Up Headway (sec)		3.8	4.0	3.9		3.8	4.0	3.9		3.1				3.1		
Follow-Up Headway (sec)		3.83	4.03	3.93		3.83	4.03	3.93		3.13				3.13		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			11				76			2				149		
Capacity, c (veh/h)			196				489			531				523		
v/c Ratio			0.06				0.16			0.00				0.29		
95% Queue Length, Q_{95} (veh)			0.2				0.5			0.0				1.2		
Control Delay (s/veh)			24.5				13.7			11.8				14.6		
Level of Service (LOS)			C				B			B				B		
Approach Delay (s/veh)		24.5				13.7				0.0				2.5		
Approach LOS		C				B										

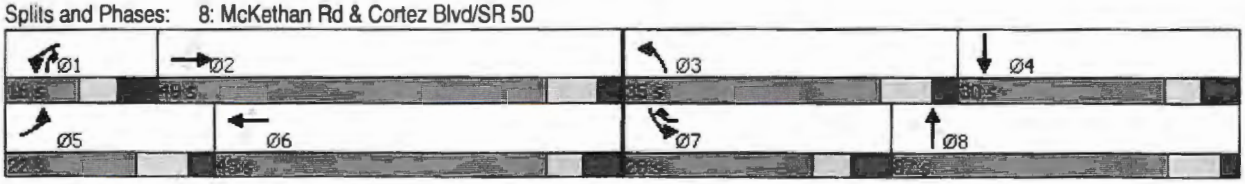
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑↑↑			↑↑↑							
Traffic Volume (vph)	22	393	271	27	372	7	332	46	9	5	15	6
Future Volume (vph)	22	393	271	27	372	7	332	46	9	5	15	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500		800	500		400	400		200	400		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.959	
Flt Protected	0.950			0.950			0.950	0.964		0.950		
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1681	1706	1583	1770	1786	0
Flt Permitted	0.423			0.503			0.565	0.582		0.950		
Satd. Flow (perm)	788	5085	1583	937	5085	1583	1000	1030	1583	1770	1786	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			282			112			112		6	
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		10277			1013			1273			1001	
Travel Time (s)		155.7			23.0			28.9			22.8	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	23	409	282	28	388	7	346	48	9	5	16	6
Shared Lane Traffic (%)							43%					
Lane Group Flow (vph)	23	409	282	28	388	7	197	197	9	5	22	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6	7	3	8	1	7	4	
Permitted Phases	2		2	6		6	8		8			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	7	3	8	1	7	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	20.0	27.7	27.7	13.2	26.2	26.2	27.7	25.7	13.2	26.2	26.2	
Total Split (s)	22.0	49.0	49.0	16.0	43.0	28.0	35.0	37.0	16.0	28.0	30.0	
Total Split (%)	16.9%	37.7%	37.7%	12.3%	33.1%	21.5%	26.9%	28.5%	12.3%	21.5%	23.1%	
Maximum Green (s)	13.8	40.8	40.8	7.8	34.8	19.8	26.8	29.3	7.8	19.8	21.8	
Yellow Time (s)	5.5	5.5	5.5	4.0	4.0	4.0	5.5	5.5	4.0	4.0	4.0	
All-Red Time (s)	2.7	2.7	2.7	4.2	4.2	4.2	2.7	2.2	4.2	4.2	4.2	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	8.2	8.2	8.2	8.2	8.2	8.2	8.2	7.7	8.2	8.2	8.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	Max	Max	None	Max	Max	Max	None	None	Max	Max	
Act Effct Green (s)	55.8	47.5	47.5	41.4	34.8	62.8	55.6	56.6	43.6	19.8	21.8	
Actuated g/C Ratio	0.43	0.37	0.37	0.32	0.27	0.48	0.43	0.44	0.34	0.15	0.17	
v/c Ratio	0.05	0.22	0.37	0.08	0.29	0.01	0.35	0.33	0.01	0.02	0.07	
Control Delay	21.3	30.2	5.1	22.5	38.4	0.0	25.4	24.9	0.0	47.2	37.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	21.3	30.2	5.1	22.5	38.4	0.0	25.4	24.9	0.0	47.2	37.2	
LOS	C	C	A	C	D	A	C	C	A	D	D	
Approach Delay		20.0			36.7			24.6			39.0	
Approach LOS		B			D			C			D	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Natural Cycle: 105
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.37
Intersection Signal Delay: 26.0 Intersection LOS: C
Intersection Capacity Utilization 48.9% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 8: McKethan Rd & Cortez Blvd/SR 50



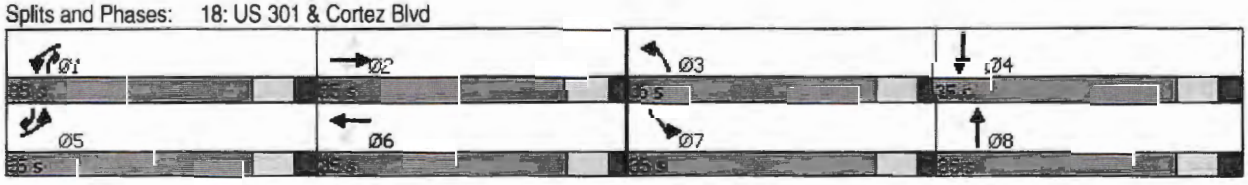
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	251	56	72	266	19	55	263	53	14	184	54
Future Volume (vph)	61	251	56	72	266	19	55	263	53	14	184	54
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	300		0	200		300	300		300
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.990				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3504	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.558			0.573			0.495			0.527		
Satd. Flow (perm)	1039	3539	1583	1067	3504	0	922	1863	1583	982	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			146		5				83			83
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		6987			1760			1365			907	
Travel Time (s)		105.9			26.7			20.7			13.7	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	69	282	63	81	299	21	62	296	60	16	207	61
Shared Lane Traffic (%)												
Lane Group Flow (vph)	69	282	63	81	320	0	62	296	60	16	207	61
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	5	2		1	6		3	8	1	7	4	5
Permitted Phases	2		2	6			8		8	4		4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	12.3	24.8	24.8	12.3	24.8		11.8	25.7	12.3	11.8	25.7	12.3
Total Split (s)	35.0	35.0	35.0	35.0	35.0		35.0	35.0	35.0	35.0	35.0	35.0
Total Split (%)	25.0%	25.0%	25.0%	25.0%	25.0%		25.0%	25.0%	25.0%	25.0%	25.0%	25.0%
Maximum Green (s)	27.7	28.2	28.2	27.7	28.2		28.2	27.3	27.7	28.2	27.3	27.7
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8		4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	2.5	2.0	2.0	2.5	2.0		2.0	2.9	2.5	2.0	2.9	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	6.8	6.8	7.3	6.8		6.8	7.7	7.3	6.8	7.7	7.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max		None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	
Flash Dont Walk (s)		11.0	11.0		11.0			11.0			11.0	
Pedestrian Calls (#/hr)		0	0		0			0			0	
Act Effct Green (s)	35.0	29.5	29.5	35.5	29.8		27.7	23.7	39.8	23.0	17.4	33.3
Actuated g/C Ratio	0.41	0.35	0.35	0.42	0.35		0.33	0.28	0.47	0.27	0.21	0.39
v/c Ratio	0.14	0.23	0.10	0.16	0.26		0.16	0.57	0.08	0.05	0.54	0.09
Control Delay	15.4	24.2	0.3	15.4	23.8		19.9	33.1	2.2	18.8	38.2	2.7
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.4	24.2	0.3	15.4	23.8		19.9	33.1	2.2	18.8	38.2	2.7
LOS	B	C	A	B	C		B	C	A	B	D	A
Approach Delay		19.1			22.1			26.7			29.4	
Approach LOS		B			C			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 84.7
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.57
Intersection Signal Delay: 23.9 Intersection LOS: C
Intersection Capacity Utilization 54.0% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 18: US 301 & Cortez Blvd



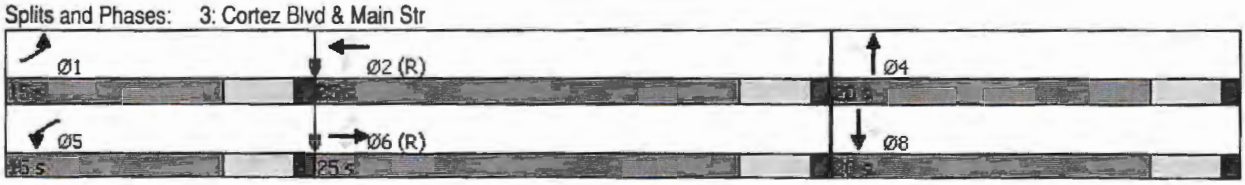
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	1177	15	3	1133	11	19	1	2	15	2	126
Future Volume (vph)	95	1177	15	3	1133	11	19	1	2	15	2	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		300	300		300	300		0	300		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.900			0.852	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1676	0	1770	1587	0
Flt Permitted	0.158			0.207			0.678			0.756		
Satd. Flow (perm)	294	3539	1583	386	3539	1583	1263	1676	0	1408	1587	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			109		2			133	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		862			2594			709			741	
Travel Time (s)		13.1			39.3			16.1			16.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	100	1239	16	3	1193	12	20	1	2	16	2	133
Shared Lane Traffic (%)												
Lane Group Flow (vph)	100	1239	16	3	1193	12	20	3	0	16	135	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6		6	2		2	4			8		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6	6	5	2	2	4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	20.0	20.0		20.0	20.0	
Total Split (s)	15.0	25.0	25.0	15.0	25.0	25.0	20.0	20.0		20.0	20.0	
Total Split (%)	25.0%	41.7%	41.7%	25.0%	41.7%	41.7%	33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	10.5	20.5	20.5	10.5	20.5	20.5	15.5	15.5		15.5	15.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	45.6	44.9	44.9	41.4	37.9	37.9	7.0	7.0		7.0	7.0	
Actuated g/C Ratio	0.76	0.75	0.75	0.69	0.63	0.63	0.12	0.12		0.12	0.12	
v/c Ratio	0.26	0.47	0.01	0.01	0.53	0.01	0.14	0.02		0.10	0.45	
Control Delay	4.4	5.8	0.0	3.0	10.0	0.0	24.8	18.0		23.8	10.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	4.4	5.8	0.0	3.0	10.0	0.0	24.8	18.0		23.8	10.4	
LOS	A	A	A	A	B	A	C	B		C	B	
Approach Delay		5.6			9.9			23.9			11.9	
Approach LOS		A			A			C			B	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 50 (83%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.53
Intersection Signal Delay: 8.0 Intersection LOS: A
Intersection Capacity Utilization 63.7% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 3: Cortez Blvd & Main Str



HCS7 Two-Way Stop-Control Report

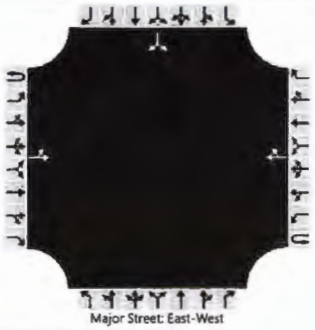
General Information

Analyst	
Agency/Co.	
Date Performed	9/23/2022
Analysis Year	2035
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Background Traffic and Existing/Budgeted Geometry

Site Information

Intersection	
Jurisdiction	
East/West Street	Powerline Rd
North/South Street	Kettering Rd
Peak Hour Factor	0.50
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		81	5				2	4						2		90
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		162													184	
Capacity, c (veh/h)		1600													1052	
v/c Ratio		0.10													0.17	
95% Queue Length, Q_{95} (veh)		0.3													0.6	
Control Delay (s/veh)		7.5													9.1	
Level of Service (LOS)		A													A	
Approach Delay (s/veh)	7.1												9.1			
Approach LOS													A			

HCS7 Two-Way Stop-Control Report

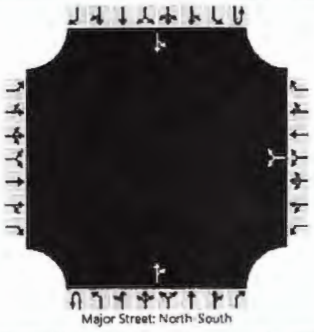
General Information

Analyst	
Agency/Co.	
Date Performed	9/23/2022
Analysis Year	2035
Time Analyzed	PM Peak
Intersection Orientation	North-South
Project Description	Background Traffic and Existing/Budgeted Geometry

Site Information

Intersection	
Jurisdiction	
East/West Street	Powerline Rd
North/South Street	Lockhart Rd
Peak Hour Factor	0.48
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						15		91			9	5		8	11	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type | Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.43		6.23						4.13		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							221							17		
Capacity, c (veh/h)							1027							1577		
v/c Ratio							0.21							0.01		
95% Queue Length, Q_{95} (veh)							0.8							0.0		
Control Delay (s/veh)							9.5							7.3		
Level of Service (LOS)							A							A		
Approach Delay (s/veh)						9.5								3.1		
Approach LOS						A										

BACKGROUND WITH REQUIRED IMPROVEMENTS

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	170	1291	0	0	0	1161	37	0	0	0	72	0
Future Volume (vph)	170	1291	0	0	0	1161	37	0	0	0	72	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500		300		600		485	0		0	0	
Storage Lanes	1		1		1		1	0		0	1	
Taper Length (ft)	25				25			25			25	
Lane Util. Factor	1.00	0.91	1.00	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00
Frt							0.850					
Flt Protected	0.950										0.950	
Satd. Flow (prot)	1770	5085	1863	1863	0	5085	1583	0	0	0	1770	0
Flt Permitted	0.950										0.950	
Satd. Flow (perm)	1770	5085	1863	1863	0	5085	1583	0	0	0	1770	0
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)							96					
Link Speed (mph)		45				45			30			30
Link Distance (ft)		635				2060			109			832
Travel Time (s)		9.6				31.2			2.5			18.9
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	179	1359	0	0	0	1222	39	0	0	0	76	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	179	1359	0	0	0	1222	39	0	0	0	76	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	Left	Left
Median Width(ft)		12				12			12			12
Link Offset(ft)		0				0			0			0
Crosswalk Width(ft)		16				16			16			16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	9	15		9	15		9	15	
Number of Detectors	1	2	1	1		2	1				1	
Detector Template	Left	Thru	Right	Left		Thru	Right				Left	
Leading Detector (ft)	20	100	20	20		100	20				20	
Trailing Detector (ft)	0	0	0	0		0	0				0	
Detector 1 Position(ft)	0	0	0	0		0	0				0	
Detector 1 Size(ft)	20	6	20	20		6	20				20	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex				Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0		0.0	0.0				0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0		0.0	0.0				0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0		0.0	0.0				0.0	
Detector 2 Position(ft)		94				94						
Detector 2 Size(ft)		6				6						
Detector 2 Type		Cl+Ex				Cl+Ex						
Detector 2 Channel												
Detector 2 Extend (s)		0.0				0.0						
Turn Type	Prot	NA	Perm	Perm		NA	Perm				Prot	
Protected Phases	7	4				8					6	
Permitted Phases			4	8			8					

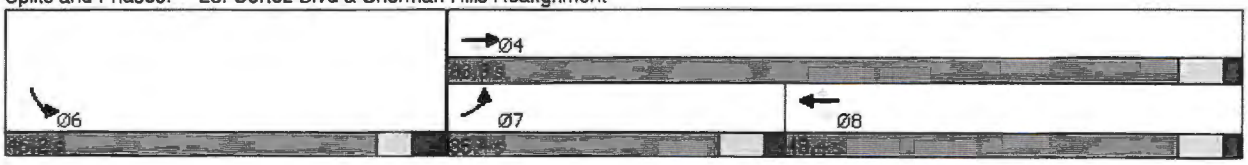
Lane Group	SBR
Lane Configurations	↱
Traffic Volume (vph)	2
Future Volume (vph)	2
Ideal Flow (vphpl)	1900
Storage Length (ft)	0
Storage Lanes	1
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Right Turn on Red	Yes
Satd. Flow (RTOR)	92
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.95
Adj. Flow (vph)	2
Shared Lane Traffic (%)	
Lane Group Flow (vph)	2
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Number of Detectors	1
Detector Template	Right
Leading Detector (ft)	20
Trailing Detector (ft)	0
Detector 1 Position(ft)	0
Detector 1 Size(ft)	20
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6

Lane Group	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Detector Phase	7	4	4	8		8	8				6	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0		5.0	5.0				5.0	
Minimum Split (s)	12.0	25.0	25.0	25.0		25.0	25.0				25.4	
Total Split (s)	35.4	83.8	83.8	48.4		48.4	48.4				46.2	
Total Split (%)	27.2%	64.5%	64.5%	37.2%		37.2%	37.2%				35.5%	
Maximum Green (s)	28.4	76.8	76.8	41.4		41.4	41.4				38.8	
Yellow Time (s)	4.9	4.9	4.9	4.9		4.9	4.9				3.7	
All-Red Time (s)	2.1	2.1	2.1	2.1		2.1	2.1				3.7	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0	0.0				0.0	
Total Lost Time (s)	7.0	7.0	7.0	7.0		7.0	7.0				7.4	
Lead/Lag	Lead			Lag		Lag	Lag					
Lead-Lag Optimize?	Yes			Yes		Yes	Yes					
Vehicle Extension (s)	3.0	3.0	3.0	3.0		3.0	3.0				3.0	
Recall Mode	None	None	None	None		None	None				Min	
Walk Time (s)		7.0	7.0	7.0		7.0	7.0				7.0	
Flash Dont Walk (s)		11.0	11.0	11.0		11.0	11.0				11.0	
Pedestrian Calls (#/hr)		0	0	0		0	0				0	
Act Effct Green (s)	13.6	47.8				26.9	26.9				9.1	
Actuated g/C Ratio	0.19	0.67				0.37	0.37				0.13	
v/c Ratio	0.53	0.40				0.64	0.06				0.34	
Control Delay	34.5	5.8				20.4	0.2				36.2	
Queue Delay	0.0	0.0				0.0	0.0				0.0	
Total Delay	34.5	5.8				20.4	0.2				36.2	
LOS	C	A				C	A				D	
Approach Delay		9.1				19.8						35.3
Approach LOS		A				B						D

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 71.8
Natural Cycle: 65
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 14.5 Intersection LOS: B
Intersection Capacity Utilization 50.8% ICU Level of Service A
Analysis Period (min) 15

Splits and Phases: 23: Cortez Blvd & Sherman Hills Realignment



Lane Group	SBR
Detector Phase	6
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	25.4
Total Split (s)	46.2
Total Split (%)	35.5%
Maximum Green (s)	38.8
Yellow Time (s)	3.7
All-Red Time (s)	3.7
Lost Time Adjust (s)	0.0
Total Lost Time (s)	7.4
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Min
Walk Time (s)	7.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	9.1
Actuated g/C Ratio	0.13
v/c Ratio	0.01
Control Delay	0.0
Queue Delay	0.0
Total Delay	0.0
LOS	A
Approach Delay	
Approach LOS	

Intersection Summary

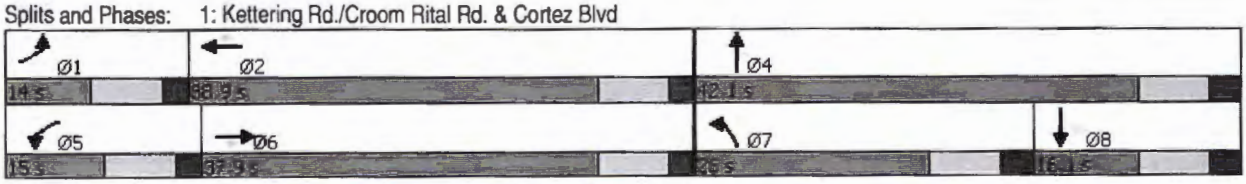
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	810	442	148	714	18	454	2	164	9	2	6
Future Volume (vph)	39	810	442	148	714	18	454	2	164	9	2	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	430		1000	540		440	0		470	0		0
Storage Lanes	1		1	2		1	2		1	0		0
Taper Length (ft)	100			100			25			25		
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.952	
Flt Protected	0.950			0.950			0.950				0.974	
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1863	1583	0	1727	0
Flt Permitted	0.950			0.950			0.950					
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1863	1583	0	1773	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			460			238			171		6	
Link Speed (mph)		45			45			55			35	
Link Distance (ft)		2060			10277			1000			500	
Travel Time (s)		31.2			155.7			12.4			9.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	41	844	460	154	744	19	473	2	171	9	2	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	844	460	154	744	19	473	2	171	0	17	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	
Protected Phases	1	6		5	2		7	4			8	
Permitted Phases			6			2			4	8		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6	6	5	2	2	7	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	30.0	30.0	5.0	30.0	30.0	5.0	8.0	8.0	8.0	8.0	
Minimum Split (s)	12.5	37.5	37.5	12.5	37.5	37.5	13.1	16.1	16.1	16.1	16.1	
Total Split (s)	14.0	37.9	37.9	15.0	38.9	38.9	26.0	42.1	42.1	16.1	16.1	
Total Split (%)	14.7%	39.9%	39.9%	15.8%	40.9%	40.9%	27.4%	44.3%	44.3%	16.9%	16.9%	
Maximum Green (s)	6.5	30.4	30.4	7.5	31.4	31.4	17.9	34.0	34.0	8.0	8.0	
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.6	2.6	2.6	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	
Total Lost Time (s)	7.5	7.5	7.5	7.5	7.5	7.5	8.1	8.1	8.1		8.1	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0	7.0						
Flash Dont Walk (s)		11.0	11.0		11.0	11.0						
Pedestrian Calls (#/hr)		0	0		0	0						
Act Effct Green (s)	6.3	30.5	30.5	7.4	37.7	37.7	15.3	20.9	20.9		8.1	
Actuated g/C Ratio	0.08	0.37	0.37	0.09	0.46	0.46	0.19	0.25	0.25		0.10	
v/c Ratio	0.30	0.45	0.53	0.50	0.32	0.02	0.74	0.00	0.32		0.09	
Control Delay	45.7	22.0	4.9	44.0	18.1	0.1	40.5	20.0	5.2		32.3	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	
Total Delay	45.7	22.0	4.9	44.0	18.1	0.1	40.5	20.0	5.2		32.3	
LOS	D	C	A	D	B	A	D	B	A		C	
Approach Delay		16.9			22.1			31.1			32.3	
Approach LOS		B			C			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 95
Actuated Cycle Length: 82.3
Natural Cycle: 90
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.74
Intersection Signal Delay: 21.7 Intersection LOS: C
Intersection Capacity Utilization 68.1% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 1: Kettering Rd./Croom Rital Rd. & Cortez Blvd



BACKGROUND PLUS PROJECT WITH REQUIRED IMPROVEMENTS FOR BACKGROUND

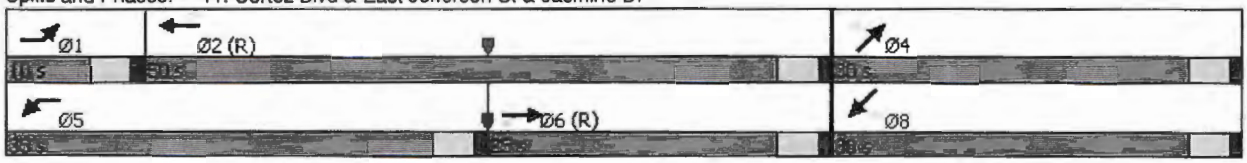
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Traffic Volume (vph)	13	504	13	826	490	30	7	176	1009	41	131	4
Future Volume (vph)	13	504	13	826	490	30	7	176	1009	41	131	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		300	400		400	400		0	300		0
Storage Lanes	1		1	2		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	0.97	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.996	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	3433	3539	1583	1770	1863	1583	1770	1855	0
Flt Permitted	0.950			0.950			0.554			0.433		
Satd. Flow (perm)	1770	3539	1583	3433	3539	1583	1032	1863	1583	807	1855	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			61			730		2	
Link Speed (mph)		45			45			45			30	
Link Distance (ft)		2005			1665			2021			1421	
Travel Time (s)		30.4			25.2			30.6			32.3	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	14	525	14	860	510	31	7	183	1051	43	136	4
Shared Lane Traffic (%)												
Lane Group Flow (vph)	14	525	14	860	510	31	7	183	1051	43	140	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	Free	Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases			6			2	4		Free	8		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Detector Phase	1	6	6	5	2	2	4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	22.5	22.5		22.5	22.5	
Total Split (s)	10.0	25.0	25.0	35.0	50.0	50.0	30.0	30.0		30.0	30.0	
Total Split (%)	11.1%	27.8%	27.8%	38.9%	55.6%	55.6%	33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	6.0	21.0	21.0	31.0	46.0	46.0	26.0	26.0		26.0	26.0	
Yellow Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Walk Time (s)		7.0	7.0		7.0	7.0	7.0	7.0		7.0	7.0	
Flash Dont Walk (s)		11.0	11.0		11.0	11.0	11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)		0	0		0	0	0	0		0	0	
Act Effct Green (s)	6.3	35.8	35.8	28.1	65.5	65.5	14.1	14.1	90.0	14.1	14.1	
Actuated g/C Ratio	0.07	0.40	0.40	0.31	0.73	0.73	0.16	0.16	1.00	0.16	0.16	
v/c Ratio	0.11	0.37	0.02	0.80	0.20	0.03	0.04	0.63	0.66	0.34	0.48	
Control Delay	40.8	22.1	0.1	34.5	5.2	0.8	30.1	44.5	2.2	39.8	38.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	40.8	22.1	0.1	34.5	5.2	0.8	30.1	44.5	2.2	39.8	38.6	
LOS	D	C	A	C	A	A	C	D	A	D	D	
Approach Delay		22.0			23.1			8.6			38.9	
Approach LOS		C			C			A			D	

Intersection Summary

Area Type: Other
Cycle Length: 90
Actuated Cycle Length: 90
Offset: 55 (61%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 65
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.80
Intersection Signal Delay: 18.4 Intersection LOS: B
Intersection Capacity Utilization 64.3% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 11: Cortez Blvd & East Jefferson St & Jasmine Dr



HCS7 Two-Way Stop-Control Report

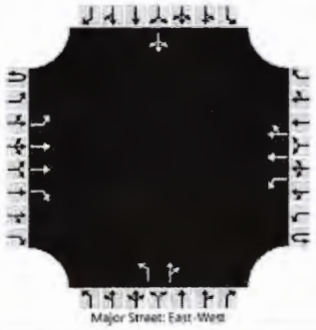
General Information

Analyst	
Agency/Co.	
Date Performed	9/23/2022
Analysis Year	2035
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Bck +Prj and req bck Impr

Site Information

Intersection	
Jurisdiction	
East/West Street	Cortez Blvd
North/South Street	Lockhart Rd
Peak Hour Factor	0.96
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	2	1	0	1	2	0		1	1	0		0	1	0
Configuration		L	T	R		L	T	TR		L		TR			LTR	
Volume (veh/h)	1	0	1117	22	4	102	1217	0		77	0	130		0	0	0
Percent Heavy Vehicles (%)	3	3			3	3				3	3	3		3	3	3
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No														
Median Type | Storage		Left + Thru								1						

Critical and Follow-up Headways

Base Critical Headway (sec)	6.4	4.1			6.4	4.1				7.5	6.5	6.9		7.5	6.5	6.9
Critical Headway (sec)	6.46	4.16			6.46	4.16				7.56	6.56	6.96		7.56	6.56	6.96
Base Follow-Up Headway (sec)	2.5	2.2			2.5	2.2				3.5	4.0	3.3		3.5	4.0	3.3
Follow-Up Headway (sec)	2.53	2.23			2.53	2.23				3.53	4.03	3.33		3.53	4.03	3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		1				110				80		135			0	
Capacity, c (veh/h)		221				534				115		454				
v/c Ratio		0.00				0.21				0.70		0.30				
95% Queue Length, Q_{95} (veh)		0.0				0.8				3.7		1.2				
Control Delay (s/veh)		21.4				13.5				88.0		16.3				
Level of Service (LOS)		C				B				F		C				
Approach Delay (s/veh)		0.0				1.1				43.0						
Approach LOS										E						

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	182	1385	111	450	1563	304	147	0	959	483	0	362
Future Volume (vph)	182	1385	111	450	1563	304	147	0	959	483	0	362
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	435		0	620		0	0		545	0		650
Storage Lanes	2		1	1		1	3		2	3		2
Taper Length (ft)	50			100			25			25		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	0.94	1.00	0.88	0.94	1.00	0.88
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5085	1583	3433	5085	1583	4990	0	2787	4990	0	2787
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	5085	1583	3433	5085	1583	4990	0	2787	4990	0	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			295			295			305			354
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		1000			840			750			850	
Travel Time (s)		15.2			12.7			17.0			19.3	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	186	1413	113	459	1595	310	150	0	979	493	0	369
Shared Lane Traffic (%)												
Lane Group Flow (vph)	186	1413	113	459	1595	310	150	0	979	493	0	369
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			36			36	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1		1	1		1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left		Right	Left		Right
Leading Detector (ft)	20	100	20	20	100	20	20		20	20		20
Trailing Detector (ft)	0	0	0	0	0	0	0		0	0		0
Detector 1 Position(ft)	0	0	0	0	0	0	0		0	0		0
Detector 1 Size(ft)	20	6	20	20	6	20	20		20	20		20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Detector 2 Position(ft)		94			94							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot		Perm	Prot		Perm
Protected Phases	5	2		1	6		3			7		
Permitted Phases			2			6			8			4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	6	3		8	7		4
Switch Phase												
Minimum Initial (s)	7.0	15.0	15.0	7.0	15.0	15.0	10.0		5.0	10.0		10.0
Minimum Split (s)	17.9	28.9	28.9	17.9	28.9	28.9	20.9		25.0	20.9		20.9
Total Split (s)	17.9	38.0	38.0	21.0	41.1	41.1	20.9		30.0	21.0		30.1
Total Split (%)	16.3%	34.5%	34.5%	19.1%	37.4%	37.4%	19.0%		27.3%	19.1%		27.4%
Maximum Green (s)	7.0	27.1	27.1	10.1	30.2	30.2	10.0		19.1	10.1		19.2
Yellow Time (s)	4.9	4.9	4.9	4.9	4.9	4.9	4.9		4.9	4.9		4.9
All-Red Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	10.9	10.9	10.9	10.9	10.9	10.9	10.9		10.9	10.9		10.9
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead		Lag	Lead		Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes		Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0
Recall Mode	None	Min	Min	None	Min	Min	None		None	None		None
Act Effct Green (s)	7.0	27.1	27.1	10.1	30.2	30.2	10.0		19.1	10.1		19.2
Actuated g/C Ratio	0.06	0.25	0.25	0.09	0.27	0.27	0.09		0.17	0.09		0.17
v/c Ratio	0.85	1.13	0.18	1.46	1.14	0.48	0.33		1.33	1.08		0.47
Control Delay	84.0	107.2	0.7	259.0	110.4	7.2	49.0		184.8	111.5		7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Delay	84.0	107.2	0.7	259.0	110.4	7.2	49.0		184.8	111.5		7.3
LOS	F	F	A	F	F	A	D		F	F		A
Approach Delay		97.6			125.7			166.8			66.9	
Approach LOS		F			F			F			E	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Natural Cycle: 145
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 1.46
Intersection Signal Delay: 117.1 Intersection LOS: F
Intersection Capacity Utilization 91.0% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 2: I-75 NB/I-75 SB & Cortez Blvd

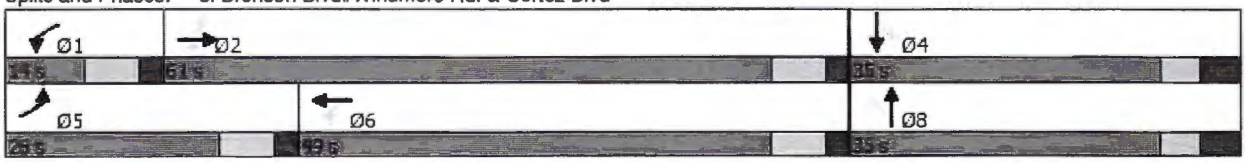
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	219	2323	312	131	1893	19	300	94	131	76	43	46
Future Volume (vph)	219	2323	312	131	1893	19	300	94	131	76	43	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	485		0	350		0	105		0	115		0
Storage Lanes	1		1	1		0	1		0	1		0
Taper Length (ft)	100			50			50			50		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.81	0.81	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.999			0.913			0.923	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	1583	1770	7537	0	1770	1701	0	1770	1719	0
Flt Permitted	0.075			0.086			0.697			0.498		
Satd. Flow (perm)	140	5085	1583	160	7537	0	1298	1701	0	928	1719	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			259		2			61			47	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		840			700			700			800	
Travel Time (s)		12.7			10.6			15.9			18.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	231	2445	328	138	1993	20	316	99	138	80	45	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	231	2445	328	138	2013	0	316	237	0	80	93	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		10			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100		20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0		0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		Perm	NA		Perm	NA	
Protected Phases	5	2		1	6			8			4	
Permitted Phases	2		2	6			8			4		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		8	8		4	4	
Switch Phase												
Minimum Initial (s)	7.0	15.0	15.0	7.0	15.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	14.0	25.0	25.0	14.0	25.0		17.4	17.4		17.4	17.4	
Total Split (s)	26.0	61.0	61.0	14.0	49.0		35.0	35.0		35.0	35.0	
Total Split (%)	23.6%	55.5%	55.5%	12.7%	44.5%		31.8%	31.8%		31.8%	31.8%	
Maximum Green (s)	19.0	54.0	54.0	7.0	42.0		27.6	27.6		27.6	27.6	
Yellow Time (s)	4.9	4.9	4.9	4.9	4.9		3.7	3.7		3.7	3.7	
All-Red Time (s)	2.1	2.1	2.1	2.1	2.1		3.7	3.7		3.7	3.7	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	7.0	7.0	7.0	7.0	7.0		7.4	7.4		7.4	7.4	
Lead/Lag	Lead	Lag	Lag	Lead	Lag							
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes							
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	None	Min	Min	None	Min		None	None		None	None	
Walk Time (s)		7.0	7.0		7.0							
Flash Dont Walk (s)		11.0	11.0		11.0							
Pedestrian Calls (#/hr)		0	0		0							
Act Effct Green (s)	66.5	54.0	54.0	53.6	46.6		27.6	27.6		27.6	27.6	
Actuated g/C Ratio	0.60	0.49	0.49	0.49	0.42		0.25	0.25		0.25	0.25	
v/c Ratio	0.78	0.98	0.36	0.77	0.63		0.97	0.50		0.34	0.20	
Control Delay	42.5	41.7	5.1	50.3	26.5		85.4	30.1		38.9	18.8	
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	42.5	41.7	5.1	50.3	26.5		85.4	30.1		38.9	18.8	
LOS	D	D	A	D	C		F	C		D	B	
Approach Delay		37.8			28.0			61.7			28.1	
Approach LOS		D			C			E			C	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 110
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.98
Intersection Signal Delay: 36.2 Intersection LOS: D
Intersection Capacity Utilization 101.1% ICU Level of Service G
Analysis Period (min) 15

Splits and Phases: 3: Bronson Blvd./Windmere Rd. & Cortez Blvd



HCS7 Two-Way Stop-Control Report

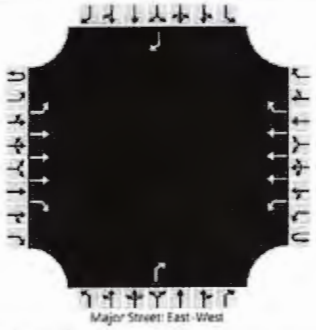
General Information

Analyst	
Agency/Co.	
Date Performed	9/23/2022
Analysis Year	2035
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Bck+Prj and Req Bck Impr

Site Information

Intersection	
Jurisdiction	
East/West Street	Cortez Blvd
North/South Street	Parkland Ave
Peak Hour Factor	0.94
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	1	3	1	0	1	3	1		0	0	1		0	0	1
Configuration		L	T	R		L	T	R				R				R
Volume (veh/h)	8	15	2369	127	44	140	1938	48				160				25
Percent Heavy Vehicles (%)	3	3			3	3						3				3
Proportion Time Blocked																
Percent Grade (%)										0				0		
Right Turn Channelized		No				No				No				No		
Median Type | Storage		Left + Thru								1						

Critical and Follow-up Headways

Base Critical Headway (sec)	5.6	5.3			5.6	5.3						7.1				7.1
Critical Headway (sec)	5.66	5.36			5.66	5.36						7.16				7.16
Base Follow-Up Headway (sec)	2.3	3.1			2.3	3.1						3.9				3.9
Follow-Up Headway (sec)	2.33	3.13			2.33	3.13						3.93				3.93

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		24				196						170		-		27
Capacity, c (veh/h)		128										138				196
v/c Ratio		0.19										1.24				0.14
95% Queue Length, Q_{95} (veh)		0.7										10.3				0.5
Control Delay (s/veh)		39.6										216.6				26.2
Level of Service (LOS)		E										F				D
Approach Delay (s/veh)		0.4								216.6				26.2		
Approach LOS										F				D		

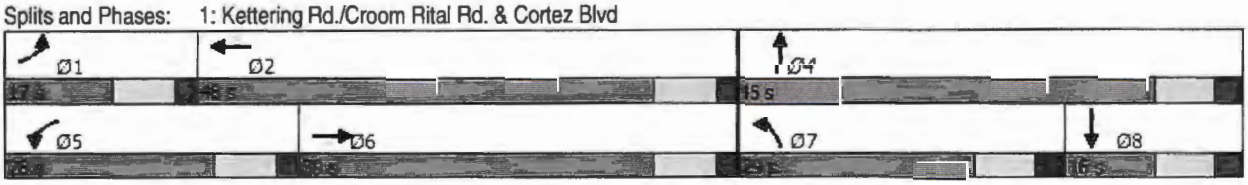
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	1135	553	437	1036	18	517	2	260	9	34	6
Future Volume (vph)	61	1135	553	437	1036	18	517	2	260	9	34	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	430		1000	540		440	0		470	0		0
Storage Lanes	1		1	2		1	2		1	0		0
Taper Length (ft)	100			100			25			25		
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.984	
Flt Protected	0.950			0.950			0.950				0.991	
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1863	1583	0	1816	0
Flt Permitted	0.950			0.950			0.950				0.936	
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1863	1583	0	1716	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			576			205			271		5	
Link Speed (mph)		45			45			55			35	
Link Distance (ft)		2060			10277			1000			500	
Travel Time (s)		31.2			155.7			12.4			9.7	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	64	1182	576	455	1079	19	539	2	271	9	35	6
Shared Lane Traffic (%)												
Lane Group Flow (vph)	64	1182	576	455	1079	19	539	2	271	0	50	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Perm	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	
Protected Phases	1	6		5	2		7	4			8	
Permitted Phases			6			2			4	8		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6	6	5	2	2	7	4	4	8	8	
Switch Phase												
Minimum Initial (s)	5.0	30.0	30.0	5.0	30.0	30.0	5.0	8.0	8.0	7.9	7.9	
Minimum Split (s)	12.5	37.5	37.5	12.5	37.5	37.5	13.1	16.1	16.1	16.0	16.0	
Total Split (s)	17.0	39.0	39.0	26.0	48.0	48.0	29.0	45.0	45.0	16.0	16.0	
Total Split (%)	15.5%	35.5%	35.5%	23.6%	43.6%	43.6%	26.4%	40.9%	40.9%	14.5%	14.5%	
Maximum Green (s)	9.5	31.5	31.5	18.5	40.5	40.5	20.9	36.9	36.9	7.9	7.9	
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	5.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.6	2.6	2.6	2.6	2.6	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	
Total Lost Time (s)	7.5	7.5	7.5	7.5	7.5	7.5	8.1	8.1	8.1		8.1	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	
Walk Time (s)		7.0	7.0		7.0	7.0						
Flash Dont Walk (s)		11.0	11.0		11.0	11.0						
Pedestrian Calls (#/hr)		0	0		0	0						
Act Effct Green (s)	8.3	31.6	31.6	17.2	43.9	43.9	19.5	31.6	31.6		8.0	
Actuated g/C Ratio	0.08	0.30	0.30	0.17	0.42	0.42	0.19	0.30	0.30		0.08	
v/c Ratio	0.45	0.76	0.65	0.80	0.50	0.02	0.84	0.00	0.40		0.36	
Control Delay	58.8	38.0	6.6	54.5	25.7	0.1	54.4	24.5	5.2		52.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	
Total Delay	58.8	38.0	6.6	54.5	25.7	0.1	54.4	24.5	5.2		52.9	
LOS	E	D	A	D	C	A	D	C	A		D	
Approach Delay		28.8			33.8			37.9			52.9	
Approach LOS		C			C			D			D	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 103.8
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 32.7 Intersection LOS: C
Intersection Capacity Utilization 78.1% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 1: Kettering Rd./Croom Rital Rd. & Cortez Blvd



HCS7 Two-Way Stop-Control Report

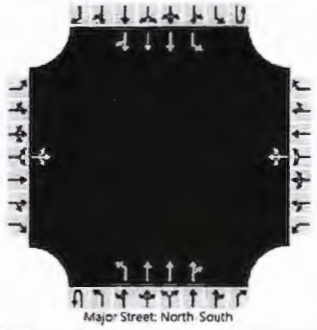
General Information

Analyst	
Agency/Co.	
Date Performed	9/23/2022
Analysis Year	2035
Time Analyzed	PM Peak
Intersection Orientation	North-South
Project Description	Bck +Proj and req Bck Impr

Site Information

Intersection	
Jurisdiction	
East/West Street	Ridge Manor Blvd
North/South Street	Cortez Blvd
Peak Hour Factor	0.97
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	1	3	0	0	1	3	0
Configuration			LTR				LTR			L	T	TR		L	T	TR
Volume (veh/h)		4	2	5		4	0	85	0	2	1297	7	0	155	1100	0
Percent Heavy Vehicles (%)		3	3	3		3	3	3	3	3			3	3		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized																
Median Type | Storage		Left + Thru								1						

Critical and Follow-up Headways

Base Critical Headway (sec)		6.4	6.5	7.1		6.4	6.5	7.1		5.3				5.3		
Critical Headway (sec)		6.46	6.56	7.16		6.46	6.56	7.16		5.36				5.36		
Base Follow-Up Headway (sec)		3.8	4.0	3.9		3.8	4.0	3.9		3.1				3.1		
Follow-Up Headway (sec)		3.83	4.03	3.93		3.83	4.03	3.93		3.13				3.13		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			11				92			2				160		
Capacity, c (veh/h)			56				285			334				264		
v/c Ratio			0.20				0.32			0.01				0.61		
95% Queue Length, Q_{95} (veh)			0.7				1.3			0.0				3.6		
Control Delay (s/veh)			84.8				23.5			15.8				37.7		
Level of Service (LOS)			F				C			C				E		
Approach Delay (s/veh)		84.8				23.5				0.0				4.7		
Approach LOS		F				C										

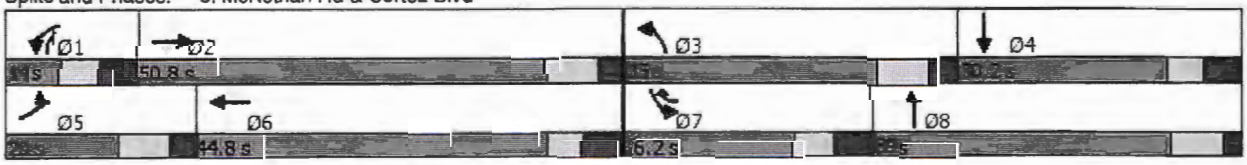
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	636	408	27	732	7	534	46	9	5	15	6
Future Volume (vph)	22	636	408	27	732	7	534	46	9	5	15	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500		800	500		400	400		200	400		0
Storage Lanes	1		1	1		1	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.95	0.95	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.959	
Flt Protected	0.950			0.950			0.950	0.960		0.950		
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	1681	1699	1583	1770	1786	0
Flt Permitted	0.225			0.388			0.545	0.545		0.950		
Satd. Flow (perm)	419	5085	1583	723	5085	1583	964	964	1583	1770	1786	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			425			181			112		6	
Link Speed (mph)		45			30			30			30	
Link Distance (ft)		10277			1013			1273			1001	
Travel Time (s)		155.7			23.0			28.9			22.8	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	23	663	425	28	763	7	556	48	9	5	16	6
Shared Lane Traffic (%)							46%					
Lane Group Flow (vph)	23	663	425	28	763	7	300	304	9	5	22	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	pm+ov	pm+pt	NA	pm+ov	Prot	NA	
Protected Phases	5	2		1	6	7	3	8	1	7	4	
Permitted Phases	2		2	6		6	8		8			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	7	3	8	1	7	4	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	20.0	27.7	27.7	13.2	26.2	26.2	27.7	25.7	13.2	26.2	26.2	
Total Split (s)	20.0	50.8	50.8	14.0	44.8	26.2	35.0	39.0	14.0	26.2	30.2	
Total Split (%)	15.4%	39.1%	39.1%	10.8%	34.5%	20.2%	26.9%	30.0%	10.8%	20.2%	23.2%	
Maximum Green (s)	11.8	42.6	42.6	5.8	36.6	18.0	26.8	31.3	5.8	18.0	22.0	
Yellow Time (s)	5.5	5.5	5.5	4.0	4.0	4.0	5.5	5.5	4.0	4.0	4.0	
All-Red Time (s)	2.7	2.7	2.7	4.2	4.2	4.2	2.7	2.2	4.2	4.2	4.2	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	8.2	8.2	8.2	8.2	8.2	8.2	8.2	7.7	8.2	8.2	8.2	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	Max	Max	Max	None	Max	Max	Max	None	None	Max	Max	
Act Effct Green (s)	55.3	48.2	48.2	42.3	36.6	62.8	57.0	57.5	44.7	18.0	22.0	
Actuated g/C Ratio	0.43	0.37	0.37	0.33	0.28	0.48	0.44	0.44	0.34	0.14	0.17	
v/c Ratio	0.08	0.35	0.50	0.10	0.53	0.01	0.53	0.52	0.01	0.02	0.07	
Control Delay	21.7	31.3	5.1	22.8	41.1	0.0	28.9	28.4	0.0	48.8	37.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	21.7	31.3	5.1	22.8	41.1	0.0	28.9	28.4	0.0	48.8	37.0	
LOS	C	C	A	C	D	A	C	C	A	D	D	
Approach Delay		21.1			40.1			28.2			39.2	
Approach LOS		C			D			C			D	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Natural Cycle: 105
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.53
Intersection Signal Delay: 28.9 Intersection LOS: C
Intersection Capacity Utilization 58.4% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 8: McKethan Rd & Cortez Blvd



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	87	296	72	72	333	19	78	263	53	14	184	92
Future Volume (vph)	87	296	72	72	333	19	78	263	53	14	184	92
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	200		200	300		0	200		300	300		300
Storage Lanes	1		1	1		0	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850		0.992				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3511	0	1770	1863	1583	1770	1863	1583
Flt Permitted	0.489			0.551			0.429			0.486		
Satd. Flow (perm)	911	3539	1583	1026	3511	0	799	1863	1583	905	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			146		4				83			103
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		6987			1760			1365			907	
Travel Time (s)		105.9			26.7			20.7			13.7	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	98	333	81	81	374	21	88	296	60	16	207	103
Shared Lane Traffic (%)												
Lane Group Flow (vph)	98	333	81	81	395	0	88	296	60	16	207	103
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2		1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt	NA	pm+ov
Protected Phases	5	2		1	6		3	8	1	7	4	5
Permitted Phases	2		2	6			8		8	4		4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6		3	8	1	7	4	5
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	12.3	24.8	24.8	12.3	24.8		11.8	25.7	12.3	11.8	25.7	12.3
Total Split (s)	23.0	48.0	48.0	19.0	44.0		18.0	58.0	19.0	15.0	55.0	23.0
Total Split (%)	16.4%	34.3%	34.3%	13.6%	31.4%		12.9%	41.4%	13.6%	10.7%	39.3%	16.4%
Maximum Green (s)	15.7	41.2	41.2	11.7	37.2		11.2	50.3	11.7	8.2	47.3	15.7
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8		4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	2.5	2.0	2.0	2.5	2.0		2.0	2.9	2.5	2.0	2.9	2.5
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.3	6.8	6.8	7.3	6.8		6.8	7.7	7.3	6.8	7.7	7.3
Lead/Lag	Lead	Lag	Lag	Lead	Lag		Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	Max	Max	None	Max		None	None	None	None	None	None
Walk Time (s)		7.0	7.0		7.0			7.0			7.0	
Flash Dont Walk (s)		11.0	11.0		11.0			11.0			11.0	
Pedestrian Calls (#/hr)		0	0		0			0			0	
Act Effct Green (s)	49.9	41.8	41.8	48.7	41.3		30.8	26.0	41.8	24.2	18.4	34.8
Actuated g/C Ratio	0.48	0.41	0.41	0.47	0.40		0.30	0.25	0.41	0.24	0.18	0.34
v/c Ratio	0.19	0.23	0.11	0.15	0.28		0.27	0.63	0.09	0.06	0.62	0.17
Control Delay	14.8	22.9	0.3	14.7	23.6		26.7	41.7	2.5	24.1	48.8	5.4
Queue Delay	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.8	22.9	0.3	14.7	23.6		26.7	41.7	2.5	24.1	48.8	5.4
LOS	B	C	A	B	C		C	D	A	C	D	A
Approach Delay		17.8			22.1			33.4			33.9	
Approach LOS		B			C			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 140
Actuated Cycle Length: 102.9
Natural Cycle: 75
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.63
Intersection Signal Delay: 25.9 Intersection LOS: C
Intersection Capacity Utilization 56.5% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 18: US 301 & Cortez Blvd

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	95	1271	15	3	1196	11	19	1	2	15	2	126
Future Volume (vph)	95	1271	15	3	1196	11	19	1	2	15	2	126
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	300		300	300		300	300		0	300		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.900			0.852	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1676	0	1770	1587	0
Flt Permitted	0.141			0.179			0.678			0.756		
Satd. Flow (perm)	263	3539	1583	333	3539	1583	1263	1676	0	1408	1587	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			109			109		2			133	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		862			2594			709			741	
Travel Time (s)		13.1			39.3			16.1			16.8	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	100	1338	16	3	1259	12	20	1	2	16	2	133
Shared Lane Traffic (%)												
Lane Group Flow (vph)	100	1338	16	3	1259	12	20	3	0	16	135	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2		1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru		Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100		20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases	1	6		5	2			4			8	
Permitted Phases	6		6	2		2	4			8		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	1	6	6	5	2	2	4	4		8	8	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0		5.0	5.0	
Minimum Split (s)	9.5	22.5	22.5	9.5	22.5	22.5	20.0	20.0		20.0	20.0	
Total Split (s)	15.0	25.0	25.0	15.0	25.0	25.0	20.0	20.0		20.0	20.0	
Total Split (%)	25.0%	41.7%	41.7%	25.0%	41.7%	41.7%	33.3%	33.3%		33.3%	33.3%	
Maximum Green (s)	10.5	20.5	20.5	10.5	20.5	20.5	15.5	15.5		15.5	15.5	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5		4.5	4.5	
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag						
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None		None	None	
Act Effct Green (s)	45.6	44.9	44.9	41.4	37.9	37.9	7.0	7.0		7.0	7.0	
Actuated g/C Ratio	0.76	0.75	0.75	0.69	0.63	0.63	0.12	0.12		0.12	0.12	
v/c Ratio	0.27	0.51	0.01	0.01	0.56	0.01	0.14	0.02		0.10	0.45	
Control Delay	4.6	6.2	0.0	3.0	10.4	0.0	24.8	18.0		23.8	10.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	4.6	6.2	0.0	3.0	10.4	0.0	24.8	18.0		23.8	10.4	
LOS	A	A	A	A	B	A	C	B		C	B	
Approach Delay		6.0			10.3			23.9			11.9	
Approach LOS		A			B			C			B	

Intersection Summary

Area Type: Other
Cycle Length: 60
Actuated Cycle Length: 60
Offset: 50 (83%), Referenced to phase 2:WBTL and 6:EBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.56
Intersection Signal Delay: 8.3 Intersection LOS: A
Intersection Capacity Utilization 66.3% ICU Level of Service C
Analysis Period (min) 15

Splits and Phases: 3: Cortez Blvd & Main Str

HCS7 Two-Way Stop-Control Report

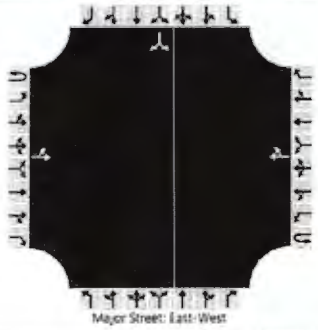
General Information

Analyst	
Agency/Co.	
Date Performed	9/23/2022
Analysis Year	2035
Time Analyzed	PM Peak
Intersection Orientation	East-West
Project Description	Bck +Prj and Req Bck Impr

Site Information

Intersection	
Jurisdiction	
East/West Street	Powerline Rd
North/South Street	Kettering Rd
Peak Hour Factor	0.50
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	1	0
Configuration		LT						TR							LR	
Volume (veh/h)		154	5				2	12						7		140
Percent Heavy Vehicles (%)		3												3		3
Proportion Time Blocked																
Percent Grade (%)														0		
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		4.1												7.1		6.2
Critical Headway (sec)		4.13												6.43		6.23
Base Follow-Up Headway (sec)		2.2												3.5		3.3
Follow-Up Headway (sec)		2.23												3.53		3.33

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)		308													294	
Capacity, c (veh/h)		1579													967	
v/c Ratio		0.20													0.30	
95% Queue Length, Q_{95} (veh)		0.7													1.3	
Control Delay (s/veh)		7.8													10.3	
Level of Service (LOS)		A													B	
Approach Delay (s/veh)		7.6												10.3		
Approach LOS														B		

HCS7 Two-Way Stop-Control Report

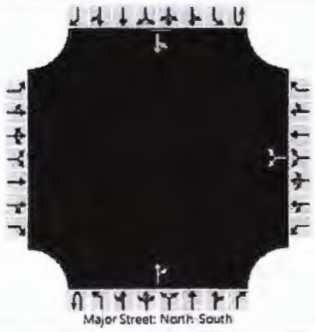
General Information

Analyst	
Agency/Co.	
Date Performed	9/23/2022
Analysis Year	2035
Time Analyzed	PM Peak
Intersection Orientation	North-South
Project Description	Bck Plus Proj and Req Bck Impr

Site Information

Intersection	
Jurisdiction	
East/West Street	Powerline Rd
North/South Street	Lockhart Rd
Peak Hour Factor	0.48
Analysis Time Period (hrs)	0.25

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						33		91			18	31		8	17	
Percent Heavy Vehicles (%)						3		3						3		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type | Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.43		6.23						4.13		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.53		3.33						2.23		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							258							17		
Capacity, c (veh/h)							946							1484		
v/c Ratio							0.27							0.01		
95% Queue Length, Q_{95} (veh)							1.1							0.0		
Control Delay (s/veh)							10.2							7.5		
Level of Service (LOS)							B							A		
Approach Delay (s/veh)						10.2							2.4			
Approach LOS						B										

BACKGROUND PLUS PROJECT WITH REQUIRED IMPROVEMENTS FOR PROJECT

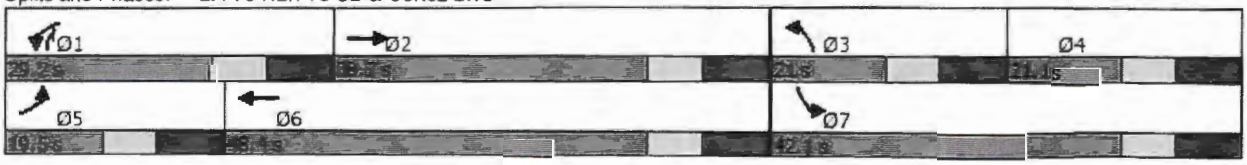
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	182	1385	111	450	1563	304	147	0	959	483	0	362
Future Volume (vph)	182	1385	111	450	1563	304	147	0	959	483	0	362
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	435		0	620		0	0		545	0		650
Storage Lanes	2		0	1		0	3		3	3		2
Taper Length (ft)	50			100			25			25		
Lane Util. Factor	0.97	0.86	0.86	0.97	0.86	0.86	0.94	1.00	0.76	0.94	1.00	0.88
Frt		0.989			0.976				0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	6337	0	3433	6254	0	4990	0	3610	4990	0	2787
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	3433	6337	0	3433	6254	0	4990	0	3610	4990	0	2787
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		15			48				186			369
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		1000			840			750			850	
Travel Time (s)		15.2			12.7			17.0			19.3	
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	186	1413	113	459	1595	310	150	0	979	493	0	369
Shared Lane Traffic (%)												
Lane Group Flow (vph)	186	1526	0	459	1905	0	150	0	979	493	0	369
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			36			36	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1		1	1		1
Detector Template	Left	Thru		Left	Thru		Left		Right	Left		Right
Leading Detector (ft)	20	100		20	100		20		20	20		20
Trailing Detector (ft)	0	0		0	0		0		0	0		0
Detector 1 Position(ft)	0	0		0	0		0		0	0		0
Detector 1 Size(ft)	20	6		20	6		20		20	20		20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0		0.0
Detector 2 Position(ft)		94			94							
Detector 2 Size(ft)		6			6							
Detector 2 Type		Cl+Ex			Cl+Ex							
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0							
Turn Type	Prot	NA		Prot	NA		Prot		pm+ov	Prot		Perm
Protected Phases	5	2		1	6		3		1	7		
Permitted Phases									3			4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2		1	6		3		1	7		4
Switch Phase												
Minimum Initial (s)	7.0	15.0		7.0	15.0		10.0		7.0	10.0		10.0
Minimum Split (s)	17.9	28.9		17.9	28.9		20.9		17.9	20.9		20.9
Total Split (s)	19.5	38.7		29.2	48.4		21.0		29.2	42.1		21.1
Total Split (%)	17.7%	35.2%		26.5%	44.0%		19.1%		26.5%	38.3%		19.2%
Maximum Green (s)	8.6	27.8		18.3	37.5		10.1		18.3	31.2		10.2
Yellow Time (s)	4.9	4.9		4.9	4.9		4.9		4.9	4.9		4.9
All-Red Time (s)	6.0	6.0		6.0	6.0		6.0		6.0	6.0		6.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0		0.0	0.0		0.0
Total Lost Time (s)	10.9	10.9		10.9	10.9		10.9		10.9	10.9		10.9
Lead/Lag	Lead	Lag		Lead	Lag		Lead		Lead			Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes		Yes			Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0		3.0
Recall Mode	None	Min		None	Min		None		None	None		None
Act Effct Green (s)	8.5	28.0		18.0	37.5		10.0		28.1	31.0		10.0
Actuated g/C Ratio	0.08	0.26		0.16	0.34		0.09		0.26	0.28		0.09
v/c Ratio	0.70	0.94		0.81	0.88		0.33		0.92	0.35		0.63
Control Delay	63.8	51.7		56.8	38.8		48.9		36.6	32.2		10.1
Queue Delay	0.0	0.0		0.0	0.0		0.0		0.0	0.0		0.0
Total Delay	63.8	51.7		56.8	38.8		48.9		36.6	32.2		10.1
LOS	E	D		E	D		D		D	C		B
Approach Delay		53.0			42.3			38.2			22.7	
Approach LOS		D			D			D			C	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 109.7
Natural Cycle: 100
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.94
Intersection Signal Delay: 41.8 Intersection LOS: D
Intersection Capacity Utilization 75.0% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 2: I-75 NB/I-75 SB & Cortez Blvd



Intersection: 2: I-75 NB/I-75 SB & Cortez Blvd

Movement	EB	EB	EB	EB	EB	EB	WB	WB	WB	WB	WB	WB
Directions Served	L	L	T	T	T	TR	L	L	T	T	T	TR
Maximum Queue (ft)	162	188	412	381	385	305	170	175	238	254	228	230
Average Queue (ft)	112	72	323	292	301	169	110	115	159	164	145	134
95th Queue (ft)	188	210	458	431	422	342	182	184	280	284	267	263
Link Distance (ft)			943	943	943	943		749	749	749	749	749
Upstream Blk Time (%)												
Queuing Penalty (veh)												
Storage Bay Dist (ft)	435	435					620					
Storage Blk Time (%)			2									
Queuing Penalty (veh)			5									

Intersection: 2: I-75 NB/I-75 SB & Cortez Blvd

Movement	NB	NB	NB	NB	NB	NB	EB	EB	SB	SB	SB
Directions Served	L	L	L	R	R	R	T	T	L	L	L
Maximum Queue (ft)	84	90	486	504	505	443	16	50	162	134	173
Average Queue (ft)	57	54	161	359	381	268	0	8	106	72	110
95th Queue (ft)	90	98	526	603	601	577	0	75	168	134	178
Link Distance (ft)	645	645	645				1572	1572	745	745	745
Upstream Blk Time (%)			2	1	0						
Queuing Penalty (veh)			0	0	0						
Storage Bay Dist (ft)				545	545	545					
Storage Blk Time (%)			0	7	5	0					
Queuing Penalty (veh)			1	3	3	0					

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	182	1385	111	450	1563	304	147	0	959	483	0	362
Future Volume (vph)	182	1385	111	450	1563	304	147	0	959	483	0	362
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	10.9	10.9		10.9	10.9		10.9		10.9	10.9		10.9
Lane Util. Factor	0.97	0.86		0.97	0.86		0.94		0.76	0.94		0.88
Frt	1.00	0.99		1.00	0.98		1.00		0.85	1.00		0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95		1.00	0.95		1.00
Satd. Flow (prot)	3433	6337		3433	6251		4990		3610	4990		2787
Flt Permitted	0.95	1.00		0.95	1.00		0.95		1.00	0.95		1.00
Satd. Flow (perm)	3433	6337		3433	6251		4990		3610	4990		2787
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	186	1413	113	459	1595	310	150	0	979	493	0	369
RTOR Reduction (vph)	0	11	0	0	32	0	0	0	139	0	0	335
Lane Group Flow (vph)	186	1515	0	459	1873	0	150	0	840	493	0	34
Turn Type	Prot	NA		Prot	NA		Prot		pm+ov	Prot		Perm
Protected Phases	5	2		1	6		3		1	7		
Permitted Phases									3			4
Actuated Green, G (s)	8.5	28.0		18.0	37.5		10.0		28.0	31.0		10.1
Effective Green, g (s)	8.5	28.0		18.0	37.5		10.0		28.0	31.0		10.1
Actuated g/C Ratio	0.08	0.26		0.16	0.34		0.09		0.26	0.28		0.09
Clearance Time (s)	10.9	10.9		10.9	10.9		10.9		10.9	10.9		10.9
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0		3.0	3.0		3.0
Lane Grp Cap (vph)	266	1617		563	2136		454		921	1410		256
v/s Ratio Prot	0.05	0.24		0.13	c0.30		0.03		c0.15	c0.10		
v/s Ratio Perm									0.08			0.01
v/c Ratio	0.70	0.94		0.82	0.88		0.33		0.91	0.35		0.13
Uniform Delay, d1	49.4	40.0		44.2	33.9		46.7		39.7	31.3		45.8
Progression Factor	1.00	1.00		1.00	1.00		1.00		1.00	1.00		1.00
Incremental Delay, d2	7.8	10.7		8.9	4.4		0.4		13.1	0.2		0.2
Delay (s)	57.1	50.6		53.1	38.3		47.1		52.8	31.5		46.0
Level of Service	E	D		D	D		D		D	C		D
Approach Delay (s)		51.4			41.2			52.0			37.7	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	45.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.94		
Actuated Cycle Length (s)	109.7	Sum of lost time (s)	43.6
Intersection Capacity Utilization	75.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

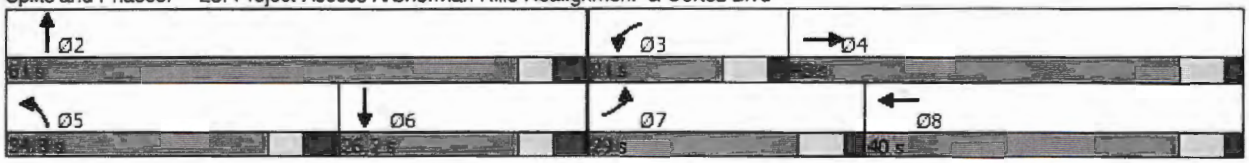
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	284	1406	1061	295	1251	37	665	20	352	72	30	31
Future Volume (vph)	284	1406	1061	295	1251	37	665	20	352	72	30	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	500		500	600		485	300		200	200		0
Storage Lanes	1		1	2		1	2		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	0.97	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850		0.924	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1770	1721	0
Flt Permitted	0.950			0.950			0.950			0.744		
Satd. Flow (perm)	1770	5085	1583	3433	5085	1583	3433	1863	1583	1386	1721	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			878			217			319		33	
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		635			2060			693			832	
Travel Time (s)		9.6			31.2			15.8			18.9	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	299	1480	1117	311	1317	39	700	21	371	76	32	33
Shared Lane Traffic (%)												
Lane Group Flow (vph)	299	1480	1117	311	1317	39	700	21	371	76	65	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA	Free	Prot	NA	Perm	Prot	NA	Perm	Perm	NA	
Protected Phases	7	4		3	8		5	2			6	
Permitted Phases			Free			8			2	6		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4		3	8	8	5	2	2	6	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Minimum Split (s)	12.0	25.0		12.0	25.0	25.0	12.4	25.4	25.4	25.4	25.4	
Total Split (s)	29.0	48.0		21.0	40.0	40.0	34.8	61.0	61.0	26.2	26.2	
Total Split (%)	22.3%	36.9%		16.2%	30.8%	30.8%	26.8%	46.9%	46.9%	20.2%	20.2%	
Maximum Green (s)	22.0	41.0		14.0	33.0	33.0	27.4	53.6	53.6	18.8	18.8	
Yellow Time (s)	4.9	4.9		4.9	4.9	4.9	3.7	3.7	3.7	3.7	3.7	
All-Red Time (s)	2.1	2.1		2.1	2.1	2.1	3.7	3.7	3.7	3.7	3.7	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	7.0	7.0		7.0	7.0	7.0	7.4	7.4	7.4	7.4	7.4	
Lead/Lag	Lead	Lag		Lead	Lag	Lag	Lead			Lag	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes	Yes	Yes			Yes	Yes	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	None	Min	Min	Min	Min	
Walk Time (s)		7.0			7.0	7.0		7.0	7.0	7.0	7.0	
Flash Dont Walk (s)		11.0			11.0	11.0		11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0			0	0		0	0	0	0	
Act Effct Green (s)	22.0	41.4	123.1	13.7	33.0	33.0	27.2	46.6	46.6	12.0	12.0	
Actuated g/C Ratio	0.18	0.34	1.00	0.11	0.27	0.27	0.22	0.38	0.38	0.10	0.10	
v/c Ratio	0.95	0.87	0.71	0.82	0.97	0.07	0.92	0.03	0.47	0.56	0.33	
Control Delay	89.1	45.3	2.7	71.4	62.3	0.2	66.2	23.6	6.7	68.9	33.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	89.1	45.3	2.7	71.4	62.3	0.2	66.2	23.6	6.7	68.9	33.2	
LOS	F	D	A	E	E	A	E	C	A	E	C	
Approach Delay		33.4			62.5			45.2			52.4	
Approach LOS		C			E			D			D	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 123.1
Natural Cycle: 120
Control Type: Actuated-Uncoordinated
Maximum v/c Ratio: 0.97
Intersection Signal Delay: 44.4 Intersection LOS: D
Intersection Capacity Utilization 83.4% ICU Level of Service E
Analysis Period (min) 15

Splits and Phases: 23: Project Access A/Sherman Hills Realignment & Cortez Blvd



PERCENT CAPACITY CONSUMED

TABLE A-1

INTERSECTION PROPORTIONATE SHARE DETERMINATION
(PM PEAK HOUR)

Intersection	Critical Movement	LOS E Lane Group Capacity (1)	New Project Trips
Cortez Blvd and I-75 Ramps	WBT/R	2,136	744
	NBR	921	413
	SBL	1,410	292
		4,467	1,449
		% Consumed	32.44%

FDOT 2022 COST TABLES

Roadway Cost Per Centerline Mile

Revised June 2022

	Construction Cost From LRE	MOT *	Mobilization *	Subtotal	Scope Contingency (25%)	Total Construction Cost	PE Design (15%)	CEI (15%)	Total Project Cost **
Rural Arterial									
New Construction (2-Lane Roadway) with 5' Paved Shoulders	$6,516,370	$651,637	$716,801	$7,884,808	$1,971,202	**$9,856,010**	$1,478,401	$1,478,401	$12,812,813
New Construction (4-Lane Roadway) with 5' Paved Shoulders	$10,734,295	$1,073,430	$1,180,772	$12,988,497	$3,247,124	**$16,235,621**	$2,435,343	$2,435,343	$21,106,308
New Construction (6-Lane Roadway) with 5' Paved Shoulders	$13,678,044	$1,367,804	$1,504,585	$16,550,433	$4,137,608	**$20,688,041**	$3,103,206	$3,103,206	$26,894,454
Milling and Resurfacing (4-Lane Roadway) with 5' Paved Shoulders	$1,671,182	$167,118	$183,830	$2,022,130	$505,533	**$2,527,663**	$379,149	$379,149	$3,285,962
Milling and Resurfacing (6-Lane Roadway) with 5' Paved Shoulders	$2,364,092	$236,409	$260,050	$2,860,551	$715,138	**$3,575,689**	$536,353	$536,353	$4,648,396
Add Lanes (2 to 4 Lanes) with 5' Paved Shoulders (Includes milling and resurfacing of existing pavement)	$7,623,562	$762,356	$838,592	$9,224,510	$2,306,127	**$11,530,637**	$1,729,596	$1,729,596	$14,989,829
Add Lanes (4 to 6 Lanes) with 5' Paved Shoulders (Includes milling and resurfacing of existing pavement)	$8,044,797	$804,480	$884,928	$9,734,204	$2,433,551	**$12,167,755**	$1,825,163	$1,825,163	$15,818,082
Add Lanes (4 to 8 Lanes) with 5' Paved Shoulders (Includes milling and resurfacing of existing pavement)	$11,222,926	$1,122,293	$1,234,522	$13,579,740	$3,394,935	**$16,974,675**	$2,546,201	$2,546,201	$22,067,078
Add Lanes (6 to 8 Lanes) with 5' Paved Shoulders (Includes milling and resurfacing of existing pavement)	$10,207,327	$1,020,733	$1,122,806	$12,350,865	$3,087,716	**$15,438,582**	$2,315,787	$2,315,787	$20,070,155
Add 1 Through Lane on Inside (To Existing) with 5' Paved Shoulders	$1,956,252	$195,625	$215,188	$2,367,065	$591,766	**$2,958,831**	$443,825	$443,825	$3,846,480
Add 1 Through Lane on Outside (To Existing) with 5' Paved Shoulders	$2,961,463	$296,146	$325,761	$3,583,370	$895,842	**$4,479,212**	$671,882	$671,882	$5,822,976
Add 300' Exclusive Left Turn Lane	$91,304	$13,696	$15,750	$120,750	$30,187	**$150,937**	$22,641	$22,641	$196,219
Add 300' Exclusive Right Turn Lane	$237,181	$35,577	$40,914	$313,671	$78,418	**$392,089**	$58,813	$58,813	$509,715
Urban Arterial									
New Construction (2-Lane Roadway) with 5' Sidewalk, and Curb & Gutter	$10,019,456	$1,001,946	$1,102,140	$12,123,542	$3,030,885	**$15,154,427**	$2,273,164	$2,273,164	$19,700,755
New Construction (4-Lane Roadway) with 5' Sidewalk, and Curb & Gutter	$14,097,157	$1,409,716	$1,550,687	$17,057,559	$4,264,390	**$21,321,949**	$3,198,292	$3,198,292	$27,718,534
New Construction (6-Lane Roadway) with 5' Sidewalk, and Curb & Gutter	$17,146,353	$1,714,635	$1,886,099	$20,747,087	$5,186,772	**$25,933,859**	$3,890,079	$3,890,079	$33,714,017
Milling and Resurfacing (4-Lane Roadway) with 5' Sidewalk, and Curb & Gutter	$1,739,197	$173,920	$191,312	$2,104,429	$526,107	**$2,630,536**	$394,580	$394,580	$3,419,696
Milling and Resurfacing (6-Lane Roadway) with 5' Sidewalk, and Curb & Gutter	$2,467,617	$246,762	$271,438	$2,985,816	$746,454	**$3,732,270**	$559,841	$559,841	$4,851,952
Add Lanes (2 to 4 Lanes) with 5' Sidewalk, and Curb & Gutter (Includes milling and resurfacing existing pavement)	$9,749,449	$974,945	$1,072,439	$11,796,833	$2,949,208	**$14,746,041**	$2,211,906	$2,211,906	$19,169,853
Add Lanes (4 to 6 Lanes) with 5' Sidewalk, and Curb & Gutter (Includes milling and resurfacing existing pavement)	$10,589,670	$1,058,967	$1,164,864	$12,813,501	$3,203,375	**$16,016,876**	$2,402,531	$2,402,531	$20,821,939
Add Lanes (4 to 8 Lanes) with 5' Sidewalk, and Curb & Gutter (Includes milling and resurfacing existing pavement)	$14,490,863	$1,449,086	$1,593,995	$17,533,945	$4,383,486	**$21,917,431**	$3,287,615	$3,287,615	$28,492,660
Add Lanes (6 to 8 Lanes) with 5' Sidewalk, and Curb & Gutter (Includes milling and resurfacing existing pavement)	$12,430,064	$1,243,006	$1,367,307	$15,040,378	$3,760,094	**$18,800,472**	$2,820,071	$2,820,071	$24,440,613
Add 1 Through Lane on Inside (To Existing) with 5' Sidewalk, and Curb & Gutter	$1,810,326	$181,033	$199,136	$2,190,495	$547,624	**$2,738,118**	$410,718	$410,718	$3,559,554
Add 1 Through Lane on Outside (To Existing) with 5' Sidewalk, and Curb & Gutter	$5,039,068	$503,907	$554,297	$6,097,272	$1,524,318	**$7,621,590**	$1,143,238	$1,143,238	$9,908,067
Add 300' Exclusive Left Turn Lane	$115,208	$17,281	$19,873	$152,363	$38,091	**$190,454**	$28,568	$28,568	$247,590
Add 300' Exclusive Right Turn Lane	$284,344	$42,652	$49,049	$376,045	$94,011	**$470,056**	$70,508	$70,508	$611,073

*** A 15% MOT and Mobilization factor was used for exclusive left and right turn lanes. A 10% factor was used for all other figures.**

**** Total cost shown is derived from a standard typical section. Costs will need to be adjusted to account for signals, bridges, or any additional item not deemed typical.**

Note:

1. **Estimates were derived from FDOT LRE system**
2. **These figures exclude costs for intersections/interchanges, improvements to cross streets, bridges over 20', right-of-way, landscaping, ITS, and traffic signals.**
3. **The figures are based on market costs for Hillsborough County.**
4. **Costs shown are present day costs.**
5. **The costs developed for this report are not project-specific and should be used for preliminary estimating purposes only.**

Other Roadway Related Costs
Revised June 2022

	Construction Cost From LRE	MOT *	Mobilization (15%)	Subtotal	Scope Contingency (25%)	Total Construction Cost	PE Design (15%)	CEI (15%)	Total Project Cost
Intersection Traffic Signalization (Mast Arm Assembly)**									
2-Lane Roadway Intersecting 2-Lane Roadway	$272,124	$40,819	$46,941	$359,884	$89,971	**$449,855**	$67,478	$67,478	$584,812
4-Lane Roadway Intersecting 4-Lane Roadway	$350,443	$52,566	$60,451	$463,461	$115,865	**$579,326**	$86,899	$86,899	$753,124
6-Lane Roadway Intersecting 6-Lane Roadway	$403,461	$60,519	$69,597	$533,578	$133,394	**$666,972**	$100,046	$100,046	$867,064
Bicycle and Pedestrian Facilities									
Sidewalks Per Mile (5' Width - 1 Side)	$162,524	$8,131	$25,613	$196,368	$49,092	**$245,460**	$36,819	$36,819	$319,098
Sidewalks Per Mile (6' Width - 1 Side)	$195,149	$9,757	$30,736	$235,642	$58,911	**$294,553**	$44,183	$44,183	$382,919
Multi-Use Trail Per Mile (12' Width - 1 Side)	$382,009	$19,100	$60,166	$461,276	$115,319	**$576,595**	$86,489	$86,489	$749,573
Stormwater Retention Facilities									
1 Acre Pond Site (6' Depth)	$505,219	$25,261	$79,572	$610,052	$152,513	**$762,565**	$114,385	$114,385	$991,335
Median Retrofit									
Convert 14' Center Turn Lane to 14' Raised Median (Per Mile)	$467,130	$70,069	$80,580	$617,779	$154,445	**$772,224**	$115,834	$115,834	$1,003,891
Cross Street Improvements									
Widen 1-Leg of Existing Rural 2-Lane Cross Street to Accommodate 2 Receiving Lanes, Dual Left Turn lanes, and Exclusive Right Turn Lane (Approximate Length of 0.25 Miles)	$2,336,325	$350,449	$403,016	$3,089,790	$772,447	**$3,862,237**	$579,336	$579,336	$5,020,909

* A 15% MOT factor was used for Traffic Signals, Median Retrofit, and Cross Street Improvements. A 5% factor was used for all other figures.

**The cost of traffic signalization assumes the installation of mast arms on all four legs of an intersection. To obtain the cost of signalizing a four-lane roadway intersecting a two-lane roadway, divide the signal cost of a four-lane roadway by two and add this figure to the signal cost of the two-lane roadway divided by two.

Notes:

1. Estimates were derived from FDOT LRE system.
2. The figures are based on market costs for Hillsborough County.
3. Costs shown are present day costs.
4. The costs developed for this report are not site-specific and should be used for preliminary estimating purposes only.

Interchange Cost
Revised June 2022

	Construction Cost From LRE	MOT (10%)	Mobilization (10%)	Subtotal	Scope Contingency (25%)	Total Construction Cost	PE Design (15%)	CEI (15%)	Subtotal Project Cost
Single Point Urban Interchange (SPUI)	$ 34,143,842.80	$3,414,364	$3,755,801	$41,313,808	$10,328,452	**$51,642,260**	$7,746,339	$7,746,339	$67,134,938

Note:

1. Cost was derived from an LRE estimate to modify the existing diamond interchange at I-75/SR 54 to a single point urban interchange.
2. Cost shown is for construction only. Does not include Design, CEI, and right-of-way.

FDOT INFLATION FACTORS

Work Program
Highway Construction Cost Inflation Factors

Fiscal Year	Inflation Factor	PDC Multiplier
2022	Base	1.000
2023	2.7%	1.027
2024	2.8%	1.056
2025	2.9%	1.086
2026	3.0%	1.119
2027	3.1%	1.154
2028	3.2%	1.191
2029	3.3%	1.230
2030	3.3%	1.270
2031	3.3%	1.312
2032	3.3%	1.356
2033	3.3%	1.400
2034	3.3%	1.447
2035	3.3%	1.494
2036	3.3%	1.544
2037	3.3%	1.595
2038	3.3%	1.647
2039	3.3%	1.702
2040	3.3%	1.758
2041	3.3%	1.816
2042	3.3%	1.876
2043	3.3%	1.938
2044	3.3%	2.002
2045	3.3%	2.068
2046	3.3%	2.136
2047	3.3%	2.206
2048	3.3%	2.279
2049	3.3%	2.354
2050	3.3%	2.432
2051	3.3%	2.512
2052	3.3%	2.595
2053	3.3%	2.681
2054	3.3%	2.769
2055	3.3%	2.861
2056	3.3%	2.955
2057	3.3%	3.053
2058	3.3%	3.153
2059	3.3%	3.257

IMPROVEMENT COST

TABLE A-2

IMPROVEMENT COST

Cortez Blvd and I-75 Ramps

NBR

600' (a) / 300 x $509,716 = $1,019,432

(a) Queue Storage: SimTraffic 603' Use 600'

Total Length: 600'

EBT

$9,908,067 x 850'(a)/5,280' = $1,595,049

(a) length of the additional lane from SB on ramp to NB off ramp

WBT

$9,908,067 x 875'(a)/5,280' = $1,641,962

(a) length of the additional lane from NB on ramp to SB off ramp

Total Cost = $1,019,432 + 1,595,049 + 1,641,962 = $4,256,443

Source: FDOT Roadway Cost per center mile, Revised June, 2022.

EXHIBIT F

Additional Roadway Pipeline Projects/Proportionate Share Improvements