

FEBRUARY, 2015  
PREPARED BY: JT/MC



**TECHNICAL SPECIFICATIONS PACKAGE**  
**FOR**  
**MARTIN LUTHER KING BOULEVARD (A.K.A.**  
**HAMMONDVILLE RD.) ROADWAY IMPROVEMENTS**  
**(EDUCATIONAL CORRIDOR)**

**FROM NW 31<sup>ST</sup> AVENUE TO POWERLINE RD.**

**LAP PROJECT**  
**FDOT FINANCIAL PROJECT ID(S) 432861-1**

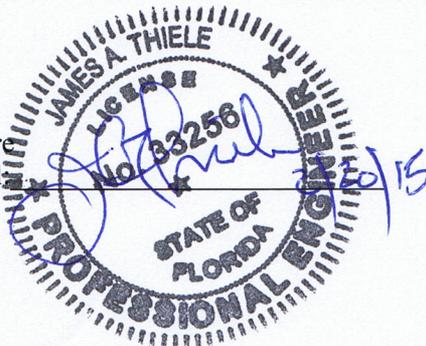
**CITY OF POMPANO BEACH / POMPANO BEACH CRA**  
**BROWARD COUNTY**

The 2014 Edition of the Florida Department of Transportation Standard Specifications is revised as follows:

*I hereby certify that this specifications package has been properly prepared by me, or under my responsible charge, in accordance with procedures adopted by the Florida Department of Transportation.*

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Signature  
and Seal



FPID(S): 432861-1

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## SECTION 4 SCOPE OF THE WORK

### **4-1 Intent of Contract.**

The intent of the Contract is to provide for the construction and completion in every detail of the work described in the Contract. Furnish all labor, materials, equipment, tools, transportation, and supplies required to complete the work in accordance with the Contract Documents.

### **4-2 Work not covered by Standard Specifications.**

Proposed construction and any contractual requirements not covered by these Standard Specifications may be covered by Contract Plan notes or by Supplemental Specifications or Special Provisions for the Contract, and all requirements of such Supplemental Specifications or Special Provisions shall be considered as a part of these Specifications.

### **4-3 Alteration of Plans or of Character of Work.**

**4-3.1 General:** The Engineer reserves the right to make, at any time prior to or during the progress of the work, such increases or decreases in quantities, whether a significant change or not, and such alterations in the details of construction, whether a substantial change or not, including but not limited to alterations in the grade or alignment of the road or structure or both, as may be found necessary or desirable by the Engineer. Such increases, decreases or alterations shall not constitute a breach of Contract, shall not invalidate the Contract, nor release the Surety from any liability arising out of this Contract or the Surety bond. The Contractor agrees to perform the work, as altered, the same as if it had been a part of the original Contract.

The term "significant change" applies only when:

(a) The Engineer determines that the character of the work as altered differs materially in kind or nature from that involved or included in the original proposed construction, or

(b) A major item of work, as defined in 1-3, is increased in excess of 125% or decreased below 75% of the original Contract quantity. The Department will apply any price adjustment for an increase in quantity only to that portion in excess of 125% of the original Contract item quantity in accordance with 4-3.2 below. In the case of a decrease below 75% the Department will only apply a price adjustment for the additional costs that are a direct result of the reduction in quantity.

In (a) above, the determination by the Engineer shall be conclusive. If the determination is challenged by the Contractor in any proceeding, the Contractor must establish by clear and convincing proof that the determination by the Engineer was without any reasonable basis.

**4-3.2 Increase, Decrease or Alteration in the Work:** The Engineer reserves the right to make alterations in the character of the work which involve a substantial change in the nature of the design or in the type of construction or which materially increases or decreases the cost or time of performance. Such alteration shall not constitute a breach of Contract, shall not invalidate the Contract or release the Surety.

Notwithstanding that the Contractor shall have no formal right whatsoever to any extra compensation or time extension deemed due by the Contractor for any cause unless and until the Contractor follows the procedures set forth in 5-12.2 for preservation, presentation and

resolution of the claim, the Contractor may at any time, after having otherwise timely provided a notice of intent to claim or preliminary time extension request pursuant to 5-12.2 and 8-7.3.2, submit to the Department a request for equitable adjustment of compensation or time or other dispute resolution proposal. The Contractor shall in any request for equitable adjustment of compensation, time, or other dispute resolution proposal certify under oath and in writing, in accordance with the formalities required by Florida law, that the request is made in good faith, that any supportive data provided are accurate and complete to the Contractor's best knowledge and belief, and that the amount of the request accurately reflects what the Contractor in good faith believes to be the Department's responsibility. Such certification must be made by an officer or director of the Contractor with the authority to bind the Contractor. Any such certified statements of entitlement and costs shall be subject to the audit provisions set forth in 5-12.14. While the submittal or review of a duly certified request for equitable adjustment shall neither create, modify, nor activate any legal rights or obligations as to the Contractor or the Department, the Department will review the content of any duly certified request for equitable adjustment or other dispute resolution proposal, with any further action or inaction by the Department thereafter being in its sole discretion. Any request for equitable adjustment that fails to fully comply with the certification requirements will not be reviewed by the Department.

The monetary compensation provided for below constitutes full and complete payment for such additional work and the Contractor shall have no right to any additional monetary compensation for any direct or indirect costs or profit for any such additional work beyond that expressly provided below. The Contractor shall be entitled to a time extension only to the extent that the performance of any portion of the additional work is a controlling work item and the performance of such controlling work item actually extends completion of the project due to no fault of the Contractor. All time related costs for actual performance of such additional work are included in the compensation already provided below and any time extension entitlement hereunder will be without additional monetary compensation. The Contractor shall have no right to any monetary compensation or damages whatsoever for any direct or indirect delay to a controlling work item arising out of or in any way related to the circumstances leading up to or resulting from additional work (but not relating to the actual performance of the additional work, which is paid for as otherwise provided herein), except only as provided for under 5-12.6.2.1.

**4-3.2.1 Allowable Costs for Extra Work:** The Engineer may direct in writing that extra work be done and, at the Engineer's sole discretion, the Contractor will be paid pursuant to an agreed Supplemental Agreement or in the following manner:

(a) Labor and Burden: The Contractor will receive payment for actual costs of direct labor and burden for the additional or unforeseen work. Labor includes foremen actually engaged in the work; and will not include project supervisory personnel nor necessary on-site clerical staff, except when the additional or unforeseen work is a controlling work item and the performance of such controlling work item actually extends completion of the project due to no fault of the Contractor. Compensation for project supervisory personnel, but in no case higher than a Project Manager's position, shall only be for the pro-rata time such supervisory personnel spent on the contract. In no case shall an officer or director of the Company, nor those persons who own more than 1% of the Company, be considered as project supervisory personnel, direct labor or foremen hereunder.

Payment for burden shall be limited solely to the following:

Table 4-3.2.1	
Item	Rate
FICA	Rate established by Law
FUTA/SUTA	Rate established by Law
Medical Insurance	Actual
Holidays, Sick & Vacation benefits	Actual
Retirement benefits	Actual
Workers Compensation	Rates based on the National Council on Compensation Insurance basic rate tables adjusted by Contractor's actual experience modification factor in effect at the time of the additional work or unforeseen work.
Per Diem	Actual but not to exceed State of Florida's rate
Insurance*	Actual
*Compensation for Insurance is limited solely to General Liability Coverage and does not include any other insurance coverage (such as, but not limited to, Umbrella Coverage, Automobile Insurance, etc.).	

At the Pre-construction conference, certify to the Engineer the following:

- (1) A listing of on-site clerical staff, supervisory personnel and their pro-rated time assigned to the contract,
- (2) Actual Rate for items listed in Table 4-3.2.1,
- (3) Existence of employee benefit plan for Holiday, Sick and Vacation benefits and a Retirement Plan, and,
- (4) Payment of Per Diem is a company practice for instances when compensation for Per Diem is requested.

Such certification must be made by an officer or director of the Contractor with authority to bind the Contractor. Timely certification is a condition precedent to any right of the Contractor to recover compensations for such costs, and failure to timely submit the certification will constitute a full, complete, absolute and irrevocable waiver by the Contractor of any right to recover such costs. Any subsequent changes shall be certified to the Engineer as part of the cost proposal or seven calendar days in advance of performing such extra work.

(b) Materials and Supplies: For materials accepted by the Engineer and used on the project, the Contractor will receive the actual cost of such materials incorporated into the work, including Contractor paid transportation charges (exclusive of equipment as hereinafter set forth). For supplies reasonably needed for performing the work, the Contractor will receive the actual cost of such supplies.

(c) Equipment: For any machinery or special equipment (other than small tools), including fuel and lubricant, the Contractor will receive 100% of the "Rental Rate Blue Book" for the actual time that such equipment is in operation on the work, and 50% of the "Rental Rate Blue Book" for the time the equipment is directed to standby and remain on the project site, to be calculated as indicated below. The equipment rates will be based on the latest edition (as of the date the work to be performed begins) of the "Rental Rate Blue Book for Construction Equipment" or the "Rental Rate Blue Book for Older Construction Equipment," whichever is applicable, as published by Machinery Information Division of PRIMEDIA

Information, Inc. (version current at the time of bid), using all instructions and adjustments contained therein and as modified below. On all projects, the Engineer will adjust the rates using regional adjustments and Rate Adjustment Tables according to the instructions in the Blue Book.

Allowable Equipment Rates will be established as set out below:

(1) Allowable Hourly Equipment Rate = Monthly Rate/176  
x Adjustment Factors x 100%.

(2) Allowable Hourly Operating Cost = Hourly Operating  
Cost x 100%.

(3) Allowable Rate Per Hour = Allowable Hourly  
Equipment Rate + Allowable Hourly Operating Cost.

(4) Standby Rate = Allowable Hourly Equipment  
Rate x 50%.

The Monthly Rate is The Basic Machine Rate Plus Any Attachments. Standby rates will apply when equipment is not in operation and is directed by the Engineer to standby at the project site when needed again to complete work and the cost of moving the equipment will exceed the accumulated standby cost. Standby rates will not apply on any day the equipment operates for eight or more hours. Standby payment will be limited to only that number of hours which, when added to the operating time for that day equals eight hours. Standby payment will not be made on days that are not normally considered work days on the project.

The Department will allow for the cost of transporting the equipment to and from the location at which it will be used. If the equipment requires assembly or disassembly for transport, the Department will pay for the time to perform this work at the rate for standby equipment.

Equipment may include vehicles utilized only by Labor, as defined above.

(d) Indirect Costs, Expenses, and Profit: Compensation for all indirect costs, expenses, and profit of the Contractor, including but not limited to overhead of any kind, whether jobsite, field office, division office, regional office, home office, or otherwise, is expressly limited to the greater of either (1) or (2) below:

(1) Solely a mark-up of 17.5% on the payments in (a) through (c),  
above.

(i) Bond: The Contractor will receive compensation for any premium for acquiring a bond for such additional or unforeseen work at the original Contract bond rate paid by the Contractor. No compensation for bond premium will be allowed for additional or unforeseen work paid by the Department via initial contingency pay item.

(ii) The Contractor will be allowed a markup of 10% on the first \$50,000 and a markup of 5% on any amount over \$50,000 on any subcontract directly related to the additional or unforeseen work. Any such subcontractor mark-up will be allowed only by the prime Contractor and a first tier subcontractor, and the Contractor must elect the markup for any eligible first tier subcontractor to do so.

(2) Solely the formula set forth below and only as applied solely as to such number of calendar days of entitlement that are in excess of ten cumulative calendar days as defined below.

$$D = \frac{A \times C}{B}$$

Where A = Original Contract Amount

B = Original Contract Time

C = 8%

D = Average Overhead Per Day

Cumulative Calendar Days is defined as the combined total number of calendar days granted as time extensions due to either extra work, excluding overruns to existing contract items, that extend the duration of the project or delay of a controlling work item caused solely by the Department, or the combined total number of calendar days for which a claim of entitlement to a time extension due to delay of a controlling work item caused solely by the Department is otherwise ultimately determined to be in favor of the Contractor.

Further, in the event there are concurrent delays to one or more controlling work items, one or more being caused by the Department and one or more being caused by the Contractor, the Contractor shall be entitled to a time extension for each day that a controlling work item is delayed by the Department but shall have no right to nor receive any monetary compensation for any indirect costs for any days of concurrent delay. No compensation, whatsoever, will be paid to the Contractor for any jobsite overhead and other indirect impacts when the total number of calendar days granted for time extension due to delay of a controlling work item caused solely by the Department is, or the total number of calendar days for which entitlement to a time extension due to delay of a controlling work item caused solely by the Department is otherwise ultimately determined in favor of the Contractor to be, equal to or less than ten calendar days and the Contractor also fully assumes all monetary risk of any and all partial or single calendar day delay periods, due to delay of a controlling work item caused solely by the Department, that when combined together are equal to or less than ten calendar days and regardless of whether monetary compensation is otherwise provided for hereunder for one or more calendar days of time extension entitlement for each calendar day exceeding ten calendar days. All calculations under this provision shall exclude weather days, Holidays, and Special Events.

**4-3.2.2 Subcontracted Work:** Compensation for the additional or unforeseen work performed by a subcontractor shall be limited solely to that provided for in 4-3.2.1 (a), (b), (c) and (d)(1). In addition, the Contractor compensation is expressly limited to the greater of the total provided in either 4-3.2.1(d)(1) or (d)(2), except that the Average Overhead Per-Day calculation is as follows:

$$D_s = \frac{A_s \times C}{B}$$

Subcontract amounts(s)\*

Where  $A_s$  = Original Contract Amount minus Original

B = Original Contract Time

C = 8%

$D_s$  = Average Overhead Per-Day

\* deduct Original Subcontract Amount(s) of subcontractor(s) performing the work

The subcontractor may receive compensation for any premium for acquiring a bond for the additional or unforeseen work; provided, however, that such payment for additional subcontractor bond will only be paid upon presentment to the Department of clear and convincing proof that the subcontractor has actually provided and paid for separate bond premiums for such additional or unforeseen work in such amount and that the subcontractor was required by the Contractor to acquire a bond.

The Contractor shall require the subcontractor to provide a certification, in accordance with 4-3.2.1 (a), as part of the cost proposal and provide such to the Engineer. Such certification must be made by an officer or director of the subcontractor with authority to bind the subcontractor. Timely certification is a condition precedent to any right of the Contractor to recover compensation for such subcontractor costs, and failure to timely submit the certification will constitute a full, complete, absolute and irrevocable waiver by the Contractor of any right to recover such subcontractor costs.

**4-3.3 No Waiver of Contract:** Changes made by the Engineer will not be considered to waive any of the provisions of the Contract, nor may the Contractor make any claim for loss of anticipated profits because of the changes, or by reason of any variation between the approximate quantities and the quantities of work actually performed. All work shall be performed as directed by the Engineer and in accordance with the Contract Documents.

**4-3.4 Conditions Requiring a Supplemental Agreement or Unilateral Payment:** A Supplemental Agreement or Unilateral Payment will be used to clarify the Plans and Specifications of the Contract; to provide for unforeseen work, grade changes, or alterations in the Plans which could not reasonably have been contemplated or foreseen in the original Plans and Specifications; to change the limits of construction to meet field conditions; to provide a safe and functional connection to an existing pavement; to settle documented Contract claims; to make the project functionally operational in accordance with the intent of the original Contract and subsequent amendments thereto.

A Supplemental Agreement or Unilateral Payment may be used to expand the physical limits of the project only to the extent necessary to make the project functionally operational in accordance with the intent of the original Contract. The cost of any such agreement extending the physical limits of the project shall not exceed \$100,000 or 10% of the original Contract price, whichever is greater.

Perform no work to be covered by a Supplemental Agreement or Unilateral Payment before written authorization is received from the Engineer. The Engineer's written authorization will set forth sufficient work information to allow the work to begin. The work activities, terms and conditions will be reduced to written Supplemental Agreement or Unilateral Payment form promptly thereafter. No payment will be made on a Supplemental Agreement or Unilateral Payment prior to the Department's approval of the document.

**4-3.5 Extra Work:** Extra work authorized in writing by the Engineer will be paid in accordance with the formula in 4-3.2. Such payment will be the full extent of all monetary compensation entitlement due to the Contractor for such extra work. Any entitlement to a time extension due to extra work will be limited solely to that provided for in 4-3.2 for additional work.

**4-3.6 Connections to Existing Pavement, Drives and Walks:** Generally adhere to the limits of construction at the beginning and end of the project as detailed in the Plans. However, if the Engineer determines that it is necessary to extend the construction in order to make suitable connections to existing pavement, the Engineer will authorize such a change in writing.

For necessary connections to existing walks and drives that are not indicated in the Plans, the Engineer will provide direction regarding the proper connections in accordance with the Design Standards.

**4-3.7 Differing Site Conditions:** During the progress of the work, if subsurface or latent physical conditions are encountered at the site differing materially from those indicated in the Contract, or if unknown physical conditions of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the Contract are encountered at the site, the party discovering such conditions shall promptly notify the other party in writing of the specific differing conditions before the Contractor disturbs the conditions or performs the affected work.

Upon receipt of written notification of differing site conditions from the Contractor, the Engineer will investigate the conditions, and if it is determined that the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any work under the Contract, an adjustment will be made, excluding loss of anticipated profits, and the Contract will be modified in writing accordingly. The Engineer will notify the Contractor whether or not an adjustment of the Contract is warranted.

The Engineer will not allow a Contract adjustment for a differing site condition unless the Contractor has provided the required written notice.

The Engineer will not allow a Contract adjustment under this clause for any effects caused to any other Department or non-Department projects on which the Contractor may be working.

**4-3.8 Changes Affecting Utilities:** The Contractor shall be responsible for identifying and assessing any potential impacts to a utility that may be caused by the changes proposed by the Contractor, and the Contractor shall at the time of making the request for a change notify the Department in writing of any such potential impacts to utilities.

Department approval of a Contractor proposed change does not relieve the Contractor of sole responsibility for all utility impacts, costs, delays or damages, whether direct or indirect, resulting from Contractor initiated changes in the design or construction activities from those in the original Contract Specifications, design plans (including traffic control plans) or other Contract Documents and which effect a change in utility work different from that shown in the utility plans, joint project agreements or utility relocation schedules.

**4-3.9 Cost Savings Initiative Proposal:**

**4-3.9.1 Intent and Objective:**

(1) This Subarticle applies to any cost reduction proposal (hereinafter referred to as a Proposal) that the Contractor initiates and develops for the purpose of refining the Contract to increase cost effectiveness or significantly improve the quality of the end result. A mandatory Cost Savings Initiative Workshop will be held prior to Contract Time beginning for the Contractor and Department to discuss potential Proposals. This Subarticle does not, however, apply to any such proposal unless the Contractor identifies it at the time of its submission to the Department as a proposal submitted pursuant to this Subarticle.

(2) The Department will consider Proposals that would result in net savings to the Department by providing a decrease in the cost of the Contract. Proposals must

result in savings without impairing essential functions and characteristics such as safety, service, life, reliability, economy of operation, ease of maintenance, aesthetics and necessary standard design features. However, nothing herein prohibits the Contractor from submitting Proposals when the required functions and characteristics can be combined, reduced or eliminated because they are nonessential or excessive. The Department will not recognize the Contractor's correction of plan errors that result in a cost reduction, as a Proposal.

(3) The Department reserves the right to reject at its discretion any Proposal submitted that proposes a change in the design of the pavement system or that would require additional right-of-way. Pending the Department's execution of a formal supplemental agreement implementing an approved Proposal, the Contractor shall remain obligated to perform the work in accordance with the terms of the existing Contract. The Department may grant time extensions to allow for the time required to develop and review a Proposal.

(4) For potential Proposals not discussed at the Cost Savings Initiative Workshop, a mandatory concept meeting will be held for the Contractor and Department to discuss the potential Proposal prior to development of the Proposal.

**4-3.9.2 Subcontractors:** The Department encourages the Contractor to include the provisions of this Subarticle in Contracts with subcontractors and to encourage submission of Proposals from subcontractors. However, it is not mandatory to submit Proposals to the Department or to accept or transmit subcontractor proposed Proposals to the Department.

**4-3.9.3 Data Requirements:** As a minimum, submit the following information with each Proposal:

(1) a description of the difference between the existing Contract requirement, including any time extension request, and the proposed change, and the comparative advantages and disadvantages.

(2) separate detailed cost estimates for both the existing Contract requirement and the proposed change. Break down the cost estimates by pay item numbers indicating quantity increases or decreases and deleted pay items. Identify additional proposed work not covered by pay items within the Contract, by using pay item numbers in the Basis of Estimates Manual. In preparing the estimates, include overhead, profit, and bond within pay items in the Contract. Separate pay item(s) for the cost of overhead, profit, and bond will not be allowed.

(3) an itemization of the changes, deletions or additions to plan details, plan sheets, design standards and Specifications that are required to implement the Proposal if the Department adopts it. Provide preliminary plan drawings sufficient to describe the proposed changes.

(4) engineering or other analysis in sufficient detail to identify and describe specific features of the Contract that must be changed if the Department accepts the Proposal with a proposal as to how these changes can be accomplished and an assessment of their effect on other project elements. The Department may require that engineering analyses be performed by a prequalified consultant in the applicable class of work. Support all design changes that result from the Proposal with prints of drawings and computations signed and sealed by the Contractor's Engineer of Record. Written documentation or drawings will be provided clearly delineating the responsibility of the Contractor's Engineer of Record.

(5) the date by which the Department must approve the Proposal to obtain the total estimated cost reduction during the remainder of the Contract, noting any effect on the Contract completion time or delivery schedule.

(6) a revised project schedule that would be followed upon approval of the Proposal. This schedule would include submittal dates and review time for the Department and Peer reviews.

**4-3.9.4 Processing Procedures:** Submit two copies of each Proposal to the Engineer or his duly authorized representative. The Department will process Proposals expeditiously; however, the Department is not liable for any delay in acting upon a Proposal submitted pursuant to this Subarticle. The Contractor may withdraw, in whole or in part, a Proposal not accepted by the Department within the period specified in the Proposal. The Department is not liable for any Proposal development cost in the case where the Department rejects or the Contractor withdraws a Proposal.

The Engineer is the sole judge of the acceptability of a Proposal and of the estimated net savings in construction costs from the adoption of all or any part of such proposal. In determining the estimated net savings, the Department reserves the right to disregard the Contract bid prices if, in the judgment of the Engineer, such prices do not represent a fair measure of the value of work to be performed or to be deleted.

Prior to approval, the Engineer may modify a Proposal, with the concurrence of the Contractor, to make it acceptable. If any modification increases or decreases the net savings resulting from the Proposal, the Department will determine the Contractor's fair share upon the basis of the Proposal as modified and upon the final quantities. The Department will compute the net savings by subtracting the revised total cost of all bid items affected by the Proposal from the total cost of the same bid items as represented in the original Contract.

Prior to approval of the Proposal that initiates the supplemental agreement, provide acceptable Contract-quality plan sheets revised to show all details consistent with the Proposal design.

**4-3.9.5 Computations for Change in Contract Cost of Performance:** If the Proposal is adopted, the Contractor's share of the net savings as defined hereinafter represents full compensation to the Contractor for the Proposal.

The Department will not include its costs to process and implement a Proposal in the estimate. However, the Department reserves the right, where it deems such action appropriate, to require the Contractor to pay the Department's cost of investigating and implementing a Proposal as a condition of considering such proposal. When the Department imposes such a condition, the Contractor shall accept this condition in writing, authorizing the Department to deduct amounts payable to the Department from any monies due or that may become due to the Contractor under the Contract.

**4-3.9.6 Conditions of Acceptance for Major Design Modifications of Category 2 Bridges:** A Proposal that proposes major design modifications of a category 2 bridge, as determined by the Engineer, shall have the following conditions of acceptance:

All bridge plans relating to the Proposal shall undergo an independent peer review conducted by a single independent engineering firm referred to for the purposes of this article as the Independent Review Engineer who is not the originator of the Proposal design, and is pre-qualified by the Department in accordance with Rule 14-75, Florida Administrative Code. The independent peer review is intended to be a comprehensive, thorough verification of the original work, giving assurance that the design is in compliance with all Department requirements. The Independent Review Engineer's comments, along with the resolution of each comment, shall be submitted to the Department. The Independent Review Engineer shall sign and seal the submittal cover letter stating that all comments have been adequately addressed and

the design is in compliance with the Department requirements. If there are any unresolved comments the Independent Review Engineer shall specifically list all unresolved issues in the signed and sealed cover letter.

The Contractor shall designate a primary engineer responsible for the Proposal design and as such will be designated as the Contractor's Engineer of Record for the Proposal design. The Department reserves the right to require the Contractor's Engineer of Record to assume responsibility for design of the entire structure.

New designs and independent peer reviews shall be in compliance with all applicable Department, FHWA and AASHTO criteria requirements including bridge load ratings.

**4-3.9.7 Sharing Arrangements:** If the Department approves a Proposal, the Contractor shall receive 50% of the net reduction in the cost of performance of the Contract as determined by the final negotiated agreement between the Contractor and the Department. The net reduction will be determined by subtracting from the savings of the construction costs the reasonable documented engineering costs incurred by the contractor to design and develop a Proposal. The reasonable documented engineering costs will be paid by the Department. Engineering costs will be based on the consultant's certified invoice and may include the costs of the Independent Review Engineer in 4-3.9.6. The total engineering costs to be subtracted from the savings to determine the net reduction will be limited to 25% of the construction savings and shall not include any markup by the Contractor or the costs for engineering services performed by the Contractor.

**4-3.9.8 Notice of Intellectual Property Interests and Department's Future Rights to a Proposal:**

**4-3.9.8.1 Notice of Intellectual Property Interests:** The Contractor's Proposal submittal shall identify with specificity any and all forms of intellectual property rights that either the Contractor or any officer, shareholder, employee, consultant, or affiliate, of the Contractor, or any other entity who contributed in any measure to the substance of the Contractor's Proposal development, have or may have that are in whole or in part implicated in the Proposal. Such required intellectual property rights notice includes, but is not limited to, disclosure of any: issued patents, copyrights, or licenses; pending patent, copyright or license applications; and any intellectual property rights that though not yet issued, applied for or intended to be pursued, could nevertheless otherwise be subsequently the subject of patent, copyright or license protection by the Contractor or others in the future. This notice requirement does not extend to intellectual property rights as to stand-alone or integral components of the Proposal that are already on the Department's QPL or design standard indexes, or are otherwise generally known in the industry as being subject to patent or copyright protection.

**4-3.9.8.2 Department's Future Rights to a Proposal:** Notwithstanding 7-3 nor any other provision of the Standard Specifications, upon acceptance of a Proposal, the Contractor hereby grants to the Department and its contractors (such grant being expressly limited solely to any and all existing or future Department construction projects and any other Department projects that are partially or wholly funded by or for the Department) a royalty-free and perpetual license under all forms of intellectual property rights to manufacture, to use, to design, to construct, to disclose, to reproduce, to prepare and fully utilize derivative works, to distribute, display and publish, in whole or in part, and to permit others to do any of the above, and to otherwise in any manner and for any purpose whatsoever do anything reasonably

necessary to fully utilize any and all aspects of such Proposal on any and all existing and future construction projects and any other Department projects.

Contractor shall hold harmless, indemnify and defend the Department and its contractors and others in privity therewith from and against any and all claims, liabilities, other obligations or losses, and reasonable expenses related thereto (including reasonable attorneys' fees), which are incurred or are suffered by any breach of the foregoing grants, and regardless of whether such intellectual property rights were or were not disclosed by the Contractor pursuant to 4-3.9.8.1, unless the Department has by express written exception in the Proposal acceptance process specifically released the Contractor from such obligation to hold harmless, indemnify and defend as to one or more disclosed intellectual property rights.

#### **4-4 Unforeseeable Work.**

When the Department requires work that is not covered by a price in the Contract and such work does not constitute a "Significant Change" as defined in 4-3.1, and the Department finds that such work is essential to the satisfactory completion of the Contract within its intended scope, the Department will make an adjustment to the Contract. The Engineer will determine the basis of payment for such an adjustment in a fair and equitable amount.

#### **4-5 Rights in and Use of Materials Found on the Site of the Work.**

**4-5.1 Ownership and Disposal of Existing Materials:** Take ownership and dispose of all materials that are not designated as the property of other parties, in both roadway and structures, found on the right-of-way, and all material in structures designated for removal. Such materials do not include earth or other excavated material required for the construction of the project. During construction, the Contractor may use materials from existing structures that are required to be removed and that are designated to remain the property of the Department. Do not cut or otherwise damage such material during removal unless the Engineer gives permission to do so. Store material in an accessible location as the Engineer directs. The Department is not responsible for the quality or quantity of any material salvaged.

**4-5.2 Ornamental Trees and Shrubs:** Take ownership of all ornamental trees or shrubs existing in the right-of-way that are required to be removed for the construction operations and which are not specifically designated on the Plans to be reset, or to be removed by others prior to the construction operations.

#### **4-6 Final Cleaning Up of Right-of-Way.**

Upon completion of the work, and before the Department accepts the work and makes final payment, remove from the right-of-way and adjacent property all falsework, equipment, surplus and discarded materials, rubbish and temporary structures; restore in an acceptable manner all property, both public and private, that has been damaged during the prosecution of the work; and leave the waterways unobstructed and the roadway in a neat and presentable condition throughout the entire length of the work under Contract. Do not dispose of materials of any character, rubbish or equipment, on abutting property, with or without the consent of the property owners. The Engineer will allow the Contractor to temporarily store equipment, surplus materials, usable forms, etc., on a well-kept site owned or leased by the Contractor, adjacent to the project. However, do not place or store discarded equipment, materials, or rubbish on such a site.

Shape and dress areas adjacent to the project right-of-way that were used as plant sites, materials storage areas or equipment yards when they are no longer needed for such purposes. Restore these areas in accordance with 7-11.1 and 7-11.2. Grass these areas when the Engineer directs.

## SECTION 5 CONTROL OF THE WORK

### 5-1 Plans and Working Drawings.

**5-1.1 Contract Documents:** The Standard Specifications and the Design Standards can be accessed from the Department's website. Have available on the worksite, at all times, one copy of the Contract Documents.

**5-1.2 Department's Plans:** Plans consist of general drawings showing such details as are necessary to give a comprehensive idea of the construction contemplated. In general, roadway plans will show alignment, profile grades, typical cross-sections and general cross-sections. In general, structure plans will show in detail all dimensions of the work contemplated. When the structure plans do not show the dimensions in detail, they will show general features and such details as are necessary to give a comprehensive idea of the structure.

Grades shown are finished grades, and B.M. Datum is North American Vertical Datum 1988 (NAVD-1988) National Geodetic Vertical Datum of 1929 (NGVD-1929) or other datum as noted in the plans.

**5-1.3 Alterations in Plans:** The Department will issue, in writing, all authorized alterations affecting the requirements and information given on the approved plans.

### 5-1.4 Shop Drawings:

#### 5-1.4.1. Definitions:

(a) Shop Drawings: All working, shop and erection drawings, associated trade literature, calculations, schedules, manuals and similar documents submitted by the Contractor to define some portion of the project work. The type of work includes both permanent and temporary works as appropriate to the project.

(b) Permanent Works: All the permanent structures and parts thereof required of the completed Contract.

(c) Temporary Works: Any temporary construction work necessary for the construction of the permanent works. This includes but is not limited to bracing, falsework, formwork, scaffolding, shoring, temporary earthworks, sheeting, cofferdams, and special erection equipment.

(d) Construction Affecting Public Safety: Construction that may jeopardize public safety such as structures spanning functioning vehicular roadways, pedestrian walkways, railroads, navigation channels of navigable waterways and walls or other structure foundations located in embankments immediately adjacent to functioning roadways. It does not apply to those areas of the site under the Contractor's control and outside the limits of normal public access.

(e) Major and Unusual Structures: Bridges of complex geometry and/or complex design. Generally, this includes the following types of structures:

1. Bridges with an individual span longer than 300 feet.
2. Structurally continuous superstructures with spans over 150 feet.
3. Steel box and plate girder bridges.
4. Steel truss bridges.
5. Concrete segmental and longitudinally post-tensioned continuous girder bridges.
6. Cable stayed or suspension bridges.
7. Arch bridges.

8. Tunnels.  
9. Movable bridges (specifically electrical and mechanical components).

10. Rehabilitation, widening, or lengthening of any of the above.

(f) Special Erection Equipment includes launching gantries, beam and winch equipment, form travelers, stability towers, strong-backs, erection trusses, launching noses or similar items made purposely for construction of the structure. It does not apply to commonly available proprietary construction equipment such as cranes.

(g) Falsework includes any temporary construction work used to support the permanent structure until it becomes self-supporting. Falsework includes steel or timber beams, girders, columns, piles and foundations, and any proprietary equipment including modular shoring frames, post shores, and adjustable horizontal shoring.

(h) Formwork includes any structure or mold used to retain plastic or fluid concrete in its designated shape until it hardens. Formwork comprises common materials such as wood or metal sheets, battens, soldiers and walers, ties, proprietary forming systems such as stay-in-place metal forms, and proprietary supporting bolts, hangers and brackets. Formwork may be either permanent formwork requiring a shop drawing submittal such as stay-in-place metal or concrete forms, or may be temporary formwork which requires certification by the Specialty Engineer for Construction Affecting Public Safety and for Major and Unusual Structures.

(i) Scaffolding is an elevated work platform used to support workmen, materials and equipment, but not intended to support the structure.

(j) Shoring is a component of falsework such as horizontal, vertical or inclined support members. In this Section, this term is interchangeable with falsework.

(k) Bracing is a temporary structural member(s) placed between beams, girders, piles columns, etc. to provide stability during construction activities.

(l) Contractor Originated Designs: Items which the Contract Documents require the Contractor to design, detail and incorporate into the permanent works.

**5-1.4.2 Work Items Requiring Shop Drawings:** In general, the Department requires shop drawings for items of work not fully detailed in the plans which require additional drawings and coordination prior to constructing the item, including but not limited to:

(a) Bridge components not fully detailed in the plans, i.e. segments, steel girder details, post-tensioning details, handrails, etc.

(b) Retaining Wall Systems

(c) Precast Box Culverts

(d) Non-standard structures and components for drainage, lighting, signalization and signing

(e) Building structures

(f) Non-standard crash cushions and other nonstructural items

(g) Design and structural details furnished by the Contractor in compliance with the Contract

(h) Temporary Works affecting public safety

Additional clarification for certain types of bridge structures is provided in 5-1.4.7. Other provisions of the Contract Documents may waive the requirement for submittals for certain items; i.e., items constructed from standard drawings or those complying with

alternate details for prestressed members under Section 450. Review the Contract Documents to determine the submittals required.

**5-1.4.3 Schedule of Submittals:** Prepare and submit a schedule of submittals that identifies the work for which shop drawings apply. For each planned submittal, define the type, and approximate number of drawings or other documents that are included and the planned submittal date, considering the processing requirements herein. Submit the schedule of submittals to the Department's Shop Drawing Review Office and the Engineer of Record within 60 days of the start of the Contract, and prior to the submission of any shop drawings.

Coordinate subsequent submittals with construction schedules to allow sufficient time for review, approval, and re-submittal as necessary.

**5-1.4.4 Style, Numbering, and Material of Submittals:**

**5-1.4.4.1 Drawings:** Furnish two clearly legible photographic or xerographic copies of all shop drawings that are necessary to complete the structure in compliance with the design shown on the plans. Prepare all shop drawings using the same units of measure as those used in the Department's plans. Use sheets no larger than 11 by 17 inches. Consecutively number each sheet in the submittal series, and indicate the total number in the series (i.e., 1 of 12, 2 of 12 . . . 12 of 12). Include on each sheet the following items as a minimum requirement: the complete Financial Project Identification Number, Bridge Number(s), drawing title and number, a title block showing the names of the fabricator or producer and the Contractor for which the work is being done, the initials of the person(s) responsible for the drawing, the date on which the drawing was prepared, the location of the item(s) within the project, the Contractor's approval stamp with date and initials, and, when applicable, the documents shall be signed and sealed by the Specialty Engineer or Contractor's Engineer of Record, as appropriate. A re-submittal will be requested when any of the required information is not included.

**5-1.4.4.2 Other Documents:** Provide four sets of original documents or clearly legible photographic or xerographic copies of documents other than drawings, such as trade literature, catalogue information, calculations, and manuals. Provide sheets no larger than 11 by 17 inches. Clearly label and number each sheet in the submittal to indicate the total number of sheets in the series (i.e., 1 of 12, 2 of 12 . . . 12 of 12). Provide an additional three sets of documentation for items involved with precast prestressed components. Provide an additional two sets of documentation for items involving structural steel components.

Prepare all documents using the same units of measure as those used in the Department's plans. Bind and submit all documents with a Table of Contents cover sheet. List on the cover sheet the total number of pages and appendices, and include the complete Financial Project Identification Number, a title referencing the submittal item(s), the name of the firm and person(s) responsible for the preparation of the document, the Contractor's approval stamp with date and initials, and, when applicable, the documents shall be signed and sealed by the Specialty Engineer or Contractor's Engineer of Record, as appropriate.

Submit appropriately prepared and checked calculations and manuals that clearly outline the design criteria. Include on the internal sheets the complete Financial Project Identification Number and the initials of the person(s) responsible for preparing and checking the document.

Clearly label trade literature and catalogue information on the front cover with the title, Financial Project Identification Number, date and name of the firm and person(s) responsible for that document.

#### **5-1.4.5 Submittal Paths and Copies:**

**5-1.4.5.1 General:** Shop drawings are not required for prequalified items. For non-prequalified items, determine the submittal path to be followed based upon the identity of the Engineer of Record as shown adjacent to the title block on the structural plan sheets, and on the key sheets of roadway plans, signing, and pavement marking plans, and/or lighting plans. At the preconstruction conference, the Department will notify the Contractor of any changes in the submittal path and whether the Department's or the Consultant's red-ink review stamp will signify an officially reviewed shop drawing.

(a) When the Florida Department of Transportation is the Engineer of Record, submit shop drawings to the appropriate Department Shop Drawing Review Office with a copy of the letter of transmittal sent to the Resident Engineer. For work requiring other information (e.g., catalog data, procedure manuals, fabrication/welding procedures, and maintenance and operating procedures), submit the required number of copies to the appropriate Department Shop Drawing Review Office. If not shown on the plans, the Department will furnish the mailing address of the appropriate Department Shop Drawing Review Office. Provide copies of material certifications and material tests to the Resident Engineer.

(b) When the Engineer of Record is a consultant hired by the Department, submit shop drawings to the consultant with a copy of the letter of transmittal sent to the Resident Engineer and, when requested, to the appropriate Department Shop Drawing Review Office. For work requiring other documentation (e.g., catalog data, procedure manuals, fabrication/welding procedures, and maintenance and operating manuals), submit the required number of copies with the prints. If not shown on the plans, the Department will furnish the mailing address of the Consulting Engineer of Record. Provide copies of material certifications and material tests to the Resident Engineer.

**5-1.4.5.2 Building Structures:** Submit working, shop and erection drawings, and all correspondence related to building structures, such as Rest Area Pavilions, Office Buildings, and Maintenance Warehouses, to the Architect of Record for review and approval. Send a copy of the transmittal to the Resident Engineer.

**5-1.4.5.3 Contractor-Originated Design:** Submit shop drawings and applicable calculations to the Engineer of Record for review. Ensure that each sheet of the shop drawings and the cover sheet of the calculations are signed and sealed by the Specialty Engineer or the Contractor's Engineer of Record. Transmit the submittal and copies of the transmittal letters in accordance with the requirements of 5-1.4.5.1 through 5-1.4.5.3, as appropriate.

**5-1.4.5.4 Temporary Works:** For Construction Affecting Public Safety, submit to the Engineer of Record shop drawings and the applicable calculations for the design of special erection equipment, bracing, falsework, scaffolding, etc. Ensure that each sheet of the shop drawings and the cover sheet of the applicable calculations is signed and sealed by the Specialty Engineer. Transmit the submittal and copies of the transmittal letters in accordance with the requirements of 5-1.4.5.1 through 5-1.4.5.3, as appropriate.

**5-1.4.5.5 Falsework Founded on Shallow Foundations:** When vertical displacement limits are provided in the Plans for falsework founded on shallow foundations such as spread footings and mats, submit to the Engineer of Record shop drawings and applicable calculations of the falsework system including subsurface conditions and settlement estimates. Ensure that each sheet of the shop drawings and the cover sheet of the applicable calculations is signed and sealed by the Specialty Engineer. Transmit the submittal and copies of the transmitted letters in accordance with the requirements of 5-1.4.5.1 through 5-1.4.5.3, as appropriate.

**5-1.4.5.6 Formwork and Scaffolding:** The Contractor is solely responsible for the safe installation and use of all formwork and scaffolding. The Department does not require any formwork or scaffolding submittals unless such work would be classified as Construction Affecting Public Safety. For formwork, scaffolding, or other temporary works affecting public safety; develop the required designs in accordance with the AASHTO Guide Design Specifications for Bridge Temporary Works, the AASHTO Construction Handbook for Bridge Temporary Works, and Chapter 11 of the Structures Design Guidelines (SDG) using wind loads specified in the SDG.

**5-1.4.5.7 Beam and Girder Temporary Bracing:** The Contractor is solely responsible for ensuring stability of beams and girders during all handling, storage, shipping and erection. Adequately brace beams and girders to resist wind, weight of forms and other temporary loads, especially those eccentric to the vertical axis of the products, considering actual beam geometry and support conditions during all stages of erection and deck construction. At a minimum, provide temporary bracing at each end of each beam or girder. Develop the required bracing designs in accordance with the AASHTO LRFD Bridge Design Specifications (LRFD) and Chapter 11 of the SDG using wind loads specified in the SDG. For information not included in the SDG or LRFD, refer to the AASHTO Guide Design Specifications for Bridge Temporary Works and the AASHTO Construction Handbook for Bridge Temporary Works.

**5-1.4.5.8 Erection Plan:** Submit, for the Engineer's review, an Erection Plan that meets the specific requirements of Sections 450, 452 and 460 and this section. Refer to Index 600 for construction activities not permitted over traffic.

**5-1.4.5.9 Other Miscellaneous Design and Structural Details**  
**Furnished by the Contractor in Compliance with the Contract:** Submit to the Engineer of Record shop drawings and the applicable calculations. Ensure that each sheet of the shop drawings and the cover sheet of the applicable calculations is signed and sealed by the Specialty Engineer. Transmit the submittal and copies of the transmittal letters in accordance with the requirements of 5-1.4.5.1 through 5-1.4.5.3, as appropriate.

**5-1.4.6 Processing of Shop Drawings:**

**5-1.4.6.1 Contractor Responsibility for Accuracy and Coordination of Shop Drawings:** Coordinate, schedule, and control all submittals, with a regard for the required priority, including those of the various subcontractors, suppliers, and engineers, to provide for an orderly and balanced distribution of the work.

Coordinate, review, date, stamp, approve and sign all shop drawings prepared by the Contractor or agents (subcontractor, fabricator, supplier, etc.) prior to submitting them to the Engineer of Record for review. Submittal of the drawings confirms verification of the work requirements, units of measurement, field measurements, construction criteria, sequence of assembly and erection, access and clearances, catalog numbers, and other similar data. Indicate on each series of drawings the specification section and page or drawing number of the Contract plans to which the submission applies. Indicate on the shop drawings all deviations from the Contract drawings and itemize all deviations in the letter of transmittal. Likewise, whenever a submittal does not deviate from the Contract plans, clearly state so in the transmittal letter.

Schedule the submission of shop drawings to allow for a 45 day review period. The review period commences upon the Engineer of Record's receipt of the valid submittal or valid re-submittal and terminates upon the transmittal of the submittal back to the Contractor. A valid submittal includes all the minimum requirements outlined in 5-1.4.4.

Submit shop drawings to facilitate expeditious review. The Contractor is discouraged from transmitting voluminous submittals of shop drawings at one time. For submittals transmitted in this manner, allow for the additional review time that may result.

Only shop drawings distributed with the “red ink” stamps are valid and all work that the Contractor performs in advance of approval will be at the Contractor’s risk.

**5-1.4.6.2 Scope of Review by Engineer:** The Engineer of Record’s review of the shop drawings is for conformity to the requirements of the Contract Documents and to the intent of the design. The Engineer of Record’s review of shop drawings which include means, methods, techniques, sequences, and construction procedures are limited to the effects on the permanent works. The Engineer of Record’s review of submittals which include means, methods, techniques, sequences, and construction procedures does not include an in-depth check for the ability to perform the work in a safe or efficient manner. Review by the Engineer of Record does not relieve the Contractor of responsibility for dimensional accuracy to ensure field fit and for conformity of the various components and details.

**5-1.4.6.3 Special Review by Engineer of Shop Drawings for Construction Affecting Public Safety:** For Construction Affecting Public Safety, the Engineer of Record, or other Engineer as the Department appoints for this purpose, will make an independent review of all relevant shop drawings and similar documents. Do not proceed with construction of the permanent works until receiving the Engineer of Record’s approval. The review of these shop drawings is for overall structural adequacy of the item to support the imposed loads and does not include a check for economy, efficiency or ease of construction.

**5-1.4.7 Other Requirements for Shop Drawings for Bridges:**

**5-1.4.7.1 Shop Drawings for Structural Steel and Miscellaneous Metals:** Furnish shop drawings for structural steel and miscellaneous metals. Shop drawings shall consist of working, shop, and erection drawings, welding procedures, and other working plans, showing details, dimensions, sizes of material, and other information necessary for the complete fabrication and erection of the metal work.

**5-1.4.7.2 Shop Drawings for Concrete Structures:** Furnish shop drawings for concrete components that are not cast-in-place and are not otherwise exempted from submittal requirements. Also, furnish shop drawings for all details that are required for the effective prosecution of the concrete work and are not included in the Contract Documents such as: special erection equipment, masonry layout diagrams, and diagrams for bending reinforcing steel, in addition to any details required for concrete components for the permanent work.

**5-1.4.7.3 Shop Drawings for Major and Unusual Structures:** In addition to any other requirements, within 60 days from the Notice to Proceed, submit information to the Engineer outlining the integration of the Major and Unusual Structure into the overall approach to the project. Where applicable to the project, include, but do not limit this information to:

(1) The overall construction program for the duration of the Contract. Clearly show the Milestone dates. (For example, the need to open a structure by a certain time for traffic operations.)

(2) The overall construction sequence. The order in which individual structures are to be built, the sequence in which individual spans of girders or cantilevers are erected, and the sequence in which spans are to be made continuous.

(3) The general location of any physical obstacles to construction that might impose restraints or otherwise affect the construction, and an outline of how to deal

with such obstacles while building the structure(s). (For example, obstacles might include road, rail and waterway clearances, temporary diversions, transmission lines, utilities, property, and the Contractor's own temporary works, such as haul roads, cofferdams, plant clearances and the like.)

(4) The approximate location of any special lifting equipment in relation to the structure, including clearances required for the operation of the equipment. (For example, crane positions, operating radii and the like.)

(5) The approximate location of any temporary falsework, and the conceptual outline of any special erection equipment. Provide the precise locations and details of attachments, fixing devices, loads, etc. in later detailed submittals.

(6) An outline of the handling, transportation, and storage of fabricated components, such as girders or concrete segments. Provide the precise details in later detailed submittals.

(7) Any other information pertinent to the proposed scheme or intended approach.

Clearly and concisely present the above information on as few drawings as possible in order to provide an overall, integrated summary of the intended approach to the project. The Department will use these drawings for information, review planning, and to assess the Contractor's approach in relation to the intent of the original design. The delivery to and receipt by the Engineer does not constitute any Department acceptance or approval of the proposals shown thereon. Include the details of such proposals on subsequent detailed shop drawing submittals. Submit timely revisions and re-submittals for all variations from these overall scheme proposals.

**5-1.4.8 Modifications for Construction:** Where the Engineer allows the Contractor to make modifications to the permanent works for the purposes of expediting the Contractor's chosen construction methods, the Contractor shall submit proposals to the Engineer of Record for review and approval prior to modifying the works. Submit proposals for minor modifications under the shop drawing process. Indicate on all drawings the deviations from the Contract Documents and itemize all deviations in the letter of transmittal. The Department will require additional submittals and/or submittal under a Cost Savings Initiative Proposal for major modifications.

Minor modifications are those items that, in the opinion of the Engineer, do not significantly affect the quantity of measured work, or the integrity or maintainability of the structure or its components. (For example, adjusting concrete dimensions, substituting steel plate sizes, changing reinforcing bar size and spacing, etc., all within the acceptable limits of the design.)

Major modifications are any modifications that, in the opinion of the Engineer, significantly affect the quantity of measured work, or the integrity or maintainability of the structure or its' components. (For example, substituting alternative beam sizes and spacings, changing material strength or type, and the like.). Provide signed and sealed revised sheets to the Engineer for any such revisions to the Contract plans prior to submitting shop drawings.

The Engineer's decision on the delineation between a minor and a major modification and the disposition of a proposal is final.

**5-1.4.9 Cost of Shop Drawings:** Include the cost of furnishing shop and working drawings in the Contract prices for the work requiring the shop and working drawings. The Department will not pay the Contractor additional compensation for such drawings.

**5-1.5 Certifications:**

**5-1.5.1 Special Erection Equipment:** Prior to its use, ensure that the Specialty Engineer personally inspects the special erection equipment and certifies to the Engineer in writing that the equipment has been fabricated in accordance with the submitted drawings and calculations. In addition, after assembly, ensure that the Specialty Engineer observes the equipment in use and certifies to the Engineer in writing that it is being used as intended and in accordance with the submitted drawings and calculations. In each case, ensure that the Specialty Engineer also signs and seals the letter of certification.

**5-1.5.2 Falsework and Shoring Requiring Shop Drawings:** After its erection or installation but prior to the application of any superimposed load, ensure that a Specialty Engineer or a designee inspects the falsework and certifies to the Engineer in writing that the falsework has been constructed in accordance with the materials and details shown on the submitted drawings and calculations. Ensure that the Specialty Engineer also signs and seals the letter of certification. Where so directed in the shop drawings, ensure all welds are performed by welders qualified under AWS D1.5 for the type of weld being performed.

**5-1.5.3 Temporary Formwork:** For Construction Affecting Public Safety and for Major and Unusual Structures, prior to the placement of any concrete, ensure that a Specialty Engineer or a designee inspects the formwork and certifies to the Engineer in writing that the formwork has been constructed to safely withstand the superimposed loads to which it will be subjected. Ensure that the Specialty Engineer signs and seals the letter of certification.

**5-1.5.4 Erection:** For Construction Affecting Public Safety, submit an erection plan signed and sealed by the Specialty Engineer to the Engineer at least four weeks prior to erection commencing. Include, as part of this submittal, signed and sealed calculations and details for any falsework, bracing or other connection supporting the structural elements shown in the erection plan. Unless otherwise specified in the Plans, erection plans are not required for simple span precast prestressed concrete girder bridges with spans of 170 feet or less.

At least two weeks prior to beginning erection, conduct a Pre-erection meeting to review details of the plan with the Specialty Engineer that signed and sealed the plan, and any Specialty Engineers that may inspect the work and the Engineer.

After erection of the elements, but prior to opening of the facility below the structure, ensure that a Specialty Engineer or a designee has inspected the erected member. Ensure that the Specialty Engineer has certified to the Engineer that the structure has been erected in accordance with the signed and sealed erection plan.

For structures without temporary supports but with temporary girder bracing systems, perform, as a minimum, weekly inspections of the bracing until all the diaphragms and cross frames are in place. For structures with temporary supports, perform daily inspections until the temporary supports are no longer needed as indicated in the erection plans. Provide written documentation of the inspections to the Engineer within 24 hours of the inspection.

**5-1.6 Corrections for Construction Errors:** For work that the Contractor constructs incorrectly or does not meet the requirements of the Contract Documents, the Contractor has the prerogative to submit an acceptance proposal to the Engineer for review and disposition. The acceptance proposal shall describe the error or defect and either describe remedial action for its

correction or propose a method for its acceptance. In either case, the acceptance proposal shall address structural integrity, aesthetics, maintainability, and the effect on Contract Time. The Department will judge any such proposal for its effect on these criteria and also for its effect on Contract Administration.

When the Engineer judges that a proposal infringes on the structural integrity or maintainability of the structure, the Contractor's Engineer of Record will perform a technical assessment and submit it to the Engineer for approval. Do not take any corrective action without the Engineer's approval.

Carry out all approved corrective construction measures at no expense to the Department.

Notwithstanding any disposition of the compensation aspects of the defective work, the Engineer's decision on the technical merits of a proposal is final.

### **5-2 Coordination of Contract Documents.**

These Specifications, the Plans, Special Provisions, and all supplementary documents are integral parts of the Contract; a requirement occurring in one is as binding as though occurring in all. All parts of the Contract are complementary and describe and provide for a complete work. In addition to the work and materials specified in the Specifications as being included in any specific pay item, include in such pay items additional, incidental work, not specifically mentioned, when so shown in the plans, or if indicated, or obvious and apparent, as being necessary for the proper completion of the work under such pay item and not stipulated as being covered under other pay items.

In cases of discrepancy, the governing order of the documents is as follows:

1. Special Provisions.
  2. Technical Special Provisions.
  3. Plans.
  4. Design Standards.
  5. Developmental Specifications.
  6. Supplemental Specifications.
  7. Standard Specifications.
- Computed dimensions govern over scaled dimensions.

### **5-3 Conformity of Work with Contract Documents.**

Perform all work and furnish all materials in reasonably close conformity with the lines, grades, cross-sections, dimensions, and material requirements, including tolerances, as specified in the Contract Documents.

In the event that the Engineer finds that the Contractor has used material or produced a finished product that is not in reasonably close conformity with the Contract Documents, but that the Contractor has produced reasonably acceptable work, the Engineer will determine if the Department will accept the work in place. In this event, the Engineer will document the basis of acceptance by Contract modification, which provides for an appropriate reduction in the Contract price for such work or materials included in the accepted work as deemed necessary to conform to the determination based on engineering judgment.

In the event that the Engineer finds that the Contractor has used material or produced a finished product that is not in reasonably close conformity with the Contract Documents, and that the Contractor has produced an inferior or unsatisfactory product, the Contractor shall remove and replace or otherwise correct the work or materials at no expense to the Department.

For base and surface courses, the Department will allow the finished grade to vary as much as 0.1 foot from the grade shown in the plans, provided that the Contractor's work meets all templates and straightedge requirements and contains suitable transitions.

#### **5-4 Errors or Omissions in Contract Documents.**

Do not take advantage of any apparent error or omission discovered in the Contract Documents, but immediately notify the Engineer of such discovery. The Engineer will then make such corrections and interpretations as necessary to reflect the actual spirit and intent of the Contract Documents.

#### **5-5 Authority of the Engineer.**

Perform all work to the satisfaction of the Engineer.

The Director, Office of Construction will decide all questions, difficulties, and disputes, of whatever nature, that may arise relative to the interpretation of the plans, construction, prosecution, and fulfillment of the Contract, and as to the character, quality, amount, and value of any work done, and materials furnished, under or by reason of the Contract.

#### **5-6 Authority and Duties of Engineer's Assistants.**

The Director, Office of Construction may appoint such assistants and representatives as he desires. These assistants and representatives are authorized to inspect all work done and all materials furnished. Such inspection may extend to all or any part of the work and to the manufacture, preparation, or fabrication of the materials to be used. Such assistants and representatives are not authorized to revoke, alter, or waive any requirement of these Specifications. Rather, they are authorized to call to the attention of the Contractor any failure of the work or materials to meet the Contract Documents, and have the authority to reject materials or suspend the work until any questions at issue can be referred to and decided by the Engineer. The Engineer will immediately notify the Contractor in writing of any such suspension of the work, stating in detail the reasons for the suspension. The presence of the inspector or other assistant in no way lessens the responsibility of the Contractor.

#### **5-7 Engineering and Layout.**

**5-7.1 Control Points Furnished by the Department:** The Engineer will provide centerline control points (Begin Project, End Project, PIs, PTs, etc.) and bench marks at appropriate intervals along the line of the project to facilitate the proper layout of the work. Normally, the Engineer will furnish only one bench mark for water crossings. Preserve all reference points and bench marks that the Department furnishes.

As an exception to the above, for projects where the plans do not show a centerline or other survey control line for construction of the work (e.g., resurfacing, safety modifications, etc.) the Engineer will provide only points marking the beginning and ending of the project, and all exceptions.

**5-7.2 Furnishing of Stake Materials:** Furnish all stakes, templates, and other materials necessary for establishing and maintaining the lines and grades necessary for control and construction of the work.

**5-7.3 Layout of Work:** Utilizing the control points furnished by the Department in accordance with 5-7.1, establish all horizontal and vertical controls necessary to construct the work in conformity to the Contract Documents. Perform all calculations required, and set all stakes needed such as grade stakes, offset stakes, reference point stakes, slope stakes, and other

reference marks or points necessary to provide lines and grades for construction of all roadway, bridge, and miscellaneous items.

When performing utility construction as part of the project, establish all horizontal and vertical controls necessary to carry out such work.

**5-7.4 Specific Staking Requirements:** When performing new base construction as part of the project, set stakes to establish lines and grades for subgrade, base, curb, and related items at intervals along the line of the work no greater than 50 feet on tangents and 25 feet on curves. Set grade stakes at locations that the Engineer directs to facilitate checking of subgrade, base, and pavement elevations in crossovers, intersections, and irregular shaped areas.

For bridge construction stakes and other control, set references at sufficiently frequent intervals to ensure construction of all components of a structure in accordance with the lines and grades shown in the plans.

For projects where the plans do not show a centerline or other survey control line for construction of the work (resurfacing, safety modifications, etc.), provide only such stakes as necessary for horizontal and vertical control of work items.

For resurfacing and resurfacing-widening type projects, establish horizontal controls adequate to ensure that the asphalt mix added matches with the existing pavement. In tangent sections, set horizontal control points at 100 foot intervals by an instrument survey. In curve sections, set horizontal control points at 25 foot intervals by locating and referencing the centerline of the existing pavement.

Establish by an instrument survey, and mark on the surface of the finished pavement at 25 foot intervals, the points necessary for striping of the finished roadway. As an exception, for resurfacing and resurfacing/widening projects, establish these points in the same manner as used for horizontal control of paving operations. Mark the pavement with white paint. If performing striping, the Engineer may approve an alternate method for layout of striping provided that the Contractor achieves an alignment equal to or better than the alignment that would be achieved using an instrument survey.

For projects that include temporary or permanent striping of “no passing zones”, provide the location and length of these zones as shown in the plans, except projects where the vertical or horizontal alignment is new or altered from preconstruction alignment. For projects that consist of new or altered vertical or horizontal alignment, the Department will provide the location and length of the "no passing zones" during construction. For these projects, notify the Engineer not less than 21 calendar days prior to beginning striping.

For all projects, set a station identification stake at each right-of-way line at 100 foot intervals and at all locations where a change in right-of-way width occurs. Mark each of these stakes with painted numerals, of a size readable from the roadway, corresponding to the project station at which it is located. As an exception to the above, for projects where plans do not show right-of-way lines, set station identification stakes at locations and intervals appropriate to the type of work being done. For resurfacing and resurfacing/widening projects, set station identification stakes at 200 foot intervals.

**5-7.5 Personnel, Equipment, and Record Requirements:** Employ only competent personnel and use only suitable equipment in performing layout work. Do not engage the services of any person or persons in the employ of the Department for performance of layout work.

Keep adequate field notes and records while performing as layout work. Make these field notes and records available for the Engineer’s review as the work progresses, and

furnish copies to the Engineer at the time of completion of the project. The Engineer's inspection, checking, or acceptance of the Contractor's field notes or layout work does not relieve the Contractor of his responsibility to achieve the lines, grades, and dimensions shown in the Contract Documents.

Prior to final acceptance of the project, mark, in a permanent manner on the surface of the completed work, all horizontal control points originally furnished by the Department.

**5-7.6 Payment:** Include the cost of performing layout work as described above in the Contract unit prices for the various items of work that require layout.

## **5-8 Contractor's Supervision.**

**5-8.1 Prosecution of Work:** Give the work the constant attention necessary to ensure the scheduled progress, and cooperate fully with the Engineer and with other contractors at work in the vicinity.

**5-8.2 Contractor's Superintendent:** Maintain a competent superintendent at the site at all times while work is in progress to act as the Contractor's agent. Provide a superintendent who is a competent superintendent capable of properly interpreting the Contract Documents and is thoroughly experienced in the type of work being performed. Provide a superintendent with the full authority to receive instructions from the Engineer and to execute the orders or directions of the Engineer, including promptly supplying any materials, tools, equipment, labor, and incidentals that may be required. Furnish such superintendence regardless of the amount of work sublet.

Provide a superintendent who speaks and understands English, and maintain at least one other responsible person who speaks and understands English, on the project during all working hours.

**5-8.3 Supervision for Emergencies:** Provide a responsible person, who speaks and understands English, and who is available at or reasonably near the worksite on a 24 hour basis, seven days a week. Designate this person as the point of contact for emergencies and in cases that require immediate action to maintain traffic or to resolve any other problem that might arise. Submit, by certified mail, the phone numbers and names of personnel designated to be contacted in cases of emergencies, along with a description of the project location, to the Florida Highway Patrol and all other local law enforcement agencies.

## **5-9 General Inspection Requirements.**

**5-9.1 Cooperation by Contractor:** Do not perform work or furnish materials without obtaining inspection by the Engineer or his representative. Furnish the Engineer with every reasonable facility for ascertaining whether the work performed and materials used are in accordance with the requirements and intent of the Contract Documents. If the Engineer so requests at any time before final acceptance of the work, remove or uncover such portions of the finished work as directed. After examination, restore the uncovered portions of the work to the standard required by the Contract Documents. If the Engineer determines that the work so exposed or examined is unacceptable, perform the uncovering or removal, and the replacing of the covering or making good of the parts removed, at no expense to the Department. However, if the Engineer determines that the work thus exposed or examined is acceptable, the Department will pay for the uncovering or removing, and the replacing of the covering or making good of the parts removed in accordance with Section 4-4.

**5-9.2 Failure of Engineer to Reject Work During Construction:** If, during or prior to construction operations, the Engineer fails to reject defective work or materials, whether from lack of discovery of such defect or for any other reason, such initial failure to reject in no way prevents the later rejection when such defect is discovered, or obligates the Department to final acceptance. The Department is not responsible for losses suffered due to any necessary removals or repairs of such defects.

**5-9.3 Failure to Remove and Renew Defective Materials and Work:** If the Contractor fails or refuses to remove and renew any defective materials used or work performed, or to make any necessary repairs in an acceptable manner and in accordance with the requirements of the Contract within the time indicated in writing, the Engineer has the authority to repair, remove, or renew the unacceptable or defective materials or work as necessary, all at the Contractor's expense. The Department will obtain payment for any expense it incurs in making these repairs, removals, or renewals, that the Contractor fails or refuses to make, by deducting such expenses from any moneys due or which may become due the Contractor, or by charging such amounts against the Contract bond.

**5-9.4 Inspection by Federal Government:** When the United States Government pays a portion of the cost of construction, its representatives may inspect the construction work as they deem necessary. However, such inspection will in no way make the Federal Government a party to the Contract.

## **5-10 Final Inspection.**

**5-10.1 Maintenance until Acceptance:** Maintain all Work until the Engineer has given final acceptance in accordance with 5-11.

**5-10.2 Inspection for Acceptance:** Upon notification that all Contract Work, or all Contract Work on the portion of the Contract scheduled for acceptance, has been completed, the Engineer will make an inspection for acceptance. The inspection will be made within seven days of the notification. If the Engineer finds that all work has been satisfactorily completed, the Department will consider such inspection as the final inspection. If any or all of the Work is found to be unsatisfactory, the Engineer will detail the remedial work required to achieve acceptance. Immediately perform such remedial work. Subsequent inspections will be made on the remedial work until the Engineer accepts all Work.

Upon satisfactory completion of the Work, the Department will provide written notice of acceptance, either partial or final, to the Contractor.

Until final acceptance in accordance with 5-11, replace or repair any damage to the accepted Work. Payment of such work will be as provided in 7-14.

**5-10.3 Partial Acceptance:** At the Engineer's sole discretion, the Engineer may accept any portion of the Work under the provisions of 5-10.2.

**5-10.4 Conditional Acceptance:** The Engineer will not make, or consider requests for conditional acceptance of a project.

## **5-11 Final Acceptance.**

When, upon completion of the final construction inspection of the entire project, the Engineer determines that the Contractor has satisfactorily completed the work, the Engineer will give the Contractor written notice of final acceptance.

## **5-12 Claims by Contractor.**

**5-12.1 General:** When the Contractor deems that extra compensation or a time extension is due beyond that agreed to by the Engineer, whether due to delay, additional work, altered work, differing site conditions, breach of Contract, or for any other cause, the Contractor shall follow the procedures set forth herein for preservation, presentation and resolution of the claim.

Submission of timely notice of intent to file a claim, preliminary time extension request, time extension request, and the certified written claim, together with full and complete claim documentation, are each a condition precedent to the Contractor bringing any circuit court, arbitration, or other formal claims resolution proceeding against the Department for the items and for the sums or time set forth in the Contractor's certified written claim. The failure to provide such notice of intent, preliminary time extension request, time extension request, certified written claim and full and complete claim documentation within the time required shall constitute a full, complete, absolute and irrevocable waiver by the Contractor of any right to additional compensation or a time extension for such claim.

### **5-12.2 Notice of Claim:**

**5-12.2.1 Claims For Extra Work:** Where the Contractor deems that additional compensation or a time extension is due for work or materials not expressly provided for in the Contract or which is by written directive expressly ordered by the Engineer pursuant to 4-3, the Contractor shall notify the Engineer in writing of the intention to make a claim for additional compensation before beginning the work on which the claim is based, and if seeking a time extension, the Contractor shall also submit a preliminary request for time extension pursuant to 8-7.3.2 within ten calendar days after commencement of a delay and a request for Contract Time extension pursuant to 8-7.3.2 within thirty calendar days after the elimination of the delay. If such notification is not given and the Engineer is not afforded the opportunity for keeping strict account of actual labor, material, equipment, and time, the Contractor waives the claim for additional compensation or a time extension. Such notice by the Contractor, and the fact that the Engineer has kept account of the labor, materials and equipment, and time, shall not in any way be construed as establishing the validity of the claim or method for computing any compensation or time extension for such claim. On projects with an original Contract amount of \$3,000,000 or less within 90 calendar days after final acceptance of the project in accordance with 5-11, and on projects with an original Contract amount greater than \$3,000,000 within 180 calendar days after final acceptance of the project in accordance with 5-11, the Contractor shall submit full and complete claim documentation as described in 5-12.3 and duly certified pursuant to 5-12.9. However, for any claim or part of a claim that pertains solely to final estimate quantities disputes the Contractor shall submit full and complete claim documentation as described in 5-12.3 and duly certified pursuant to 5-12.9, as to such final estimate claim dispute issues, within 90 or 180 calendar days, respectively, of the Contractor's receipt of the Department's final estimate.

If the Contractor fails to submit a certificate of claim as described in 5-12.9, the Department will so notify the Contractor in writing. The Contractor shall have ten calendar days from receipt of the notice to resubmit the claim documentation, without change, with a certificate of claim as described in 5-12.9, without regard to whether the resubmission is within the applicable 90 or 180 calendar day deadline for submission of full and complete claim documentation. Failure by the Contractor to comply with the ten calendar day notice shall constitute a waiver of the claim.

**5-12.2.2 Claims For Delay:** Where the Contractor deems that additional compensation or a time extension is due on account of delay, differing site conditions, breach of

Contract, or any other cause other than for work or materials not expressly provided for in the Contract (Extra Work) or which is by written directive of the Engineer expressly ordered by the Engineer pursuant to 4-3, the Contractor shall submit a written notice of intent to the Engineer within ten days after commencement of a delay to a controlling work item expressly notifying the Engineer that the Contractor intends to seek additional compensation, and if seeking a time extension, the Contractor shall also submit a preliminary request for time extension pursuant to 8-7.3.2 within ten calendar days after commencement of a delay to a controlling work item, as to such delay and providing a reasonably complete description as to the cause and nature of the delay and the possible impacts to the Contractor's work by such delay, and a request for Contract Time extension pursuant to 8-7.3.2 within thirty calendar days after the elimination of the delay. On projects with an original Contract amount of \$3,000,000 or less within 90 calendar days after final acceptance of the project in accordance with 5-11, and on projects with an original Contract amount greater than \$3,000,000 within 180 calendar days after final acceptance of the project in accordance with 5-11, the Contractor shall submit full and complete documentation as described in 5-12.3 and duly certified pursuant to 5-12.9.

If the Contractor fails to submit a certificate of claim as described in 5-12.9, the Department will so notify the Contractor in writing. The Contractor shall have ten calendar days from receipt of the notice to resubmit the claim documentation, without change, with a certificate of claim as described in 5-12.9, without regard to whether the resubmission is within the applicable 90 or 180 calendar day deadline for submission of full and complete claim documentation. Failure by the Contractor to comply with the ten calendar day notice shall constitute a waiver of the claim.

There shall be no Contractor entitlement to any monetary compensation or time extension for any delays or delay impacts, whatsoever, that are not to a controlling work item, and then as to any such delay to a controlling work item entitlement to any monetary compensation or time extension shall only be to the extent such is otherwise provided for expressly under 4-3 or 5-12, except that in the instance of delay to a non-controlling item of work the Contractor may be compensated for the direct costs of idle labor or equipment only, at the rates set forth in 4-3.2.1(a) and (c), and then only to the extent the Contractor could not reasonably mitigate such idleness.

**5-12.3 Content of Written Claim:** As a condition precedent to the Contractor being entitled to additional compensation or a time extension under the Contract, for any claim, the Contractor shall submit a certified written claim to the Department which will include for each individual claim, at a minimum, the following information:

(a) A detailed factual statement of the claim providing all necessary dates, locations, and items of work affected and included in each claim;

(b) The date or dates on which actions resulting in the claim occurred or conditions resulting in the claim became evident;

(c) Identification of all pertinent documents and the substance of any material oral communications relating to such claim and the name of the persons making such material oral communications;

(d) Identification of the provisions of the Contract which support the claim and a statement of the reasons why such provisions support the claim, or alternatively, the provisions of the Contract which allegedly have been breached and the actions constituting such breach;

(e) A detailed compilation of the amount of additional compensation sought and a breakdown of the amount sought as follows:

(1) documented additional job site labor expenses;  
(2) documented additional cost of materials and supplies;  
(3) a list of additional equipment costs claimed, including each piece of equipment and the rental rate claimed for each;  
(4) any other additional direct costs or damages and the documents in support thereof;  
(5) any additional indirect costs or damages and all documentation in support thereof.

(f) A detailed compilation of the specific dates and the exact number of calendar days sought for a time extension, the basis for entitlement to time for each day, all documentation of the delay, and a breakout of the number of days claimed for each identified event, circumstance or occurrence.

Further, the Contractor shall be prohibited from amending either the bases of entitlement or the amount of any compensation or time stated for any and all issues claimed in the Contractor's written claim submitted hereunder, and any circuit court, arbitration, or other formal claims resolution proceeding shall be limited solely to the bases of entitlement and the amount of any compensation or time stated for any and all issues claimed in the Contractor's written claim submitted hereunder. This shall not, however, preclude a Contractor from withdrawing or reducing any of the bases of entitlement and the amount of any compensation or time stated for any and all issues claimed in the Contractor's written claim submitted hereunder at any time.

**5-12.4 Action on Claim:** The Engineer will respond on projects with an original Contract amount of \$3,000,000 or less within 90 calendar days of receipt of a complete claim submitted by a Contractor in compliance with 5-12.3, and on projects with an original Contract amount greater than \$3,000,000 within 120 calendar days of receipt of a complete claim submitted by a Contractor in compliance with 5-12.3. Failure by the Engineer to respond to a claim within 90 or 120 days, respectively, after receipt of a complete claim in compliance with 5-12.3 constitutes a denial of the claim by the Engineer. If the Engineer finds the claim or any part thereof to be valid, such partial or whole claim will be allowed and paid for to the extent deemed valid and any time extension granted, if applicable, as provided in the Contract. No circuit court or arbitration proceedings on any claim, or a part thereof, may be filed until after final acceptance per 5-11 of all Contract work by the Department or denial hereunder, whichever occurs last.

**5-12.5 Pre-Settlement and Pre-Judgment Interest:** Entitlement to any pre-settlement or pre-judgment interest on any claim amount determined to be valid subsequent to the Department's receipt of a certified written claim in full compliance with 5-12.3, whether determined by a settlement or a final ruling in formal proceedings, the Department shall pay to the Contractor simple interest calculated at the Prime Rate (as reported by the Wall Street Journal as the base rate on corporate loans posted by at least 75% of the nations 30 largest banks) as of the 60th calendar day following the Department's receipt of a certified written claim in full compliance with 5-12.3, such interest to accrue beginning 60 calendar days following the Department's receipt of a certified written claim in full compliance with 5-12.3 and ending on the date of final settlement or formal ruling.

**5-12.6 Compensation for Extra Work or Delay:**

**5-12.6.1 Compensation for Extra Work:** Notwithstanding anything to the contrary contained in the Contract Documents, the Contractor shall not be entitled to any compensation beyond that provided for in 4-3.2.

**5-12.6.2 Compensation for Delay:** Notwithstanding anything to the contrary contained in the Contract Documents, the additional compensation set forth in 5-12.6.2.1 shall be the Contractor's sole monetary remedy for any delay other than to perform extra work caused by the Department unless the delay shall have been caused by acts constituting willful or intentional interference by the Department with the Contractor's performance of the work and then only where such acts continue after Contractor's written notice to the Department of such interference. The parties anticipate that delays may be caused by or arise from any number of events during the term of the Contract, including, but not limited to, work performed, work deleted, supplemental agreements, work orders, disruptions, differing site conditions, utility conflicts, design changes or defects, time extensions, extra work, right-of-way issues, permitting issues, actions of suppliers, subcontractors or other contractors, actions by third parties, suspensions of work by the Engineer pursuant to 8-6.1, shop drawing approval process delays, expansion of the physical limits of the project to make it functional, weather, weekends, holidays, special events, suspension of Contract time, or other events, forces or factors sometimes experienced in construction work. Such delays or events and their potential impacts on the performance by the Contractor are specifically contemplated and acknowledged by the parties in entering into this Contract, and shall not be deemed to constitute willful or intentional interference with the Contractor's performance of the work without clear and convincing proof that they were the result of a deliberate act, without reasonable and good-faith basis, and specifically intended to disrupt the Contractor's performance.

**5-12.6.2.1 Compensation for Direct Costs, Indirect Costs, Expenses, and Profit thereon, of or from Delay:** For any delay claim, the Contractor shall be entitled to monetary compensation for the actual idle labor and equipment, and indirect costs, expenses, and profit thereon, as provided for in 4-3.2.1(d) and solely for costs incurred beyond what reasonable mitigation thereof the Contractor could have undertaken.

**5-12.7 Mandatory Claim Records:** After giving the Engineer notice of intent to file a claim for extra work or delay, the Contractor must keep daily records of all labor, material and equipment costs incurred for operations affected by the extra work or delay. These daily records must identify each operation affected by the extra work or delay and the specific locations where work is affected by the extra work or delay, as nearly as possible. The Engineer may also keep records of all labor, material and equipment used on the operations affected by the extra work or delay. The Contractor shall, once a notice of intent to claim has been timely filed, and not less than weekly thereafter as long as appropriate, provide the Engineer a copy of the Contractor's daily records and be likewise entitled to receive a copy of the Department's daily records. The copies of daily records to be provided hereunder shall be provided at no cost to the recipient.

**5-12.8 Claims For Acceleration:** The Department shall have no liability for any constructive acceleration of the work, nor shall the Contractor have any right to make any claim for constructive acceleration nor include the same as an element of any claim the Contractor may otherwise submit under this Contract. If the Engineer gives express written direction for the Contractor to accelerate its efforts, such written direction will set forth the prices and other pertinent information and will be reduced to a written Contract Document promptly. No payment will be made on a Supplemental Agreement for acceleration prior to the Department's approval of the documents.

**5-12.9 Certificate of Claim:** When submitting any claim, the Contractor shall certify under oath and in writing, in accordance with the formalities required by Florida law, that the claim is made in good faith, that the supportive data are accurate and complete to the

Contractor's best knowledge and belief, and that the amount of the claim accurately reflects what the Contractor in good faith believes to be the Department's liability. Such certification must be made by an officer or director of the Contractor with the authority to bind the Contractor.

**5-12.10 Non-Recoverable Items:** The parties agree that for any claim the Department will not have liability for the following items of damages or expense:

- a. Loss of profit, incentives or bonuses;
- b. Any claim for other than extra work or delay;
- c. Consequential damages, including, but not limited to, loss of bonding capacity, loss of bidding opportunities, loss of credit standing, cost of financing, interest paid, loss of other work or insolvency;
- d. Acceleration costs and expenses, except where the Department has expressly and specifically directed the Contractor in writing "to accelerate at the Department's expense"; nor
- e. Attorney fees, claims preparation expenses and costs of litigation.

**5-12.11 Exclusive Remedies:** Notwithstanding any other provision of this Contract, the parties agree that the Department shall have no liability to the Contractor for expenses, costs, or items of damages other than those which are specifically identified as payable under 5-12. In the event any legal action for additional compensation, whether on account of delay, acceleration, breach of contract, or otherwise, the Contractor agrees that the Department's liability will be limited to those items which are specifically identified as payable in 5-12.

**5-12.12 Settlement Discussions:** The content of any discussions or meetings held between the Department and the Contractor to settle or resolve any claims submitted by the Contractor against the Department shall be inadmissible in any legal, equitable, arbitration or administrative proceedings brought by the Contractor against the Department for payment of such claim. Dispute Resolution Board, State Arbitration Board and Claim Review Committee proceedings are not settlement discussions, for purposes of this provision.

**5-12.13 Personal Liability of Public Officials:** In carrying out any of the provisions of the Contract or in exercising any power or authority granted to the Secretary of Transportation, Engineer or any of their respective employees or agents, there shall be no liability on behalf of any employee, officer or official of the Department for which such individual is responsible, either personally or as officials or representatives of the Department. It is understood that in all such matters such individuals act solely as agents and representatives of the Department.

**5-12.14 Auditing of Claims:** All claims filed against the Department shall be subject to audit at any time following the filing of the claim, whether or not such claim is part of a suit pending in the Courts of this State. The audit may be performed, at the Department's sole discretion, by employees of the Department or by any independent auditor appointed by the Department, or both. The audit may begin after ten days written notice to the Contractor, subcontractor, or supplier. The Contractor, subcontractor, or supplier shall make a good faith effort to cooperate with the auditors. As a condition precedent to recovery on any claim, the Contractor, subcontractor, or supplier must retain sufficient records, and provide full and reasonable access to such records, to allow the Department's auditors to verify the claim and failure to retain sufficient records of the claim or failure to provide full and reasonable access to such records shall constitute a waiver of that portion of such claim that cannot be verified and shall bar recovery thereunder. Further, and in addition to such audit access, upon the Contractor submitting a written claim, the Department shall have the right to request and receive, and the Contractor shall have the affirmative obligation to provide to the Department, copies of any and

all documents in the possession of the Contractor or its subcontractors, materialmen or suppliers as may be deemed relevant by the Department in its review of the basis, validity or value of the Contractor's claim.

Without limiting the generality of the foregoing, the Contractor shall upon written request of the Department make available to the Department's auditors, or upon the Department's written request for copies provide copies at the Department's expense, any or all of the following documents:

1. Daily time sheets and foreman's daily reports and diaries;
2. Insurance, welfare and benefits records;
3. Payroll register;
4. Earnings records;
5. Payroll tax return;
6. Material invoices, purchase orders, and all material and supply acquisition contracts;
7. Material cost distribution worksheet;
8. Equipment records (list of company owned, rented or other equipment used);
9. Vendor rental agreements and subcontractor invoices;
10. Subcontractor payment certificates;
11. Canceled checks for the project, including, payroll and vendors;
12. Job cost report;
13. Job payroll ledger;
14. General ledger, general journal, (if used) and all subsidiary ledgers and journals together with all supporting documentation pertinent to entries made in these ledgers and journals;
15. Cash disbursements journal;
16. Financial statements for all years reflecting the operations on this project;
17. Income tax returns for all years reflecting the operations on this project;
18. All documents which reflect the Contractor's actual profit and overhead during the years this Contract was being performed and for each of the five years prior to the commencement of this Contract;
19. All documents related to the preparation of the Contractor's bid including the final calculations on which the bid was based;
20. All documents which relate to each and every claim together with all documents which support the amount of damages as to each claim;
21. Worksheets used to prepare the claim establishing the cost components for items of the claim including, but not limited to, labor, benefits and insurance, materials, equipment, subcontractors, and all documents that establish which time periods and individuals were involved, and the hours and rates for such individuals.

### **5-13 Recovery Rights, Subsequent to Final Payment.**

The Department reserves the right, if it discovers an error in the partial or final estimates, or if it discovers that the Contractor performed defective work or used defective materials, after the final payment has been made, to claim and recover from the Contractor or his surety, or both,

by process of law, such sums as may be sufficient to correct the error or make good the defects in the work and materials.

## SECTION 6 CONTROL OF MATERIALS

### **6-1 Acceptance Criteria.**

**6-1.1 General:** Acceptance of materials is based on the following criteria. All requirements may not apply to all materials. Use only materials in the work that meet the requirements of these Specifications. The Engineer may inspect and test any material, at points of production, distribution and use.

**6-1.2 Sampling and Testing:** Use the Department's current sample identification and tracking system to provide related information and attach the information to each sample. Restore immediately any site from which material has been removed for sampling purposes to the pre-sampled condition with materials and construction methods used in the initial construction, at no additional cost to the Department.

Ensure when a material is delivered to the location as described in the Contract Documents, there is enough material delivered to take samples, at no expense to the Department.

**6-1.2.1 Pretest by Manufacturers:** Submit certified manufacturer's test results to the Engineer for qualification and use on Department projects. Testing will be as specified in the Contract Documents. The Department may require that manufacturers submit samples of materials for independent verification purposes.

**6-1.2.2 Point of Production Test:** Test the material during production as specified in the Contract Documents.

**6-1.2.3 Point of Distribution Test:** Test the material at Distribution facilities as specified in the Contract Documents.

**6-1.2.4 Point of Use Test:** Test the material immediately following placement as specified in the Specifications. After delivery to the project, the Department may require the retesting of materials that have been tested and accepted at the source of supply, or may require the testing of materials that are to be accepted by Producer Certification. The Department may reject all materials that, when retested, do not meet the requirements of these Specifications.

### **6-1.3 Certification:**

**6-1.3.1 Producer Certification:** Provide complete certifications for materials as required. Furnish to the Engineer for approval, Producer Certifications for all products listed on the Qualified Products List and when required by the applicable material Specification(s). Do not incorporate any manufactured products or materials into the project without approval from the Engineer. Materials will not be considered for payment when not accompanied by Producer Certification. Producers may obtain sample certification forms through the Department's website. Ensure that the certification is provided on the producer's letterhead and is signed by a legally responsible person from the producer and notarized.

**6-1.3.1.1 Qualified Products List:** The Product Evaluation Section in the State Specifications and Estimates Office publishes and maintains a Qualified Products List. This list provides assurance to Contractors, consultants, designers, and Department personnel that specific products and materials are approved for use on Department facilities. The Department will limit the Contractor's use of products and materials that require pre-approval to items listed on the Qualified Products List effective at the time of placement.

Manufacturers seeking evaluation in accordance with Departmental procedures of an item must submit a Product Evaluation Application, available on the Department's website

[www2.dot.state.fl.us/specificationsestimates/productevaluation/qpl/submittalprocess.aspx](http://www2.dot.state.fl.us/specificationsestimates/productevaluation/qpl/submittalprocess.aspx) , with supporting documentation as defined and detailed by the applicable Specifications and Standards. This may include certified test reports from an independent test laboratory, certification that the material meets all applicable specifications, signed and sealed drawings and calculations, quality control plans, samples, infrared scans, or other technical data.

Manufacturers successfully completing the Department's evaluation are eligible for inclusion on the Qualified Products List. The Department will consider any marked variations from original test values for a material or any evidence of inadequate field performance of a material as sufficient evidence that the properties of the material have changed, and the Department will remove the material from the Qualified Products List.

**6-1.3.1.2 Approved Products List:** The State Traffic Operations Office maintains the Approved Products List of Traffic Control Signal Devices. Traffic Monitoring Site Equipment and Materials are also included on the Approved Products List. This list provides assurance to Maintaining Agencies, Contractors, consultants, designers, and Department personnel that the specific items listed are approved for use on Department facilities. The Department will limit the Contractor's procurement and use of Traffic Control Signal Devices, and Traffic Monitoring Site equipment and materials to only those items listed on the Approved Products List that is effective at the time of procurement, except as provided in Section 603.

The approval process is described in detail on the State Traffic Operation website, [www.dot.state.fl.us/trafficoperations/terl/apl2.htm](http://www.dot.state.fl.us/trafficoperations/terl/apl2.htm) . Manufacturers seeking evaluation of a specific device must submit an application which can be obtained from the State Traffic Operations Office.

**6-1.3.2 Contractor Installation Certification:** Provide installation certifications as required by the Contract Documents.

## **6-2 Applicable Documented Authorities Other Than Specifications.**

**6-2.1 General:** Details on individual materials are identified in various material specific Sections of the Specifications that may refer to other documented authorities for requirements. When specified, meet the requirements as defined in such references.

**6-2.2 Test Methods:** Methods of sampling and testing materials are in accordance with the Florida Methods (FM). If a Florida Method does not exist for a particular test, perform the testing in accordance with the method specified in the Specification. When test methods or other standards are referenced in the Specifications without identification of the specific time of issuance, use the most current issuance, including interims or addendums thereto, at the time of bid opening.

**6-2.3 Construction Aggregates:** Aggregates used on Department projects must be in accordance with Rule 14-103, FAC.

## **6-3 Storage of Materials and Samples.**

**6-3.1 Method of Storage:** Store materials in such a manner as to preserve their quality and fitness for the work, to facilitate prompt inspection, and to minimize noise impacts on sensitive receivers. More detailed specifications concerning the storage of specific materials are prescribed under the applicable Specifications. The Department may reject improperly stored materials.

**6-3.2 Use of Right-of-Way for Storage:** If the Engineer allows, the Contractor may use a portion of the right-of-way for storage purposes and for placing the Contractor's plant and equipment. Use only the portion of the right-of-way that is outside the clear zone, which is the

portion not required for public vehicular or pedestrian travel. When used, restore the right-of-way to pre-construction condition at no additional cost to the Department or as specified in the Contract Documents. Provide any additional space required at no expense to the Department.

**6-3.3 Responsibility for Stored Materials:** Accept responsibility for the protection of stored materials. The Department is not liable for any loss of materials, by theft or otherwise, or for any damage to the stored materials.

**6-3.4 Storage Facilities for Samples:** Provide facilities for storage of samples as described in the Contract Documents and warranted by the test methods and Specifications.

#### **6-4 Defective Materials.**

Materials not meeting the requirements of these Specifications will be considered defective. The Engineer will reject all such materials, whether in place or not. Remove all rejected material immediately from the site of the work and from storage areas, at no expense to the Department.

Do not use material that has been rejected and the defects corrected, until the Engineer has approved the material's use. Upon failure to comply promptly with any order of the Engineer made under the provisions of this Article, the Engineer will remove and replace defective material and deduct the cost of removal and replacement from any moneys due or to become due the Contractor.

As an exception to the above, the Contractor may submit, upon approval of the Engineer, an engineering and/or laboratory analysis to evaluate the effect of defective in place materials. A Specialty Engineer, who is an independent consultant or the Contractor's Engineer of Record as stated within each individual Section shall perform any such analysis. The Engineer will determine the final disposition of the material after review of the information submitted by the Contractor. No additional monetary compensation or time extension will be granted for the impact of any such analysis or review.

#### **6-5 Products and Source of Supply.**

**6-5.1 Source of Supply–Convict Labor (Federal-Aid Contracts Only):** Do not use materials that were produced after July 1, 1991, by convict labor for Federal-aid highway construction projects unless the prison facility has been producing convict-made materials for Federal-aid highway construction projects before July 1, 1987.

Use materials that were produced prior to July 2, 1991, by convicts on Federal-aid highway construction projects free from the restrictions placed on the use of these materials by 23 U.S.C. 114. The Department will limit the use of materials produced by convict labor for use in Federal-aid highway construction projects to:

1. materials produced by convicts on parole, supervised release, or probation from a prison or,
2. materials produced in a qualified prison facility.

The amount of such materials produced for Federal-aid highway construction during any 12-month period shall not exceed the amount produced in such facility for use in such construction during the 12-month period ending July 1, 1987.

**6-5.2 Source of Supply-Steel (Federal-Aid Contracts Only):** For Federal-aid Contracts, only use steel and iron produced in the United States, in accordance with the Buy America provisions of 23 CFR 635.410, as amended. Ensure that all manufacturing processes for this material occur in the United States. As used in this specification, a manufacturing process is

any process that modifies the chemical content, physical shape or size, or final finish of a product, beginning with the initial melding and mixing and continuing through the bending and coating stages. A manufactured steel or iron product is complete only when all grinding, drilling, welding, finishing and coating have been completed. If a domestic product is taken outside the United States for any process, it becomes foreign source material. When using steel and iron as a component of any manufactured product incorporated into the project (e.g., concrete pipe, prestressed beams, corrugated steel pipe, etc.), these same provisions apply, except that the manufacturer may use minimal quantities of foreign steel and iron when the cost of such foreign materials does not exceed 0.1% of the total Contract amount or \$2,500, whichever is greater. These requirements are applicable to all steel and iron materials incorporated into the finished work, but are not applicable to steel and iron items that the Contractor uses but does not incorporate into the finished work. Provide a certification from the producer of steel or iron, or any product containing steel or iron as a component, stating that all steel or iron furnished or incorporated into the furnished product was manufactured in the United States in accordance with the requirements of this specification and the Buy America provisions of 23 CFR 635.410, as amended. Such certification shall also include (1) a statement that the product was produced entirely within the United States, or (2) a statement that the product was produced within the United States except for minimal quantities of foreign steel and iron valued at \$ (actual value). Furnish each such certification to the Engineer prior to incorporating the material into the project. When FHWA allows the use of foreign steel on a project, furnish invoices to document the cost of such material, and obtain the Engineer's written approval prior to incorporating the material into the project.

**6-5.3 Unfit, Hazardous, and Dangerous Materials:** Do not use any material that, after approval and/or placement, has in any way become unfit for use. Do not use materials containing any substance that has been determined to be hazardous by the State of Florida Department of Environmental Protection or the U.S. Department of Environmental Protection. Provide workplaces free from serious recognized hazards and to comply with occupational safety and health standards, as determined by the U.S. Department of Labor Occupational Safety and Health Administration.

**LEGAL REQUIREMENTS AND RESPONSIBILITY TO THE PUBLIC – E-VERIFY.  
(REV 1-19-11) (2-11)**

SECTION 7 (Pages 56 – 80) is expanded by the following new Article:

**7-28 E-Verify.**

The Contractor shall utilize the U.S. Department of Homeland Security's E-Verify system, in accordance with the terms governing use of the system, to confirm the employment eligibility of all persons employed by the Contractor during the term of the Contract to perform employment duties within Florida and all persons, including subcontractors, assigned by the Contractor to perform work pursuant to the Contract with the Department.

## **SECTION 8 PROSECUTION AND PROGRESS**

### **8-1 Subletting or Assigning of Contracts.**

Do not, sell, transfer, assign or otherwise dispose of the Contract or Contracts or any portion thereof, or of the right, title, or interest therein, without written consent of the Department. If the Contractor chooses to sublet any portion of the Contract, the Contractor must provide a written request to sublet work on the Certification of Sublet Work form developed by the Department for this purpose. With the Engineer's acceptance of the request, the Contractor may sublet a portion of the work, but shall perform with his own organization work amounting to not less than 40% of the total Contract amount. The Certification of Sublet Work request will be deemed acceptable by the Department, for purposes of the Department's consent, unless the Engineer notifies the Contractor within 5 business days of receipt of the Certification of Sublet Work that the Department is not consenting to the requested subletting.

Include in the total Contract amount the cost of materials and manufactured component products, and their transportation to the project site. For the purpose of meeting this requirement the Department will not consider off-site commercial production of materials and manufactured component products that the Contractor purchases, or their transportation to the project, as subcontracted work.

If the Contractor sublets a part of a Contract item, the Department will use only the sublet proportional cost in determining the percentage of subcontracted normal work.

Execute all agreements to sublet work in writing and include all pertinent provisions and requirements of the Contract. Upon request, furnish the Department with a copy of the subcontract. The subletting of work does not relieve the Contractor or the surety of their respective liabilities under the Contract.

The Department recognizes a subcontractor only in the capacity of an employee or agent of the Contractor, and the Engineer may require the Contractor to remove the subcontractor as in the case of an employee.

### **8-2 Work Performed by Equipment-Rental Agreement.**

The limitations set forth in 8-1, concerning the amount of work that may be sublet, do not apply to work performed by equipment-rental agreement. However, for any work proposed to be performed by equipment-rental agreement, notify the Engineer in writing of such intention before using the rented equipment, and indicate whether the equipment will be rented on an operated or non-operated basis. Include with the written notice a listing and description of the equipment and a description of the particular work to be performed with such equipment. As an exception to the above requirements, the Department will not require written notice for equipment to be rented (without operators) from an equipment dealer or from a firm whose principal business is the renting or leasing of equipment.

The operators of all rented equipment, whether rented on an operated or a non-operated basis, are subject to all wage rate requirements applicable to the project. When renting equipment without operators, the Contractor shall carry the operators on his own payroll. For equipment that is rented on an operated basis, and when required by the Contract or requested by the Engineer, furnish payrolls from the lessor with the names of the operators shown thereon.

When a lessor provides rentals of equipment on an operated basis that exceed \$10,000, such lessor is subject to any Equal Employment Opportunity requirements that are applicable to the project.

### **8-3 Prosecution of Work.**

**8-3.1 Compliance with Time Requirements:** Commence work in accordance with the accepted working schedule and provide sufficient labor, materials and equipment to complete the work within the time limit(s) set forth in the proposal. Should the Contractor fail to furnish sufficient and suitable equipment, forces, and materials, as necessary to prosecute the work in accordance with the required schedule, the Engineer may withhold all estimates that are, or may become due, or suspend the work until the Contractor corrects such deficiencies.

**8-3.2 Submission of Working Schedule:** Within 21 calendar days after Contract award or at the preconstruction conference, whichever is earlier, submit to the Engineer a work progress schedule for the project. The Engineer will review and respond to the Contractor within 15 calendar days of receipt.

Provide a schedule that shows the various activities of work in sufficient detail to demonstrate a reasonable and workable plan to complete the project within the Contract Time. Show the order and interdependence of activities and the sequence for accomplishing the work. Describe all activities in sufficient detail so that the Engineer can readily identify the work and measure the progress on of each activity. Show each activity with a beginning work date, a duration, and a monetary value. Include activities for procurement fabrication, and deliver of materials, plant, and equipment, and review time for shop drawings and submittals. Include milestone activities when milestones are required by the Contract Documents. In a project with more than one phase, adequately identify each phase and its completion date, and do not allow activities to span more than one phase.

Conduct sufficient liaison and provide sufficient information to indicate coordination activities with utility owners that have facilities within the limits of construction have been resolved. Incorporate in the schedule any utility adjustment schedules included in the Contract Documents unless the utility company and the Department mutually agree to changes to the utility schedules shown in the Contract.

Submit a working plan with the schedule, consisting of a concise written description of the construction plan.

The Engineer will return inadequate schedules to the Contractor for corrections. Resubmit a corrected schedule within 15 calendar days from the date of the Engineer's return transmittal.

Submit an updated Work Progress Schedule, for Engineer's acceptance, if there is a significant change in the planned order or duration of an activity. The Engineer will review the corrected schedule and respond within 7 calendar days of receipt.

By acceptance of the schedule, the Engineer does not endorse or otherwise certify the validity or accuracy of the activity durations or sequencing of activities. The Engineer will use the accepted schedule as the baseline against which to measure the progress.

If the Contractor fails to finalize either the initial or a revised schedule in the time specified, the Engineer will withhold all Contract payments until the Engineer accepts the schedule.

**8-3.3 Beginning Work:** Notify the Engineer not less than five days in advance of the planned start day of work. Upon the receipt of such notice, the Engineer may give the Contractor Notice to Proceed and may designate the point or points to start the work. In the Notice to

Proceed, the Engineer may waive the five day advance notice and authorize the Contractor to begin immediately. Notify the Engineer in writing at least two days in advance of the starting date of important features of the work. Do not commence work under the Contract until after the Department has issued the Notice to Proceed. The Department will issue the Notice to Proceed within 20 calendar days, excluding Saturdays, Sundays and Holidays, after execution of the Contract.

**8-3.4 Provisions for Convenience of Public:** Schedule construction operations so as to minimize any inconvenience to adjacent businesses or residences. Where necessary, the Engineer may require the Contractor to first construct the work in any areas along the project where inconveniences caused by construction operations would present a more serious handicap. In such critical locations, where there is no assurance of continuous effective prosecution of the work once the construction operations are begun, the Engineer may require the Contractor to delay removal of the existing (usable) facilities.

**8-3.5 Preconstruction Conference:** Immediately after awarding the Contract but before the Contractor begins work, the Engineer will call a preconstruction conference at a place the Engineer designates to go over the construction aspects of the project. Attend this meeting, along with the Department and the various utility companies that will be involved with the road construction.

#### **8-4 Limitations of Operations.**

**8-4.1 Night Work:** During active nighttime operations, furnish, place and maintain lighting sufficient to permit proper workmanship and inspection. Use lighting with 5 ft-cd minimum intensity. Arrange the lighting to prevent interference with traffic or produce undue glare to property owners. Operate such lighting only during active nighttime construction activities. Provide a light meter to demonstrate that the minimum light intensity is being maintained.

Lighting may be accomplished by the use of portable floodlights, standard equipment lights, existing street lights, temporary street lights, or other lighting methods approved by the Engineer.

Submit a lighting plan at the Preconstruction Conference for review and acceptance by the Engineer. Submit the plan on standard size plan sheets (not larger than 24 by 36 inch), and on a scale of either 100 or 50 feet to 1 inch. Do not start night work prior to the Engineer's acceptance of the lighting plan.

During active nighttime operations, furnish, place and maintain variable message signs to alert approaching motorists of lighted construction zones ahead. Operate the variable message signs only during active construction activities.

Include compensation for lighting for night work in the Contract prices for the various items of the Contract. Take ownership of all lighting equipment for night work.

**8-4.2 Sequence of Operations:** Do not open up work to the prejudice of work already started. The Engineer may require the Contractor to finish a section on which work is in progress before starting work on any additional section.

**8-4.3 Interference with Traffic:** At all times conduct the work in such manner and in such sequence as to ensure the least practicable interference with traffic. Operate all vehicles and other equipment safely and without hindrance to the traveling public. Park all private vehicles outside the clear zone. Place materials stored along the roadway so as to cause no obstruction to the traveling public as possible.

Where existing pavement is to be widened and stabilizing is not required, prevent any open trench from remaining after working hours by scheduling operations to place the full thickness of widened base by the end of each day. Do not construct widening strips simultaneously on both sides of the road, except where separated by a distance of at least 1/4 mile along the road and where either the work of excavation has not been started or the base has been completed.

**8-4.4 Coordination with other Contractors:** Sequence the work and dispose of materials so as not to interfere with the operations of other Contractors engaged upon adjacent work; join the work to that of others in a proper manner, in accordance with the spirit of the Contract Documents; and perform the work in the proper sequence in relation to that of other contractors; all as may be directed by the Engineer.

Each contractor is responsible for any damage done by him or his agents to the work performed by another contractor.

**8-4.5 Drainage:** Conduct the operations and maintain the work in such condition to provide adequate drainage at all times. Do not obstruct existing functioning storm sewers, gutters, ditches, and other run-off facilities.

**8-4.6 Fire Hydrants:** Keep fire hydrants on or adjacent to the highway accessible to fire apparatus at all times, and do not place any material or obstruction within 15 feet of any fire hydrant.

**8-4.7 Protection of Structures:** Do not operate heavy equipment close enough to pipe headwalls or other structures to cause their displacement.

**8-4.8 Fencing:** Erect permanent fence as a first order of business on all projects that include fencing where the Engineer determines that the fencing is necessary to maintain the security of livestock on adjacent property, or for protection of pedestrians who are likely to gain access to the project from adjacent property.

**8-4.9 Contaminated Materials:** When the construction operations encounter or expose any abnormal condition that may indicate the presence of a contaminated material, discontinue such operations in the vicinity of the abnormal condition and notify the Engineer immediately. Be alert for the presence of tanks or barrels; discolored or stained earth, metal, wood, ground water; visible fumes; abnormal odors; excessively hot earth; smoke; or other conditions that appear abnormal as possible indicators of the presence of contaminated materials. Treat these conditions with extraordinary caution.

Make every effort to minimize the spread of any contaminated materials into uncontaminated areas.

Do not resume the construction operations in the vicinity of the abnormal conditions until so directed by the Engineer.

Dispose of the contaminated material in accordance with the requirements and regulations of any Local, State, or Federal agency having jurisdiction. Where the Contractor performs work necessary to dispose of contaminated material, and the Contract does not include pay items for disposal, the Department will pay for this work as provided in 4-4.

The Department agrees to hold harmless and indemnify the Contractor for damages when the Contractor discovers or encounters contaminated materials or pollutants during the performance of services for the Department when the presence of such materials or pollutants were unknown or not reasonably discoverable. Such indemnification agreement is only effective if the Contractor immediately stops work and notifies the Department of the contaminated material or pollutant problem.

Such indemnification agreement is not valid for damages resulting from the Contractor's willful, wanton, or intentional conduct or the operations of Contaminated and Hazardous Material Contractors.

### **8-5 Qualifications of Contractor's Personnel.**

Provide competent, careful, and reliable superintendents, foremen, and workmen. Provide workmen with sufficient skill and experience to properly perform the work assigned to them. Provide workmen engaged on special work, or skilled work, such as bituminous courses or mixtures, concrete bases, pavements, or structures, or in any trade, with sufficient experience in such work to perform it properly and satisfactorily and to operate the equipment involved. Provide workmen that shall make due and proper effort to execute the work in the manner prescribed in the Contract Documents, or the Engineer may take action as prescribed below.

It is prohibited as a conflict of interest for a Contractor to subcontract with a Consultant to perform Contractor Quality Control when the Consultant is under contract with the Department to perform work on any project described in the Contractor's Contract with the Department. Prior to approving a Consultant for Contractor Quality Control, the Contractor shall submit to the Department a Certificate from the proposed Consultant certifying that no conflict of interest exists.

Whenever the Engineer determines that any person employed by the Contractor is incompetent, unfaithful, intemperate, disorderly, or insubordinate, the Engineer will provide written notice and the Contractor shall discharge the person from the work. Do not employ any discharged person on the project without the written consent of the Engineer. If the Contractor fails to remove such person or persons, the Engineer may withhold all estimates that are or may become due, or suspend the work until the Contractor complies with such orders. Protect, defend, indemnify, and hold the Department, its agents, officials, and employees harmless from all claims, actions, or suite arising from such removal, discharge, or suspension of employees.

### **8-6 Temporary Suspension of Contractor's Operations.**

**8-6.1 Authority to Suspend Contractor's Operations:** The Engineer has the authority to suspend the Contractor's operations, wholly or in part. The Engineer will order such suspension in writing, giving in detail the reasons for the suspension. Contract Time will be charged during all suspensions of Contractor's operations. The Department may grant an extension of Contract time in accordance with 8-7.3.2 when determined appropriate in the Department's sole judgment.

No additional compensation or time extension will be paid or granted to the Contractor when the operations are suspended for the following reasons:

- a. The Contractor fails to comply with the Contract Documents.
- b. The Contractor fails to carry out orders given by the Engineer.
- c. The Contractor causes conditions considered unfavorable for continuing

the Work.

Immediately comply with any suspension order. Do not resume operations until authorized to do so by the Engineer in writing. Any operations performed by the Contractor, and otherwise constructed in conformance with the provisions of the Contract, after the issuance of the suspension order and prior to the Engineer's authorization to resume operations will be at no cost to the Department. Further, failure to immediately comply with any suspension order will also constitute an act of default by the Contractor and is deemed sufficient basis in and of itself for the Department to declare the Contractor in default, in accordance with 8-9, with the

exception that the Contractor will not have ten calendar days to correct the conditions for which the suspension was ordered.

**8-6.1.1 State of Emergency:** The Engineer has the authority to suspend the Contractor's operations, wholly or in part, pursuant to a Governor's Declaration of a State of Emergency. The Engineer will order such suspension in writing, giving in detail the reasons for the suspension. Contract Time will be charged during all suspensions of Contractor's operations. The Department, at its sole discretion, may grant an extension of Contract Time and reimburse the Contractor for specific costs associated with such suspension. Further, in such instances, the Department's determination as to entitlement to either time or compensability will be final, unless the Contractor can prove by clear and convincing evidence to a Disputes Review Board that the Department's determination was without any reasonable factual basis

**8-6.2 Prolonged Suspensions:** If the Engineer suspends the Contractor's operations for an indefinite period, store all materials in such manner that they will not obstruct or impede the traveling public unnecessarily or become damaged in any way. Take every reasonable precaution to prevent damage to or deterioration of the work performed. Provide suitable drainage of the roadway by opening ditches, shoulder drains, etc., and provide any temporary structures necessary for public travel through the project.

**8-6.3 Permission to Suspend Contractor's Operations:** Do not suspend operations or remove equipment or materials necessary for completing the work without obtaining the Engineer's written permission. Submit all requests for suspension of operations in writing to the Engineer, and identify specific dates to begin and end the suspension. The Contractor is not entitled to any additional compensation for suspension of operations during such periods.

**8-6.4 Suspension of Contractor's Operations - Holidays and Special Events:** Unless the Contractor submits a written request to work during one or more days of a Holiday or Special Event at least ten calendar days in advance of the beginning date of the Holiday or Special Event and receives written approval from the Engineer, the Contractor shall not work on the following days: Martin Luther King, Jr. Day; Memorial Day; the Saturday and Sunday immediately preceding Memorial Day; Independence Day; Independence Day (Observed); Labor Day; the Friday, Saturday, and Sunday immediately preceding Labor Day; Veterans Day; Veterans Day (Observed); the Wednesday immediately preceding Thanksgiving Day; Thanksgiving Day; the Friday, Saturday and Sunday immediately following Thanksgiving Day; December 24 through January 2, inclusive; and Special Events noted in the Plans. Contract Time will be charged during these Holiday and Special Event periods. Contract time will be adjusted in accordance with 8-7.3.2. The Contractor is not entitled to any additional compensation beyond any allowed Contract Time adjustment for suspension of operations during such Holiday and Special Event periods.

During such suspensions, remove all equipment and materials from the clear zone, except those required for the safety of the traveling public and retain sufficient personnel at the job site to properly meet the requirements of Sections 102 and 104. The Contractor is not entitled to any additional compensation for removal of equipment from clear zones or for compliance with Section 102 and Section 104 during such Holiday and Special Event periods.

## **8-7 Computation of Contract Time.**

**8-7.1 General:** Perform the contracted work fully, entirely, and in accordance with the Contract Documents within the Contract Time specified in the proposal, or as may be extended in accordance with the provisions herein below.

The Department considers in the computation of the allowable Contract Time the effect that utility relocation and adjustments have on job progress and the scheduling of construction operations required in order to adequately maintain traffic, as detailed in the plans or as scheduled in the Special Provisions.

**8-7.2 Date of Beginning of Contract Time:** The date on which Contract Time begins is either (1) the date on which the Contractor actually begins work, or (2) the date for beginning the charging of Contract Time as set forth in the proposal; whichever is earlier.

**8-7.3 Adjusting Contract Time:**

**8-7.3.1 Increased Work:** The Department may grant an extension of Contract Time when it increases the Contract amount due to overruns in original Contract items, adds new work items, or provides for unforeseen work. The Department will base the consideration for granting an extension of Contract Time on the extent that the time normally required to complete the additional designated work delays the Contract completion schedule.

**8-7.3.2 Contract Time Extensions:** The Department may grant an extension of Contract Time when a controlling item of work is delayed by factors not reasonably anticipated or foreseeable at the time of bid. The Department may allow such extension of time only for delays occurring during the Contract Time period or authorized extensions of the Contract Time period. When failure by the Department to fulfill an obligation under the Contract results in delays to the controlling items of work, the Department will consider such delays as a basis for granting a time extension to the Contract.

Whenever the Engineer suspends the Contractor's operations, as provided in 8-6, for reasons other than the fault of the Contractor, the Engineer will grant a time extension for any delay to a controlling item of work due to such suspension. The Department will not grant time extensions to the Contract for delays due to the fault or negligence of the Contractor.

The Department does not include an allowance for delays caused by the effects of inclement weather or suspension of Contractor's operations as defined in 8-6.4, in establishing Contract Time. The Engineer will continually monitor the effects of weather and, when found justified, grant time extensions on either a bimonthly or monthly basis. The Engineer will not require the Contractor to submit a request for additional time due to the effects of weather.

The Department will grant time extensions, on a day for day basis, for delays caused by the effects of rains or other inclement weather conditions, related adverse soil conditions or suspension of operations as defined in 8-6.4 that prevent the Contractor from productively performing controlling items of work resulting in:

(1) The Contractor being unable to work at least 50% of the normal work day on pre-determined controlling work items; or

(2) The Contractor must make major repairs to work damaged by weather, provided that the damage is not attributable to the Contractor's failure to perform or neglect; and provided that the Contractor was unable to work at least 50% of the normal workday on pre-determined controlling work items.

No additional compensation will be made for delays caused by the effects of inclement weather.

The Department will consider the delays in delivery of materials or component equipment that affect progress on a controlling item of work as a basis for granting a time extension if such delays are beyond the control of the Contractor or supplier. Such delays may include an area-wide shortage, an industry-wide strike, or a natural disaster that affects all

feasible sources of supply. In such cases, the Contractor shall furnish substantiating letters from a representative number of manufacturers of such materials or equipment clearly confirming that the delays in delivery were the result of an area-wide shortage, an industry-wide strike, etc. No additional compensation will be made for delays caused by delivery of materials or component equipment.

The Department will not consider requests for time extension due to delay in the delivery of custom manufactured equipment such as traffic signal equipment, highway lighting equipment, etc., unless the Contractor furnishes documentation that he placed the order for such equipment in a timely manner, the delay was caused by factors beyond the manufacturer's control, and the lack of such equipment caused a delay in progress on a controlling item of work. No additional compensation will be paid for delays caused by delivery of custom manufactured equipment.

The Department will consider the affect of utility relocation and adjustment work on job progress as the basis for granting a time extension only if all the following criteria are met:

(1) Delays are the result of either utility work that was not detailed in the plans, or utility work that was detailed in the plans but was not accomplished in reasonably close accordance with the schedule included in the Contract Documents.

(2) Utility work actually affected progress toward completion of controlling work items.

(3) The Contractor took all reasonable measures to minimize the effect of utility work on job progress, including cooperative scheduling of the Contractor's operations with the scheduled utility work at the preconstruction conference and providing adequate advance notification to utility companies as to the dates to coordinate their operations with the Contractor's operations to avoid delays.

As a condition precedent to an extension of Contract Time the Contractor must submit to the Engineer:

A preliminary request for an extension of Contract Time must be made in writing to the Engineer within ten calendar days after the commencement of a delay to a controlling item of work. If the Contractor fails to submit this required preliminary request for an extension of Contract Time, the Contractor fully, completely, absolutely and irrevocably waives any entitlement to an extension of Contract Time for that delay. In the case of a continuing delay only a single preliminary request for an extension of Contract Time will be required. Each such preliminary request for an extension of Contract Time shall include as a minimum the commencement date of the delay, the cause of the delay, and the controlling item of work affected by the delay.

Furthermore, the Contractor must submit to the Engineer a request for a Contract Time extension in writing within 30 days after the elimination of the delay to the controlling item of work identified in the preliminary request for an extension of Contract Time. Each request for a Contract Time extension shall include as a minimum all documentation that the Contractor wishes the Department to consider related to the delay, and the exact number of days requested to be added to Contract Time. If the Contractor contends that the delay is compensable, then the Contractor shall also be required to submit with the request for a Contract Time extension a detailed cost analysis of the requested additional compensation. If the Contractor fails to submit this required request for a Contract Time extension, with or without a detailed cost analysis, depriving the Engineer of the timely opportunity to verify the delay and

the costs of the delay, the Contractor waives any entitlement to an extension of Contract Time or additional compensation for the delay.

Upon timely receipt of the preliminary request of Contract Time from the Contractor, the Engineer will investigate the conditions, and if it is determined that a controlling item of work is being delayed for reasons beyond the control of the Contractor the Engineer will take appropriate action to mitigate the delay and the costs of the delay. Upon timely receipt of the request for a Contract Time extension the Engineer will further investigate the conditions, and if it is determined that there was an increase in the time or the cost of performance of the controlling item of work beyond the control of the Contractor, then an adjustment of Contract Time will be made, and a monetary adjustment will be made, excluding loss of anticipated profits, and the Contract will be modified in writing accordingly.

The existence of an accepted schedule, including any required update(s), as stated in 8-3.2, is a condition precedent to the Contractor having any right to the granting of an extension of contract time or any monetary compensation arising out of any delay. Contractor failure to have an accepted schedule, including any required update(s), for the period of potential impact, or in the event the currently accepted schedule and applicable updates do not accurately reflect the actual status of the project or fail to accurately show the true controlling or non-controlling work activities for the period of potential impact, will result in any entitlement determination as to time or money for such period of potential impact being limited solely to the Department's analysis and identification of the actual controlling or non-controlling work activities. Further, in such instances, the Department's determination as to entitlement as to either time or compensability will be final, unless the Contractor can prove by clear and convincing evidence to a Disputes Review Board that the Department's determination was without any reasonable factual basis.

## **8-8 Failure of Contractor to Maintain Satisfactory Progress.**

**8-8.1 General: Pursue the work to completion:** Section 337.16 of the Florida Statutes establishes certain requirements pertaining to the suspension or revocation of a Contractor's Certificate of Qualification because of delinquency on a previously awarded Contract.

### **8-8.2 Regulations Governing Suspension for Delinquency:**

(a) A Contractor is delinquent when the allowed Contract Time for performing the work has expired, and the Contractor has not completed the Contract work.

(b) Once the Department determines that the Contractor is delinquent, the Department will give the Contractor written notice of intent to suspend the Contractor's Certificate of Qualification. If the Contractor disagrees with the delinquency, the Contractor shall file a request for an administrative hearing with the Clerk of Agency Proceedings within ten days of receipt of the notice of intent to suspend. If the Contractor does not file a request, the Department will make the suspension conclusive and final. The request for hearing is filed when the Contractor delivers it to, and it is received by, the Clerk of Agency Proceedings, Mail Station 58, Room 562, Haydon Burns Building, 605 Suwannee Street, Tallahassee, Florida 32399-0450.

(c) If the Contractor files a request for a hearing, the Department will schedule the hearing within 30 days of the hearing officer's receipt of the request.

(d) The Department will continue the period of suspension of the Contractor's Certificate of Qualification until the Contractor is no longer delinquent. If the Contractor requests an administrative hearing, the Department's final order, depending on the outcome of the hearing, will set forth the time period of suspension for the number of days the Department

determines that the Contractor was delinquent, even if the Contractor cures the delinquency during the pendency of the administrative proceedings.

(e) During the period of suspension of the Contractor's Certificate of Qualification, the Department will not allow the Contractor and its affiliates to bid on any Department Contract, regardless of dollar amount, and will not approve the Contractor as a subcontractor on any Department contract.

(f) The Department may grant extensions of time during the prosecution of the work as allowed under these Specifications regardless of the Contractor's delinquency status.

## **8-9 Default and Termination of Contract.**

**8-9.1 Determination of Default:** The following acts or omissions constitute acts of default and, except as to subparagraphs (i and k), the Department will give notice, in writing, to the Contractor and his surety for any delay, neglect or default, if the Contractor:

(a) fails to begin the work under the Contract within the time specified in the Notice to Proceed;

(b) fails to perform the work with sufficient workmen and equipment or with sufficient materials to ensure prompt completion of the Contract;

(c) performs the work unsuitably, or neglects or refuses to remove materials or to perform anew such work that the Engineer rejects as unacceptable and unsuitable;

(d) discontinues the prosecution of the work, or fails to resume discontinued work within a reasonable time after the Engineer notifies the Contractor to do so;

(e) becomes insolvent or is declared bankrupt, or files for reorganization under the bankruptcy code, or commits any act of bankruptcy or insolvency, either voluntarily or involuntarily;

(f) allows any final judgment to stand against him unsatisfied for a period of ten calendar days;

(g) makes an assignment for the benefit of creditors;

(h) fails to comply with Contract requirements regarding minimum wage payments or EEO requirements;

(i) fails to comply with the Engineer's written suspension of work order within the time allowed for compliance and which time is stated in that suspension of work order; or

(j) for any other cause whatsoever, fails to carry on the work in an acceptable manner, or if the surety executing the bond, for any reasonable cause, becomes unsatisfactory in the opinion of the Department.

(k) fails to comply with 3-9.

For a notice based upon reasons stated in subparagraphs (a) through (h) and (j): if the Contractor, within a period of ten calendar days after receiving the notice described above, fails to correct the conditions of which complaint is made, the Department will, upon written certificate from the Engineer of the fact of such delay, neglect, or default and the Contractor's failure to correct such conditions, have full power and authority, without violating the Contract, to take the prosecution of the work out of the hands of the Contractor and to declare the Contractor in default.

If the Contractor, after having received a prior notice described above for any reason stated in subparagraph (b), (c), (d), (e), (f) or (h), commits a second or subsequent act of default for any reason covered by the same subparagraph (b), (c), (d), (e), (f) or (h) as stated in the prior notice, and regardless whether the specific reason is the same, then, regardless of whether the Contractor has cured the deficiency stated in that prior notice, the Department will,

upon written certificate from the Engineer of the fact of such delay, neglect or default and the Contractor's failure to correct such conditions, have full power and authority, without any prior written notice to the Contractor and without violating the Contract, to take the prosecution of the work out of the hands of the Contractor and to declare the Contractor in default.

Regarding subparagraph (i), if the Contractor fails to comply with the Engineer's written suspension of work order within the time allowed for compliance and which time is stated in that suspension of work order, the Department will, upon written certificate from the Engineer of the fact of such delay and the Contractor's failure to correct that condition, have full power and authority, without violating the Contract, to immediately take the prosecution of the work out of the hands of the Contractor and to declare the Contractor in default.

Regarding subparagraph (k), if the Contractor fails to comply with 3-9, the Department will have full power and authority, without violating the Contract, to immediately take the prosecution of the work out of the hands of the Contractor and to declare the Contractor in default.

The Department has no liability for anticipated profits for unfinished work on a Contract that the Department has determined to be in default.

Notwithstanding the above, the Department shall have the right to declare the Contractor (or its "affiliate") in default and immediately terminate this Contract, without any prior notice to the Contractor, in the event the Contractor (or its "affiliate") is at any time "convicted" of a "contract crime," as these terms are defined in Section 337.165(1), Florida Statutes. The Department's right to default the Contractor (or its "affiliate") for "conviction" of a "contract crime" shall extend to and is expressly applicable to any and all Department Contracts that were either advertised for bid; for which requests for proposals or letters of interest were requested; for which an intent to award was posted or otherwise issued; or for which a Contract was entered into, after the date that the underlying or related criminal indictment, criminal information or other criminal charge was filed against the Contractor (or its "affiliate") that resulted in the "conviction." In the event the Department terminates this Contract for this reason, the Contractor shall hereby forfeit any claims for additional compensation, extra time, or anticipated profits. The Contractor shall only be paid for any completed work up to the date of termination. Further, the Contractor shall be liable for any and all additional costs and expenses the Department incurs in completing the Contract work after such termination.

**8-9.2 Termination of Contract for Convenience:** The Department may terminate the entire Contract or any portion thereof, if the Secretary determines that a termination is in the Department's interest. The Secretary will deliver to the Contractor a Written Notice of Termination specifying the extent of termination and the effective date.

When the Department terminates the entire Contract, or any portion thereof, before the Contractor completes all items of work in the Contract, the Department will make payment for the actual number of units or items of work that the Contractor has completed, at the Contract unit price, and according to the formulas and provisions set forth in 4-3.2 for items of work partially completed, and such payments will constitute full and complete compensation for such work or items. No payment of any kind or amount will be made for items of work not started. The Department will not consider any claim for loss of anticipated profits, or overhead of any kind (including home office and jobsite overhead or other indirect impacts) except as provided in 4-3.2 for partially completed work.

The Department will consider reimbursing the Contractor for actual cost of mobilization (when not otherwise included in the Contract) including moving equipment to the

job where the volume of the work that the Contractor has completed is too small to compensate the Contractor for these expenses under the Contract unit prices.

The Department may purchase at actual cost acceptable materials and supplies procured for the work, that the Department has inspected, tested, and approved and that the Contractor has not incorporated in the work. Submit the proof of actual cost, as shown by receipted bills and actual cost records, at such points of delivery as the Engineer may designate.

Termination of a contract or a portion thereof, under the provisions of this Subarticle, does not relieve the Contractor or the surety of its responsibilities for the completed portion of the Contract or its obligations for and concerning any just claims arising out of the work performed.

All Contractor claims for additional payment, due to the Department's termination of the entire Contract or any portion thereof, must meet the requirements of 5-12.

**8-9.3 Completion of Work by Department:** Upon declaration of default, the Department will have full power to appropriate or use any or all suitable and acceptable materials and equipment on the site and may enter into an agreement with others to complete the work under the Contract, or may use other methods to complete the work in an acceptable manner. The Department will charge all costs that the Department incurs because of the Contractor's default, including the costs of completing the work under the Contract, against the Contractor. If the Department incurs such costs in an amount that is less than the sum that would have been payable under the Contract had the defaulting Contractor completed the work then the Department will pay the difference to the defaulting Contractor. If the Department incurs such costs in an amount that exceeds the sum that would have been payable under the Contract, then the Contractor and the surety shall be liable and shall pay the State the amount of the excess.

If, after the ten day notice period and prior to any action by the Department to otherwise complete the work under the Contract, the Contractor establishes his intent to prosecute the work in accordance with the Department's requirements, then the Department may allow the Contractor to resume the work, in which case the Department will deduct from any monies due or that may become due under the Contract, any costs to the Department incurred by the delay, or from any reason attributable to the delay.

**8-10 Liquidated Damages for Failure to Complete the Work.**

**8-10.1 Highway Code Requirements Pertaining to Liquidated Damages:**

Section 337.18, paragraph (2) of the Florida Statutes, requires that the Department adopt regulations for the determination of default and provides that the Contractor pay liquidated damages to the Department for any failure of the Contractor to complete the Contract work within the Contract Time. These Code requirements govern, and are herewith made a part of the Contract.

**8-10.2 Amount of Liquidated Damages:** Applicable liquidated damages are the amounts established in the following schedule:

\$50,000 and under.....	\$836
Over \$50,000 but less than \$250,000.....	\$884
\$250,000 but less than \$500,000.....	\$1,074
\$500,000 but less than \$2,500,000.....	\$1,742
\$2,500,000 but less than \$5,000,000.....	\$2,876
\$5,000,000 but less than \$10,000,000.....	\$3,770
\$10,000,000 but less than \$15,000,000.....	\$4,624

\$15,000,000 but less than \$20,000,000.....\$5,696  
\$20,000,000 and over.....\$9,788 plus 0.00005 of any  
amount over \$20 million (Round to nearest whole dollar)

**8-10.3 Determination of Number of Days of Default:** For all contracts, regardless of whether the Contract Time is stipulated in calendar days or working days, the Engineer will count default days in calendar days.

**8-10.4 Conditions under which Liquidated Damages are Imposed:** If the Contractor or, in case of his default, the surety fails to complete the work within the time stipulated in the Contract, or within such extra time that the Department may have granted then the Contractor or, in case of his default, the surety shall pay to the Department, not as a penalty, but as liquidated damages, the amount so due as determined by the Code requirements, as provided in 8-10.2.

**8-10.5 Right of Collection:** The Department has the right to apply, as payment on such liquidated damages, any money the Department owes the Contractor.

**8-10.6 Allowing Contractor to Finish Work:** The Department does not waive its right to liquidated damages due under the Contract by allowing the Contractor to continue and to finish the work, or any part of it, after the expiration of the Contract Time including granted time extensions.

**8-10.7 Completion of Work by Department:** In the case of a default of the Contract and the completion of the work by the Department, the Contractor and his surety are liable for the liquidated damages under the Contract, but the Department will not charge liquidated damages for any delay in the final completion of the Department's performance of the work due to any unreasonable action or delay on the part of the Department.

### **8-11 Release of Contractor's Responsibility.**

The Department considers the Contract complete when the Contractor has completed all work and the Department has accepted the work. The Department will then release the Contractor from further obligation except as set forth in his bond, and except as provided in 5-13.

### **8-12 Recovery of Damages Suffered by Third Parties.**

In addition to the damages provided for in 8-10.2 and pursuant to Section 337.18 of the Florida Statutes, when the Contractor fails to complete the work within the Contract Time or within such additional time that the Department may grant the Department may recover from the Contractor amounts that the Department pays for damages suffered by third parties unless the failure to timely complete the work was caused by the Department's act or omission.

**EARTHWORK AND RELATED OPERATIONS FOR LAP (OFF-SYSTEM).**  
**(REV 1-23-12) (FA 2-27-12)**

**SECTION 120**  
**EARTHWORK AND RELATED OPERATIONS FOR LAP (OFF-SYSTEM)**

**120-1 Description.**

**120-1.1 General:** Perform earthwork and related operations based on the type of work specified in the Contract and the Earthwork Categories as defined below. Meet the applicable requirements for materials, equipment and construction as specified.

Earthwork and related operations consists of excavation for the construction of the roadway, excavation for structures and pipe, constructing backfill around structures and pipe, and constructing embankments as required for the roadway, ditches, and channel changes.

**120-1.2 Earthwork Categories:** Performance of Earthwork Operations will fall into one of the following Earthwork Categories:

**120-1.2.1 Earthwork Category 1:** Includes the earthwork and related operations associated with the construction of sidewalks and bike paths along with any drainage structures associated with these facilities.

**120-1.2.2 Earthwork Category 2:** Includes the earthwork and related operations associated with the construction of turn lanes and other non-mainline traffic lanes, widening, roadway shoulders, concrete box culverts, retaining walls, and other drainage structures on the non-mainline pavement.

**120-1.2.3 Earthwork Category 3:** Includes the earthwork and related operations associated with the construction of new mainline pavement, along with concrete box culverts, retaining walls, and other drainage structures on the mainline pavement.

**120-2 Classes of Excavation.**

**120-2.1 Excavation of Unsuitable Material:** Excavation of unsuitable material consists of the removal of muck, clay, rock or any other material that is unsuitable in its original position and that is excavated below the finished grading template. For stabilized bases and sand bituminous road mixes, the finished grading template is the top of the finished base, shoulders and slopes. For all other bases and rigid pavement, the finished grading template is the finished shoulder and slope lines and bottom of completed base or rigid pavement.

**120-2.2 Lateral Ditch Excavation:** Lateral ditch excavation consists of all excavation of inlet and outlet ditches to structures and roadway, changes in channels of streams, and ditches parallel to the roadway right-of-way. Dress lateral ditches to the grade and cross-section shown in the plans.

**120-2.3 Channel Excavation:** Channel excavation consists of the excavation and satisfactory disposal of all materials from the limits of the channel as shown in the plans.

**120-2.4 Excavation for Structures and Pipe:** Excavation for structures consists of the excavation for bridge foundations, box culverts, pipe culverts, storm sewers and all other pipe lines, retaining walls, headwalls for pipe culverts and drains, catch basins, drop inlets, manholes, and similar structures.

### **120-3 Excavation Requirements.**

**120-3.1 Excavation and Replacement of Unsuitable Materials:** Where rock, muck, clay, or other material within the limits of the roadway is unsuitable in its original position, excavate such material to the cross-sections shown in the plans or indicated by the Engineer, and backfill with suitable material. Shape backfill materials to the required cross-sections. Where the removal of plastic soils below the finished earthwork grade is required, meet a construction tolerance of plus or minus 0.2 foot in depth and plus or minus 6 inches (each side) in width.

**120-3.2 Lateral Ditch Excavation:** Excavate inlet and outlet ditches to structures and roadway, changes in channels of streams and ditches parallel to the roadway. Dress lateral ditches to the grade and cross-section shown in the plans.

**120-3.3 Channel Excavation:** Excavate and dispose of all materials from the limits of the channel as shown in the plans. Excavate for bridge foundations, box culverts, pipe culverts, storm sewers and all other pipe lines, retaining walls, headwalls for pipe culverts and drains, catch basins, drop inlets, manholes, and similar structures.

#### **120-3.4 Excavation for Structures and Pipe.**

**120-3.4.1 Requirements for all Excavation:** Excavate foundation pits to permit the placing of the full widths and lengths of footings shown in the plans, with full horizontal beds. Do not round or undercut corners or edges of footings. Perform all excavation to foundation materials, satisfactory to the Engineer, regardless of the elevation shown on the plans. Perform all excavation in stream beds to a depth at least 4 feet below the permanent bed of the stream, unless a firm footing can be established on solid rock before such depth is reached, and excavate to such additional depth as may be necessary to eliminate any danger of undermining. Wherever rock bottom is secured, excavate in such manner as to allow the solid rock to be exposed and prepared in horizontal beds for receiving the masonry. Remove all loose and disintegrated rock or thin strata. Have the Engineer inspect and approve all foundation excavations prior to placing masonry.

#### **120-3.4.2 Earth Excavation:**

**120-3.4.2.1 Foundation Material other than the Rock:** When masonry is to rest on an excavated surface other than rock, take special care to avoid disturbing the bottom of the excavation, and do not remove the final foundation material to grade until just before placing the masonry. In case the foundation material is soft or mucky, the Engineer may require excavation to a greater depth and to backfill to grade with approved material.

**120-3.4.2.2 Foundation Piles:** Where foundation piles are used, complete the excavation of each pit before driving the piles. After the driving is completed, remove all loose and displaced material, leaving a smooth, solid, and level bed to receive the masonry.

**120-3.4.2.3 Removal of Obstructions:** Remove boulders, logs, or any unforeseen obstacles encountered in excavating.

**120-3.4.3 Rock Excavation:** Clean all rock and other hard foundation material, remove all loose material, and cut all rock to a firm surface. Either level, step vertically and horizontally, or serrate the rock, as may be directed by the Engineer. Clean out all seams, and fill them with concrete or mortar.

**120-3.4.4 Pipe Trench Excavation:** Excavate trenches for pipe culverts and storm sewers to the elevation of the bottom of the pipe and to a width sufficient to provide adequate working room. Remove soil not meeting the classification specified as suitable backfill material in 120-8.3.2.2 to a depth of 4 inches below the bottom of the pipe elevation. Remove rock, boulders or other hard lumpy or unyielding material to a depth of 12 inches below the bottom of the pipe elevation. Remove muck or other soft material to a depth necessary to establish a firm foundation. Where the soils permit, ensure that the trench sides are vertical up to at least the mid-point of the pipe.

For pipe lines placed above the natural ground line, place and compact the embankment, prior to excavation of the trench, to an elevation at least 2 feet above the top of the pipe and to a width equal to four pipe diameters, and then excavate the trench to the required grade.

#### **120-4 Disposal of Surplus and Unsuitable Material.**

**120-4.1 Ownership of Excavated Materials:** Dispose of surplus and excavated materials as shown in the plans or, if the plans do not indicate the method of disposal, take ownership of the materials and dispose of them outside the right-of-way.

**120-4.2 Disposal of Muck on Side Slopes:** As an exception to the provisions of 120-4.1, when approved by the Engineer, muck (A-8 material) may be placed on the slopes, or stored alongside the roadway, provided there is a clear distance of at least 6 feet between the roadway grading limits and the muck, and the muck is dressed to present a neat appearance. In addition, this material may also be disposed of by placing it on the slopes where, in the opinion of the Engineer, this will result in an aesthetically pleasing appearance and will have no detrimental effect on the adjacent developments. Where the Engineer permits the disposal of muck or other unsuitable material inside the right-of-way limits, do not place such material in a manner which will impede the inflow or outfall of any channel or of side ditches. The Engineer will determine the limits adjacent to channels within which such materials may be disposed.

**120-4.3 Disposal of Paving Materials:** Unless otherwise noted, take ownership of paving materials, such as paving brick, asphalt block, concrete slab, sidewalk, curb and gutter, etc., excavated in the removal of existing pavements, and dispose of them outside the right-of-way. If the materials are to remain the property of the Agency, place them in neat piles as directed. Existing limerock base that is removed may be incorporated in the stabilized portion of the subgrade. If the construction sequence will allow, incorporate all existing limerock base into the project as allowed by the Contract Documents.

**120-4.4 Disposal Areas:** Where the Contract Documents require disposal of excavated materials outside the right-of-way, and the disposal area is not indicated in the Contract Documents, furnish the disposal area without additional compensation.

Provide areas for disposal of removed paving materials out of sight of the project and at least 300 feet from the nearest roadway right-of-way line of any road. If the materials are buried, disregard the 300 foot limitation.

#### **120-5 Materials for Embankment.**

**120-5.1 General Requirements for Embankment Materials:** Construct embankments using suitable materials excavated from the roadway or delivered to the jobsite from authorized borrow pits.

Construct the embankment using maximum particle sizes as follows:

In top 12 inches: 3 1/2 inches (in any dimension).

12 to 24 inches: 6 inches (in any dimension).

In the depth below 24 inches: not to exceed 12 inches (in any dimension) or the compacted thickness of the layer being placed, whichever is less.

Spread all material so that the larger particles are separated from each other to minimize voids between them during compaction. Compact around these rocks in accordance with 120-7.2.

When and where approved by the Engineer, larger rocks (not to exceed 18 inches in any dimension) may be placed outside the one to two slope and at least 4 feet or more below the bottom of the base. Compact around these rocks to a firmness equal to that of the supporting soil. Where constructing embankments adjacent to bridge end bents or abutments, do not place rock larger than 3 1/2 inches in diameter within 3 feet of the location of any end-bent piling.

**120-5.2 Use of Materials Excavated From the Roadway and Appurtenances:** Assume responsibility for determining the suitability of excavated material for use on the project in accordance with the applicable Contract Documents. Consider the sequence of work and maintenance of traffic phasing in the determination of the availability of this material.

**120-5.3 Authorization for Use of Borrow:** Use borrow only when sufficient quantities of suitable material are not available from roadway and drainage excavation, to properly construct the embankment, subgrade, and shoulders, and to complete the backfilling of structures and pipe. Do not use borrow material until so ordered by the Engineer, and then only use material from approved borrow pits.

**120-5.3.1 Haul Routes for Borrow Pits:** Provide and maintain, at no expense to the Agency, all necessary roads for hauling the borrow material. Where borrow area haul roads or trails are used by others, do not cause such roads or trails to deteriorate in condition.

Arrange for the use of all non-public haul routes crossing the property of any railroad. Incur any expense for the use of such haul routes. Establish haul routes which will direct construction vehicles away from developed areas when feasible, and keep noise from hauling operations to a minimum. Advise the Engineer in writing of all proposed haul routes.

**120-5.3.2 Borrow Material for Shoulder Build-up:** When so indicated in the plans, furnish borrow material with a specific minimum bearing value, for building up of existing shoulders. Blend materials as necessary to achieve this specified minimum bearing value prior to placing the materials on the shoulders. Take samples of this borrow material at the pit or blended stockpile.

**120-5.4 Materials Used at Pipes, Culverts, etc.:** Construct embankments over and around pipes, culverts, and bridge foundations with selected materials.

## **120-6 Embankment Construction.**

**120-6.1 General:** Construct embankments in sections of not less than 300 feet in length or for the full length of the embankment.

**120-6.2 Dry Fill Method:**

**120-6.2.1 General:** Construct embankments to meet compaction requirements in 120-7 and in accordance with the acceptance program requirements in 120-9.

Restrict the compacted thickness of the last embankment lift to 6 inches maximum.

As far as practicable, distribute traffic over the work during the construction of embankments so as to cover the maximum area of the surface of each layer.

Construct embankment in the dry whenever normal dewatering equipment and methods can accomplish the needed dewatering.

**120-6.2.1.1 For A-3 and A-2-4 Materials with up to 15% fines:**

Construct the embankment in successive layers with lifts up to a maximum compacted thickness of 12 inches. Ensure the percentage of fines passing the No. 200 US Standard sieve in the A-2-4 material does not exceed 15%.

**120-6.2.1.2 For A-1 Plastic materials (As designated in FDOT Design Standard Index 505) and A-2-4 Materials with greater than 15% fines:** Construct the embankment in successive layers with lifts up to a maximum compacted thickness of 6 inches.

**120-6.2.1.3 Equipment and Methods:** Provide normal dewatering equipment including, but not limited to, surface pumps, sump pumps and trenching/digging machinery. Provide normal dewatering methods including, but not limited to, constructing shallow surface drainage trenches/ditches, using sand blankets, sumps and siphons.

When normal dewatering does not adequately remove the water, the Engineer may require the embankment material to be placed in the water or in low swampy ground in accordance with 120-7.2.4.

**120-6.2.2 Placing in Unstable Areas:** Where depositing the material in water, or in low swampy ground that will not support the weight of hauling equipment, construct the embankment by dumping successive loads in a uniformly distributed layer of a thickness not greater than necessary to support the hauling equipment while placing subsequent layers. Once sufficient material has been placed so that the hauling equipment can be supported, construct the remaining portion of the embankment in layers in accordance with the applicable provisions of 120-7.2.4 and 120-7.2.6.

**120-6.2.3 Placing on Steep Slopes:** When constructing an embankment on a hillside sloping more than 20 degrees from the horizontal, before starting the fill, deeply plow or cut into steps the surface of the original ground on which the embankment is to be placed.

**120-6.2.4 Placing Outside Standard Minimum Slope:** Where material that is unsuitable for normal embankment construction is to be used in the embankment outside the standard minimum slope (approximately one to two), place such material in layers of not more than 18 inches in thickness, measured loose. The Contractor may also place material which is suitable for normal embankment, outside such standard minimum slope, in 18 inch layers. Maintain a constant thickness for suitable material placed within and outside the standard minimum slope, unless placing in a separate operation.

**120-6.3 Hydraulic Method:**

**120-6.3.1 Method of Placing:** When the hydraulic method is used, as far as practicable, place all dredged material in its final position in the embankment by

such method. Place and compact any dredged material that is re-handled, or moved and placed in its final position by any other method, as specified in 120-7.2. The Contractor may use baffles or any form of construction he may select, provided the slopes of the embankments are not steeper than indicated in the plans. Remove all timber used for temporary bulkheads or baffles from the embankment, and fill and thoroughly compact the holes thus formed. When placing fill on submerged land, construct dikes prior to beginning of dredging, and maintain the dikes throughout the dredging operation.

**120-6.3.2 Excess Material:** Do not use excess material placed outside the prescribed slopes, below the normal high-water level, to raise the fill. Remove only the portion of this material required for dressing the slopes.

**120-6.3.3 Protection of Openings in Embankment:** Leave openings in the embankments at the bridge sites. Remove any material which invades these openings or existing channels without additional compensation to provide the same depth of channel as existed before the construction of the embankment. Do not excavate or dredge any material within 200 feet of the toe of the proposed embankment.

## **120-7 Compaction Requirements.**

**120-7.1 Moisture Content:** Compact the materials at a moisture content such that the specified density can be attained. If necessary to attain the specified density, add water to the material, or lower the moisture content by manipulating the material or allowing it to dry, as is appropriate.

### **120-7.2 Compaction of Embankments:**

**120-7.2.1 Earthwork Category 1 and 2 Density Requirements:** The Engineer will accept a minimum density of 95% of the maximum density as determined by AASHTO T-99 Method C for all earthwork items requiring densities.

**120-7.2.2 Earthwork Category 3 Density Requirements:** The Engineer will accept a minimum of 100% of the maximum density as determined by AASHTO T-99 Method C for all densities required under category 3.

Except for embankments constructed by the hydraulic method as specified in 120-6.3, and for the material placed outside the standard minimum slope as specified in 120-6.2.4, and for other areas specifically excluded herein, compact each layer of the material used in the formation of embankments to the required density stated above. Uniformly compact each layer using equipment that will achieve the required density, and as compaction operations progress, shape and manipulate each layer as necessary to ensure uniform density throughout the embankment.

**120-7.2.3 Compaction Over Unstable Foundations:** Where the embankment material is deposited in water or on low swampy ground, and in a layer thicker than 12 inches (as provided in 120-6.2.2), compact the top 6 inches (compacted thickness) of such layer to the density as specified in 120-9.5.

**120-7.2.4 Compaction Where Plastic Material Has Been Removed:** Where unsuitable material is removed and the remaining surface is of the A-4, A-5, A-6, or A-7 Soil Groups, as determined by the Engineer, compact the surface of the excavated area by rolling with a sheepsfoot roller exerting a compression of at least 250 psi on the tamper feet, for the full width of the roadbed (subgrade and shoulders). Perform rolling before beginning any backfill, and continue until the

roller feet do not penetrate the surface more than 1 inch. Do not perform such rolling where the remaining surface is below the normal water table and covered with water. Vary the procedure and equipment required for this operation at the discretion of the Engineer.

**120-7.2.5 Compaction of Material To Be Used In Base, Pavement, or Stabilized Areas:** Do not compact embankment material which will be incorporated into a pavement, base course, or stabilized subgrade, to be constructed as a part of the same Contract.

**120-7.2.6 Compaction of Grassed Shoulder Areas:** For the upper 6 inch layer of all shoulders which are to be grassed, since no specific density is required, compact only to the extent directed.

**120-7.2.7 Compaction of Grassed Embankment Areas:** For the outer layer of all embankments where plant growth will be established, do not compact. Leave this layer in a loose condition to a minimum depth of 6 inches for the subsequent seeding or planting operations.

**120-7.3 Compaction of Subgrade:** If the plans do not provide for stabilizing, compact the subgrade in both cuts and fills to the density specified in 120-9.5. For undisturbed soils, do not apply density requirements where constructing narrow widening strips or paved shoulders 5 feet or less in width.

Where trenches for widening strips are not of sufficient width to permit the use of standard compaction equipment, perform compaction using vibratory rollers, trench rollers, or other type compaction equipment approved by the Engineer.

Maintain the required density until the base or pavement is placed on the subgrade.

## **120-8 Backfilling Around Structures and Pipe.**

### **120-8.1 Requirements for all Structures:**

**120-8.1.1 General:** Backfill around structures and pipe in the dry whenever normal dewatering equipment and methods can accomplish the needed dewatering.

**120-8.1.2 Equipment and Methods:** Provide normal dewatering equipment including, but not limited to, surface pumps, sump pumps, wellpoints and header pipe and trenching/digging machinery. Provide normal dewatering methods including, but not limited to, constructing shallow surface drainage trenches/ditches, using sand blankets, perforated pipe drains, sumps and siphons.

**120-8.1.3 Backfill Materials:** Backfill to the original ground surface or subgrade surface of openings made for structures, with a sufficient allowance for settlement. The Engineer may require that the material used for this backfill be obtained from a source entirely apart from the structure.

Do not allow heavy construction equipment to cross over culvert or storm sewer pipes until placing and compacting backfill material to the finished earthwork grade or to an elevation at least 4 feet above the crown of the pipe.

**120-8.1.4 Use of A-7 Material:** In the backfilling of trenches, A-7 material may be used from a point 12 inches above the top of the pipe up to the elevation shown on the FDOT Design Standards as the elevation for undercutting of A-7 material.

**120-8.1.5 Time of Placing Backfill:** Do not place backfill against any masonry or concrete abutment, wingwall, or culvert until the Engineer has given permission

to do so, and in no case until the masonry or concrete has been in place seven days or until the specified 28-day compressive strength occurs.

**120-8.1.6 Placement and Compaction:** When the backfill material is deposited in water, compact per 120-8.2.5 and 120-8.3.4. Place the material in horizontal layers not exceeding 6 inches compacted thickness, in depth above water level, behind abutments, wingwalls and end bents or end rest piers, and around box culverts and all structures including pipe culverts. The Engineer may approve placing material in thicker lifts of no more than 12 inches compacted thickness above the soil envelope if a test section demonstrates the required density can be achieved. Approval will be based on five passing density tests over the test section consisting of a lift of backfill from structure to structure. The Engineer will identify the test section with the compaction effort and soil classification in the Agency Logbook. In case of a change in compaction effort or soil classification, construct a new test section. The Engineer reserves the right to terminate the Contractor's use of thick lift construction and have him revert to the 6 inch compacted lifts whenever it is determined that satisfactory results are not being obtained.

#### **120-8.2 Additional Requirements for Structures Other than Pipe:**

**120-8.2.1 Density:** Where the backfill material is deposited in water, obtain a 12 inch layer of comparatively dry material, thoroughly compacted by tamping, before the Engineer verifies layer and density requirements. Meet the requirements of the density Acceptance Criteria.

**120-8.2.2 Box Culverts:** For box culverts over which pavement is to be constructed, compact around the structure to an elevation not less than 12 inches above the top of the structure, using rapid-striking mechanical tampers.

**120-8.2.3 Other Limited Areas:** Compact in other limited areas using mechanical tampers or approved hand tampers, until the cover over the structure is at least 12 inches thick. When hand tampers are used, deposit the materials in layers not more than 4 inches thick using hand tampers suitable for this purpose with a face area of not more than 100 in<sup>2</sup>. Take special precautions to prevent any wedging action against the masonry, and step or terrace the slope bounding the excavation for abutments and wingwalls if required by the Engineer.

**120-8.2.4 Culverts and Piers:** Backfill around culverts and piers on both sides simultaneously to approximately the same elevation.

**120-8.2.5 Compaction Under Wet Conditions:** Where wet conditions do not permit the use of mechanical tampers, compact using hand tampers. Use only A-3 material for the hand tamped portions of the backfill. When the backfill has reached an elevation and condition such as to make the use of the mechanical tampers practical, perform mechanical tamping in such manner and to such extent as to transfer the compaction force into the sections previously tamped by hand.

#### **120-8.3 Additional Requirements for Pipe 15 Inches Inside Diameter or Greater:**

**120-8.3.1 General:** Trenches for pipe may have up to four zones that must be backfilled.

**Lowest Zone:** The lowest zone is backfilled for deep undercuts up to within 4 inches of the bottom of the pipe.

**Bedding Zone:** The zone above the Lowest Zone is the Bedding Zone. Usually it will be the backfill which is the 4 inches of soil below the bottom of the pipe. When rock or other hard material has been removed to place the pipe, the Bedding Zone will be the 12 inches of soil below the bottom of the pipe.

**Cover Zone:** The next zone is backfill that is placed after the pipe has been laid and will be called the Cover Zone. This zone extends to 12 inches above the top of the pipe. The Cover Zone and the Bedding Zone are considered the Soil Envelope for the pipe.

**Top Zone:** The Top Zone extends from 12 inches above the top of the pipe to the base or final grade.

#### **120-8.3.2 Material:**

**120-8.3.2.1 Lowest Zone:** Backfill areas undercut below the Bedding Zone of a pipe with coarse sand, or other suitable granular material, obtained from the grading operations on the project, or a commercial material if no suitable material is available.

**120-8.3.2.2 Soil Envelope:** In both the Bedding Zone and the Cover Zone of the pipe, backfill with materials classified as A-1, A-2, or A-3. Material classified as A-4 may be used if the pipe is concrete pipe.

**120-8.3.2.3 Top Zone:** Backfill the area of the trench above the soil envelope of the pipe with materials allowed on Design Standard, Index No. 505.

#### **120-8.3.3 Compaction:**

**120-8.3.3.1 Lowest Zone:** Compact the soil in the Lowest Zone to approximately match the density of the soil in which the trench was cut.

**120-8.3.3.2 Bedding Zone:** If the trench was not undercut below the bottom of the pipe, loosen the soil in the bottom of the trench immediately below the approximate middle third of the outside diameter of the pipe.

If the trench was undercut, place the bedding material and leave it in a loose condition below the middle third of the outside diameter of the pipe. Compact the outer portions to meet the density requirements of the Acceptance Criteria. Place the material in lifts no greater than 6 inches (compacted thickness).

**120-8.3.3.3 Cover Zone:** Place the material in 6 inches layers (compacted thickness), evenly deposited on both sides of the pipe, and compact with mechanical tampers suitable for this purpose. Hand tamp material below the pipe haunch that cannot be reached by mechanical tampers. Meet the requirements of the density Acceptance Criteria.

**120-8.3.3.4 Top Zone:** Place the material in layers not to exceed 12 inches in compacted thickness. Meet the requirements of the density Acceptance Criteria.

**120-8.3.4 Backfill Under Wet Conditions:** Where wet conditions are such that dewatering by normal pumping methods would not be effective, the procedure outlined below may be used when specifically authorized by the Engineer in writing.

Granular material may be used below the elevation at which mechanical tampers would be effective, but only material classified as A-3. Place and compact the

material using timbers or hand tampers until the backfill reaches an elevation such that it's moisture content will permit the use of mechanical tampers. When the backfill has reached such elevation, use normally acceptable backfill material. Compact the material using mechanical tampers in such manner and to such extent as to transfer the compacting force into the material previously tamped by hand.

**120-9 Acceptance Program.**

**120-9.1 Density over 105%:** When a computed dry density results in a value greater than 105% of the applicable Proctor maximum dry density, the Engineer will perform a second density test within 5 feet. If the second density results in a value greater than 105%, investigate the compaction methods, examine the applicable Maximum Density and material description. If necessary, the Engineer will test an additional sample for acceptance in accordance with AASHTO T 99, Method C.

**120-9.2 Maximum Density Determination:** The Engineer will determine the maximum density and optimum moisture content by sampling and testing the material in accordance with the specified test method listed in 120-9.3.

**120-9.3 Density Testing Requirements:** Compliance with the requirements of 120-9.5 will be determined in accordance FM 1-T 238. The in-place moisture content will be determined for each density in accordance with FM 5-507 (Determination of Moisture Content by Means of a Calcium Carbide Gas Pressure Moisture Tester), or ASTM D 4643 (Laboratory Determination of Moisture Content of Granular Soils By Use of a Microwave Oven).

**120-9.4 Soil Classification:** The Engineer will perform soil classification tests in accordance with AASHTO T-88, and classify soils in accordance with AASHTO M-145 (Standard Specification for Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes) in order to determine compliance with embankment utilization requirements.

**120-9.5 Acceptance Criteria:** The Engineer will accept a minimum density in accordance with 120-7.2 with the following exceptions:

- 1) embankment constructed by the hydraulic method as specified in 120-6.3;
- 2) material placed outside the standard minimum slope as specified in 120-6.2.4;
- 3) other areas specifically excluded herein.

**120-9.6 Frequency:** The Engineer will conduct sampling and testing at a minimum frequency listed in the table below.

Test Name	Frequency
Maximum Density	One per soil type
Density	1 per 500' RDWY (Alt Lift)
Soil Classification	One per Maximum Density

**120-10 Maintenance and Protection of Work.**

While construction is in progress, maintain adequate drainage for the roadbed at all times. Maintain a shoulder at least 3 feet wide adjacent to all pavement or base construction in order to provide support for the edges.

Maintain and protect all earthwork construction throughout the life of the Contract, and take all reasonable precautions to prevent loss of material from the roadway due to the action of wind or water. Repair any slides, washouts, settlement, subsidence, or other mishap which may occur prior to final acceptance of the work. Maintain all channels excavated as a part of the Contract work against natural shoaling or other encroachments to the lines, grades, and cross-sections shown in the plans, until final acceptance of the project.

#### **120-11 Construction.**

**120-11.1 Construction Tolerances:** Shape the surface of the earthwork to conform to the lines, grades, and cross-sections shown in the plans. In final shaping of the surface of earthwork, maintain a tolerance of 0.3 foot above or below the plan cross-section with the following exceptions:

1. Shape the surface of shoulders to within 0.1 foot of the plan cross-section.
2. Shape the earthwork to match adjacent pavement, curb, sidewalk, structures, etc.
3. Shape the bottom of ditches so that the ditch impounds no water.
4. When the work does not include construction of base or pavement, shape the entire roadbed (shoulder point to shoulder point) to within 0.1 foot above or below the plan cross-section.

Ensure that the shoulder lines do not vary horizontally more than 0.3 foot from the true lines shown in the plans.

**120-11.2 Operations Adjacent to Pavement:** Carefully dress areas adjacent to pavement areas to avoid damage to such pavement. Complete grassing of shoulder areas prior to placing the final wearing course. Do not manipulate any embankment material on a pavement surface.

When shoulder dressing is underway adjacent to a pavement lane being used to maintain traffic, exercise extreme care to avoid interference with the safe movement of traffic.

#### **120-12 Method of Measurement.**

**120-12.1 Excavation:** Excavation will be paid for by volume, in cubic yards, calculated by the method of average end areas, unless the Engineer determines that another method of calculation will provide a more accurate result. The material will be measured in its original position by field survey or by photogrammetric means as designated by the Engineer. Measurement for payment will include the excavation of unsuitable material, lateral ditch excavation, channel excavation, and excavation for structures and pipe. Payment will not be made for excavation or embankment beyond the limits shown in the plans or authorized by the Engineer.

**120-12.2 Embankment:** Measurement will be made on a loose volume basis, as measured in trucks or other hauling equipment at the point of dumping on the road. Payment will not be made for embankment beyond the limits shown in the plans or authorized by the Engineer.

#### **120-13 Basis of Payment.**

**120-13.1 General:** Prices and payments for the work items included in this Section will be full compensation for all work described herein, including excavating, dredging, hauling, placing, and compacting; dressing the surface of the earthwork; and maintaining and protecting the complete earthwork.

**120-13.2 Excavation:** The total quantity of all excavation specified under this Section will be paid for at the Contract unit price for Excavation. No payment will be made for the excavation of any materials which are used for purposes other than those shown in the plans or designated by the Engineer. No payment will be made for materials excavated outside the lines and grades given by the Engineer, unless specifically authorized by the Engineer.

**120-13.3 Embankment:** The total quantity of embankment specified in this Section will be paid for at the Contract unit price for embankment. No payment will be made for materials which are used for purposes other than those shown in the plans or designated by the Engineer. No payment will be made for materials placed outside the lines and grades given by the Engineer.

**HOT MIX ASPHALT FOR LAP (OFF-SYSTEM).  
(REV 11-17-11) (FA 2-27-12)**

**SECTION 334  
HOT MIX ASPHALT FOR LAP (OFF-SYSTEM)**

**334-1 Description.**

**334-1.1 General:** Construct a Hot Mix Asphalt (HMA) pavement based on the type of work specified in the Contract and the Asphalt Work Categories as defined below. Meet the applicable requirements for plants, equipment, and construction requirements as defined below. Use a HMA mix that meets the requirements of this specification

**334-1.2 Asphalt Work Mix Categories:** Construction of Hot Mix Asphalt Pavement will fall into one of the following work categories:

**334-1.2.1 Asphalt Work Category 1:** Includes the construction of bike paths and miscellaneous asphalt.

**334-1.2.2 Asphalt Work Category 2:** Includes the construction of new HMA turn lanes, paved shoulders and other non-mainline pavement locations.

**334-1.2.3 Asphalt Work Category 3:** Includes the construction of new mainline HMA pavement lanes, milling and resurfacing.

**334-1.3 Mix Types:** Use the appropriate HMA mix as shown in Table 334-1.

Table 334-1 HMA Mix Types			
Asphalt Work Category	Mix Types	Traffic Level	ESALs (millions)
1	Type SP-9.5 <sup>(1)</sup>	A	<0.3
2	Structural Mixes: Types SP-9.5 or SP-12.5 <sup>(1)</sup> Friction Mixes: Types FC-9.5 or FC-12.5 <sup>(1)</sup>	B	0.3 to <3
3	Structural Mixes: Types SP-9.5 or SP-12.5 Friction Mixes: Types FC-9.5 or FC-12.5	C	≥3

(1) Equivalent mixes may be approved as determined by the Engineer. For example, Marshall S-III mixture type is equivalent to Superpave SP-9.5, Marshall S-I is equivalent to Superpave SP-12.5, and Marshall FC-3 is equivalent to Superpave FC-9.5.

A Type SP or FC mix one traffic level higher than the traffic level specified in the Contract may be substituted, at no additional cost (i.e. Traffic Level B may be substituted for Traffic Level A, etc.). Traffic levels are as defined in Section 334 of the Department's Standard Specifications for Road and Bridge Construction.

**334-1.4 Gradation Classification:** HMA mixes are classified as either coarse or fine, depending on the overall gradation of the mixture. Coarse and fine mixes are defined in 334-3.2.2. Use only fine mixes.

The equivalent AASHTO nominal maximum aggregate size Superpave mixes are as follows:

Type SP-9.5, FC-9.5 .....	9.5 mm
Type SP-12.5, FC-12.5 .....	12.5 mm

**334-1.5 Thickness:** The total pavement thickness of the HMA pavement will be based on a specified spread rate or plan thickness as shown in the Contract Documents. Before paving, propose a spread rate or thickness for each individual layer meeting the requirements of this specification, which when combined with other layers (as applicable) will equal the plan spread rate or thickness. When the total pavement thickness is specified as plan thickness, the plan thickness and individual layer thickness will be converted to spread rate using the following equation:

$$\text{Spread rate (lbs/yd}^2\text{)} = t \times G_{\text{mm}} \times 43.3$$

where:  $t$  = Thickness (in.) (Plan thickness or individual layer thickness)  
 $G_{\text{mm}}$  = Maximum specific gravity from the mix design

For target purposes only, spread rate calculations shall be rounded to the nearest whole number.

**334-1.5.1 Layer Thicknesses:** Unless otherwise called for in the Contract Documents, the allowable layer thicknesses for HMA mixtures are as follows:

Type SP-9.5, FC-9.5 .....	3/4 – 1-1/2 inches
Type SP-12.5, FC-12.5 .....	1 1/2 – 2-1/2 inches

**334-1.5.2 Additional Requirements:** The following requirements also apply to HMA mixtures:

1. When construction includes the paving of adjacent shoulders (less than or equal to 5 feet wide), the layer thickness for the upper pavement layer and shoulder shall be the same and paved in a single pass, unless otherwise called for in the Contract Documents.
2. For overbuild layers, use the minimum and maximum layer thicknesses as specified above unless called for differently in the Contract Documents. On variable thickness overbuild layers, the minimum allowable thickness may be reduced by 1/2 inch, and the maximum allowable thickness may be increased by 1/2 inch, unless called for differently in the Contract Documents.

**334-1.6 Weight of Mixture:** The weight of the mixture shall be determined as provided in 320-3.2 of the Florida Department of Transportation (FDOT) specifications.

### 334-2 Materials.

**334-2.1 Superpave Asphalt Binder:** Unless specified elsewhere in the Contract or in 334-2.3.3, use a PG 67-22 asphalt binder from the FDOT's Qualified Products List (QPL). If the Contract calls for an alternative binder, meet the requirements of FDOT Specifications Section 336 or 916, as appropriate.

**334-2.2 Aggregate:** Use aggregate capable of producing a quality pavement.

For Type FC mixes, use an aggregate blend that consists of crushed granite, crushed Oolitic limestone, other crushed materials (as approved by FDOT for friction courses per Rule 14-103.005, Florida Administrative Code), or a combination of the above. Crushed limestone from the Oolitic formation may be used if it contains a minimum of 12% silica material as determined by FDOT Test Method FM 5-510 and FDOT grants approval of the source prior to its use. As an exception, mixes that contain a minimum of 60% crushed granite may either contain:

1. Up to 40% fine aggregate from other sources; or,
2. A combination of up to 20% RAP and the remaining fine aggregate from other sources.

A list of aggregates approved for use in friction courses may be available on the FDOT's State Materials Office website. The URL for obtaining this information, if available, is: <ftp://ftp.dot.state.fl.us/fdot/smo/website/sources/frictioncourse.pdf>.

**334-2.3 Reclaimed Asphalt Pavement (RAP) Material:**

**334-2.3.1 General requirements:** RAP may be used as a component of the asphalt mixture, if approved by the Engineer. Usage of RAP is subject to the following requirements:

1. Limit the amount of RAP material used in the mix to a maximum of 50% by weight of total aggregate.
2. Provide stockpiled RAP material that is reasonably consistent in characteristics and contains no aggregate particles which are soft or conglomerates of fines.
3. Provide RAP material having a minimum average asphalt content of 4.0% by weight of total mix. The Engineer may sample the stockpile to verify that this requirement is met.
4. Use a grizzly or grid over the RAP cold bin, in-line roller crusher, screen, or other suitable means to prevent oversized RAP material from showing up in the completed recycle mixture. If oversized RAP material appears in the completed recycle mix, take the appropriate corrective action immediately. If the appropriate corrective actions are not immediately taken, stop plant operations.

**334-2.3.2 Material Characterization:** Assume responsibility for establishing the asphalt binder content, gradation, viscosity and bulk specific gravity ( $G_{sb}$ ) of the RAP material based on a representative sampling of the material.

**334-2.3.3 Asphalt Binder for Mixes with RAP:** Select the appropriate asphalt binder grade based on Table 334-2. Maintain the viscosity of the recycled mixture within the range of 5,000 to 15,000 poises.

Table 334-2 Asphalt Binder Grade for Mixes Containing RAP	
Percent RAP	Asphalt Binder Grade
< 20	PG 67-22
20 – 29	PG 64-22
≥ 30	Recycling Agent

**334-3 Composition of Mixture.**

**334-3.1 General:** Compose the asphalt mixture using a combination of aggregates, mineral filler, if required, and asphalt binder material. Size, grade and combine the aggregate fractions to meet the grading and physical properties of the mix design. Aggregates from various sources may be combined.

**334-3.2 Mix Design:**

**334-3.2.1 General:** Design the asphalt mixture in accordance with AASHTO R 35-09, except as noted herein. Submit the proposed mix design with supporting test data indicating compliance with all mix design criteria to the

Engineer. Prior to the production of any asphalt mixture, obtain the Engineer's conditional approval of the mix design. If required by the Engineer, send representative samples of all component materials, including asphalt binder to a laboratory designated by the Engineer for verification. As an exception to these requirements, use a currently approved FDOT Mix Design.

The Engineer will consider any marked variations from original test data for a mix design or any evidence of inadequate field performance of a mix design as sufficient evidence that the properties of the mix design have changed, and at his discretion, the Engineer may no longer allow the use of the mix design.

**334-3.2.2 Mixture Gradation Requirements:** Combine the aggregates in proportions that will produce an asphalt mixture meeting all of the requirements defined in this specification and conform to the gradation requirements at design as defined in AASHTO M 323-07, Table 3. Aggregates from various sources may be combined.

**334-3.2.2.1 Mixture Gradation Classification:** Plot the combined mixture gradation on an FHWA 0.45 Power Gradation Chart. Include the Control Points from AASHTO M323-07, Table-3, as well as the Primary Control Sieve (PCS) Control Point from AASHTO M323-07, Table 4. Fine mixes are defined as having a gradation that passes above or through the primary control sieve control point. Use only fine mixes.

**334-3.2.3 Gyrotory Compaction:** Compact the design mixture in accordance with AASHTO T312-09. Use the number of gyrations as defined in AASHTO R35-09, Table 1.

**334-3.2.4 Design Criteria:** Meet the requirements for nominal maximum aggregate size as defined in AASHTO M323-07, as well as for relative density, VMA, VFA, and dust-to-binder ratio as specified in AASHTO M323-07, Table 6.

**334-3.2.5 Moisture Susceptibility:** Test 4 inch specimens in accordance with FM 1-T 283. Provide a mixture having a retained tensile strength ratio of at least 0.80 and a minimum tensile strength (unconditioned) of 100 psi. If necessary, add a liquid anti-stripping agent from the FDOT's Qualified Products List or hydrated lime in order to meet these criteria.

In lieu of moisture susceptibility testing, add a liquid anti-stripping agent from the FDOT's Qualified Products List. Add 0.5% liquid anti-stripping agent by weight of binder.

**334-3.2.6 Additional Information:** In addition to the requirements listed above, provide the following information on each mix design:

1. The design traffic level and the design number of gyrations ( $N_{\text{design}}$ ).
2. The source and description of the materials to be used.
3. The FDOT source number and the FDOT product code of the aggregate components furnished from an FDOT approved source (if required).
4. The gradation and proportions of the raw materials as intended to be combined in the paving mixture. The gradation of the component materials shall be representative of the material at the time of use. Compensate for any change in aggregate gradation caused by handling and processing as necessary.

5. A single percentage of the combined mineral aggregate passing each specified sieve. Degradation of the aggregate due to processing (particularly material passing the No. 200 sieve) should be accounted for and identified.
6. The bulk specific gravity ( $G_{sb}$ ) value for each individual aggregate and RAP component.
7. A single percentage of asphalt binder by weight of total mix intended to be incorporated in the completed mixture, shown to the nearest 0.1%.
8. A target temperature at which the mixture is to be discharged from the plant and a target roadway temperature. Do not exceed a target temperature of 330°F for modified asphalts and 315°F for unmodified asphalts.
9. Provide the physical properties achieved at four different asphalt binder contents. One shall be at the optimum asphalt content, and must conform to all specified physical requirements.
10. The name of the mix designer.
11. The ignition oven calibration factor.

#### **334-4 Process Control.**

Assume full responsibility for controlling all operations and processes such that the requirements of these Specifications are met at all times. Perform any tests necessary at the plant and roadway to control the process.

#### **334-5 General Construction Requirements.**

**334-5.1 Weather Limitations:** Do not transport asphalt mix from the plant to the roadway unless all weather conditions are suitable for the laying operations.

##### **334-5.2 Limitations of Laying Operations:**

**334-5.2.1 General:** Spread the mixture only when the surface upon which it is to be placed has been previously prepared, is intact, firm, and properly cured, and is dry.

**334-5.2.2 Air Temperature:** Spread the mixture only when the air temperature in the shade and away from artificial heat is at least 40°F for layers greater than 1 inch (100 lb per square yard) in thickness and at least 45°F for layers 1 inch (100 lb per square yard) or less in thickness (this includes leveling courses). The minimum temperature requirement for leveling courses with a spread rate of 50 lb per square yard or less is 50°F.

**334-5.3 Mix Temperature:** Heat and combine the ingredients of the mix in such a manner as to produce a mixture with a temperature at the plant and at the roadway, within a range of plus or minus 30°F from the target temperature as shown on the mix design. Reject all loads outside of this range.

**334-5.4 Transportation of the Mixture:** Transport the mixture in vehicles previously cleaned of all foreign material. After cleaning, thinly coat the inside surface of the truck bodies with soapy water or an asphalt release agent as needed to prevent the mixture from adhering to the beds. Do not allow excess liquid to pond in the truck body. Do not use diesel fuel or any other hazardous or environmentally detrimental material as a coating for the inside surface of the truck body. Cover each load at all times.

##### **334-5.5 Preparation of Surfaces Prior to Paving:**

**334-5.5.1 Cleaning:** Clean the surface of all loose and deleterious material by the use of power brooms or blowers, supplemented by hand brooming where necessary.

**334-5.5.2 Patching and Leveling Courses:** As shown in the plans, bring the existing surface to proper grade and cross-section by the application of patching or leveling courses.

**334-5.5.3 Application over Surface Treatment:** Where an asphalt mix is to be placed over a surface treatment, sweep and dispose of all loose material from the paving area.

**334-5.5.4 Tack Coat:** Use a rate of application as defined in Table 334-3. Control the rate of application to be within plus or minus 0.01 gal. per square yard of the target application rate. The target application rate may be adjusted by the Engineer to meet specific field conditions. Determine the rate of application as needed to control the operation. When using RA-550, multiply the target rate of application by 0.6.

Asphalt Mixture Type	Underlying Pavement Surface	Target Tack Rate (gal/yd <sup>2</sup> )
Base Course, Structural Course, Dense Graded Friction Course	Newly Constructed Asphalt Layers	0.02 minimum
	Milled Surface or Oxidized and Cracked Pavement	0.06
	Concrete Pavement	0.08
Open Graded Friction Course	Newly Constructed Asphalt Layers	0.05
	Milled Surface	0.07

**334-5.6 Paving:**

**334-5.6.1 Alignment of Edges:** With the exception of pavements placed adjacent to curb and gutter or other true edges, place all pavements by the stringline method to obtain an accurate, uniform alignment of the pavement edge. Control the unsupported pavement edge to ensure that it will not deviate more than plus or minus 1.5 inches from the stringline.

**334-5.6.2 Rain and Surface Conditions:** Immediately cease transportation of asphalt mixtures from the plant when rain begins at the roadway. Do not place asphalt mixtures while rain is falling, or when there is water on the surface to be covered. Once the rain has stopped and water has been removed from the tacked surface to the satisfaction of the Engineer and the temperature of the mixture caught in transit still meets the requirements as specified in 334-5.3, the Contractor may then place the mixture caught in transit.

**334-5.6.3 Checking Depth of Layer:** Check the depth of each layer at frequent intervals to ensure a uniform spread rate that will meet the requirements of the Contract.

**334-5.6.4 Hand Spreading:** In limited areas where the use of the spreader is impossible or impracticable, spread and finish the mixture by hand.

**334-5.6.5 Spreading and Finishing:** Upon arrival, dump the mixture in the approved paver, and immediately spread and strike-off the mixture to the full width required, and to such loose depth for each course that, when the work is completed, the required weight of mixture per square yard, or the specified thickness, is secured. Carry a uniform amount of mixture ahead of the screed at all times.

**334-5.6.6 Thickness Control:** Ensure the spread rate is within 10% of the target spread rate, as indicated in the Contract. When calculating the spread rate, use, at a minimum, an average of five truckloads of mix. When the average spread rate is beyond plus or minus 10% of the target spread rate, monitor the thickness of the pavement layer closely and adjust the construction operations.

If the Contractor fails to maintain an average spread rate within plus or minus 10% of the target spread rate for two consecutive days, the Engineer may elect to stop the construction operation at any time until the issue is resolved.

When the average spread rate for the total structural or friction course pavement thickness exceeds the target spread rate by  $\pm 50$  lbs per sy for layers  $\geq 2.5$  inches or exceeds the target spread rate by  $\pm 25$  lbs per sy for layers  $< 2.5$  inches, address the unacceptable pavement in accordance with 334-5.10.4, unless an alternative approach is agreed upon by the Engineer.

### **334-5.7 Leveling Courses:**

**334-5.7.1 Patching Depressions:** Before spreading any leveling course, fill all depressions in the existing surface as shown in the plans.

**334-5.7.2 Spreading Leveling Courses:** Place all courses of leveling with an asphalt paver or by the use of two motor graders, one being equipped with a spreader box. Other types of leveling devices may be used upon approval by the Engineer.

**334-5.7.3 Rate of Application:** When using Type SP-9.5 (fine graded) for leveling, do not allow the average spread of a layer to be less than 50 pounds per square yard or more than 75 pounds per square yard. The quantity of mix for leveling shown in the plans represents the average for the entire project; however, the Contractor may vary the rate of application throughout the project as directed by the Engineer. When leveling in connection with base widening, the Engineer may require placing all the leveling mix prior to the widening operation.

**334-5.8 Compaction:** For each paving or leveling train in operation, furnish a separate set of rollers, with their operators.

When density testing for acceptance is required, select equipment, sequence, and coverage of rolling to meet the specified density requirement. Regardless of the rolling procedure used, complete the final rolling before the surface temperature of the pavement drops to the extent that effective compaction may not be achieved or the rollers begin to damage the pavement.

When density testing for acceptance is not required, use a rolling pattern approved by the Engineer.

Use hand tamps or other satisfactory means to compact areas which are inaccessible to a roller, such as areas adjacent to curbs, headers, gutters, bridges, manholes, etc.

### **334-5.9 Joints.**

**334-5.9.1 Transverse Joints:** Construct smooth transverse joints, which are within 3/16 inch of a true longitudinal profile when measured with a 15 foot manual straightedge. These requirements are waived for transverse joints at the beginning and end of the project and at the beginning and end of bridge structures, if the deficiencies are caused by factors beyond the control of the Contractor such as no milling requirement, as determined by the Engineer. When smoothness requirements are waived, construct a reasonably smooth transitional joint.

**334-5.9.2 Longitudinal Joints:** For all layers of pavement except the leveling course, place each layer so that longitudinal construction joints are offset 6 to 12 inches laterally between successive layers. Do not construct longitudinal joints in the wheel paths. The Engineer may waive these requirements where offsetting is not feasible due to the sequence of construction.

**334-5.10 Surface Requirements:** Construct a smooth pavement with good surface texture and the proper cross slope.

**334-5.10.1 Texture of the Finished Surface of Paving Layers:** Produce a finished surface of uniform texture and compaction with no pulled, torn, raveled, crushed or loosened portions and free of segregation, bleeding, flushing, sand streaks, sand spots, or ripples. Correct any area of the surface that does not meet the foregoing requirements in accordance with 334-5.10.4.

**334-5.10.2 Cross Slope:** Construct a pavement surface with cross slopes in compliance with the requirements of the Contract Documents.

**334-5.10.3 Pavement Smoothness:** Construct a smooth pavement meeting the requirements of this Specification. Furnish a 15 foot manual and a 15 foot rolling straightedge meeting the requirements of FM 5-509.

#### **334-5.10.3.1 Straightedge Testing:**

**334-5.10.3.1.1 Acceptance Testing:** Using a rolling straightedge, test the final (top) layer of the pavement. Test all pavement lanes where the width is constant using a rolling straightedge and document all deficiencies on a form approved by the Engineer. Notify the Engineer of the location and time of all straightedge testing a minimum of 48 hours before beginning testing.

**334-5.10.3.1.2 Final (Top) Pavement Layer:** At the completion of all paving operations, straightedge the final (top) layer either behind the final roller of the paving train or as a separate operation. Address all deficiencies in excess of 3/16 inch in accordance with 334-5.10.4, unless waived by the Engineer. Retest all corrected areas.

**334-5.10.3.1.3 Straightedge Exceptions:** Straightedge testing will not be required in the following areas: shoulders, intersections, tapers, crossovers, sidewalks, bicycle/shared use paths, parking lots and similar areas, or in the following areas when they are less than 250 feet in length: turn lanes, acceleration/deceleration lanes and side streets. In the event the Engineer identifies a surface irregularity in the above areas that is determined to be

objectionable, straightedge and address all deficiencies in excess of 3/8 inch in accordance with 334-5.10.4.

**334-5.10.4 Correcting Unacceptable Pavement:** Correct deficiencies in the pavement layer by removing and replacing the full depth of the layer, extending a minimum of 50 feet on both sides of the defective area for the full width of the paving lane, at no additional cost.

### **334-6 Acceptance of the Mixture.**

**334-6.1 General:** The asphalt mixture will be accepted based on the Asphalt Work Category as defined below:

1. Asphalt Work Category 1 – Certification by the Contractor as defined in 334-6.2.
2. Asphalt Work Category 2 – Certification and process control testing by the Contractor as defined in 334-6.3
3. Asphalt Work Category 3 – Process control testing by the Contractor and acceptance testing by the Engineer as defined in 334-6.4.

**334-6.2 Certification by the Contractor:** On Asphalt Work Category 1 construction, the Engineer will accept the mix on the basis of visual inspection. Submit a Notarized Certification of Specification Compliance letter on company letterhead to the Engineer stating that all material produced and placed on the project meets the requirements of the Specifications. The Engineer may run independent tests to determine the acceptability of the material.

**334-6.3 Certification and Process Control Testing by the Contractor:** On Asphalt Work Category 2 construction, submit a Notarized Certification of Specification Compliance letter on company letterhead to the Engineer stating that all material produced and placed on the project meets the requirements of the Specifications, along with supporting test data documenting all process control testing as described in 334-6.3.1. If required by the Contract, utilize an Independent Laboratory as approved by the Engineer for the process control testing. The mix will also require visual acceptance by the Engineer. In addition, the Engineer may run independent tests to determine the acceptability of the material. Material failing to meet these acceptance criteria will be addressed as directed by the Engineer such as but not limited to acceptance at reduced pay, delineation testing to determine the limits of the questionable material, removal and replacement at no cost to the agency, or performing an Engineering analysis to determine the final disposition of the material.

**334-6.3.1 Process Control Sampling and Testing Requirements:** Perform process control testing at a frequency of once per day. Obtain the samples in accordance with FDOT Method FM 1-T 168. Test the mixture at the plant for gradation ( $P_{.8}$  and  $P_{.200}$ ) and asphalt binder content ( $P_b$ ). Measure the roadway density with 6 inch diameter roadway cores at a minimum frequency of once per 1,500 feet of pavement with a minimum of three cores per day.

Determine the asphalt binder content of the mixture in accordance with FM 5-563. Determine the gradation of the recovered aggregate in accordance with FM 1-T 030. Determine the roadway density in accordance with FM 1-T 166. The minimum roadway density will be based on the percent of the maximum specific gravity ( $G_{mm}$ ) from the approved mix design. If the Contractor or Engineer suspects that the mix design  $G_{mm}$  is no longer representative of the asphalt

mixture being produced, then a new Gmm value will be determined from plant-produced mix with the approval of the Engineer. Roadway density testing will not be required in certain situations as described in 334-6.4.1. Assure that the asphalt binder content, gradation and density test results meet the criteria in Table 334-4.

Table 334-4 Process Control and Acceptance Values	
Characteristic	Tolerance
Asphalt Binder Content (percent)	Target $\pm$ 0.55
Passing No. 8 Sieve (percent)	Target $\pm$ 6.00
Passing No. 200 Sieve (percent)	Target $\pm$ 2.00
Roadway Density (daily average)	Minimum 91.5% of Gmm
Roadway Density (any single core)	Minimum 88.0 % of Gmm

**334-6.4 Process Control Testing by the Contractor and Acceptance Testing by the Engineer:** On Asphalt Work Category 3, perform process control testing as described in 334-6.3.1. In addition, the Engineer will accept the mixture at the plant with respect to gradation (P<sub>8</sub> and P<sub>200</sub>) and asphalt binder content (P<sub>b</sub>). The mixture will be accepted on the roadway with respect to density. The Engineer will sample and test the material as described in 334-6.3.1. The Engineer will randomly obtain at least one set of samples per day. Assure that the asphalt content, gradation and density test results meet the criteria in Table 334-4. Material failing to meet these acceptance criteria will be addressed as directed by the Engineer such as but not limited to acceptance at reduced pay, delineation testing to determine the limits of the questionable material, removal and replacement at no cost to the agency, or performing an Engineering analysis to determine the final disposition of the material.

**334-6.4.1 Acceptance Testing Exceptions:** When the total quantity of any mix type in the project is less than 500 tons, the Engineer will accept the mix on the basis of visual inspection. The Engineer may run independent tests to determine the acceptability of the material.

Density testing for acceptance will not be performed on widening strips or shoulders with a width of 5 feet or less, variable thickness overbuild courses, leveling courses, any asphalt layer placed on subgrade (regardless of type), miscellaneous asphalt pavement, bike/shared use paths, crossovers, or any course with a specified thickness less than 1 inch or a specified spread rate less than 100 lb per square yard. Density testing for acceptance will not be performed on asphalt courses placed on bridge decks or approach slabs. In addition, density testing for acceptance will not be performed on the following areas when they are less than 1,000 feet continuous in length: turning lanes, acceleration lanes, deceleration lanes, shoulders, parallel parking lanes, or ramps. Density testing for acceptance will not be performed in intersections. The limits of the intersection will be from stop bar to stop bar for both the mainline and side streets. Compact these courses in accordance with a standard rolling procedure approved by the Engineer. In the event that the rolling procedure deviates from the approved procedure, placement of the mix will be stopped.

**334-7 Method of Measurement.**

For the work specified under this Section, the quantity to be paid for will be the weight of the mixture, in tons.

The bid price for the asphalt mix will include the cost of the liquid asphalt or the asphalt recycling agent and the tack coat application as specified in 334-5.5.4. There will be no separate payment or unit price adjustment for the asphalt binder material in the asphalt mix.

**334-8 Basis of Payment.**

**334-8.1 General:** Price and payment will be full compensation for all the work specified under this Section.

**CONCRETE FOR LAP (OFF-SYSTEM).  
(REV 12-20-11) (FA 2-27-12)**

**SECTION 344  
CONCRETE FOR LAP (OFF-SYSTEM)**

**344-1 Description.**

**344-1 General:** Construct concrete based on the type of work as described in the Contract and the concrete work categories as defined below.

**344-1.2 Work Categories:** Construction will fall into one of the following concrete work categories:

**344-1.2.1 Concrete Work Category 1:** Includes the construction of sidewalks, curb and gutter, ditch and slope pavement, or other non-reinforced cast-in-place elements.

**344-1.2.2 Concrete Work Category 2:** Includes the construction of precast concrete including concrete barriers, traffic railing barriers, parapets, sound barriers, inlets, manholes, junction boxes, pipe culverts, storm sewers, box culverts, prestressed concrete poles, concrete bases for light poles, highway sign foundations, retaining wall systems, traffic separators or other structural precast elements.

**344-1.2.3 Concrete Work Category 3:** Includes the work associated with the placement and/or construction of structural cast-in-place concrete meeting the requirements of this section.

**344-2 Materials.**

**344-2.1 General:** Use concrete composed of a mixture of Portland cement, aggregates, and water, with or without chemical or mineral admixtures that meet the following requirements:

**344-2.1.1 Portland Cement:** Portland cements meeting the requirements of AASHTO M-85 or ASTM C-150 is required. Different brands of cement, cement of the same brand from different facilities or different types of cement shall be stored separately and shall not be mixed.

**344-2.1.2 Coarse and Fine Aggregates:** Aggregates shall meet ASTM C 33. Source approval by the FDOT is not required.

**344-2.1.3 Water:** Water shall meet the requirements of ASTM C 1602.

**344-2.1.4 Chemical Admixtures:** Chemical admixtures shall be listed on the FDOT Qualified Products List. Admixtures may be added at the dosage rates recommended by the manufacturer.

**344-2.1.5 Pozzolans and Slag:** Pozzolans and Slag shall meet the requirements of Table 344-1. Fly ash shall not include the residue resulting from the burning of municipal garbage or any other refuse with coal, or the burning of industrial or municipal garbage in incinerators.

Table 344-1		
Type or Class	Test Method	Exceptions
Class C Fly Ash	ASTM C 618	Not to be used with Types IP or IS cements.
Class F Fly Ash	ASTM C 618	Not to be used with Types IP or IS cements.
Petroleum Coke Class F	ASTM C 618	Not to be used with Types IP or IS cements.
Bark Ash Class F	ASTM C 618	Not to be used with Types IP or IS cements.
Silica Fume	ASTM C 1240	
Metakaolin	ASTM C 618	
Slag	ASTM C 989	Use only ground granulated blast-furnace slag grade 100 or 120.
Ultra Fine Fly Ash	ASTM C 618	Not to be used with Types IP or IS cements.

### 344-3 Production, Mixing and Delivery of Concrete.

#### 344-3.1 Concrete Production Requirements:

**344-3.1.1 Category 1:** Use a concrete production facility that is certified by the National Ready Mixed Concrete Association (NRMCA) or listed on the FDOT list of non-structural concrete producers. Concrete production facilities listed on the FDOT Producers with Accepted QC Programs list for structural concrete may also be used for Category 1.

**344-3.1.2 Category 2:** Use a prestressed and or precast facility listed on the FDOT Producers with Accepted QC Programs for precast or prestressed concrete.

**344-3.1.3 Category 3:** Use a structural concrete facility listed on the FDOT Producers with Accepted QC Programs for structural concrete.

#### 344-3.2 Classes of Concrete: Meet the requirements of Table 344-2.

Table 344-2						
Class	Minimum Strength (28 day) (psi)	Target Slump (inches)	Target Range (inches)	Air Content Range (%)	Minimum Total Cementitious Materials Content (lb/yd <sup>3</sup> )	Maximum Water to Cementitious Material Ratio (lb/lb)
Category 1						
Class NS	2,500	N/A	N/A	N/A	N/A	N/A
Category 3						
I	3,000	3	± 1.5	1.0 to 6.0	470	0.53
I (Pavement)	3,000	2	± 1.5	1.0 to 6.0	470	0.50
II	3,400	3	± 1.5	1.0 to 6.0	470	0.53
II (Bridge Deck)	4,500	3	± 1.5	1.0 to 6.0	611	0.44
III	5,000	3	± 1.5	1.0 to 6.0	611	0.44
III (Seal)	3,000	8	± 1.5	1.0 to 6.0	611	0.53
IV	5,500	3	± 1.5	1.0 to 6.0	658	0.41
IV (Drilled Shaft)	4,000	8.5	± 1.5	0.0 to 6.0	658	0.41
V (Special)	6,000	3	± 1.5	1.0 to 6.0	752	0.37
V	6,500	3	± 1.5	1.0 to 6.0	752	0.37
VI	8,500	3	± 1.5	1.0 to 6.0	752	0.37

**344-3.3 Contractors Quality Control:** For Categories 1 and 2, assume full responsibility for controlling all operations and processes such that the requirements of these Specifications are met at all times.

For Category 3, furnish a Quality Control (QC) plan to identify to the Engineer how quality will be ensured at the project site. During random inspections, the Engineer will use this document to verify that the construction of the project is in agreement with the QC plan.

**344-3.4 Concrete Mix Design:** Before producing any Category 1 or Category 2, submit the proposed mix designs to the Engineer on a form provided by the Engineer. For Category 3, submit to the Engineer for approval, FDOT approved mix designs. Do not use concrete mix designs without prior approval of the Engineer.

Materials may be adjusted provided that the theoretical yield requirement of the approved mix design is met. Show all required original approved design mix data and batch adjustments on an Engineer approved concrete delivery ticket.

**344-3.5 Delivery:** For Category 3, the maximum allowable transit time of concrete is 90 minutes.

Furnish a delivery ticket on a form approved by the Engineer with each batch of concrete before unloading at the placement site. Record material quantities incorporated into the mix on the delivery ticket. Ensure that the Batchers responsible for producing the concrete signs the delivery ticket certifying that the batch was produced and delivered in accordance with these requirements. Sign the delivery ticket certifying that the concrete was placed in accordance with these requirements.

**344-3.6 Placing Concrete:**

**344-3.6.1 Concreting in Cold Weather:** Do not mix or place concrete when the air temperature at placement is below 45°F.

During the curing period, if NOAA predicts the ambient temperature to fall below 35°F for 12 hours or more or to fall below 30°F for more than 4 hours, enclose the structure in such a way that the air temperature within the enclosure can be kept above 50°F for a period of 3 days after placing the concrete or until the concrete reaches a minimum compressive strength of 1,500 psi.

Assume all risks connected with the placing and curing of concrete. Although the Engineer may give permission to place concrete, the Contractor is responsible for satisfactory results. If the placed concrete is determined to be unsatisfactory, remove, dispose of, and replace the concrete at no expense to the Agency.

**344-3.6.2 Concreting in Hot Weather:** For Category 3, hot weather concreting is defined as the production, placing and curing of concrete when the concrete temperature at placing exceeds 86°F but is less than 100°F.

Unless the specified hot weather concreting measures are in effect, reject concrete exceeding 86°F at the time of placement. Regardless of special measures taken, reject concrete exceeding 100°F. Predict the concrete temperatures at placement time and implement hot weather measures to avoid production shutdown.

**344-3.7 Mixers:** For Category 3 concrete, do not place concrete from a truck mixer that does not have a current FDOT mixer identification card.

**344-3.8 Small Quantities of Concrete:** With approval of the Engineer, small quantities of concrete, less than 3 cubic yards placed in one day and less than 0.5 cubic yards placed

in a single placement may be accepted using a pre-bagged mixture. The Engineer may verify that the pre-bagged mixture is prepared in accordance with the manufacturer's recommendations and will meet the requirements of this Specification.

**344-3.9 Sampling and Testing:**

**344-3.9.1 Category 1:** The Engineer may sample and test the concrete to verify its quality. The minimum 28 day compressive strength requirement for this concrete is 2,500 psi.

**344-3.9.2: Category 2:** No sampling and testing is required for category 2.

**344-3.9.3 Category 3:** The Engineer will randomly select a sample from each 200 cubic yards or one day's production to determine plastic properties and to make three 4 x 8 inch cylinders for testing by the Engineer at 28 days to ensure that the design compressive strength has been met for the class of concrete as specified in Table 344-2.

**344-3.10 Records:** Ensure the following records are available for review for at least 3 years after final acceptance of the project:

1. Approved concrete mix designs.
2. Materials source (delivery tickets, certifications, certified mill test reports).
3. A copy of the scale company or testing agency report showing the observed deviations from quantities checked during calibration of the scales and meters.
4. A copy of the documentation certifying the admixture weighing/measuring devices.

**344-4 Acceptance of the Work.**

**344-4.1 Category 1 Work:** Category 1 work will be accepted based on certification by the batcher and contractor on the delivery ticket.

**344-4.2 Category 2 Work:** Certify that the precast elements were produced by a production facility on the FDOT's list of Producers with Accepted QC Programs for precast or prestressed concrete. In addition, the producer's logo shall be stamped on the element. The producer shall not use the Florida Department of Transportation QC stamp on elements used on this project. Provide a statement of certification from the manufacturer of the precast element that the element meets the requirements of this Specification.

**344-4.3 Category 3 Work:** Category 3 concrete will be accepted based on the Engineer's test results for plastic properties and compressive strength requirements for the class of concrete as defined in Table 344-2. In addition, a Delivery Ticket as described in 344-3.5 will be required for acceptance of the material at the project site.

**344-4.4 Small Quantities of Concrete:** Category 3 concrete meeting the definition of 344-3.8 will be accepted in accordance with 344-4.3 based on test results for plastic properties and compressive strength.

**344-5 Method of Measurement.**

The quantities to be paid for will be the items shown in the plans, completed and accepted.

**344-6 Basis of Payment.**

Prices and payments will be full compensation for all work and materials specified in this Section.

**LANDSCAPE INSTALLATION FOR LAP (OFF-SYSTEM).**  
**(REV 4-5-11) (FA 4-15-11)**

**SECTION 580**  
**LANDSCAPE INSTALLATION FOR LAP (OFF-SYSTEM)**

**580-1 Description.**

Plant trees and shrubs of the species, size, and quality indicated in the plans.

The Engineer reserves the right to adjust the number and location of any of the designated types and species to be used at any of the locations shown, in order to provide for any unanticipated effects which might become apparent after the substantial completion of other phases of the project, or for other causes.

**580-2 Materials.**

**580-2.1 Plants:**

**580-2.1.1 Authority for Nomenclature; Species, etc.:** For the designated authority in the identification of all plant material, refer to two publications of L.H. Bailey: "Hortus III" and "Manual of Cultivated Plants," and ensure that all specimens are true to type, name, etc., as described therein. For the standard nomenclature, refer to the publication of the American Joint Committee on Horticultural Nomenclature, "Standardized Plant Names."

**580-2.1.2 Grade Standards and Conformity with Type and Species:** Only use nursery grown plant material except where specified as Collected Material. Use nursery grown plant material that complies with all required inspection, grading standards, and plant regulations in accordance with the latest edition of the Florida Department of Agriculture's "Grades and Standards for Nursery Plants".

Except where a lesser grade might be specifically specified in the plans, ensure that the minimum grade for all trees and shrubs is Florida No. 1. Ensure that all plants are the proper size and grade at the time of delivery to the site, throughout the project construction period and during any designated plant establishment period.

Ensure that plant materials are true to type and species and that any plant materials not specifically covered in Florida Department of Agriculture's "Grades and Standards for Nursery Plants" conform in type and species with the standards and designations in general acceptance by Florida nurseries.

Ensure that plant materials are shipped with tags stating the botanical and common name of the plant.

**580-2.1.3 Inspection and Transporting:** Move nursery stock in accordance with all Federal and State regulations therefor, and accompany each shipment with the required inspection certificates for filing with the Engineer.

**580-2.2 Water:** Water used in landscaping operations may be obtained from any approved source. Ensure that water is free of any substance which might be detrimental to plant growth. The use of effluent water is subject to approval and must meet all Federal, State and Local requirements.

### **580-3 Specific Requirements for the Various Plant Designations.**

#### **580-3.1 Balled-and-Burlapped Plants (B&B), and Wired Balled-and-Burlapped (WB & B):**

**580-3.1.1 General:** Properly protect the root ball of these plants until planting them. The Engineer may reject any plant which shows evidence of having been mishandled. Set the B&B and WB&B plants then remove the top 2/3 of all wire, rope, and binding surrounding the plant. Remove the burlap from the top 4 inches of the root ball. Do not disturb the root ball in any way. Bare root material is not allowed for substitution.

At least 90 days before digging out B & B and WB & B plants, root-prune those 1 1/2 inches or greater in diameter and certify such fact on accompanying invoices.

**580-3.1.2 Provisions for Wiring:** For plants grown in soil of a loose texture, which does not readily adhere to the root system (and especially in the case of large plants or trees), the Engineer may require WB & B plants. For WB & B plants, before removing the plant from the excavated hole, place sound hog wire around the burlapped ball, and loop and tension it until the tightened wire netting substantially packages the burlapped ball such as to prevent disturbing of the loose soil around the roots during handling.

**580-3.2 Container-Grown Plants (CG):** The Engineer will not accept any CG plants with roots which have become pot-bound or for which the top system is too large for the size of the container. Fully cut and open all containers in a manner that will not damage the root system. Do not remove CG plants from the container until immediately before planting to prevent damage to the root system.

**580-3.3 Collected Plants (Trees and Shrubs) (C):** Use C plants which have a root ball according to "Florida Grades and Standards for Nursery Plants". Do not plant any C plant before the Engineer's inspection and acceptance at the planting site.

**580-3.4 Collected Plants (Herbaceous) (HC):** The root mass and vegetative portions of collected herbaceous plants shall be as large as the specified container-grown equivalent. Do not plant any collected plant before inspection and acceptance by the Engineer.

**580-3.5 Specimen Plants (Special Grade):** When Specimen (or Special Grade) plants are required, label them as such on the plant list, and tag the plant to be furnished.

**580-3.6 Palms:** Wrap the roots of all plants of the palm species before transporting, except if they are CG plants and ensure that they have an adequate root ball structure and mass for healthy transplantation as defined in "Florida Grades and Standards for Nursery Plants".

The Engineer will not require burlapping if the palm is carefully dug from marl or heavy soil that adheres to the roots and retains its shape without crumbling. During transporting and after arrival, carefully protect root balls of palms from wind and exposure to the sun. Muck grown palms are not allowed. After delivery to the job site, if not planting the palm within 24 hours, cover the root ball with a moist material. Plant all palms within 48 hours of delivery to the site.

Move sabal and coconut palms in accordance with the "Florida Grades and Standards for Nursery Plants."

**580-3.7 Substitution of Container-Grown (CG) Plants:** With the Engineer's approval, the Contractor may substitute CG plants for any other root classification types, if he has met all other requirements of the Contract Documents.

#### **580-4 Planting Requirements.**

**580-4.1 Layout:** Prior to any excavation or planting, mark all planting beds and individual locations of palms, trees, large shrubs and proposed art and architectural structures, as shown in the plans, on the ground with a common bright orange colored spray paint, or with other approved methods, within the project limits. Obtain the Engineer's approval and make necessary utility clearance requests.

**580-4.2 Excavation of Plant Holes:** Excavate plant holes after an area around the plant three times the size of the root ball has been tilled to a depth of the root ball. Ensure that the plant hole is made in the center of the tilled area only to the depth of the plant root ball.

Where excess material has been excavated from the plant hole, use the excavated material to backfill to proper level.

**580-4.3 Setting of Plants:** Center plants in the hole. Lower the plant into the hole so that it rests on a prepared hole bottom such that the roots are level with, or slightly above, the level of their previous growth and so oriented such as to present the best appearance.

Backfill with native soil, unless otherwise specified on the plans. Firmly rod and water-in the backfill so that no air pockets remain. Apply a sufficient quantity of water immediately upon planting to thoroughly moisten all of the backfilled earth. Keep plants in a moistened condition for the duration of the planting period.

When so directed, form a water ring 6 inches in width to make a water collecting basin with an inside diameter equal to the diameter of the excavated hole. Maintain the water ring in an acceptable condition.

**580-4.4 Special Bed Preparation:** Where multiple or mass plantings are to be made in extended bedding areas, and the plans specify Special Bed Preparation, prepare the planting beds as follows:

Remove all vegetation from within the area of the planting bed and excavate the surface soil to a depth of 6 inches. Backfill the excavated area with peat, sand, finish soil layer material or other material to the elevation of the original surface. Till the entire area to provide a loose, friable mixture to a depth of at least 8 inches. Level the bed only slightly above the adjacent ground level. Then mulch the entire bedding area, in accordance with 580-8.

#### **580-5 Staking and Guying.**

**580-5.1 General:** When specified in the plans, or as directed by the Engineer, stake plants in accordance with the following.

Use wide plastic, rubber or other flexible strapping materials to support the tree to stakes or ground anchors that will give as the tree moves in any direction up to 30 degrees. Do not use rope or wire through a hose. Use guy chords, hose or any other thin bracing or anchorage material which has a minimum 12 inches length of high visibility flagging tape secured to guys, midway between the tree and stakes for safety.

Stake trees larger than 1 inch diameter and smaller than 2 inches diameter with a 2 by 2 inch stake, set at least 2 feet in the ground and extending to the crown of the plant. Firmly fasten the plant to the stake with flexible strapping materials as noted above.

**580-5.2 Trees of 2 to 3 1/2 inches [50 to 90 mm] Caliper:** Stake all trees, other than palm trees, larger than 2 inches caliper and smaller than 3 1/2 inches caliper with two 2 by 4 inch stakes, 8 feet long, set 2 feet in the ground. Place the tree midway between the stakes and hold it firmly in place by flexible strapping materials as noted above.

**580-5.3 Large Trees:** Guy all trees, other than palm trees, larger than 3 1/2 inches caliper, from at least three points, with flexible strapping materials as noted above.

Anchor flexible strapping to 2 by 4 by 24 inch stakes, driven into the ground such that the top of the stake is at least 3 inches below the finished ground.

**580-5.4 Special Requirements for Palm Trees:** Brace palms which are to be staked with three 2 by 4 inch wood braces, toe-nailed to cleats which are securely banded at two points to the palm, at a point one third the height of the trunk. Pad the trunk with five layers of burlap under the cleats. Place braces approximately 120 degrees apart and secure them underground by 2 by 4 by 12 inch stake pads.

**580-6 Tree Protection and Root Barriers.**

Install tree barricades when called for in the Contract Documents or by the Engineer to protect existing trees from damage during project construction. Place barricades at the drip line of the tree foliage or as far from the base of the tree trunk as possible. Barricades shall be able to withstand bumps by heavy equipment and trucks. Maintain barricades in good condition.

When called for in the Contract Documents, install root barriers or fabrics in accordance with the details shown.

**580-7 Pruning.**

Prune all broken or damaged roots and limbs in accordance with established arboriculture practices. When pruning is completed ensure that all remaining wood is alive. Do not reduce the size or quality of the plant below the minimum specified.

**580-8 Mulching.**

Uniformly apply mulch material, consisting of wood chips (no Cypress Mulch is allowed), pine straw, compost, or other suitable material approved by the Engineer, to a minimum loose thickness of 3 inches over the entire area of the backfilled hole or bed within two days after the planting. Maintain the mulch continuously in place until the time of final inspection.

**580-9 Disposal of Surplus Materials and Debris.**

Dispose of surplus excavated material from plant holes by scattering or otherwise as might be directed so that it is not readily visible or conspicuous to the passing motorist or pedestrian. Remove all debris and other objectionable material from the site and clean up the entire area and leave it in neat condition.

**580-10 Contractor's Responsibility for Condition of the Plantings.**

Ensure that the plants are kept watered, that the staking and guying is kept adjusted as necessary, that all planting areas and beds are kept free of weeds and undesirable plant growth and that the plants are maintained so that they are healthy, vigorous, and undamaged at the time of acceptance.

**580-11 Plant Establishment Period.**

If the Contract Documents designate a Plant Establishment Period, assume responsibility for the proper maintenance, survival and condition of all landscape items during such period at no additional cost.

**580-12 Method of Measurement.**

The quantities to be paid for will be the items shown in the plans, completed and accepted.

**580-13 Basis of Payment.**

Prices and payments will be full compensation for all work specified in this Section.

**DIVISION 02000**  
**SITE CIVIL TECHNICAL SPECIFICATIONS**

**MARTIN LUTHER KING BOULEVARD ROADWAY  
IMPROVEMENTS (EDUCATIONAL CORRIDOR)  
LAP PROJECT - FDOT FINANCIAL PROJECT ID(S) 432861-1**

**SITE CLEARING AND GRUBBING  
SUPPLEMENTAL SPECIFICATIONS**

**PART 1 GENERAL**

**1.1 SECTION INCLUDES**

- A. Remove surface debris.
- B. Remove paving, curbs, and rock base in areas shown on drawings.
- C. Remove designated trees and shrubs including root systems in accordance with Landscape Plans/Specifications.
- D. Stripping and stock piling top soil
- E. Debris disposal

**1.2 RELATED SECTIONS, CODES AND REFERENCES**

- A. Dewatering Supplemental Technical Specification
- B. Dust Control Supplemental Technical Specification
- C. Storm Drainage System Technical Specification
- D. Florida Department of Transportation – Standard Specifications for Road and Bridge Construction (latest edition). Including (but not limited to) Sections 120 thru 175 – Earthwork and Related Operations, Sections 200 thru 290 - Base Courses, Sections 300 thru 370 – Bituminous Treatment Surface Courses and Concrete Pavement.
- E. City of Pompano Beach – Engineering Department Manual of Standard Engineering Specifications (latest edition).

**1.3 DEFINITIONS**

- A. Clearing is defined as the removal of trees, brush, down timber, rotten wood, rubbish, any other vegetation, and objectionable material at or above original ground elevation not designated to be saved. Clearing also includes removal of fences, walls, guard posts, guardrail, signs, and other obstructions interfering with the proposed work.
- B. Grubbing is defined as the removal from below the surface of the natural ground of stumps, roots and stubs, brush, organic materials and debris.

#### **1.4 REGULATORY REQUIREMENTS**

- A. Coordinate clearing work with utility companies.
- B. Conform to applicable Municipal and Broward County codes for legal disposal of debris and environmental protection. Contractor shall pay all fees.
- C. Conform to applicable Municipal and Broward County codes limiting generation of noise.

#### **1.5 QUALITY ASSURANCE**

1. Remove branches from trees, which are to remain, if required to clear new construction, in a manner approved by the City's Landscape Architect and Consultant.
2. Recommend procedures to compensate for loss of roots and perform initial pruning of branches and stimulation of root growth where removed to accommodate new construction. Extend pruning operation to restore natural shape of entire tree, in a manner approved by the City's Landscape Architect and Consultant.
3. Perform tree repair work for damages incurred by new construction, in a manner approved by the City's Landscape Architect and Consultant.

#### **1.6 SUBMITTALS**

- A. Certification: Submit written certification by a qualified tree surgeon that trees indicated to remain have been protected during the course of construction under provisions of recognized standards of the industry. Indicate that damaged trees were promptly and properly treated. Indicate which damaged trees, if any, are incapable of retaining full growth potential and are recommended to be replaced.

#### **1.7 TRAFFIC AND SITE OCCUPANCY**

- A. During site clearing operations, ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities.
- B. Do not close or obstruct streets and/or walkways/paths without prior approval by the City.
- C. Provide traffic control devices, flagmen and other controls to ensure safe passage of traffic and pedestrians.

#### **1.8 TEMPORARY PROTECTIONS**

- A. Temporary protection: Protect streets, roads, adjacent property, active utilities, and existing landscape materials and other site improvements designated to remain from damage through the use of temporary fencing, barricades, or guards. Refer to Construction Documents for more information.
- B. Protect root systems. Do not store construction materials, debris, or excavated material within the drip line, which is the outer perimeter of branches. Do not permit vehicles within the drip line. Restrict foot traffic to prevent excessive compaction of

soil over root systems. Refer to Landscape Plans and Specifications for more information.

- C. Protect tree root systems from damage due to noxious materials in solution caused by run-off or spillage during mixing and placement of construction materials or drainage from stored materials. Protect root systems from flooding, erosion, or excessive wetting resulting from dewatering operations.
- D. Burning of plants or fires of any kind is strictly prohibited.

## **PART 2 PRODUCTS**

### **2.1 MATERIALS**

- A. Tree pruning compound: Waterproof, antiseptic, elastic and free of kerosene, coal tar, creosote, and other substances harmful to plants.
- B. Obtain approved borrow soil material off-site when satisfactory soil material is not available on-site.

## **PART 3 EXECUTION**

### **3.1 PREPARATION**

- A. Protect and maintain bench marks and survey control points from disturbance during construction.
- B. Verify that existing plant life and features designated to remain are tagged or identified.

### **3.2 INSPECTION OF SITE**

- A. Visit the site and gain thorough familiarity with existing conditions such as existing grades, locations of buildings, poles, trees and landscape elements, and other site improvements, which may impact the Work.

### **3.3 PROTECTION**

- A. Protect utilities that remain from damage.
- B. Protect trees, plant growth, and features designated to remain.
- C. Protect benchmarks and existing structures from damage or displacement.
- D. Relocate and protect large boulders and rocks identified by City/Owner to remain as final landscaping elements.

### **3.4 CLEARING**

- A. Clear areas required for access to site and execution of Work.
- B. Remove paving, curbs, and rock base from areas indicated.

- C. Remove trees and shrubs as indicated. Remove stumps, main root ball, root system to a depth of 24 inches, and surface rock not to remain as final landscaping.
- D. Clear undergrowth and deadwood without disturbing subsoil.
- E. Apply herbicide to remaining stumps to inhibit growth.
- F. Carefully and cleanly cut roots and branches of trees indicated to remain, where roots and branches obstruct new construction, with sharp pruning instruments. Do not break or chop roots or branches. Paint cuts over 1/2 inch in size with tree pruning compound.
- G. Remove all topsoil containing roots and organic material, grass roots, organic soil, trees, shrubs, brush, grass, weeds, and other debris.
- H. Selective Clearing: In areas where trees are to remain, remove all undergrowth, dead trees, stumps, roots, vines, and other debris.

### **3.5 GRUBBING**

- A. Grubbing: Scarify the areas where vegetation or other unsuitable materials occur to a minimum depth of 6 inches until all such materials are loosened and remove from the site.
  1. Use only hand methods for grubbing inside the drip line of trees indicated to remain.
  2. Fill depressions caused by clearing and grubbing operations with satisfactory soil materials and compact and grade under provisions of the Earthwork Specifications.

### **3.6 EXCAVATION AROUND TREES**

- A. Refer to Landscape Plans and Specifications for more information.
- B. Excavate within drip line of trees only where indicated.
- C. Where trenching for utilities is required within the drip line, tunnel around roots by hand digging. Do not cut main lateral roots or tap roots; cut smaller roots, which interfere with installation of new work. Cut roots with sharp pruning instruments: do not break or chop.
- D. Do not allow exposed roots to dry out before permanent backfill is placed; provide temporary earth cover, or pack with peat moss and wrap with burlap. Water and maintain in moist condition and temporarily support and protect from damage until permanently relocated and covered with earth. Prune branches to balance loss to root system caused by damage or cutting of root system.

### **3.7 GRADING AND FILLING AROUND TREES**

- A. Refer to Landscape Plans and Specifications for more information.
- B. Maintain existing grade within drip line of trees, unless otherwise indicated.

- C. Lowering grades: Where existing grade is above new finish grade shown around trees, carefully hand excavate within drip line to new finish grade. Cut roots exposed by excavation or provide permanent protections as recommended by tree surgeon.

### **3.8 RAISING GRADES**

- A. Refer to Paving, Grading and Drainage Plans and Specifications for more information.
- B. Minor filling: Where existing grade is 6 inches or less below elevation of finish grade shown, use a topsoil fill material. Place in single layers and compact as required; hand grade to required finish elevations.
- C. Moderate filling: Where existing grade is more than 6 inches, but less than 12 inches, below finish grade elevation, place a layer of drainage fill on existing grade prior to placing topsoil. For balance of area, place drainage fill to an elevation 6 inches below grade and complete fill with a layer of topsoil to finish grade elevation. Do not compact gravel or topsoil layers receiving vegetative cover; hand grade to required elevations.

### **3.9 PROTECTION AND REPAIR OF TREES TO REMAIN**

- A. Refer to Landscape Plans and Specifications for more information.
- B. Protect existing trees, shrubs and other landscape features designated for preservation with temporary fencing or barricades satisfactory to the City and/or the Engineer. No material shall be stored or construction operation carried on within the drip line of any tree to be saved or within the tree protection fence. The CONTRACTOR is to familiarize himself with the provisions of Local, County and State Tree Preservation and Abuse Regulations.
- C. Continual parking and servicing of equipment under the drip line or canopy of trees marked for preservation is not permitted. When trees and shrubs are designated for preservation and require pruning, they shall be trimmed as directed by the City and/or Landscape Consultant.
- D. CONTRACTOR shall make every effort to prevent damage to existing trees, including but not limited to the installation of tree protection barriers. The CONTRACTOR is responsible for all required remedial action resulting from said damage occurring from work performed under this contract.
- E. Repair trees damaged by construction operations. Make repairs promptly after damage occurs to prevent progressive deterioration of damaged trees. If an existing tree designated to remain is damaged the contractor will be required to provide new trees of same size and species as those replaced, up to 6-inch caliper. For replacement of trees over 6 inches in caliper taken 12 inches above grade, provide new trees of 6-inch caliper, and of the same species as selected by the City.

- F. Prior to repairing any injuries to bark, trunk, limbs, and roots of remaining plantings, the Contractor shall hire (at his own expense) a licensed Tree Surgeon/Arborist to inspect tree damage. The Tree Surgeon/Arborist shall prepare a report outlining the appropriate course of action for each occurrence. All work shall be completed using approved arboricultural practices and materials.

### **3.10 REMOVAL**

- A. Remove debris, rock, and extracted plant life from site on a daily basis.
- B. Do not allow accumulations of debris. Temporary stockpile location to be approved by the City and/or Engineer.
- C. Do not deposit or bury on the site debris resulting from clearing and grubbing work, wasted construction materials or any other debris.
- D. Burning of debris is not allowed.
- E. Use of blowers to distribute dust is not allowed.
- F. Existing fences, signs, poles, frames, grates, covers and appurtenances shall be salvaged and stored by the Contractor and provided to the City. The salvaged material shall become property of the City of Pompano Beach and disposal of same shall be as directed by the City. Contractor shall obtain direction from the City on where to store these materials upon the commencement of the work. If the City decides they do not want the salvaged materials then the Contractor shall dispose of them offsite.

**END OF SECTION**

**MARTIN LUTHER KING BOULEVARD ROADWAY  
IMPROVEMENTS (EDUCATIONAL CORRIDOR)  
LAP PROJECT - FDOT FINANCIAL PROJECT ID(S) 432861-1**

**EXCAVATION, BACKFILLING AND COMPACTING  
FOR UTILITIES & DRAINAGE  
SUPPLEMENTAL SPECIFICATIONS**

**PART 1 GENERAL**

**1.1 SECTION INCLUDES**

- A. Clearing, excavating, grading and backfilling as required for the construction of piped and other underground utility systems and appurtenances.

**1.2 RELATED SECTIONS, CODES AND REFERENCES**

- A. Site Clearing and Grubbing Supplemental Technical Specifications
- B. Dewatering Supplemental Technical Specifications
- C. Storm Drainage System Supplemental Technical Specifications
- D. Florida Department of Transportation – Standard Specifications for Road and Bridge Construction (latest edition). Including (but not limited to) Sections 120 thru 175 – Earthwork and Related Operations, Sections 200 thru 290 - Base Courses, Sections 300 thru 370 – Bituminous Treatment Surface Courses and Concrete Pavement.
- E. City of Pompano Beach – Engineering Department Manual of Standard Engineering Specifications (latest edition).

**1.3 QUALITY ASSURANCE**

- A. Comply with Chapter 90-96 of the Laws of Florida (The Trench Safety Act) and OSHA Standard 29 CFR, Section 1926.650 Subpart P.
- B. References:
  - 1. American Society for Testing and Materials (ASTM):
    - (a) D1556-90; Test Method for Density and Unit Weight of Soil in Place by the Sand-Cone Method.
    - (b) D1557-91; Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort.
    - (c) D2487-90; Classification of Soils for engineering Purposes.

**PART 2 PRODUCTS**

**2.1 PRODUCTS AND MATERIALS**

- A. Bedding Material:
  - 1. For use below the water table or in wet trenches: pea rock, 3/4 inch washed rock, or similar material.
  - 2. Pipe bedding material for use in dry trenches: lime rock screenings, sand or other fine inorganic material.
  
- B. Additional Backfill Material:
  - 1. "Satisfactory/Suitable Fill Materials" include materials classified in ASTM D2487 as GW, GP, SW, and SP properly worked by Contractor to obtain optimum moisture and compaction. Maximum size of rock limited to 3 inches. Use 2-inch maximum size for the top 2 feet below the finish indicated grade.
  - 2. Stones or rocks:
    - (a) Not larger than three inches in diameter.
    - (b) When placed within one foot of piping and appurtenances: Not larger than two inches in diameter.
    - (c) When placed within one foot of PVC piping: Not larger than one inch in diameter.
  
- C. Fill Brought From Off-site: Provide test results and source certification that fill materials do not contain any hazardous materials such as heavy metals, organics, petroleum products. If imported materials are required to meet the requirements of this Section or to meet the quantity requirements of the project the Contractor shall provide the imported materials within the scope of the contract.

## **2.2 PREPARATION**

- A. Perform all clearing necessary for the proper installation of all piping and appurtenances.
  
- B. Transplant, relocate, protect and preserve plantings, shrubbery, trees, or other landscape materials subject to damage resulting from excavation and other site operations. Refer to Landscape Plans and Specifications for Tree Relocation and Protection for additional information.
  
- C. Relocate, brace, protect and preserve utility poles, structures, and other site improvements subject to damage resulting from excavation and other site operations. Repair damaged site improvements.

## **2.3 PROJECT CONDITIONS**

- A. Existing Utilities:
  - 1. Protect existing utilities from movement, settlement, or other damages according to Instructions to Bidders and General Conditions.
  
- B. Trench Safety Act: Provide trench safety systems at all trench excavations where workers may be exposed to moving ground or cave-ins regardless of depth of trench. Ensure all trenches more than 5 feet in depth comply with OSHA "Trench Safety Act".

## **2.4 FIELD QUALITY CONTROL**

- A. Excavations:
  - 1. Perform all excavations of every description and of whatever substances encountered, including rock excavations, to the dimensions and depth

necessary for installation of utility systems as specified or to remove deleterious materials.

2. All excavations: Made by open cut.
  3. Trench walls:
    - (a) Kept at the natural repose of the soil or as otherwise specified below.
    - (b) Sheeted and braced as necessary to protect the safety of workmen, the general public, this or other work or structures, or to maintain specified trench widths.
    - (c) Wood sheeting or certain designs of steel sheeting: cut off sheeting at a level 2 feet above the top of the installed pipe and leave in place that portion below that level.
    - (d) Interlocking steel sheeting: remove sheeting after use providing removal can be accomplished without disturbing the bedding, pipe or pipe alignment.
    - (e) Damage to the pipe bedding, pipe or alignment of the constructed utility caused by removal of sheeting: Replace affected portion of the Work at no additional cost to Owner.
    - (f) Open trench ahead of pipe laying operations: Not more than 100 linear feet.
    - (g) Slope trench sides to a stable angle of repose of the excavated material in areas where trench widths are not limited by Right-of-Way and easement widths, property line restrictions, existing adjacent improvements, including pavements, structures and other utilities, or maintenance of traffic.
    - (h) Safely constructed movable shield, "box" or "mole": use in place of sheeting when the trench is opened immediately ahead of the shield and closed immediately behind the shield as pipe laying proceeds inside the shield.
  4. Trench Access: Provide ladders or steps.
  5. Pipe trenches for utility lines:
    - (a) Excavate to a width within the limits of the top of the pipe and the trench bottom to provide a clearance on each side of the pipe barrel, measured to the face of the excavation or sheeting, if used, of 8 inches to 12 inches.
    - (b) Manhole excavations: Of sufficient depth to permit their construction on the undisturbed bottom of the excavation.
  6. Materials removed from the trenches:
    - (a) Store and dispose of excavated materials in a manner that will not interfere with traffic on public streets and sidewalks.
    - (b) Do not store or place excavated materials on public or private property outside the Owner's property line.
    - (c) Properly dispose of unsuitable materials such as muck and organically contaminated fill off site.
    - (d) Materials suitable for use as backfill: Hauled to and use in areas where not enough suitable material is available from the excavation.
- B. Excess suitable material: Dispose of within the limits of the project as directed by the City and/or Engineer. Finish grade disposal area.
1. Excavation of Unclassified Material:
    - (a) Materials encountered during the excavating to the depth and extent specified and indicated on drawings may include rock, concrete, masonry, or other similar materials.
    - (b) No adjustment will be made in the Contract Price because of the presence (or absence) of rock, concrete, masonry, or other similar materials.

- C. Removal of Water:
1. All excavations:
    - (a) Free from water before pipe or structures are installed.
    - (b) Extreme Water Conditions: Contractor may elect to utilize extreme water conditions methods specified elsewhere in this document.
  2. Control water flow on site:
    - (a) Meet State and Federal "SWPPP" flow containment programs and approvals. Restrict flow from one site area to another by installing temporary dams or plugs within the pipe provided they are suitably removed and do not damage the lining of the pipe.
    - (b) All work shall be conducted in strict accordance with the proposed "SWPPP" plan prepared by the engineer of record.
    - (c) Installed lines, except for water distribution lines: May be used to convey trench water, provided the pipe lining is not damaged and the line is cleaned out prior to acceptance of the work.
  3. Dewatering:
    - (a) Provide all necessary pumps, under drains, well-point systems, and other means for removing water from trenches and other parts of the Work.
    - (b) Continue dewatering operations until the backfill has progressed to a sufficient depth over the pipe to prevent flotation or movement of the pipe in the trench and so that it is above the natural water table.
  4. Water Disposal:
    - (a) Do not cause injury to public health, to public or private property, to the work completed or in progress, to the surface of the streets, or cause any interference with the use of the same by the public.
    - (b) All disposal of surface water shall be based on "SWPPP" approved plan.
    - (c) Do not start excavation until receiving approval of proposed water disposal method.
- D. Pipe Bedding:
1. Excavate pipe trenches to a level of 8 inches below the outside bottom of the proposed pipe barrel.
  2. Backfill resulting excavation with pipe bedding material, up to the level of the lower one-half of the proposed pipe barrel.
  3. Tamped and compact backfill to provide proper bedding for the pipe and then shape bed to receive the pipe.
  4. Provide bedding under the branch of all fittings to furnish adequate support and bearing under the fitting.
  5. Excavations below the levels required for installation of the pipe bedding, except for "Additional Excavation": Backfill with bedding material, tamp, compact and shape to provide proper support for the proposed pipe, at no additional cost to the Owner.
- E. Backfill under Manholes, Inlets and Meter Vaults:
1. Fill excavations below the levels required for the proper construction of manholes or meter vaults with 3/4 inch washed rock. Distribute washed rock such that structures can be set plumb.
- F. Trench Stabilization:
1. No claim for extras, or additional payment will be considered for cost incurred in the stabilization of trench bottoms, which are rendered soft or unstable as a result of construction methods, such as improper or inadequate sheeting, dewatering or other causes.

2. Do not install pipe when such conditions exist.
3. Contractor: correct such conditions so as to provide proper bedding or foundations for the proposed installation at no additional cost to the Owner.

G. Backfill:

1. Backfilling of utility trenches: not allowed until the work has been approved by the City and/or Engineer, and other jurisdictional inspectors as applicable.
2. Provide bearing tests as required by codes and jurisdictional authorities.
3. Uncover any work, which is covered or concealed without approved inspections by the Building Department Inspector at no cost to the Owner.
4. Partial backfill: May be made to restrain the pipe during pressure testing.
5. Provide additional or supplemental backfill materials as necessary from on-site or off-site sources.
6. Placing Backfill:
  - (a) Place selected backfill material containing no stone or rocks larger than 2 inches in 12-inch layers and thoroughly tamp to a depth of 12 inches over the top of the pipe.
  - (b) Provide thorough support for the branch of all service connection fittings.
  - (c) Preserve the alignment and gradient of the installed pipe.
  - (d) Waterlines or Force Main Pipes: Place remainder of the backfill in layers, not to exceed 12 inches, and compact with mechanical tampers or other suitable equipment to obtain a density of not less than 95 percent of its maximum density.
  - (e) Sewer Pipes:
    1. Backfill to a depth of 30 inches over the pipe by placing backfill material in 12 inch layers and thoroughly compact with mechanical tampers to obtain a density of not less than 95 percent of maximum density.
    2. Place remainder of backfill in layers not to exceed 12 inches, and compact with mechanical tampers or other suitable equipment to obtain a density of not less than 95 percent of maximum density.
  - (f) Within paved areas of trench excavation: construct base and surfacing constructed as based upon ASTM D1557-91 and compacted to 98 percent maximum density.
  - (g) Partially backfill no more than 100 feet of trench with pipe in place at any time.

H. Compaction and Densities:

1. Methods of control and testing of backfill construction are:
  - (a) Maximum density of the material in trenches: Conform to AASHTO Designation T 180-74.
  - (b) Field density of the backfill material in place: Conform to AASHTO Designation T 238-79.
2. Laboratory and field density tests necessary to establish compliance with the compaction requirements of these specifications will be conducted at the Owner's expense at intervals to be determined by the Owner. Tests will be made at depths and locations selected by the Owner.
3. Rework and recompact trench backfill, which does not comply with the specified densities until the required compaction is secured, at no additional cost to the Owner. Costs for retesting such work: Paid for by the Contractor.

I. Additional Excavation and Backfill:

1. Remove and dispose of organic material, such as roots, muck, or other vegetative matter, or other material encountered below the level of proposed pipe bedding material.
  2. Install sheeting as necessary to maintain pipe trenches within the specified limits.
  3. Backfill resulting excavation with suitable backfill material, placed in 12-inch layers tamped and compacted up to the level of the bottom of the proposed pipe bedding material.
  4. Sufficiently compact this material to protect the pipe against settlement.
  5. Provide pipe bedding as specified above.
- J. Trenching in Extreme Water Conditions:
1. General:
    - (a) A combination of conditions in the substrata, water table, or method of disposal may be encountered during the course of the work, which make dewatering impossible, or only possible through the use of unusual methods.
    - (b) When such conditions are encountered, but only after all reasonable means to dewater the excavation have been employed without success, the Contractor, with the concurrence of the City and Engineer, may elect to employ the following method of construction.
    - (c) Obtain the concurrence of the City and Engineer in writing and limit the use of this method of construction to such specific portions of the work as the City/Engineer determines.
    - (d) Standards of construction quality previously specified apply to this alternate method for this method of achieving the Work.
  2. Excavation:
    - (a) Perform excavation of pipe trenches under water to the level of the bottom of the proposed pipe bedding as specified above:
      1. If rock, such as lime rock or other similar hard, cemented material providing firm, unyielding trench bottoms is encountered at the level of the bottom of the proposed pipe bedding: no additional excavation required.
      2. If material such as sand, marl, or other material which cannot be classified as rock, is encountered at the level of the bottom of the proposed pipe bedding: Excavate pipe trench to an additional depth of 10 inches minimum, below that level.
      3. Provide additional excavation, and related additional backfilling made necessary by deleterious materials encountered.
    - (b) Excavate for manholes to be installed under water to a depth, below the outside bottom of the proposed structure to provide a minimum space of 12 inches in rock, or 24 inches in sand for the placement of drain field lime rock.
    - (c) Provide longitudinally sloping plane bottom surface for the placement of pipe bedding material from the bottom of the manhole excavation, at its extremity, to a line of intersection with the bottom of the typical excavation of 10 feet measured horizontally, from the vertical plane of the manhole excavation.
  3. Pipe and Manhole Bedding:
    - (a) Backfill pipe trench or manhole excavation to receive the pipe or manhole with drain field lime rock up to the level of the lower one-third (1/3) of the proposed pipe barrel, or to the outside bottom of the proposed manhole as applicable.

- (b) Tamp and compact backfill to provide proper bedding for the pipe or manhole.
  - (c) Do not utilize material other than drain field rock as bedding material for underwater construction.
- 4. Backfill:
  - (a) Backfill after the pipe is installed with drain field rock around the pipe and to a level even with the top of the pipe bell.
  - (b) Carefully lift all backfill material, including drain field rock, into trench and release to fall freely when the bucket or container is at or just above water level:
  - (c) Do not dump or push backfill material into trenches containing water.
  - (d) Carefully ram backfill material into place in uniform layers below the existing water level.
  - (e) Place and compact backfill material above the water level to densities specified above.
- K. Restoration of Existing Surfaces: Restore paved and grassed areas disturbed by the operations required under this Section as indicated on the Drawings and specified herein.
- L. Testing:
  - 1. Contractor to coordinate work and cooperate with City's soil testing company as required to perform all necessary testing. Refer to General Conditions and Misc. Requirements and Forms for additional information.
  - 2. Tests of Materials as follows;
    - (a) Laboratory Tests for Moisture Content and Density: Under provisions of ASTM D1557-91, one test for each material encountered or proposed to be used.
    - (b) Field Tests for Moisture Content and Density: Under provisions of ASTM D1556- 90, one test per layer per 100 linear feet of ditch.

**END OF SECTION**

**MARTIN LUTHER KING BOULEVARD ROADWAY IMPROVEMENTS  
(EDUCATIONAL CORRIDOR)  
LAP PROJECT - FDOT FINANCIAL PROJECT ID(S) 432861-1**

**DEWATERING  
SUPPLEMENTAL SPECIFICATIONS**

**PART 1      GENERAL**

**1.01      SCOPE**

- A. The work covered by this section consists of furnishing all labor, equipment, and materials, and performing all operations required for dewatering all excavation as required ensuring all work is performed in the dry.
- B. Contractor shall not discharge water in any manner that will:
  - 1. Adversely affect water quality of adjoining water bodies.
  - 2. Violate Federal, State or Local laws or regulations.
  - 3. Allow discharge to flow onto private property.
  - 4. Hamper movement of traffic.
  - 5. Damage portions of the work previously constructed.
- C. See GENERAL CONDITIONS which contain information and requirements that apply to the Work specified herein and are mandatory for this project.
- D. Contractor to provide and operate equipment adequate to keep all excavations and trenches free of water. Remove all water during periods when concrete is being deposited, when pipe is being laid, during the placing of backfill, and at such other times as required for efficient and safe execution of the Work. Avoid settlement or damage to adjacent property. Dispose of water in a manner that will not damage adjacent property. When dewatering open excavations, dewater from outside the structural limits and from a point below the bottom of the excavation when possible. Design dewatering system to prevent removal of fines from existing ground.

- E. The engine for dewatering pump(s) shall have a second, in-line, muffler added to the normal muffler and the set-up shall be baffled to minimize noise. The Contractor shall be responsible for any nuisance created due to the disposal of the water from his discharge system.

**PART 2 PRODUCTS**

- A. The engine for dewatering pump(s) shall have a second, in-line, muffler added to the normal muffler and the set-up shall be baffled to minimize noise. The Contractor shall be responsible for any nuisance created due to the disposal of the water from his discharge system.

**PART 3 EXECUTION**

**3.01 GENERAL**

- A. It is the Contractor's responsibility to process any required permit(s) through the appropriate jurisdictional agencies. The Contractor will be required to provide copies of these permits to the City and Engineer prior to proceeding with any dewatering activities.
- B. Contractor to provide and operate equipment adequate to keep all excavations and trenches free of water. Remove all water during periods when concrete is being deposited, when pipe is being laid, during the placing of backfill, and at such other times as required for efficient and safe execution of the Work. Avoid settlement or damage to adjacent property. Dispose of water in a manner that will not damage adjacent property. When dewatering open excavations, dewater from outside the structural limits and from a point below the bottom of the excavation when possible. Design dewatering system to prevent removal of fines from existing ground.
- C. The Contractor shall provide all labor, materials, tools and equipment necessary to properly control the quality of the discharge from his dewatering operations as described herein. The Contractor shall comply with all applicable laws, rules and regulations governing the discharge of water from his dewatering operations. All dewatering shall be accomplished by the use of sanded wellpoints and other techniques deemed necessary by the Contractor to properly dewater the excavation site.

**3.02 DEWATERING METHODS**

- A. The method of dewatering shall be approved by the City of Pompano Beach. It may include:
  - 1. Wellpoints
  - 2. Sump pumps
  - 3. Bedding rock
  - 4. Other approved items

**3.03 SILTATION CONTROL**

- A. The maximum allowable turbidity limit for waters discharging from dewatering operations shall meet applicable water quality standards. The water discharged from the Contractor's dewatering operation shall not exceed this limit.

**3.04 BACTERIOLOGICAL CONTROL**

- A. The Contractor shall utilize any and all methods approved by the appropriate agencies to control the Bacteriological quality of wellpoint discharge into existing drainage ditches and/or canals.

**END OF SECTION**

**MARTIN LUTHER KING BOULEVARD ROADWAY  
IMPROVEMENTS (EDUCATIONAL CORRIDOR)  
LAP PROJECT - FDOT FINANCIAL PROJECT ID(S) 432861-1**

**RESTORATION AND CLEANUP  
SUPPLEMENTAL SPECIFICATIONS**

**PART 1 GENERAL**

**1.1 SECTION INCLUDES**

- A. Restoration of driveways, lawn areas, trees and plants, roadways, and any other existing improvement affected by the proposed work. This section includes furnishing equipment, labor and materials, and performing all necessary and incidental operations to perform the required work.
- B. All areas disturbed or damaged during construction shall be restored to conditions existing prior to the work.

**1.2 RELATED SECTIONS, CODES AND REFERENCES**

- A. Site Clearing and Grubbing Supplemental Technical Specification
- B. Dust Control Supplemental Technical Specification
- C. Florida Department of Transportation – Standard Specifications for Road and Bridge Construction (latest edition). Including (but not limited to) Sections 120 thru 175 – Earthwork and Related Operations, Sections 200 thru 290 - Base Courses, Sections 300 thru 370 – Bituminous Treatment Surface Courses and Concrete Pavement.
- D. City of Pompano Beach – Engineering Department Manual of Standard Engineering Specifications (latest edition).

**1.3 SUBMITTALS**

- A. Submit initial construction schedule and continuous updates throughout construction indicating restoration, restoration type, for each phase of work following the sequencing specified and/or approved alternative. Final cleanup time should also be referenced to the progress schedule for each phase as well as the overall Final clean-up at the end of construction.

**PART 2 PRODUCTS**

**2.1 PRODUCTS AND MATERIALS**

- A. Asphaltic Pavement and Base:
  - 1. Materials shall be as specified in FDOT Standard Specifications for Road and Bridge Construction.
- B. Concrete:

1. Materials for concrete driveway approaches, sidewalks and curbs shall be as specified in FDOT Standard Specifications for Road and Bridge Construction.
2. Dumpster Wall:
3. Materials shall be as specified in Contract Documents and as submitted by Wall Manufacturer in accordance with the Florida Building Code.

### **PART 3 EXECUTION**

#### **3.1 RESTORATION/CLEAN-UP**

- A. Asphaltic Pavement and Base:
  1. Restore asphaltic pavement and base as specified in FDOT Standard Specifications for Road and Bridge Construction.
  2. Concrete: Restore concrete curbing and flatwork as specified in FDOT Standard Specifications for Road and Bridge Construction.

#### **3.2 PROJECT CONDITIONS**

- A. Existing Utilities:
  1. Protect existing utilities from movement, settlement, or other damages according to Instructions to Bidders and General Conditions.

**END OF SECTION**

**MARTIN LUTHER KING BOULEVARD ROADWAY  
IMPROVEMENTS (EDUCATIONAL CORRIDOR)  
LAP PROJECT - FDOT FINANCIAL PROJECT ID(S) 432861-1**

**DUST CONTROL  
SUPPLEMENTAL SPECIFICATIONS**

**PART 1 GENERAL**

**1.1 SECTION INCLUDES**

- A. This section includes furnishing equipment, labor and materials, and performing all necessary and incidental operations to maintain all work areas within the project limits in a safe, dust free condition until all work in a given area is completed.
- B. All areas disturbed or damaged during construction shall be restored to conditions existing prior to the work.

**1.2 RELATED SECTIONS, CODES AND REFERENCES**

- A. Site Clearing and Grubbing Supplemental Technical Specification
- B. Restoration and Cleanup Supplemental Technical Specification
- C. Florida Department of Transportation – Standard Specifications for Road and Bridge Construction (latest edition). Including (but not limited to) Sections 120 thru 175 – Earthwork and Related Operations, Sections 200 thru 290 - Base Courses, Sections 300 thru 370 – Bituminous Treatment Surface Courses and Concrete Pavement.
- D. City of Pompano Beach – Engineering Department Manual of Standard Engineering Specifications (latest edition).

**1.3 SUBMITTALS**

- A. Dust Control: Submit detailed description of the proposed methods for minimizing vehicle tracking of sediments and dust control throughout construction operations. The proposed methods shall include at least the requirements described in this specification, unless otherwise approved by the City and/or Engineer.
- B. Waste Disposal: Submit detailed description of the proposed methods to prevent the discharge of solid materials, including building materials, to water bodies and/or existing drainage facilities.

**PART 2 PRODUCTS**

**2.1 PRODUCTS AND MATERIALS**

- A. Asphaltic Pavement and Base: Materials shall be as specified in FDOT Standard Specifications for Road and Bridge Construction.

- B. Concrete: Materials for concrete driveway approaches, sidewalks and curbs shall be as specified in FDOT Standard Specifications for Road and Bridge Construction..
- C. Dumpster Wall: 1. Materials shall be as specified in Contract Documents and as submitted by Wall Manufacturer in accordance with the Florida Building Code.

## **PART 3 EXECUTION**

### **3.1 DUST CONTROL**

- A. Dust Control: The proposed methods for dust control shall include at least the following, unless otherwise approved by the City and/or Engineer:
  - 1. Covering loaded haul trucks with tarpaulins.
  - 2. Removing excess dirt from driveways/parking areas daily.
  - 3. Stabilizing construction entrances according to FDOT design standard 106.
  - 4. Using sweepers during dust generating such as excavation and milling operations.
  - 5. Provide and maintain dust control provisions throughout construction of dumpster.
  - 6. Provide and maintain dust control provisions throughout construction of new Community Center Building.

### **3.2 WASTE DISPOSAL**

- A. Waste Disposal: The proposed methods for waste disposal shall include at least the following, unless otherwise approved by the City and/or Engineer:
  - 1. Proving litter control and collection within the project during construction activities.
  - 2. Disposing of all fertilizer or other chemical containers according to EPA's standard practices as detailed by the manufacturer.
  - 3. Disposing of solid materials including building and construction materials off the site but not in surface waters, or wetlands.

### **3.3 PROJECT CONDITIONS**

- A. Existing Facilities/Amenities:
  - 1. Protect existing facilities/amenities from damages according to Instructions to Bidders and General Conditions.

**END OF SECTION**

**MARTIN LUTHER KING BOULEVARD ROADWAY IMPROVEMENTS  
(EDUCATIONAL CORRIDOR)  
LAP PROJECT - FDOT FINANCIAL PROJECT ID(S) 432861-1**

**MAINTENANCE OF TRAFFIC  
SUPPLEMENTAL SPECIFICATIONS**

**PART 1 GENERAL**

**1.1 SYSTEM DESCRIPTION**

- A. Maintenance of vehicular and pedestrian traffic on and off site.
- B. The Work specified in this Section consists of maintaining traffic within the limits of the project for the duration of the construction period, including any temporary suspensions of the Work. It shall include the construction and maintenance of any necessary detour along the project; the furnishing, installing and maintaining of traffic control and safety devices during construction; the control of dust, and any other special requirements for the safe and expeditious movement of traffic as may be called for on the Drawings. The term, Maintenance of Traffic, shall include all of such facilities, devices, and operations as are required for the safety and convenience of the public as well as for minimizing public nuisance; all as specified in this Section.
- C. The CONTRACTOR'S responsibility for maintenance of traffic shall begin on the day he starts work on the project or on the first day contract time is charged, whichever is earlier. The CONTRACTOR shall coordinate and obtain traffic plan approval for applicable City, County, and for FDOT.

**1.2 SUBMITTALS**

- A. Submit Maintenance of Traffic Plan signed and sealed by a Registered ENGINEER licensed in the State of Florida.
- B. Submittal - Review Process
  - 1. Prior to the CONTRACTOR submitting the maintenance of traffic plans (MOT) to the Broward County Traffic Engineering Division (BCTED) in accordance with the MOT Application Procedure for approval (refer to plan notes), the Contractor is to submit it to the City and Engineer for review of accuracy and completeness. Only after the City and Engineer have reviewed the MOT package submittal for completion and accuracy will the Contractor submit it to BCTED. Once approved by BCTED then a copy of the approved MOT must be submitted to the City and Engineer.
- C. The Maintenance of Traffic Plan shall include provisions for vehicular and pedestrian traffic at all times. Cost associated with the following provisions shall be part of the cost of maintenance of traffic pay item. The following are minimum requirements:
  - 1. It shall be the responsibility of the CONTRACTOR to install any necessary temporary or permanent pavement, road rock, pavement marking and signage and/or signalization as required to maintain access to all businesses within the roadway corridor.
  - 2. CONTRACTOR shall be responsible for providing a safe and adequate walking surface to all businesses within the roadway corridor. This safe walk route shall be part of the submitted Maintenance of Traffic Plan.

3. Contractor shall provide any and all measures necessary to maintain ADA access to each building and access point, with the understanding that all new construction shall be in conformance with current ADA requirements. The Contractor shall consider the existing sidewalk conditions and ensure that access to each business is not worsened at any time during construction.
4. Contractor shall provide any and all measures necessary to maintain access to trash receptacles/dumpsters from all businesses and coordinate with the City of Pompano Beach Solid Waste Department to make necessary arrangements to allow for any re-scheduling or special access measures for the required trash pick-up.

### **1.3 QUALITY ASSURANCE**

- A. Conform to:
  1. The Florida Department of Transportation "Standard Specifications for Road and Bridge Construction" (latest edition).
  2. "Supplemental Specifications to the Standard Specifications for Road and Bridge Construction" (latest edition).
  3. Broward Traffic Engineering Division standards (latest edition).

## **PART 2 PRODUCTS**

- 2.1 In accordance with City, BCTED and MUTCD standards.

## **PART 3 EXECUTION**

### **3.1 FIELD QUALITY CONTROL**

- A. Inspection
  1. Do not proceed with the work of this section until conditions for proper execution of work is inspected and approved by the City and the Engineer.

### **3.2 REGULATORY COORDINATION**

- A. Install and maintain adequate traffic control devices, warning devices and barriers for the purpose of protecting vehicular and pedestrian traffic, workmen and the work area in general.
- B. Maintain traffic control for the duration of the project period, including any temporary suspensions of the work.
- C. Maintain traffic in accordance with section 102 of the "Standard Specifications" and the State of Florida, Manual of Traffic Control and Safe Practices for Street and Highway Construction, maintenance and utility operations.

### **3.3 PROTECTION**

- A. Seven days prior to the beginning of construction the Contractor SHALL notify the Broward County Traffic Engineering Division, (954) 484-9600 to arrange for Construction Coordination.

**END OF SECTION**

**MARTIN LUTHER KING BOULEVARD ROADWAY IMPROVEMENTS  
(EDUCATIONAL CORRIDOR)  
LAP PROJECT - FDOT FINANCIAL PROJECT ID(S) 432861-1**

**SUBSURFACE INVESTIGATION AND PROTECTION OF EXISTING  
UTILITIES**  
**SUPPLEMENTAL SPECIFICATIONS**

**PART 1 GENERAL**

**1.1 SECTION INCLUDES**

- A. Subsurface Investigation.
- B. Protection of Existing Utilities:

Various utilities are located within the limit of work in the project area. The City and owners of these utilities require the Contractor to follow specific construction practices when working near the utility. This work includes alterations, relocations, abandonment, utility protection installation, grading, bedding, backfilling, pavement section construction, haul routes and any other construction activity near or around the utility. All known existing utilities are shown on the plans; however, the Contractor shall verify the location of the affected utility. In addition, the Contractor shall confirm to the City that there are no other unknown utilities in the project limits which may be affected.

**1.2 RELATED SECTIONS**

- A. Site Clearing and Grubbing Supplemental Technical Specifications
- B. Storm Drainage Supplemental Technical Specifications
- C. Florida Department of Transportation – Standard Specifications for Road and Bridge Construction (latest edition). Including (but not limited to) Sections 120 thru 175 – Earthwork and Related Operations, Sections 200 thru 290 - Base Courses, Sections 300 thru 370 – Bituminous Treatment Surface Courses and Concrete Pavement.
- D. City of Pompano Beach – Engineering Department Manual of Standard Engineering Specifications (latest edition).

**1.3 REFERENCES**

- A. Compliance with Sunshine State One Call Requirements:
  - A. The Contractor shall comply with all applicable provisions of Florida Statutes when planning or performing excavations at utility test hole sites.
  - B. Compliance actions include, but are not limited to:

1. Notify owners or operators of underground utility facilities at least two (2) business days prior (not including the day of actual notice) to making or beginning excavations in the vicinity of such facilities;
2. Call the Sunshine State One Call by dialing 811 for the marking of member utilities;
3. Contact non-member utilities directly; coordinate with utility owner representatives as required for inspection or other on-site assistance;
4. Immediately cease excavation work and report any resultant utility line damage to owner.

## **PART 2 PRODUCTS**

**Not Applicable**

## **PART 3 EXECUTION**

### **3.1 UNDERGROUND UTILITIES FIELD IDENTIFICATION**

- A. Underground utilities have been located on the plans based on the best available data. The Contractor is ultimately responsible for locating all existing underground utilities whether shown on the plans or not shown. The Contractor shall be responsible to meet the state laws on utility notification and will be responsible for contacting the state "One-Call" center for utility location coordination. The State of Florida's call center is "Sunshine State One-Call of Florida, Inc.", 811, [www.callsunshine.com](http://www.callsunshine.com). The Contractor shall confirm the location, clearance and depths of utilities with the utility owner and shall notify the City and Engineer of any discrepancies or additional utilities and obtain direction before proceeding with trenching or excavation operations. The Contractor shall utilize the utility owners locates if applicable to the given utility.

### **3.2 LOCATING UTILITIES BY POTHOLE UNDERGROUND UTILITIES FIELD IDENTIFICATION**

- A. The Contractor shall locate all existing utilities by a method approved by the utility owner and the City. The preferred method is by vacuum extraction along with a land surveyor to survey in the utility elevation and horizontal location. The use of a backhoe for potholing will only be permitted in closed construction areas; and if approved by the utility owner; and if utility owner has been given written notification in a timely manner; and if approved by the City. The backhoe shall be used to within a minimum of 4 feet of the utility at which time hand digging will be required to prevent damage to the utility. Each pothole shall be backfilled with approved material after utility location is established. Pothole method shall be part of the submitted procedures plan identified under paragraph 3.3 below.

### **3.3 PROCEDURES AND EMERGENCY PLAN**

- A. All work around the utility shall be coordinated with the utility owner prior to disturbance of the project site. All processes and procedures required by the utility owner shall be agreed to in writing by the Contractor and utility owner a minimum of 14 days prior to any disturbance of the project site. The processes and procedures will include the specific

Contractor equipment to be used and the acceptable horizontal and vertical clearance distances the given equipment can be utilized in relation to the corresponding utility. The Contractor shall be responsible to comply with USDOT Safety Regulations, 49 CFR, Parts 192 and 195. The written "hold-harmless" agreement between the Contractor and utility owner shall include at the minimum:

1. Utility Owner, utility owner representatives and Contractor including contact information.
  2. Utility Description including utility material type, pipe/duct material, approximate horizontal location and anticipated depth.
  3. Work procedures around the utility as determined between the Contractor and utility owner, including schedule.
  4. Construction equipment temporary crossings/haul routes over the utility and corresponding cover and marking requirements.
  5. Anticipated work plan around the utility, to the utility and protection of the utility including anticipated equipment to be utilized by the Contractor. Equipment that creates vibrations during construction use shall be identified including but not limited to compaction equipment, vehicle traffic, roto-milling equipment, blasting, etc.
  6. Cover, grading, excavation, embankment, bedding, backfill material type, and drainage requirements including locating and pothole methods.
  7. Anticipated safety plan for working around the utility including dewatering practices.
  8. Utility owner access to the exposed utility for maintenance as agreed to by the utility owner and Contractor.
  9. Emergency Plan including emergency personnel contacts, utility emergency personnel contacts, and associated emergency procedures to be followed. The emergency procedures shall identify emergency responsibilities of Contractor and utility owner. The nearest pipeline shut-off shall be identified and an estimated time to shut the pipeline off should be included. The emergency procedures shall also include environmental BMP's for hazardous spills or as required by law or the City.
  10. The Emergency Plan shall be coordinated and meet all requirements by the City.
- B. Submittal of the work procedures and emergency plan shall be distributed to the City, Engineer and kept on site by the Contractor. ANY DAMAGE TO THE UTILITY BY THE CONTRACTOR SHALL BE RESTORED AT THE CONTRACTORS COST WITH NO COST TO THE CITY OR UTILITY OWNER. This cost will include, at the minimum, all legal costs associated with the emergency response, spill clean-up, facility restoration, etc.

**END OF SECTION**

**MARTIN LUTHER KING BOULEVARD ROADWAY IMPROVEMENTS  
(EDUCATIONAL CORRIDOR)  
LAP PROJECT - FDOT FINANCIAL PROJECT ID(S) 432861-1**

**STORM DRAINAGE  
SUPPLEMENTAL SPECIFICATIONS**

**PART 1 GENERAL**

**1.1 SECTION INCLUDES**

- A. Storm drainage piping, fittings and accessories.
- B. Catch basins, inlets, manholes, storm-water pipes, exfiltration trenches, trench drains and other drainage structures, pollution retardant basins (PRB's), weirs, paved area drainage, surface drainage and sodded area drainage.

**1.2 RELATED SECTIONS, CODES AND REFERENCES**

- A. Site Clearing and Grubbing Supplemental Technical Specifications
- B. Excavation, Backfilling and Compacting for Utilities Supplemental Technical Specifications
- C. Dewatering Supplemental Technical Specifications
- D. Florida Department of Transportation – Standard Specifications for Road and Bridge Construction (latest edition). Including (but not limited to) Sections 120 thru 175 – Earthwork and Related Operations, Sections 200 thru 290 - Base Courses, Sections 300 thru 370 – Bituminous Treatment Surface Courses and Concrete Pavement.
- E. City of Pompano Beach – Engineering Department Manual of Standard Engineering Specifications (latest edition).
- F. American Association of State Highway and Transportation Officials (AASHTO):
  - 1. AASHTO M145-82, Classification of Soils and Soil-Aggregate Mixtures for Highway Construction Purposes.
  - 2. AASHTO T180-831, Moisture-Density Relations of Soils Using a 10-pound Hammer and an 18-inch Drop.
  - 3. AASHTO M 294, class I corrugated polyethylene pipe.
- G. American Society for Testing Materials (ASTM):
  - 1. ASTM C14-82, Specifications for Concrete Sewer, Storm Drain and Culvert.
  - 2. ASTM C76-85a, Specification for Reinforced Concrete Culvert, Storm Drain and Sewer Pipe.
  - 3. ASTM C144-84, Specification for Aggregate for Masonry Mortar.
  - 4. ASTM C150-86, Specification for Portland cement.
  - 5. ASTM C270-86b, Specification for Mortar for Unit Masonry.
  - 6. ASTM C361-85a, Specification for Reinforcement Concrete Low-Head Pressure Pipe.
  - 7. ASTM C443-85a, Specification for Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets.

### **1.3 REGULATORY REQUIREMENTS**

- A. Conform to all applicable, Florida Department of Environmental Protection, South Florida Water Management District and Broward County Codes and Regulations for installation of this Section's Related Work.
- B. The Contractor is responsible for acquiring a valid NPDES permit, unless such permit is determined to be non-applicable by the regulatory agency having proper jurisdiction. The Contractor shall be responsible for maintaining an NPDES log on-site at all times in accordance with NPDES guidelines.

### **1.4 SUBMITTALS**

- A. Submit product data under provisions of Submittals and Submittal Procedures identified on the front end documents.
- B. Submit manufacturer's latest published product data indicating materials, dimensions, finish, fittings and fastenings, specifications and accessories.
- C. Submit shop drawings, product data, certifications of quality by manufacturers, approval stamps by contractor for the following items:
  - 1. Stormwater Pipe and Fittings
  - 2. Duraslot Pipe. Contractor to verify slot height required based on final proposed grade elevations. Contractor to submit detailed shop drawings for review/approval by City and Engineer prior to ordering.
  - 3. Grates and castings
  - 4. Precast structures

### **1.5 PROJECT RECORD DOCUMENTS**

- A. Submit documents under provisions of the Contract Close-out and Project Record Documents identified on the City's front end documents.
- B. Accurately record location of pipe runs, connections, catch basins and invert elevations.

## **PART 2 PRODUCTS**

### **2.1 MATERIALS**

- A. Pipe:
  - 1. Reinforced Concrete Pipe (RCP): ASTM C76, Class 1 with Wall Type A; bar reinforcement; inside nominal diameter as indicated on Drawings; bell and spigot end joints, as modified by Section 941, FDOT Standard Specifications.
  - 2. High Density Polyethylene Pipe (HDPE): pipe with smooth interior and annular exterior corrugations. Pipe shall meet AASHTO M294, Type S or ASTM F2306 and be in accordance with Section 948-2.3 of FDOT 2015 Standard Specifications for Road and Bridge Construction for Class I pipe. Pipe fittings shall conform to AASHTO M252, AASHTO M294, or ASTM F2306.

3. PVC Pipe: SDR 35 PVC (white) with push-on joints meeting the and be in accordance with Section 948-1.4(a) of FDOT 2015 Standard Specifications for Road and Bridge Construction.
  4. Trench Drain: Pipe and trench grate shall be in accordance to Section 436 of FDOT 2015 Standard Specifications for Road and Bridge Construction
- B. Inlets, Manholes and Junction Boxes:
1. Fabricate from precast concrete conforming to ASTM C478 and C65T. All concrete to have a minimum compressive strength of 3000 psi at 28 days.
  2. Join structure sections with a mastic-sealing compound. Fill the remaining space with cement mortar and finish so as to produce a smooth continuous surface inside and outside the wall sections.
  3. Cast all openings in the precast structure at the time of manufacturer. Make holes for piping size 6 inches larger than the outside diameter of the proposed pipe. Fill all spaces between the manhole and the pipe with mortar and finish smooth.
- C. Baffles (PRBs):
1. Provide corrugated aluminum pipe in half sections (one size larger than adjacent pipe), when indicated on the drawings, to serve as baffles. The baffles shall have water tight gaskets to prevent leakage.
- D. Forms:
1. Forms for cast-in-place headwalls or other concrete structures to be of wood or metal, designed and constructed so that they may be removed without damage to the concrete. Build forms true to line and grade. Brace forms in a substantial and unyielding manner.
- E. Concrete:
1. Use Class 1 concrete for headwalls, pipe endwalls, and other miscellaneous concrete items. Unless indicated otherwise, the minimum compressive strength for Class 1 concrete is to be 3000 psi in 28 days.
- F. Concrete Reinforcement:
1. In accordance with Florida Department of Transportation - Standard Specifications for Road and Bridge Construction (latest edition).
- G. Frames and Grates:
1. Provide US Foundry frame and grate, refer to plans for models.
- H. Manhole Covers:
1. Refer to plans for models.

## **PART 3 EXECUTION**

### **3.1 EXAMINATION**

- A. Verify that trench cut is ready to receive work and excavations, dimensions and elevations are as indicated on drawings. Installation shall be in accordance with and be in accordance with Section 430 of FDOT 2015 Standard Specifications for Road and Bridge Construction.
- B. Beginning of installation means acceptance of existing conditions.

- C. Existing drainage system must remain operational while preventing siltation, flooding and/or localized ponding.

### **3.2 PREPARATION**

- A. Hand trim excavations to required elevations. Correct over excavation with fill material.
- B. Remove large stones or other hard matter, which could damage drainage tile or impede consistent backfilling or compaction.

### **3.3 EXCAVATION**

- A. All work shall meet OSHA and State Safety Standards.
- B. General:
  - 1. Removal of Obstructions: remove boulders, logs or any unforeseen obstacles encountered in excavating at no additional cost to the Owner.
  - 2. Rock Excavation: free all rock and other hard material of all loose material, clean and cut to a firm surface; either level, step vertically and horizontally, or serrate, as may be directed by the Project Consultant.
  - 3. Pipe Trench Excavation:
    - (a) Excavate trenches for pipe culverts and for storm sewers to the required depth and to a width sufficient to provide adequate working room.
    - (b) Place and compact the embankment above the natural ground line for pipe lines placed above the natural ground line, prior to excavation of the trench, to an elevation at least 2 feet above the top of the pipe and to a width equal to 4 diameters.
  - 4. Excavate the trench to the required grade.
  - 5. Where the soils permit, the trench sides are to be vertical up to at least the mid-point of the pipe.
    - (a) For all pipe culverts and storm sewers 24 inches or over in diameter (except side drain), shape the bedding to conform to the outside of the pipe, for a depth of not less than 10 percent of its total height (outside dimensions) and provide recesses to receive the bell.
    - (b) Where wet conditions are such that dewatering by normal pumping methods, including well pointing, would not be effective, then this requirement may be modified by the Project Consultant. Select bedding material, which might be utilized by the convenience of the Contractor in lieu of dewatering, is to be at the Contractor's expense.
    - (c) For all side drain, and for pipe culverts less than 24 inches in diameter, the trench bottom may be either flat or shaped to fit the bottom of the pipe, except as provided for trenches, cut below grade and for areas of unsuitable foundation material. Regardless of the shape of the trench bottom, make excavation for the hubs as required to allow the pipe barrel to rest firmly on the trench bottom.
  - 6. Unsuitable Material: when rock, boulders, or other hard, lumpy or unyielding materials are encountered in the trench bottom, remove them to a depth at least 12 inches below the bottom of the pipe. Remove muck or other soft material considered by the Project Consultant to be unsuitable as foundation for the pipe to the depth required for obtaining a firm foundation and as directed by the Project Consultant.
  - 7. Pipe Bedding: when undercutting is required in order to remove unsuitable material (either hard or soft), backfill the trench to a point 6 inches above the bottom of the pipe, with suitable granular material which will form a firm bed for the pipe, and shape the bottom to fit the pipe. Bedding material to be coarse sand, washed limerock, or other suitable granular material.

8.        Compaction: when a pipe trench is undercut in order to remove unsuitable material or for other reasons, bring it to required grade using suitable materials, after which compact the bottom to match approximately the density of the soil in which the trench was cut.

### **3.4        PUMPING**

- A.        No pumping is to be done while concrete is being placed, or for a period of at least 24 hours thereafter, unless it is done from a suitable pump separated from the concrete work by a watertight wall.

### **3.5        BACKFILLING**

- A.        Backfill to the original ground surfaced or sub grade surface of openings made for structures, with a sufficient allowance for settlement. If required by the Project Consultant, obtain the material to be used in making the backfill from a source entirely apart from the structure. All materials used for backfill are to be of a quality acceptable to the Project Consultant and be free of large lumps, wood, or other extraneous material.
- B.        Heavy construction equipment will not be permitted to cross over culvert or storm sewer pipes until backfill material has been placed and compacted to the finished earthwork grade or to an elevation at least 4 feet above the crown of the pipe.
- C.        Compaction Under Wet Conditions: where wet conditions do not permit the use of mechanical tampers, perform compaction of the backfill with hand tampers. Only A-3 material will be allowed for use in the hand tamped portions of the backfill. When the backfill has reached an elevation and condition such as to make the use of the mechanical tampers practicable, do the mechanical tamping in such a manner and to such extent as to transfer the compaction force into the sections previously tamped by hand.
- D.        Pipe Culvert and Storm Sewers: perform backfilling of pipe trenches in 3 stages as follows:
  1.        First Stage: provide adequate compacted fill beneath the haunches of the pipe, using mechanical tampers suitable for this purpose. This compaction applies to the material placed beneath the haunches of the pipe.
  2.        Second Stage: obtain a well-compacted bed and fill along the sides of the pipe and to a point at least 1 foot above the top of the pipe. The width of backfill and compaction to be done under this stage is to be the width of the portion of the trench having vertical sides; or when no portion of the trench has vertical sides, it is to be to a width at least equal to twice the outside diameter of the pipe.
  3.        Third Stage: backfill the remainder of the trench with suitable material and compact under provisions of the requirements hereinafter.
- E.        Compaction: place the backfill for the first and second stages above in 6-inch layers (compacted thickness) and compact to 95 percent of maximum density as determined by AASHTO T180. Where the backfill lies within the roadway embankment or sub grade, compact it to the densities specified for these areas.
  1.        When pavement is to be constructed over the pipe, place the backfill for the third stage in the manner and compact to the degree required for the first and second stages. Where no pavement is to be constructed and vehicular traffic is not to pass over the pipe, compact the third stage backfill to firmness approximately equal to that of the soil adjacent to the pipe trench.

- F. Backfill Under Wet Conditions: where wet conditions are such that dewatering by normal pumping methods would not be effective, the procedure outlined may be used when specifically authorize by the Project Consultant in writing.
  - 1. In such specifically authorized cases, the backfill material used below the elevation at which mechanical tampers would be effective is to be of the A-3 soil classification (based on AASHTO Designation M145).
  - 2. After the pipe is bedded properly, place the A-3 material, and ram and compact beneath the pipe haunches by the use of timbers of hand tampers, and continue hand-tamping during the placing of the backfill reaches an elevation such that its moisture content will permit the use of mechanical tampers.
  - 3. When the backfill has reached such elevation, normally acceptable backfill material may be used and compaction is to be obtained by the use of mechanical tampers.
  - 4. Perform the mechanical tamping in such manner and to such extent so as to transfer the compacting force into the previously hand-tamped fill.
  
- G. Requirements for Thick Lift compaction in Granular Materials: If compaction equipment is available with which the required density can be obtained in thicker lifts than permitted as listed before and upon satisfactory evidence that the proposed equipment will produce work equal in quality to that produced by the specified methods, the Project Consultant may permit placement of granular material of soil groups A-1, A-2 or A-3 in lifts up to a maximum of 3 feet compacted thickness. Furnish equipment and labor to excavate and backfill test pits required to be dug for the performance of density tests.
  - 1. Thick lift compaction procedures will not be allowed for first stage backfilling (beneath the haunches) of pipe culverts and storm sewers.

**3.6 INSTALLATION - PIPE**

- A. Install pipe, fittings and accessories under provisions of ASTM D2321 and ASTM D2774. Seal joints watertight.
- B. Place pipe on minimum 4-inch deep bed of aggregate.
- C. Lay pipe to slope gradients noted on Drawings, with maximum variation from true slope of 1/8 inch in 10 feet.
- D. Install coarse filter aggregate at sides and over top of pipe. Provide top cover to minimum compacted thickness of 12 inches.
- E. Place filter fabric over leveled top surface of filter aggregate cover prior to subsequent backfilling operations. Conforming to Section 985 FDOT, Mirafi Type.
- F. Place filter aggregate in maximum 6 inch lifts, consolidating each lift.
- G. Increase compaction of each successive lift. Refer to Earthwork specifications for compaction requirements. Do not displace or damage pipe when compacting.

**3.7 INSTALLATION – CATCH BASINS AND MANHOLES**

- A. Form bottom of excavation clean and smooth to correct elevation.
- B. Form and place pre-cast structure, with provision for storm sewer pipe end sections.
- C. Establish elevations and pipe inverts for inlets and outlets as indicated.

- D. Mount lid and frame level in grout, secured to top cone section to elevation indicated.
- E. Install baffles only after the road base additions are completed and the pipe network has been visually checked for straightness.

**3.8 INSTALLATION – TIE-IN CONNECTION TO EXISTING DRAINAGE STRUCTURES**

- A. Make pipe connection into existing (previously installed) drainage structure by removing mud plug. After inserting the pipe, fill the cavity between the pipe exterior and the wall of the structure with mortar. Larger spaces may require bricks to be inserted with the mortar.

**3.9 PAVEMENT REPLACEMENT**

- A. Where existing pavement, curbing, curb and gutter, sidewalk or valley gutter is removed only for the purpose of construction or removing box culverts, pipe culverts, storm sewers, inlets, manholes, etc., replace and restore such pavement, etc. to as good condition, as determined by the City and/or Engineer, as before removal, at no additional cost to the Owner. The replaced pavement is to be of the same or similar type as that specified in the Asphaltic Pavement and Base specifications.
- B. Field inspection will be performed under provisions of the Quality Control section of the front end documents.
- C. Request inspection by governing authority prior to and immediately after placing filter aggregate cover over pipe.

**3.10 PROTECTION**

- A. Protect pipe, slot(s), grate(s) and covers from damage or displacement throughout backfilling and grading operations.

**3.11 NPDES SITE REQUIREMENTS**

- A. Contractor shall adhere to any applicable NPDES (National Pollutant Discharge Elimination System) site requirements as determined by the City and/or Engineer. Said requirements will be determined in pre-construction or if needed throughout construction to remedy particular concerns.
- B. Contractor shall install and maintain erosion control and sedimentation control measures in accordance with the Standards for Soil Erosion and Sediment Control in Florida (Florida Guidelines).
- C. Maintenance measures shall be applied as needed during entire period of construction.
- D. The Contractor is responsible for acquiring a valid NPDES permit, unless such permit is determined to be non-applicable by the regulatory agency having proper jurisdiction.
- E. The Contractor shall be responsible for maintaining an NPDES log on-site at all times in accordance with NPDES guidelines.

**END OF SECTION**

**MARTIN LUTHER KING BOULEVARD ROADWAY  
IMPROVEMENTS (EDUCATIONAL CORRIDOR)  
LAP PROJECT - FDOT FINANCIAL PROJECT ID(S) 432861-1**

**TRAFFIC SIGNS  
SUPPLEMENTAL SPECIFICATIONS  
SECTION 02890**

**PART 1**

**1.1 SUMMARY**

- A. The Scope of work of this section includes the provision of various traffic signs throughout Site to ensure safe vehicular and pedestrian traffic.
- B. This Section includes the following:
  - 1. Aluminum Panel Signs.

**1.2 REFERENCE**

- A. Broward County Traffic Engineering Division standards (latest edition)
- B. Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction (latest edition).
- C. Manual on Uniform Traffic Control Devices for Streets and Highways published by the U.S. Department of Transportation, Federal Highway Administration, 1978.

**1.3 SUBMITTALS**

- A. Product Data: For each product indicated.
- B. Shop Drawings: Include plans, elevations, sections, details and attachments to other work.
  - 1. Verify dimensions by field measurements before fabrication and indicate measurements on Shop Drawings.
  - 2. Provide message list for each sign, including large scale details of wording and lettering.

**1.4 QUALITY ASSURANCE**

- A. Regulatory Requirements:
  - 1. Signs and Signalization shall conform to Standards of Broward County and Florida Department Of Transportation (FDOT) Standard Index 600-660, 11860-11865, 17302-17346, 17355,17870, FDOT Specifications and Construction Details as well as Broward County Traffic Engineering Division standards (latest editions).
  - 2. Coordinate all work to be performed with appropriate approvals from Broward County and local municipal traffic engineering departments.

3. Traffic regulating signs: Conform to the colors, dimensions and requirements of the Manual on Uniform Traffic Control Devices for Streets and Highways (ANSI D6.1).
4. Signage and pavement markings: Conform to FDOT and Broward County Traffic Engineering Department Requirements.
5. Americans With Disabilities Act (ADA): Provide conforming pavement markings and signage.

## **PART 2 PRODUCTS**

### **2.1 MATERIALS:**

- A. Sign panels: Aluminum Association Alloy 6061-T6, .080 gauge, unless otherwise specified.
- B. Support members: Aluminum Association Alloy 6061-T6.
- C. Bolts: Aluminum Association Alloy 2024-T4 with an anodic coating 0.0002 inch thick minimum and chromate sealed.
- D. Lockwashers: Aluminum Association Alloy 7075-T6 with an anodic coating 0.0002-inch thick minimum and chromate sealed.
- E. Nuts: Aluminum Association Alloy 6262-T9.
- F. Concrete Base: 3000 psi at 28 days.
- G. Reflective sheeting: FDOT Type A.

### **2.2 FABRICATION:**

- A. Prepare sign blanks and fabricate reflectorized sign faces to conform to the applicable requirements of FDOT Standard Specifications for Road and Bridge Construction (latest edition), Section 700.

## **PART 3 EXECUTION**

### **3.1 INSTALLATION**

- A. General: Locate signs and accessories where indicated, using mounting methods in compliance with manufacturer's written instructions and all applicable codes and Standards of the FDOT Roadway and Traffic Design Manual.
  1. Install signs level, plumb, and at heights indicated, with sign surfaces free from distortion and other defects in appearance.

### **3.2 FIELD QUALITY CONTROL**

- A. Routine inspection of proposed work must be coordinated with Broward County Traffic Engineering and the City.

**END OF SECTION**

**DIVISION 16000**  
**ELECTRICAL TECHNICAL SPECIFICATIONS**

Division 16 - STREET LIGHTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. This section is to be used in tandem with the standards for Street Lighting for development within the City of Pompano Beach. Additional street lighting is to be provided to supplement the existing light poles which are under an agreement with the city and Florida Power and Light.

1.2 STANDARDS AND REGULATIONS

- A. All electrical equipment shall conform to the requirements of these Specifications, the plans and special provisions, all material and work shall conform to the requirements of the following in the order noted:
  1. Latest adopted edition of the National Electrical Code (NEC).
  2. National Electrical Manufacturers Association (NEMA).
  3. American Society for Testing and Materials (ASTM).
  4. Illumination Engineering Society (IES).
  5. American Standards Association (ASA).
  6. City of Pompano beach Street Lighting Design Standard Drawings
  7. American National Standards Institute (ANSI).
  8. Other City ordinances or requirements that may apply.
  9. All material must be Underwriters laboratories Listed (UL) Prior to start of work, all necessary licenses, permits and approvals shall be obtained. The Contractor shall comply with all laws, ordinances, rules, orders, and regulations relating to the performance of the work, the protection of adjacent property and the maintenance of all other facilities.

1.3 CONTRACTORS RESPONSIBILITY FOR RELOCATION OF EXISTING STREET LIGHTS

- A. Existing street lighting that must be relocated or repositioned, as a result of the construction of new streets or driveways into a development shall be the responsibility of the contractor, unless indicated by others.

1.4 UTILITY COMPANY AUTHORIZATION

- A. Written notices from the serving utility company, stating that line clearances and service have been checked and are adequate, shall be submitted to the Engineer.

1.5 SUBMITTALS

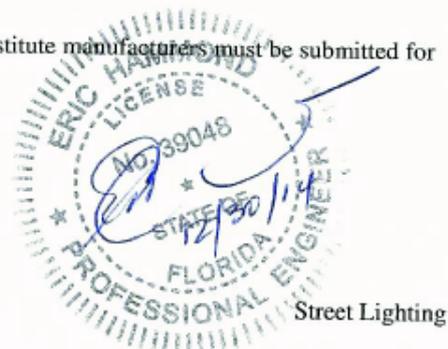
- A. A full submittal shall be submitted for review by the Engineer and the appropriate city personnel. The submittals shall consist of:
  1. Catalog cuts that clearly identifies all poles, base type, lighting fixtures, service cabinets, junction boxes, lamps, and photoelectric eyes splice tanks, wire, fuse holders and products that are to be used in this project.

1.6 LUMINAIRES

- A. Refer to Electrical Lighting Plans for Luminaire Schedule. Substitute manufacturers must be submitted for approval prior to shop drawing submittal.

1.7 LIGHTING POLE IDENTIFICATION

- A. Nominal Voltage Identification:



1. Labeled over the lighting standard handhole.
2. 1 inch high, black legend on orange background.
3. The top of the legend shall be 4 inches above the top of the handhole.
4. Legend is to be "240 VOLTS".

1.8 PHOTOELECTRIC CONTROLS

- A. Control of the street lighting is by a master photocell. This photocell controls a lighting relay in a pad mount electrical service cabinet. The photo cell will be mounted atop the nearest light pole to the service cabinet. The photo cell will be a twist lock configure with the window pointing north and instant on operation, designed to turn on at 3 foot-candles, rated to operate over the voltage range of 105 to 305 volts AC, 60 Hz.
- B. ELECTRICAL CONNECTIONS AT LIGHT POLE BASES
  - a. Fuse connectors shall be installed at every light pole base. All lighting branch circuit conductors above ground potential shall be served by a fused connector.

1.9 ELECTRICALSERVICE CABINET

- A. The Service Cabinet shall be Underwriter Laboratory listed and labeled for service entrance use. Metering is required on all installations.
- B. The length of conductors within the Service Cabinet shall be sufficient to neatly train the conductor to the terminal point with no excess. Multiple conductors shall be neatly bundled, and secured with suitable nylon ties. Terminations shall be made so that there is no bare conductor at the terminal. The conductor insulation shall bear against the terminal or connector shoulder.
- C. The base of the service cabinet shall be sealed to the concrete pad with a polyurethane sealant meeting ASTM C-920, Type S, Class 25, Grade NS. The color shall approximately match the color of the Service Cabinet.

1.10 JUNCTION BOXES

- A. All junction boxes shall be concrete with a galvanized steel lid and shown and identified on the submitted plans. All connections and splices shall be made only within junction boxes. Install junction boxes: Two way (in the splice) or three way (Wye or T) are the only acceptable methods.
- B. Enter conduit from the direction of the run. Terminating within 3 inches of the box wall nearest entry. Concrete junction boxes with steel lids shall be sized by number of conduits in the box as per the NEC.
- C. Concrete junction boxes with steel lids shall be used in all locations including where the junction box will be in the sidewalk.
- D. Junction boxes shall be installed at:
  1. Locations where more than two conduit runs intersect.
  2. Where conduit runs are more than 300 feet long.
  3. Where shown on the submitted plans.
  4. At critical angle points.
  5. Locations as directed by the Engineer.
  6. In the sidewalk at the back of the walk whenever possible.
  7. Flush with the sidewalk grade, firmly bedded and aligned as directed by the Engineer.

1.11 CONDUCTOR COLOR CODING

- A. Equipment grounding conductors and the grounded conductor shall be color coded per the National Electrical Code.
- B. At each junction box, light standard handhole, and service cabinet, street lighting conductors shall be color coded per phase of the 120/240 volt AC service. Remote wiring from the Service Cabinet to the photoelectric control shall be color coded as follows:
  - 1. Black-Line
  - 2. White-Neutral (grounded conductor)
  - 3. Red-Load

1.12 CONDUIT

- A. Conduit installed underground across roadways or driveways shall be rigid metallic galvanized or Schedule 80 PVC conforming to NEC. All conduit installed underground shall have Polyethylene Underground Hazard Marking Tape, 6 inches wide, red, legend "Caution-Electric Line Buried below", placed approximately 12" above the conduit. All galvanized conduit in contact with concrete shall be wrapped with 2" wide, 10 mil thick electrical tape, Scotchwrap 50 or approved equal, half lapped. Coat with a suitable primer.
- B. All conduits installed under sidewalk shall be Schedule 40 rigid polyvinyl (PVC) unless otherwise noted on the plans. PVC conduit shall conform to the NEC. Conduits terminating in junction boxes shall terminate not less than five inches or more than nine inches below the lid of the box and be a minimum of 2 inches above final grade in the bottom of the box. Every conduit entering such boxes shall be neatly upswept and contain an equipment ground with a minimum size 8 awg stranded copper, except for spare conduits. The only conduit bends permitted shall be either factory bends or those formed by the use of an approved conduit bending tool employing correctly sized dies. Conduit entering any electrical enclosures shall be positioned to avoid bending or cutting cabinet braces and cross members that are formed as a part of the electrical enclosure or its pedestal. Such bending or cutting is expressly prohibited.
- C. All metallic conduits in junction boxes shall have grounding bushings and be bonded to the system ground wire and be attached to the ground strap, lid, and box. Size of all conduits shall be shown on the Plans. A 200 pound breaking strength pull string or true tape with footage measurements shall be pulled into all conduit runs, except the service entrance conduit and conduit for grounding electrode conductor. All empty conduits shall be plugged or capped immediately after pulling through a cleaning mandrel and installation of the pull string.

1.13 ACCEPTANCE TESTING

- A. All measurements will be made with an instrument designed for that purpose and acceptable to the City. The Contractor may use its own instruments to verify readings. If a discrepancy exists, the readings taken with the City's instrument will be considered as the correct readings. If the contractor disputes the City's readings, the City will produce calibration documentation for the instrument or verify the readings with a third instrument.

1.14 OPERATIONAL TESTING

- A. The Contractor shall verify the correct operation of the lighting test switch, the master photocell, and the ground fault circuit interrupter receptacle.

1.15 VOLTAGE READINGS

- A. The Contractor shall take voltage readings at the supply side of the lighting contactor. The voltage readings will be taken with the contactor open (no lights energized) and the contactor closed (all lights on). The readings to be taken are Leg A to ground, Leg B to ground, and Leg A to Leg B.

1.16 AMPERAGE READINGS

- A. The Contractor shall take current readings using a clamp on amp meter with the lighting contactor closed (all lights on). The readings to be taken are Leg A at the output of the lighting contactor and Leg B at the output of the lighting contactor.

1.17 RECORD DRAWINGS

- A. The contractor shall provide red lined prints of the plans showing as-built information of the field wiring prior to acceptance of the job by the City.

END OF SECTION

**APPENDIX**

**APPENDIX A PROJECT PERMITS AND CONDITIONS –**

1. BROWARD COUNTY ENVIRONMENTAL PROTECTION AND GROWTH MANAGEMENT DEPARTMENT (BCEPGMD) – ENVIRONMENTAL RESOURCE PERMIT (STORMWATER)
2. BROWARD COUNTY HIGHWAY CONSTRUCTION AND ENGINEERING DIVISION (BCHCED) PLAN APPROVAL
3. BROWARD COUNTY TRAFFIC ENGINEERING DIVISION (BCTED) PLAN APPROVAL AND MAINTENANCE OF TRAFFIC APPLICATION PROCEDURE
4. BROWARD COUNTY MASS TRANSIT PLAN APPROVAL
5. FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) PLAN APPROVAL - **REFER TO EXECUTED LAP AGREEMENT**
6. FLORIDA TURNPIKE – GENERAL USE PERMIT

**APPENDIX B GEOTECHNICAL ROADWAY SOIL SURVEY REPORT PREPARED BY GEOVERSE, INC.**

**APPENDIX C CITY OF POMPANO BEACH CODE OF ORDINANCES 97.50 AND 97.60.**

**APPENDIX D BROWARD COUNTY TRANSIT – PRE-FABRICATED BUS SHELTER STANDARD DETAILS (DATED 2/18/13)**

**APPENDIX E TIDEFLEX STORMWATER CHECK VALVE – PROPRIETARY PRODUCT CERTIFICATION AND SPECIFICATIONS**

**APPENDIX F RAIN BIRD IRRIGATION EQUIPMENT – PROPRIETARY PRODUCT CERTIFICATION**

**APPENDIX G UTILITY CERTIFICATIONS AND WORK SCHEDULES**

**APPENDIX A**  
**PROJECT PERMITS AND CONDITIONS –**

1. BROWARD COUNTY ENVIRONMENTAL PROTECTION AND GROWTH  
MANAGEMENT DEPARTMENT (BCEPGMD) – ENVIRONMENTAL RESOURCE PERMIT  
(STORMWATER)



Environmental Protection and Growth Management Department  
**ENVIRONMENTAL LICENSING and BUILDING PERMITTING DIVISION**  
1 North University Drive, Suite 201-A • Plantation, FL 33324  
PHONE • 954-519-1483 Fax • 954-519-1412

December 03, 2014

City of Pompano Beach  
Attention: Alessandra Delfico, P.E., City Engineer  
1201 NE 5 Ave  
Pompano Beach, FL 33060

RE: MLK Blvd (Blount to Powerline)  
City of Pompano Beach, S/T/R (33-48-42)

This is to notify you of the Environmental Protection and Growth Management Department's (EPGMD) action concerning your application received 10/09/2014. The application has been reviewed for compliance with the following requirements:

**ERP Review - GRANTED**

EPGMD has the authority to review the project for compliance with the provisions of Chapter 373, Part IV, Florida Statutes pursuant to an agreement between EPGMD, DEP and the SFWMD. The agreement is outlined in a document entitled "DELEGATION AGREEMENT AMONG THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION, THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT, AND BROWARD COUNTY."

Based on the information submitted, Environmental Resource Permit No. 06-07031-P was issued on 12/03/2014.

**Broward County Surface Water Management Review - GRANTED**

EPGMD has reviewed the project for compliance with the Surface Water Management requirements of Chapter 27, Article V Sec. 27-191 through 27-202 of the Broward County Code.

Based on the information submitted, Surface Water Management License No. SWM2014-075-0 was issued on 12/03/2014. The above named licensee is hereby authorized to perform the work or operate the facility shown on the approved drawing(s), plans, documents and specifications, as submitted by licensee, and made a part hereof.

Please be advised that no Certificate of Occupancy can be issued on this project until released, in writing, by all EPGMD divisions as required. Such release will be pending approval of any engineering certifications required by specific condition No. 15.

The above referenced approvals will remain in effect subject to the following:

1. Not receiving a filed request for a Chapter 120, Florida Statutes administrative hearing;
2. the attached SFWMD General Conditions;
3. the attached SFWMD Special Conditions;
4. the attached Broward County General Conditions;
5. the attached Broward County Specific Conditions;
6. the attached II exhibits.

Should you object to the conditions of the ERP, please refer to the attached "Notice of Rights" which addresses the procedures to be followed if you desire a public hearing or other review of the proposed action. Please contact this office if you have any questions concerning this matter. If we do not hear from you in accordance with the attached "Notice of Rights", we will assume you concur with the action taken by EPGMD.

Issuance of the above-referenced Broward County licenses(s) constitutes a final agency determination. A person with a substantial interest may file a petition to request review of or to intervene in a review of a final administrative determination, subject to the provisions of Section 27-14, Broward County Code of Ordinance.

### CERTIFICATE OF SERVICE

I HEREBY CERTIFY that a "Notice of Rights" has been mailed to the Permittee (and the persons listed in the attached distribution list) no later than 5:00 p.m. on 12/03/2014, in accordance with Section 120.60 (3), Florida Statutes.

By: *Susan Jackson*  
*for* Ashley Resta, P.E.  
Surface Water Management Program

Enclosed are the following:

- executed staff report;
- set(s) of stamped and approved plans;
- application fee receipts;
- Notice of Rights; and
- Inspection Guidelines Brochure.



Surface Water Management Program

## “What to Expect When We Are Inspecting Surface Water Management Systems”

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A guideline for **engineers, contractors, and licensees** of surface water management systems when applying for the release of Certificate(s) of Occupancy.

The intent of this document is to establish some guidelines to achieve compliance with the Code while maximizing customer service needs to licensees and their agents and the local building departments by facilitating the Certificate(s) of Occupancy (CO) release procedure for building projects. It is also the intent of this document to encourage licensees and their agents and the local building departments to not put our inspection staff on the “critical path”. ***We recognize that the local building departments must adhere to the requirements of the Florida Building Code and the requirements of Article I of the Broward County Natural Resource Protection Code.***

The Environmental Licensing and Building Permitting Division (ELBPD) - Surface Water Management Licensing program has the responsibility of reviewing designs, licensing, and inspecting surface water management systems within portions of Broward County under the provisions of the Broward County Natural Resource Protection Code, Chapter 27, Section 27-191 through Section 27-201. This includes enforcement for the purpose of protecting our natural resources. This document contains specific information about the ELBPD’s surface water management inspection procedures, review of record/as-built drawings, and time required to complete the procedure successfully. Please be advised this document may be included with the approved license and may be modified on an as-needed basis.

***The following certification package must be submitted at least two (2) weeks prior to the anticipated date of occupancy; exceptions may be made on a case by case basis.***

***Note: Item 1 is not applicable to plans stamped as General Licenses (GL##-###). Items 2 & 3 may apply to GL if plans are stamped for construction certification.***

1. Final Record/As-built Drawings (hard copy and electronic) of the site, lake/canal slopes, control structure(s) or overflow structure(s) (where applicable), and Finished Floor Elevation(s); etc.
2. Signed and sealed letter from a Florida-Registered Professional Engineer certifying all components of the surface water management system were constructed in substantial conformance with the approved plans; and
3. When requesting a partial certification include a \$100 partial certification fee (fees are subject to change). The certifying engineer must indicate that a substantial amount of the water management system has been constructed to serve the partial phase to satisfy the water quality and water quantity requirements of the Code and exactly which lots/buildings are requested for release.

Staff will perform an inspection on a first-come first-served basis of the above items. A successful submittal of the required items will prevent unwanted delays in the inspection and CO release processes.

***What we look for During the Record/As-Built Drawing Review and During the Inspection***

1. The engineer's letter must contain the appropriate certification language. The suggested wording is located in the Code and in the specific conditions of the license. The letter must be signed and sealed. It is imperative that the engineer of record describe any minor modifications to the system that were made during the construction of the project. However, substantial modifications must have received prior approval by the Surface Water Licensing Program.
2. The as-built/record drawing must document the Finished Floor Elevation(s) showing substantial conformance with approved plans.
3. In addition to rim, manhole, and pipe invert elevations, the plans should contain a sufficient amount of survey information to show that the site grades and perimeter grades were constructed in substantial conformance with the approved plans.
4. If part of the approved system, lake and canal slope as-built plans should contain a substantial number of cross sections (a minimum of 1 section per 50 linear feet is preferred) to show compliance with the Department's slope criteria. The staff reserves the right to require additional slope cross sections as necessary as well as slope regrading. Surface area calculations at the control elevation should be submitted for lakes.
5. Control structure or overflow structure information must show all (as-built) dimensions and elevations.
6. All catch basin and manhole structures must have appropriate mudwork to prevent seepage that could lead to structure/asphalt failures and subsequent turbidity violations.
7. All catch basins, manholes, and pipes must be relatively free of sediment and debris and must be accessible to staff. Arrangements should be made with staff for inspecting basins that are covered with fabric materials for sediment control purposes. Fabric must be removed by the licensee or other appropriate personnel prior to the inspection.
8. Lake, canal, swale, dry detention/retention area slopes must be stabilized through appropriate measures, i.e, no evidence of erosion or sedimentation should be encountered during the inspection. Arrangements should be made with staff with regards to timeliness of sodding or seeding slopes and bottoms of dry detention/retention areas.
9. All baffle mechanisms must be made water tight at all contact surfaces of basin walls by a durable gasket device.

***Successful compliance with the above items will insure a timely release of the Certificate(s) of Occupancy from division staff.***

Upon completion of the field inspection, arrangements with inspection staff will be made to correct all observed field deficiencies. With your cooperation, the Operation Letter will be released upon correction of all field deficiencies.

**Environmental Licensing and Building Permitting Division**

Surface Water Management Program  
1 North University Drive, Suite 201-A • Plantation, Florida 33324  
Phone 954-519-1483 FAX 954-519-1412

## NOTICE OF RIGHTS

As required by Sections 120.569(1), and 120.60(3), Fla. Stat., the following is notice of the opportunities which may be available for administrative hearing or judicial review when the substantial interests of a party are determined by an agency. Please note that this Notice of Rights is not intended to provide legal advice. Not all the legal proceedings detailed below may be an applicable or appropriate remedy. You may wish to consult an attorney regarding your legal rights.

### **RIGHT TO REQUEST ADMINISTRATIVE HEARING**

A person whose substantial interests are or may be affected by the Broward County Environmental Protection and Growth Management Department's (EPGMD, formerly known as Department of Planning and Environmental Protection or DPEP) action under the "Delegation Agreement Among the Florida Department of Environmental Protection, the South Florida Water Management District and Broward County" has the right to request an administrative hearing on that action pursuant to Sections 120.569 and 120.57, Fla. Stat. Persons seeking a hearing on an EPGMD decision which does or may affect their substantial interests shall file a petition for hearing with the District Clerk within 21 days of receipt of written notice of the decision, unless one of the following shorter time periods apply: 1) within 14 days of the notice of consolidated intent to grant or deny concurrently reviewed applications for environmental resource permits and use of sovereign submerged lands pursuant to Section 373.427, Fla. Stat.; or 2) within 14 days of service of an Administrative Order pursuant to Subsection 373.119(1), Fla. Stat. "Receipt of written notice of agency decision" means receipt of either written notice through mail, electronic mail, or posting that the EPGMD has or intends to take final agency action, or publication of notice that the EPGMD has or intends to take final agency action. Any person who receives written notice of an EPGMD decision and fails to file a written request for hearing within the timeframe described above waives the right to request a hearing on that decision.

### **FILING INSTRUCTIONS**

The Petition must be filed with the EPGMD Enforcement Administration Section's Environmental Compliance Administrator. Filings with the Environmental Compliance Administrator may be made by mail, hand-delivery, or e-mail. **Filings by facsimile will not be accepted after October 1, 2014.** A petition for administrative hearing or other document is deemed filed upon receipt during normal business hours by the Environmental Compliance Administrator, at the Broward County government offices in Plantation, Florida. Any document received by the EPGMD Enforcement Administration after 5:00 p.m. shall be filed as of 8:00 a.m. on the next regular business day. Additional filing instructions are as follows:

- Filings by mail must be addressed to the Environmental Compliance Administrator, Enforcement Administration Section, 1 N University Drive, Mailbox 307, Plantation, FL 33324.
- Filings by hand-delivery must be delivered to the EPGMD Enforcement Administration Section. **Delivery of a petition to the Broward County security desk does not constitute filing. To ensure proper filing, it will be necessary to request the Broward County security officer to contact the Environmental Compliance Administrator's office.** An employee of the Environmental Compliance Administrator's office will receive and file the petition.
- Filings by e-mail must be transmitted to the EPGMD Enforcement Administration Section at [epdhotline@broward.org](mailto:epdhotline@broward.org). The filing date for a document transmitted by electronic mail shall be the date the EPGMD Enforcement Administration Section receives the complete document. A party who files a document by e-mail shall (1) represent that the original physically signed document will be retained by that party for the duration of the proceeding and of any subsequent appeal or subsequent proceeding in that cause and that the party shall produce it upon the request of other

parties; and (2) be responsible for any delay, disruption, or interruption of the electronic signals and accepts the full risk that the document may not be properly filed.

### **INITIATION OF AN ADMINISTRATIVE HEARING**

Pursuant to Rules 28-106.201 and 28-106.301, Fla. Admin. Code, initiation of an administrative hearing shall be made by written petition to the EPGMD in legible form and on 8 and 1/2 by 11 inch white paper. All petitions shall contain:

1. Identification of the action being contested, including the permit number, application number, EPGMD file number or any other EPGMD identification number, if known.
2. The name, address and telephone number of the petitioner and petitioner's representative, if any.
3. An explanation of how the petitioner's substantial interests will be affected by the agency decision.
4. A statement of when and how the petitioner received notice of the EPGMD's decision.
5. A statement of all disputed issues of material fact. If there are none, the petition must so indicate.
6. A concise statement of the ultimate facts alleged, including the specific facts the petitioner contends warrant reversal or modification of the EPGMD's proposed action.
7. A statement of the specific rules or statutes the petitioner contends require reversal or modification of the EPGMD's proposed action.
8. If disputed issues of material fact exist, the statement must also include an explanation of how the alleged facts relate to the specific rules or statutes.
9. A statement of the relief sought by the petitioner, stating precisely the action the petitioner wishes the EPGMD to take with respect to the EPGMD's proposed action.

A person may file a request for an extension of time for filing a petition. The EPGMD may, for good cause, grant the request. Requests for extension of time must be filed with the EPGMD prior to the deadline for filing a petition for hearing. Such requests for extension shall contain a certificate that the moving party has consulted with all other parties concerning the extension and that the EPGMD and any other parties agree to or oppose the extension. A timely request for extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

If the EPGMD takes action with substantially different impacts on water resources from the notice of intended agency decision, the persons who may be substantially affected shall have an additional point of entry pursuant to Rule 28-106.111, Fla. Admin. Code, unless otherwise provided by law.

### **MEDIATION**

The procedures for pursuing mediation are set forth in Section 120.573, Fla. Stat., and Rules 28-106.111 and 28-106.401-405, Fla. Admin. Code. The EPGMD is not proposing mediation for this agency action under Section 120.573, Fla. Stat., at this time.

### **RIGHT TO SEEK JUDICIAL REVIEW**

Pursuant to Sections 120.60(3) and 120.68, Fla. Stat., a party who is adversely affected by final EPGMD action may seek judicial review of the EPGMD's final decision by filing a notice of appeal pursuant to Florida Rule of Appellate Procedure 9.110 in the Fourth District Court of Appeal or in the appellate district where a party resides and filing a second copy of the notice with the District Clerk within 30 days of rendering of the final EPGMD action.

## **SFWMD General Conditions**

1. All activities shall be implemented following the plans, specifications and performance criteria approved by this permit. Any deviations must be authorized in a permit modification in accordance with Rule 62-330.315, F.A.C. Any deviations that are not so authorized may subject the permittee to enforcement action and revocation of the permit under Chapter 373, F.S.
2. A complete copy of this permit shall be kept at the work site of the permitted activity during the construction phase, and shall be available for review at the work site upon request by the Agency staff. The permittee shall require the contractor to review the complete permit prior to beginning construction.
3. Activities shall be conducted in a manner that does not cause or contribute to violations of state water quality standards. Performance-based erosion and sediment control best management practices shall be installed immediately prior to, and be maintained during and after construction as needed, to prevent adverse impacts to the water resources and adjacent lands. Such practices shall be in accordance with the *State of Florida Erosion and Sediment Control Designer and Reviewer Manual (Florida Department of Environmental Protection and Florida Department of Transportation June 2007)*, and the *Florida Stormwater Erosion and Sedimentation Control Inspector's Manual (Florida Department of Environmental Protection, Nonpoint Source Management Section, Tallahassee, Florida, July 2008)*, which are both incorporated by reference in subparagraph 62-330.050(9)(b)5, F.A.C., unless a project-specific erosion and sediment control plan is approved or other water quality control measures are required as part of the permit.
4. At least 48 hours prior to beginning the authorized activities, the permittee shall submit to the Agency a fully executed Form 62-330.350(1), "Construction Commencement Notice," indicating the expected start and completion dates. A copy of this form may be obtained from the Agency, as described in subsection 62-330.010(5), F.A.C. If available, an Agency website that fulfills this notification requirement may be used in lieu of the form.
5. Unless the permit is transferred under Rule 62-330.340, F.A.C., or transferred to an operating entity under Rule 62-330.310, F.A.C., the permittee is liable to comply with the plans, terms and conditions of the permit for the life of the project or activity.
6. Within 30 days after completing construction of the entire project, or any independent portion of the project, the permittee shall provide the following to the Agency, as applicable:
  - a. For an individual, private single-family residential dwelling unit, duplex, triplex, or quadruplex — "Construction Completion and Inspection Certification for Activities Associated With a Private Single-Family Dwelling Unit" [Form 62-330.310(3)]; or
  - b. For all other activities — "As-Built Certification and Request for Conversion to Operational Phase" [Form 62-330.310(1)].
  - c. If available, an Agency website that fulfills this certification requirement may be used in lieu of the form.
7. If the final operation and maintenance entity is a third party:
  - a. Prior to sales of any lot or unit served by the activity and within one year of permit issuance, or within 30 days of as- built certification, whichever comes first, the permittee shall submit, as applicable, a copy of the operation and maintenance documents (see sections 12.3 thru 12.3.3 of Volume I) as filed with the Department of State, Division of Corporations and a copy of any easement, plat, or deed restriction needed to operate or maintain the project, as recorded with the Clerk of the Court in the County in which the activity is located.
  - b. Within 30 days of submittal of the as- built certification, the permittee shall submit "Request for Transfer of Environmental Resource Permit to the Perpetual Operation Entity" [Form 62-330.310(2)] to transfer the permit to the operation and maintenance entity, along with the documentation requested in the form. If available, an Agency website that fulfills this transfer requirement may be used in lieu of the form.
8. The permittee shall notify the Agency in writing of changes required by any other regulatory agency that require changes to the permitted activity, and any required modification of this permit must be obtained prior to implementing the changes.

9. This permit does not:
  - a. Convey to the permittee any property rights or privileges, or any other rights or privileges other than those specified herein or in Chapter 62-330, F.A.C.;
  - b. Convey to the permittee or create in the permittee any interest in real property;
  - c. Relieve the permittee from the need to obtain and comply with any other required federal, state, and local authorization, law, rule, or ordinance; or
  - d. Authorize any entrance upon or work on property that is not owned, held in easement, or controlled by the permittee.
10. Prior to conducting any activities on state-owned submerged lands or other lands of the state, title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund, the permittee must receive all necessary approvals and authorizations under Chapters 253 and 258, F.S. Written authorization that requires formal execution by the Board of Trustees of the Internal Improvement Trust Fund shall not be considered received until it has been fully executed.
11. The permittee shall hold and save the Agency harmless from any and all damages, claims, or liabilities that may arise by reason of the construction, alteration, operation, maintenance, removal, abandonment or use of any project authorized by the permit.
12. The permittee shall notify the Agency in writing:
  - a. Immediately if any previously submitted information is discovered to be inaccurate; and
  - b. Within 30 days of any conveyance or division of ownership or control of the property or the system, other than conveyance via a long-term lease, and the new owner shall request transfer of the permit in accordance with Rule 62-330.340, F.A.C. This does not apply to the sale of lots or units in residential or commercial subdivisions or condominiums where the stormwater management system has been completed and converted to the operation phase.
13. Upon reasonable notice to the permittee, Agency staff with proper identification shall have permission to enter, inspect, sample and test the project or activities to ensure conformity with the plans and specifications authorized in the permit.
14. If any prehistoric or historic artifacts, such as pottery or ceramics, stone tools or metal implements, dugout canoes, or any other physical remains that could be associated with Native American cultures, or early colonial or American settlement are encountered at any time within the project site area, work involving subsurface disturbance in the immediate vicinity of such discoveries shall cease. The permittee or other designee shall contact the Florida Department of State, Division of Historical Resources, Compliance and Review Section, at (850) 245-6333 or (800) 847-7278, as well as the appropriate permitting agency office. Such subsurface work shall not resume without verbal or written authorization from the Division of Historical Resources. If unmarked human remains are encountered, all work shall stop immediately and notification shall be provided in accordance with Section 872.05, F.S.
15. Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered binding unless a specific condition of this permit or a formal determination under Rule 62-330.201, F.A.C., provides otherwise.
16. The permittee shall provide routine maintenance of all components of the stormwater management system to remove trapped sediments and debris. Removed materials shall be disposed of in a landfill or other uplands in a manner that does not require a permit under Chapter 62-330, F.A.C., or cause violations of state water quality standards.
17. This permit is issued based on the applicant's submitted information that reasonably demonstrates that adverse water resource-related impacts will not be caused by the completed permit activity. If any adverse impacts result, the Agency will require the permittee to eliminate the cause, obtain any necessary permit modification, and take any necessary corrective actions to resolve the adverse impacts.
18. A Recorded Notice of Environmental Resource Permit may be recorded in the county public records in accordance with Rule 62-330.090(7), F.A.C. Such notice is not an encumbrance upon the property.

### **SFWMD Special Conditions**

- 1. The permittee shall be responsible for the correction of any erosion, shoaling or water quality problems that result from the construction or operation of the surface water management system.**
- 2. Measures shall be taken during construction to insure that sedimentation and/or turbidity problems are not created in the receiving water.**
- 3. The District reserves the right to require that additional water quality treatment methods be incorporated into the drainage system if such measures are shown to be necessary.**
- 4. Facilities other than those stated herein shall not be constructed without an approved modification of this permit.**
- 5. The conditions outlined in the Broward County Specific Conditions section, except where language specifically relates to Broward County Code, are incorporated into these SFWMD Special Conditions.**
- 6. Operation of the surface water management system shall be the responsibility of permittee.**
- 7. A stable, permanent and accessible elevation reference shall be established on or within one hundred (100) feet of all permitted discharge structures no later than the submission of the certification report. The location of the elevation reference must be noted on or with the certification report.**

## **Broward County General Conditions**

- 1. The terms, conditions, requirements, limitations and restrictions set forth herein are accepted by the licensee and must be completed by the licensee and are enforceable by the Environmental Protection and Growth Management Department (EPGMD) pursuant to Chapter 27 of the Broward County Code of Ordinances. The EPGMD will review this license periodically and may revoke or suspend the license, and initiate administrative and/or judicial action for any violation of the conditions by the licensee, its agents, employees, servants or representatives.**
- 2. This license is valid only for the specific uses set forth in the license application and any deviation from the approved uses may constitute grounds for revocation, suspension, and/or enforcement action by the EPGMD.**
- 3. In the event the licensee is temporarily unable to comply with any of the conditions of the license or with this chapter, the licensee shall notify the EPGMD within eight (8) hours or as stated in the specific section of this chapter. Within three (3) working days of the event, the licensee shall submit a written report to EPGMD that describes the incident, its cause, the measures being taken to correct the problem and prevent its reoccurrence, the owner's intention regarding the repair, replacement and reconstruction of destroyed facilities and a schedule of events leading toward operation with the license condition.**
- 4. The issuance of this license does not convey any vested rights or exclusive privileges, nor does it authorize any injury to public or private property or any invasion of personal rights, or any violations of federal, state or local laws or regulations.**
- 5. This license must be available for inspection on licensee's premises during the entire life of the license.**
- 6. By accepting this license, the licensee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this licensed facility or activity, that are submitted to the EPGMD, may be used by the EPGMD as evidence in any enforcement proceeding arising under Chapter 27 of the Broward County Code of Ordinances, except where such use is prohibited by Section 403.111, Florida Statutes.**
- 7. The licensee agrees to comply with Chapter 27 of the Broward County Code of Ordinances, and shall comply with all provisions of the most current version of this chapter, as amended.**
- 8. Any new owner or operator of a licensed facility shall apply by letter for a transfer of license within thirty (30) days after sale or legal transfer. The transferor shall remain liable for performance in accordance with the license until the transferee applies for and is granted a transfer of license. The transferee shall be liable for any violation of Chapter 27 that results from the transferee's activities. The transferee shall comply with the transferor's original license conditions when the transferee has failed to obtain its own license.**
- 9. The licensee, by acceptance of this license, specifically agrees to allow access and shall allow access to the licensed source, activity or facility at times by EPGMD personnel for the purposes of inspection and testing to determine compliance with this license and Chapter 27 of the Broward County Code of Ordinances.**
- 10. This license does not constitute a waiver or approval of any other license, approval, or regulatory requirement by this or any other governmental agency that may be required.**
- 11. Enforcement of the terms and provisions of this license shall be at the reasonable discretion of EPGMD, and any forbearance on behalf of EPGMD to exercise its rights hereunder in the event of any breach by the licensee, shall not be deemed or construed to be a waiver of EPGMD's rights hereunder.**

## **Broward County Specific Conditions**

1. The licensee shall allow authorized personnel of the Environmental Licensing and Building Permitting Division (ELBPD), municipality or local water control district to conduct such inspections at reasonable hours, as are necessary to determine compliance with the requirements of the license and the approved plans and specifications.
2. The responsible entity shall agree to maintain the operating efficiency of the water management works. Except in cases where the responsible entity is a governmental agency, the agreement shall further require that if the water management works is not adequately maintained, the County may undertake the required work and bill all associated costs to the responsible entity. If the payment for such obligations is not satisfied within 30 days, said obligation shall become a lien against the property associated with the water management works. Where ownership of the water management works is separate from property ownership, the ELBPD shall require these agreements to be recorded.
3. The licensee shall prosecute the work authorized in a manner so as to minimize any adverse impact of the works on fish, wildlife, natural environmental values, and water quality. The licensee shall institute necessary measures during the construction period, including fill compaction of any fill material placed around newly installed structures, to reduce erosion, turbidity, nutrient loading and sedimentation in the receiving waters. Any erosion, shoaling or deleterious discharges due to permitted actions will be corrected promptly at no expense to the County.
4. The licensee shall comply with all applicable local land use and subdivision regulations and other local requirements. In addition, the licensee shall obtain all necessary Federal, State, local and special district authorizations prior to the start of any construction alteration of works authorized by this license.
5. Offsite discharges during construction and development shall be made only through the facilities authorized by this license. Water discharged from the project shall be through structures having a mechanism for regulating upstream water stages. Stages may be subject to operating schedules satisfactory to the appropriate regulatory agency.
6. The licensee shall hold and save the County harmless from any and all damages, claims, or liabilities which may arise by reason of the construction, operation, maintenance or use of any facility authorized by the license.
7. The license does not convey property rights nor any rights or privileges other than those specified therein.
8. No construction authorized by the license shall commence until a responsible entity acceptable to the ELBPD has been established and has agreed to operate and maintain the efficiency of the system. The entity must be provided with sufficient ownership so that it has control over all water management facilities authorized therein. Upon receipt of written evidence of the satisfaction of this condition, the ELBPD will issue authorization to commence the construction.
9. No beautification, or erection of any structure that will prohibit or limit access of maintenance equipment or vehicles in the right-of-way or easements will be allowed.
10. Any license which grants any entity the permission to place a structure on property which is owned by Broward County or upon which Broward County has an easement shall be construed to create a revocable license for that structure to remain on the property. Broward County may require removal of such a structure at no cost to the County.
11. The area under license will be maintained in a safe and operating condition at all times. Equipment will be promptly removed from the right-of-way or easement and the right-of-way or easement will be restored to its original or better condition within a reasonable time on termination of the authorized use.
12. The ELBPD will be notified, as required in the license or as indicated on the approved plans, to coordinate and schedule inspections.
13. The operation or construction will be in accordance with the approved details and plans submitted with the application. Any modification must be submitted to the ELBPD in writing and receive prior approval.
14. Monitoring may be required for sites with high pollutant generating potential, such as industrial sites, Class I and II solid waste disposal sites, and projects discharging to areas identified in Section 27-200 (b) (1) (o). Such monitoring will be under the cognizance of the ELBPD.

15. Upon completion of the construction of a surface water management system or phase thereof licensed by the ELBPD, it is a requirement of the issuance of the license, and hence transfer of operation and maintenance responsibility, that a Florida Registered Professional Engineer certify that the surface water management system was indeed constructed as licensed. Certified record drawings shall accompany the certification. Suggested wording for this is as follows:

**I HEREBY CERTIFY TO THE CONSTRUCTION COMPLETION OF ALL THE COMPONENTS OF THE SURFACE WATER MANAGEMENT FACILITIES FOR THE ABOVE REFERENCES PROJECT AND THAT THEY HAVE BEEN CONSTRUCTED IN SUBSTANTIAL CONFORMANCE WITH THE PLANS AND SPECIFICATIONS APPROVED BY THE BROWARD COUNTY ELBPD, AND HEREBY AFFIX MY SEAL THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_.**

\_\_\_\_\_  
(SEAL)

16. Water management areas shall be legally reserved to the operation entity and for that purpose by dedication on the plat, deed restrictions, easements, etc., so that subsequent owners or others may not remove such areas from their intended use. Management areas, including maintenance easements, shall be connected to a public road or other location from which operation and maintenance access is legally and physically available.

17. The licensee shall notify the ELBPD in writing within twenty-four (24) hours of the start, finish, suspension, and/or abandonment of any construction or alteration of works authorized by this license.

18. A prorated share of surface water management retention/detention areas, sufficient to provide the required flood protection and water quality treatment, must be provided prior to occupancy of any building or residence.

19. The operation license shall be valid for a specific period of time not to exceed five (5) years from the date the license is transferred to the operation phase. The operation license shall be renewed in accordance with Section 27 - 198 (d) (2) of the Article.

20. The ELBPD reserves the right to require additional water quality treatment methods be incorporated into the drainage system if such measures are shown to be necessary.

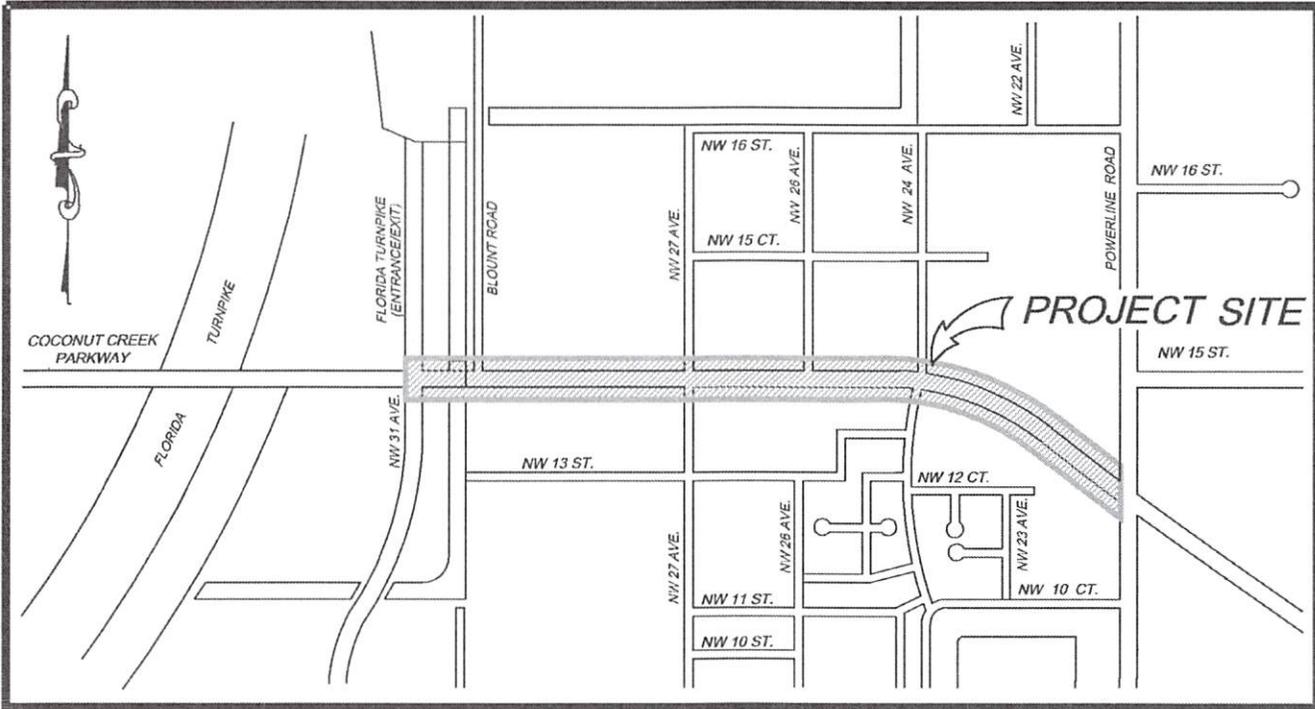
21. This permit does not constitute the approval required by Section 27-353(i), Broward County Code, to conduct dewatering operations at or within one-quarter mile radius of a contaminated site. Please contact the Pollution Prevention and Remediation Division at (954) 519-1260 for further information.

22. The licensee shall keep a log of the operation and maintenance schedule for all components of the surface water management system.

23. The surface water management system must be inspected by the Surface Water Management Section to verify compliance with Specific Condition No. 15 of the license. In accordance with the Broward County Natural Resource Protection Code, Article I, Sec. 27-66 (f), the County agency or municipal agency charged with issuing a certificate of occupancy (CO) shall not issue a CO until notified of the ELBPD approval. Partial certifications will be handled in accordance with Specific Condition No. 18.

24. The licensee is advised that he/she is required to submit a Storm Water Notice of Intent (NOI) application at least 48 hours prior to the commencement of construction to the Florida Department of Environmental Protection, NPDES Stormwater Notices Center, MS #3585 at 2600 Blair Stone Road - Tallahassee, Florida 32399-2400.

25. Any changes to the proposed connection into the FDOT system will require additional FDOT review and approval and may necessitate a modification of this license.



VICINITY MAP

SECTION 33, TOWNSHIP 48 SOUTH, RANGE 42 EAST  
N.T.S.

**Exhibit** 1

**STAFF REPORT**

**Project Name:** MLK Blvd (Blount to Powerline)  
**Permit Number:** 06-07031-P                      **License Number:** SWM2014-075-0  
**Application Number:** 141009-16                      **Concurrent Application:** L2014-222  
**Application Type:** New Environmental Resource  
**Location:** Broward County                      **Section-Township-Range:** 33-48-42  
**Permittee's Name:** City of Pompano Beach

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**Project Area:** 9.12 acres                      **Drainage Area:** 9.12 acres  
**Project Land Use:** Roadway  
**Drainage Basin:** C-14  
**Receiving Body:** Existing System

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**Purpose:**

The construction and operation of a surface water management system to serve 9.12 acres of roadway improvements.

**Project Evaluation:**

**Project Site Description:**

The site is presently developed as a four-lane roadway. The proposed work will be conducted along Martin Luther King Blvd, from East of Blount Road to Powerline Road in Pompano Beach.

**Proposed Project Design:**

The proposed construction will include 0.79 acres of new asphalt (roadway lanes) and the proposed drainage system. A system of swales, inlets and culverts will direct the storm runoff to 0.72 acres of dry retention roadside swales and 215 LF of exfiltration trench (50 LF of 6' W x 5.5' H and 165 LF of 10' W x 5' H) for water quality treatment and storm runoff attenuation prior to discharging through a connection into the FDOT roadway drainage system. The discharge into the FDOT system is controlled to a discharge of 0.37 cfs via a 3" bleeder with an invert elevation at 10.50' NAVD.

The applicant's consultant has demonstrated through plans and calculations that the proposed project meets the requirements of the Code.

**Control Elevation:**

Control Elevation = 5.5 ft, NAVD    WSWT Control Elevation = 5.5 ft, NAVD  
Method of Determination = BC Avg. Wet Season Water Table Map

**Water Quality Design:**

Water quality treatment will be provided in the exfiltration trench system and the roadside dry retention swales for 2.5 inches times the percent impervious over the increased impervious area (0.79 acres) and the reconstructed impervious area (0.21 acres).

<u>Basin Name</u>	<u>Treatment Type</u>	<u>Treatment Method</u>	<u>Volume Required</u>	<u>Volume Provided</u>
MLK Blvd - Blount to Powerline	Treatment	Exfiltration Trench	0.21 ac-ft	0.17 ac-ft
MLK Blvd - Blount to Powerline	Treatment	Dry Retention	0.21 ac-ft	0.18 ac-ft
			Total: 0.35 ac-ft	

**Environmental Summary:**

No wetland areas were identified within the project area and no wetland impacts are anticipated from the development of this parcel. Therefore, no wetland mitigation requirements have been included in the permit for this project.

The proposed activities have been evaluated for potential secondary and cumulative impacts and to determine if the project is contrary to the public interest. Based upon the proposed project design, EPGMD has determined that the project will not cause adverse secondary or cumulative impacts to the water resources and is not contrary to the public interest.

**Special Concerns:**

**Operating Entity:** City of Pompano Beach  
Attention: Alessandra Delfico, P.E., City Engineer  
1201 NE 5 Ave  
Pompano Beach, FL 33060

**Waste Water System/Supplier:** BCUD #4

**Exhibit** 2c

**STAFF RECOMMENDATION:**

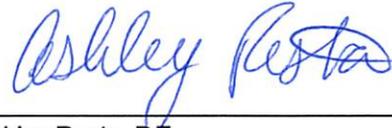
South Florida Water Management District and Broward County rules have been adhered to and an Individual Permit should be granted.

**SWM2014-075-0, ERP 06-07031:**

**Surface Water Management Program:**



Alex Lopez



Ashley Resta, P.E.

**Aquatic and Wetland Resources Program:**



Linda Sunderland, Manager

**STAFF REPORT DISTRIBUTION LIST  
ADDRESSES**

**Owner:**

City of Pompano Beach  
Attention: Alessandra Delfico, P.E., City Engineer  
1201 NE 5 Ave  
Pompano Beach, FL 33060

**Applicant:**

City of Pompano Beach  
Attention: Alessandra Delfico, P.E., City Engineer  
1201 NE 5 Ave  
Pompano Beach, FL 33060

**Engineering  
Consultant:**

Keith and Associates, Inc.  
Attention: James A. Thiele, P.E.  
301 E Atlantic Blvd  
Pompano Beach, FL 33060

**Other:**

City of Pompano Beach Building Official  
Army Corps of Engineers

# CONSTRUCTION PLANS

## FOR

# MARTIN LUTHER KING JR. BLVD. (HAMMONDVILLE RD.)

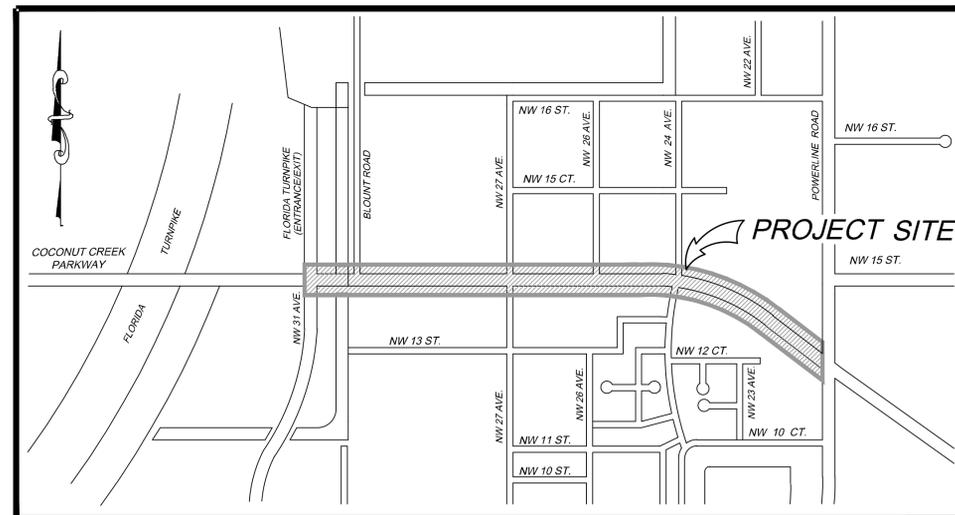
# FROM NW 31ST AVE. TO POWERLINE RD. (S.R. 845)

## ROADWAY IMPROVEMENTS

### CITY OF POMPANO BEACH, BROWARD COUNTY, FLORIDA

PREPARED FOR:

#### INDEX



#### VICINITY MAP

SECTION 33, TOWNSHIP 48 SOUTH, RANGE 42 EAST  
N.T.S.

#### LAND DESCRIPTION

A PORTION OF MARTIN LUTHER KING, JR. BOULEVARD THAT PORTION OF DR. MARTIN LUTHER KING JR. BOULEVARD (HAMMONDVILLE ROAD) RIGHT-OF-WAY; SAID PORTION BEING BOUNDED ON THE EAST BY POWERLINE ROAD (S.R. S-809) AND BOUNDED ON THE WEST BY THE SUNSHINE STATE PARKWAY (FLORIDA TURNPIKE). SAID LANDS LYING IN THE CITY OF POMPANO BEACH, BROWARD COUNTY, FLORIDA.

ALL EXISTING/PROPOSED ELEVATIONS SHOWN  
ARE BASED ON NAVD1988  
CONVERSION TO NGVD1929 = +1.54'

Exhibit 4



**CITY COMMISSION**  
**LAMAR FISHER - MAYOR**  
**GEORGE BRUMMER - VICE MAYOR**  
**BARRY DOCKSWELL - COMMISSIONER**  
**CHARLOTTE BURRIE - COMMISSIONER**  
**REX HARDIN - COMMISSIONER**  
**WOODROW J. POITIER - COMMISSIONER**

**KEITH AND ASSOCIATES, INC.**  
 CIVIL/ ROADWAY ENGINEERING AND SURVEYING  
 301 EAST ATLANTIC BOULEVARD  
 POMPANO BEACH, FL 33060  
 T: 954-788-3400 F: 954-788-3500

**IBI GROUP (FLORIDA), INC.**  
 PLANNING AND LANDSCAPE ARCHITECTURE  
 2200 PARK CENTRAL BLVD. NORTH, SUITE 100  
 POMPANO BEACH, FL 33064  
 T: 954-974-2200 F: 954-973-2686

**CALVIN, GIORDANO AND ASSOCIATES, INC.**  
 TRAFFIC ENGINEERING  
 1800 ELLER DRIVE, SUITE 600  
 FORT LAUDERDALE, FL 33316  
 T: 954-921-7781 F: 954-921-8807

THESE PLANS MAY HAVE BEEN  
REDUCED IN SIZE BY REPRODUCTION.  
THIS MUST BE CONSIDERED WHEN  
OBTAINING SCALED DATA.



COVER	TOPOGRAPHIC SURVEY
C-1	ENGINEERING NOTES AND LEGEND
C-2 - C-7	ROADWAY PLANS
C-8 - C-13	PAVING, GRADING AND DRAINAGE PLANS
C-14 - C-19	PAVEMENT MARKING AND SIGNAGE PLANS
C-20 - C-21	ROADWAY SECTIONS
C-22 - C-27	CONSTRUCTION DETAILS
C-23	CONSTRUCTION DETAILS
C-28	CONSTRUCTION NOTES
C-28A	BROWARD COUNTY TRAFFIC ENGINEERING DIVISION - GENERAL AND PAY ITEM NOTES
C-29	STORMWATER POLLUTION PREVENTION PLAN, DETAILS AND NOTES
TCP-1	TRAFFIC CONTROL GENERAL NOTES
TCP-2 - TCP-4	TRAFFIC CONTROL PLANS
TM01 - TM04	TREE MANAGEMENT PLANS
L01 - L06 - L02	LANDSCAPE PLANS
L07	LANDSCAPE DETAILS
IR01 - IR06 - IR02	IRRIGATION PLANS
IR07	IRRIGATION DETAILS
IR08	IRRIGATION LEGEND AND NOTES

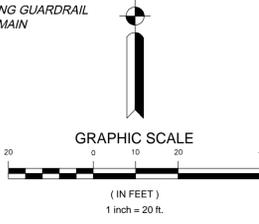
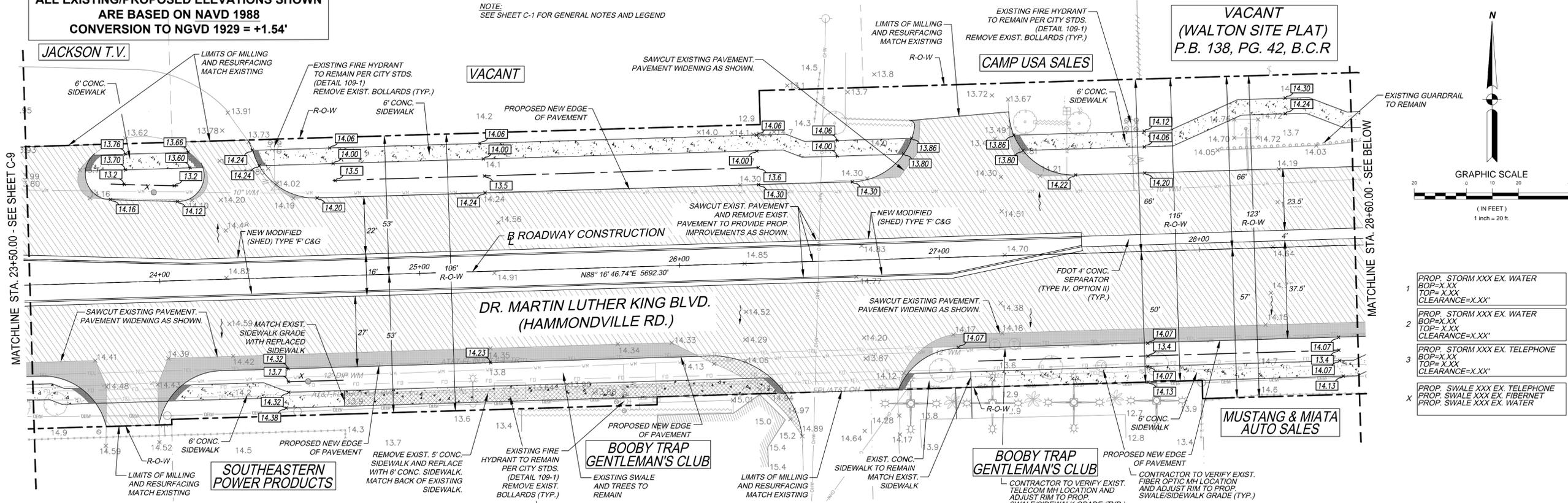


301 EAST ATLANTIC BOULEVARD  
 POMPANO BEACH, FLORIDA 33060-6643  
 STATE OF FLORIDA CERTIFICATE OF  
 AUTHORIZATION NUMBER - 7928  
 (954) 788-3400 FAX (954) 788-3500

PROJECT No. 07470.50 DECEMBER 2012  
 LATEST REVISIONS OCTOBER 2014

ALL EXISTING/PROPOSED ELEVATIONS SHOWN  
ARE BASED ON NAVD 1988  
CONVERSION TO NGVD 1929 = +1.54'

NOTE:  
SEE SHEET C-1 FOR GENERAL NOTES AND LEGEND



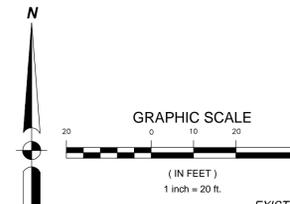
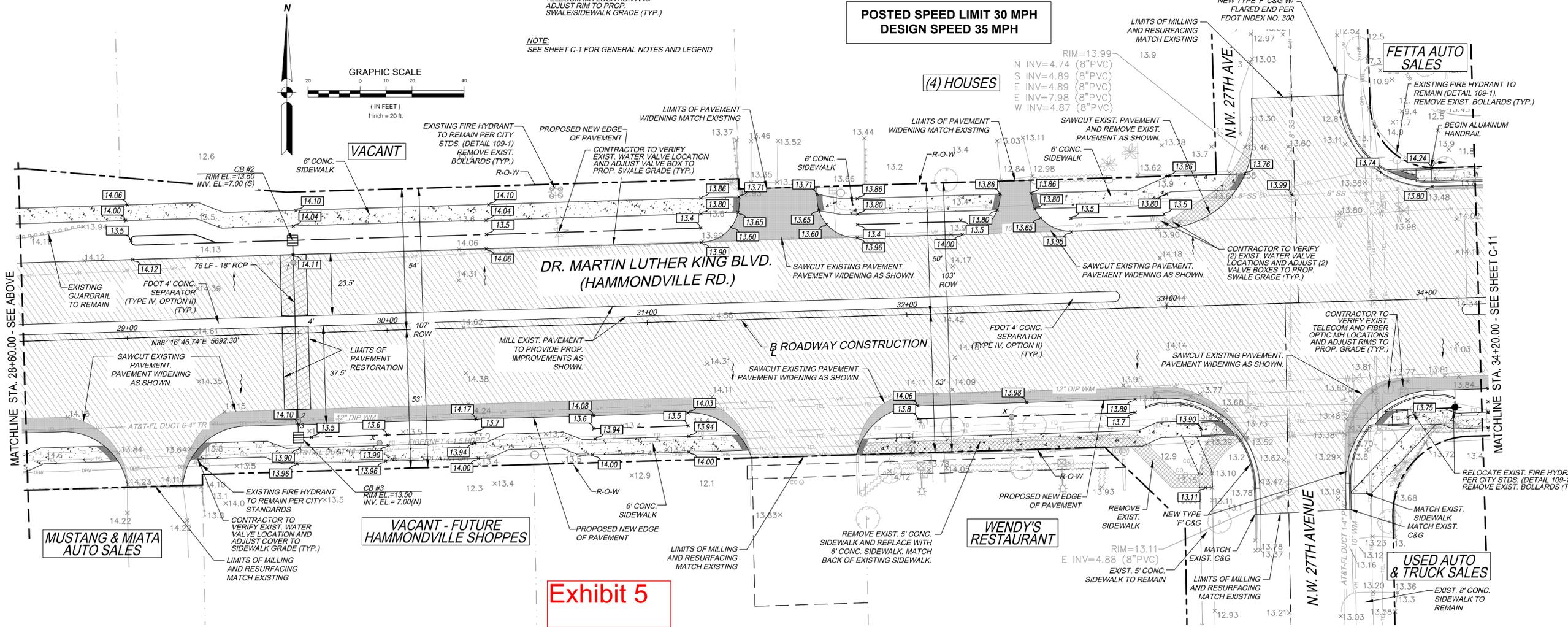
- 1 PROP. STORM XXX EX. WATER  
BOP=X.XX  
TOP=X.XX  
CLEARANCE=X.XX'
- 2 PROP. STORM XXX EX. WATER  
BOP=X.XX  
TOP=X.XX  
CLEARANCE=X.XX'
- 3 PROP. STORM XXX EX. TELEPHONE  
BOP=X.XX  
TOP=X.XX  
CLEARANCE=X.XX'
- X PROP. SWALE XXX EX. TELEPHONE  
PROP. SWALE XXX EX. FIBER NET  
PROP. SWALE XXX EX. WATER

DATE: SEPTEMBER, 2012  
SCALE: 1" = 20'  
DRAWN BY: D.C.  
DESIGN BY: M.C.  
CHECKED BY: J.T.

REVISION	DATE

JAMES A. THELLE, P.E.  
FLORIDA REG. PROJ. #32566  
(FOR THE FIRM)

**KEITH**  
consulting engineers  
301 EAST ATLANTIC BOULEVARD  
POMPANO BEACH, FLORIDA 33060-6643  
(954) 788-3400 FAX (954) 788-3500  
STATE OF FLORIDA CERTIFICATE OF  
AUTHORIZATION NUMBER - 7928



NOTE:  
SEE SHEET C-1 FOR GENERAL NOTES AND LEGEND

POSTED SPEED LIMIT 30 MPH  
DESIGN SPEED 35 MPH

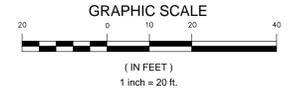
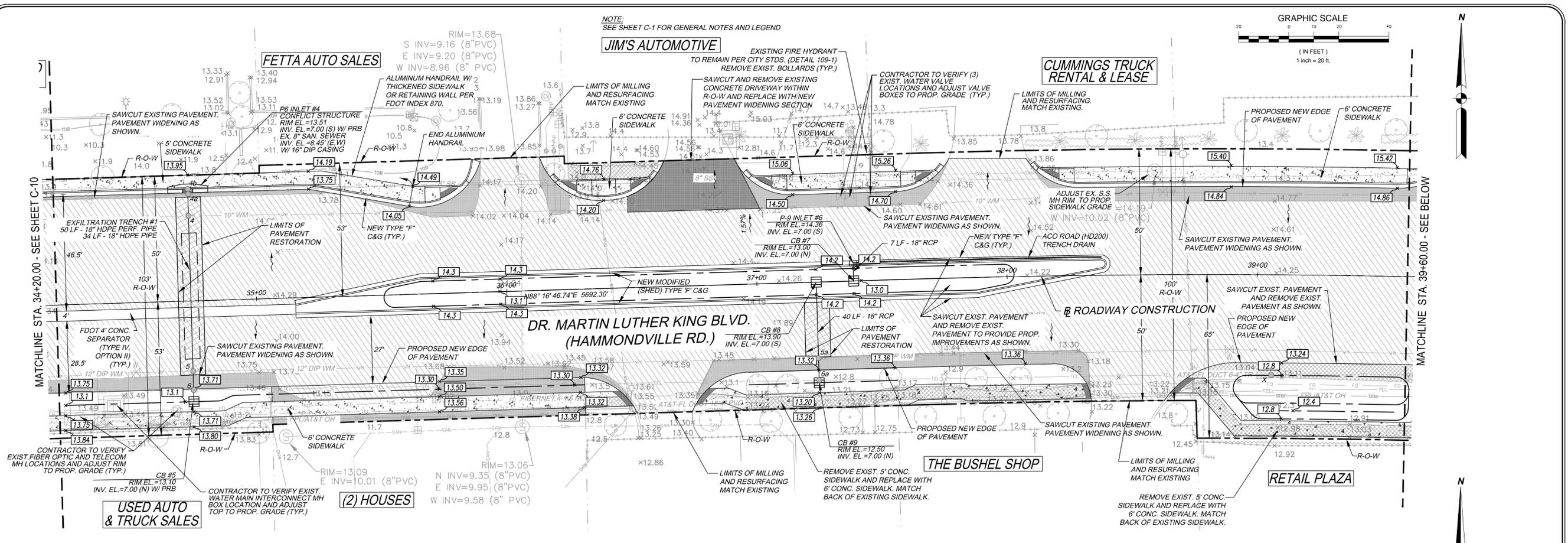
- RELOCATE EXIST. FIRE HYDRANT  
PER CITY STDS. (DETAIL 109-1)  
REMOVE EXIST. BOLLARDS (TYP.)
- BEGIN ALUMINUM  
HANDRAIL
- MATCH EXIST.  
SIDEWALK  
MATCH EXIST.  
C&G
- EXIST. 8" CONC.  
SIDEWALK TO REMAIN

**MARTIN LUTHER KING JR. BOULEVARD  
ROAD IMPROVEMENTS  
PAVING, GRADING AND DRAINAGE PLAN**  
BROWARD COUNTY, FLORIDA  
CITY OF POMPANO BEACH

SHEET NO. C-10

PROJECT NO. 07470.50

Exhibit 5



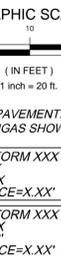
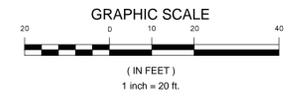
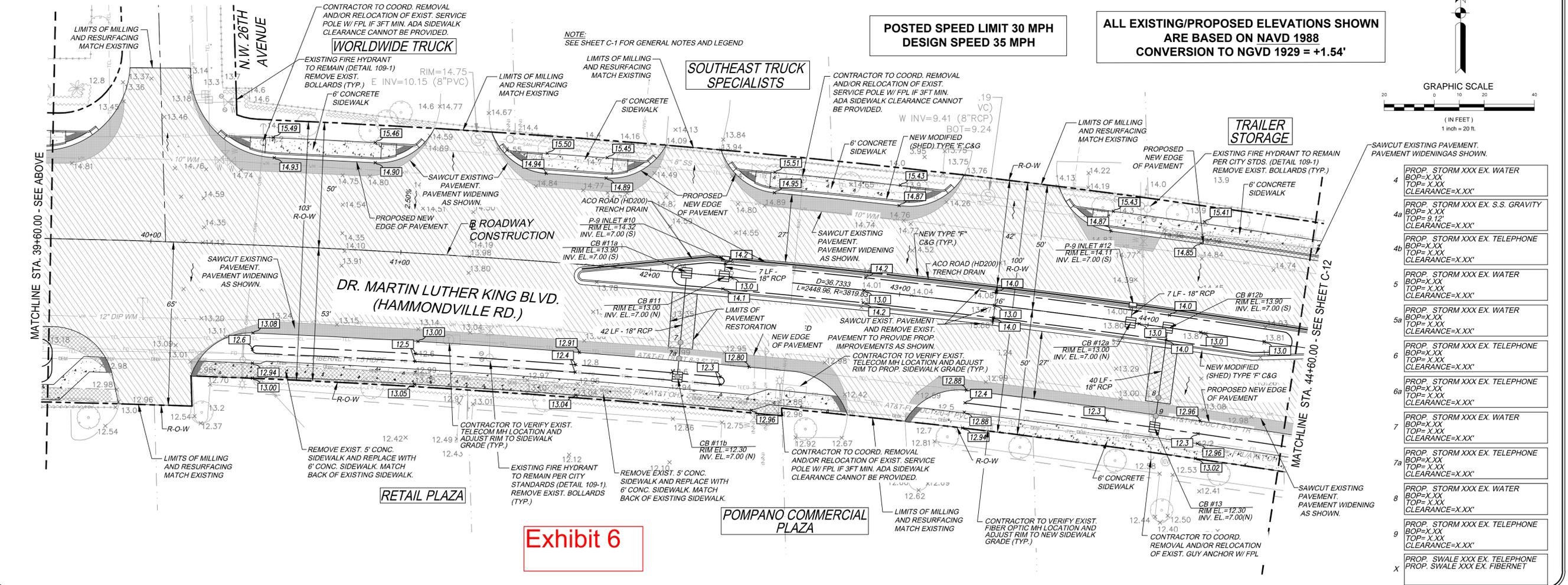
NOTE: SEE SHEET C-1 FOR GENERAL NOTES AND LEGEND

DATE: SEPTEMBER, 2012	SCALE: 1" = 20'	DRAWN BY: D.C.	DESIGN BY: M.C.	CHECKED BY: J.L.
-----------------------	-----------------	----------------	-----------------	------------------

REVISION	DATE

JAMES A. THELLE, P.E.  
FLORIDA REG. NO. 33256  
(FOR THE FIRM)

**KEITH**  
consulting engineers  
301 EAST ATLANTIC BOULEVARD  
POMPANO BEACH, FLORIDA 33060-6643  
(954) 788-3400 FAX (954) 788-3500  
STATE OF FLORIDA CERTIFICATE OF  
AUTHORIZATION NUMBER - 7928



NOTE: SEE SHEET C-1 FOR GENERAL NOTES AND LEGEND

ALL EXISTING/PROPOSED ELEVATIONS SHOWN  
ARE BASED ON NAVD 1988  
CONVERSION TO NGVD 1929 = +1.54'

POSTED SPEED LIMIT 30 MPH  
DESIGN SPEED 35 MPH

**KEITH**  
consulting engineers  
301 EAST ATLANTIC BOULEVARD  
POMPANO BEACH, FLORIDA 33060-6643  
(954) 788-3400 FAX (954) 788-3500  
STATE OF FLORIDA CERTIFICATE OF  
AUTHORIZATION NUMBER - 7928

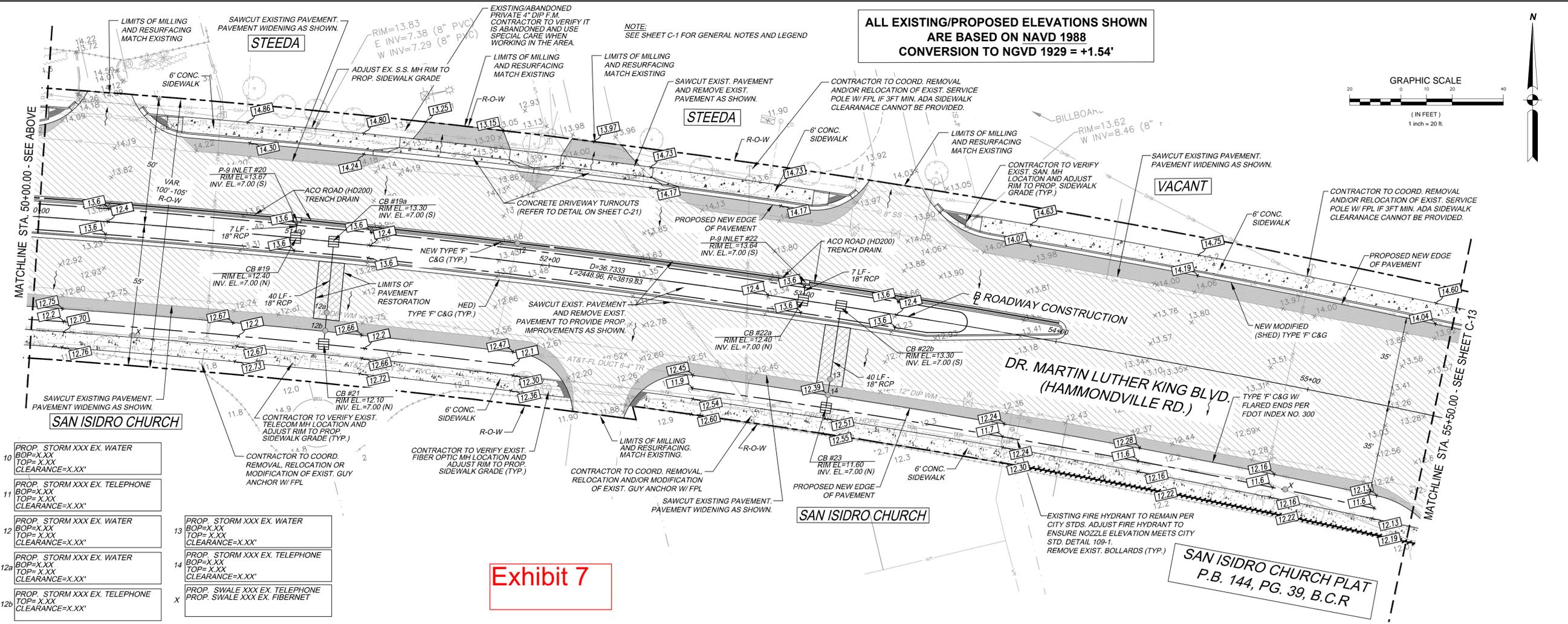
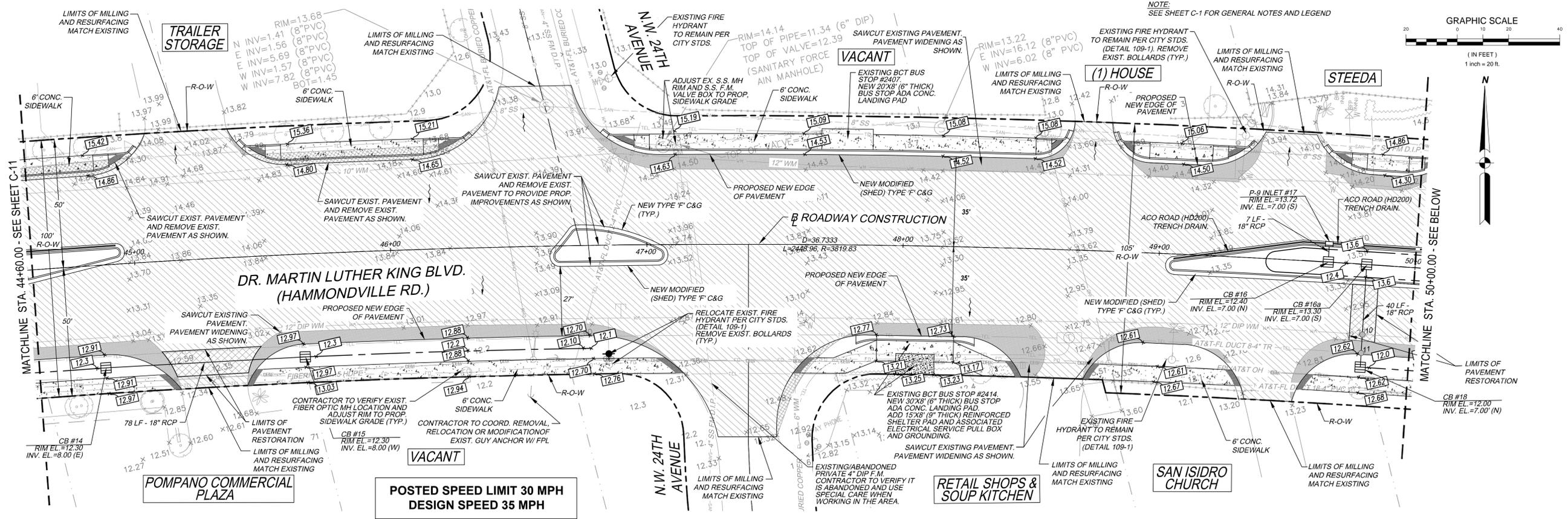
4	PROP. STORM XXX EX. WATER BOP=X.XX TOP=X.XX CLEARANCE=X.XX'
4a	PROP. STORM XXX EX. S.S. GRAVITY BOP=X.XX TOP=X.XX CLEARANCE=X.XX'
4b	PROP. STORM XXX EX. TELEPHONE BOP=X.XX TOP=X.XX CLEARANCE=X.XX'
5	PROP. STORM XXX EX. WATER BOP=X.XX TOP=X.XX CLEARANCE=X.XX'
5a	PROP. STORM XXX EX. WATER BOP=X.XX TOP=X.XX CLEARANCE=X.XX'
6	PROP. STORM XXX EX. TELEPHONE BOP=X.XX TOP=X.XX CLEARANCE=X.XX'
6a	PROP. STORM XXX EX. TELEPHONE BOP=X.XX TOP=X.XX CLEARANCE=X.XX'
7	PROP. STORM XXX EX. WATER BOP=X.XX TOP=X.XX CLEARANCE=X.XX'
7a	PROP. STORM XXX EX. TELEPHONE BOP=X.XX TOP=X.XX CLEARANCE=X.XX'
8	PROP. STORM XXX EX. WATER BOP=X.XX TOP=X.XX CLEARANCE=X.XX'
9	PROP. STORM XXX EX. TELEPHONE BOP=X.XX TOP=X.XX CLEARANCE=X.XX'
x	PROP. SWALE XXX EX. TELEPHONE PROP. SWALE XXX EX. FIBERNET

Exhibit 6

SHEET NO. C-11

PROJECT NO. 07470.50

N:\07470.50\MLK\Bid Improvements - PB\CBAL\Engineering\Chad\dwg\07470.50.PCD.dwg (20) Skala.rvt



**ALL EXISTING/PROPOSED ELEVATIONS SHOWN  
ARE BASED ON NAVD 1988  
CONVERSION TO NGVD 1929 = +1.54'**

- 10 PROP. STORM XXX EX. WATER  
BOP=X.XX  
TOP=X.XX  
CLEARANCE=X.XX'
- 11 PROP. STORM XXX EX. TELEPHONE  
BOP=X.XX  
TOP=X.XX  
CLEARANCE=X.XX'
- 12 PROP. STORM XXX EX. WATER  
BOP=X.XX  
TOP=X.XX  
CLEARANCE=X.XX'
- 12a PROP. STORM XXX EX. WATER  
BOP=X.XX  
TOP=X.XX  
CLEARANCE=X.XX'
- 12b PROP. STORM XXX EX. TELEPHONE  
BOP=X.XX  
TOP=X.XX  
CLEARANCE=X.XX'
- 13 PROP. STORM XXX EX. WATER  
BOP=X.XX  
TOP=X.XX  
CLEARANCE=X.XX'
- 14 PROP. STORM XXX EX. TELEPHONE  
BOP=X.XX  
TOP=X.XX  
CLEARANCE=X.XX'
- x PROP. SWALE XXX EX. TELEPHONE  
PROP. SWALE XXX EX. FIBERNET

**Exhibit 7**

**SAN ISIDRO CHURCH PLAT  
P.B. 144, PG. 39, B.C.R**

DATE: SEPTEMBER, 2012	SCALE: 1"=20'	DRAWN BY: D.C.	DESIGN BY: M.C.	CHECKED BY: J.L.
-----------------------	---------------	----------------	-----------------	------------------

REVISION	DATE

JAMES A. THELLE, P.E.  
FLORIDA REG. NO. 33256  
(FOR THE FIRM)

**KEITH**  
consulting engineers  
301 EAST ATLANTIC BOULEVARD  
POMPAHO BEACH, FLORIDA 33060-6643  
(954) 788-3400 FAX (954) 788-3500  
STATE OF FLORIDA CERTIFICATE OF  
AUTHORIZATION NUMBER - 7828

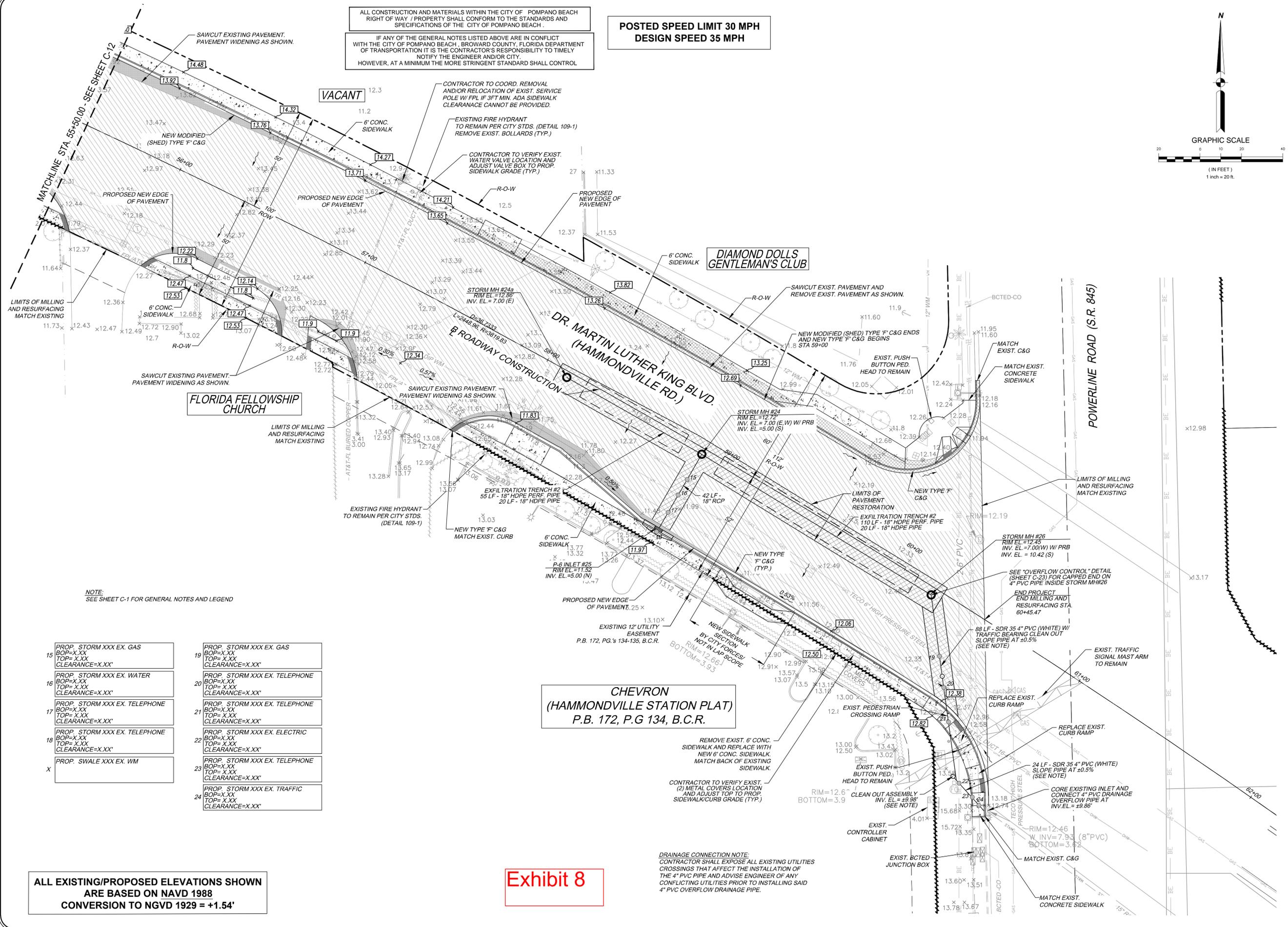
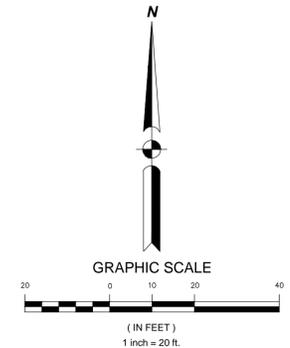
**MARTIN LUTHER KING JR. BOULEVARD  
ROAD IMPROVEMENTS  
PAVING, GRADING AND DRAINAGE PLAN**  
BROWARD COUNTY, FLORIDA  
CITY OF POMPAHO BEACH

SHEET NO. **C-12**  
PROJECT NO. **07470.50**

ALL CONSTRUCTION AND MATERIALS WITHIN THE CITY OF POMPANO BEACH RIGHT OF WAY / PROPERTY SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE CITY OF POMPANO BEACH.

IF ANY OF THE GENERAL NOTES LISTED ABOVE ARE IN CONFLICT WITH THE CITY OF POMPANO BEACH, BROWARD COUNTY, FLORIDA DEPARTMENT OF TRANSPORTATION IT IS THE CONTRACTOR'S RESPONSIBILITY TO TIMELY NOTIFY THE ENGINEER AND/OR CITY. HOWEVER, AT A MINIMUM THE MORE STRINGENT STANDARD SHALL CONTROL.

**POSTED SPEED LIMIT 30 MPH**  
**DESIGN SPEED 35 MPH**



NOTE:  
SEE SHEET C-1 FOR GENERAL NOTES AND LEGEND

15	PROP. STORM XXX EX. GAS BOP=X.XX TOP=X.XX CLEARANCE=X.XX'	19	PROP. STORM XXX EX. GAS BOP=X.XX TOP=X.XX CLEARANCE=X.XX'
16	PROP. STORM XXX EX. WATER BOP=X.XX TOP=X.XX CLEARANCE=X.XX'	20	PROP. STORM XXX EX. TELEPHONE BOP=X.XX TOP=X.XX CLEARANCE=X.XX'
17	PROP. STORM XXX EX. TELEPHONE BOP=X.XX TOP=X.XX CLEARANCE=X.XX'	21	PROP. STORM XXX EX. TELEPHONE BOP=X.XX TOP=X.XX CLEARANCE=X.XX'
18	PROP. STORM XXX EX. TELEPHONE BOP=X.XX TOP=X.XX CLEARANCE=X.XX'	22	PROP. STORM XXX EX. ELECTRIC BOP=X.XX TOP=X.XX CLEARANCE=X.XX'
X	PROP. SWALE XXX EX. WM	23	PROP. STORM XXX EX. TELEPHONE BOP=X.XX TOP=X.XX CLEARANCE=X.XX'
		24	PROP. STORM XXX EX. TRAFFIC BOP=X.XX TOP=X.XX CLEARANCE=X.XX'

**ALL EXISTING/PROPOSED ELEVATIONS SHOWN  
 ARE BASED ON NAVD 1988  
 CONVERSION TO NGVD 1929 = +1.54'**

**Exhibit 8**

DATE: SEPTEMBER, 2012  
 SCALE: 1" = 20'  
 DRAWN BY: D.C.  
 DESIGN BY: M.C.  
 CHECKED BY: J.T.L.

REVISION	DATE

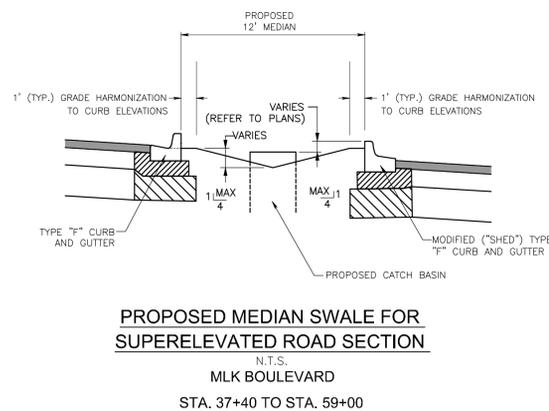
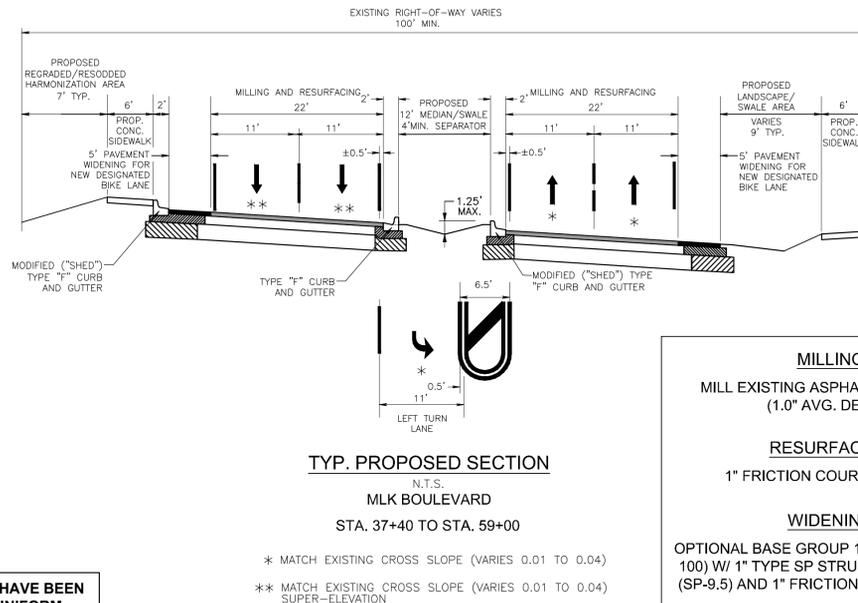
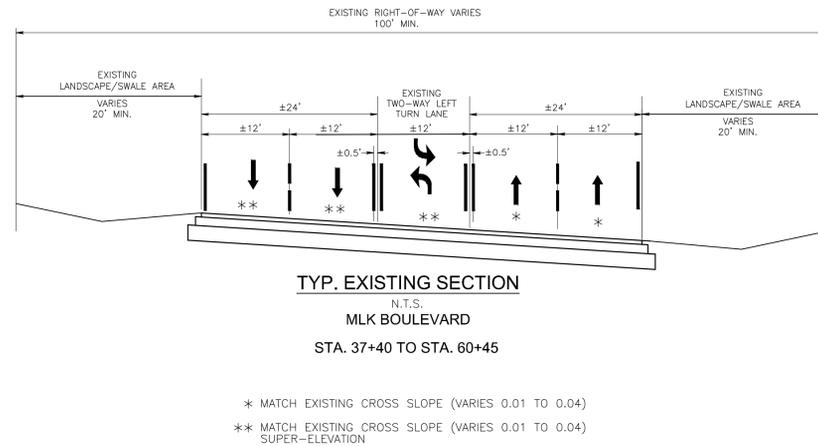
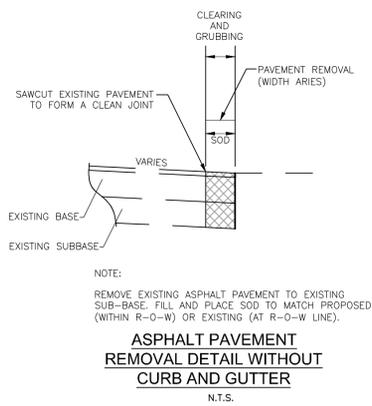
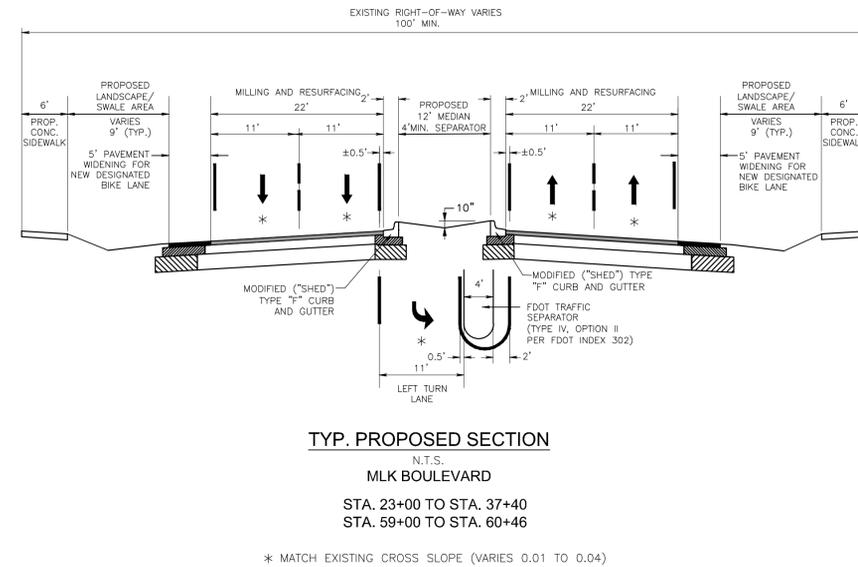
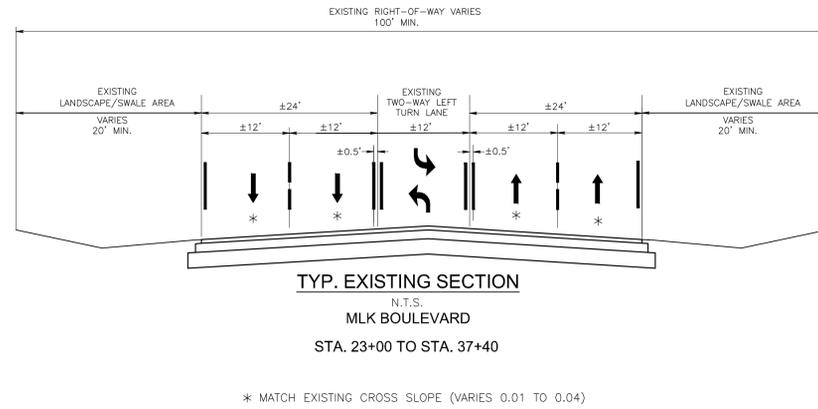
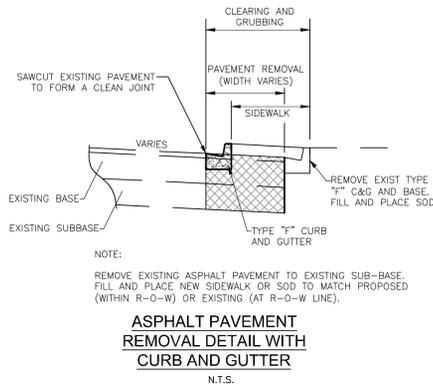
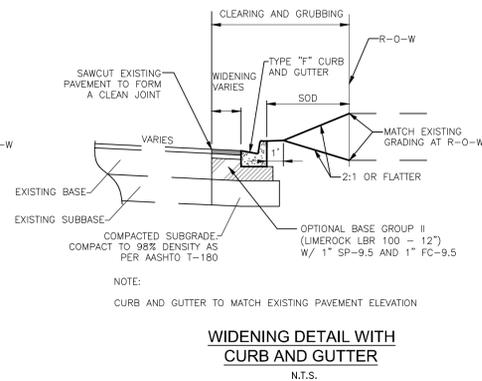
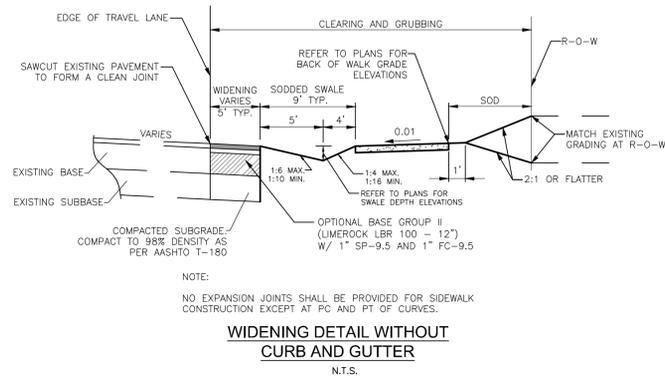
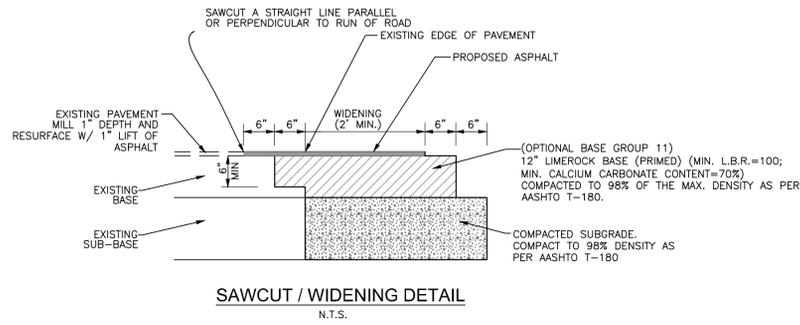
JAMES A. THELLE, P.E.  
 FLORIDA REG. NO. 33256  
 (FOR THE FIRM)

**KEITH**  
 consulting engineers  
 301 EAST ATLANTIC BOULEVARD  
 POMPANO BEACH, FLORIDA 33060-6643  
 (954) 788-3400 FAX (954) 788-3500  
 STATE OF FLORIDA CERTIFICATE OF  
 AUTHORIZATION NUMBER - 7928

**MARTIN LUTHER KING JR. BOULEVARD  
 ROAD IMPROVEMENTS  
 PAVING, GRADING AND DRAINAGE PLAN**  
 BROWARD COUNTY, FLORIDA  
 CITY OF POMPANO BEACH

SHEET NO. **C-13**

PROJECT NO. **07470.50**



THE PUBLIC ROADWAY(S) INDICATED ON THESE PLANS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE "MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION AND MAINTENANCE FOR STREETS AND HIGHWAYS - STATE OF FLORIDA."

ALL CONSTRUCTION MATERIALS WITHIN THE CITY OF POMPANO BEACH'S RIGHT-OF-WAY SHALL CONFORM TO STANDARDS AND SPECIFICATIONS OF THE CITY OF POMPANO BEACH AND/OR OTHER APPLICABLE STANDARDS (INCLUDING REQUIREMENTS FOR BROWARD COUNTY TRAFFICWAYS). IF ANY OF THE DETAILS AND NOTES SHOWN ABOVE ARE IN CONFLICT WITH CITY AND/OR OTHER APPLICABLE STANDARDS, THE CONTRACTOR IS REQUIRED TO IMMEDIATELY NOTIFY THE ENGINEER.

EXISTING POSTED SPEED LIMIT 40 MPH  
EXISTING DESIGN SPEED 50 MPH

PROPOSED POSTED SPEED LIMIT 30 MPH  
DESIGN SPEED 35 MPH

**MILLING**  
MILL EXISTING ASPHALT PAVEMENT (1.0" AVG. DEPTH)

**RESURFACING**  
1" FRICTION COURSE (FC-9.5)

**WIDENING**  
OPTIONAL BASE GROUP 11 (LIMEROCK LBR 100) W/ 1" TYPE SP STRUCTURAL COURSE (SP-9.5) AND 1" FRICTION COURSE (FC-9.5)

Exhibit 9

DATE: MAY 2012  
SCALE: N.T.S.  
DRAWN BY: D.C.  
DESIGN BY: M.C.  
CHECKED BY: J.T.

REVISION

DATE

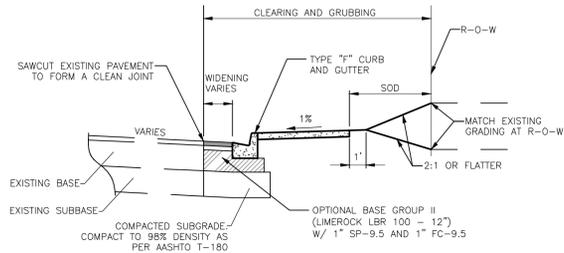
JAMES A. THIELE, P.E.  
REGISTERED PROFESSIONAL ENGINEER  
FLORIDA LICENSE NO. 33256  
(FOR THE FIRM)

**KEITH**  
CONSULTING ENGINEERS, INC.  
301 EAST ATLANTIC BOULEVARD  
POMPANO BEACH, FLORIDA 33060-6643  
(954) 786-3400 FAX (954) 786-3500  
STATE OF FLORIDA CERTIFICATE OF AUTHORIZATION NUMBER - 7928

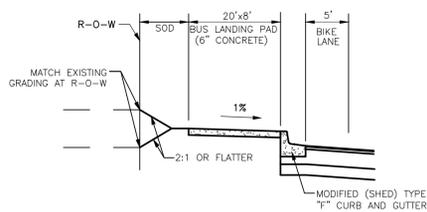
MARTIN LUTHER KING JR. BOULEVARD  
ROADWAY IMPROVEMENTS  
ROADWAY SECTIONS  
BROWARD COUNTY, FLORIDA  
CITY OF POMPANO BEACH

SHEET NO. C-20

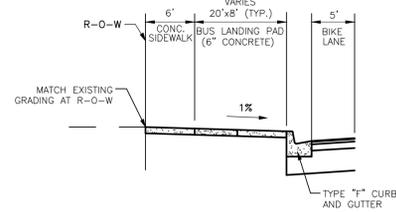
PROJECT NO. 07470.50



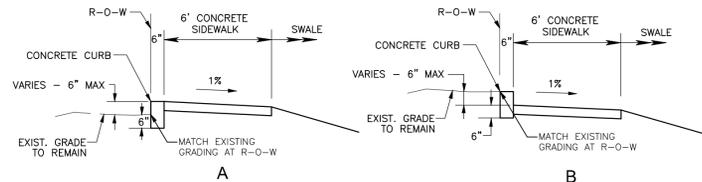
**SIDEWALK AT THE BACK OF CURB DETAIL**  
N.T.S.



**BUS LANDING PAD ALONG NORTH SIDE OF MLK BLVD.**  
N.T.S.

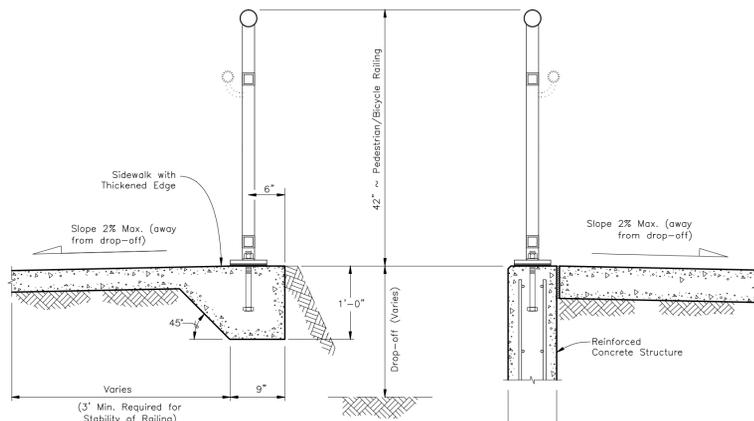


**BUS LANDING PAD ALONG SOUTH SIDE OF MLK BLVD.**  
N.T.S.



NOTE:  
1. THESE DETAILS SHALL BE USED FOR ALL LOCATIONS WHERE NO RIGHT OF ENTRY, OR PERMANENT EASEMENTS EXIST, AS DIRECTED BY THE ENGINEER AND/OR CITY/CRA.

**BACK OF SIDEWALK**  
N.T.S.

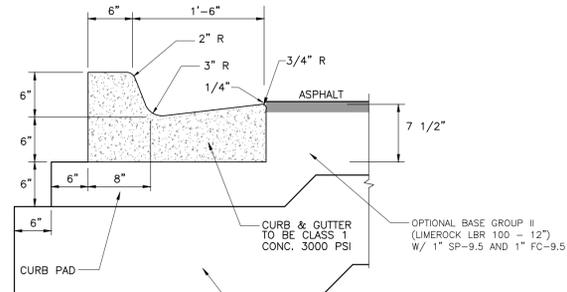


**TYPICAL SECTION ON CONCRETE SIDEWALK (Case I)**

**TYPICAL SECTION ON RETAINING WALL (Case II)**

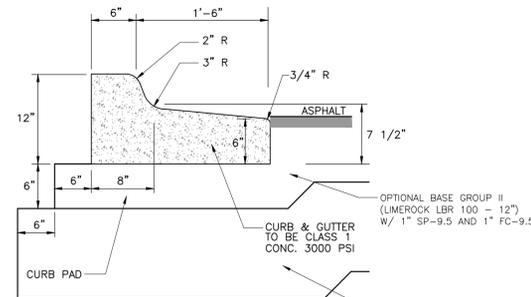
NOTE:  
1. CONTRACTOR SHALL INSTALL ALUMINUM HANDRAIL PER FDOT INDEX 870 WHEN DROP-OFF CONDITION IMMEDIATELY ADJACENT TO SIDEWALK EXCEEDS 6 INCHES (CASE II) AND/OR GROUND SLOPES EXCEED 2:1 (H:V) WITHIN 1 FOOT TO THE BACK OF WALK (CASE I).

**ALUMINUM RAILING FOR DROP-OFF BEHIND SIDEWALK**  
N.T.S.



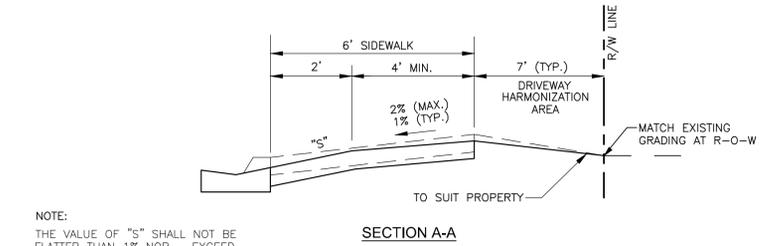
NOTE:  
ALL TYPE F-CURB SHALL BE IN ACCORDANCE WITH THE STANDARD REQUIREMENTS OF THE FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT).

**TYPE 'F' CURB & GUTTER**  
N.T.S.



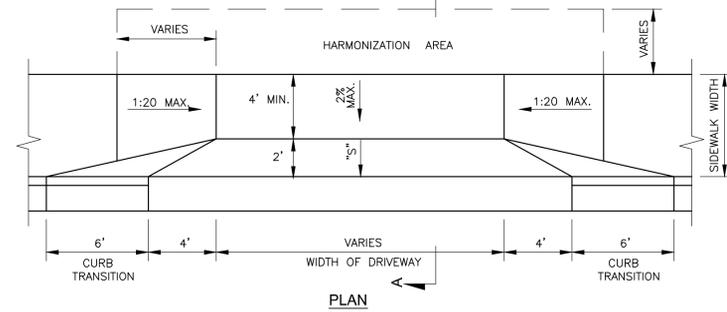
NOTE:  
ALL TYPE F-CURB SHALL BE IN ACCORDANCE WITH THE STANDARD REQUIREMENTS OF THE FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT).

**MODIFIED (SHED) TYPE 'F' CURB & GUTTER**  
N.T.S.

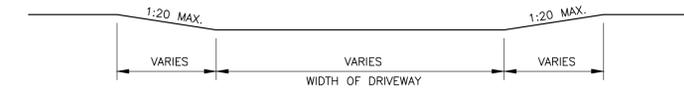


NOTE:  
THE VALUE OF "S" SHALL NOT BE FLATTER THAN 1% NOR EXCEED THE MAXIMUM ALLOWED BY FDOT INDEX 515.

**SECTION A-A**

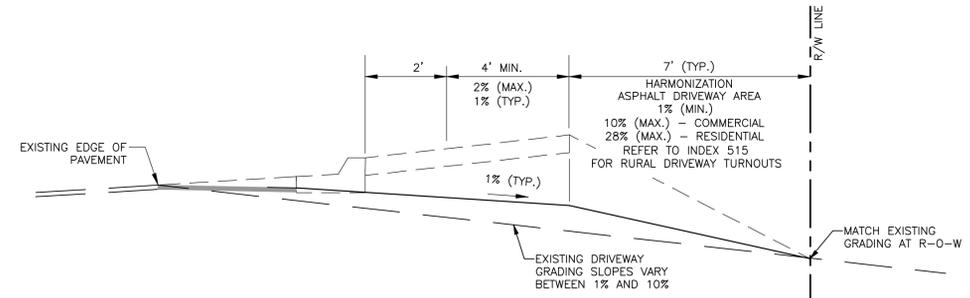


**PLAN**



**BACK OF SIDEWALK PROFILE**

**CONCRETE DRIVEWAY TURNOUT DETAIL**  
N.T.S.



**ASPHALT DRIVEWAY DETAIL ON HIGH SIDE OF SUPER-ELEVATED ROADWAY SECTION**  
N.T.S.

STA. 38+00 TO STA. 53+00

**Exhibit 10**

THE PUBLIC ROADWAY(S) INDICATED ON THESE PLANS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE "MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION AND MAINTENANCE FOR STREETS AND HIGHWAYS - STATE OF FLORIDA."

ALL CONSTRUCTION MATERIALS WITHIN THE CITY OF POMPANO BEACH'S RIGHT-OF-WAY SHALL CONFORM TO STANDARDS AND SPECIFICATIONS OF THE CITY OF POMPANO BEACH AND/OR OTHER APPLICABLE STANDARDS (INCLUDING REQUIREMENTS FOR BROWARD COUNTY TRAFFICWAYS). IF ANY OF THE DETAILS AND NOTES SHOWN ABOVE ARE IN CONFLICT WITH CITY AND/OR OTHER APPLICABLE STANDARDS, THE CONTRACTOR IS REQUIRED TO IMMEDIATELY NOTIFY THE ENGINEER.

EXISTING POSTED SPEED LIMIT 40 MPH  
EXISTING DESIGN SPEED 50 MPH

PROPOSED POSTED SPEED LIMIT 30 MPH  
DESIGN SPEED 35 MPH

DATE: MAY 2012  
SCALE: N.T.S.  
DRAWN BY:  
DESIGN BY:  
CHECKED BY: J.T.

REVISION

DATE

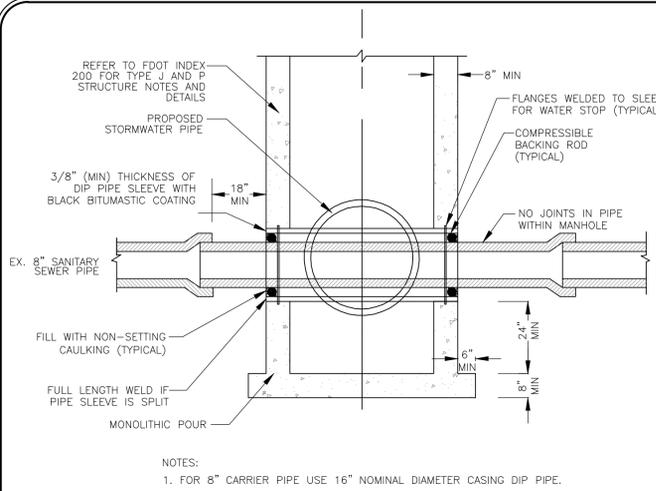
JAMES A. THIELE, P.E.  
REGISTERED PROFESSIONAL ENGINEER  
FLORIDA LICENSE NO. 33256  
(FOR THE FIRM)

**KEITH**  
CONSULTING ENGINEERS  
301 EAST ATLANTIC BOULEVARD  
POMPANO BEACH, FLORIDA 33060-6643  
(954) 786-3400 FAX (954) 786-3500  
STATE OF FLORIDA CERTIFICATE OF AUTHORIZATION NUMBER - 7928

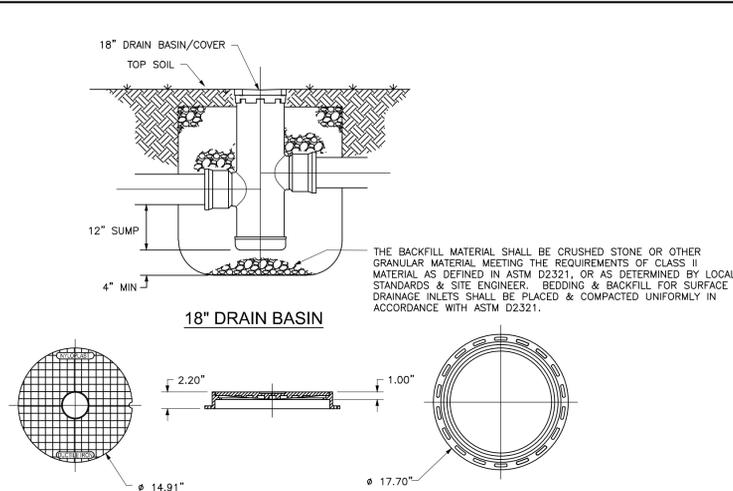
MARTIN LUTHER KING JR. BOULEVARD  
ROAD IMPROVEMENTS  
ROADWAY SECTIONS  
CITY OF POMPANO BEACH  
BROWARD COUNTY, FLORIDA

SHEET NO. C-21

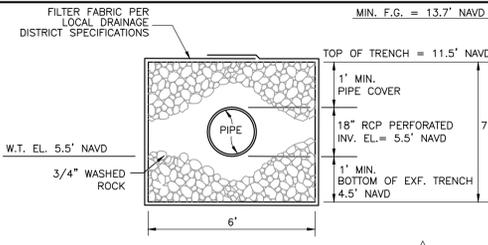
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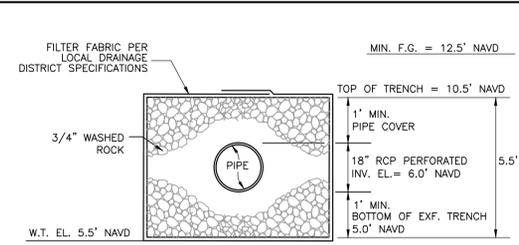
**CONFLICT STRUCTURE**  
PER BCWS STANDARDS (FIGURES 155 AND 167)  
N.T.S.



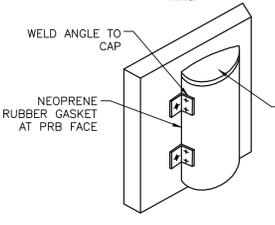
**18\"/>**



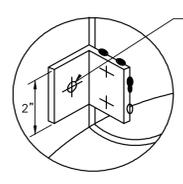
**EXFILTRATION TRENCH SECTION #1**  
N.T.S.



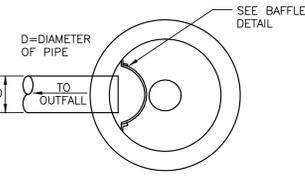
**EXFILTRATION TRENCH SECTION #2**  
N.T.S.



**BAFFLE DETAIL**

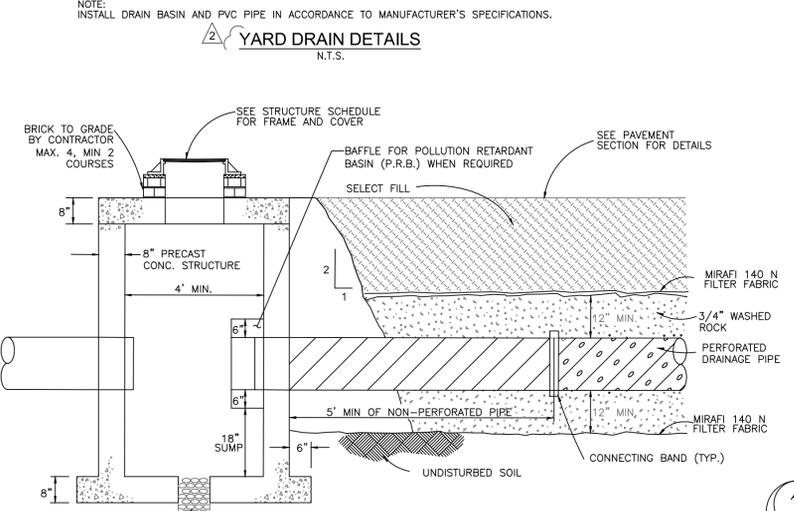


**BRACKET DETAIL**

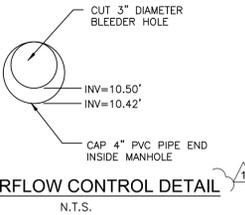


**PLAN VIEW**

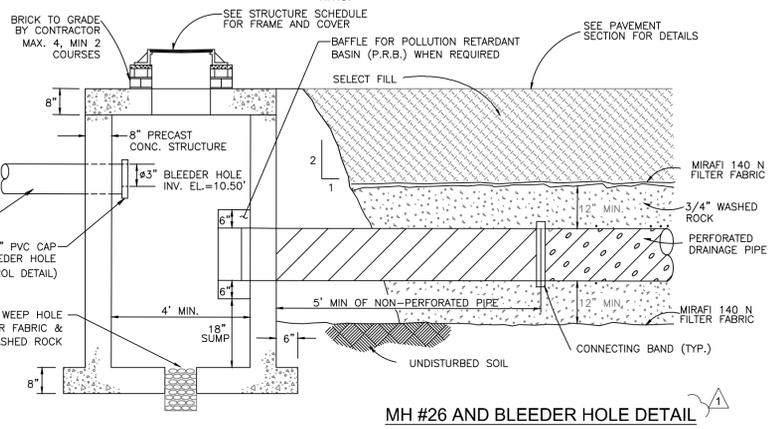
**POLLUTION RETARDANT BAFFLE DETAIL**  
N.T.S.  
NOTE: BAFFLE TO BE A SECTION OF CMP CUT IN HALF. CMP PIPE FOR BAFFLE SHALL BE THE NEXT STANDARD PIPE DIAMETER LARGER THAN THE INFLOW PIPE.



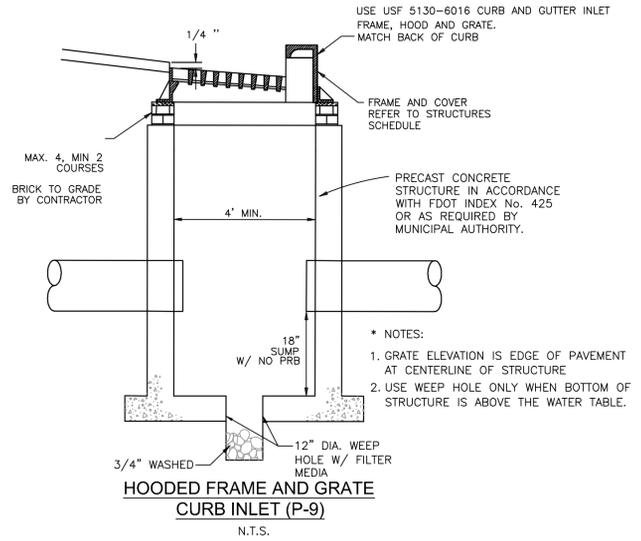
**EXFILTRATION TRENCH**  
N.T.S.



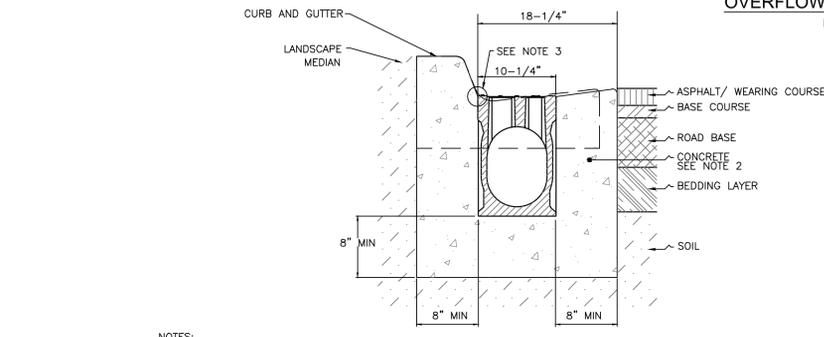
**OVERFLOW CONTROL DETAIL**  
N.T.S.



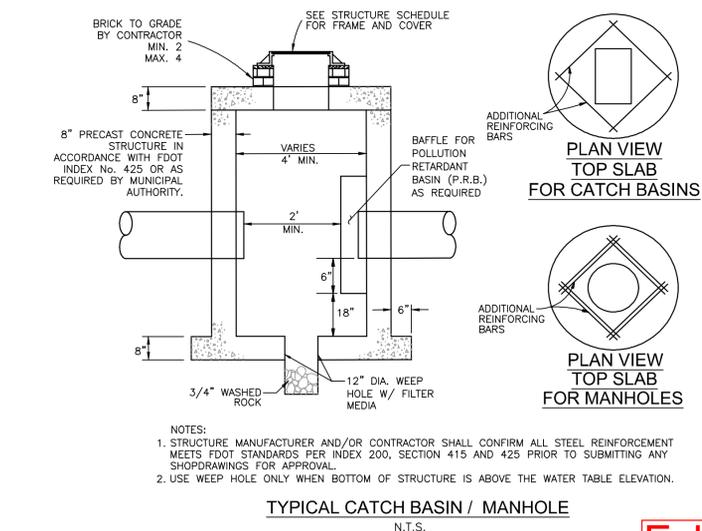
**MH #26 AND BLEEDER HOLE DETAIL**  
N.T.S.



**HOODED FRAME AND GRATE CURB INLET (P-9)**  
N.T.S.



**ACDRAIN HD200 CURB AND GUTTER SECTION DETAIL**  
N.T.S.



**TYPICAL CATCH BASIN / MANHOLE**  
N.T.S.

**PLAN VIEW TOP SLAB FOR CATCH BASINS**

**PLAN VIEW TOP SLAB FOR MANHOLES**

STRUCTURE SCHEDULE			
No.	TYPE	FRAME & GRATE	COMMENTS
1	P-9 CURB INLET	P-9	
2	DITCH BOTTOM INLET - TYPE C	USF 4155-6210	
3	DITCH BOTTOM INLET - TYPE C	USF 4155-6210	
4	P-6 CURB INLET	P-6	CONFLICT STRUCTURE, PRB (S)
5	DITCH BOTTOM INLET - TYPE C	USF 4155-6210	PRB (N)
6	P-9 CURB INLET	P-9	
7	DITCH BOTTOM INLET - TYPE C	USF 4155-6210	
8	DITCH BOTTOM INLET - TYPE C	USF 4155-6210	
9	DITCH BOTTOM INLET - TYPE C	USF 4155-6210	
10	P-9 CURB INLET	P-9	
11	DITCH BOTTOM INLET - TYPE C	USF 4155-6210	
11a	DITCH BOTTOM INLET - TYPE C	USF 4155-6210	
11b	DITCH BOTTOM INLET - TYPE C	USF 4155-6210	
12	P-9 CURB INLET	P-9	
12a	DITCH BOTTOM INLET - TYPE C	USF 4155-6210	
12b	DITCH BOTTOM INLET - TYPE C	USF 4155-6210	
13	DITCH BOTTOM INLET - TYPE C	USF 4155-6210	
14	DITCH BOTTOM INLET - TYPE C	USF 4155-6210	
15	DITCH BOTTOM INLET - TYPE C	USF 4155-6210	
16	DITCH BOTTOM INLET - TYPE C	USF 4155-6210	
16a	DITCH BOTTOM INLET - TYPE C	USF 4155-6210	
17	P-9 CURB INLET	P-9	
18	DITCH BOTTOM INLET - TYPE C	USF 4155-6210	
19	DITCH BOTTOM INLET - TYPE C	USF 4155-6210	
19a	DITCH BOTTOM INLET - TYPE C	USF 4155-6210	
20	P-9 CURB INLET	P-9	
21	DITCH BOTTOM INLET - TYPE C	USF 4155-6210	
22	P-9 CURB INLET	P-9	
22a	DITCH BOTTOM INLET - TYPE C	USF 4155-6210	
22b	DITCH BOTTOM INLET - TYPE C	USF 4155-6210	
23	DITCH BOTTOM INLET - TYPE C	USF 4155-6210	
24	STORM MH	USF 420	PRB (E,W)
24a	STORM MH	USF 420	
25	P-6 CURB INLET	P-6	
26	STORM MH	USF 420	PRB (W)
27	YARD DRAIN	PER MANUFACTURER	

**Exhibit 11**

DATE: MAY 2012  
SCALE: N.T.S.  
DRAWN BY: D.C.  
DESIGN BY: M.C.  
CHECKED BY: J.T.

REVISION	DATE	REV. PER CITY COMMENTS	REV. PER FDOT COMMENTS
1	10-1-14		
2	10-31-14		

JAMES A. THIELE, P.E.  
REGISTERED PROFESSIONAL ENGINEER  
FLORIDA LICENSE NO. 33256  
(FOR THE FIRM)

**KEITH**  
CONSULTING ENGINEERS  
301 EAST ATLANTIC BOULEVARD  
POMPANO BEACH, FLORIDA 33060-6643  
(954) 788-3400 FAX (954) 788-3500  
STATE OF FLORIDA CERTIFICATE OF AUTHORIZATION NUMBER - 7928

**MARTIN LUTHER KING JR. BOULEVARD ROAD IMPROVEMENTS**  
**CONSTRUCTION DETAILS**  
BROWARD COUNTY, FLORIDA  
CITY OF POMPANO BEACH

SHEET NO. **C-23**

PROJECT NO. **07470.50**

N:\07470.50 MLK Blvd Improvements - PRB\CDRA\Engineering\Cadd\07470.50 ROADWAY SECTIONS - DTLS.dwg



Environmental Protection and Growth Management Department  
**ENVIRONMENTAL LICENSING and BUILDING PERMITTING DIVISION**  
1 North University Drive, Suite 201-A • Plantation, FL 33324  
PHONE • 954-519-1483 Fax • 954-519-1412

November 14, 2014

Broward County Highway Construction & Engineering Division  
Attention: Richard Tornese, P.E., Director  
1 N University Drive, Suite 300B  
Plantation, FL 33324

RE: MLK Blvd. (NW 31 Ave to Blount)  
City of Pompano Beach, S/T/R (33-48-42)

This is to notify you of the Environmental Protection and Growth Management Department's (EPGMD) action concerning your application received 09/18/2014. The application has been reviewed for compliance with the following requirements:

**Broward County Surface Water Management Review - GRANTED**

EPGMD has reviewed the project for compliance with the Surface Water Management requirements of Chapter 27, Article V Sec. 27-191 through 27-202 of the Broward County Code.

Based on the information submitted, Surface Water Management License No. SWM2014-067-0 was issued on 11/14/2014. The above named licensee is hereby authorized to perform the work or operate the facility shown on the approved drawing(s), plans, documents and specifications, as submitted by licensee, and made a part hereof.

Please be advised that no Certificate of Occupancy can be issued on this project until released, in writing, by all EPGMD divisions as required. Such release will be pending approval of any engineering certifications required by specific condition No. 15.

The above referenced approvals will remain in effect subject to the following:

1. the attached Broward County General Conditions;
2. the attached Broward County Specific Conditions;
3. the attached   6   exhibits.

*Ashley Resta*

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Ashley Resta, P.E.  
Surface Water Management Program

Enclosed are the following:

- executed staff report;
- set(s) of stamped and approved plans; and
- application fee receipts.



Surface Water Management Program

# “What to Expect When We Are Inspecting Surface Water Management Systems”

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A guideline for **engineers, contractors, and licensees** of surface water management systems when applying for the release of Certificate(s) of Occupancy.

The intent of this document is to establish some guidelines to achieve compliance with the Code while maximizing customer service needs to licensees and their agents and the local building departments by facilitating the Certificate(s) of Occupancy (CO) release procedure for building projects. It is also the intent of this document to encourage licensees and their agents and the local building departments to not put our inspection staff on the “critical path”. ***We recognize that the local building departments must adhere to the requirements of the Florida Building Code and the requirements of Article I of the Broward County Natural Resource Protection Code.***

The Environmental Licensing and Building Permitting Division (ELBPD) - Surface Water Management Licensing program has the responsibility of reviewing designs, licensing, and inspecting surface water management systems within portions of Broward County under the provisions of the Broward County Natural Resource Protection Code, Chapter 27, Section 27-191 through Section 27-201. This includes enforcement for the purpose of protecting our natural resources. This document contains specific information about the ELBPD’s surface water management inspection procedures, review of record/as-built drawings, and time required to complete the procedure successfully. Please be advised this document may be included with the approved license and may be modified on an as-needed basis.

***The following certification package must be submitted at least two (2) weeks prior to the anticipated date of occupancy; exceptions may be made on a case by case basis.***

***Note: Item 1 is not applicable to plans stamped as General Licenses (GL##-###). Items 2 & 3 may apply to GL if plans are stamped for construction certification.***

1. Final Record/As-built Drawings (hard copy and electronic) of the site, lake/canal slopes, control structure(s) or overflow structure(s) (where applicable), and Finished Floor Elevation(s); etc.
2. Signed and sealed letter from a Florida-Registered Professional Engineer certifying all components of the surface water management system were constructed in substantial conformance with the approved plans; and
3. When requesting a partial certification include a \$100 partial certification fee (fees are subject to change). The certifying engineer must indicate that a substantial amount of the water management system has been constructed to serve the partial phase to satisfy the water quality and water quantity requirements of the Code and exactly which lots/buildings are requested for release.

Staff will perform an inspection on a first-come first-served basis of the above items. A successful submittal of the required items will prevent unwanted delays in the inspection and CO release processes.

### ***What we look for During the Record/As-Built Drawing Review and During the Inspection***

1. The engineer's letter must contain the appropriate certification language. The suggested wording is located in the Code and in the specific conditions of the license. The letter must be signed and sealed. It is imperative that the engineer of record describe any minor modifications to the system that were made during the construction of the project. However, substantial modifications must have received prior approval by the Surface Water Licensing Program.
2. The as-built/record drawing must document the Finished Floor Elevation(s) showing substantial conformance with approved plans.
3. In addition to rim, manhole, and pipe invert elevations, the plans should contain a sufficient amount of survey information to show that the site grades and perimeter grades were constructed in substantial conformance with the approved plans.
4. If part of the approved system, lake and canal slope as-built plans should contain a substantial number of cross sections (a minimum of 1 section per 50 linear feet is preferred) to show compliance with the Department's slope criteria. The staff reserves the right to require additional slope cross sections as necessary as well as slope regrading. Surface area calculations at the control elevation should be submitted for lakes.
5. Control structure or overflow structure information must show all (as-built) dimensions and elevations.
6. All catch basin and manhole structures must have appropriate mudwork to prevent seepage that could lead to structure/asphalt failures and subsequent turbidity violations.
7. All catch basins, manholes, and pipes must be relatively free of sediment and debris and must be accessible to staff. Arrangements should be made with staff for inspecting basins that are covered with fabric materials for sediment control purposes. Fabric must be removed by the licensee or other appropriate personnel prior to the inspection.
8. Lake, canal, swale, dry detention/retention area slopes must be stabilized through appropriate measures, i.e, no evidence of erosion or sedimentation should be encountered during the inspection. Arrangements should be made with staff with regards to timeliness of sodding or seeding slopes and bottoms of dry detention/retention areas.
9. All baffle mechanisms must be made water tight at all contact surfaces of basin walls by a durable gasket device.

***Successful compliance with the above items will insure a timely release of the Certificate(s) of Occupancy from division staff.***

Upon completion of the field inspection, arrangements with inspection staff will be made to correct all observed field deficiencies. With your cooperation, the Operation Letter will be released upon correction of all field deficiencies.

#### **Environmental Licensing and Building Permitting Division**

Surface Water Management Program

1 North University Drive, Suite 201-A • Plantation, Florida 33324

Phone 954-519-1483 FAX 954-519-1412

## **Broward County General Conditions**

1. The terms, conditions, requirements, limitations and restrictions set forth herein are accepted by the licensee and must be completed by the licensee and are enforceable by the Environmental Protection and Growth Management Department (EPGMD) pursuant to Chapter 27 of the Broward County Code of Ordinances. The EPGMD will review this license periodically and may revoke or suspend the license, and initiate administrative and/or judicial action for any violation of the conditions by the licensee, its agents, employees, servants or representatives.
2. This license is valid only for the specific uses set forth in the license application and any deviation from the approved uses may constitute grounds for revocation, suspension, and/or enforcement action by the EPGMD.
3. In the event the licensee is temporarily unable to comply with any of the conditions of the license or with this chapter, the licensee shall notify the EPGMD within eight (8) hours or as stated in the specific section of this chapter. Within three (3) working days of the event, the licensee shall submit a written report to the EPGMD that describes the incident, its cause, the measures being taken to correct the problem and prevent its reoccurrence, the owner's intention regarding the repair, replacement and reconstruction of destroyed facilities and a schedule of events leading toward operation with the license condition.
4. The issuance of this license does not convey any vested rights or exclusive privileges, nor does it authorize any injury to public or private property or any invasion of personal rights, or any violations of federal, state or local laws or regulations.
5. This license must be available for inspection on licensee's premises during the entire life of the license.
6. By accepting this license, the licensee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this licensed facility or activity, that are submitted to the EPGMD, may be used by the EPGMD as evidence in any enforcement proceeding arising under Chapter 27 of the Broward County Code of Ordinances, except where such use is prohibited by Section 403.111, Florida Statutes.
7. The licensee agrees to comply with Chapter 27 of the Broward County Code of Ordinances, and shall comply with all provisions of the most current version of this chapter, as amended.
8. Any new owner or operator of a licensed facility shall apply by letter for a transfer of license within thirty (30) days after sale or legal transfer. The transferor shall remain liable for performance in accordance with the license until the transferee applies for and is granted a transfer of license. The transferee shall be liable for any violation of Chapter 27 that results from the transferee's activities. The transferee shall comply with the transferor's original license conditions when the transferee has failed to obtain its own license.
9. The licensee, by acceptance of this license, specifically agrees to allow access and shall allow access to the licensed source, activity or facility at times by EPGMD personnel for the purposes of inspection and testing to determine compliance with this license and Chapter 27 of the Broward County Code of Ordinances.
10. This license does not constitute a waiver or approval of any other license, approval, or regulatory requirement by this or any other governmental agency that may be required.
11. Enforcement of the terms and provisions of this license shall be at the reasonable discretion of EPGMD, and any forbearance on behalf of EPGMD to exercise its rights hereunder in the event of any breach by the licensee, shall not be deemed or construed to be a waiver of EPGMD's rights hereunder.

## Broward County Specific Conditions

1. The licensee shall allow authorized personnel of the Planning and Environmental Regulation Division (PER), municipality or local water control district to conduct such inspections at reasonable hours, as are necessary to determine compliance with the requirements of the license and the approved plans and specifications.
2. The responsible entity shall agree to maintain the operating efficiency of the water management works. Except in cases where the responsible entity is a governmental agency, the agreement shall further require that if the water management works is not adequately maintained, the County may undertake the required work and bill all associated costs to the responsible entity. If the payment for such obligations is not satisfied within 30 days, said obligation shall become a lien against the property associated with the water management works. Where ownership of the water management works is separate from property ownership, the PER shall require these agreements to be recorded.
3. The licensee shall prosecute the work authorized in a manner so as to minimize any adverse impact of the works on fish, wildlife, natural environmental values, and water quality. The licensee shall institute necessary measures during the construction period, including fill compaction of any fill material placed around newly installed structures, to reduce erosion, turbidity, nutrient loading and sedimentation in the receiving waters. Any erosion, shoaling or deleterious discharges due to permitted actions will be corrected promptly at no expense to the County.
4. The licensee shall comply with all applicable local land use and subdivision regulations and other local requirements. In addition, the licensee shall obtain all necessary Federal, State, local and special district authorizations prior to the start of any construction alteration of works authorized by this license.
5. Offsite discharges during construction and development shall be made only through the facilities authorized by this license. Water discharged from the project shall be through structures having a mechanism for regulating upstream water stages. Stages may be subject to operating schedules satisfactory to the appropriate regulatory agency.
6. The licensee shall hold and save the County harmless from any and all damages, claims, or liabilities which may arise by reason of the construction, operation, maintenance or use of any facility authorized by the license.
7. The license does not convey property rights nor any rights or privileges other than those specified therein.
8. No construction authorized by the license shall commence until a responsible entity acceptable to the PER has been established and has agreed to operate and maintain the efficiency of the system. The entity must be provided with sufficient ownership so that it has control over all water management facilities authorized therein. Upon receipt of written evidence of the satisfaction of this condition, the PER will issue authorization to commence the construction.
9. No beautification, or erection of any structure that will prohibit or limit access of maintenance equipment or vehicles in the right-of-way or easements will be allowed.
10. Any license which grants any entity the permission to place a structure on property which is owned by Broward County or upon which Broward County has an easement shall be construed to create a revocable license for that structure to remain on the property. Broward County may require removal of such a structure at no cost to the County.
11. The area under license will be maintained in a safe and operating condition at all times. Equipment will be promptly removed from the right-of-way or easement and the right-of-way or easement will be restored to its original or better condition within a reasonable time on termination of the authorized use.
12. The PER will be notified, as required in the license or as indicated on the approved plans, to coordinate and schedule inspections.
13. The operation or construction will be in accordance with the approved details and plans submitted with the application. Any modification must be submitted to the PER in writing and receive prior approval.
14. Monitoring may be required for sites with high pollutant generating potential, such as industrial sites, Class I and II solid waste disposal sites, and projects discharging to areas identified in Section 27-200 (b) (1) (o). Such monitoring will be under the cognizance of the PER.

15. Upon completion of the construction of a surface water management system or phase thereof licensed by the PER, it is a requirement of the issuance of the license, and hence transfer of operation and maintenance responsibility, that a Florida Registered Professional Engineer certify that the surface water management system was indeed constructed as licensed. Certified record drawings shall accompany the certification. Suggested wording for this is as follows:

I HEREBY CERTIFY TO THE CONSTRUCTION COMPLETION OF ALL THE COMPONENTS OF THE SURFACE WATER MANAGEMENT FACILITIES FOR THE ABOVE REFERENCES PROJECT AND THAT THEY HAVE BEEN CONSTRUCTED IN SUBSTANTIAL CONFORMANCE WITH THE PLANS AND SPECIFICATIONS APPROVED BY THE BROWARD COUNTY PER, AND HEREBY AFFIX MY SEAL THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
(SEAL)

16. Water management areas shall be legally reserved to the operation entity and for that purpose by dedication on the plat, deed restrictions, easements, etc., so that subsequent owners or others may not remove such areas from their intended use. Management areas, including maintenance easements, shall be connected to a public road or other location from which operation and maintenance access is legally and physically available.

17. The licensee shall notify the PER in writing within twenty-four (24) hours of the start, finish, suspension, and/or abandonment of any construction or alteration of works authorized by this license.

18. A prorated share of surface water management retention/detention areas, sufficient to provide the required flood protection and water quality treatment, must be provided prior to occupancy of any building or residence.

19. The operation license shall be valid for a specific period of time not to exceed five (5) years from the date the license is transferred to the operation phase. The operation license shall be renewed in accordance with Section 27 - 198 (d) (2) of the Article.

20. The PER reserves the right to require additional water quality treatment methods be incorporated into the drainage system if such measures are shown to be necessary.

21. This permit does not constitute the approval required by Section 27-353(i), Broward County Code, to conduct dewatering operations at or within one-quarter mile radius of a contaminated site. Please contact the Pollution Prevention, Remediation and Air Quality Division at (954) 519-1260 for further information.

22. The licensee shall keep a log of the operation and maintenance schedule for all components of the surface water management system.

23. The surface water management system must be inspected by the Surface Water Management Section to verify compliance with Specific Condition No. 15 of the license. In accordance with the Broward County Natural Resource Protection Code, Article I, Sec. 27-66 (f), the County agency or municipal agency charged with issuing a certificate of occupancy (CO) shall not issue a CO until notified of the PER approval. Partial certifications will be handled in accordance with Specific Condition No. 18.

24. The licensee is advised that he/she is required to submit a Storm Water Notice of Intent (NOI) application at least 48 hours prior to the commencement of construction to the Florida Department of Environmental Protection, NPDES Stormwater Notices Center, MS #2510 at 2600 Blair Stone Road - Tallahassee, Florida 32399-2400.

25. Electronic self-certification through the website [www.fldepportal.com/go/apply-build/](http://www.fldepportal.com/go/apply-build/) is required no later than 30 days after the start of construction, in accordance with the 10/2 General Permit requirements of 403.814(12)

## STAFF REPORT

**Project Name:** MLK Blvd. (NW 31 Ave to Blount)  
**License Number:** SWM2014-067-0  
**Application Number:** L2014-209  
**Application Type:** BC Surface Water Management License  
**Location:** Broward County                    **Section-Township-Range:** 33-48-42  
**Permittee's Name:** Broward County Highway Construction & Engineering Division

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**Project Area:** 2.64 acres                    **Drainage Area:** 2.64 acres  
**Project Land Use:** Roadway  
**Drainage Basin:** C-14  
**Receiving Body:** Existing System

---

**Purpose:**

The construction and operation of a surface water management system to serve 2.64 acres of roadway improvements along a portion of Martin Luther King Blvd.

**Project Evaluation:**

**Project Site Description:**

The site is presently developed as a four-lane roadway. The proposed work will be conducted along Martin Luther King Blvd, starting east of NW 31st Ave to Blount Road in Pompano Beach.

**Proposed Project Design:**

The proposed roadway improvements within the county owned segment of Martin Luther King Blvd (Blount Road west to NW 31st Ave) will result in a net decrease of proposed impervious area. The existing drainage infrastructure west of Blount Road will remain undisturbed.

The applicant's consultant has demonstrated through plans and calculations that the proposed project meets the requirements of the Code.

**Water Quality Design:**

The total net impervious area has been reduced per these proposed improvements, therefore no additional water quality treatment is required.

**Special Concerns:**

**Operating Entity:** Broward County Highway Construction & Engineering Division  
Attention: Richard Tornese, P.E., Director  
1 N University Drive, Suite 300B  
Plantation, FL 33324

**Waste Water System/Supplier:** BCUD #4

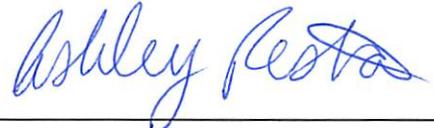
**SWM2014-067-0, STAFF REVIEW:**

**Surface Water Management Program:**



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Alex Lopez



---

Ashley Resta, P.E.

**STAFF REPORT DISTRIBUTION LIST  
ADDRESSES**

**Owner:**

Broward County Highway Construction &  
Engineering Division  
Attention: Richard Tornese, P.E., Director  
1 N University Drive, Suite 300B  
Plantation, FL 33324

**Applicant:**

Broward County Highway Construction &  
Engineering Division  
Attention: Richard Tornese, P.E., Director  
1 N University Drive, Suite 300B  
Plantation, FL 33324

**Engineering  
Consultant:**

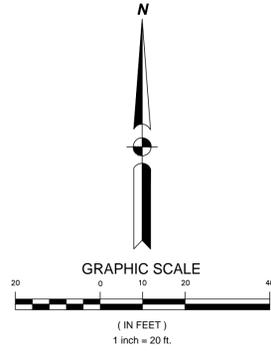
Keith and Associates, Inc.  
Attention: James A. Thiele, P.E.  
301 E Atlantic Blvd  
Pompano Beach, FL 33060

**Other:**

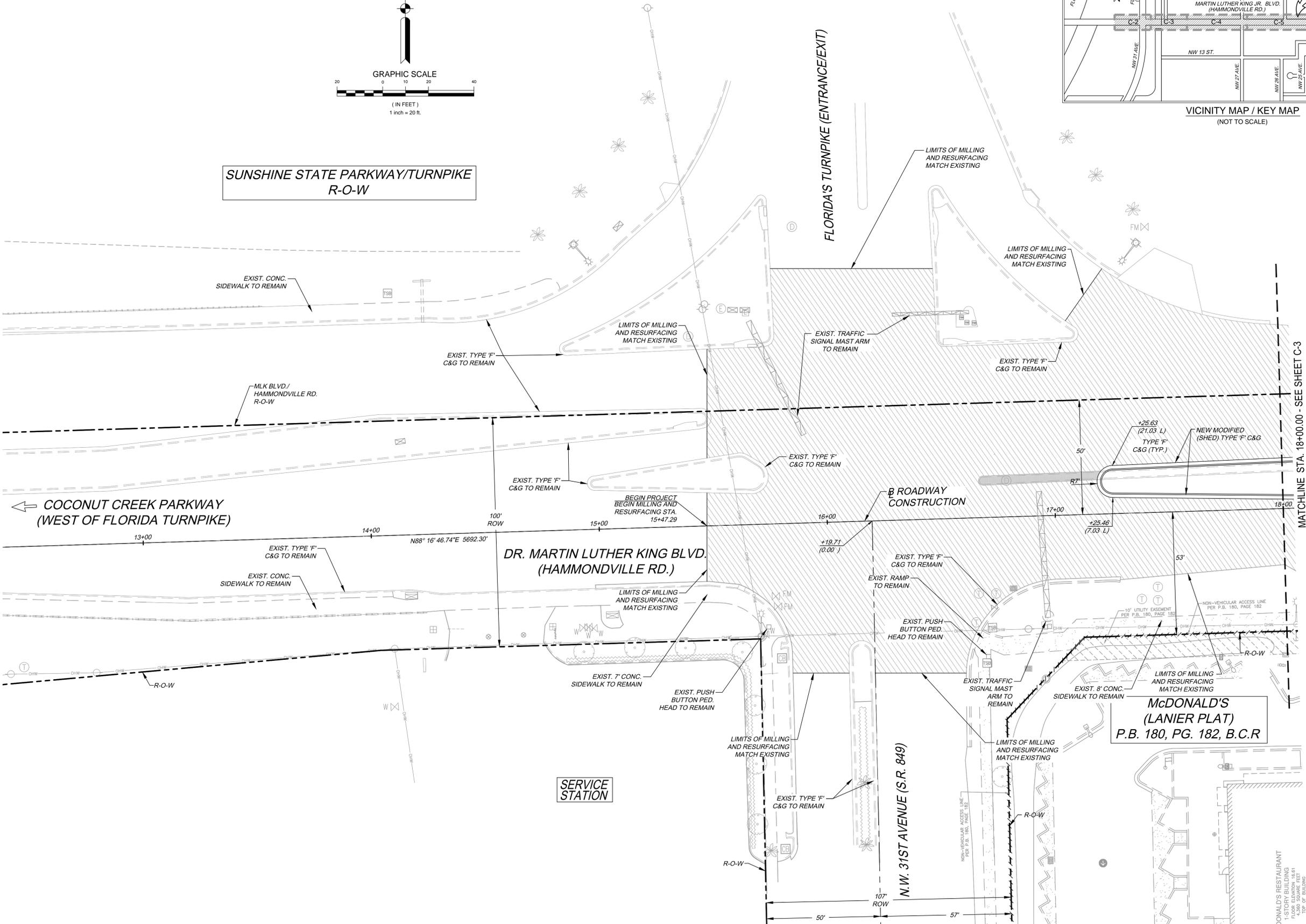
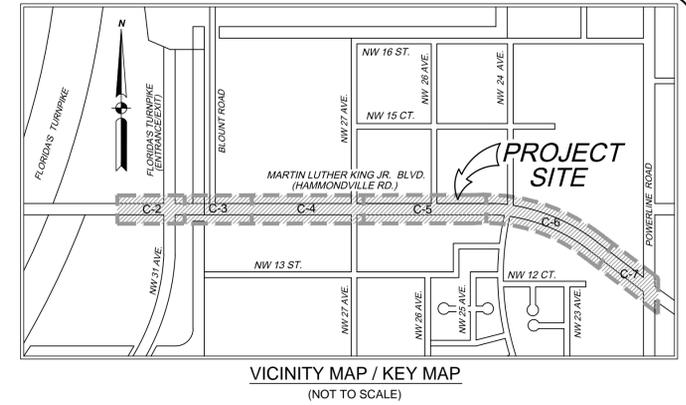
City of Pompano Beach Building Official  
Army Corps of Engineers

POSTED SPEED LIMIT 30 MPH  
DESIGN SPEED 35 MPH

NOTE:  
SEE SHEET C-1 FOR GENERAL NOTES AND LEGEND



SUNSHINE STATE PARKWAY/TURNPIKE  
R-O-W



DATE:	SEPTEMBER, 2012
SCALE:	1" = 20'
DRAWN BY:	D.C.
DESIGN BY:	M.C.
CHECKED BY:	J.T.

REVISION	DATE

JAMES A. THELE, P.E.  
FLORIDA REG. NO. 33256  
(FOR THE FIRM)

301 EAST ATLANTIC BOULEVARD  
POMPANO BEACH, FLORIDA 33060-6643  
(954) 788-3400 FAX (954) 788-3500  
STATE OF FLORIDA CERTIFICATE OF AUTHORIZATION NUMBER - 7928

MARTIN LUTHER KING JR. BOULEVARD  
ROAD IMPROVEMENTS  
ROADWAY PLAN  
CITY OF POMPANO BEACH BROWARD COUNTY, FLORIDA

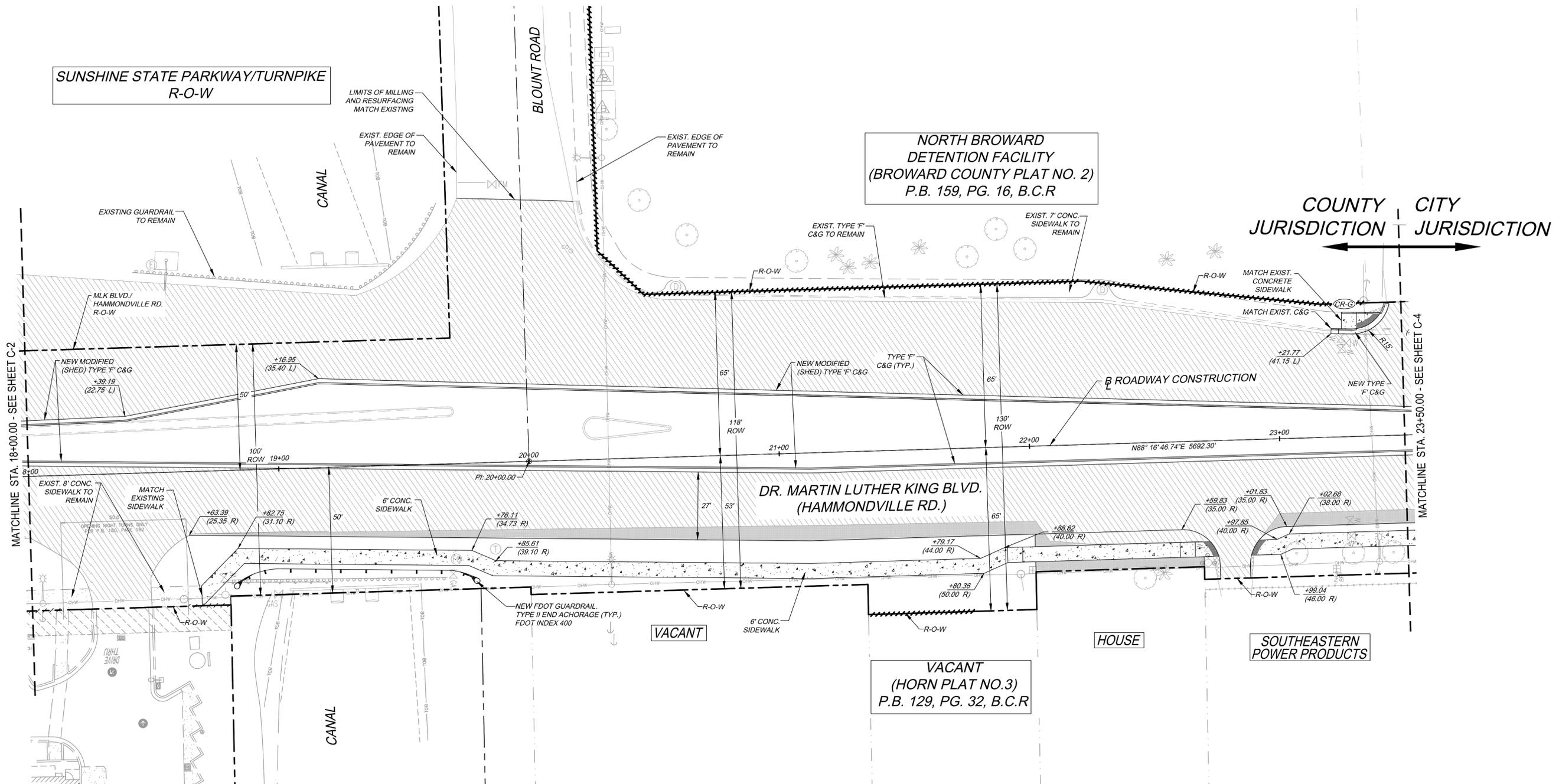
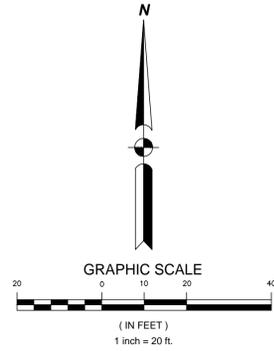
SHEET NO. C-2

PROJECT NO. 07470.50

Exhibit 1

**POSTED SPEED LIMIT 30 MPH**  
**DESIGN SPEED 35 MPH**

NOTE:  
 SEE SHEET C-1 FOR GENERAL NOTES AND LEGEND



DATE:	SEPTEMBER, 2012
SCALE:	1" = 20'
DRAWN BY:	D.C.
DESIGN BY:	M.C.
CHECKED BY:	J.L.

REVISION	DATE

JAMES A. THELE, P.E.  
 FLORIDA REG. NO. 33256  
 (FOR THE FIRM)

**KEITH**  
 consulting engineers  
 301 EAST ATLANTIC BOULEVARD  
 POMPANO BEACH, FLORIDA 33060-6643  
 (954) 788-3400 FAX (954) 788-3500  
 STATE OF FLORIDA CERTIFICATE OF  
 AUTHORIZATION NUMBER - 7928

**MARTIN LUTHER KING JR. BOULEVARD  
 ROAD IMPROVEMENTS  
 ROADWAY PLAN**  
 BROWARD COUNTY, FLORIDA  
 CITY OF POMPANO BEACH

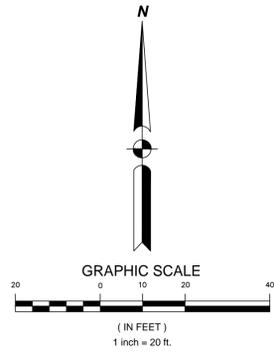
SHEET NO. **C-3**

PROJECT NO. **07470.50**

ALL EXISTING/PROPOSED ELEVATIONS SHOWN  
ARE BASED ON NAVD 1988  
CONVERSION TO NGVD 1929 = +1.54'

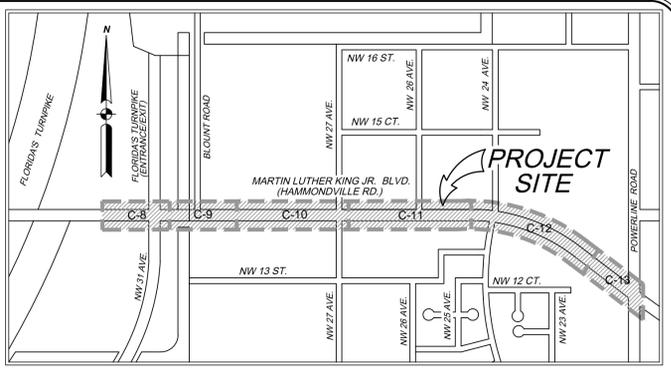
POSTED SPEED LIMIT 30 MPH  
DESIGN SPEED 35 MPH

NOTE:  
SEE SHEET C-1 FOR GENERAL NOTES AND LEGEND

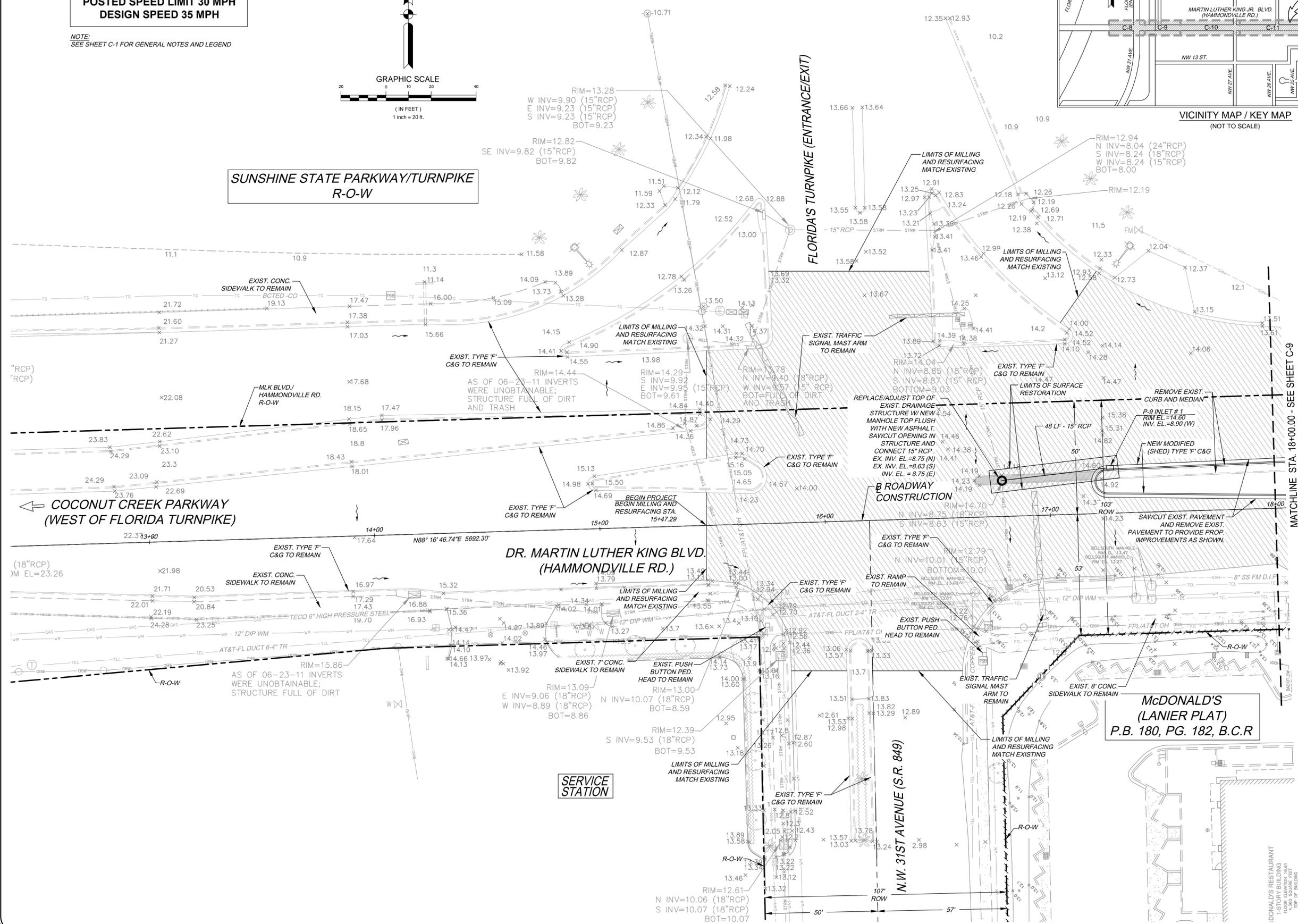


SUNSHINE STATE PARKWAY/TURNPIKE  
R-O-W

FLORIDA'S TURNPIKE (ENTRANCE/EXIT)



VICINITY MAP / KEY MAP  
(NOT TO SCALE)



MATCHLINE STA. 18+00.00 - SEE SHEET C-9

DATE:	SEPTEMBER, 2012
SCALE:	1" = 20'
DRAWN BY:	D.C.
DESIGN BY:	M.C.
CHECKED BY:	J.T.

REVISION	DATE

JAMES A. THELE, P.E.  
FLORIDA REG. NO. 33256  
(FOR THE FIRM)

**KEITH**  
consulting engineers

301 EAST ATLANTIC BOULEVARD  
POMPANO BEACH, FLORIDA 33060-6643  
(954) 788-3400 FAX (954) 788-3500  
STATE OF FLORIDA CERTIFICATE OF  
FLORIDA REG. NO. 33256  
AUTHORIZATION NUMBER - 7928

MARTIN LUTHER KING JR. BOULEVARD  
ROAD IMPROVEMENTS  
PAVING, GRADING AND DRAINAGE PLAN  
CITY OF POMPANO BEACH  
BROWARD COUNTY, FLORIDA

SHEET NO. C-8

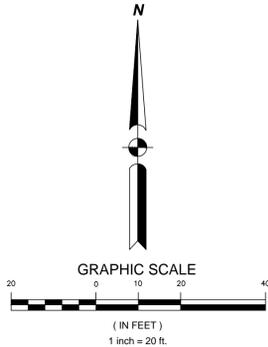
PROJECT NO. 07470.50

Exhibit 3

ALL EXISTING/PROPOSED ELEVATIONS SHOWN  
ARE BASED ON NAVD 1988  
CONVERSION TO NGVD 1929 = +1.54'

POSTED SPEED LIMIT 30 MPH  
DESIGN SPEED 35 MPH

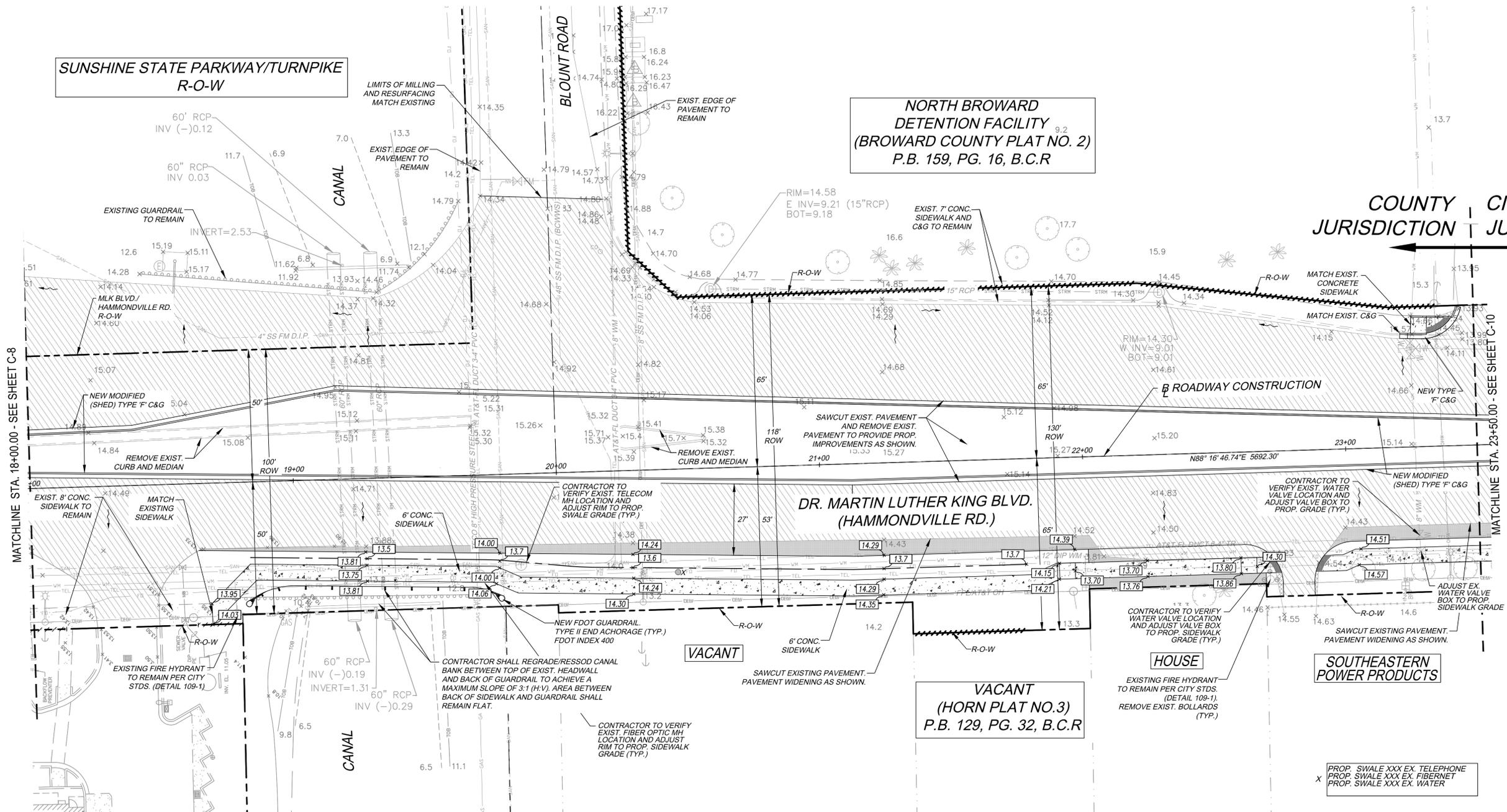
NOTE:  
SEE SHEET C-1 FOR GENERAL NOTES AND LEGEND



SUNSHINE STATE PARKWAY/TURNPIKE  
R-O-W

NORTH BROWARD  
DETENTION FACILITY  
(BROWARD COUNTY PLAT NO. 2)  
P.B. 159, PG. 16, B.C.R

COUNTY JURISDICTION | CITY JURISDICTION



MATCHLINE STA. 18+00.00 - SEE SHEET C-8

MATCHLINE STA. 23+50.00 - SEE SHEET C-10

DATE:	SEPTEMBER, 2012
SCALE:	1" = 20'
DRAWN BY:	D.C.
DESIGN BY:	M.C.
CHECKED BY:	J.T.

REVISION	DATE

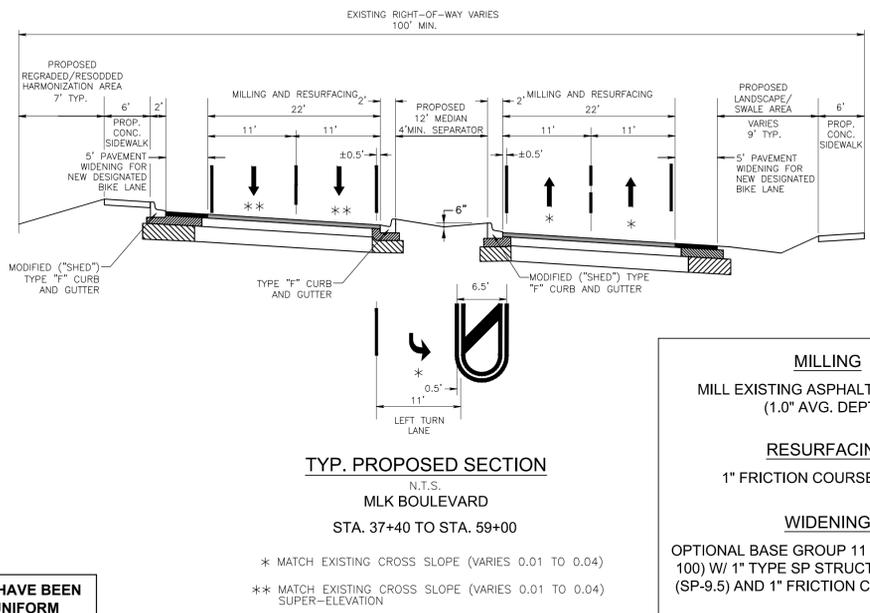
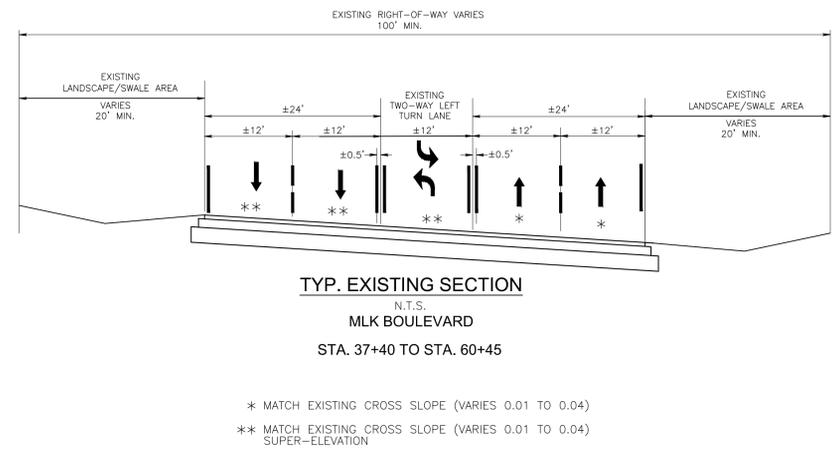
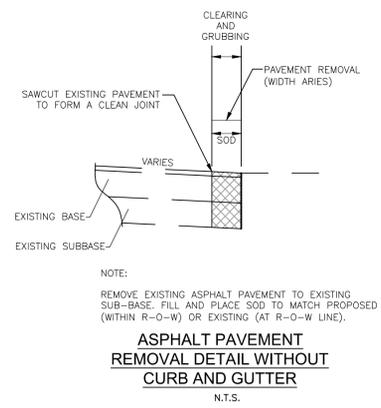
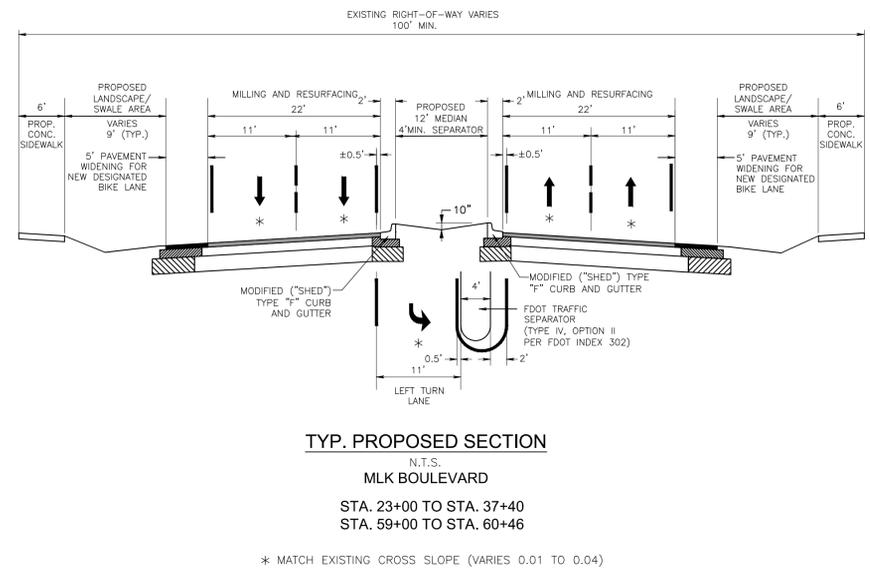
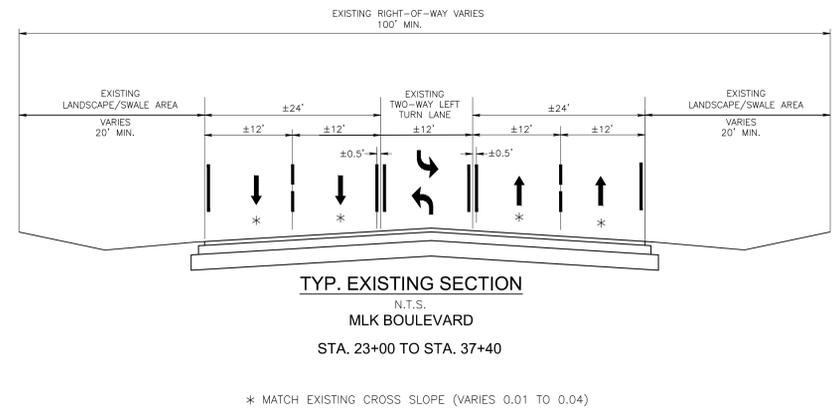
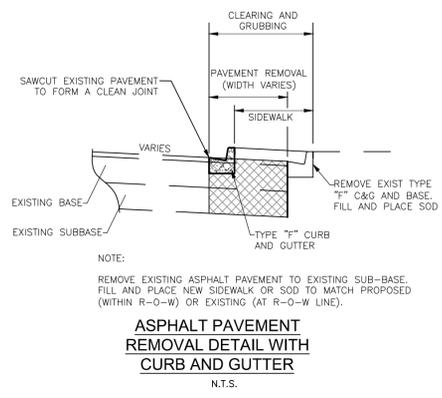
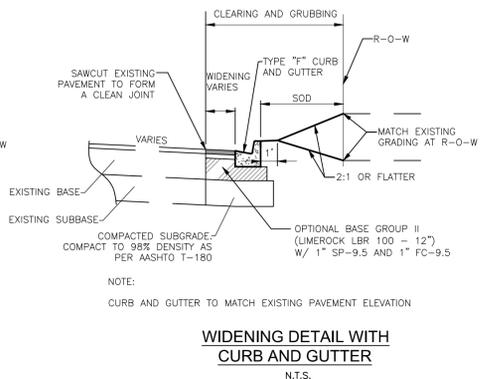
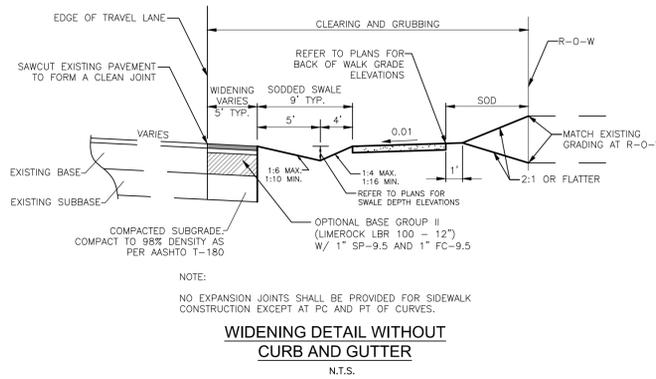
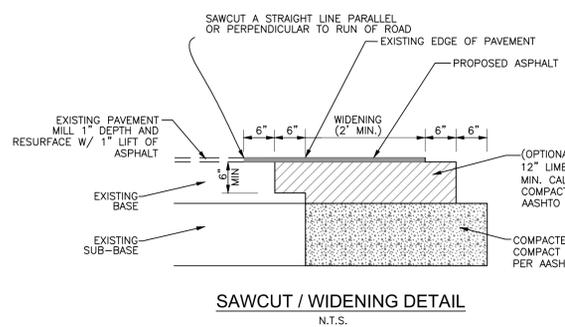
JAMES A. THELE, P.E.  
FLORIDA REG. NO. 33256  
(FOR THE FIRM)

**KEITH**  
consulting engineers  
301 EAST ATLANTIC BOULEVARD  
POMPANO BEACH, FLORIDA 33060-6643  
(954) 788-3400 FAX (954) 788-3500  
STATE OF FLORIDA CERTIFICATE OF  
AUTHORIZATION NUMBER - 7928

MARTIN LUTHER KING JR. BOULEVARD  
ROAD IMPROVEMENTS  
PAVING, GRADING AND DRAINAGE PLAN  
CITY OF POMPANO BEACH  
BROWARD COUNTY, FLORIDA

SHEET NO. C-9

PROJECT NO. 07470.50



**MILLING**  
MILL EXISTING ASPHALT PAVEMENT (1.0" AVG. DEPTH)

**RESURFACING**  
1" FRICTION COURSE (FC-9.5)

**WIDENING**  
OPTIONAL BASE GROUP 11 (LIMEROCK LBR 100) W/ 1" TYPE SP STRUCTURAL COURSE (SP-9.5) AND 1" FRICTION COURSE (FC-9.5)

THE PUBLIC ROADWAY(S) INDICATED ON THESE PLANS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE "MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION AND MAINTENANCE FOR STREETS AND HIGHWAYS - STATE OF FLORIDA."

ALL CONSTRUCTION MATERIALS WITHIN THE CITY OF POMPANO BEACH'S RIGHT-OF-WAY SHALL CONFORM TO STANDARDS AND SPECIFICATIONS OF THE CITY OF POMPANO BEACH AND/OR OTHER APPLICABLE STANDARDS (INCLUDING REQUIREMENTS FOR BROWARD COUNTY TRAFFICWAYS). IF ANY OF THE DETAILS AND NOTES SHOWN ABOVE ARE IN CONFLICT WITH CITY AND/OR OTHER APPLICABLE STANDARDS, THE CONTRACTOR IS REQUIRED TO IMMEDIATELY NOTIFY THE ENGINEER.

EXISTING POSTED SPEED LIMIT 40 MPH  
EXISTING DESIGN SPEED 50 MPH

PROPOSED POSTED SPEED LIMIT 30 MPH  
DESIGN SPEED 35 MPH

DATE:	MAY 2012
SCALE:	N.T.S.
DRAWN BY:	D.C.
DESIGN BY:	M.C.
CHECKED BY:	M.G.

REVISION	
DATE	

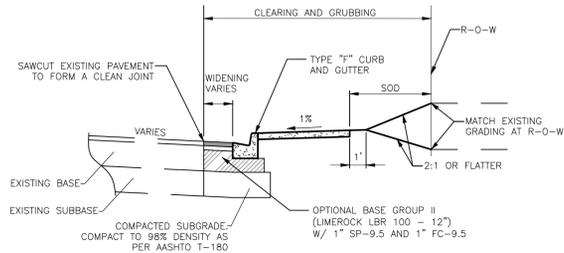
JAMES A. THIELE, P.E.  
FLORIDA REG. NO. 32295  
(FOR THE FIRM)

**KEITH**  
CONSULTING ENGINEERS  
301 EAST ATLANTIC BOULEVARD  
POMPANO BEACH, FLORIDA 33060-6643  
(954) 786-3400 FAX (954) 788-3500  
STATE OF FLORIDA CERTIFICATE OF AUTHORIZATION NUMBER - 1928

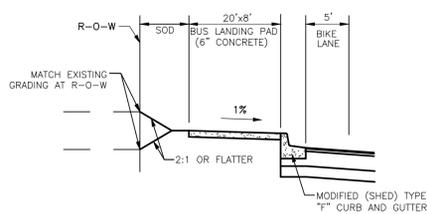
MARTIN LUTHER KING JR. BOULEVARD  
ROAD IMPROVEMENTS  
ROADWAY SECTIONS  
BROWARD COUNTY, FLORIDA  
CITY OF POMPANO BEACH

SHEET NO. C-20

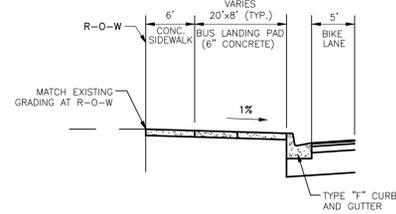
PROJECT NO. 07470.50



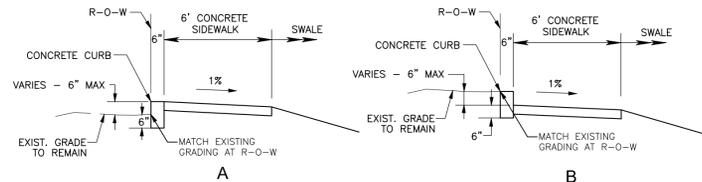
**SIDEWALK AT THE BACK OF CURB DETAIL**  
N.T.S.



**BUS LANDING PAD ALONG NORTH SIDE OF MLK BLVD.**  
N.T.S.

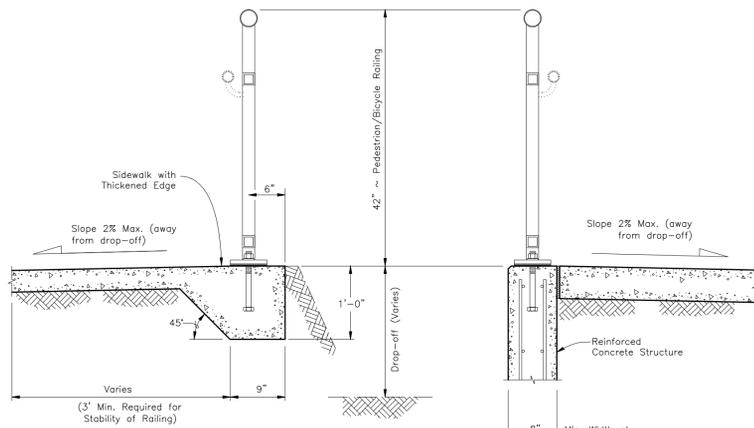


**BUS LANDING PAD ALONG SOUTH SIDE OF MLK BLVD.**  
N.T.S.



NOTE:  
1. THESE DETAILS SHALL BE USED FOR ALL LOCATIONS WHERE NO RIGHT OF ENTRY, OR PERMANENT EASEMENTS EXIST, AS DIRECTED BY THE ENGINEER AND/OR CITY/CRA.

**MODIFIED (SHED) TYPE 'F' CURB & GUTTER**  
N.T.S.

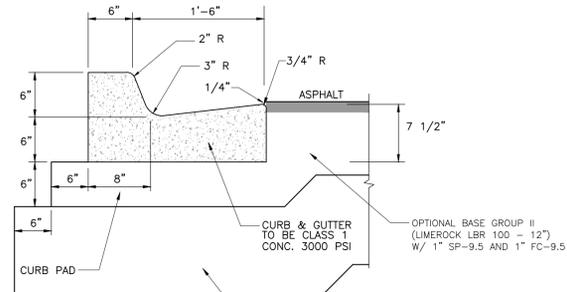


**TYPICAL SECTION ON CONCRETE SIDEWALK (Case I)**

**TYPICAL SECTION ON RETAINING WALL (Case II)**

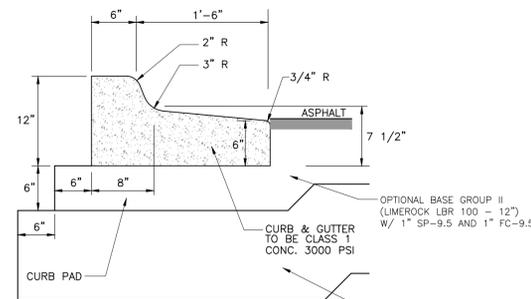
NOTE:  
1. CONTRACTOR SHALL INSTALL ALUMINUM HANDRAIL PER FDOT INDEX 870 WHEN DROP-OFF CONDITION IMMEDIATELY ADJACENT TO SIDEWALK EXCEEDS 6 INCHES (CASE II) AND/OR GROUND SLOPES EXCEED 2:1 (H:V) WITHIN 1 FOOT TO THE BACK OF WALK (CASE I).

**ALUMINUM RAILING FOR DROP-OFF BEHIND SIDEWALK**  
N.T.S.



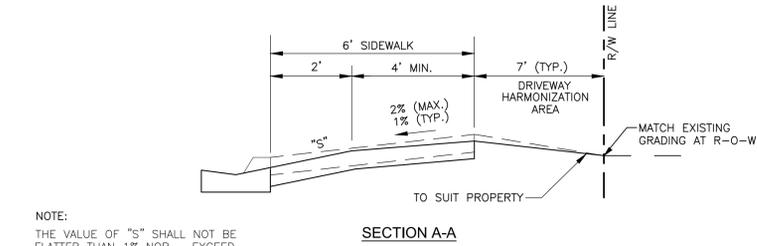
NOTE:  
ALL TYPE F-CURB SHALL BE IN ACCORDANCE WITH THE STANDARD REQUIREMENTS OF THE FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT).

**TYPE 'F' CURB & GUTTER**  
N.T.S.



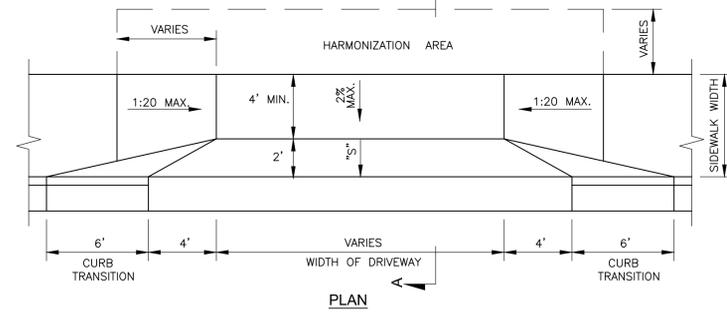
NOTE:  
ALL TYPE F-CURB SHALL BE IN ACCORDANCE WITH THE STANDARD REQUIREMENTS OF THE FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT).

**MODIFIED (SHED) TYPE 'F' CURB & GUTTER**  
N.T.S.

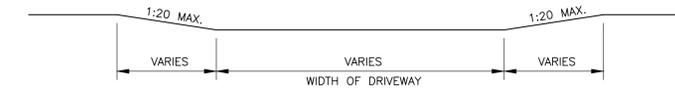


NOTE:  
THE VALUE OF "S" SHALL NOT BE FLATTER THAN 1% NOR EXCEED THE MAXIMUM ALLOWED BY FDOT INDEX 515.

**SECTION A-A**

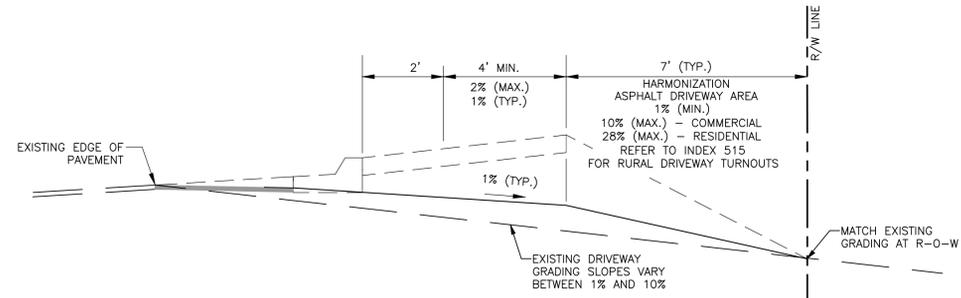


**PLAN**



**BACK OF SIDEWALK PROFILE**

**CONCRETE DRIVEWAY TURNOUT DETAIL**  
N.T.S.



**ASPHALT DRIVEWAY DETAIL ON HIGH SIDE OF SUPER-ELEVATED ROADWAY SECTION**  
N.T.S.

STA. 38+00 TO STA. 53+00

THE PUBLIC ROADWAY(S) INDICATED ON THESE PLANS HAVE BEEN DESIGNED IN ACCORDANCE WITH THE "MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION AND MAINTENANCE FOR STREETS AND HIGHWAYS - STATE OF FLORIDA."

ALL CONSTRUCTION MATERIALS WITHIN THE CITY OF POMPANO BEACH'S RIGHT-OF-WAY SHALL CONFORM TO STANDARDS AND SPECIFICATIONS OF THE CITY OF POMPANO BEACH AND/OR OTHER APPLICABLE STANDARDS (INCLUDING REQUIREMENTS FOR BROWARD COUNTY TRAFFICWAYS). IF ANY OF THE DETAILS AND NOTES SHOWN ABOVE ARE IN CONFLICT WITH CITY AND/OR OTHER APPLICABLE STANDARDS, THE CONTRACTOR IS REQUIRED TO IMMEDIATELY NOTIFY THE ENGINEER.

EXISTING POSTED SPEED LIMIT 40 MPH  
EXISTING DESIGN SPEED 50 MPH

PROPOSED POSTED SPEED LIMIT 30 MPH  
DESIGN SPEED 35 MPH

DATE: MAY 2012  
SCALE: N.T.S.  
DRAWN BY: D.C.  
DESIGN BY: M.C.  
CHECKED BY: M.G.

REVISION

DATE

JAMES A. THIELE, P.E.  
FLORIDA REG. NO. 32296  
(FOR THE FIRM)

**KEITH**  
ASSOCIATES, INC.  
consulting engineers  
301 EAST ATLANTIC BOULEVARD  
POMPANO BEACH, FLORIDA 33060-6643  
(954) 786-3400 FAX (954) 786-3500  
STATE OF FLORIDA CERTIFICATE OF  
AUTHORIZATION NUMBER - 7928

MARTIN LUTHER KING JR. BOULEVARD  
ROAD IMPROVEMENTS  
ROADWAY SECTIONS  
CITY OF POMPANO BEACH  
BROWARD COUNTY, FLORIDA

SHEET NO. C-21

PROJECT NO. 07470.50

**APPENDIX A**  
**PROJECT PERMITS AND CONDITIONS –**

2. BROWARD COUNTY HIGHWAY CONSTRUCTION AND ENGINEERING DIVISION  
(BCHCED) – PLAN APPROVAL



Public Works Department

**HIGHWAY CONSTRUCTION AND ENGINEERING DIVISION**

1 N. University Drive, Box B 300 • Plantation, Florida 33324-2038 • 954-577-4555 • FAX 954-357-5715

February 13, 2015

Mark Castano  
Keith and Associates, Inc.  
301 East Atlantic Blvd.  
Pompano Beach, Florida 33060-6643

RE: **MLK Blvd. Turnpike to Powerline Rd.**  
Paving and Drainage Plan Review  
Highway Construction and Engineering Division Ref. #140919001

Dear Mr. Castano;

Attached please find three (3) copies of the above referenced revised plans approved by this office on for construction improvements in **MLK Blvd. (Hammondville Road)** right of way. This approval is based primarily upon the information contained within these plans and any supporting documentation which you may have submitted.

In the event that applicable standards, regulations or laws change subsequent to plan approval, but prior to permit issuance, revised plans must be submitted for approval under the new requirements.

Prior to commencing construction of the roadway and related improvements shown on the approved plans, a licensed engineering contractor will need to obtain a permit, from this office, for work in the **MLK Blvd. (Hammondville Road)** right of way. Prior to the contractor coming in to obtain said permit the Engineer of record shall provide the contractor with a copy of this letter, one set of stamped approved plans and advise them to ensure that the following are either in his/her possession or are on file in the Broward County Highway Construction and Engineering Division:

- 1) Three (3) sets of shop drawings, signed and sealed by the Engineer of Record to be approved by the Broward County Highway Construction and Engineering Division; and
- 2) Schedule an appointment with the Broward County Highway Construction and Engineering Division to obtain the permit, please call Mr. Etienne Joachim, at 954-577-4571.

When the contractor arrives for their scheduled appointment they will be required to complete a permit application, if they have not done so prior to coming in for the appointment. The contractor will be required to show their contractor's license, proof of insurance and he/she will be required to post any required security, **if the security has not already been posted for the roadway and related improvements**, prior to the issuance of a permit for the work covered by the approved plan. Any security filed with Broward County must be in acceptable form to Broward County prior to issuance of the permit.

There is a security amount for the improvement(s) shown on this plan of **\$65,196.00**. In addition to the security for the required improvements, in accordance with Resolution 2003-0058, there is a requirement

**MLK Blvd. Turnpike to Powerline Rd.**

Highway Construction and Engineering Division Ref. #140919001

for payment of a security release fee. ***Please have the P&D security issue resolved prior to coming in for permit. You should contact Mr. Malcolm at 954-577-4590 for assistance in these matters.***

Please be advised that prior to commencing construction of any improvements within the county jurisdiction right of way a **maintenance of traffic plan** approved by the Broward County Traffic Engineering Division must be on file with the Broward County Highway Construction and Engineering Division.

Prior to construction of any improvements within the county jurisdiction right of way, the permittee shall notify the Sunshine State One-Call of Florida, Inc. for underground facility locations, as set forth in the Underground Facility Damage Prevention and Safety Act of the State of Florida.

Prior to construction of any improvements within the county jurisdiction right of way, the contractor will need to contact Jason Espinosa at 954-577-4600 in the Field Operations Section of this office to set up a pre-construction meeting. If after the pre-construction meeting you should have any questions pertaining to the permit requirements please contact Field Operation directly.

If a permit for construction of the work as shown in these plans, within the **MLK Blvd. (Hammondville Road)** right of way, is not obtained **within one year** from the date of approval of said plan(s), the plan approval granted herein shall be null and void. If work has not commenced within **180 days** after issuance of a permit, the permit is null and void unless other arrangements have been made with this office. Prior to commencing construction, the contractor shall give the Broward County Highway Construction and Engineering Division a minimum of forty eight (48) hours notice. Prior to scheduling any required tests and/or inspections the contractor shall give the Broward County Highway Construction and Engineering Division a minimum of twenty four (24) hours notice.

While the job is in progress a set of plans for the project bearing the Broward County Highway Construction and Engineering Division approval stamp and a copy of the signed permit must be on the job site. No work shall occur unless the plans and permit are available at the work site.

All construction shall be in accordance with the approved plan, however, should minor revisions be necessary these revisions must be shown on a revised plan that shall be signed by the Engineer of Record and the Broward County Highway Construction and Engineering Division representative prior to construction. If the Broward County Highway Construction and Engineering Division or its Representative denies the request for said revision, construction shall continue in accordance with the original approval. A signed copy of all revisions shall be kept at the work location and on file in the Broward County Highway Construction and Engineering Division.

Prior to commencing any paving operation in the county right of way the Engineer of Record shall provide to this office and receive approval of the following:

One (1) set of certified drainage as-built drawings signed and sealed by a Professional Land Surveyor registered in the State of Florida together with the Engineers Certification. All drainage installations shall be tested for leakage prior to backfilling; and

One (1) set of finished rock base as built drawings signed and sealed by a Professional Land Surveyor registered in the State of Florida and certified by a Professional Engineer registered in the State of Florida, stating that the installation shown thereon was made in substantial conformance with the approved drawings. Finished rock as-built drawings shall be at the same scale as the approved drawings and must show finished rock base elevations and offsets at centerline, edge of median and edge of pavement, plus elevations of bottom of swale or flow line of gutter, top of curb and right of way line, at high point and low points, intersections and changes in slope. Elevations shall be verified and shown at intervals not to exceed 300 feet measured along the profile grade line for projects over 1500 feet in length; every 100 feet for

**MLK Blvd. Turnpike to Powerline Rd.**

Highway Construction and Engineering Division Ref. #140919001

projects 500 to 1500 feet in length and every 50 feet for projects under 500 feet in length. These elevations shall be depicted on a set of plans at the same scale, with sufficient clarity to make judgment of acceptability possible; and

All test reports including One (1) copy of the density reports on the compaction of the subgrade, base, shoulders and swales verified by an independent certified Engineering Testing Laboratory.

As a point of information please be advised that prior to construction of the base course for the improvements covered by the attached plan all underground construction in the vicinity must be installed, tested and accepted.

Prior to final inspection, the Engineer shall furnish one set of certified Record drawings signed and sealed by both Engineer and P.L.S., to the Broward County Highway Construction and Engineering Division. The drawings submitted must bear the certification of the Engineer that the installation conforms substantially to the design, has passed all required tests, and that the inspection of the installation during construction was conducted under the supervision of the Engineer or his representative. All locative information and dimensions shall be certified by a land surveyor registered in the State of Florida. Additionally, all required reports and certifications must be received by the Broward County Highway Construction and Engineering Division prior to final inspection. Record drawings shall indicate the following:

1. Size, material, location and elevation of all underground utilities encountered during construction; and
2. The record drawings shall also contain all rim elevations, invert elevations and structure Numbers; and
3. Accurate house connection dimensions shall be shown on the plans. Main and terminal

After all construction is completed and all certifications, record drawings and other required documents have been submitted to the Broward County Highway Construction and Engineering Division, and accepted, but before the one-year bonded maintenance period begins, the permittee shall request a final inspection of the project. Following the inspection, if everything is acceptable the Broward County Highway Construction and Engineering Division will issue a notice of approval, which will mark the commencement of the one-year warranty period.

Design review and permitting must be done by the City having permit authority. Should the City request a change that affects the conditions of the approved plans, then the revised plans must be resubmitted to this office.

Should you have any question please contact Rick Labinsky at 954-577-4581.

Very truly yours,



Richard Labinsky, PE  
Eng. III, P&D Section

cc: Sharon Gross, w/encl., Alric Malcolm, Alessandra Delfico, PE

# TS CITY, FLORIDA

## INDEX

COVER  
TOPOGRAPHIC SURVEY

ENGINEERING NOTES AND LEGEND  
ROADWAY PLANS  
PAVING, GRADING AND DRAINAGE PLANS  
PAVEMENT MARKING AND SIGNAGE PLANS  
ROADWAY SECTIONS  
CONSTRUCTION DETAILS  
CONSTRUCTION NOTES  
STORMWATER POLLUTION PREVENTION PLAN,  
DETAILS AND NOTES

TRAFFIC CONTROL GENERAL NOTES  
TRAFFIC CONTROL PLANS

TREE MANAGEMENT PLANS  
LANDSCAPE PLANS  
LANDSCAPE DETAILS  
LANDSCAPE NOTES

IRRIGATION PLANS  
IRRIGATION DETAILS  
IRRIGATION LEGEND AND NOTES

ELECTRICAL STREET LIGHTING PLANS  
PHOTOMETRIC STREET LIGHTING PLANS  
ELECTRICAL SCHEDULE & DETAILS  
ELECTRICAL PANEL SCHEDULES & ONE-LINE

PERMIT SET  
MUST BE ON JOBSITE AT ALL TIMES  
DURING CONSTRUCTION

NOTICE  
INSPECTION REQUIRED  
24 HRS. PRIOR TO COMMENCING ANY WORK IN  
THE PUBLIC R/W CONTACT THE BROWARD  
COUNTY HIGHWAY CONSTRUCTION AND  
ENGINEERING DIVISION AT 954-577-4600 FOR  
INSPECTION.

NOTE:  
APPROVAL OF THIS PLAN DOES  
NOT CONSTITUTE A PERMIT FOR  
CONSTRUCTION.  
A PERMIT FOR CONSTRUCTION MUST BE  
OBTAINED FROM THE BROWARD COUNTY  
HIGHWAY CONSTRUCTION AND ENGINEERING  
DIVISION PRIOR TO COMMENCING  
CONSTRUCTION IN THE PUBLIC RIGHT OF WAY.

ALL MATERIALS USED AND INSTALLATIONS  
WITHIN THE PUBLIC RIGHT OF WAY OR  
EASEMENTS SHALL BE IN ACCORDANCE WITH  
BROWARD COUNTY HIGHWAY CONSTRUCTION  
AND ENGINEERING DIVISION SPECIFICATIONS.

BROWARD COUNTY HIGHWAY CONSTRUCTION AND  
ENGINEERING DIVISION

PLAN CONSISTENT  
WITH PLAT REQUIREMENTS

PUBLIC RIGHT OF WAY APPROVAL  
FOR PAVING, GRADING AND DRAINAGE

BY: J. L. [Signature] DATE: 2-13-15

DOES NOT INCLUDE APPROVAL  
OF PAVEMENT MARKING & SIGNS

HAVE BEEN  
Y REPRODUCTION.  
SIDERED WHEN  
DATA.

FOR WHAT'S BELOW  
WAYS CALL 911  
BEFORE YOU DIG

© 2011 Florida Highway & Bridge

FLORIDA HIGHWAY & BRIDGE

**KEITH**  
ASSOCIATES, INC.  
consulting engineers

301 EAST ATLANTIC BOULEVARD  
POMPANO BEACH, FLORIDA 33060-6643

STATE OF FLORIDA CERTIFICATE OF  
AUTHORIZATION NUMBER - 7928

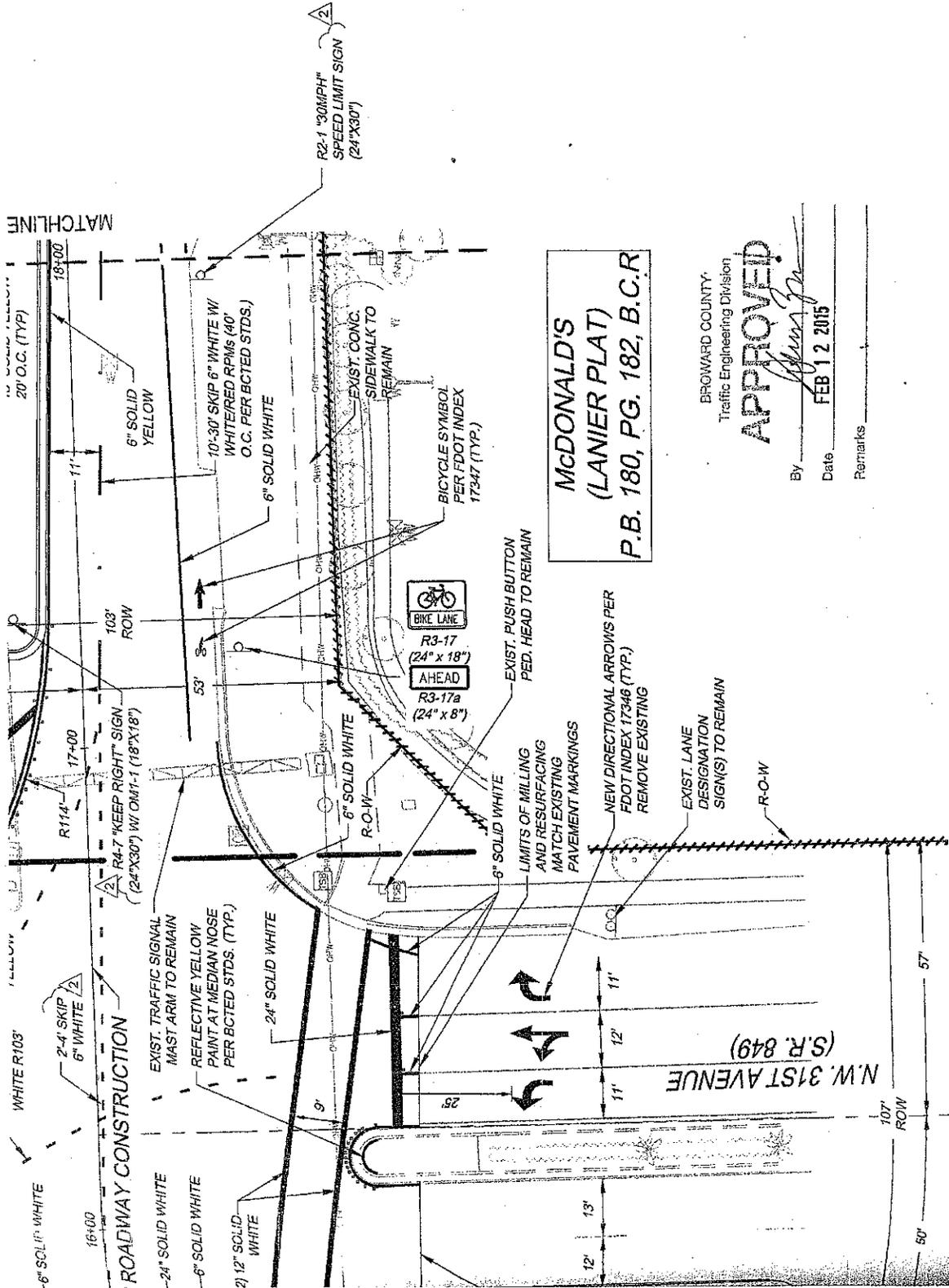
(954) 788-3400 FAX (954) 788-3500

PROJECT No. 07470.50 DECEMBER 2012  
LATEST REVISIONS FEBRUARY 2015

# MARTIN LUTHER KING JR. BOULEVARD ROAD IMPROVEMENTS PAVEMENT MARKINGS AND SIGNAGE PLAN

SHEET NO. C-14

PROJECT NO. 07470.50



**MCDONALD'S  
(LANIER PLAT)  
P.B. 180, PG. 182, B.C.R**

BROWARD COUNTY  
Traffic Engineering Division  
**APPROVED**

By: *[Signature]*  
Date: FEB 12 2015  
Remarks:

**APPENDIX A**  
**PROJECT PERMITS AND CONDITIONS –**

3. BROWARD COUNTY TRAFFIC ENGINEERING DIVISION (BCTED) – PLAN APPROVAL AND MAINTENANCE OF TRAFFIC APPLICATION PROCEDURE



PUBLIC WORKS DEPARTMENT  
**TRAFFIC ENGINEERING DIVISION**

2300 W. Commercial Boulevard • Fort Lauderdale, Florida 33309 • 954-847-2600

November 18, 2014

Ms Enelise Michaels  
Keith and Associates, Inc.  
301 East Atlantic Blvd  
Pompano Beach Florida 33060-6643

Re: **Martin Luther King Jr Blvd/Hammondville Road Educational Corridor  
NW 31 Avenue to Powerline Road – Roadway Improvements – P&D Plan  
FDOT Requested Revisions – Plan Modified November 2014  
BCHCED Reference # 140919001**

Dear Ms Michaels:

Broward County Traffic Engineering Division has reviewed the above referenced plan, and finds the copper communications/interconnect portion of the plan to be acceptable. There are no school/pedestrian, signal or fiber optic communications/interconnect comments.

A copy of the Pavement Marking and Signing Inspection Procedure is attached for your information.

Reviewed by:

**Signal Design:** Rebecca Martinez @ 954-847-2619 or [remartinez@broward.org](mailto:remartinez@broward.org)

**Systems Communications:** Tim Miller @ 954-847-2761 or [timiller@broward.org](mailto:timiller@broward.org)  
(Copper only)

**Systems Communications:** Robert Blount @ 954-847-2745 or [rblount@broward.org](mailto:rblount@broward.org)  
(Fiber Optic only)

**Schools/Traffic Calming:** Stephon Ramoutar @ 954-847-2744 or [sramoutar@broward.org](mailto:sramoutar@broward.org)

**Please note** that pavement marking and signing comments, acceptance and sign-off will be provided by the Broward County Highway Construction and Engineering Division.

You may call me at 954-847-2641, or contact me by E-Mail at [sgross@broward.org](mailto:sgross@broward.org), if you have any questions.

Sincerely,

A handwritten signature in blue ink that reads "Sharon Gross".

SHARON GROSS

Attachments

Broward County Board of County Commissioners  
Sue Gunzburger • Dale V.C. Holness • Martin David Kiar • Chip LaMarca • Stacy Ritter • Tim Ryan • Barbara Sharief • Lois Wexler  
Broward.org

**MEMORANDUM**

Please pass to the next person

	Name	Initial and Date	Comments	
			Yes	No
1	Rebecca Martinez	Rem 11/13/14		✓
2	Tim Miller	J.M. 11/13/14		X
3	Stephon Ramoutar	SR 11.12.14		✓
4	Bob Blount	BD 11/12/14		X
5				

**From:** Sharon Gross

**RE:** Martin Luther King Jr Blvd/Hammondville Road Educational Corridor  
 NW 31 Avenue to Powerline Road – Roadway Improvements – P&D Plan  
**FDOT Requested Revisions – Plan Modified November 2014**  
 BCHCED Reference # 140919001

**Date:** November 12, 2014

Please review the attached plan for the following; date and return to me by **November 18, 2014**

**Communications:**

- Communication infrastructure is in or within approximately 1500 feet of the proposed construction area.
- Communication Conduit/Interconnect is not in the area.

**Signals:**

- Traffic Signal will need to be modified

**Special Projects:**

Schools

- School issues are in the area of proposed construction.
- Flashers
- Maintenance of Traffic – School/Pedestrian Note – FDOT/BCTED

Traffic Calming ( )

- Pavement Marking and Signs

Street Lights

- Street Lights are in the area of proposed construction.

Maintenance of Traffic

- MOT

Security To Be Provided:

- Communications Conduit/Interconnect Cable
- Other \_\_\_\_\_

**RECEIVED**

**NOV 17 2014**

**BROWARD COUNTY  
 TRAFFIC ENGINEERING DIVISION**

## Gross, Sharon

---

**From:** Miller, Timothy  
**Sent:** Thursday, November 13, 2014 1:19 PM  
**To:** Gross, Sharon  
**Subject:** Plan Review (Martin Luther King - Hammondville Rd. Educational Corridor - from NW 31 Ave. to Powerline Rd. - Roadway Improvement - P&D Plan - FDOT Requested Revisions - Plan Modified November 2014 - BCTED # 140919001)

November 13, 2014

Sharon,

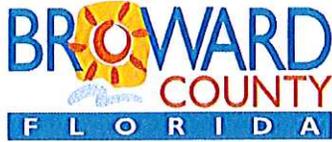
The above listed plan has been reviewed and it's acceptable for copper communications / interconnects.

Thank you



Tim Miller, Traffic Signal Technician III  
Traffic Engineering Division  
Systems Communication Section  
2300 West Commercial Blvd. Tamarac, Fl. 33309  
Mon -Thur. 6:00 am - 4:00 pm  
(954) 847 - 2761  
[timiller@broward.org](mailto:timiller@broward.org)





PUBLIC WORKS DEPARTMENT  
**TRAFFIC ENGINEERING DIVISION**

2300 W. Commercial Boulevard • Fort Lauderdale, Florida 33309 • 954-847-2600

**Broward County Traffic Engineering Division**  
**Pavement Marking and Signing Inspection Request Procedure**

(Effective Date: October 1, 2009)

- 1) The Broward County Traffic Engineering Division (BCTED) limits inspections to final inspections only. Inspections are limited to work/projects in the public right-of-way or connections to the public right-of-way.
- 2) Traffic Engineering Division staff's contact for a project is the Engineer-of-Record (EOR) only. The EOR is expected to resolve any issues/questions raised by the pavement marking and signing Contractor(s) or Sub-Contractor(s).
- 3) It is the responsibility of the EOR to insure that the project is completed in conformance with the approved plan, prior to requesting a pavement marking and signing inspection. The EOR is to inspect the project and generate a punch list, as needed. The EOR will be responsible for making sure that the Contractor or Sub-Contractor correct the deficiencies listed in the punch list generated by the EOR.
- 4) After the EOR determines that the completed project conforms to the approved plans, the EOR shall take photographs to document the conformance. The photographs should be compared with the approved plans and be identified by station number. The photographs should show, but, not be limited to:
  - (a) RPM's - four-corner coverage, correct spacing and location.
  - (b) Signs – correct location, correct sign as shown on approved plan.
  - (c) Messages on Pavement – correct location, spelling and size.
  - (d) Arrows – correct location, shape and size, centered in lane.
  - (e) Edge Lines and Lane Lines – correct color and correct width.
  - (f) Stop Bar – correct location and width.
  - (g) Reflectivity of Thermoplastic markings – even distribution of glass beads.
- 5) After all deficiencies have been satisfactorily corrected, the EOR will be able to submit a final inspection/acceptance request to BCTED.
- 6) The EOR shall submit a written request for pavement marking and signing inspections to Sharon Gross. The complete inspection request shall include:
  - (a) A signed and sealed letter requesting the inspection and certifying that the

project conforms to the approved plans, and that the EOR has personally inspected the completed project for conformance with the approved plan.

- (b) Photographs which document that the completed project conforms to the approved plan.
- (c) Copies of the Broward County Certificate of Competency, issued by the Broward County Permitting, Licensing and Consumer Protection Division, for each contractor and/or sub-contractor that worked on the pavement marking and signing portion of the project.

7) Upon receipt of the certification letter and photographs, BCTED staff will examine the photographs within one week of receipt of a completed request. If a review of the photographs reveals deficiencies in the project, the EOR will be notified in writing by US Mail or by E-Mail, that the photographs indicate that the project is not ready for a final inspection. No field inspection will be performed and no punch list will be issued by BCTED. The EOR will be asked to repeat the certification and inspection request procedure, detailed in paragraphs 4 through 6, after the project deficiencies have been corrected.

8) If a BCTED staff review of the photographs does not show major deficiencies, a field inspection will be performed and the results will be provided to the EOR within four weeks of receipt of the completed certification package. If the project is accepted, an acceptance letter will be sent to the EOR, via US Mail. If, however, several deficiencies are identified during the field inspection, the inspection will be terminated and the EOR will be notified of the termination by US Mail or by E-mail. No punch list will be issued by BCTED. The Engineer-of-Record will be instructed to repeat the certification and inspection request procedure, detailed in paragraphs 4 through 6, after the project deficiencies have been corrected.

9) Items that will result in the termination of an inspection include, but are not limited to:

- (a) A lack of uniformity of glass bead coverage, at multiple locations.
- (b) A lack of reflectivity of the Thermoplastic markings, at multiple locations.
- (c) Incorrect application of materials, not in conformance with manufacturer's instructions.
- (d) Incorrect color or thickness of Thermoplastic markings.
- (e) Signs that are missing, incorrectly spelled, or that are not to current standards
- (f) A lack of four-corner coverage on multiple RPM's.



Public Works Department

**HIGHWAY CONSTRUCTION AND ENGINEERING DIVISION**

1 N. University Drive, Box B300, Plantation, Florida 33324-2038 • 954-577-4555 • FAX 954-357-5715

September 12, 2014

Mark Castano, P.E.  
Keith & Associates, Inc.  
301 E Atlantic Blvd  
Pompano Beach, FL 33060-6643

Re: **M.L. King Blvd (Hammondville Rd) – Pompano Beach**  
**BCTED Ref # 130503060**

Dear Mr. Castano:

Enclosed for your use are two stamped copies of the approved pavement marking and signing plan for the subject project. If additional copies are needed, please contact this office.

Should you have any questions, please contact me at 954 577-4588 or by email at [dzeller@broward.org](mailto:dzeller@broward.org).

Sincerely,

A handwritten signature in black ink, appearing to read "David Zeller".

David Zeller, Engineer II  
for: BCTED and BCHCED Paving and Drainage

Enclosures

cc: Sharon Gross, BCTED w/enclosure



**LEGEND**

11.40

PROPOSED GRADE ELEVATION

11.40  
10.90

PROPOSED TOP OF CURB ELEVATION  
PROPOSED PAVEMENT ELEVATION



PROPOSED CONCRETE SIDEWALK/  
FLAT WORK



PROPOSED PAVEMENT WIDENING (2'MIN.)  
(REFER TO PLANS DETAILS)



REMOVAL OF EXISTING CONCRETE  
DRIVEWAY AND REPLACEMENT WITH NEW  
PAVEMENT WIDENING SECTION



REMOVAL OF EXISTING PAVEMENT  
(INCLUDING REMOVAL OF ASPHALT AND  
BASE TO A MIN. DEPTH OF 10 INCHES  
BELOW EXIST. GRADE) OR REMOVAL OF  
EXISTING CONCRETE SIDEWALK.  
REGRADE/RESOD AS NEW SWALE AREA OR  
AS NEW 6-FT WIDE CONCRETE SIDEWALK.  
(REFER TO PLANS AND DETAILS).



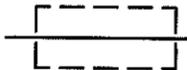
PROPOSED MILLING (1" DEPTH) AND  
RESURFACING (1" - S-III)  
(REFER TO PLANS AND DETAILS)



PROPOSED CATCH BASIN OR CURB INLET



PROPOSED DRAINAGE MANHOLE



PROPOSED EXFILTRATION TRENCH



PROPOSED UTILITY CROSSING



PROPOSED FLOW DIRECTIONAL ARROW



PROPOSED SIGN



DIRECTIONAL ARROWS  
(PER FDOT INDEX 17346)



PROPOSED DETECTABLE WARNING



CURB RAMP IDENTIFICATION  
(PER FDOT INDEX 304)



EX. RIGHT-O



EX. NON-VE



EXIST. FLAG



EXIST. GAS



EXIST. GUYW



EXIST. IRRIGA



EXIST. CABLE



EXIST. PICNIC



EXIST. PARKI



EXIST. GARBA



EXIST. NEWSF



EXIST. PARKI



EXIST. PAYPH



EXIST. SANIT



EXIST. SINGLE



EXIST. SPRIN



EXIST. WATER



EXIST. WOOD



EXIST. WOOD



EXIST. AIR RE



EXIST. BOLLAR



EXIST. DECOR



EXIST. CONCR



EXIST. CONCR



EXIST. HARD



EXIST. SOFT

PREVIOUSLY ACQUIRED FOR THIS PROJECT. THE CONDITIONS OUTLINED IN THE PERMITS ARE IN ALL WORK ASSOCIATED WITH THIS PROJECT IS IN COMPLIANCE WITH ALL OF THE REQUIREMENTS

TO BE NON-APPLICABLE BY REGULATORY AGENCY HAVING PROPER JURISDICTION REGARDING NECESSARY STEPS TO CONTAIN ALL UNCONFINED PARTICULATE MATTER WITHIN THE PROJECT BOUNDARIES.

ELECTRIC HANDHOLES, VALVES, RISERS, SPRINKLER SYSTEM, BACKFLOW PREVENTOR, UTILITY & LIGHTS & NEW LAYOUT.

COORDINATION FOR COORDINATION WITH APPLICABLE UTILITY COMPANIES PRIOR TO ADJUSTMENTS.

IF SUCH INVESTIGATIONS AS SHOWN ON THE DRAWINGS ARE NOT GUARANTEED AS TO THE CONDITIONS PRIOR TO STARTING CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL BE RESPONSIBLE

STRUCTURES AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ALL CONFLICTS.

CONDITION, INCLUDING AREAS COVERED WITH SOD, CONCRETE, AND PAVEMENT.

CONSTRUCTION OPERATIONS.

BE PERFORMED IN ACCORDANCE TO THE MUTCD AND FDOT STANDARDS AND SHALL BE IN ACCORDANCE WITH THE PROJECT.

RECORD. ONCE THE AS-BUILTS ARE APPROVED BY THE ENGINEER OF RECORD, THE ENGINEER SHALL BE RESPONSIBLE FOR APPROVALS AND PERMIT CLOSE-OUTS. THE AS-BUILTS SHALL INDICATE ALL INFORMATION NECESSARY FOR THE CONTRACTOR TO BE SIGNED AND SEALED BY A PROFESSIONAL LAND SURVEYOR. IF THEY ARE SUFFICIENTLY ACCURATE, CLEAR AND LEGIBLE TO SATISFY THE ENGINEER OF RECORD, THE PROJECT WILL NOT BE CONSIDERED COMPLETE UNTIL ALL FINAL CERTIFICATIONS HAVE BEEN

VEGETATION AND TREE REMOVAL REQUIREMENTS.

EXISTING SIGNAGE AND PAVEMENT MARKINGS WILL BE REMOVED OR RELOCATED BY THE CONTRACTOR

AND CURRENT BROWARD COUNTY

SECTION 711, DESIGN STANDARDS, INDEX 17346, AND THE BROWARD COUNTY TRAFFIC ENGINEERING STANDARD

"B" OR EQUIVALENT, APPLIED WITH EPOXY OR BITUMINOUS ADHESIVE.

SPECIFICATIONS.

TRAFFIC ENGINEERING STANDARD (CURRENT ADDITION).

FOR ALL PAVEMENT MARKING AND SIGNAGE WORK.

BROWARD COUNTY  
Traffic Engineering Division  
**APPROVED**

By [Signature]

Date SEP 12 2014

Remarks \_\_\_\_\_

**APPENDIX A**  
**PROJECT PERMITS AND CONDITIONS –**

4. BROWARD COUNTY MASS TRANSIT – PLAN APPROVAL



Transportation Department  
**Transit Division** – Service and Capital Planning  
One University Drive, Plantation, FL 33324, Room 3100A

September 5, 2014

**TO:** Mark Castano, Engineering Manager  
**FROM:** Arethia Douglas; Broward County Transportation Department, Transit Division  
**SUBJECT:** Martin Luther King Blvd. (Hammondville Rd.) Educational Corridor – Roadway Improvements (Section 33, Township 488S, Range 42E)

A handwritten signature in black ink, appearing to read "A Douglas", written over the "FROM:" line of the email header.

Following the review of the Martin Luther King Blvd. (Hammondville Rd.) Educational Corridor – Roadway Improvements, Broward County Transit has found no issues with the submitted revised drawings and response letter dated August 5, 2014.

Following completion of the construction BCT will need to inspect the stops to ensure compliance with the following:

1. 2% maximum cross slope on the pads.
2. Installation of the bus stop shelters and amenities.

cc: Stu Terraza, File

**APPENDIX A**  
**PROJECT PERMITS AND CONDITIONS –**

5. FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT) –  
PLAN APPROVAL – REFER TO EXECUTED LAP AGREEMENT

**APPENDIX A**  
**PROJECT PERMITS AND CONDITIONS –**

6. FLORIDA TURNPIKE – GENERAL USE PERMIT

Oms# 441159

TP-86-SP-011-15  
Permit No.: 2015-K-853-004

Date: 1/26/15

Name of Applicant or Authorized Agent: Alessandra Delfico, P.E. (City Engineer - Pompano Beach)

Entity (if applicable): City of Pompano Beach

(If entity, furnish contact information for responsible representative)

Address: 1201 NE 5th Avenue Zip Code: 33060

City/State: Pompano Beach, Florida Telephone No.: (954)786-4144

Email Address: Alessandra.Delfico@copbfl.com

**Activity / Project Site**

County: Broward State Road: N/A 91 Section: N/A 86470

From Mile Post: N/A 67.4 to Mile Post: N/A 67.4

Construction Proposed or Underway: Yes  No  FM Project No.: \_\_\_\_\_

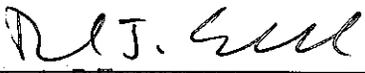
Name of Municipality if Work is within Limits: Pompano Beach / Broward County

Description of Work Activity: The City of Pompano Beach plans to enhance MLK Blvd (a.k.a. Hammondville Road) between NW 31st Avenue (Tpke. Ramp) and Powerline Rd. in accordance with the Phase II "Educational Corridor". The prop. imp. include incorporating new sidewalks and dedicated bicycle lanes along both sides of the roadway, new medians, roadway milling and resurfacing (with some widening), enhanced landscape, overall drainage, roadway and lighting improvements.

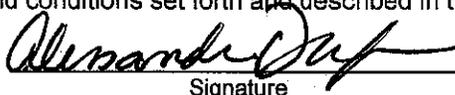
**General Provisions**

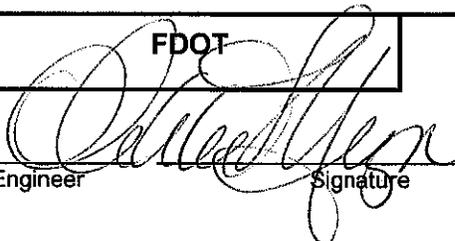
1. Attach any pertinent plans or drawings.
2. Attach notification letters sent to any Utilities both aerial and underground that will be potentially impacted.
3. The designated FDOT Engineer shall be notified 48 hours prior to beginning of work. Contact Dan Ekback at (954) 934-1205.
4. All work, materials and equipment shall be subject to inspection and approval by FDOT. Applicants certification of work at completion is required.
5. The permittee shall be responsible to place and display safety devices and proper maintenance of traffic in accordance with the latest version of the Department's Design Standards, index series 600, or an alternative plan signed and sealed by a professional Engineer and attached with the permit.
6. All FDOT property shall be restored to its original condition. Any damage to FDOT property as a result of this work shall be repaired and restored in a manner acceptable to the FDOT at the sole expense of the permittee.

JAN 26 2015

<b>Special Provisions</b>		1-27-2015
<b>SEE ATTACHMENT A</b>	Recommended for Approval	
	By: Dan Ekback, P.E. Florida's Turnpike Enterprise Permits Engineer	
<b>Permit Not Valid Without Attachments</b>		

<b>Conditions</b>	
<p>1. In the event the permittee fails to meet any of the requirements of this permit by the FDOT, the permitted activity must cease until brought into compliance. If compliance can not be met, then the permit will be rendered void and said work shall be removed from the right of way at no cost to the FDOT.</p> <p>2. Work shall commence within <u>365</u> days of permit approval. Work shall be completed by <u>10/2017</u>. (Date)</p> <p>3. The rights and privileges herein set out are granted only to the extent of the State's right, title and interest in the land to be entered upon and used by the permittee, and the permittee will, at all times, and to the extent permitted by law, assume all risk of and indemnify, defend and save harmless the State of Florida and the FDOT from and against any and all loss, damage, cost or expense arising in any manner on account of the exercise or attempted exercises by said permittee of the aforesaid rights and privileges.</p>	

<b>Applicant</b>		
I hereby agree to comply with all terms and conditions set forth and described in this permit.		
<u>Alessandra Delfico PE, City Engineer</u> Printed or Typed Name and Title	 Signature	<u>1-23-15</u> Date

<b>Debbie M. Meyer, P.E.</b> Eng. of Maintenance Operations Florida's Turnpike Enterprise	<b>FDOT</b>	
Approved By: _____ Print Designated Engineer	 Signature	<u>01/20/15</u> Date
_____ Title		

# ATTACHMENT "A"

Permit #2015-K-853-004 (TP-86-SP-011-15)

**Project Description:** SR-91, MP 67.4

The City of Pompano Beach is proposing roadway improvements along Hammondville Road, between NW 31<sup>st</sup> Avenue and Powerline Road. A small portion at the west end of the project, within FTE R/W will have updated signage and pavement markings. In addition, a small portion will be milled and resurfaced.

The following apply:

1. **The Applicant shall be responsible to make sure the Contractor abides by all FDOT Standard Specifications and Design Standards.**
2. **The Applicant shall be contacted by the Florida's Turnpike Enterprise contact person Giuseppe Scaringi or his designee within five (5) working days from the date of the permit approval to schedule a pre-work meeting.** At the pre-work meeting, the permit and attachment conditions will be discussed, and the Applicant shall provide emergency contact names and numbers and a schedule for the proposed work.
3. **This permit does not allow Lane Closures. Lane Closures requests must be submitted 2 weeks prior to implementation.**

**Permit is good through 10-31-2017. We are asking that the applicant submit an E-mail requesting an extension, 10 days prior to the expiration date, if they want to keep the permit valid and open past the expiration date. If an E-mail is not received or an extension is not granted, the permit will be closed and a new permit submittal will be required to continue work. The extension will be up to the discretion of the Permits Engineer, Dan Ekback, P.E.**

**E-mail: [Daniel.ekback@dot.state.fl.us](mailto:Daniel.ekback@dot.state.fl.us)**

CC: *Dave Soto, File*

# Special Conditions

Permit #2015-K-853-004 (TP-86-SP-011-15)

The following apply:

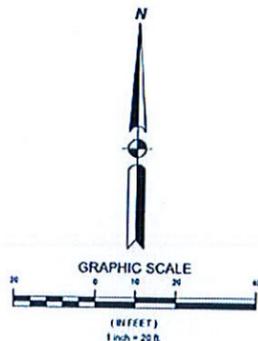
1. Any Traffic Management Plan shall be in accordance with the current edition of the *F.D.O.T. Roadway and Traffic Design Standards*, Index Series 600 through 670, and the *M.U.T.C.D.* as minimum criteria. Certified personnel representing the Applicant must supervise any Maintenance of Traffic setup.
2. While work is in progress, all vehicles shall be parked as far off the roadway as possible. All vehicles must be clearly marked with a company name and/or logo, and be equipped with working amber strobe lights. In addition, all workers shall wear ANSI approved apparel (safety vests) while on Turnpike property.
3. The overnight storage of any vehicles, equipment or materials within the Turnpike right-of-way shall be prohibited without prior approval by the Turnpike Permits Office. Definitely NO overnight storage of vehicles in the median.
4. The Applicant's attention is directed to the fact that the Applicant will be required to pay tolls, as applicable to the general public.
5. Protection of Existing Work. Areas where fencing, signing, lighting, guardrail, paving, grassing and/or sodding have been completed by others shall be given maximum protection while work under this permit is in progress. Any damaged work shall be completely restored to original or better condition at the expense of the Applicant. Any conflicts with existing work shall be brought to the immediate attention of the Turnpike Enterprise Permits Office.
6. The Permittee shall be required to obtain necessary permits from all other agencies having jurisdiction in the areas of this permitted work, if applicable.
7. The Permittee shall be prohibited from driving or parking within the clear zone in a direction opposite the flow of traffic.
8. The Applicant shall be responsible for the protection of all Turnpike facilities and structures within the area of this work, including, but not limited to existing drainage structures, concrete ditch protection, irrigation systems, signs, delineators and fencing. Any damage to Turnpike facilities or structures shall be reported to the Permits office within 24 hours and repaired or replaced to the satisfaction of the Turnpike, and in compliance with current F.D.O.T. standards and specifications.

9. In case of extreme traffic or weather conditions, the Applicant may be required to remove their operation from the roadway and/or right-of-way, at the discretion of the Engineer or the Florida Highway Patrol, Troop "K", who has jurisdiction on this roadway.
10. The Applicant agrees to coordinate its work at all times so as not to
  - (a) Delay, interfere with, or cause increased costs to the Department's construction or maintenance contractor that may be working in the area,
  - (b) Take any action that might be the basis for a claim for delay, interference, or increased costs by the contractor.
  - (c) In the event that the Applicant or its agents or employees receive any information, either express or implied, and either directly from the contractor or otherwise, which indicates delay, interference, or increased costs have been or might be caused as a result of the Applicant's work, the Applicant shall immediately cease all work and shall immediately notify the Permits Office of the circumstances so an investigation can be made and steps can be taken to avoid any delay, interference, or increased costs. The Applicant agrees to be responsible and pay for all damages that are caused by the Applicant's breach of the provisions of this Permit or by the Applicant's negligence.
11. The Applicant shall notify the Turnpike Permits Representative within two weeks of completion of this work. **At that time, a final inspection will be scheduled prior to final acceptance of the work, with participation from the Turnpike, the Applicant, and the Contractor.**
12. The Applicant shall submit a "Certification of Permit Completion" within 30 days after "Final Acceptance" of the work by the Turnpike.
13. Commencement of this work by the Permittee shall act as acknowledgment and acceptance of the terms and conditions of this Permit and Special Conditions.

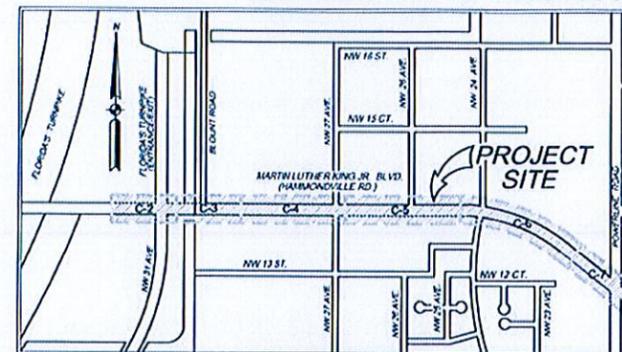
CC: *Dave Soto, File*

POSTED SPEED LIMIT 30 MPH  
DESIGN SPEED 35 MPH

NOTE:  
SEE SHEET C-1 FOR GENERAL NOTES AND LEGEND

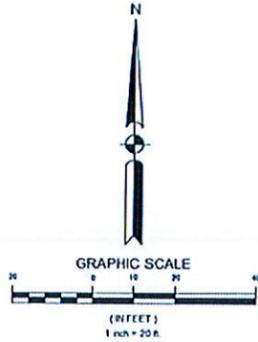


BCHCED REF. # 140919001



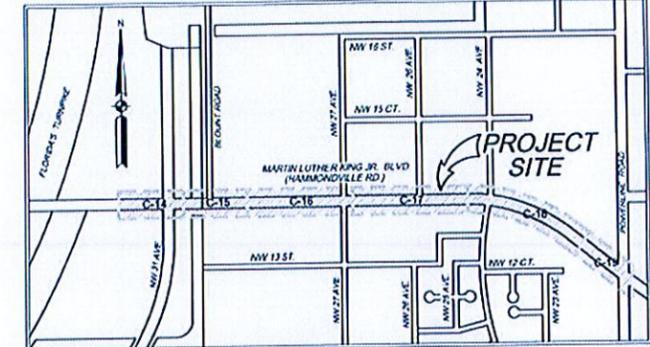
POSTED SPEED LIMIT 30 MPH  
DESIGN SPEED 35 MPH

NOTE:  
SEE SHEET C-1 FOR GENERAL NOTES, LEGEND, AND  
RPM PLACEMENT DETAILS.  
SEE SHEET C-22 FOR SIGN INSTALLATION DETAILS.



SUNSHINE STATE PARKWAY/TURNPIKE  
R-O-W

BCHCED REF. # 140919001



PERMIT SET  
MUST BE ON-SITE AT ALL TIMES  
DURING CONSTRUCTION

NOTICE  
INSPECTION REQUIRED  
24 HRS. PRIOR TO COMMENCING ANY WORK IN  
THE PUBLIC R/W CONTACT THE BROWARD  
COUNTY HIGHWAY CONSTRUCTION AND  
ENGINEERING DIVISION AT 954-517-4600 FOR  
INSPECTION.

NOTE:  
APPROVAL OF THIS PLAN DOES  
NOT CONSTITUTE A PERMIT FOR  
CONSTRUCTION.  
A PERMIT FOR CONSTRUCTION MUST BE  
OBTAINED FROM THE BROWARD COUNTY  
HIGHWAY CONSTRUCTION AND ENGINEERING  
DIVISION PRIOR TO COMMENCING  
CONSTRUCTION IN THE PUBLIC RIGHT OF WAY.

ALL MATERIALS USED AND INSTALLATIONS  
WITHIN THE PUBLIC RIGHT OF WAY OR  
EASEMENTS SHALL BE IN ACCORDANCE WITH  
BROWARD COUNTY HIGHWAY CONSTRUCTION  
AND ENGINEERING DIVISION SPECIFICATIONS

BROWARD COUNTY HIGHWAY CONSTRUCTION AND  
ENGINEERING DIVISION  
 PLAN CONSISTENT  
WITH PLAT REQUIREMENTS  
 PUBLIC RIGHT OF WAY APPROVAL  
FOR PAVING, GRADING AND DRAINAGE  
BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
DOES NOT INCLUDE APPROVAL  
OF PAVEMENT MARKING & SIGNS

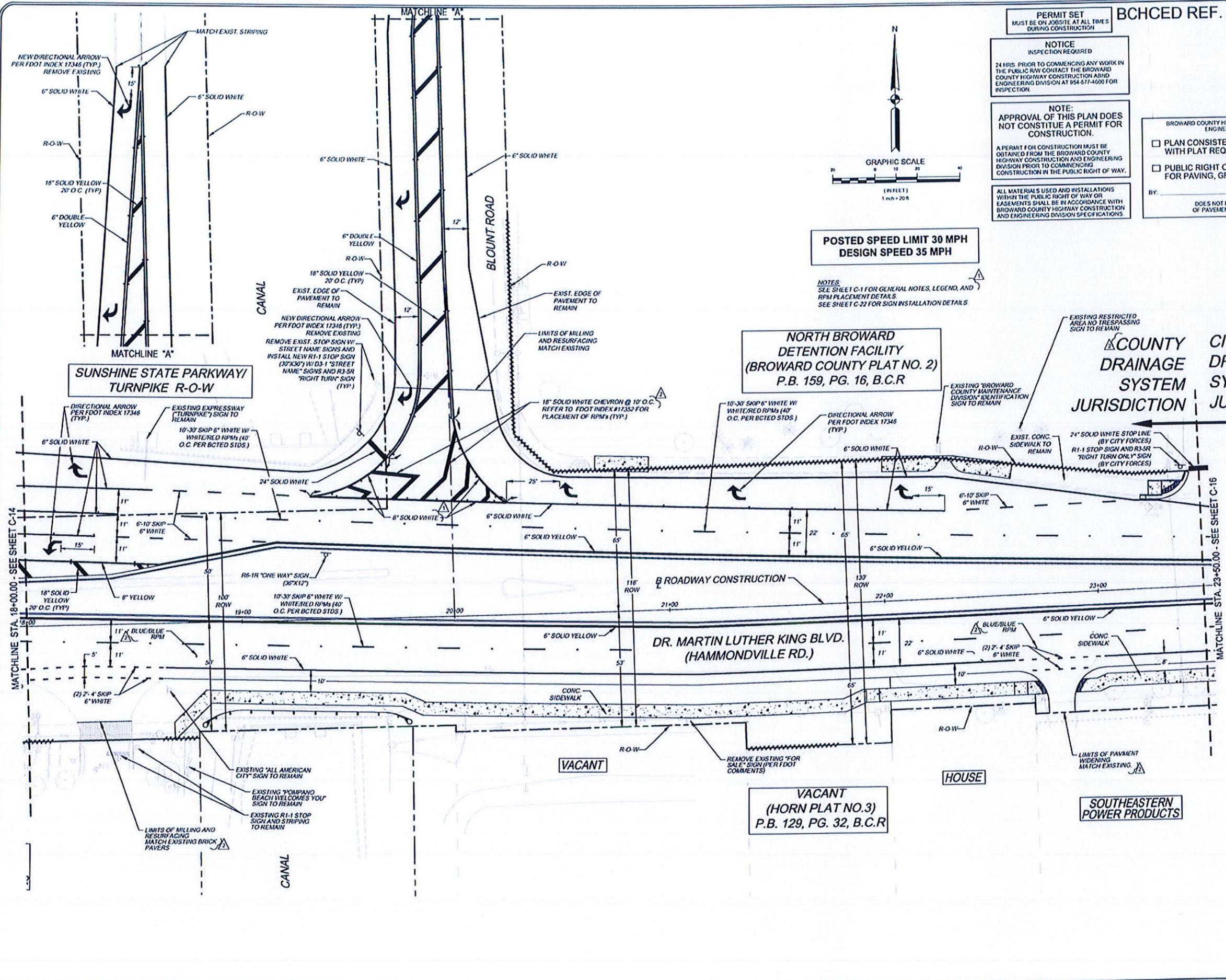
DATE	SEPTEMBER, 2012
SCALE	1" = 20'
DRAWN BY	D.C.
DESIGN BY	M.C.
CHECKED BY	J.T.

REVISION		
NO.	DATE	DESCRIPTION
1	09/11/12	REV. PER BCTD COMMENTS
2	09/11/12	REV. PER FOOT COMMENTS



**KELLY**  
consulting engineers  
301 EAST ATLANTIC BOULEVARD  
POMPANO BEACH, FLORIDA 33060-6663  
(954) 788-3400 FAX (954) 788-3500  
STATE OF FLORIDA CERTIFICATE OF  
AUTHORIZATION NUMBER - 7928

MARTIN LUTHER KING JR. BOULEVARD  
ROAD IMPROVEMENTS  
PAVEMENT MARKINGS AND SIGNAGE PLAN  
BROWARD COUNTY, FLORIDA  
CITY OF POMPANO BEACH



POSTED SPEED LIMIT 30 MPH  
DESIGN SPEED 35 MPH

NOTES:  
SEE SHEET C-1 FOR GENERAL NOTES, LEGEND, AND  
RPM PLACEMENT DETAILS.  
SEE SHEET C-22 FOR SIGN INSTALLATION DETAILS

NORTH BROWARD  
DETENTION FACILITY  
(BROWARD COUNTY PLAT NO. 2)  
P.B. 159, PG. 16, B.C.R

COUNTY DRAINAGE SYSTEM JURISDICTION  
CITY DRAINAGE SYSTEM JURISDICTION

DR. MARTIN LUTHER KING BLVD.  
(HAMMONDVILLE RD.)

VACANT  
(HORN PLAT NO.3)  
P.B. 129, PG. 32, B.C.R

SOUTHEASTERN  
POWER PRODUCTS

K:\Projects\07470.50\07470.50.dwg

MEMORANDUM

TO: Maintenance of Traffic (MOT) Applicants
FROM: Maj Shakib Engineer II
DATE: May 6, 2008
SUBJECT: MOT Application Procedure

In an effort to facilitate and expedite Broward County's MOT review/approval process, please review the attached MOT Instructions/Requirements documents and complete the attached MOT Application Form.

Effective October 1, 2007, the Broward County Traffic Engineering Division (BCTED), has implemented new submittal procedures to include the approved MOT Application Form and the items listed in the MOT Instructions/Requirements.

All submitted materials shall be legible. Therefore, it is recommended all facsimile transmittals be made from original documents.

Should you have any questions regarding these procedures, please call the MOT Hotline at (954) 847-2670.

Attachments:

- 1. "Maintenance of Traffic Instructions/Requirements" (Page 1)
2. "Maintenance of Traffic Application Form" (Page 2)

© STUBBS BARTON, Lanes MOT Application Form 09-23-10.doc

Broward County Board of County Commissioners www.broward.org

Maintenance of Traffic (MOT) Instructions/Requirements

An approved MOT Plan from the Broward County Traffic Engineering Division (BCTED) shall be required when work is being performed within Broward County Right of Way regardless of whether a permit is required. The approved MOT Plan shall be on site prior to and during the entire operation.

Application Process for an MOT Plan:

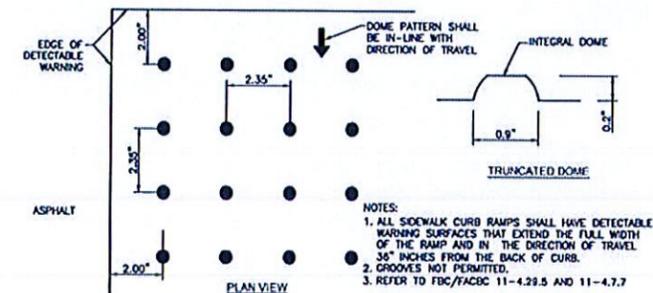
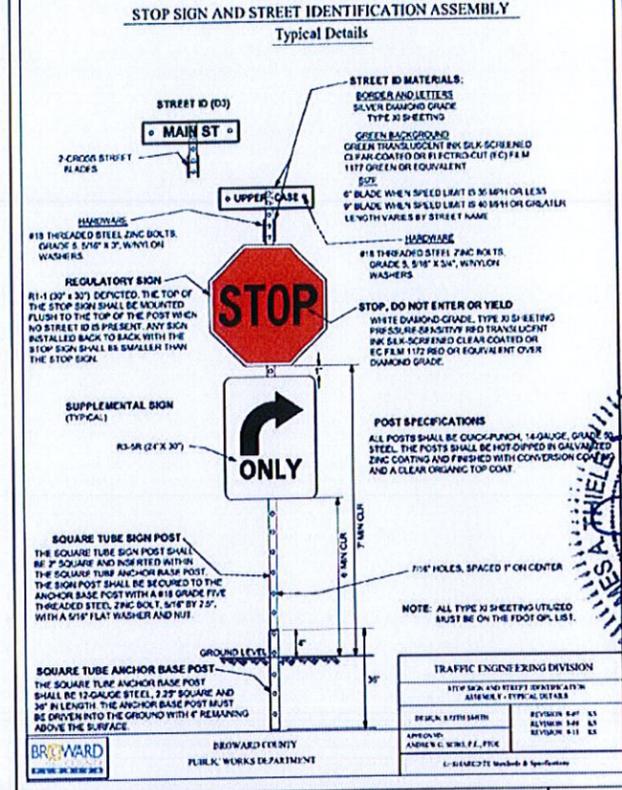
- Include an MOT Application Form.
- Include a location map for the project.
- Submit an applicable FDOT Design Standard Index from the 600 Series and/or a Typical Application figure from the MUTCD which represents the roadway characteristics and project conditions.
- If the project involves the closure of a sidewalk, include a sidewalk closure index.
- If the project does not involve a lane but is within the right of way, include the appropriate index for work off the road.
- If the project requires a lane shift, include a lane shift index.
- A sketch should accompany the materials for a condition that is not typical. Include taper lengths, shift lengths, shift widths, sign spacing, barricade or cone spacing, pavement markings, removal of pavement markings, nearby signal locations, etc.
- Indexes, Typical Applications or sketches shall have the roadways identified by name and show a north arrow.
- Applications shall include a current FDOT approved certification for Worksite Traffic Supervisor. If you are submitting an MOT Plan with an FDOT Design Standard 600 Series Index or a Typical Application figure from the MUTCD, an Intermediate Level Certification Card will be required.
- The MOT Plan must cover all phases of construction.
- If the project includes a sign-off sheet, it must be labeled with the project's name and/or location of the project.
- The approval of an MOT application may require up to (2) weeks from the time that all required documents as stated above are received at the Traffic Engineering Division.

© STUBBS BARTON, Lanes MOT Application Form 09-23-10.doc

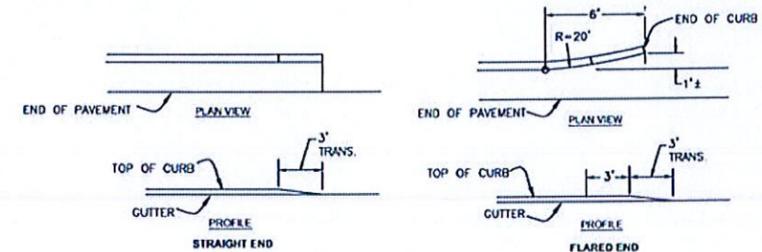
Maintenance of Traffic Application Form

Form fields for Maintenance of Traffic Application Form including Date, Contractor, City, State, Zip, Office #, Mobile #, Fax #, Fall name and number of 24 hr contact person, Name of Contractors working under this approval, Location of Project, Project Boundaries, Description of Work, Proposed Start Date, Proposed Completion Date, Authorized Contractor's Representative, A copy of the certification card(s) shall be included with every MOT Plan, Certified Signal Contractor's Name, Certified Signal Contractor's Phone #.

© STUBBS BARTON, Lanes MOT Application Form 09-23-10.doc



DETECTABLE WARNING DETAIL ('TRUNCATED DOMES') N.T.S.



TYPE F CURB AND GUTTER CURB FLARED AND STRAIGHT ENDS N.T.S.



- NOTES:
1. CONTRACTOR TO SUBMIT SHOP DRAWING WITH SIGN IN ACCORDANCE WITH FDOT/BCTED REQUIREMENTS AND MUTCD STANDARDS.
2. OVERALL SIGN DIMENSION AND MULTIPOST DETAILS TO BE PREPARED BY CONTRACTOR.

SIGN D3-2 (PER MUTCD) N.T.S.

REFER TO FDOT INDEX 304 FOR DETECTABLE WARNING AND SIDEWALK RAMPS DETAILS AND FDOT INDEX 310 FOR CONCRETE SIDEWALK DETAILS

THE CONTRACTOR SHALL INSTALL ALL SIGNS IN ACCORDANCE WITH THE VERTICAL CLEARANCES IDENTIFIED ON FDOT INDEX 17302 AND BCTED'S STANDARD SIGN DETAIL. IN CASES WHERE DOUBLE SIGNS ARE PROPOSED, THE BOTTOM OF THE SECONDARY SIGN SHALL BE PLACED WITH A BOTTOM VERTICAL CLEARANCE OF 7 FEET.

PERMIT SET MUST BE ON JOBSITE AT ALL TIMES DURING CONSTRUCTION. NOTICE INSPECTION REQUIRED. 24 HRS. PRIOR TO COMMENCING ANY WORK IN THE PUBLIC RW CONTACT THE BROWARD COUNTY HIGHWAY CONSTRUCTION AND ENGINEERING DIVISION AT 954-577-4600 FOR INSPECTION. NOTE: APPROVAL OF THIS PLAN DOES NOT CONSTITUTE A PERMIT FOR CONSTRUCTION. A PERMIT FOR CONSTRUCTION MUST BE OBTAINED FROM THE BROWARD COUNTY HIGHWAY CONSTRUCTION AND ENGINEERING DIVISION PRIOR TO COMMENCING CONSTRUCTION IN THE PUBLIC RIGHT OF WAY. ALL MATERIALS USED AND INSTALLATIONS WITHIN THE PUBLIC RIGHT OF WAY OR EASEMENTS SHALL BE IN ACCORDANCE WITH BROWARD COUNTY HIGHWAY CONSTRUCTION AND ENGINEERING DIVISION SPECIFICATIONS. BROWARD COUNTY HIGHWAY CONSTRUCTION AND ENGINEERING DIVISION. PLAN CONSISTENT WITH PLAT REQUIREMENTS. PUBLIC RIGHT OF WAY APPROVAL FOR PAVING, GRADING AND DRAINAGE. BY: DATE: DOES NOT INCLUDE APPROVAL OF PAVEMENT MARKING & SIGNS.

Table with columns: DATE, SCALE, DRAWN BY, DESIGN BY, CHECKED BY.

Table with columns: REVISION, DATE, REVISED COMMENTS, REV PER FOOT COMMENTS.



KEITH consulting engineers 301 EAST ATLANTIC BOULEVARD, POMPANO BEACH, FLORIDA 33060-6669 (954) 788-3400 FAX (954) 788-3500 STATE OF FLORIDA CERTIFICATE OF AUTHORIZATION NUMBER - 7928

MARTIN LUTHER KING JR. BOULEVARD ROAD IMPROVEMENTS CONSTRUCTION DETAILS BROWARD COUNTY, FLORIDA CITY OF POMPANO BEACH SHEET NO. C-22 PROJECT NO. 07470.50



**APPENDIX B**

**GEOTECHNICAL ROADWAY SOIL SURVEY REPORT PREPARED BY GEOVERSE, INC.**

GEOTECHNICAL ROADWAY SOIL SURVEY  
for  
HAMMONDVILLE ROAD

Pompano Beach, FL

Prepared for:

Keith & Associates, Inc.  
301 East Atlantic Boulevard  
Pompano Beach, FL 33308

Prepared by:

George P. Ballock, P.E.

December 31, 2002



***GeoVerse, Inc.***

*Innovative Engineering Solutions*

555 Sawgrass Corporate Parkway, Sunrise, FL 33325  
Phone (954) 835-9055 – FAX (954) 835-9044



**GeoVerse, Inc.**  
*Innovative Engineering Solutions*

December 31, 2002

Mr. Wilson Sanchez, P.E.  
Keith and Associates, Inc.  
301 East Atlantic Boulevard  
Pompano Beach, FL 33308

RE: Report of Roadway Geotechnical Soil Survey  
**Hammondville Road from 300 FT W. of NW 31<sup>st</sup> Ave. to Powerline Road**  
Pompano Beach, Florida  
GeoVerse Project No. 220136

Dear Mr. Sanchez:

As requested, GeoVerse, Inc. has completed the Roadway Geotechnical Soil Survey for the proposed reconstruction and widening of MLK Boulevard (Hammondville Road) in Pompano Beach, Florida. The scope of this investigation included field sampling and testing for determination of the existing subsurface soil properties, site drainage characteristics and existing pavement conditions and laboratory testing for determination of material constituents and physical properties. A summary of the findings of our investigation is presented in the following report.

### ***Field Investigation***

The field investigation consisted of the following:

- Auger borings along the construction corridor performed at approximately 200 FT spacing alternating left and right within the road right of way. The auger borings were typically 5 feet deep with every fifth boring 15 feet deep.
- FDOT Exfiltration Tests performed at a approximately 1 500 FT spacing along the construction corridor.
- Performance of pavement cores for determination of existing pavement and base thickness at a frequency of three tests per lane mile.
- Sampling of subgrade for determination of existing subgrade LBR.

### **Auger Borings**

The auger boring survey identified 5 soil stratum within the limits of the corridor as follows:

- Stratum 1 – Light Brown to Dark Brown Fine Sand with trace Organics and Limestone Fragments (AASHTO Classification A-3). Stratum 1 consists mostly of sand with trace root matter and occasional rock. This layer was typically encountered at the ground surface intermittently throughout the roadway corridor.
- Stratum 2 – Tan to Dark Grey Fine Sand with Limestone Fragments (AASHTO Classification A-3): Stratum 2 was encountered throughout the roadway corridor typically ranging from depths of 2-5 FT. It is very similar to Stratum 3 with the exception that small quantities of limestone fragments are present in the soil.

- Stratum 3 - Tan to Dark Grey Fine to Medium Sand (AASHTO Classification A-3). This is the predominate subsurface soil constituent identified in the soil survey. Stratum number 3 is very uniform, poorly graded fine sand that varies in color with depth and horizontal location. Above the water table this sand is typically white to tan while near the depth of the water table the sand typically becomes very dark brown. Below the dark brown zone the sand transitions back to a medium brown color. The coloration of the sand is most likely a result of iron staining.
- Stratum 4 - Dark Brown Fine Sand with Organics (AASHTO Classification A-8, Organic Content 3.3 to 5.1 percent). This layer was encountered at the ground surface intermittently throughout the roadway corridor. It is typically a topsoil layer.
- Stratum 5 - Light Grey to Grey Fine Sand with Shell (AASHTO Classification A-3). Stratum 5 was encountered intermittently throughout the project. It is very similar to Stratum 3 with the exception that small quantities of shell are present in the soil.

Detailed logs of the auger borings are included in the appendix. The auger boring logs include detailed stratification of the soils that were encountered. A summary of the auger boring survey is presented on the Roadway Soil Survey in the appendix.

The groundwater table was typically encountered at depths of 5 feet to 8 feet below the existing ground surface elevation at the time of the borings. The water table depth remained fairly constant with only minor changes throughout the project. Fluctuations in the groundwater table can be expected due to changes in ground surface elevation, seasonal changes in rainfall, surface runoff, construction operations, and other site-specific occurrences.

### Pavement Cores

Pavement cores were performed at approximately 1000 FT spacing for the entire length of the project. The pavement core results are summarized in the following table.

TEST NO.	LOCATION	ASPHALT THICKNESS (Inches)	BASE THICKNESS (Inches)
PC-1	798' East of NW 31 <sup>st</sup> Ave. on South side of MLK Blvd.	1.13	13.00
PC-2	146' West of Powerline Rd. on North side of MLK Blvd.	1.13	11.88
PC-3	202' East of NW 31 <sup>st</sup> Ave. on North side of MLK Blvd.	1.38	11.75
PC-4	133' East of NW 27 <sup>th</sup> Ave. on North side of MLK Blvd.	2.13	12.38
PC-5	43' West of NW 26 <sup>th</sup> Ave. on South side of MLK Blvd.	2.38	14.50
PC-6	416' East of NW 24 <sup>th</sup> Ave. on South side of MLK Blvd.	2.13	11.50



## FDOT Exfiltration Tests

Four FDOT Exfiltration tests were performed along the length of the project. The hydraulic conductivity defined by the Exfiltration tests ranged from  $1.7 \times 10^{-5}$  to  $1.6 \times 10^{-4}$  CFS/FT<sup>2</sup>-FT HEAD. The average hydraulic conductivity was  $6.2 \times 10^{-5}$  CFS/FT<sup>2</sup>-FT HEAD. Detailed reports of the tests are included in the appendix of this report.

## Laboratory Soil Tests

The laboratory-testing phase of the project consisted of the performance of classification tests, organic content tests and Limerock Bearing Ration (LBR) tests. Representative samples of soil from each of the defined soil strata were tested for particle size distribution, organic content and plasticity for determination of AASHTO soil classification. The results of the classification tests are presented in detail in the test reports in the appendix and are summarized on the Roadway Soil Survey sheet.

Limerock Bearing Ratio tests were performed on two samples of existing subgrade taken from the western and eastern portions of the project. The existing subgrade LBR ranged from 46 to 51.

## Closing

It should be noted that our borings sampled a limited portion of the site and as such other ground conditions could be present on the site that were not discovered during this investigation. In the event that other ground conditions are encountered during the construction we must be notified so that a proper treatment of those areas can be developed.

We appreciate the opportunity to be of service on this project. If there are any questions, or we can be of any further assistance, please do not hesitate to contact our office.

Respectfully Submitted,  
*GeoVerse, Inc.*

  
12/31/02  
George P. Ballock, P.E.  
President  
Florida Registration No. 34041



**APPENDIX A**  
**ROADWAY SOIL SURVEY**

STATE OF FLORIDA  
DEPARTMENT OF TRANSPORTATION  
MATERIALS AND RESEARCH

PROJECT : HAMMONDVILLE ROAD FROM 300 FT WEST  
OF NW 31st AVE. TO POWERLINE ROAD

DATE OF SURVEY: 12/9-12/2002  
SURVEY MADE BY: Scanlon, Gramh, Ott  
SUBMITTED BY: George P. Ballock, P.E.

DISTRICT: Four  
ROAD NO.: \_\_\_\_\_  
COUNTY: Broward

CROSS SECTION SOIL SURVEY FOR THE DESIGN OF ROADS

SURVEY BEGINS STA. : \_\_\_\_\_ SURVEY ENDS STA. : \_\_\_\_\_  
SURVEY BEGINS STA. : \_\_\_\_\_ SURVEY ENDS STA. : \_\_\_\_\_  
SURVEY BEGINS STA. : \_\_\_\_\_ SURVEY ENDS STA. : \_\_\_\_\_

STRATUM NO.	ORGANIC CONTENT		SIEVE ANALYSIS RESULTS % PASSING					ATTERBERG LIMITS (%)			AASHTO GROUP	DESCRIPTION	CORROSION TEST RESULTS					
	NO. OF TESTS	% ORGANIC	NO. OF TESTS	4 MESH	10 MESH	40 MESH	100 MESH	200 MESH	NO. OF TESTS	LIQUID LIMIT			PLASTIC INDEX	NO. OF TESTS	RESISTIVITY Ohms	CHLORIDE ppm	SO ppm	pH
1	---	-----	2	85-98	79-96	66-76	19-20	8	---	N.P.	N.P.	A-3	Light Brown to Dark Brown Fine Sand with trace Organics and Limestone Fragments	---	-----	-----	-----	-----
2	---	-----	3	68-90	63-88	52-77	13-23	7-18	---	N.P.	N.P.	A-3	Tan to Dark Grey Fine Sand with Limestone Fragments	---	-----	-----	-----	-----
3	---	-----	5	97-100	96-100	75-89	1-17	0-7	---	N.P.	N.P.	A-3	White to Dark Brown Fine to Medium Sand	---	-----	-----	-----	-----
4	5	3.3-5.1	1	99	98	87	16	6	---	N.P.	N.P.	A-8	Dark Brown Fine Sand with Organics	---	-----	-----	-----	-----
5	---	-----	1	81	80	67	9	3	---	N.P.	N.P.	A-3	Light Grey to Grey Fine Sand with Shell	---	-----	-----	-----	-----

NOTES

- (1) Strata boundaries are approximate.
- (2) ∇ , Water table encountered.
- (3) GNE, Groundwater not encountered.

EMBANKMENT AND SUBGRADE MATERIAL

- The material from Stratum Number 1 appears suitable for use in embankment when utilized in accordance with Index 505.
- The material from Stratum Number 2 appears suitable for use in embankment when utilized in accordance with Index 505.
- The material from Stratum Number 3 appears suitable for use in embankment when utilized in accordance with Index 505.
- The material from Stratum Number 4 contains organic material and is not suitable for use in embankment. It may be used to construct a finish soil layer as described in Section 162 of the FDOT Standard Specifications.
- The material from Stratum Number 5 appears suitable for use in embankment when utilized in accordance with Index 505.

REVISIONS											
DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION	DATE	BY	DESCRIPTION



CITY OF  
POMPANO BEACH

ROADWAY SOIL SURVEY



# GeoVerse, Inc.

555 Sawgrass Corporate Parkway, Sunrise, FL 33325  
Phone: (954) 835-9055 FAX (954) 835-9044

## ROADWAY SOIL SURVEY

Project Number: 220136      Project Name: MLK Boulevard (Hammondville Road)  
Customer Name: Keith & Associates, Inc.  
Project Manager: George P. Ballock, P.E.

<b>Boring No:</b>	B-01	<b>Location:</b> 4' West of NW 31st Ave. and 4' North of MLK Blvd.	<b>Date:</b> 09-Dec-02
<b>Stratum No</b>	<b>Depth (Ft)</b>	<b>Description</b>	
4	0.0 - 2.0	Fine Sand with organics and trace limestone fragments, Dark Brown	
2	2.0 - 4.5	Fine Sand with limestone fragments, Brown	
3	4.5 - 5.0	Sand, Tan	
<b>Water Table (Ft):</b>	N/A	<b>Pavement Survey:</b> No	<b>Test Type:</b> 5 ft Auger <b>Sampled By:</b> Mark Scanlon

<b>Boring No:</b>	B-02	<b>Location:</b> 240' East of B-1 and 6' South of MLK Blvd.	<b>Date:</b> 09-Dec-02
<b>Stratum No</b>	<b>Depth (Ft)</b>	<b>Description</b>	
4	0.0 - 1.0	Fine Sand with organics, Dark Brown	
2	1.0 - 2.0	Fine Sand with limestone fragments, Dark Brown	
3	2.0 - 5.0	Fine Sand, Grey	
<b>Water Table (Ft):</b>	N/A	<b>Pavement Survey:</b> No	<b>Test Type:</b> 5 ft Auger <b>Sampled By:</b> Mark Scanlon

<b>Boring No:</b>	B-03	<b>Location:</b> 248' East of B-2 and 5' North of MLK Blvd.	<b>Date:</b> 09-Dec-02
<b>Stratum No</b>	<b>Depth (Ft)</b>	<b>Description</b>	
4	0.0 - 2.0	Fine Sand with organics and trace limestone fragments, Dark Brown	
3	2.0 - 5.0	Sand, Light Grey	
<b>Water Table (Ft):</b>	N/A	<b>Pavement Survey:</b> No	<b>Test Type:</b> 5 ft Auger <b>Sampled By:</b> Mark Scanlon

<b>Boring No:</b>	B-04	<b>Location:</b> 200' East of B-3 and 8' South of MLK Blvd.	<b>Date:</b> 09-Dec-02
<b>Stratum No</b>	<b>Depth (Ft)</b>	<b>Description</b>	
1	0.0 - 2.0	Fine Sand with trace limestone fragments and organics, Dark Brown	
3	2.0 - 4.0	Sand, Light Grey	
3	4.0 - 5.0	Sand, Grey	
<b>Water Table (Ft):</b>	N/A	<b>Pavement Survey:</b> No	<b>Test Type:</b> 5 ft Auger <b>Sampled By:</b> Mark Scanlon



# GeoVerse, Inc.

555 Sawgrass Corporate Parkway, Sunrise, FL 33325

Phone: (954) 835-9055 FAX (954) 835-9044

## ROADWAY SOIL SURVEY

Project Number: 220136 Project Name: MLK Boulevard (Hammondville Road)

Customer Name: Keith & Associates, Inc.

Project Manager: George P. Ballock, P.E.

<b>Boring No:</b>	B-05	<b>Location:</b> 400' East of B-4 and 4' South of MLK Blvd.	<b>Date:</b> 09-Dec-02	
<b>Stratum No</b>	<b>Depth (Ft)</b>	<b>Description</b>		
2	0.0 - 2.0	Fine Sand with limestone fragments, Tan to Brown		
3	2.0 - 3.0	Sand, Grey		
3	3.0 - 5.0	Sand, Light Grey		
<b>Water Table (Ft):</b>	N/A	<b>Pavement Survey:</b> No	<b>Test Type:</b> 5 ft Auger	<b>Sampled By:</b> Mark Scanlon

<b>Boring No:</b>	B-06	<b>Location:</b> 200' East of B-5 and 6' North of MLK Blvd.	<b>Date:</b> 09-Dec-02	
<b>Stratum No</b>	<b>Depth (Ft)</b>	<b>Description</b>		
2	0.0 - 2.0	Fine Sand with limestone fragments, Brown		
5	2.0 - 3.0	Fine Sand with shell, Light Grey		
3	3.0 - 4.5	Sand, Light Grey		
3	4.5 - 5.0	Sand, Dark Grey		
<b>Water Table (Ft):</b>	N/A	<b>Pavement Survey:</b> No	<b>Test Type:</b> 5 ft Auger	<b>Sampled By:</b> Mark Scanlon

<b>Boring No:</b>	B-07	<b>Location:</b> 200' East of B-6 and 4' South of MLK Blvd.	<b>Date:</b> 09-Dec-02	
<b>Stratum No</b>	<b>Depth (Ft)</b>	<b>Description</b>		
3	0.0 - 2.0	Fine Sand, Brown		
3	2.0 - 4.5	Sand, Light Grey		
3	4.5 - 5.0	Fine Sand, Dark Brown		
<b>Water Table (Ft):</b>	N/A	<b>Pavement Survey:</b> No	<b>Test Type:</b> 5 ft Auger	<b>Sampled By:</b> Mark Scanlon

<b>Boring No:</b>	B-08	<b>Location:</b> 200' East of B-7 and 4' North of MLK Blvd.	<b>Date:</b> 09-Dec-02	
<b>Stratum No</b>	<b>Depth (Ft)</b>	<b>Description</b>		
2	0.0 - 1.5	Fine Sand with limestone fragments, Grey		
3	1.5 - 3.5	Sand, Grey		
3	3.5 - 5.0	Fine Sand, Dark Grey		
<b>Water Table (Ft):</b>	N/A	<b>Pavement Survey:</b> No	<b>Test Type:</b> 5 ft Auger	<b>Sampled By:</b> Mark Scanlon



# GeoVerse, Inc.

555 Sawgrass Corporate Parkway, Sunrise, FL 33325  
Phone: (954) 835-9055 FAX (954) 835-9044

## ROADWAY SOIL SURVEY

Project Number: 220136 Project Name: MLK Boulevard (Hammondville Road)  
Customer Name: Keith & Associates, Inc.  
Project Manager: George P. Ballock, P.E.

Boring No:	B-09	Location: 263' East of NW 27th Ave. and 6' North of MLK Blvd.	Date: 10-Dec-02
Stratum No	Depth (Ft)	Description	
2	0.0 - 5.0	Fine Sand with limestone fragments, Brown	
Water Table (Ft):	N/A	Pavement Survey: No	Test Type: 5 ft Auger Sampled By: Mark Scanlon

Boring No:	B-10	Location: 200' East of B-9 and 4' South of MLK Blvd.	Date: 10-Dec-02
Stratum No	Depth (Ft)	Description	
2	0.0 - 2.0	Fine Sand with limestone fragments, Grey	
3	2.0 - 5.0	Sand, Light Grey	
Water Table (Ft):	N/A	Pavement Survey: No	Test Type: 5 ft Auger Sampled By: Mark Scanlon

Boring No:	B-11	Location: 200' East of B-10 and 4' North of MLK Blvd.	Date: 10-Dec-02
Stratum No	Depth (Ft)	Description	
2	0.0 - 2.0	Fine Sand with limestone fragments, Grey	
3	2.0 - 5.0	Sand, Grey	
Water Table (Ft):	N/A	Pavement Survey: No	Test Type: 5 ft Auger Sampled By: Mark Scanlon

Boring No:	B-12	Location: 240' West of NW 24th Ave. and 6' North of MLK Blvd.	Date: 10-Dec-02
Stratum No	Depth (Ft)	Description	
2	0.0 - 4.0	Fine Sand with limestone fragments, Grey	
3	4.0 - 5.0	Sand, Light Grey	
Water Table (Ft):	N/A	Pavement Survey: No	Test Type: 5 ft Auger Sampled By: Mark Scanlon

Boring No:	B-13	Location: 200' West of Powerline Rd. and 11' South of MLK Blvd.	Date: 11-Dec-02
Stratum No	Depth (Ft)	Description	
2	0.0 - 0.5	Fine Sand with limestone fragments, Grey	
3	0.5 - 2.0	Sand, Brown	
3	2.0 - 4.0	Sand, Light Grey	
3	4.0 - 5.0	Fine Sand, Dark Brown	
Water Table (Ft):	N/A	Pavement Survey: No	Test Type: 5 ft Auger Sampled By: Scott Graham



# GeoVerse, Inc.

555 Sawgrass Corporate Parkway, Sunrise, FL 33325  
Phone: (954) 835-9055 FAX (954) 835-9044

## ROADWAY SOIL SURVEY

Project Number: 220136 Project Name: MLK Boulevard (Hammondville Road)

Customer Name: Keith & Associates, Inc.

Project Manager: George P. Ballock, P.E.

<b>Boring No:</b>	B-14	<b>Location:</b> 18' West of Powerline Rd. and 12' North of MLK Blvd.	<b>Date:</b> 11-Dec-02	
<b>Stratum No</b>	<b>Depth (Ft)</b>	<b>Description</b>		
3	0.0 - 0.7	Fine Sand, Dark Brown		
3	0.7 - 4.0	Sand, Grey		
3	4.0 - 5.0	Sand, Dark Brown		
<b>Water Table (Ft):</b>	N/A	<b>Pavement Survey:</b> No	<b>Test Type:</b> 5 ft Auger	<b>Sampled By:</b> Scott Graham

<b>Boring No:</b>	B-15	<b>Location:</b> 400' West of Powerline Rd. and 12' S of MLK Blvd.	<b>Date:</b> 11-Dec-02	
<b>Stratum No</b>	<b>Depth (Ft)</b>	<b>Description</b>		
1	0.0 - 0.3	Fine Sand with trace limestone fragments and organics, Dark Grey		
2	0.3 - 4.0	Fine Sand with limestone fragments, Grey		
3	4.0 - 5.0	Sand, Light Grey		
<b>Water Table (Ft):</b>	N/A	<b>Pavement Survey:</b> No	<b>Test Type:</b> 5 ft Auger	<b>Sampled By:</b> Scott Graham

<b>Boring No:</b>	B-16	<b>Location:</b> 240' East of NW 31st Ave. and 13' South of MLK Blvd.	<b>Date:</b> 12-Dec-02	
<b>Stratum No</b>	<b>Depth (Ft)</b>	<b>Description</b>		
2	0.0 - 2.0	Fine Sand with limestone fragments, Grey		
3	3.0 - 4.0	Fine Sand, Dark Brown		
1	4.0 - 5.0	Sand with trace organics and limestone fragments, Brown		
<b>Water Table (Ft):</b>	N/A	<b>Pavement Survey:</b> No	<b>Test Type:</b> 5 ft Auger	<b>Sampled By:</b> Webster Ott

<b>Boring No:</b>	B-17	<b>Location:</b> 18' West of NW 31st Ave. and 24' South of MLK Blvd.	<b>Date:</b> 12-Dec-02	
<b>Stratum No</b>	<b>Depth (Ft)</b>	<b>Description</b>		
2	0.0 - 2.0	Fine Sand with limestone fragments, Light Brown		
3	2.5 - 5.0	Fine Sand, Tan to Brown		
<b>Water Table (Ft):</b>	N/A	<b>Pavement Survey:</b> No	<b>Test Type:</b> 5 ft Auger	<b>Sampled By:</b> Webster Ott



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## ROADWAY SOIL SURVEY

Project Number: 220136      Project Name: MLK Boulevard (Hammondville Road)  
Customer Name: Keith & Associates, Inc.  
Project Manager: George P. Ballock, P.E.

<b>Boring No:</b>	B-18	<b>Location:</b> 228' West of NW 31st Ave. and 24' South of MLK Blvd.	<b>Date:</b> 12-Dec-02
<b>Stratum No</b>	<b>Depth (Ft)</b>	<b>Description</b>	
4	0.0 - 2.0	Fine Sand with organics, Dark Brown	
2	2.0 - 5.0	Fine Sand with limestone fragments, Brown	
<b>Water Table (Ft):</b>	N/A	<b>Pavement Survey:</b> No	<b>Test Type:</b> 5 ft Auger <b>Sampled By:</b> Webster Ott

<b>Boring No:</b>	B-19	<b>Location:</b> 329' West of NW 27th Ave. and 1' South of MLK Blvd.	<b>Date:</b> 12-Dec-02
<b>Stratum No</b>	<b>Depth (Ft)</b>	<b>Description</b>	
2	0.0 - 2.0	Fine Sand with limestone fragments, Brown	
3	3.0 - 5.0	Sand, Light Grey	
<b>Water Table (Ft):</b>	N/A	<b>Pavement Survey:</b> No	<b>Test Type:</b> 5 ft Auger <b>Sampled By:</b> Webster Ott

<b>Boring No:</b>	B-20	<b>Location:</b> 28' West of NW 27th Ave. and 15' North of MLK Blvd.	<b>Date:</b> 12-Dec-02
<b>Stratum No</b>	<b>Depth (Ft)</b>	<b>Description</b>	
2	0.0 - 2.0	Fine Sand with limestone fragments, Brown	
3	3.0 - 4.0	Sand, Light Brown	
3	4.0 - 5.0	Sand, Light Grey	
<b>Water Table (Ft):</b>	N/A	<b>Pavement Survey:</b> No	<b>Test Type:</b> 5 ft Auger <b>Sampled By:</b> Webster Ott

<b>Boring No:</b>	B-21	<b>Location:</b> 343' East of NW 24th Ave. and 15' South of MLK Blvd.	<b>Date:</b> 12-Dec-02
<b>Stratum No</b>	<b>Depth (Ft)</b>	<b>Description</b>	
3	0.0 - 2.0	Sand, Grey	
3	3.5 - 5.0	Sand, Light Grey	
<b>Water Table (Ft):</b>	N/A	<b>Pavement Survey:</b> No	<b>Test Type:</b> 5 ft Auger <b>Sampled By:</b> Webster Ott

<b>Boring No:</b>	B-22	<b>Location:</b> 181' East of NW 24th Ave. and 5' North of MLK Blvd.	<b>Date:</b> 12-Dec-02
<b>Stratum No</b>	<b>Depth (Ft)</b>	<b>Description</b>	
1	0.0 - 2.0	Fine Sand with trace limestone fragments and organics, Dark Grey	
2	3.5 - 5.0	Sand with limestone fragments, Grey	
<b>Water Table (Ft):</b>	N/A	<b>Pavement Survey:</b> No	<b>Test Type:</b> 5 ft Auger <b>Sampled By:</b> Webster Ott



# GeoVerse, Inc.

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## ROADWAY SOIL SURVEY

Project Number: 220136 Project Name: MLK Boulevard (Hammondville Road)  
Customer Name: Keith & Associates, Inc.  
Project Manager: George P. Ballock, P.E.

<b>Boring No:</b>	B-23	<b>Location:</b> 202' East of NW 26th Ave. and 13' South of MLK Blvd.	<b>Date:</b> 12-Dec-02
<b>Stratum No</b>	<b>Depth (Ft)</b>	<b>Description</b>	
2	0.0 - 2.0	Fine Sand with limestone fragments, Brown	
3	3.5 - 5.0	Sand, Dark Brown	
<b>Water Table (Ft):</b>	N/A	<b>Pavement Survey:</b> No	<b>Test Type:</b> 5 ft Auger <b>Sampled By:</b> Webster Ott

<b>Boring No:</b>	B-24	<b>Location:</b> 38' East of NW 27th Ave. and 6' South of MLK Blvd.	<b>Date:</b> 12-Dec-02
<b>Stratum No</b>	<b>Depth (Ft)</b>	<b>Description</b>	
2	0.0 - 2.0	Fine Sand with limestone fragments, Brown	
3	3.0 - 5.0	Sand, Brown	
<b>Water Table (Ft):</b>	N/A	<b>Pavement Survey:</b> No	<b>Test Type:</b> 5 ft Auger <b>Sampled By:</b> Webster Ott

<b>Boring No:</b>	B-25	<b>Location:</b> 600' West of Powerline Rd. and 12' South of MLK Blvd.	<b>Date:</b> 30-Dec-02
<b>Stratum No</b>	<b>Depth (Ft)</b>	<b>Description</b>	
1	0.0 - 2.0	Fine Sand with trace organics, Dark Brown	
3	2.0 - 5.0	Fine Sand, Light Grey	
<b>Water Table (Ft):</b>	N/A	<b>Pavement Survey:</b> No	<b>Test Type:</b> 5 ft Auger <b>Sampled By:</b> Jim Smith

<b>Boring No:</b>	DB-1	<b>Location:</b> 200' West of B-13 and 8' North of MLK Blvd.	<b>Date:</b> 11-Dec-02
<b>Stratum No</b>	<b>Depth (Ft)</b>	<b>Description</b>	
3	0.0 - 1.0	Fine Sand, Brown	
5	1.0 - 4.0	Sand with shell, Light Brown	
3	4.0 - 5.0	Sand, Light Grey	
3	5.0 - 15.0	Sand, Dark Brown	
<b>Water Table (Ft):</b>	N/A	<b>Pavement Survey:</b> No	<b>Test Type:</b> 15 ft Auger <b>Sampled By:</b> Mark Scanlon

<b>Boring No:</b>	DB-2	<b>Location:</b> 101' West of NW 24th Ave. and 33' South of MLK Blvd.	<b>Date:</b> 11-Dec-02
<b>Stratum No</b>	<b>Depth (Ft)</b>	<b>Description</b>	
2	0.0 - 5.0	Fine Sand with limestone fragments, Light Brown	
3	5.0 - 8.0	Sand, Brown	
<b>Water Table (Ft):</b>	5	<b>Pavement Survey:</b> No	<b>Test Type:</b> 15 ft Auger <b>Sampled By:</b> Mark Scanlon



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## ROADWAY SOIL SURVEY

**Project Number:** 220136      **Project Name:** MLK Boulevard (Hammondville Road)  
**Customer Name:** Keith & Associates, Inc.  
**Project Manager:** George P. Ballock, P.E.

<b>Boring No:</b>	DB-3	<b>Location:</b> 263' East of NW 27th Ave. and 6' North of MLK Blvd.	<b>Date:</b> 11-Dec-02
<b>Stratum No</b>	<b>Depth (Ft)</b>	<b>Description</b>	
2	0.0 - 5.0	Fine Sand with limestone fragments, Brown	
3	5.0 - 15.0	Sand, Brown	
<b>Water Table (Ft):</b>	6.5	<b>Pavement Survey:</b> No	<b>Test Type:</b> 15 ft Auger <b>Sampled By:</b> Mark Scanlon

<b>Boring No:</b>	DB-4	<b>Location:</b> 200' East of NW 31st Ave. and 24' North of MLK Blvd.	<b>Date:</b> 12-Dec-02
<b>Stratum No</b>	<b>Depth (Ft)</b>	<b>Description</b>	
1	0.0 - 3.5	Fine Sand with trace organics and limestone fragments, Dark Brown	
3	3.5 - 15.0	Sand, Tan	
<b>Water Table (Ft):</b>	4.5	<b>Pavement Survey:</b> No	<b>Test Type:</b> 15 ft Auger <b>Sampled By:</b> Mark Scanlon

<b>Boring No:</b>	DB-5	<b>Location:</b> 800' East of NW 31st Ave. and 25' South of MLK Blvd.	<b>Date:</b> 12-Dec-02
<b>Stratum No</b>	<b>Depth (Ft)</b>	<b>Description</b>	
4	0.0 - 0.3	Fine Sand with organics, Dark Brown	
2	0.3 - 3.0	Fine Sand with limestone fragments, Grey	
3	3.0 - 5.0	Sand, Light Grey	
3	5.0 - 15.0	Sand, Orangish Brown	
<b>Water Table (Ft):</b>	6	<b>Pavement Survey:</b> No	<b>Test Type:</b> 15 ft Auger <b>Sampled By:</b> Scott Graham

<b>Boring No:</b>	EX-1	<b>Location:</b> 200' East of B-4 and 8' North of MLK Blvd.	<b>Date:</b> 10-Dec-02
<b>Stratum No</b>	<b>Depth (Ft)</b>	<b>Description</b>	
2	0.0 - 2.0	Fine Sand with limestone fragments, Brown	
5	2.0 - 5.0	Sand with shell, Tan	
3	5.0 - 10.0	Sand, Dark Brown	
<b>Water Table (Ft):</b>	7.5	<b>Pavement Survey:</b> No	<b>Test Type:</b> Exfiltration <b>Sampled By:</b> Scott Graham



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## ROADWAY SOIL SURVEY

**Project Number:** 220136      **Project Name:** MLK Boulevard (Hammondville Road)  
**Customer Name:** Keith & Associates, Inc.  
**Project Manager:** George P. Ballock, P.E.

<b>Boring No:</b>	EX-2	<b>Location:</b> 600' East of NW 31st Ave. and 12' N of MLK Blvd.	<b>Date:</b> 12-Dec-02
<b>Stratum No</b>	<b>Depth (Ft)</b>	<b>Description</b>	
3	0.0 - 3.0	Sand, Grey	
3	3.0 - 5.0	Sand, Brown	
3	5.0 - 10.0	Sand, Dark Brown	
<b>Water Table (Ft):</b>	8.5	<b>Pavement Survey:</b> No	<b>Test Type:</b> Exfiltration <b>Sampled By:</b> Scott Grahm

<b>Boring No:</b>	EX-3	<b>Location:</b> 2200' East of NW 31st Ave. and 25' South of MLK Blvd.	<b>Date:</b> 10-Dec-02
<b>Stratum No</b>	<b>Depth (Ft)</b>	<b>Description</b>	
3	0.0 - 10.0	Sand, Brown to Dark Brown	
<b>Water Table (Ft):</b>	5.5	<b>Pavement Survey:</b> No	<b>Test Type:</b> Exfiltration <b>Sampled By:</b> Scott Grahm

<b>Boring No:</b>	EX-4	<b>Location:</b> 800' West of Powerline Rd. and 10' North of MLK Blvd.	<b>Date:</b> 12-Dec-02
<b>Stratum No</b>	<b>Depth (Ft)</b>	<b>Description</b>	
3	0.0 - 0.3	Sand, Dark Brown	
3	0.3 - 4.0	Fine Sand, Grey	
3	4.0 - 10.0	Sand, Dark Grey	
<b>Water Table (Ft):</b>	7	<b>Pavement Survey:</b> No	<b>Test Type:</b> Exfiltration <b>Sampled By:</b> Scott Grahm



**GeoVerse, Inc.**

Innovative Engineering Solutions

**REPORT OF ROADWAY PAVEMENT CORES**

**PROJECT:** MLK Boulevard (Hammondville Road)  
**CLIENT:** Keith and Associates, Inc.  
**SAMPLED BY:** Scott Graham

**PROJECT NO:** 220136  
**DATE SAMPLED:** 12/20/02

**CORE DATA:**

TEST NO.	LOCATION	ASPHALT THICKNESS (Inches)	BASE THICKNESS (Inches)
PC-1	798' East of NW 31 <sup>st</sup> Ave. on South side of MLK Blvd.	1.13	13.00
PC-2	146' West of Powerline Rd. on North side of MLK Blvd.	1.13	11.88
PC-3	202' East of NW 31 <sup>st</sup> Ave. on North side of MLK Blvd.	1.38	11.75
PC-4	133' East of NW 27 <sup>th</sup> Ave. on North side of MLK Blvd.	2.13	12.38
PC-5	43' West of NW 26 <sup>th</sup> Ave. on South side of MLK Blvd.	2.38	14.50
PC-6	416' East of NW 24 <sup>th</sup> Ave. on South side of MLK Blvd.	2.13	11.50

**APPENDIX B**

**FIELD DRAINAGE TESTS**



**STANDARD EXFILTRATION TEST (FDOT)**

PROJECT NUMBER: 220136 DATE: December 10, 2002  
 PROJECT NAME: MLK Boulevard.(Hammondville Road)  
 PROJECT ADDRESS: MLK Boulevard from Powerline Road to Florida Turnpike, Pompano Beach, FL  
 CLIENT: Keith & Associates, Inc.  
 TEST LOCATION: EX-1: 200' East of B-4 and 8' North of MLK Boulevard

**TEST DATA:**

DEPTH OF HOLE:	10.0 feet
DIAMETER OF HOLE:	8.0 inches
SCREEN INTERVAL:	3.0 feet to 9.0 feet
WATER TABLE:	7.5 feet

**SOIL PROFILE:**

DEPTH (FEET)	SOIL DESCRIPTION
0.0 – 2.0	Brown Sand with limestone fragments
2.0 – 5.0	Tan Sand with shell
5.0 – 10.0	Dark Brown Sand

**EXFILTRATION TEST RESULTS:**

STABILIZATION:	TIME (MINUTES)	VOLUME (GALLONS)	TEST:	TIME (MINUTES)	VOLUME (GALLONS)
	1.0	4.3		11.0	0.8
	2.0	3.3		12.0	0.9
	3.0	1.3		13.0	0.8
	4.0	1.6		14.0	0.8
	5.0	0.6		15.0	0.9
	6.0	1.0		16.0	0.9
	7.0	0.9		17.0	0.8
	8.0	0.8		18.0	0.8
	9.0	0.7		19.0	0.8
	10.0	0.8		20.0	1.1

AVERAGE (GPM): 1.53 0.86

HYDRAULIC CONDUCTIVITY:  $2.8 \times 10^{-5}$  CFS/FT<sup>2</sup>-FT HEAD



**STANDARD EXFILTRATION TEST (FDOT)**

PROJECT NUMBER: 220136 DATE: December 12, 2002  
PROJECT NAME: MLK Boulevard (Hammondville Road)  
PROJECT ADDRESS: MLK Boulevard from Powerline Road to Florida Turnpike, Pompano Beach, FL  
CLIENT: Keith & Associates, Inc.  
TEST LOCATION: EX-2: 600' East of NW 31<sup>st</sup> Ave. and 12' North of MLK Boulevard

**TEST DATA:**

DEPTH OF HOLE:	10.0 feet
DIAMETER OF HOLE:	8.5 inches
SCREEN INTERVAL:	3.0 feet to 9.0 feet
WATER TABLE:	8.5 feet

**SOIL PROFILE:**

DEPTH (FEET)	SOIL DESCRIPTION
0.0 - 3.0	Grey Sand
3.0 - 5.0	Brown Sand
5.0 - 10.0	Dark Brown Sand

**EXFILTRATION TEST RESULTS:**

STABILIZATION:	TIME (MINUTES)	VOLUME (GALLONS)	TEST:	TIME (MINUTES)	VOLUME (GALLONS)
	1.0	3.0		11.0	1.5
	2.0	3.3		12.0	1.5
	3.0	1.7		13.0	1.5
	4.0	1.5		14.0	1.5
	5.0	1.5		15.0	1.5
	6.0	1.5		16.0	1.5
	7.0	1.5		17.0	1.0
	8.0	1.5		18.0	1.0
	9.0	1.5		19.0	1.0
	10.0	1.5		20.0	1.0

AVERAGE (GPM): 1.85 1.3

HYDRAULIC CONDUCTIVITY:  $4.1 \times 10^{-5}$  CFS/FT<sup>2</sup>-FT HEAD



**STANDARD EXFILTRATION TEST (FDOT)**

PROJECT NUMBER: 220136 DATE: December 10, 2002  
PROJECT NAME: MLK Boulevard (Hammondville Road)  
PROJECT ADDRESS: MLK Boulevard from Powerline Road to Florida Turnpike, Pompano Beach, FL  
CLIENT: Keith & Associates, Inc.  
TEST LOCATION: EX-3: 2200' East of NW 31<sup>st</sup> Ave. and 25' South of MLK Boulevard

**TEST DATA:**

DEPTH OF HOLE:	10.0 feet
DIAMETER OF HOLE:	8.5 inches
SCREEN INTERVAL:	3.0 feet to 9.0 feet
WATER TABLE:	5.5 feet

**SOIL PROFILE:**

DEPTH (FEET)	SOIL DESCRIPTION
0.0 – 1.0	Dark Brown Sand
1.0 – 2.0	Brown Sand
2.0 – 5.0	Grey Sand
5.0 – 10.0	Dark Brown Sand

**EXFILTRATION TEST RESULTS:**

STABILIZATION:	TIME (MINUTES)	VOLUME (GALLONS)	TEST:	TIME (MINUTES)	VOLUME (GALLONS)
	1.0	5.0		11.0	4.0
	2.0	5.0		12.0	4.0
	3.0	5.0		13.0	4.0
	4.0	5.0		14.0	4.0
	5.0	5.0		15.0	4.0
	6.0	4.0		16.0	4.0
	7.0	4.0		17.0	4.0
	8.0	4.0		18.0	4.0
	9.0	4.0		19.0	4.0
	10.0	4.0		20.0	4.0

AVERAGE (GPM): 4.5 4

HYDRAULIC CONDUCTIVITY:  $1.6 \times 10^{-4}$  CFS/FT<sup>2</sup>-FT HEAD



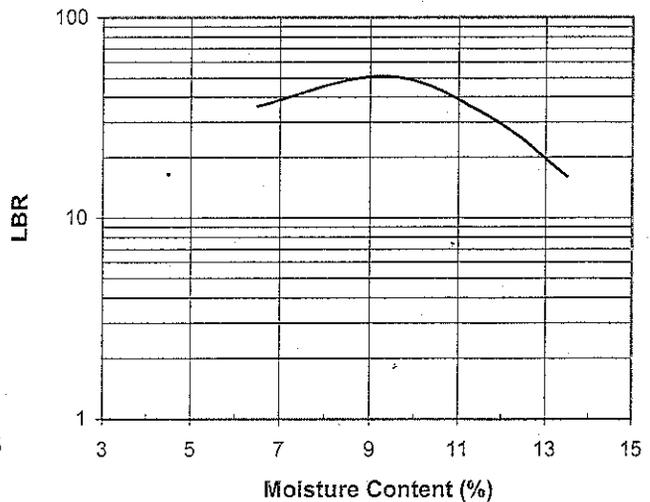
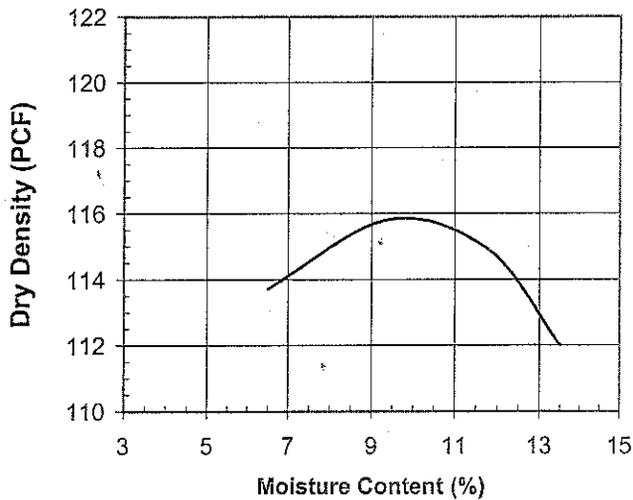
**APPENDIX C**  
**LABORATORY SOIL TESTS**

**LIMEROCK BEARING RATIO TEST REPORT (FM 5-515)**

PROJECT: MLK Boulevard (Hammondville Road) PROJECT NO.: 220136  
 CLIENT: Keith & Associates  
 LOCATION: 200' East of 27<sup>th</sup> Ave., North side, 8' from road.  
 SOIL DESCRIPTION: Brown to grey sand with shell and limestone.  
 SAMPLED BY: David Robinson DATE: 12/19/02 PROCTOR NO.: 22013601  
 TESTED BY: Kevin Osborne DATE: 12/23/02

MOISTURE %	WET DENSITY	DRY DENSITY	LBR
6.5	121.0	113.7	36
9.4	126.8	115.8	51
11.8	128.5	114.9	31
13.5	127.1	112.0	16

Optimum Moisture Content 9.7 %  
 Maximum Dry Density 115.9 PCF  
 Maximum LBR 51



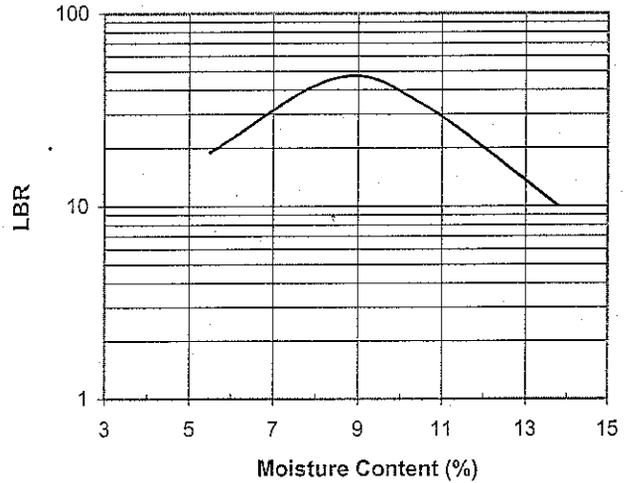
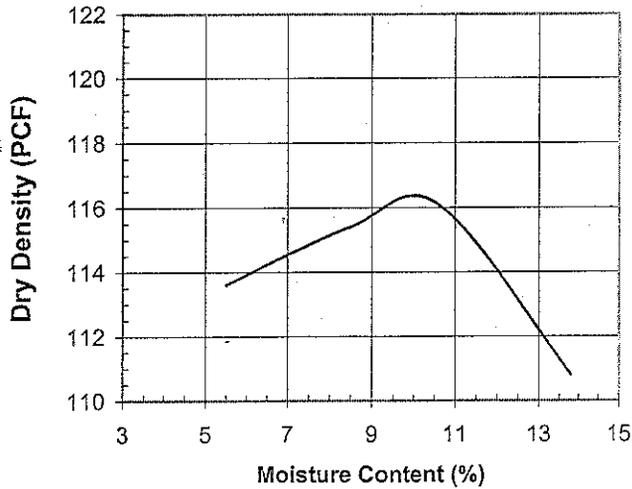


**LIMEROCK BEARING RATIO TEST REPORT (FM 5-515)**

**PROJECT:** MLK Boulevard (Hammondville Road) **PROJECT NO.:** 220136  
**CLIENT:** Keith & Associates  
**LOCATION:** 150' East of Northwest 24th Ave., North side, 8' from road.  
**SOIL DESCRIPTION:** Grey sand with shell and limestone.  
**SAMPLED BY:** David Robinson **DATE:** 12/19/02 **PROCTOR NO.:** 22013602  
**TESTED BY:** Kevin Osborne **DATE:** 12/23/02

MOISTURE %	WET DENSITY	DRY DENSITY	LBR
5.5	119.9	113.6	19
8.5	125.2	115.4	46
10.6	128.4	116.1	33
13.8	126.1	110.8	10

**Optimum Moisture Content** 10.0 %  
**Maximum Dry Density** 116.3 PCF  
**Maximum LBR** 46





**REPORT OF PARTICLE SIZE ANALYSIS (ASTM D422)**

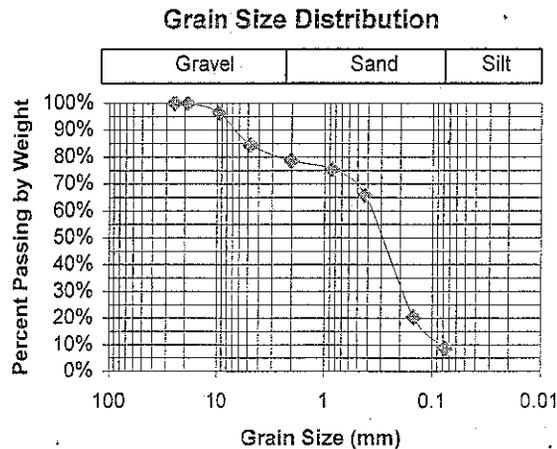
<b>PROJECT:</b>	MLK Boulevard (Hammondville Road)	<b>PROJECT NUMBER:</b>	220136
<b>CLIENT:</b>	Keith and Associates, Inc.	<b>DATE SAMPLED:</b>	12/09/02
<b>LOCATION:</b>	B-4, 0 – 2 FT	<b>DATE TESTED:</b>	12/23/02
<b>SAMPLED BY:</b>	Mark Scanlon	<b>TESTED BY:</b>	C. Ballock
<b>DESCRIPTION:</b>	Dark Brown Fine Sand with trace limestone fragments and organics (Stratum No. 1)		

**SIEVE ANALYSIS:**

SIEVE SIZE	CUMULATIVE WEIGHT RETAINED (GRAMS)	PERCENT RETAINED (%)	PERCENT PASSING (%)	SPECIFICATIONS
1"	0.0	0.0%	100.0%	
3/4"	0.0	0.0%	100.0%	
3/8"	3.9	3.6%	96.4%	
#4	16.8	15.4%	84.6%	
#10	23.3	21.4%	78.6%	
#20	26.8	24.6%	75.4%	
#40	37.1	34.0%	66.0%	
#100	86.8	79.6%	20.4%	
#200	99.6	91.4%	8.6%	
Total Weight:	109.0			

**SOIL CLASSIFICATION:**

<b>AASHTO SOIL CLASSIFICATION</b>	A-3
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**GeoVerse, Inc.**

Innovative Engineering Solutions

**REPORT OF PARTICLE SIZE ANALYSIS (ASTM D422)**

**PROJECT:** MLK Boulevard (Hammondville Road)  
**CLIENT:** Keith and Associates, Inc.  
**LOCATION:** B-15, 0 – 0.25 FT  
**SAMPLED BY:** Scott Graham  
**DESCRIPTION:** Dark Grey Fine Sand with trace limestone fragments and organics (Stratum No. 1)

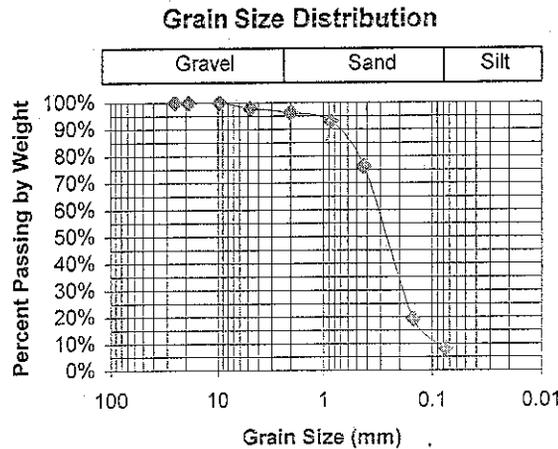
**PROJECT NUMBER:** 220136  
**DATE SAMPLED:** 12/11/02  
**DATE TESTED:** 12/23/02  
**TESTED BY:** C. Ballock

**SIEVE ANALYSIS:**

SIEVE SIZE	CUMULATIVE WEIGHT RETAINED (GRAMS)	PERCENT RETAINED (%)	PERCENT PASSING (%)	SPECIFICATIONS
1"	0.0	0.0%	100.0%	
3/4"	0.0	0.0%	100.0%	
3/8"	0.0	0.0%	100.0%	
#4	1.6	2.1%	97.9%	
#10	2.9	3.7%	96.3%	
#20	5.5	7.1%	92.9%	
#40	18.4	23.8%	76.2%	
#100	62.5	80.7%	19.3%	
#200	71.0	91.7%	8.3%	
Total Weight:	77.4			

**SOIL CLASSIFICATION:**

<b>AASHTO SOIL CLASSIFICATION</b>	A-3
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**GeoVerse, Inc.**

Innovative Engineering Solutions

**REPORT OF PARTICLE SIZE ANALYSIS (ASTM D422)**

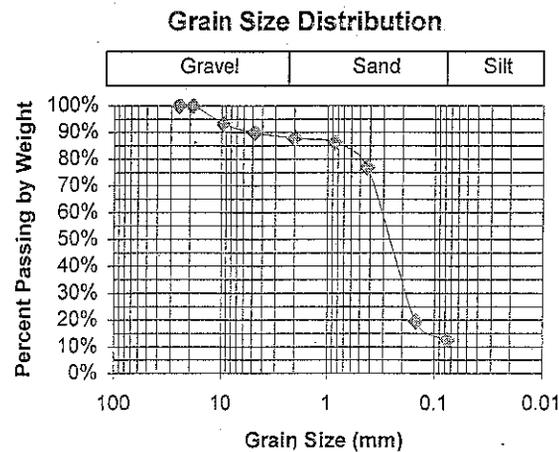
<b>PROJECT:</b>	MLK Boulevard (Hammondville Road)	<b>PROJECT NUMBER:</b>	220136
<b>CLIENT:</b>	Keith and Associates, Inc.	<b>DATE SAMPLED:</b>	12/12/02
<b>LOCATION:</b>	B-20, 0 – 0.5 FT	<b>DATE TESTED:</b>	12/23/02
<b>SAMPLED BY:</b>	Webster Ott	<b>TESTED BY:</b>	C. Ballock
<b>DESCRIPTION:</b>	Brown Fine Sand with Limestone Fragments (Stratum No. 2)		

**SIEVE ANALYSIS:**

SIEVE SIZE	CUMULATIVE WEIGHT RETAINED (GRAMS)	PERCENT RETAINED (%)	PERCENT PASSING (%)	SPECIFICATIONS
1"	0.0	0.0%	100.0%	
3/4"	0.0	0.0%	100.0%	
3/8"	8.7	6.8%	93.2%	
#4	13.0	10.2%	89.8%	
#10	15.6	12.2%	87.8%	
#20	17.6	13.8%	86.2%	
#40	29.6	23.2%	76.8%	
#100	102.6	80.5%	19.5%	
#200	111.3	87.4%	12.6%	
Total Weight:	127.4			

**SOIL CLASSIFICATION:**

<b>AASHTO SOIL CLASSIFICATION</b>	A-3
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**GeoVerse, Inc.**

Innovative Engineering Solutions

**REPORT OF PARTICLE SIZE ANALYSIS (ASTM D422)**

<b>PROJECT:</b>	MLK Boulevard (Hammondville Road)	<b>PROJECT NUMBER:</b>	220136
<b>CLIENT:</b>	Keith and Associates, Inc.	<b>DATE SAMPLED:</b>	12/11/02
<b>LOCATION:</b>	DB-2, 0 – 3 FT	<b>DATE TESTED:</b>	12/23/02
<b>SAMPLED BY:</b>	Mark Scanlon	<b>TESTED BY:</b>	C. Ballock
<b>DESCRIPTION:</b>	Light Brown Fine Sand with limestone fragments (Stratum No. 2)		

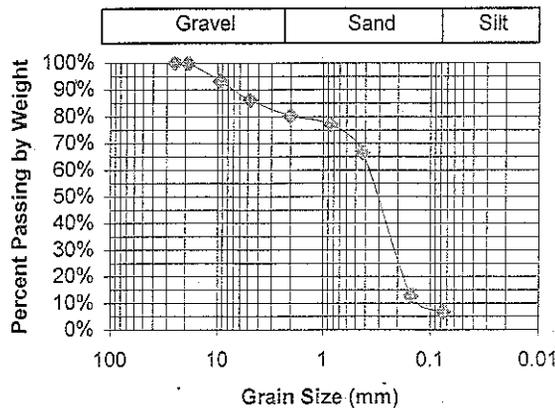
**SIEVE ANALYSIS:**

SIEVE SIZE	CUMULATIVE WEIGHT RETAINED (GRAMS)	PERCENT RETAINED (%)	PERCENT PASSING (%)	SPECIFICATIONS
1"	0.0	0.0%	100.0%	
¾"	0.0	0.0%	100.0%	
3/8"	10.8	6.7%	93.3%	
#4	22.4	13.9%	86.1%	
#10	31.8	19.7%	80.3%	
#20	37.1	23.0%	77.0%	
#40	54.2	33.6%	66.4%	
#100	140.9	87.4%	12.6%	
#200	150.2	93.1%	6.9%	
Total Weight:	161.3			

**SOIL CLASSIFICATION:**

<b>AASHTO SOIL CLASSIFICATION</b>	A-3
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**Grain Size Distribution**





## REPORT OF PARTICLE SIZE ANALYSIS (ASTM D422)

<b>PROJECT:</b>	MLK Boulevard (Hammondville Road)	<b>PROJECT NUMBER:</b>	220136
<b>CLIENT:</b>	Keith and Associates, Inc.	<b>DATE SAMPLED:</b>	12/12/02
<b>LOCATION:</b>	DB-5, 0.5 – 1.5 FT	<b>DATE TESTED:</b>	12/23/02
<b>SAMPLED BY:</b>	Scott Graham	<b>TESTED BY:</b>	C. Ballock
<b>DESCRIPTION:</b>	Grey Fine Sand with Limestone Fragments (Stratum No. 2)		

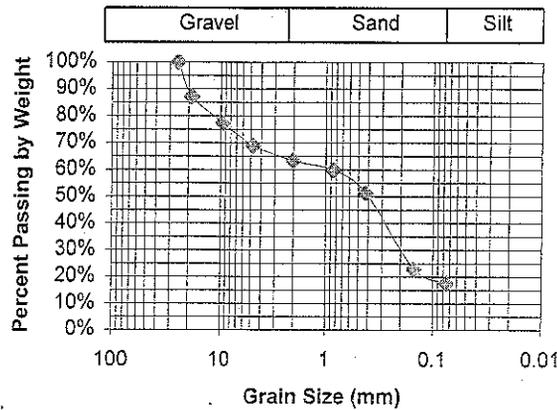
### SIEVE ANALYSIS:

SIEVE SIZE	CUMULATIVE WEIGHT RETAINED (GRAMS)	PERCENT RETAINED (%)	PERCENT PASSING (%)	SPECIFICATIONS
1"	0.0	0.0%	100.0%	
3/4"	24.6	12.8%	87.2%	
3/8"	52.8	22.7%	77.3%	
#4	72.4	31.1%	68.9%	
#10	85.5	36.7%	63.3%	
#20	93.6	40.2%	59.8%	
#40	113.1	48.5%	51.5%	
#100	179.7	77.1%	22.9%	
#200	192.3	82.5%	17.5%	
Total Weight:	233			

### SOIL CLASSIFICATION:

<b>AASHTO SOIL CLASSIFICATION</b>	A-3
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Grain Size Distribution





**GeoVerse, Inc.**

Innovative Engineering Solutions

**REPORT OF PARTICLE SIZE ANALYSIS (ASTM D422)**

**PROJECT:** MLK Boulevard (Hammondville Road)  
**CLIENT:** Keith and Associates, Inc.  
**LOCATION:** B-2, 2 - 4 FT  
**SAMPLED BY:** Mark Scanlon  
**DESCRIPTION:** Gray Fine Sand (Stratum No. 3)

**PROJECT NUMBER:** 220136  
**DATE SAMPLED:** 12/09/02  
**DATE TESTED:** 12/23/02  
**TESTED BY:** C. Ballock

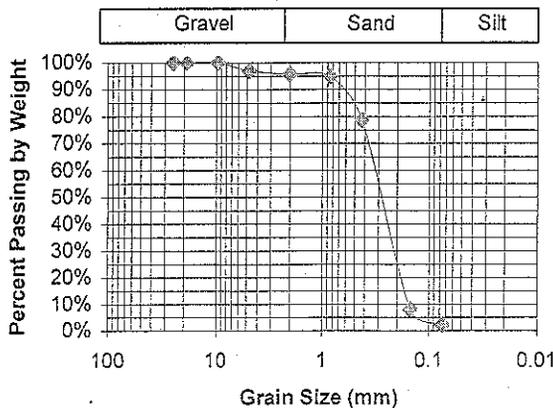
**SIEVE ANALYSIS:**

SIEVE SIZE	CUMULATIVE WEIGHT RETAINED (GRAMS)	PERCENT RETAINED (%)	PERCENT PASSING (%)	SPECIFICATIONS
1"	0.0	0.0	100.0	
3/4"	0.0	0.0	100.0	
3/8"	0.0	0.0	100.0	
#4	4.0	3.0	97.0	
#10	5.8	4.3	95.7	
#20	6.9	5.1	94.9	
#40	28.9	21.4	78.6	
#100	123.8	91.8	8.2	
#200	131.7	97.7	2.3	
Total Weight:	134.8			

**SOIL CLASSIFICATION:**

<b>AASHTO SOIL CLASSIFICATION</b>	A-3
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**Grain Size Distribution**







**Geo Verse, Inc.**

Innovative Engineering Solutions

**REPORT OF PARTICLE SIZE ANALYSIS (ASTM D422)**

**PROJECT:** MLK Boulevard (Hammondville Road)  
**CLIENT:** Keith and Associates, Inc.  
**LOCATION:** B-17, 2.5 – 4 FT  
**SAMPLED BY:** Webster Ott  
**DESCRIPTION:** Tan to Brown Fine Sand (Stratum No. 3)

**PROJECT NUMBER:** 220136  
**DATE SAMPLED:** 12/12/02  
**DATE TESTED:** 12/23/02  
**TESTED BY:** C. Ballock

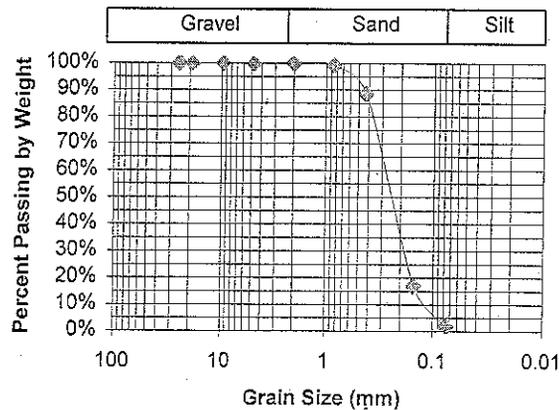
**SIEVE ANALYSIS:**

SIEVE SIZE	CUMULATIVE WEIGHT RETAINED (GRAMS)	PERCENT RETAINED (%)	PERCENT PASSING (%)	SPECIFICATIONS
1"	0.0	0.0%	100.0%	
3/4"	0.0	0.0%	100.0%	
3/8"	0.0	0.0%	100.0%	
#4	0.0	0.0%	100.0%	
#10	0.1	0.1%	99.9%	
#20	0.9	0.7%	99.3%	
#40	15.0	11.3%	88.7%	
#100	109.9	83.1%	16.9%	
#200	129.7	98.1%	1.9%	
Total Weight:	132.2			

**SOIL CLASSIFICATION:**

<b>AASHTO SOIL CLASSIFICATION</b>	A-3
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**Grain Size Distribution**





**GeoVerse, Inc.**

Innovative Engineering Solutions

## REPORT OF PARTICLE SIZE ANALYSIS (ASTM D422)

**PROJECT:** MLK Boulevard (Hammondville Road)  
**CLIENT:** Keith and Associates, Inc.  
**LOCATION:** DB-3, 8 – 10 FT  
**SAMPLED BY:** Mark Scanlon  
**DESCRIPTION:** Brown Sand (Stratum No. 3)

**PROJECT NUMBER:** 220136  
**DATE SAMPLED:** 12/11/02  
**DATE TESTED:** 12/23/02  
**TESTED BY:** C. Ballock

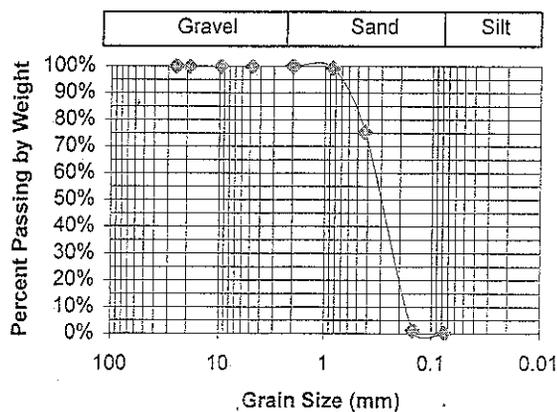
### SIEVE ANALYSIS:

SIEVE SIZE	CUMULATIVE WEIGHT RETAINED (GRAMS)	PERCENT RETAINED (%)	PERCENT PASSING (%)	SPECIFICATIONS
1"	0.0	0.0%	100.0%	
3/4"	0.0	0.0%	100.0%	
3/8"	0.0	0.0%	100.0%	
#4	0.0	0.0%	100.0%	
#10	0.0	0.0%	100.0%	
#20	0.7	0.6%	99.4%	
#40	29.1	24.6%	75.4%	
#100	116.9	98.6%	1.4%	
#200	118.4	99.9%	0.1%	
Total Weight:	118.5			

### SOIL CLASSIFICATION:

AASHTO SOIL CLASSIFICATION	A-3
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Grain Size Distribution





## REPORT OF PARTICLE SIZE ANALYSIS (ASTM D422)

PROJECT: MLK Boulevard (Hammondville Road)  
 CLIENT: Keith and Associates, Inc.  
 LOCATION: DB-4, 5 – 15 FT.  
 SAMPLED BY: Mark Scanlon  
 DESCRIPTION: Tan Sand (Stratum No. 3)

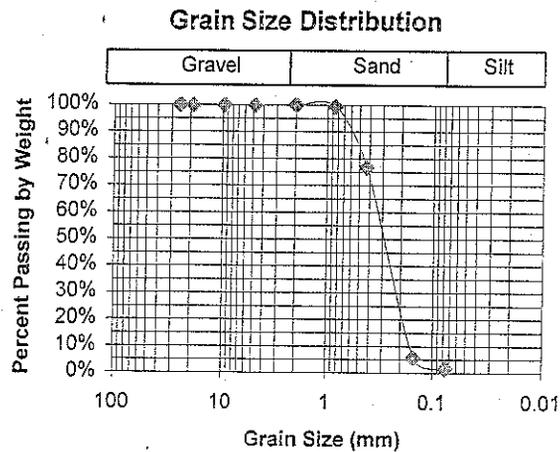
PROJECT NUMBER: 220136  
 DATE SAMPLED: 12/12/02  
 DATE TESTED: 12/23/02  
 TESTED BY: C. Ballock

### SIEVE ANALYSIS:

SIEVE SIZE	CUMULATIVE WEIGHT RETAINED (GRAMS)	PERCENT RETAINED (%)	PERCENT PASSING (%)	SPECIFICATIONS
1"	0.0	0.0%	100.0%	
3/4"	0.0	0.0%	100.0%	
3/8"	0.0	0.0%	100.0%	
#4	0.0	0.0%	100.0%	
#10	0.1	0.1%	99.9%	
#20	0.9	0.5%	99.5%	
#40	43.4	23.4%	76.6%	
#100	175.0	94.2%	5.8%	
#200	182.9	98.5%	1.5%	
Total Weight:	185.7			

### SOIL CLASSIFICATION:

AASHTO SOIL CLASSIFICATION	A-3
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**GeoVerse, Inc.**

Innovative Engineering Solutions

**REPORT OF PARTICLE SIZE ANALYSIS (ASTM D422)**

<b>PROJECT:</b>	MLK Boulevard (Hammondville Road)	<b>PROJECT NUMBER:</b>	220136
<b>CLIENT:</b>	Keith and Associates, Inc.	<b>DATE SAMPLED:</b>	12/12/02
<b>LOCATION:</b>	B-18, 0 – 2 FT	<b>DATE TESTED:</b>	12/23/02
<b>SAMPLED BY:</b>	Webster Ott	<b>TESTED BY:</b>	C. Ballock
<b>DESCRIPTION:</b>	Dark Brown Fine Sand with organics (3.28% Organic) (Stratum No. 4)		

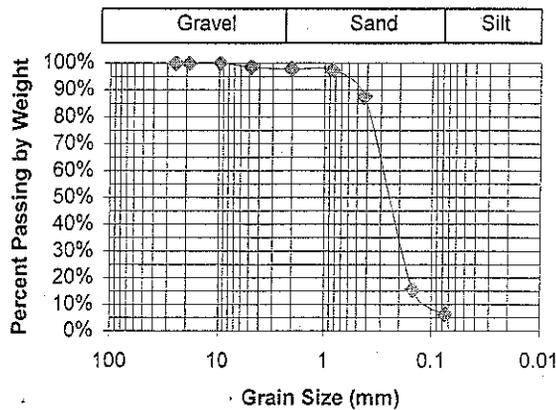
**SIEVE ANALYSIS:**

SIEVE SIZE	CUMULATIVE WEIGHT RETAINED (GRAMS)	PERCENT RETAINED (%)	PERCENT PASSING (%)	SPECIFICATIONS
1"	0.0	0.0%	100.0%	
3/4"	0.0	0.0%	100.0%	
3/8"	0.0	0.0%	100.0%	
#4	1.2	1.5%	98.5%	
#10	1.8	2.3%	97.7%	
#20	2.1	2.6%	97.4%	
#40	10.0	12.6%	87.4%	
#100	67.2	84.5%	15.5%	
#200	74.5	93.7%	6.3%	
Total Weight:	79.5			

**SOIL CLASSIFICATION:**

<b>AASHTO SOIL CLASSIFICATION</b>	A-8
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**Grain Size Distribution**





**GeoVerse, Inc.**

*Innovative Engineering Solutions*

**REPORT OF PARTICLE SIZE ANALYSIS (ASTM D422)**

<b>PROJECT:</b>	MLK Boulevard (Hammondville Road)	<b>PROJECT NUMBER:</b>	220136
<b>CLIENT:</b>	Keith and Associates, Inc.	<b>DATE SAMPLED:</b>	12/09/02
<b>LOCATION:</b>	B-6, 2 – 3 FT	<b>DATE TESTED:</b>	12/23/02
<b>SAMPLED BY:</b>	Mark Scanlon	<b>TESTED BY:</b>	C. Ballock
<b>DESCRIPTION:</b>	Light Grey Fine Sand with Shell (Stratum No. 5)		

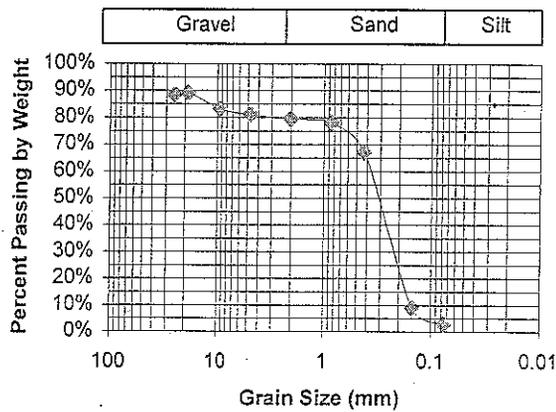
**SIEVE ANALYSIS:**

SIEVE SIZE	CUMULATIVE WEIGHT RETAINED (GRAMS)	PERCENT RETAINED (%)	PERCENT PASSING (%)	SPECIFICATIONS
1"	20.3	11.6%	88.4%	
3/4"	20.3	10.8%	89.2%	
3/8"	32.4	16.8%	83.2%	
#4	36.6	19.0%	81.0%	
#10	39.6	20.5%	79.5%	
#20	42.7	22.1%	77.9%	
#40	63.6	32.9%	67.1%	
#100	175.4	90.8%	9.2%	
#200	187.5	97.1%	2.9%	
Total Weight:	193.1			

**SOIL CLASSIFICATION:**

<b>AASHTO SOIL CLASSIFICATION</b>	A-3
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**Grain Size Distribution**





**GeoVerse, Inc.**

*Innovative Engineering Solutions*

**REPORT OF ORGANIC CONTENT BY LOSS ON IGNITION TEST**

**PROJECT:** MLK Boulevard (Hammondville Road) **PROJECT NUMBER:** 220136  
**CLIENT:** Keith and Associates, Inc.  
**LOCATION:** MLK Boulevard from Powerline Road to Florida Turnpike, Pompano Beach, FL  
**SAMPLED BY:** Webster Ott **DATE SAMPLED:** 12/9-12/02  
**TESTED BY:** Craig Ballock **DATE TESTED:** 12/26/02

**TEST RESULTS:**

SAMPLE NUMBER	LOCATION	DEPTH (FT)	ORGANIC CONTENT (%)
1	B-18	0 - 2	3.28
2	B-1	0 - 2	3.74
3	B-3	0 - 2	3.98
4	DB-5	0 - .25	4.21
5	B-2	0 - 2	5.12

**REMARKS:**

**APPENDIX C**

**CITY OF POMPANO BEACH CODE OF ORDINANCES 97.50 AND 97.60.**

## § 97.50 LIMITED EXEMPTIONS.

The following activities are exempted from the provisions of this chapter provided they adhere to any and all applicable restrictions.

(A) Construction activity provided:

(1) It shall be unlawful for any person, firm or corporation to do, perform or engage in any construction work, building, excavation, dredging, building alteration or repair work of any nature, to any building or structure, or upon any site for a building or structure in the city between the hours of 11:00 p.m. and 8:00 a.m. of any weekday and from 11:00 p.m. on Saturday to 8:00 a.m. on Monday of each week. It shall be unlawful for any person, firm or corporation to conduct any pile driving activity whatsoever between the hours of 5:30 p.m. and 9:00 a.m. of any weekday and from 5:30 p.m. on Saturday to 9:00 a.m. on Monday of each week.

(2) Any person desiring to engage in the aforesaid activity beyond the stated hours of limitation, based upon cases of urgent necessity or upon the interests of public health, safety and ultimate convenience, may apply to the City Manager for a special permit allowing it. The permits, if granted, shall be limited to a period of up to three days' duration, but may be renewed for additional periods of up to three days each if the emergency or need continues. In the issuance of these permits the City Manager shall weigh all facts and circumstances and shall determine whether the reasons given for the urgent necessity are valid and reasonable, whether the public health, safety and ultimate convenience shall be protected or better served by granting the permit requested, and whether the manner and amount of loss or inconvenience to the party in interest imposes a significant hardship. Upon an affirmative finding of the foregoing considerations, the City Manager or his designee is authorized to issue the permit requested and any extensions thereof, as may be required.

(B) Lawn maintenance equipment provided:

(1) It shall be unlawful to operate lawn mowers, edgers, trimmers, blowers and power-driven hedge shears in the city between the hours of 9:00 p.m. and 8:00 a.m.

(2) This section shall not apply to the operation of such equipment on golf courses.

(Ord. 94-32, passed 4-5-94; Am. Ord. 96-22, passed 11-28-95) [Penalty, see § 10.99](#)

## § 97.60 NOISE DISTURBANCE.

(A) With the exception of those activities listed under §§ [97.40](#) and [97.50](#) as provided for in this chapter, the following acts are declared to be noise disturbances and in violation of this chapter, and no sound level measurement is needed to verify the existence of the following noise disturbances:

(1) The sounding of any horn or signaling device, except as a danger warning; the sounding of any signaling device for any unnecessary or unreasonable period of time; and the unreasonable use of any signaling device in such a manner as to disturb the peace, health and comfort of a reasonable person of ordinary sensibilities.

(2) The using, operating or permitting to be played, used or operated, of any radio, television, tape or record player, amplifier, musical instrument or other machine or device used for production, reproduction or emission of sound in a manner which either annoys, disturbs, injures or endangers the peace, health or comfort of a reasonable person of ordinary sensibilities, or at any time with greater sound intensity than necessary for convenient hearing for the person or persons who are in the room, vehicle or area in which such device is operated.

(3) The using, operating or permitting to be used or operated, of any loud speaker or public address system in such a manner which either annoys, disturbs, injures or endangers the peace, health or comfort of a reasonable person of ordinary sensibilities, or at any time with greater sound intensity than necessary for convenient hearing for the person or persons who are in the room, vehicle or area in which such device is operated.

(4) The repairing, rebuilding, modifying or testing of any motor vehicle, off-road vehicle, racing vehicle or motor boat in or near a residential area in such a manner which either annoys, disturbs, injures or endangers the peace, health or comfort of a reasonable person of ordinary sensibilities.

(B) Alleged noise disturbance violations shall be investigated on a “complaint only” basis and where the person or persons making the complaint signs a sworn affidavit stating the details of the complaint and how the sound in question violates the provisions of this section; otherwise, no such complaint shall be investigated.

(C) The provisions contained in this section shall not relieve the activity or use of property from adhering to all other applicable provisions of this chapter.

(Ord. 94-32, passed 4-5-94) [Penalty, see § 10.99](#)

**Disclaimer:**

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For further information regarding the official version of any of this Code of Ordinances or other documents posted on this site, please contact the Municipality directly or contact American Legal Publishing toll-free at 800-445-5588.

**APPENDIX D**

**BROWARD COUNTY TRANSIT – PRE-FABRICATED BUS SHELTER  
STANDARD DETAILS (DATED 2/18/13)**

# 2005-  
 Submittal # 2  
 Make Comments Needed  
 Revise & Resubmit  
 Note Comments  
 Date: 4/18/13  
 [Signature]



# BROWARD COUNTY TRANSIT PRE-FABRICATED BUS SHELTER FLORIDA

(ALUMINUM OPTION)

FEBRUARY 18, 2013

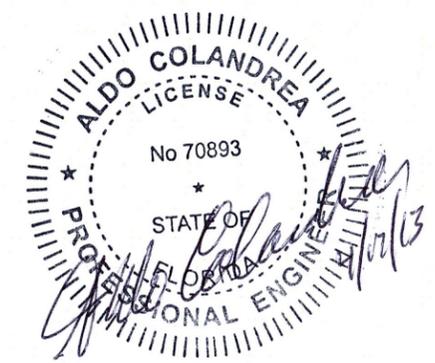


TABLE		
SHEET #	DESCRIPTION	COMMENTS
2	3 FT. SHELTER ASSEMBLY	ELEVATION VIEWS SHOWN
3	4 FT. SHELTER ASSEMBLY	ELEVATION VIEWS SHOWN
4	5 FT. SHELTER ASSEMBLY	ELEVATION VIEWS SHOWN
5	7 FT. SHELTER ASSEMBLY	ELEVATION VIEWS SHOWN
6	STRUCTURAL CONNECTIONS AND DETAILS	SOLAR PANEL OPTIONS
7	STRUCTURAL CONNECTIONS AND DETAILS	ROOF PANEL, PRESSURE PLATE, PURLIN, AND RAFTER BASE
8	STRUCTURAL CONNECTIONS AND DETAILS	RAFTER TO COLUMN, ARM TO COLUMN AND RAFTER CONNECTION
9	STRUCTURAL CONNECTIONS AND DETAILS	SIDE WALL TO COLUMN, AND PERF. PANEL TO SIDE WALL FRAME
10	STRUCTURAL CONNECTIONS AND DETAILS	CROSS BEAM TO COLUMNS PERF. PANEL TO CROSS BEAMS
11	STRUCTURAL CONNECTIONS AND DETAILS	MOUNTING ARM TO MAP CASE FRAME, AND MAP CASE TO FRAME
12	STRUCTURAL CONNECTIONS AND DETAILS	BACKWALL INFILL SUB ASSEMBLY AND WELDMENT
13	STRUCTURAL CONNECTIONS AND DETAILS	BACKWALL MAP CASE DISPLAY FRAME WELDMENT
14	CONCRETE PAD LAYOUT	(3 FT. SHELTER)
15	CONCRETE PAD LAYOUT	(4 FT. SHELTER)
16	CONCRETE PAD LAYOUT	(5 FT. SHELTER)
17	CONCRETE PAD LAYOUT	(7 FT. SHELTER)
18	ELECTRICAL PLAN	
19	ELECTRICAL PLAN	
20	ELECTRICAL PLAN	
21	INTERLUDE BACKLESS BENCH	(ELEVATION VIEWS)



**STRUCTURAL NOTES**

**1) DESIGN UNIFORM LOADS:**

ROOF DEAD LOAD  
20 PSF

ROOF LIVE LOAD  
30 PSF (MINIMUM PER FBC SECTION 1616.1)

WIND LOAD  
BASIC WIND SPEED = 170 MPH, 3 SECOND GUST. PER IBC SECTION 20.2  
BUILDING CATEGORY = II  
WIND EXPOSURE = C  
INTERNAL PRESSURE COEFFICIENT = 0

2) STRUCTURAL ALUMINUM SECTIONS SHALL CONFORM TO THE PHYSICAL PROPERTIES OF 6061-T6 OR AN ENGINEERING APPROVED EQUIVALENT.

3) STRUCTURAL ALUMINUM SHALL BE ERECTED IN ACCORDANCE WITH THE INSTALLATION INSTRUCTIONS PROVIDED BY BRASCO INTERNATIONAL, INC.

4) ALUMINUM WELDS SHALL USE EITHER 5356 OR 5556 FILLER MATERIAL. WELDING WILL CONFORM TO THE REQUIREMENTS OF THE 2005 ALUMINUM DESIGN MANUAL.

5) BOLTED CONNECTIONS SHALL CONSIST OF STAINLESS STEEL ASTM A-513 BOLTS OR AN ENGINEERING APPROVED EQUAL.

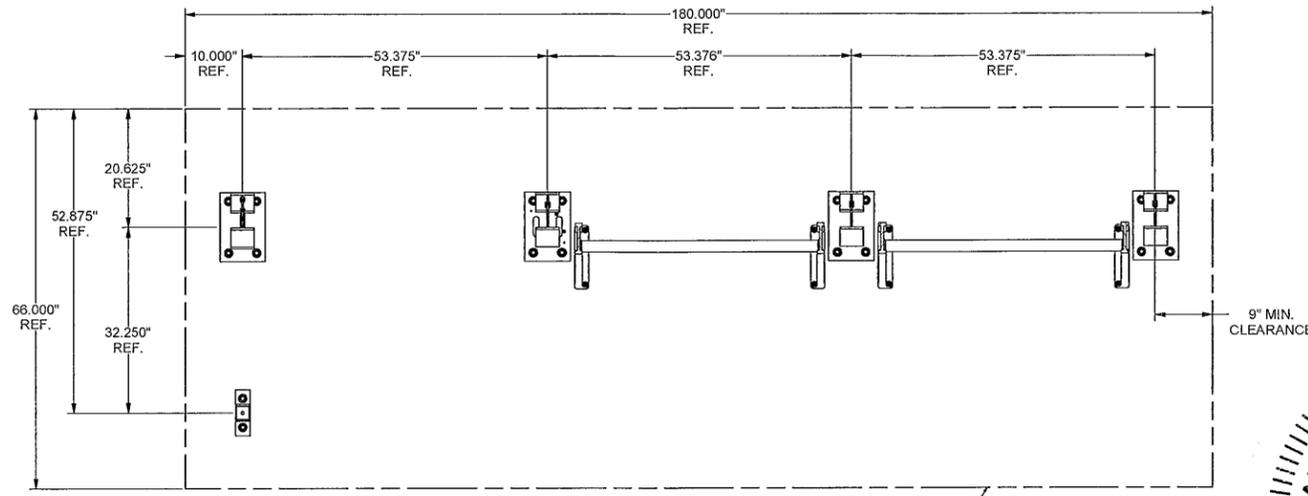
6) CONCRETE ANCHORS SHALL BE HILTI HIT-HY150 ADHESIVE ANCHORS OR EQUIVALENT, AND SHALL BE INSTALLED PER THE LATEST HILTI CATALOGUE REQUIREMENTS.

7) THE ROOF SHALL CONSIST OF A GALLINA 16MM POLYCARBONATE (PC) PANEL AND SHALL BE INSTALLED PER INSTRUCTIONS PROVIDED AT [HTTP://WWW.GALLINAUSA.COM](http://www.gallinausa.com)

8) MINIMUM CONCRETE STRENGTH OF 3,000 PSI REQUIRED FOR CONCRETE PAD.

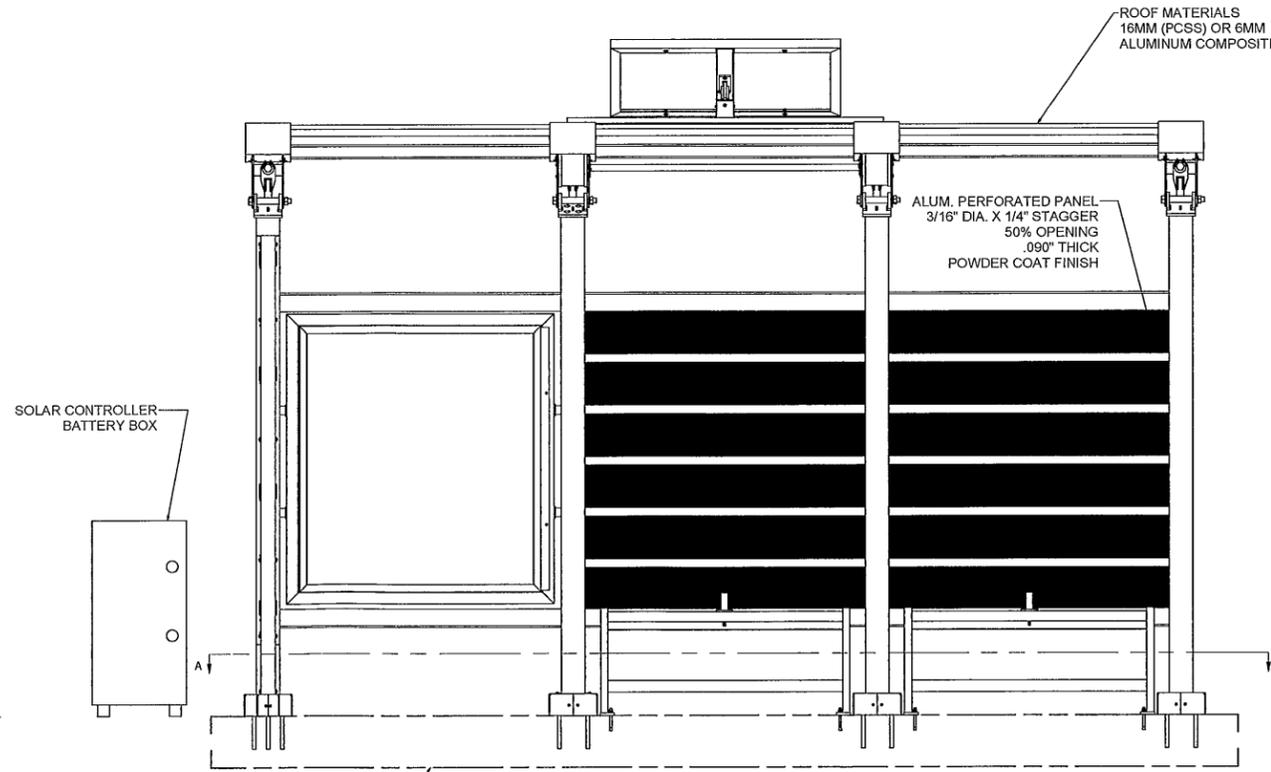
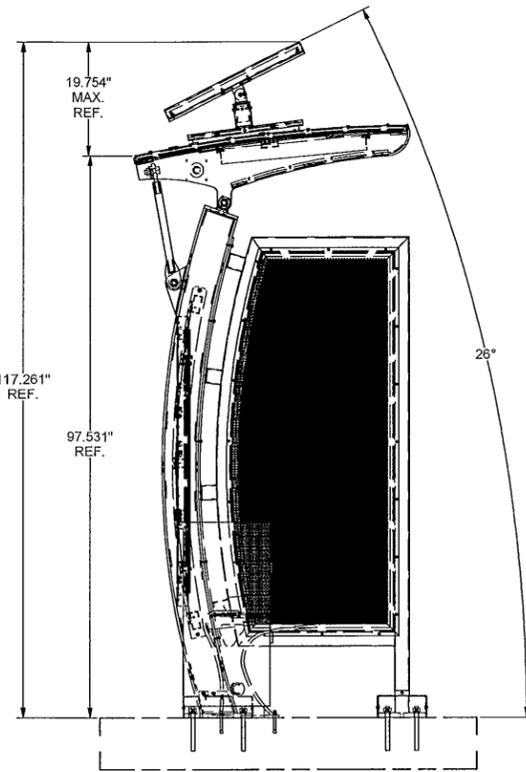
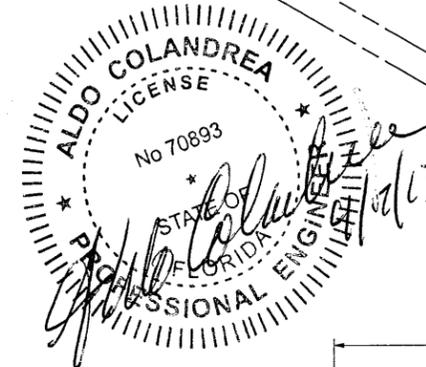
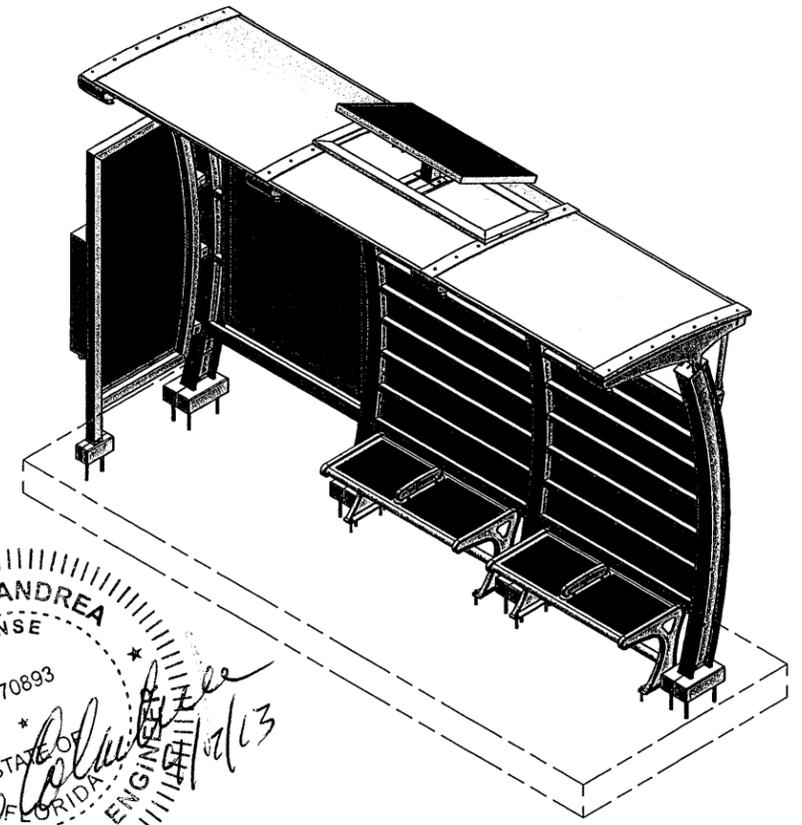
9) JOINT ASSEMBLY AND TIGHTENING OF SHEAR/BEARING CONNECTIONS. THE SNUG TIGHT CONDITION IS DEFINED AS THE TIGHTNESS THAT EXISTS WHEN ALL PLIES IN A JOINT ARE IN FIRM CONTACT. THIS MAY BE ATTAINED BY A FULL EFFORT OF A MAN USING AN ORDINARY SPUD WRENCH. REFERENCE SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS SECTION 8 ITEM C.

10) ALL STEEL AND IRON PRODUCTS IN THESE STRUCTURES WILL COMPLY WITH THE "BUY AMERICA" CONTRACT REQUIREMENTS.

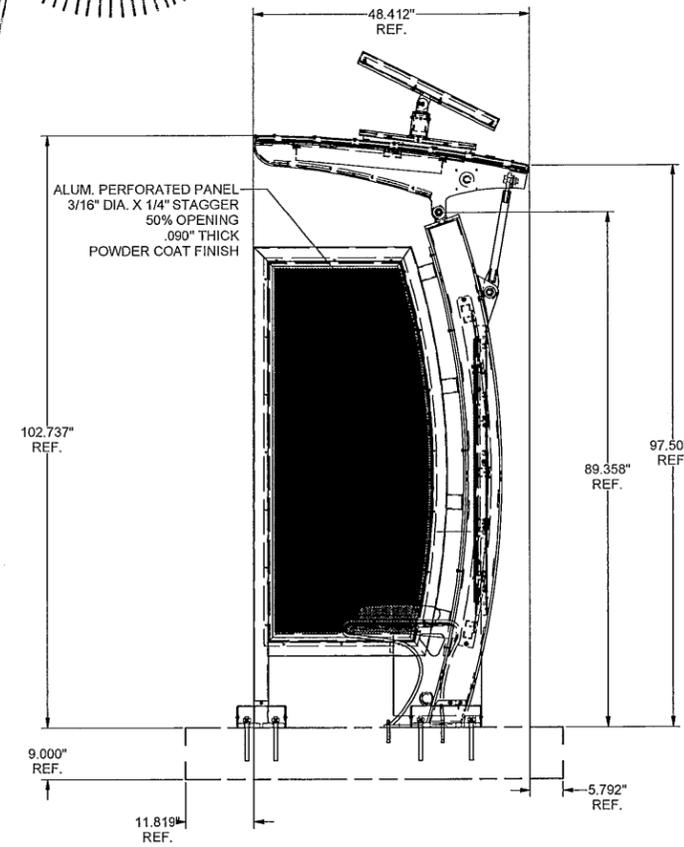


**SECTION A-A**

FOOTING BY OTHERS



FOOTING BY OTHERS



**ALDO F. COLANDREA, PH.D., P.E.**  
13710 REECK RD., SOUTHGATE MI, 48195  
734-324-2924W, 734-7353915C

	BRASCO INTERNATIONAL, INC. 32400 INDUSTRIAL DR. MADISON HEIGHTS, MICHIGAN 48071 1-800-893-3665 WWW.BRASCO.COM		CUSTOMER:	BROWARD COUNTY DIVISION	DESIGNER:	BMB	CHECKER:	AC
	THIS DRAWING IS CONFIDENTIAL AND IS FOR THE SOLE USE OF OUR CUSTOMERS AND MAY NOT BE REPRODUCED OR COPIED WITHOUT WRITTEN PERMISSION FROM BRASCO INTERNATIONAL.		PROJECT:	BROWARD COUNTY TRANSIT BUS SHELTER	DATE:	2/14/13	DATE:	2/15/13
	MODEL:	4 FT. SHELTER ASSEMBLY (ELEVATION VIEWS)	JOB #	X	SHEET:	3	REVISOR:	A

STRUCTURAL NOTES

1) DESIGN UNIFORM LOADS:

ROOF DEAD LOAD  
20 PSF

ROOF LIVE LOAD  
30 PSF (MINIMUM PER FBC SECTION 1616.1)

WIND LOAD  
BASIC WIND SPEED = 170 MPH, 3 SECOND GUST. PER IBC SECTION 20.2  
BUILDING CATEGORY = II  
WIND EXPOSURE = C  
INTERNAL PRESSURE COEFFICIENT = 0

2) STRUCTURAL ALUMINUM SECTIONS SHALL CONFORM TO THE PHYSICAL PROPERTIES OF 6061-T6 OR AN ENGINEERING APPROVED EQUIVALENT.

3) STRUCTURAL ALUMINUM SHALL BE ERECTED IN ACCORDANCE WITH THE INSTALLATION INSTRUCTIONS PROVIDED BY BRASCO INTERNATIONAL, INC.

4) ALUMINUM WELDS SHALL USE EITHER 5356 OR 5556 FILLER MATERIAL. WELDING WILL CONFORM TO THE REQUIREMENTS OF THE 2005 ALUMINUM DESIGN MANUAL.

5) BOLTED CONNECTIONS SHALL CONSIST OF STAINLESS STEEL ASTM A-513 BOLTS OR AN ENGINEERING APPROVED EQUAL.

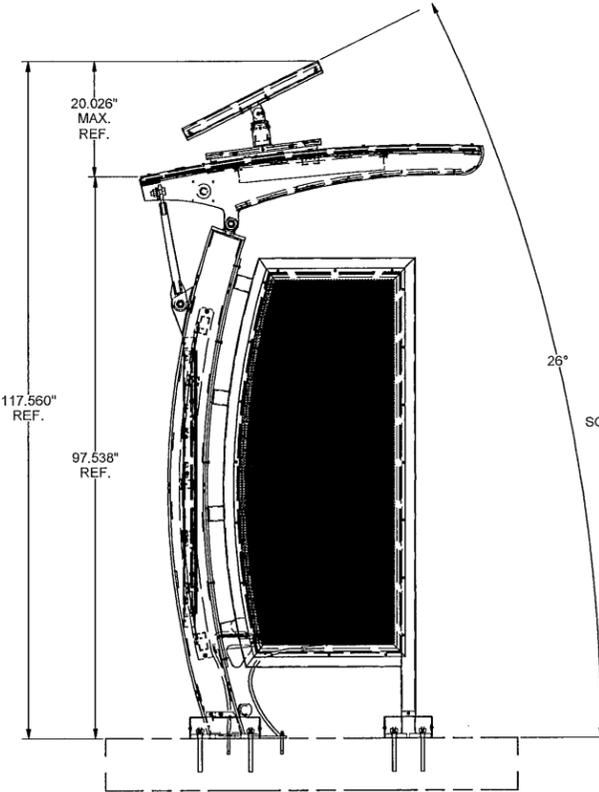
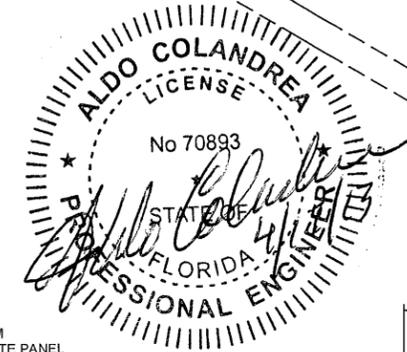
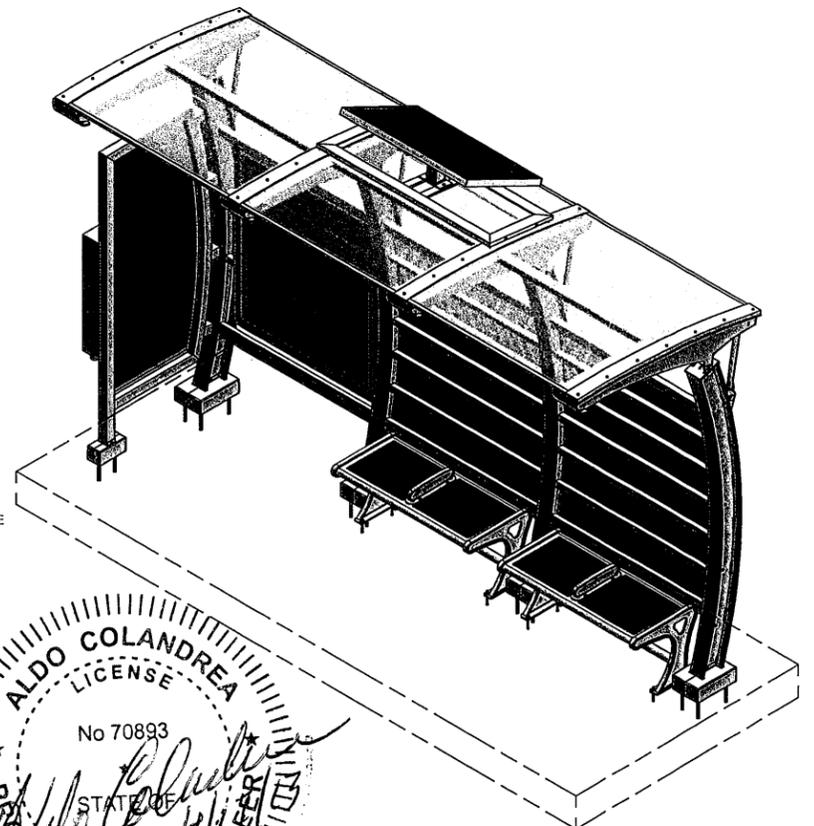
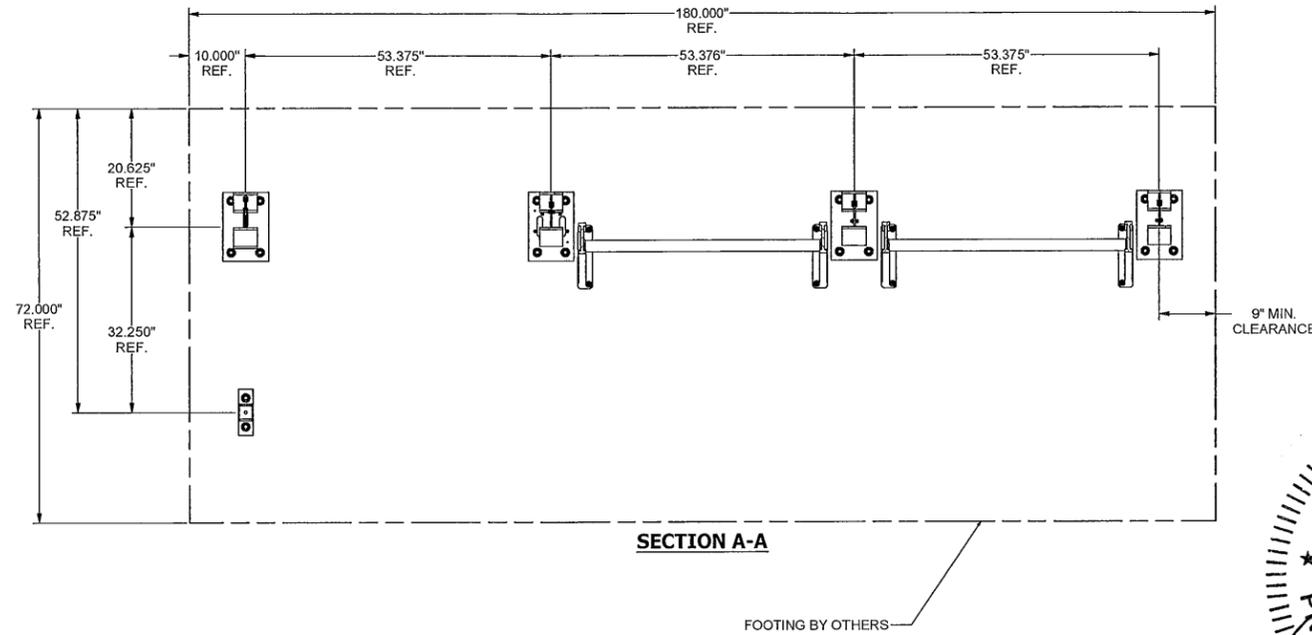
6) CONCRETE ANCHORS SHALL BE HILTI HIT-HY150 ADHESIVE ANCHORS OR EQUIVALENT, AND SHALL BE INSTALLED PER THE LATEST HILTI CATALOGUE REQUIREMENTS.

7) THE ROOF SHALL CONSIST OF A GALLINA 16MM POLYCARBONATE (PC) PANEL AND SHALL BE INSTALLED PER INSTRUCTIONS PROVIDED AT [HTTP://WWW.GALLINAUSA.COM](http://www.gallinausa.com)

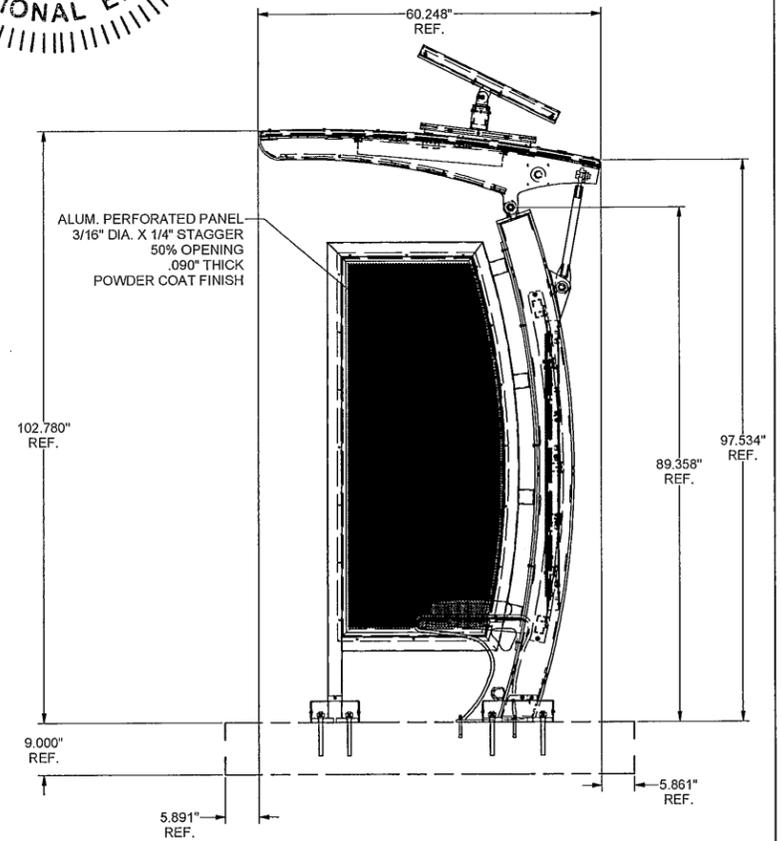
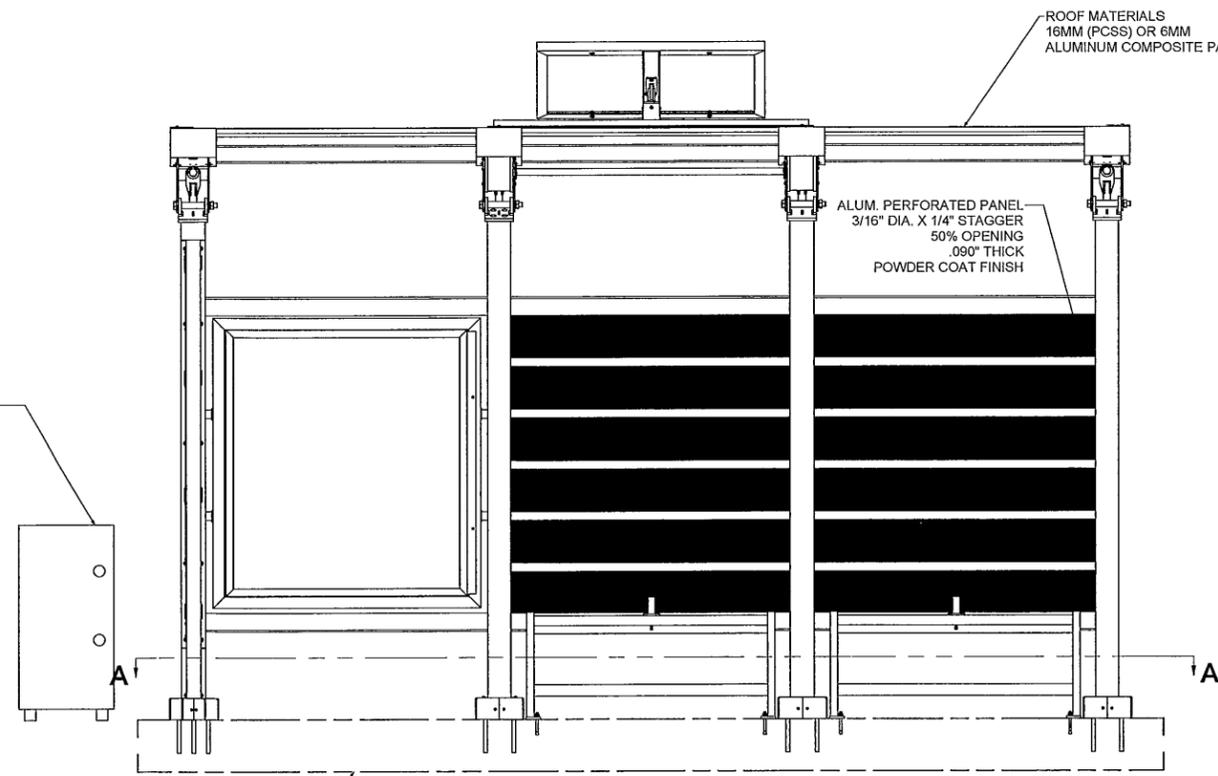
8) MINIMUM CONCRETE STRENGTH OF 3,000 PSI REQUIRED FOR CONCRETE PAD.

9) JOINT ASSEMBLY AND TIGHTENING OF SHEAR/BEARING CONNECTIONS, THE SNUG TIGHT CONDITION IS DEFINED AS THE TIGHTNESS THAT EXISTS WHEN ALL PLIES IN A JOINT ARE IN FIRM CONTACT. THIS MAY BE ATTAINED BY A FULL EFFORT OF A MAN USING AN ORDINARY SPUD WRENCH. REFERENCE SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS SECTION 8 ITEM C.

10) ALL STEEL AND IRON PRODUCTS IN THESE STRUCTURES WILL COMPLY WITH THE "BUY AMERICA" CONTRACT REQUIREMENTS.



SOLAR CONTROLLER BATTERY BOX



ALDO F. COLANDREA, PH.D., P.E.  
13710 REECK RD., SOUTHGATE MI, 48195  
734-324-2924W, 734-7353915C

	BRASCO INTERNATIONAL, INC. 32400 INDUSTRIAL DR. MADISON HEIGHTS, MICHIGAN 48071 1-800-813-3665 WWW.BRASCO.COM		CUSTOMER:	BROWARD COUNTY TRANSIT DIVISION	DESIGNER:	BMB	CHECKER:	AC
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	MODEL:	5 FT. SHELTER ASSEMBLY (ELEVATION VIEWS)	JOB #	X	SHEET:	4	REVISION:	A

**STRUCTURAL NOTES**

**1) DESIGN UNIFORM LOADS:**

ROOF DEAD LOAD  
20 PSF

ROOF LIVE LOAD  
30 PSF (MINIMUM PER FBC SECTION 1616.1)

WIND LOAD  
BASIC WIND SPEED = 170 MPH, 3 SECOND GUST. PER IBC SECTION 20.2  
BUILDING CATEGORY = II  
WIND EXPOSURE = C  
INTERNAL PRESSURE COEFFICIENT = 0

2) STRUCTURAL ALUMINUM SECTIONS SHALL CONFORM TO THE PHYSICAL PROPERTIES OF 6061-T6 OR AN ENGINEERING APPROVED EQUIVALENT.

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5) BOLTED CONNECTIONS SHALL CONSIST OF STAINLESS STEEL ASTM A-513 BOLTS OR AN ENGINEERING APPROVED EQUAL.

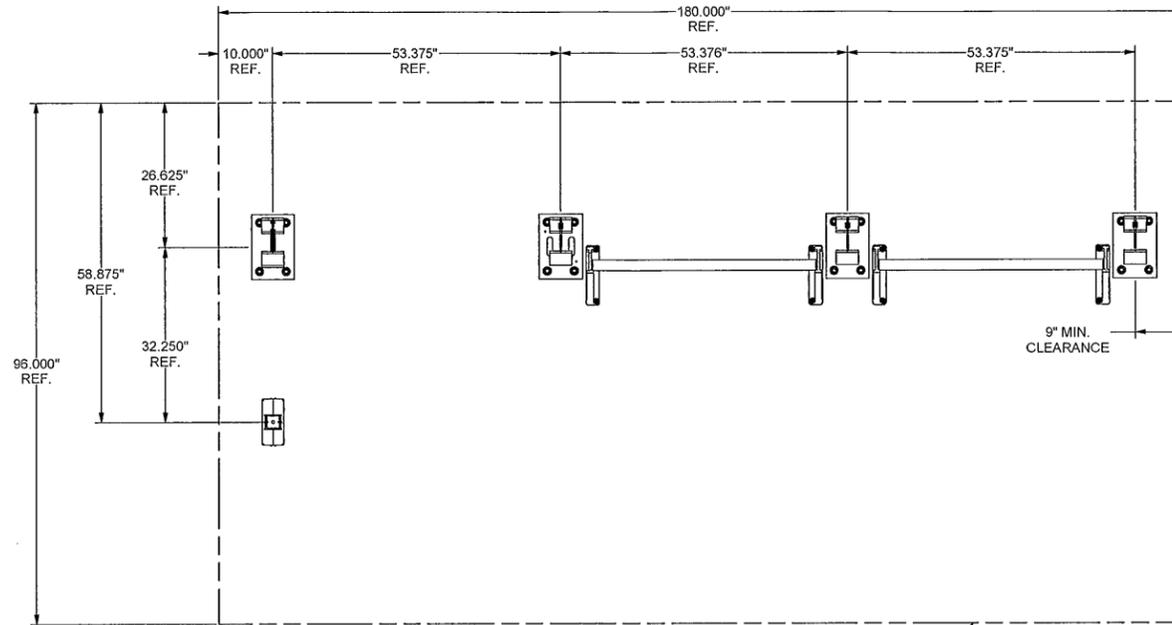
6) CONCRETE ANCHORS SHALL BE HILTI HIT-HY150 ADHESIVE ANCHORS OR EQUIVALENT, AND SHALL BE INSTALLED PER THE LATEST HILTI CATALOGUE REQUIREMENTS.

7) THE ROOF SHALL CONSIST OF A GALLINA 16MM POLYCARBONATE (PC) PANEL AND SHALL BE INSTALLED PER INSTRUCTIONS PROVIDED AT [HTTP://WWW.GALLINAUSA.COM](http://www.gallinausa.com)

8) MINIMUM CONCRETE STRENGTH OF 3,000 PSI REQUIRED FOR CONCRETE PAD.

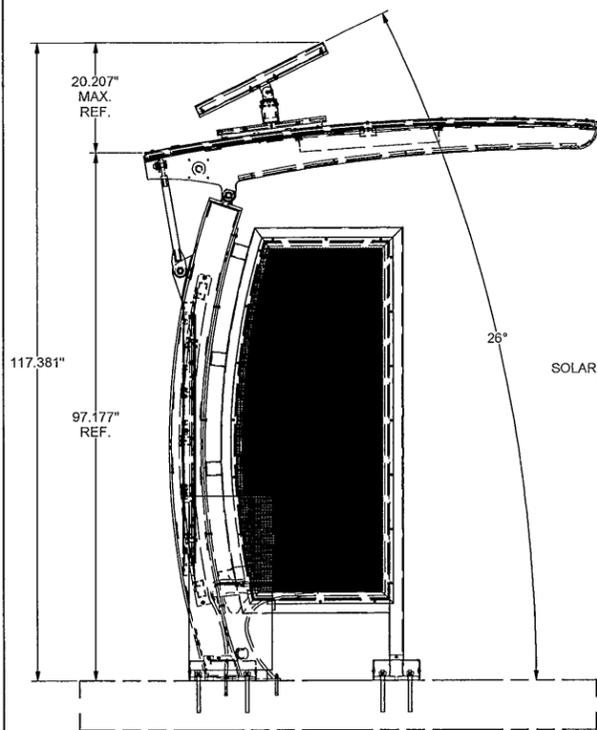
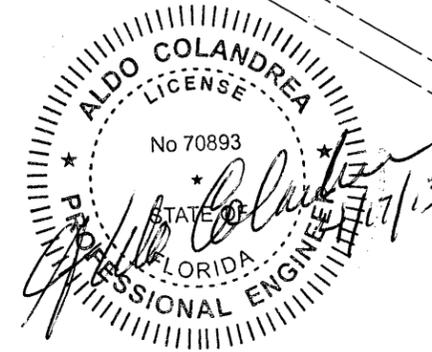
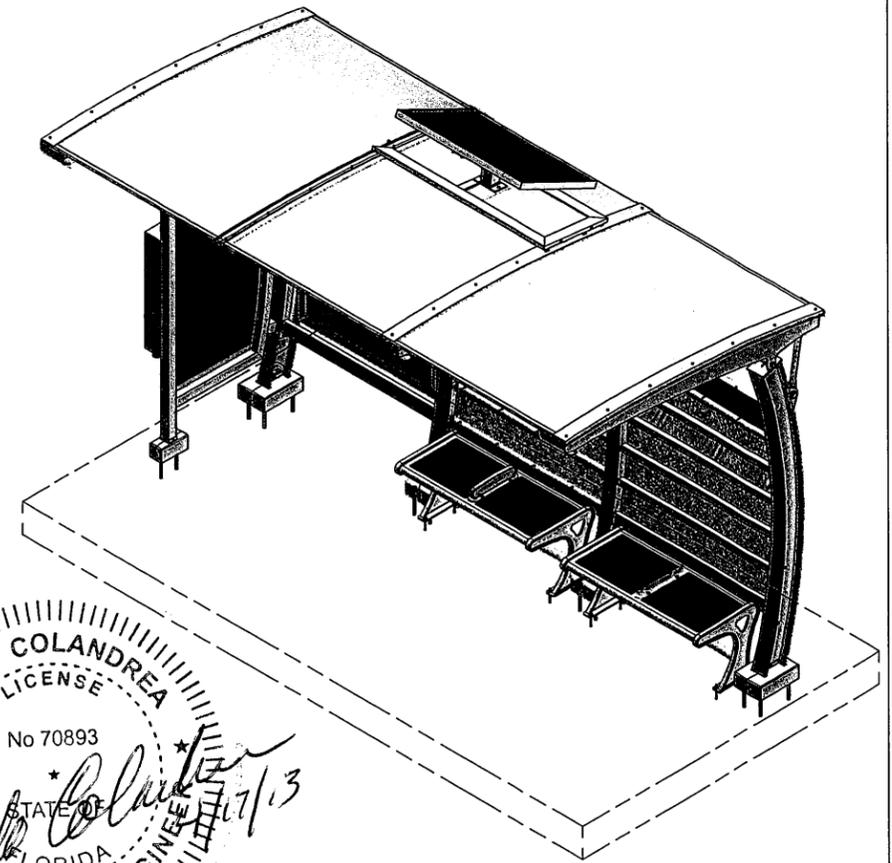
9) JOINT ASSEMBLY AND TIGHTENING OF SHEAR/BEARING CONNECTIONS. THE SNUG TIGHT CONDITION IS DEFINED AS THE TIGHTNESS THAT EXISTS WHEN ALL PLIES IN A JOINT ARE IN FIRM CONTACT. THIS MAY BE ATTAINED BY A FULL EFFORT OF A MAN USING AN ORDINARY SPUD WRENCH. REFERENCE SPECIFICATIONS FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS SECTION 8 ITEM C.

10) ALL STEEL AND IRON PRODUCTS IN THESE STRUCTURES WILL COMPLY WITH THE "BUY AMERICA" CONTRACT REQUIREMENTS.

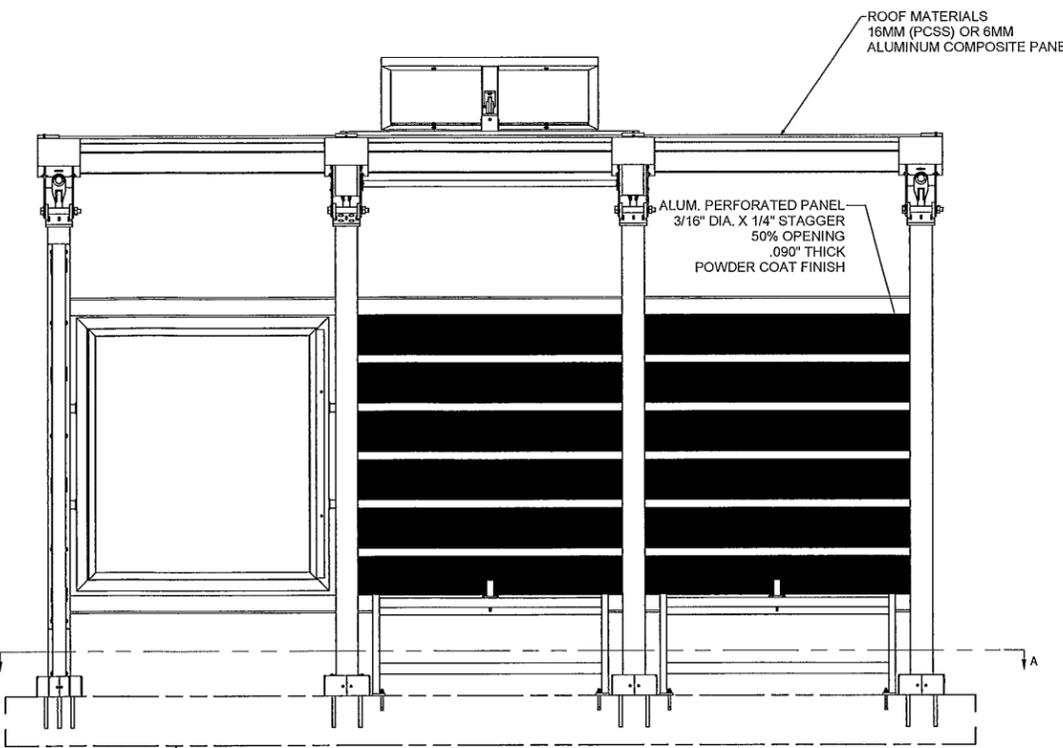


**SECTION A-A**

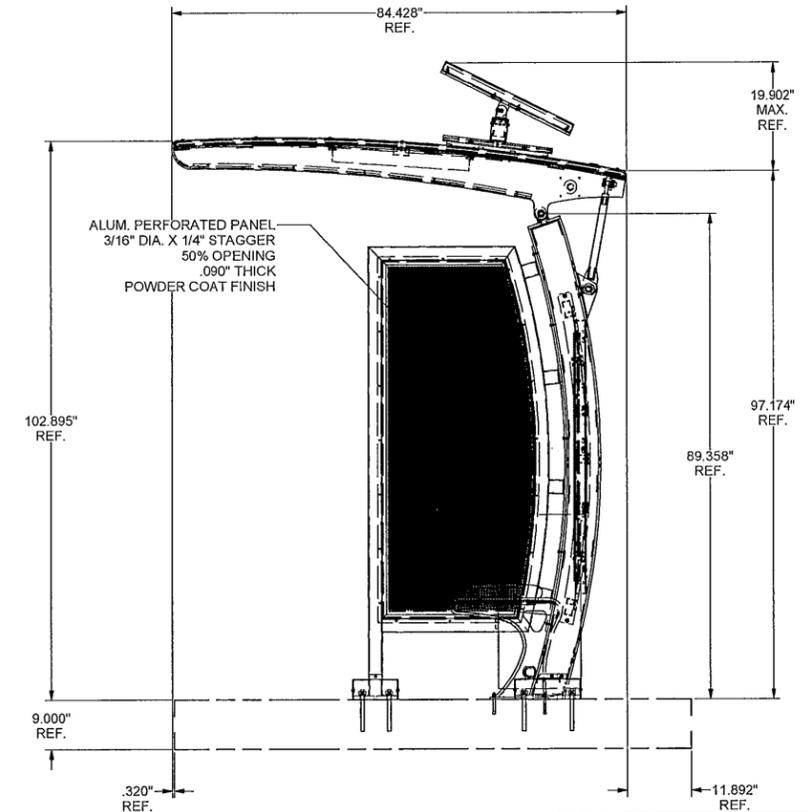
FOOTING BY OTHERS



SOLAR CONTROLLER BATTERY BOX

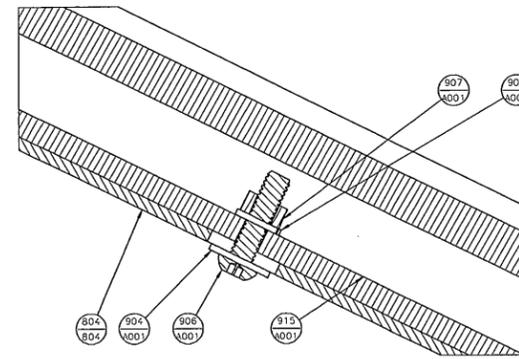
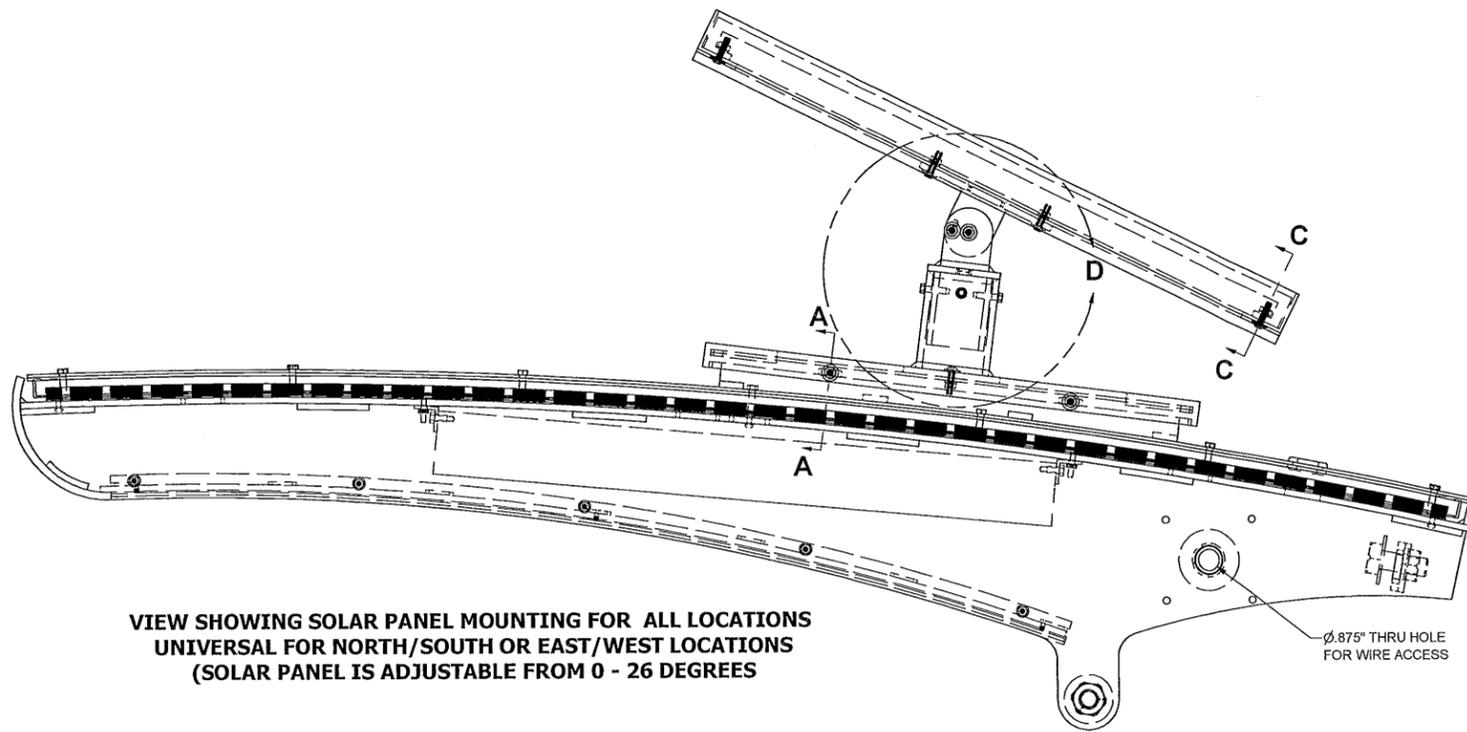


FOOTING BY OTHERS

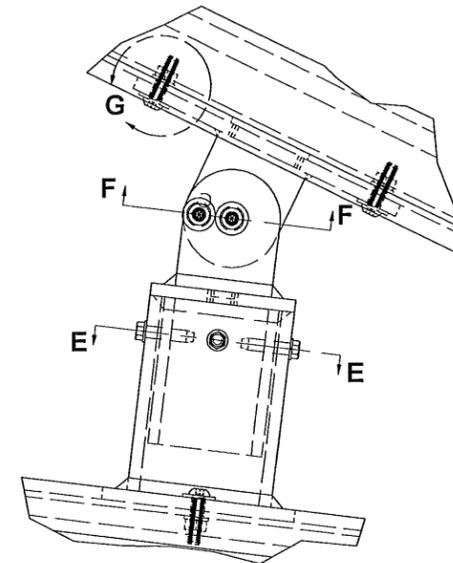


**ALDO F. COLANDREA, PH.D., P.E.**  
13710 REECK RD., SOUTHGATE MI, 48195  
734-324-2924W, 734-7353915C

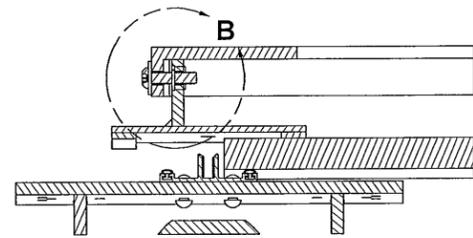
	BRASCO INTERNATIONAL, INC.	CUSTOMER:	BROWARD COUNTY TRANSIT DIVISION	DESIGNER:	BMB	CHECKER:	AC
	32400 INDUSTRIAL DR. MADISON HEIGHTS, MICHIGAN 48071 1-800-893-3665 WWW.BRASCO.COM	PROJECT:	BROWARD COUNTY TRANSIT BUS SHELTER	DATE:	2/14/13	DATE:	2/15/13
<small>THIS DRAWING IS CONFIDENTIAL AND IS FOR THE SOLE USE OF OUR CUSTOMERS AND MAY NOT BE REPRODUCED OR COPIED WITHOUT WRITTEN PERMISSION FROM BRASCO INTERNATIONAL.</small>		MODEL:	7 FT. SHELTER ASSEMBLY (ELEVATION VIEWS)	SHEET:	5	REVISION:	A



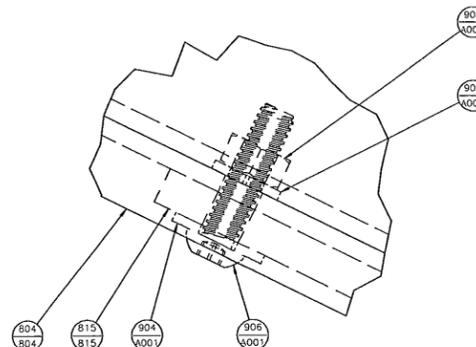
SECTION C-C  
SHOWING TYPICAL CONNECTION  
OF SOLAR PANEL TO FRAME WELDMENT



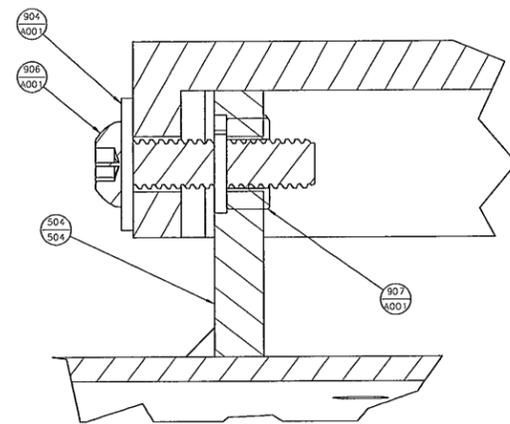
DETAIL D  
ENLARGED VIEW SHOWING CONNECTIONS OF SOLAR  
PANEL AND ORIENTATION CONNECTIONS



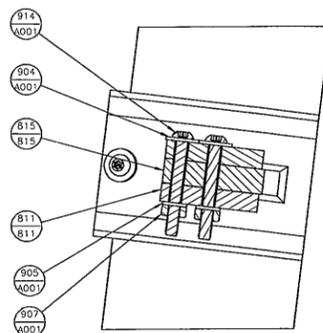
SECTION A-A  
SHOWING SOLAR PANEL MOUNTING  
BRACKET TO RAFTER PRESSURE CAPS



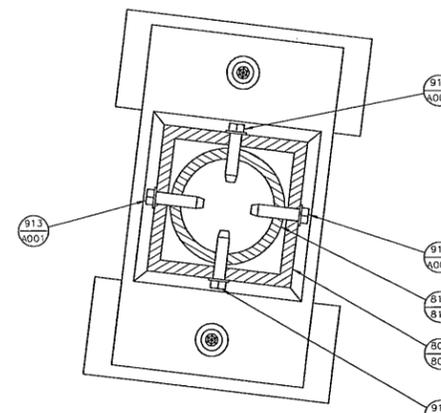
DETAIL G  
SHOWING TYPICAL ATTACHMENT OF  
SOLAR PANEL BRACKET TO ROOF MOUNT BRACKET



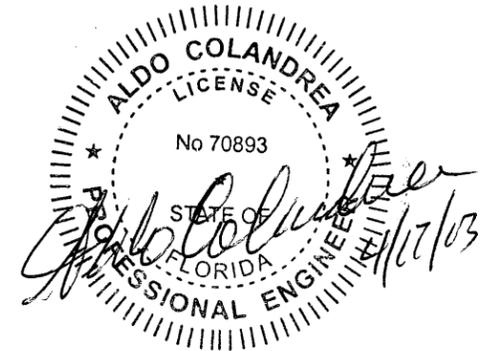
DETAIL B  
ENLARGED VIEW SHOWING TYPICAL CONNECTION  
OF SOLAR PANEL MOUNTING WELDMENT  
TO RAFTER PRESSURE CAPS



SECTION F-F  
SHOWING ATTACHMENT OF SOLAR PANEL  
BRACKET TO POST WELDMENT  
(ATTACHMENT TO SET SOLAR PANEL ANGLE)



SECTION E-E  
SHOWING TYPICAL ATTACHMENT AFTER  
SOLAR PANEL IS SET TO PROPER ORIENTATION



UNLESS OTHERWISE SPECIFIED  
ALL MECHANICAL FASTENERS TO BE  
TORQUED SNUG TIGHT DURING  
INSTALLTION

NOTE:  
S.S. IS ABBREVIATION FOR STAINLESS  
STEEL

BRASCO INTERNATIONAL PARTS LIST			
ITEM	DESCRIPTION	PART NUMBER	STOCK SIZE
804	FLAT BAR ASSEMBLY (6 FT) (RH)		
804	SOLAR PANEL WELDMENT		
808	POST WELDMENT		
811	SLEEVE WELDMENT		
815	SOLAR PANEL CLEVIS WELDMENT		
904	1/4" S.S. FLAT WASHER	F1052	
905	1/4" S.S. LOCKWASHER	F1055	
906	1/4-20 X 1" LG. S.S. TAMPER RESISTANT BUTTON SOCKET CAP SCREW	F1137	
907	1/4"-20 S.S. NUT	F1059	
913	#12 x 1 1/2" S.S. HEX HEAD TEK SCREW	F1043	
914	1/4-20 X 2" LG. S.S. TAMPER RESISTANT BUTTON SOCKET CAP SCREW	F1138	
915	SOLAR PANEL	SK052	

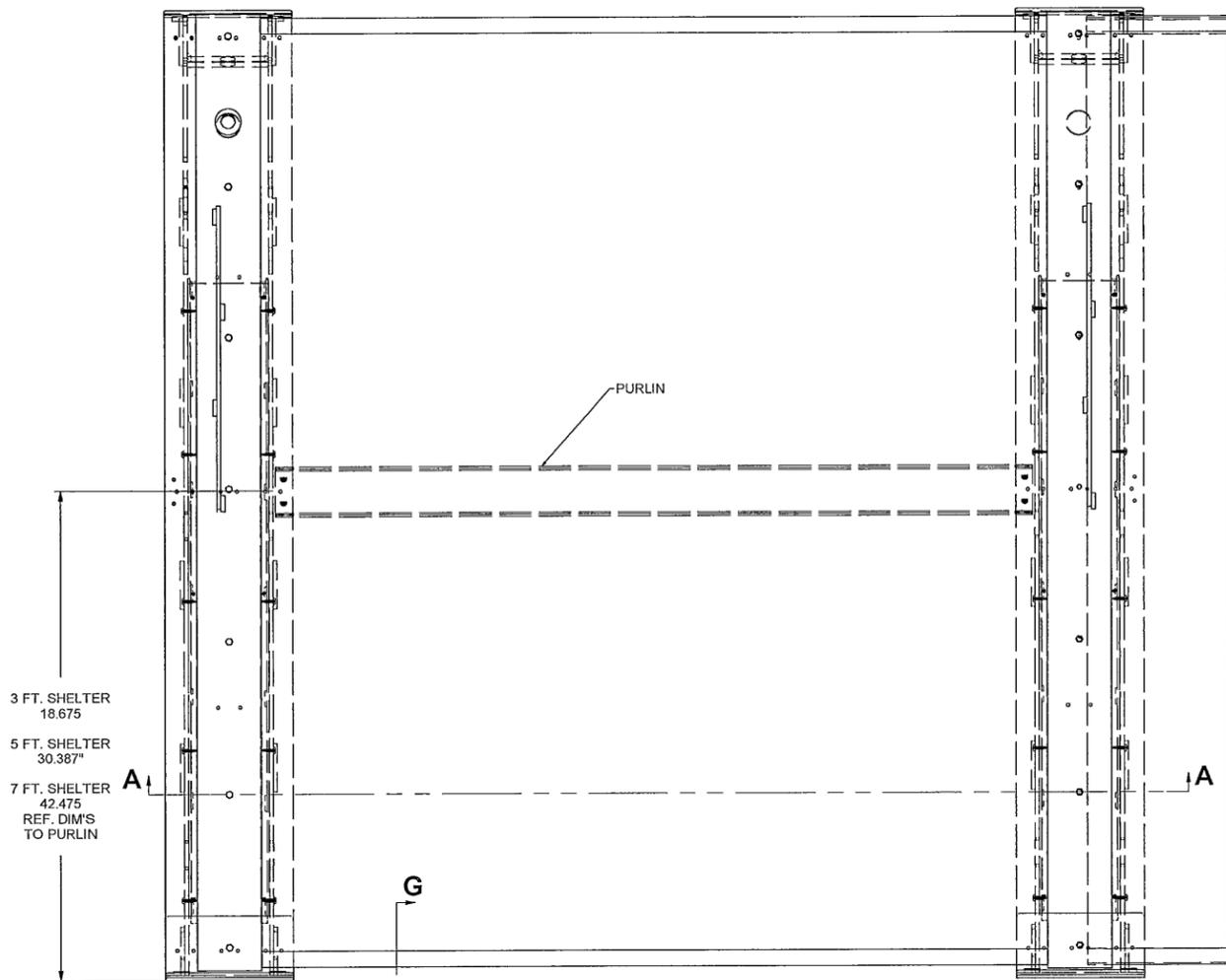
ALDO F. COLANDREA, PH.D., P.E.  
13710 REECK RD., SOUTHGATE MI, 48195  
734-324-2924W, 734-7353915C



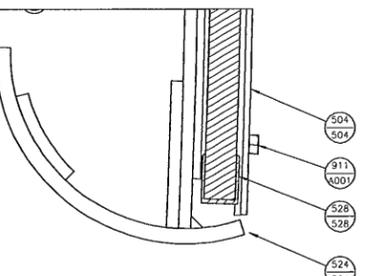
BRASCO INTERNATIONAL, INC.  
32400 INDUSTRIAL DR.  
MADISON HEIGHTS, MICHIGAN 48071  
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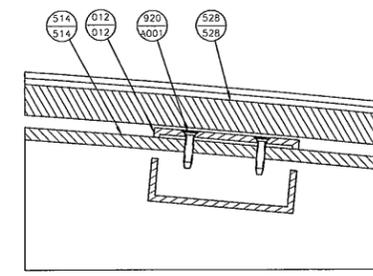
CUSTOMER:	BROWARD COUNTY TRANSIT DIVISION	DESIGNER:	BMB	CHECKER:	AC
PROJECT:	BROWARD COUNTY TRANSIT BUS SHELTER	DATE:	2/14/13	DATE:	2/15/13
MODEL:	STRUCTURAL CONNECTIONS AND DETAILS (SOLAR PANEL OPTION)	JOB #	X	SHEET:	6
				REVISION:	A



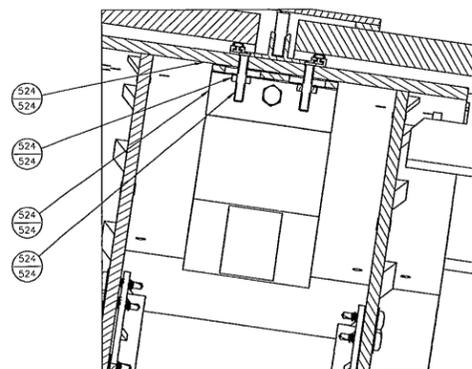
**TOP VIEW OF SHELTER SHOWING MIDDLE ROOF PANELS AND RAFTERS**



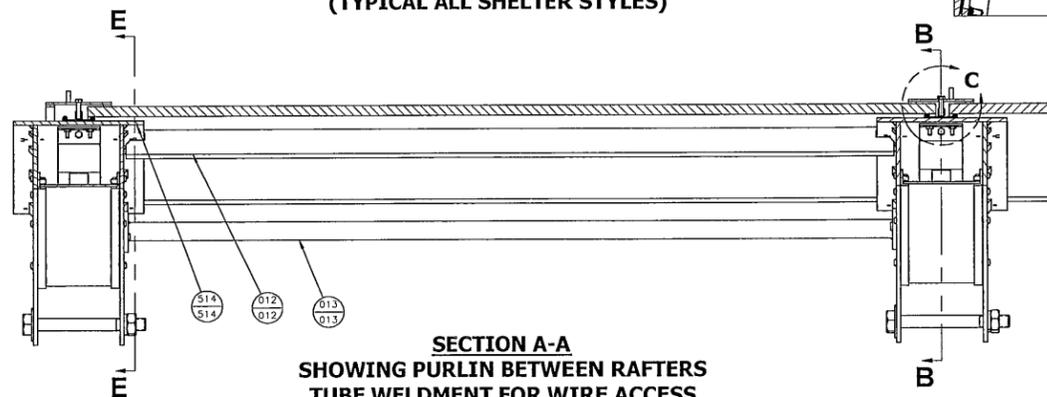
**SECTION G-G SHOWING TYPICAL PCSS COVER ON FRONT AND REAR OF THE SHELTER**



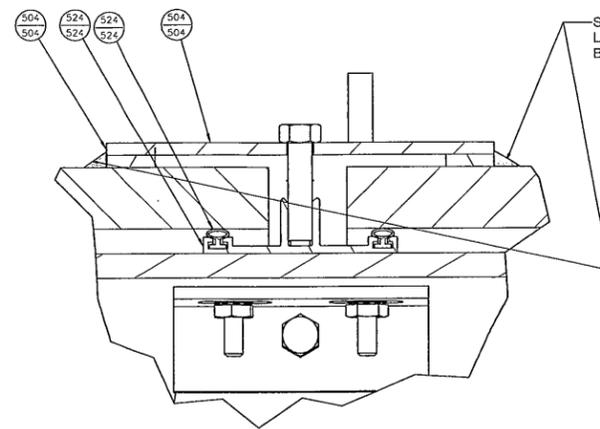
**SECTION E-E SHOWING TYPICAL PURLIN CONNECTIONS TO COLUMN RAFTERS (TYPICAL ALL SHELTER STYLES)**



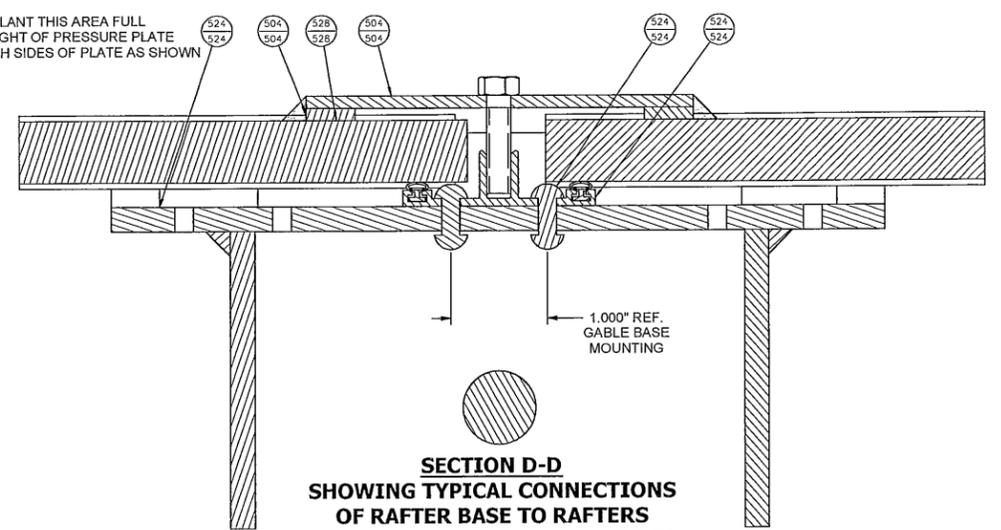
**SECTION H-H SHOWING TYPICAL LIGHT MOUNTING TO RAFTER (TYPICAL ALL SHELTER TYPES)**



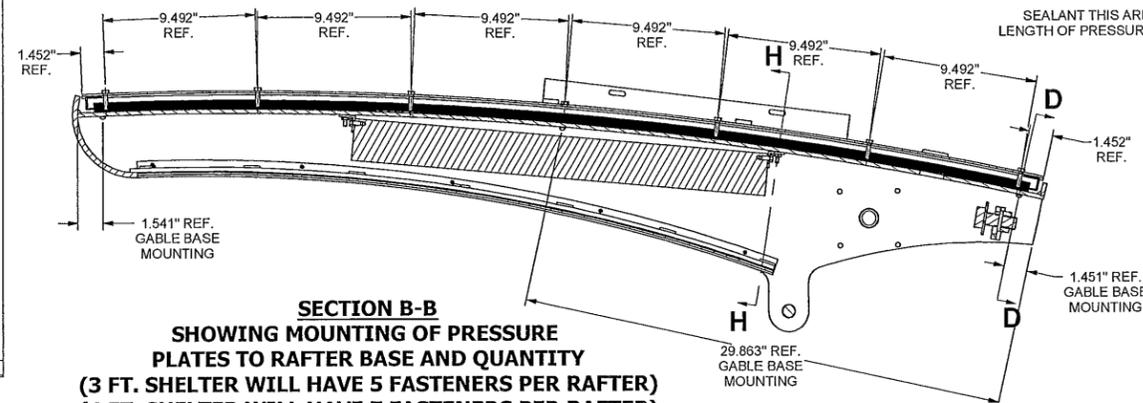
**SECTION A-A SHOWING PURLIN BETWEEN RAFTERS TUBE WELDMENT FOR WIRE ACCESS (TYPICAL FOR ALL SHELTER CONFIGURATIONS)**



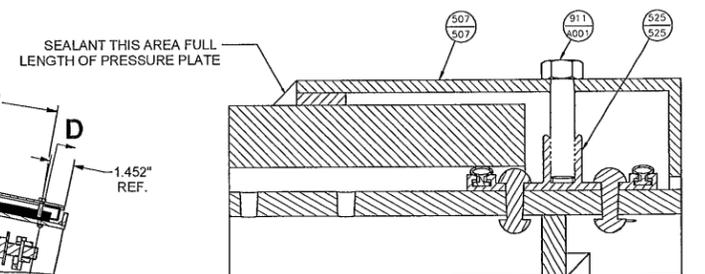
**DETAIL C SHOWING TYPICAL CONNECTIONS OF ROOF PANELS TO RAFTERS AND PRESSURE PLATES TO RAFTER BASE (TYPICAL FOR ALL SHELTER STYLES)**



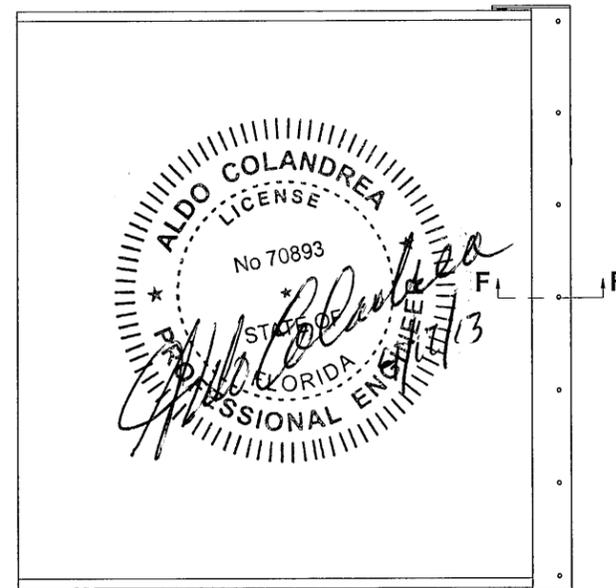
**SECTION D-D SHOWING TYPICAL CONNECTIONS OF RAFTER BASE TO RAFTERS (TYPICAL FOR ALL SHELTER STYLES)**



**SECTION B-B SHOWING MOUNTING OF PRESSURE PLATES TO RAFTER BASE AND QUANTITY (3 FT. SHELTER WILL HAVE 5 FASTENERS PER RAFTER) (4 FT. SHELTER WILL HAVE 7 FASTENERS PER RAFTER) (5 FT. SHELTER WILL HAVE 7 FASTENERS PER RAFTER) (7 FT. SHELTER WILL HAVE 7 FASTENERS PER RAFTER)**



**SECTION F-F SHOWING TYPICAL CONNECTIONS OF ROOF PANELS TO END RAFTERS AND PRESSURE PLATES TO RAFTER BASE (TYPICAL FOR ALL SHELTER STYLES)**



**TOP VIEW OF SHELTER SHOWING END ROOF PANEL AND RAFTER (TYPICAL FOR ALL SHELTER CONFIGURATIONS)**

ALDO F. COLANDREA, PH.D., P.E.  
13710 REECK RD., SOUTHGATE MI, 48195  
734-324-2924W, 734-7353915C



UNLESS OTHERWISE SPECIFIED ALL MECHANICAL FASTENERS TO BE TORQUED SNUG TIGHT DURING INSTALLTION

NOTE: S.S. IS ABBREVIATION FOR STAINLESS STEEL

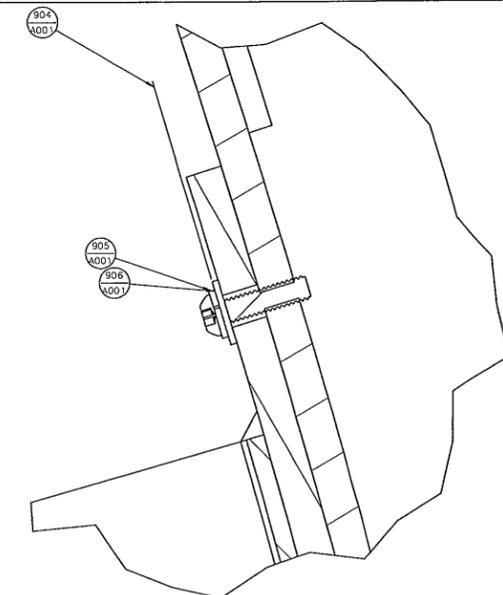
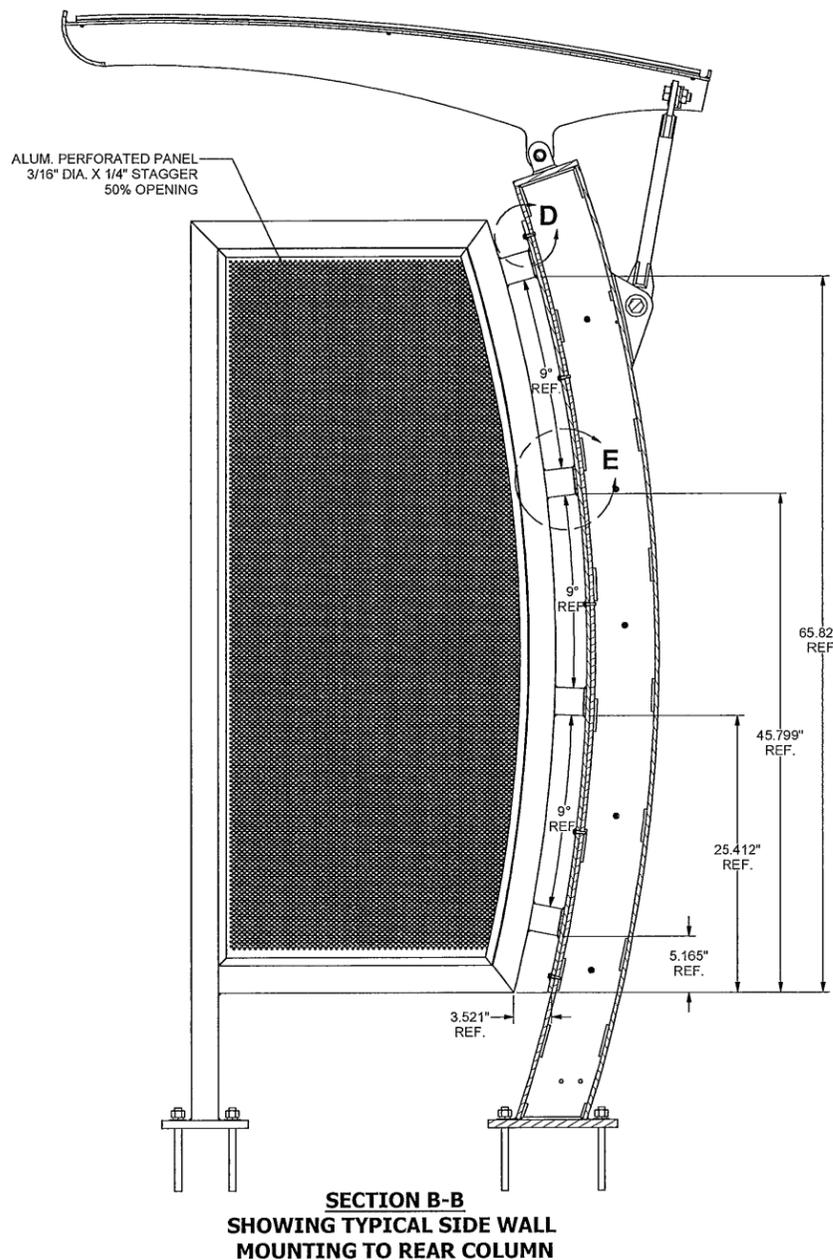
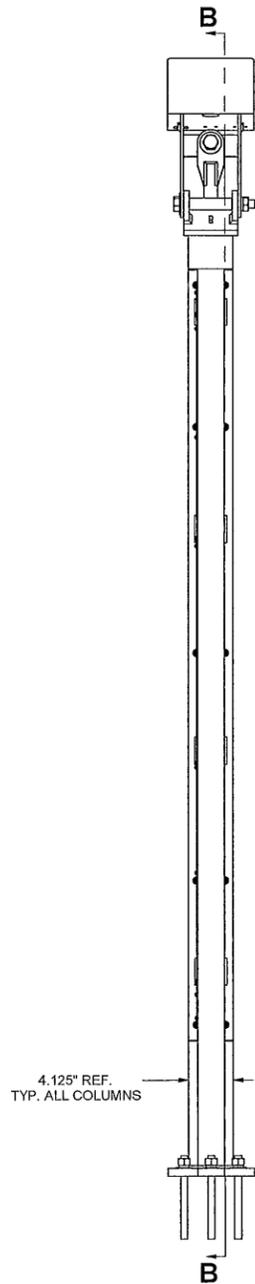
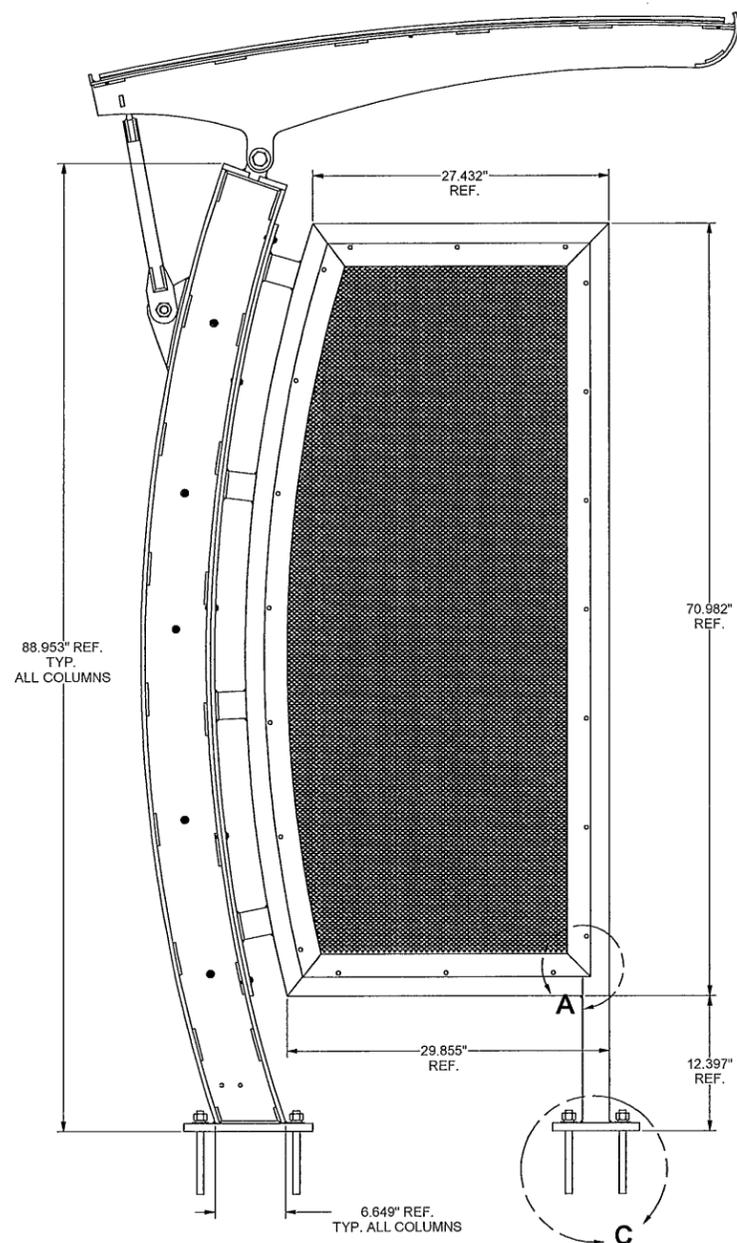
BRASCO INTERNATIONAL PARTS LIST			
ITEM	DESCRIPTION	PART NUMBER	STOCK SIZE
012	PURLIN	AH033	47.500' LG.
013	TUBE WELDMENT (WIRE ACCESS)		
504	FLAT BAR ASSEMBLY (5 FT) (RH)		
507	FLAT BAR END CAP (5 FT) ASSEMBLY		
514	5 FT ROOF BEAM (CL 2) ASSY		
524	5 FT ROOF BEAM (CL 3) ASSY		
525	5 FT ROOF BEAM (CL 4) ASSY		
528	ROOF PANEL MIDDLE (5 FT) ASSEMBLY		
911	1/4"-20 X 1" S.S. HEX HEAD BOLT	F1006	
920	#10-24 X 3/4" S.S. FLAT HEAD THREAD CUTTING SCREW	F1027	
600	INTERLUDE BACKLESS BENCH		



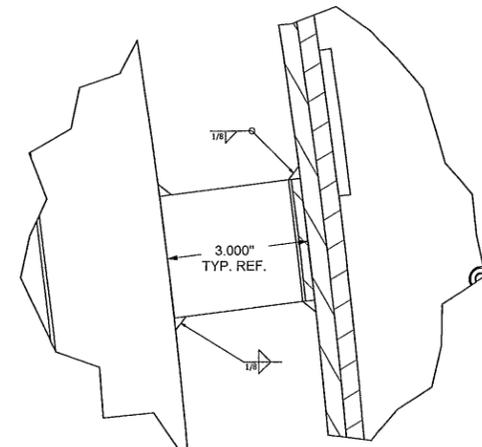
BRASCO INTERNATIONAL, INC.  
32400 INDUSTRIAL DR.  
MADISON HEIGHTS, MICHIGAN 48071  
1-800-693-3565 WWW.BRASCO.COM

CUSTOMER:	BROWARD COUNTY TRANSIT DIVISION	DESIGNER:	BMB	CHECKER:	AC
PROJECT:	BROWARD COUNTY TRANSIT BUS SHELTER	DATE:	2/14/13	DATE:	2/15/13
MODEL:	STRUCTURAL CONNECTIONS AND DETAILS (ROOF PANEL, PRESSURE PLATE, PURLIN, AND RAFTER BASE)	JOB #	X	SHEET:	7
				REVISION:	A

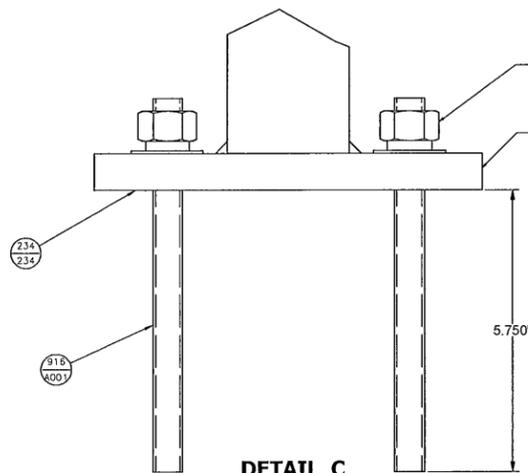




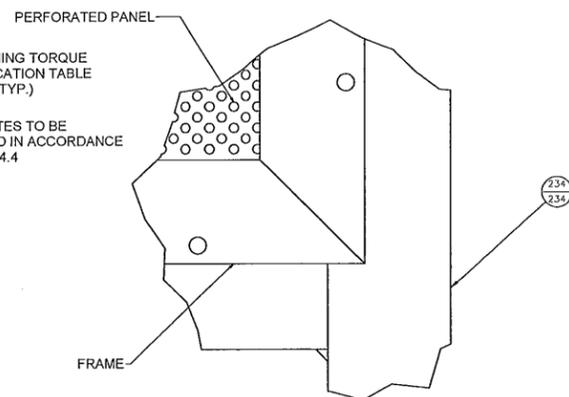
**DETAIL D**  
ENLARGED VIEW SHOWING TYPICAL CONNECTION OF SIDE WALL TO COLUMN (TYPICAL FOR ALL SHELTER CONFIGURATIONS THAT REQUIRE A SIDE WALL)



**DETAIL E**  
ENLARGED VIEW SHOWING TYPICAL WELDS OF TUBE TO SIDE WALL FRAME AND MOUNTING PLATE



**DETAIL C**  
SHOWING SIDE WALL MOUNTING PLATE WELDS TO COLUMN (TYPICAL FOR ALL SHELTER CONFIGURATIONS THAT REQUIRE A SIDE WALL)



**DETAIL A**  
SHOWING TYPICAL CONNECTION OF PERFORATED PANEL SASH TO SIDE WALL FRAME (TYPICAL FOR ALL SHELTER CONFIGURATIONS THAT REQUIRE A SIDE WALL)

UNLESS OTHERWISE SPECIFIED ALL MECHANICAL FASTENERS TO BE TORQUED SNUG TIGHT DURING INSTALLTION

NOTE: S.S. IS ABBREVIATION FOR STAINLESS STEEL



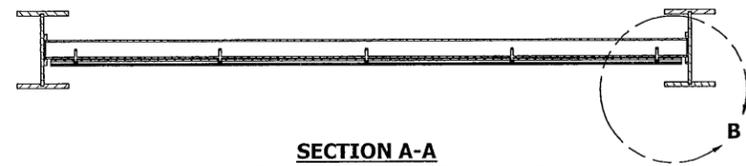
BRASCO INTERNATIONAL PARTS LIST			
ITEM	DESCRIPTION	PART NUMBER	STOCK SIZE
234	SIDE WALL-SASH ASSY		
904	1/4" S.S. FLAT WASHER	F1052	
905	1/4" S.S. LOCKWASHER	F1055	
906	1/4-20 X 1" LG. S.S. TAMPER RESISTANT BUTTON SOCKET CAP SCREW	F1137	
916	ANCHOR ROD HAS E B 5/8" X 7 5/8" LG.	F1154	

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734-324-2924W, 734-7353915C

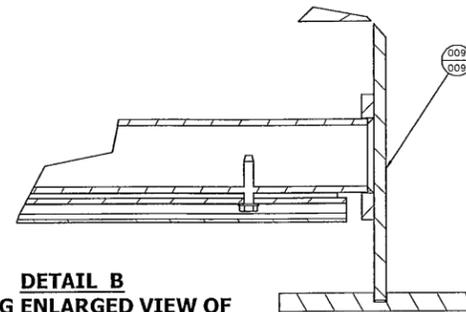


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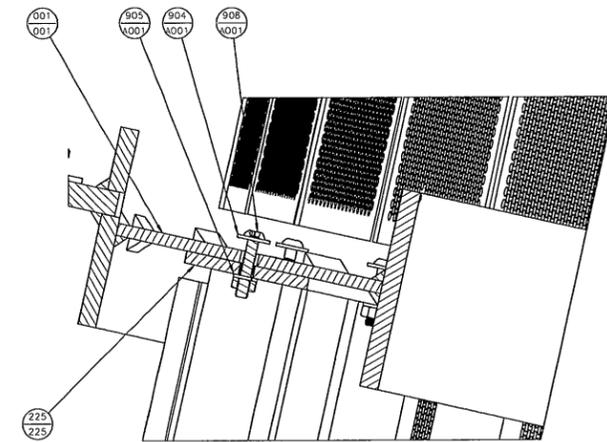
CUSTOMER: BROWARD COUNTY TRANSIT DIVISION  
DESIGNER: BMB  
PROJECT: BROWARD COUNTY TRANSIT BUS SHELTER  
DATE: 2/14/13  
CHECKER: AC  
DATE: 2/15/13  
MODEL: STRUCTURAL CONNECTIONS AND DETAILS (SIDE WALL TO COLUMN, AND PERF PANEL TO SIDE WALL FRAME)  
JOB # X  
SHEET: 9  
REVISION: A



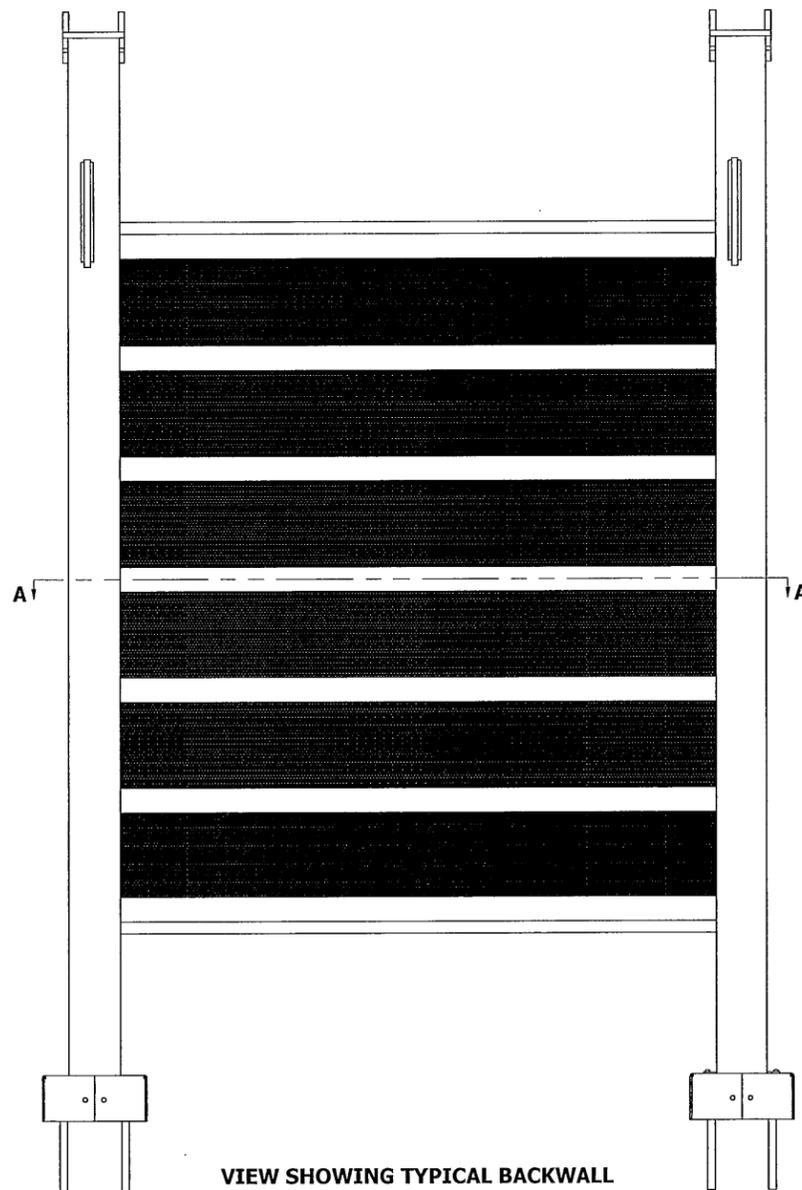
**SECTION A-A**  
SHOWING TYPICAL CONNECTION OF PERF. PANEL PRESSURE PLATES TO CROSS BEAMS  
(TYPICAL ALL SHELTER STYLES)



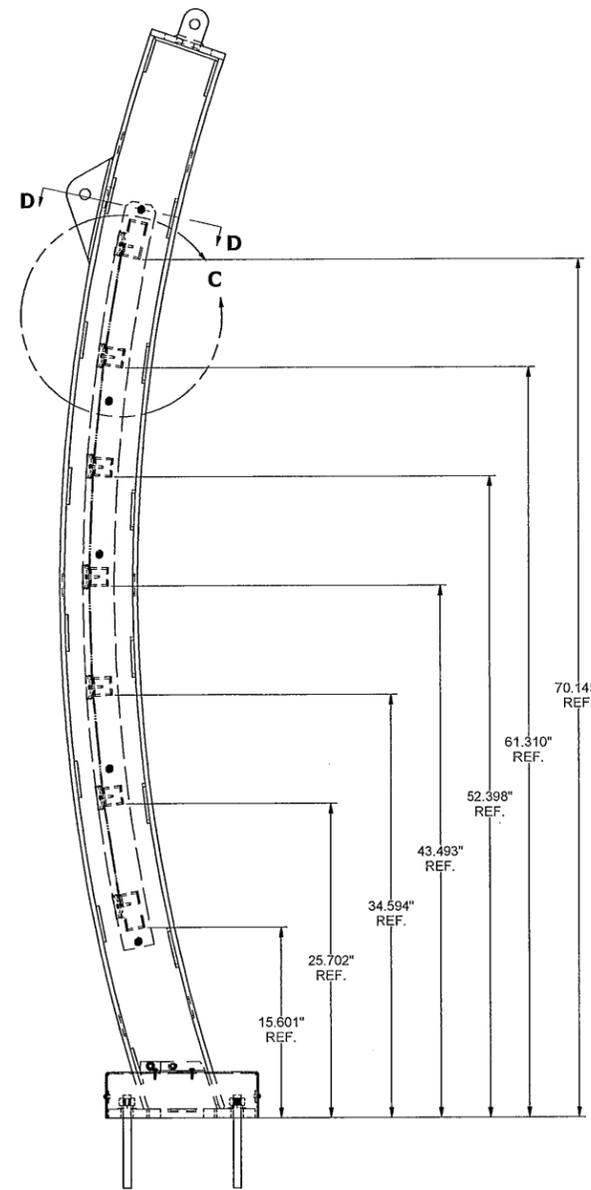
**DETAIL B**  
SHOWING ENLARGED VIEW OF TYPICAL CONNECTION OF PERF. PANEL PRESSURE CAP TO CROSS BEAM  
(TYPICAL FOR ALL SHELTER STYLES)



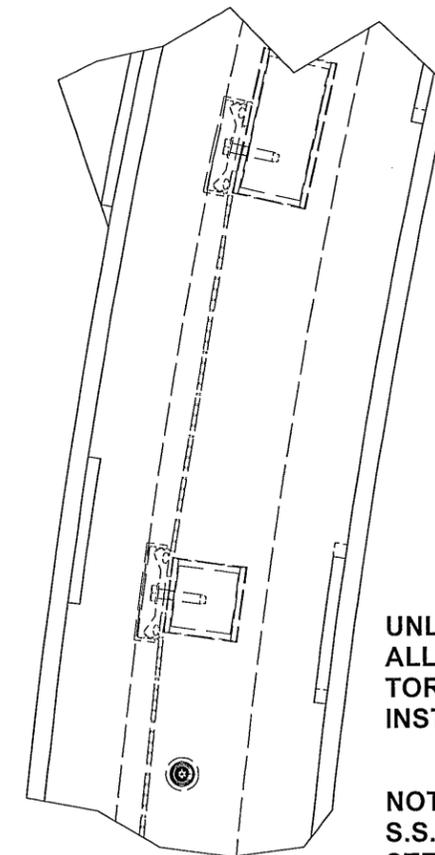
**SECTION D-D**  
SHOWING TYPICAL CONNECTION OF BACK WALL WELDMENTS TO COLUMNS 2 AND 3  
(TYPICAL ALL SHELTER STYLES AND CONFIGURATIONS)



**VIEW SHOWING TYPICAL BACKWALL PERF. PANEL AND ATTACHMENT**



**VIEW SHOWING TYPICAL ATTACHMENT OF PERF. PANEL TO BACKWALL**



**DETAIL C**  
SHOWING PERF. PANELS ATTACHMENT TO CROSS BEAMS  
(TYPICAL ALL SHELTER STYLES)



**UNLESS OTHERWISE SPECIFIED ALL MECHANICAL FASTENERS TO BE TORQUED SNUG TIGHT DURING INSTALLTION**

**NOTE: S.S. IS ABBREVIATION FOR STAINLESS STEEL**

BRASCO INTERNATIONAL PARTS LIST			
ITEM	DESCRIPTION	PART NUMBER	STOCK SIZE
001	COLUMN #1 (3FT),3,4		
009	COLUMN #2		
225	BACKWALL INFILL ASSY		
904	1/4" S.S. FLAT WASHER	F1052	
905	1/4" S.S. LOCKWASHER	F1055	
908	1/4-20 X 1 1/4" LG. S.S. TAMPER RESISTANT BUTTON SOCKET CAP SCREW	F1126	

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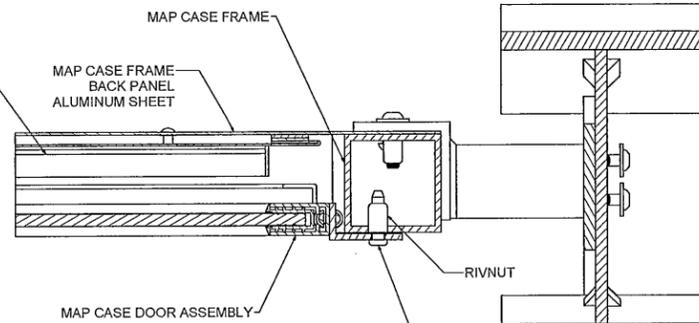


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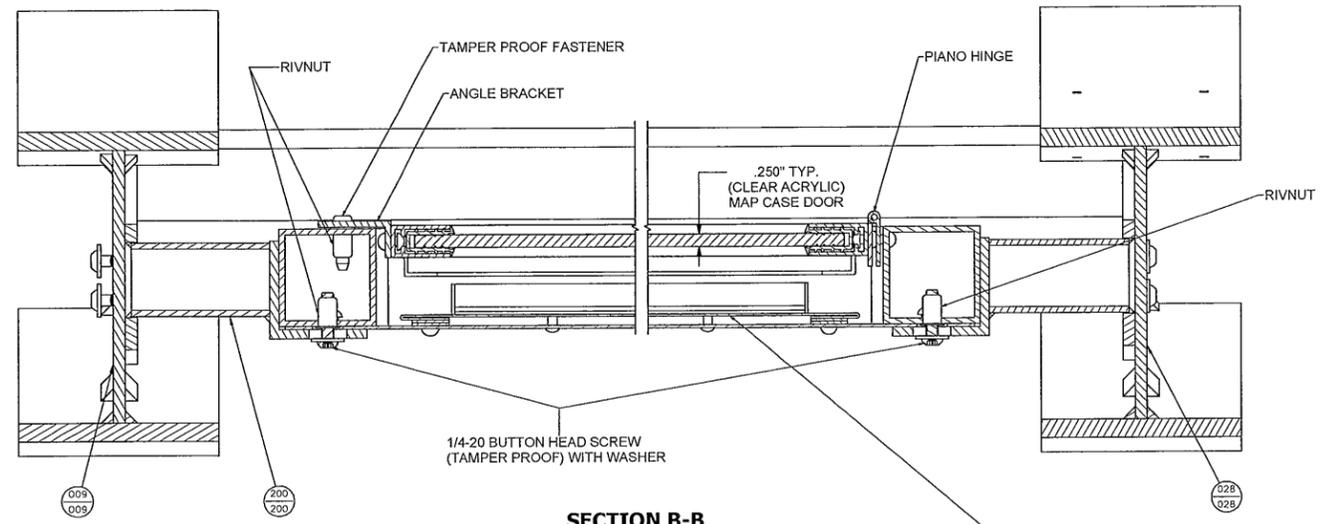
CUSTOMER:	BROWARD COUNTY TRANSIT DIVISION	DESIGNER:	BMB	CHECKER:	AC
PROJECT:	BROWARD COUNTY TRANSIT BUS SHELTER	DATE:	2/14/13	DATE:	2/15/13
MODEL:	STRUCTURAL CONNECTIONS AND DETAILS (CROSS BEAM TO COLUMNS, PERF PANEL TO CROSS BEAMS)	JOB #	X	SHEET:	10
				REVISION:	A

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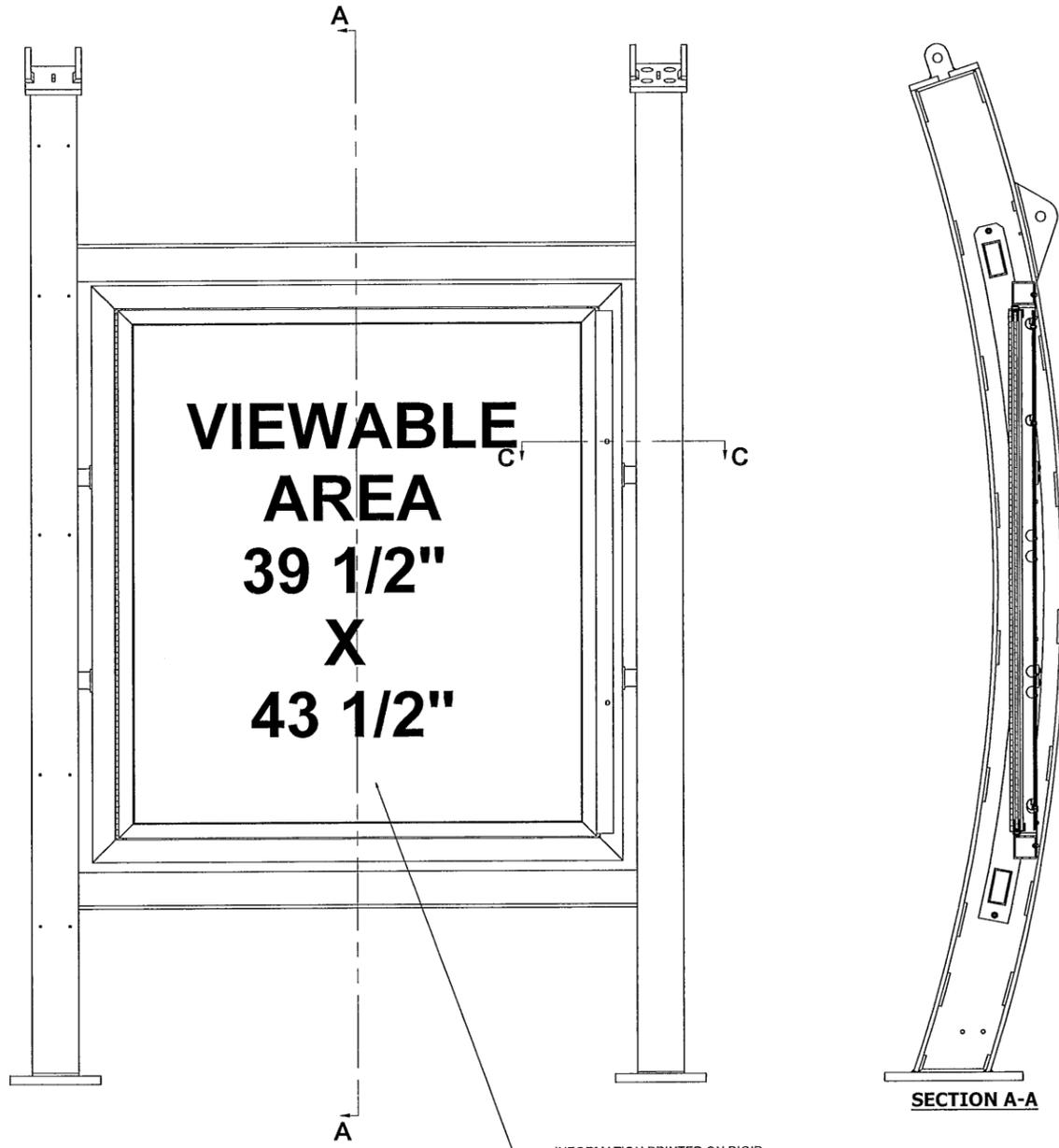
ALUMINUM DISPLAY BOARD WITH ALUMINUM POSTER HOLDER ASSEMBLIES INCLUDING END CAPS AND SPRING CLIPS ATTACHED TO BACK PANEL OF DISPLAY CASE USING 2 PART VELCRO ATTACHMENT



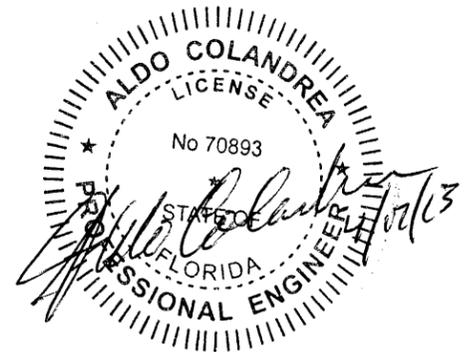
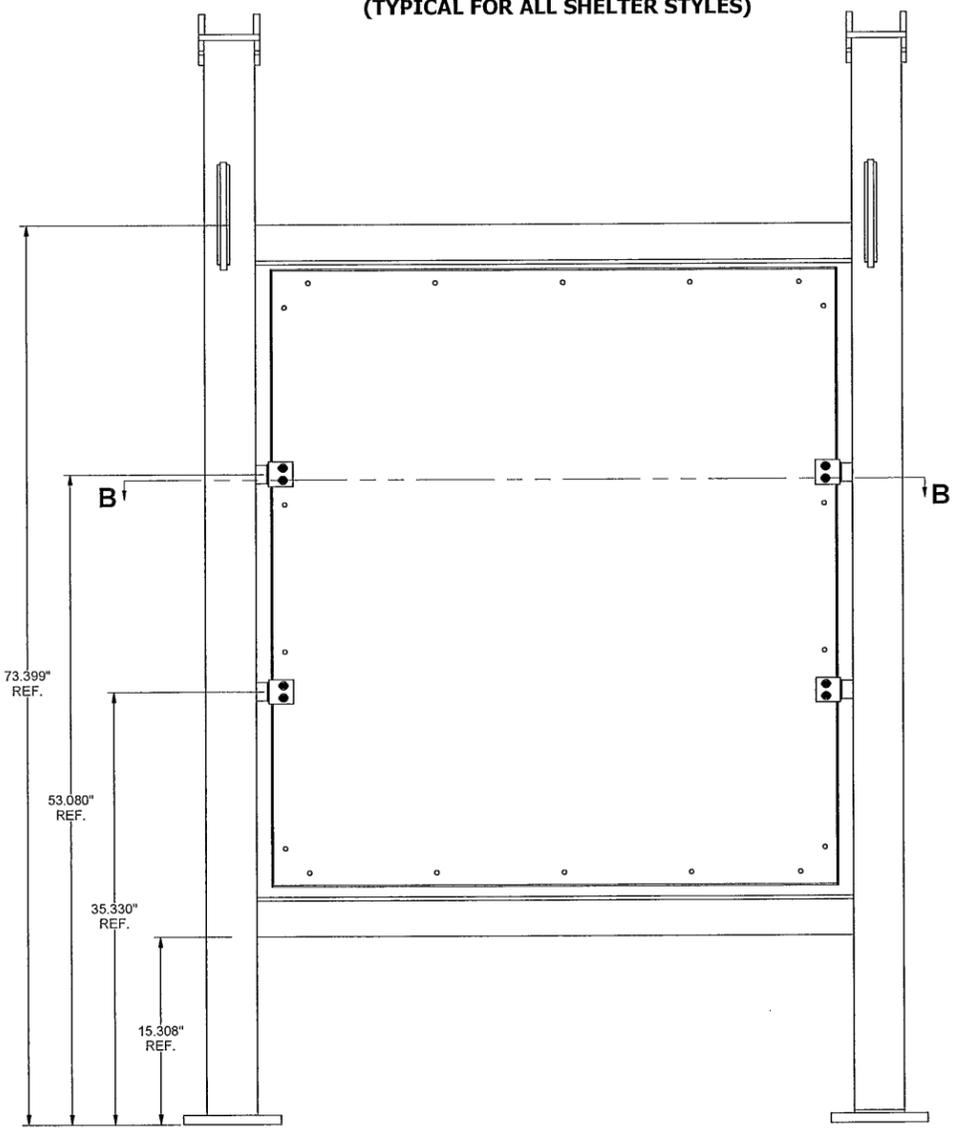
**SECTION C-C**  
SHOWING MAP CASE MOUNTING TO MAP CASE FRAME  
(TYPICAL FOR ALL SHELTER STYLES)



**SECTION B-B**  
SHOWING TYPICAL CONNECTIONS FOR MOUNTING ARMS TO MAP CASE FRAME, AND CLIP CONNECTION TO COLUMNS  
(TYPICAL FOR ALL SHELTER STYLES)



**SECTION A-A**



INFORMATION PRINTED ON RIGID PAPER BOARD OR PLASTIC LAMINATED SHEET WITH ADHESIVE BACKING, OR TO BE SUPPORTED TO BACKER PANELS WITH FASTENERS

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734-324-2924W, 734-7353915C



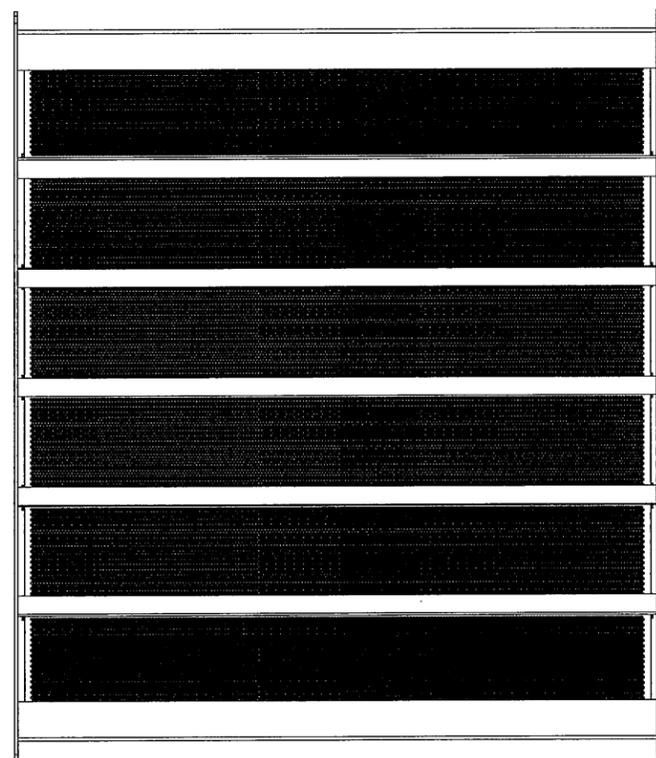
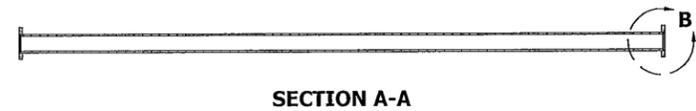
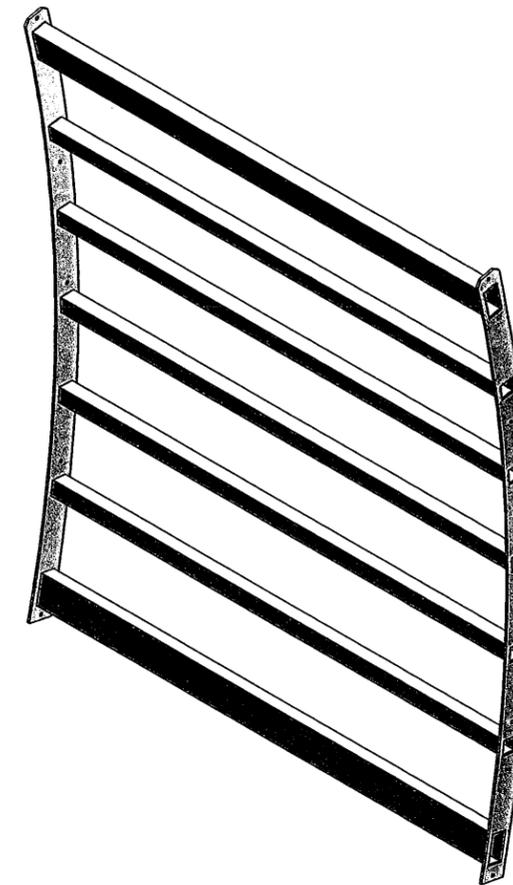
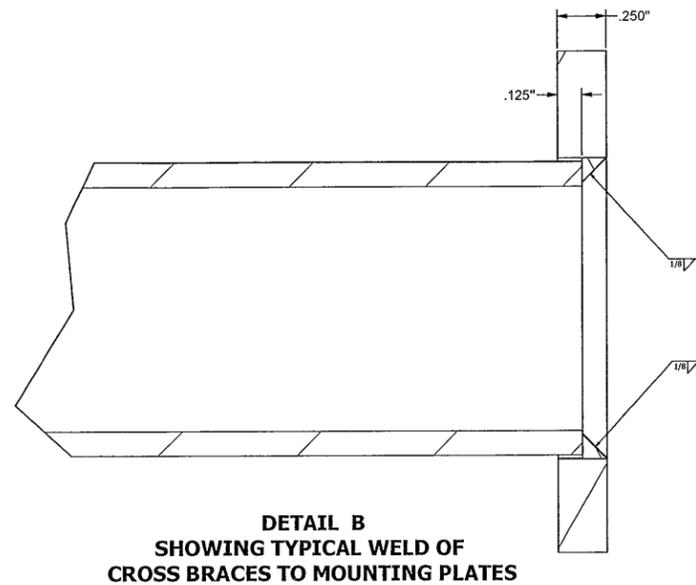
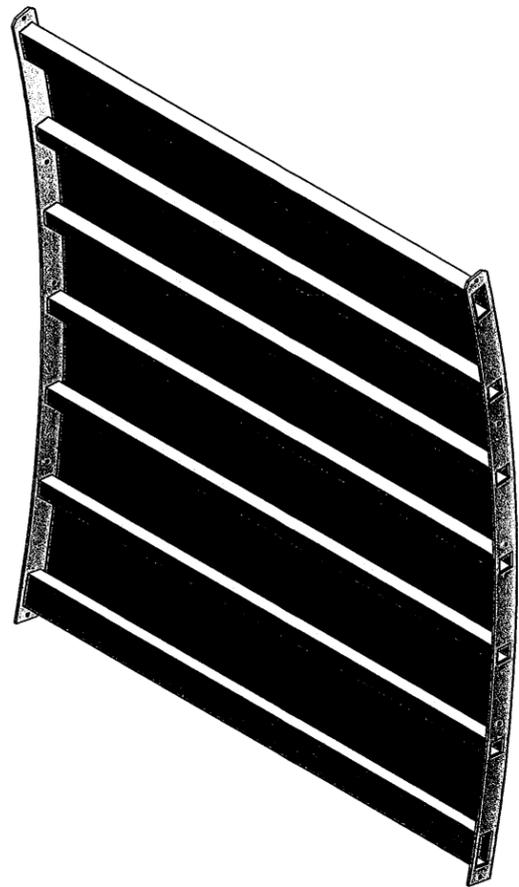
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BRASCO INTERNATIONAL PARTS LIST			
ITEM	DESCRIPTION	PART NUMBER	STOCK SIZE
009	COLUMN #2		
028	COLUMN #1 (45.7 FT.)		

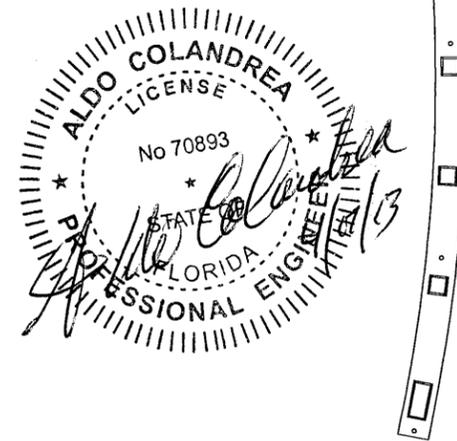
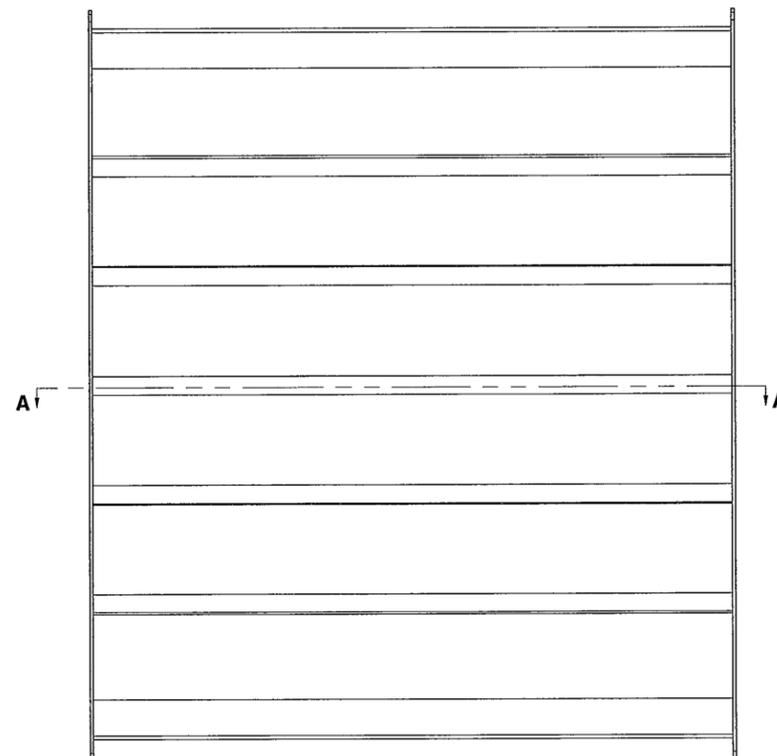
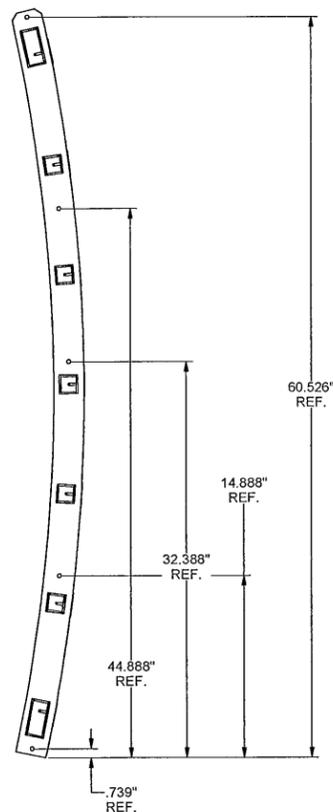
  

CUSTOMER:	BROWARD COUNTY TRANSIT DIVISION	DESIGNER:	BMB	CHECKER:	AC
PROJECT:	BROWARD COUNTY TRANSIT BUS SHELTER	DATE:	2/14/13	DATE:	2/15/13
MODEL:	STRUCTURAL CONNECTIONS AND DETAILS (MOUNTING ARM TO MAP CASE FRAME, AND MAP CASE TO FRAME)	JOB #	X	SHEET:	11
				REVISION:	A

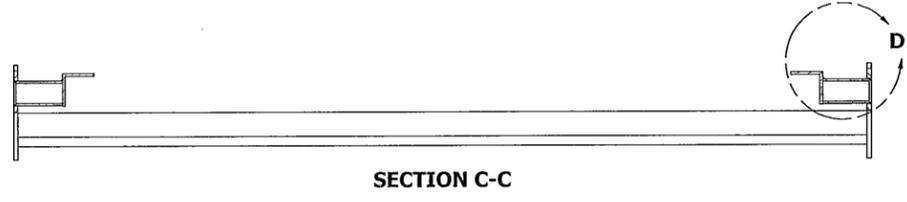
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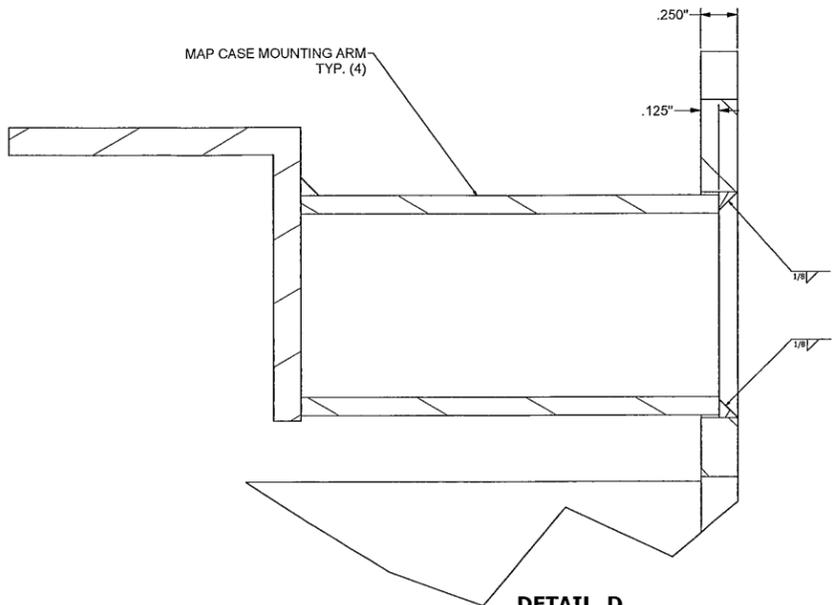
**VIEW SHOWING BACKWALL  
INFILL SUB ASSEMBLY  
WITH PERF PANELS ATTACHED  
UNIT WILL BE INSTALLED BETWEEN  
COLUMNS USING 1/4-20 THREADED  
BOLT WITH WASHER AND LOCK WASHER**



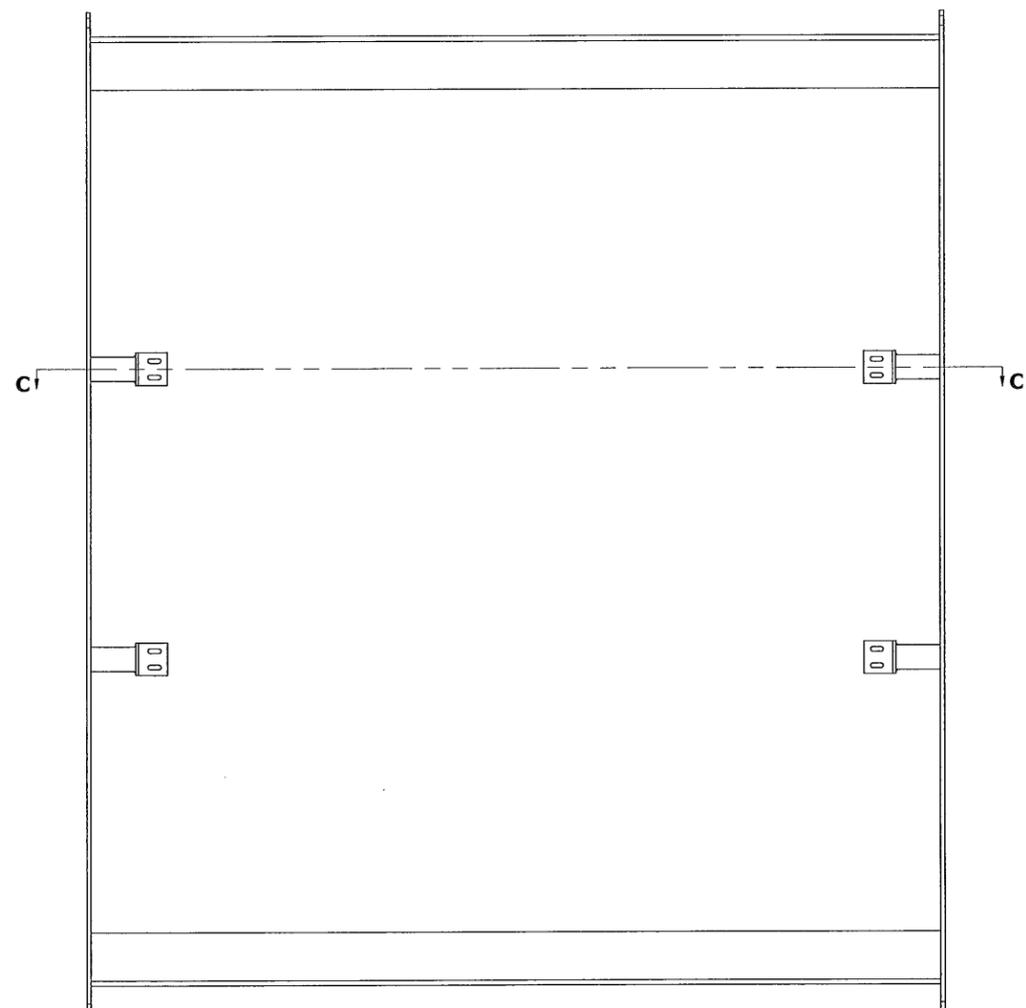
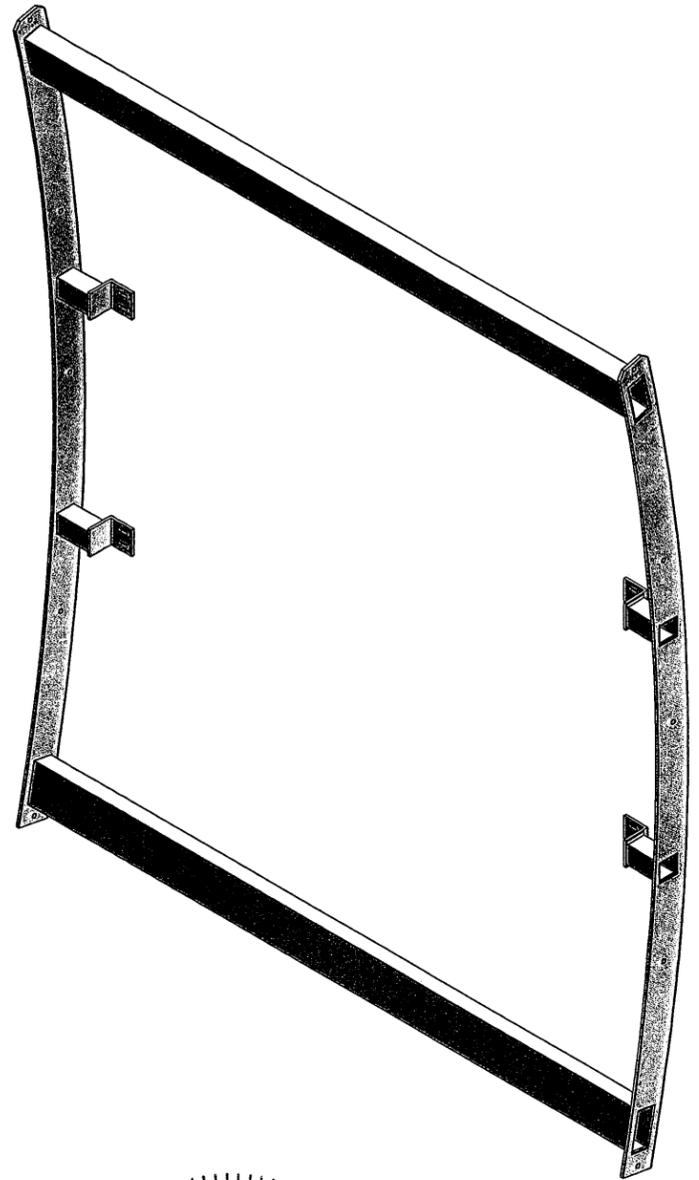
	<b>BRASCO INTERNATIONAL, INC.</b> 32400 INDUSTRIAL DR. MADISON HEIGHTS, MICHIGAN 48071 1-800-893-3655 WWW.BRASCO.COM	CUSTOMER: BROWARD COUNTY TRANSIT DIVISION PROJECT: BROWARD COUNTY TRANSIT BUS SHELTER	DESIGNER: BMB DATE: 2/14/13	CHECKER: AC DATE: 2/15/13
	<small>THIS DRAWING IS CONFIDENTIAL AND IS FOR THE SOLE USE OF OUR CUSTOMERS AND MAY NOT BE REPRODUCED OR COPIED WITHOUT WRITTEN PERMISSION FROM BRASCO INTERNATIONAL</small>	MODEL: STRUCTURAL CONNECTIONS AND DETAILS (BACKWALL INFILL SUB ASSEMBLY AND WELDMENT) JOB # X	SHEET: 12	REVISION: A



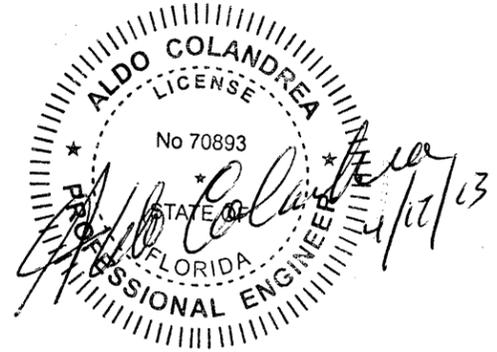
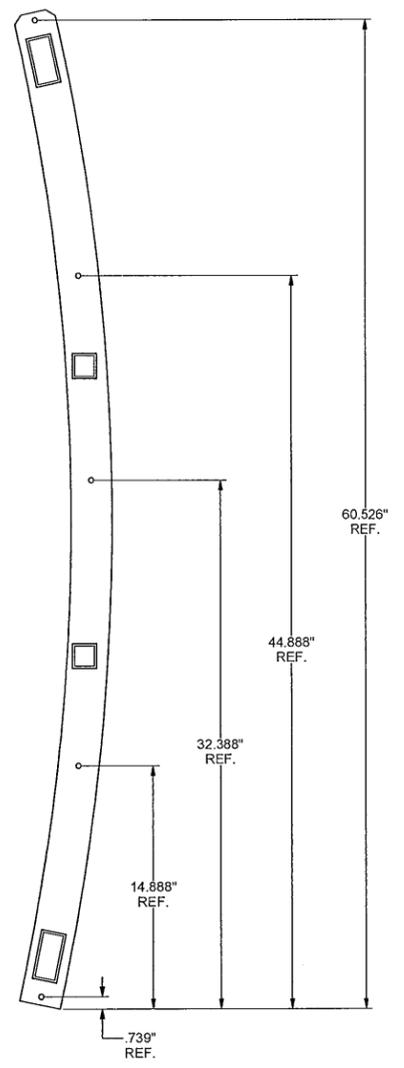
SECTION C-C



DETAIL D  
SHOWING TYPICAL WELD OF  
MAP CASE MOUNTING ARM TO  
COLUMN MOUNTING PLATE



VIEW SHOWING BACKWALL  
MAP CASE DISPLAY WELDMENT  
UNIT WILL BE INSTALLED BETWEEN  
COLUMNS USING 1/4-20 THREADED  
BOLT WITH WASHER AND LOCK WASHER



	BRASCO INTERNATIONAL, INC. 32400 INDUSTRIAL DR. MADISON HEIGHTS, MICHIGAN 48071 1-800-893-3665 WWW.BRASCO.COM	CUSTOMER:	BROWARD COUNTY TRANSIT DIVISION	DESIGNER:	BMB	CHECKER:	AC	
	<small>THIS DRAWING IS CONFIDENTIAL AND IS FOR THE SOLE USE OF OUR CUSTOMERS AND MAY NOT BE REPRODUCED OR COPIED WITHOUT WRITTEN PERMISSION FROM BRASCO INTERNATIONAL.</small>	PROJECT:	BROWARD COUNTY TRANSIT BUS SHELTER	DATE:	2/14/13	DATE:	2/15/13	
	MODEL:	STRUCTURAL CONNECTIONS AND DETAILS (BACKWALL MAP CASE DISPLAY FRAME WELDMENT)	JOB #	X	SHEET:	13	REVISION:	A

1) Allowable Net Bearing Capacity = 1.500 P.S.F.  
per the FBC2010, Chapter 18, Table 1806.2.

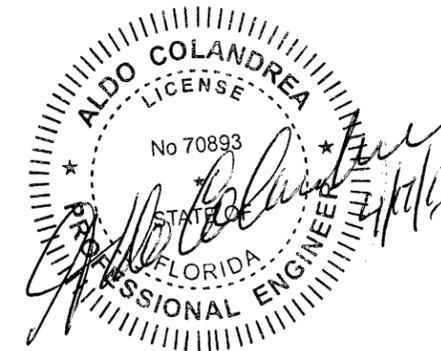
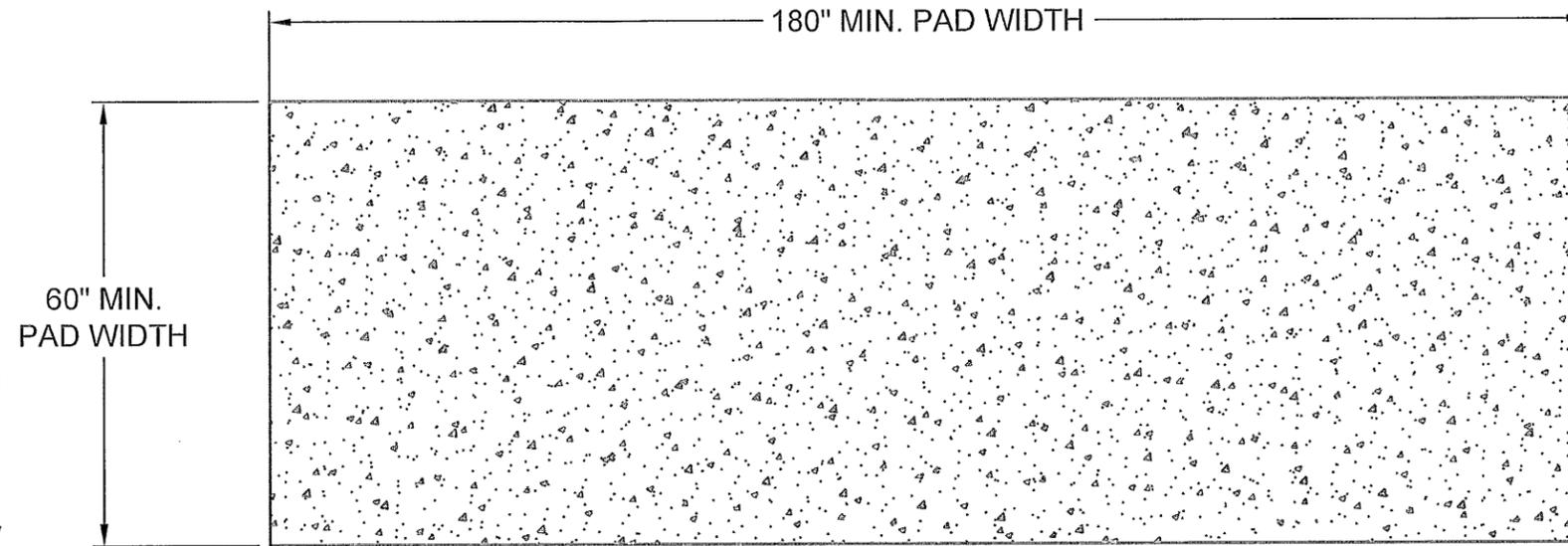
2) The concrete footings shall attain a 3000 psi 28  
day compressive strengths:

3) Concrete work shall be accomplished in  
accordance with the latest "American Concrete  
Institute" Recommendations

4) Reinforcing steel shall conform to A.S.T.M.  
A615, Grade 60

5) Contractor shall verify all existing conditions and  
report any conditions substantially different than  
those used by the engineer

6) The subgrade shall be thoroughly compacted by  
approved methods. All fill under slabs shall be  
clean sand or rock, free of debris and other  
deleterious materials.



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CUSTOMER:	BROWARD COUNTY TRANSIT DIVISION	DESIGNER:	BMB	CHECKER:	AC
PROJECT:	BROWARD COUNTY TRANSIT BUS SHELTER	DATE:	2-14-13	DATE:	2-15-13
MODEL:	CONCRETE PAD LAYOUT (3 FT. SHELTER)	JOB #	SHEET:	REVISION:	A
			14		

1) Allowable Net Bearing Capacity = 1,500 P.S.F. per the FBC2010, Chapter 18, Table 1806.2.

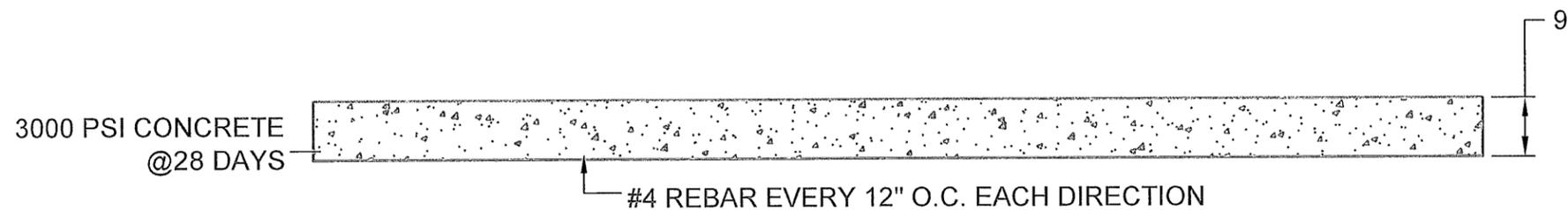
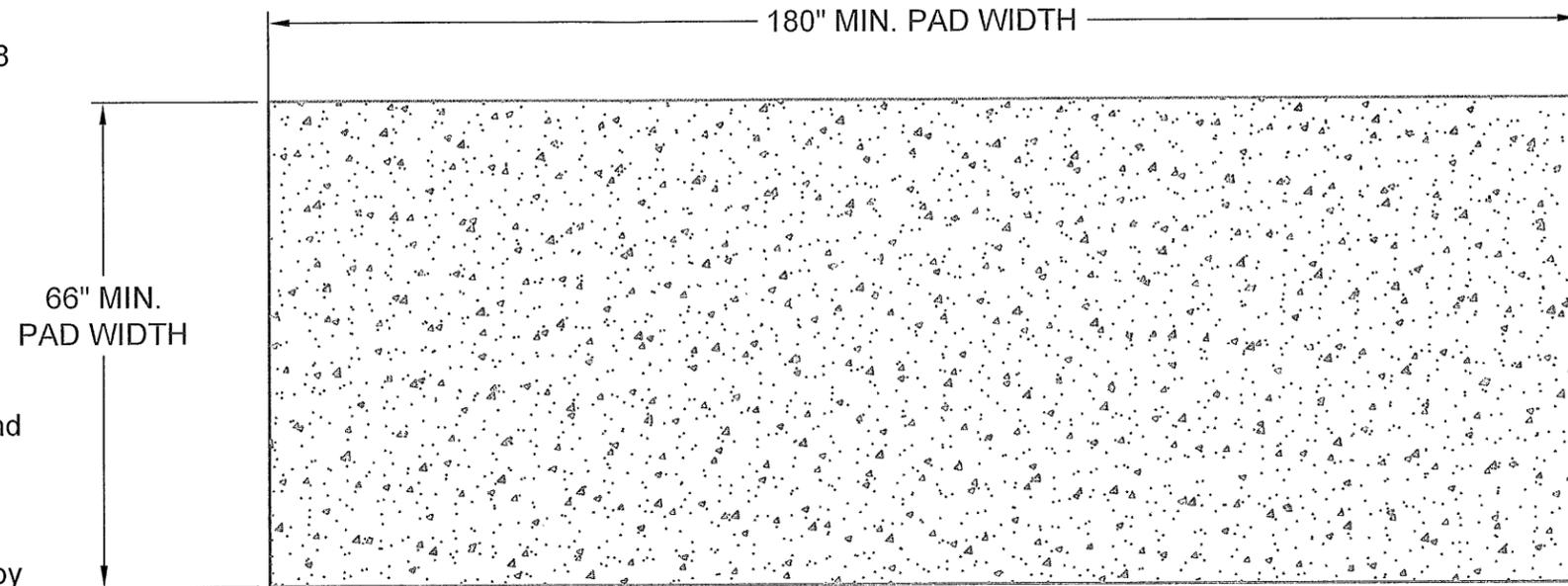
2) The concrete footings shall attain a 3000 psi 28 day compressive strengths:

3) Concrete work shall be accomplished in accordance with the latest "American Concrete Institute" Recommendations

4) Reinforcing steel shall conform to A.S.T.M. A615, Grade 60

5) Contractor shall verify all existing conditions and report any conditions substantially different than those used by the engineer

6) The subgrade shall be thoroughly compacted by approved methods. All fill under slabs shall be clean sand or rock, free of debris and other deleterious materials.



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CUSTOMER:	BROWARD COUNTY TRANSIT DIVISION	
PROJECT:	BROWARD COUNTY TRANSIT BUS SHELTER	
MODEL:	CONCRETE PAD LAYOUT (4 FT. SHELTER)	JOB #

DESIGNER:	CHECKER:
BMB	AC
DATE:	DATE:
2-14-13	2-15-13
SHEET:	REVISION:
15	A

1) Allowable Net Bearing Capacity = 1.500 P.S.F. per the FBC2010, Chapter 18, Table 1806.2.

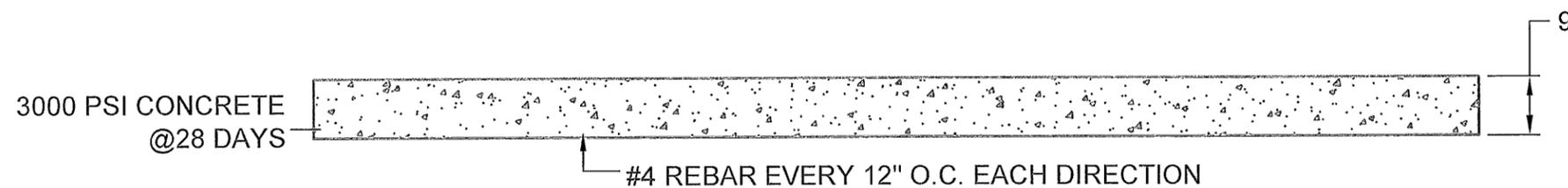
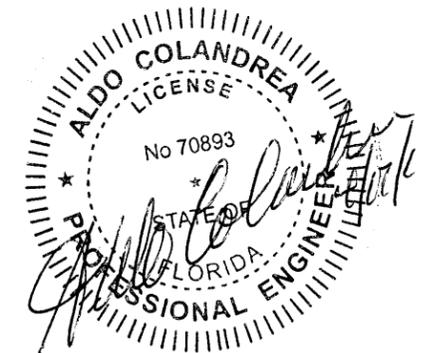
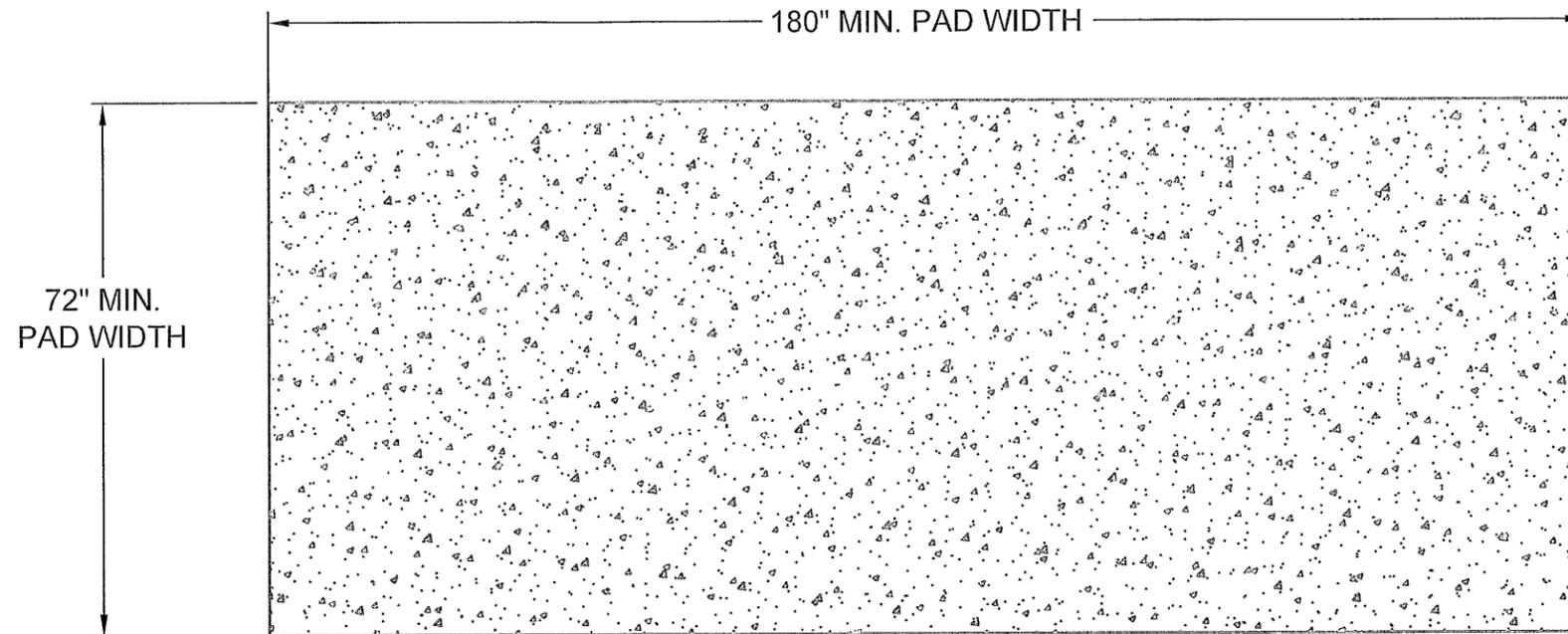
2) The concrete footings shall attain a 3000 psi 28 day compressive strengths:

3) Concrete work shall be accomplished in accordance with the latest "American Concrete Institute" Recommendations

4) Reinforcing steel shall conform to A.S.T.M. A615, Grade 60

5) Contractor shall verify all existing conditions and report any conditions substantially different than those used by the engineer

6) The subgrade shall be thoroughly compacted by approved methods. All fill under slabs shall be clean sand or rock, free of debris and other deletrious materials.



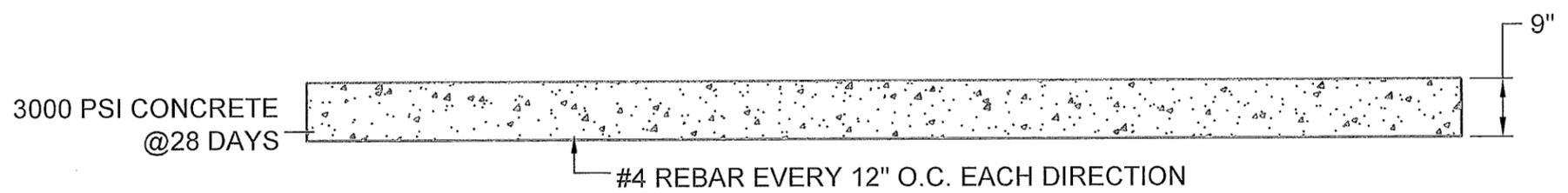
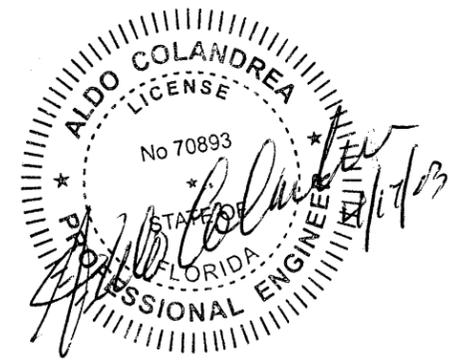
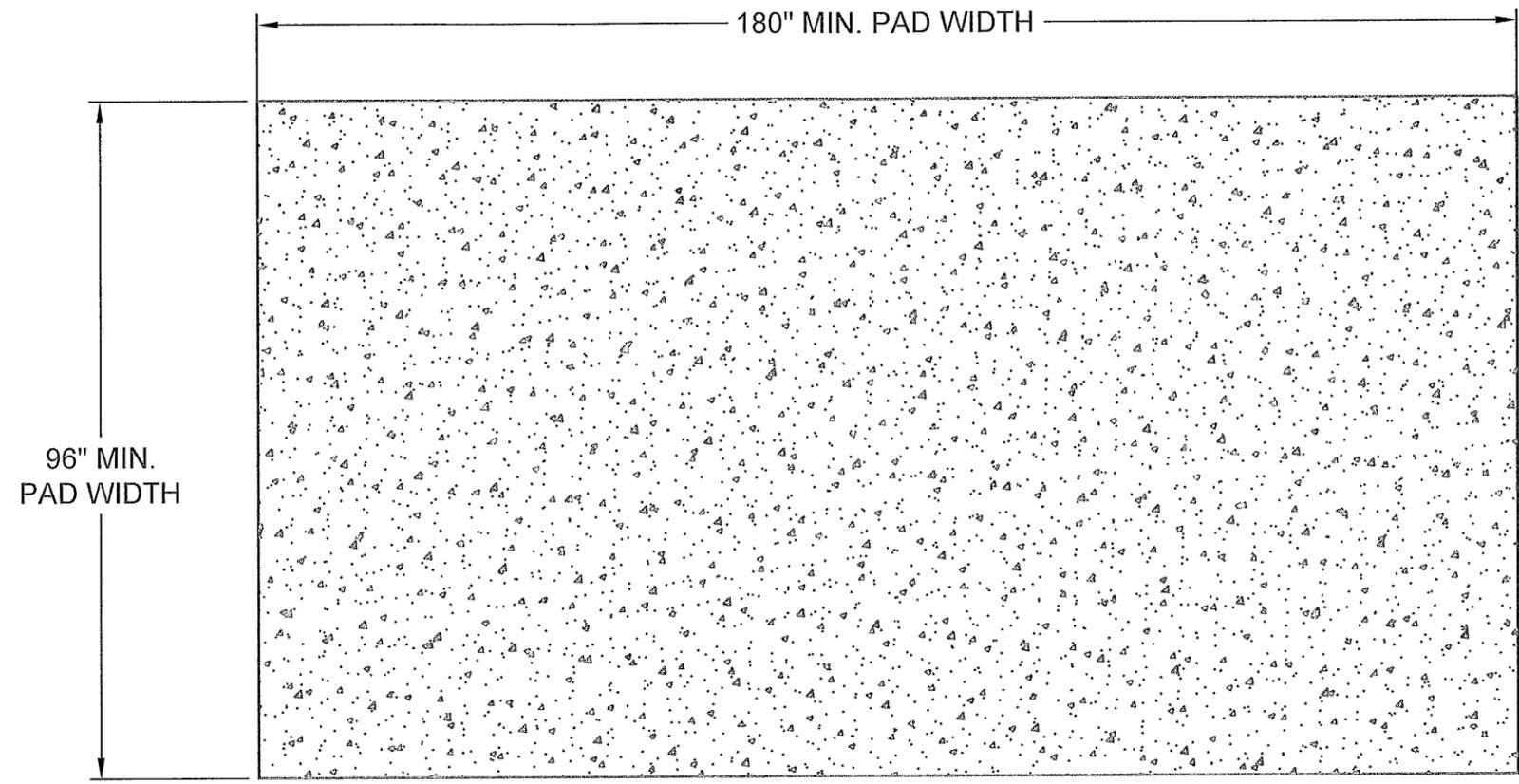
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CUSTOMER:	BROWARD COUNTY TRANSIT DIVISION	
PROJECT:	BROWARD COUNTY TRANSIT BUS SHELTER	
MODEL:	CONCRETE PAD LAYOUT (5 FT. SHELTER)	JOB #

DESIGNER:	CHECKER:
BMB	AC
DATE:	DATE:
2-14-13	2-15-13
SHEET:	REVISION:
16	A

- 1) Allowable Net Bearing Capacity = 1.500 P.S.F. per the FBC2010, Chapter 18, Table 1806.2.
- 2) The concrete footings shall attain a 3000 psi 28 day compressive strengths:
- 3) Concrete work shall be accomplished in accordance with the latest "American Concrete Institute" Recommendations
- 4) Reinforcing steel shall conform to A.S.T.M. A615, Grade 60
- 5) Contractor shall verify all existing conditions and report any conditions substantially different than those used by the engineer
- 6) The subgrade shall be thoroughly compacted by approved methods. All fill under slabs shall be clean sand or rock, free of debris and other deleterious materials.



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CUSTOMER:	BROWARD COUNTY TRANSIT DIVISION		DESIGNER:	CHECKER:
PROJECT:	BROWARD COUNTY TRANSIT BUS SHELTER		BMB	AC
MODEL:	CONCRETE PAD LAYOUT (7 FT. SHELTER)	JOB #	DATE:	DATE:
			2-14-13	2-15-13
			SHEET:	REVISION:
			17	A

### ELECTRICAL NOTES

- THE ENTIRE INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (NEC) AND THE LATEST EDITIONS OF ALL LOCAL CODES, RULES AND ORDINANCES HAVING JURISDICTION.
- AS A MINIMUM, ALL EQUIPMENT SHALL MEET APPLICABLE STANDARDS, FOR THE TYPE OF EQUIPMENT AND INTENDED USE, OF THE FOLLOWING:
  - AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
  - ILLUMINATING ENGINEERS SOCIETY (IES)
  - AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
  - NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATES (NEMA)
  - NOTE: THESE STANDARDS ARE SUBORDINATE TO CODES AND STANDARDS SET BY U.L.
 ALL ELECTRICAL EQUIPMENT, DEVICES, WIRE, ETC., SHALL BE LISTED, FOR INTENDED USE, WITH UNDERWRITER'S LABORATORIES INC. (U.L.), WHERE STANDARDS HAVE BEEN ESTABLISHED BY U.L.
- ELECTRICAL CONTRACTOR SHALL NOT SCALE DRAWINGS. CONTRACTOR SHALL REFER TO MANUFACTURER'S PLANS AND ELEVATIONS FOR EXACT LOCATIONS OF ALL EQUIPMENT UNLESS NOTED OTHERWISE.
- CONTRACTOR SHALL KEEP ALL AREAS IN WHICH WORK IS BEING PERFORMED, FREE FROM DEBRIS AT ALL TIMES AND SAID AREAS SHALL BE LEFT BROOM CLEAN AT THE END OF EACH WORKING DAY.
- CONTRACTOR SHALL SUBMIT AT ONE TIME, SIX (6) SETS OF LOOSE-LEAF BOUND BOOKS, INDEXED WITH ALL PRODUCTS, MATERIALS, LIGHTING FIXTURES, LAMPS, WIRING DEVICES, ETC. CLEARLY HIGHLIGHTING ALL EQUIPMENT QUANTITIES AND DETAILS. ALL EQUIPMENT SHALL BE AS SPECIFIED ON PLANS: THE RESPONSIBILITY TO ACCEPT OR REJECT ANY PROPOSED SUBSTITUTION REMAINS WITH THE PROJECT ENGINEER. THE CONTRACTOR MAY AT HIS JUDGMENT USE ANY ARTICLE, DEVICE, PRODUCT, OR MATERIAL WHICH IN THE JUDGMENT OF THE ENGINEER EXPRESSED IN WRITING ARE EQUAL TO THAT SPECIFIED.
- ALL CONDUIT RUNS ARE SHOWN DIAGRAMMATIC. EXACT ROUTING SHALL BE DETERMINED IN THE FIELD, UNLESS OTHERWISE NOTED.
- WARNING LABEL AND MARKING SHALL BE APPLIED BY THE INSTALLER IN A VISIBLE LOCATION AT THE BATTERY ENCLOSURE AS PER NEC 690.5C, AND NEC 690.55.
- WARNING SIGN SHALL BE MOUNTED ON OR ADJACENT TO THE DISCONNECTING MEANS AS PER NEC 690.17 AND NEC 690.53.
- WIRES, CABLES AND FLEXIBLE CORDS SHALL BE LISTED AND LABELED FOR PV USED. WHERE USED TO CONNECT THE MOVING PART OF TRACKING PV MODULES, FLEXIBLE CORDS AND CABLES SHALL COMPLY WITH ARTICLE 400 AND SHALL BE OF A TYPE IDENTIFIED AS A HARD SERVICE CORD OR PORTABLE POWER CABLE. THEY SHALL BE SUITABLE FOR EXTRA-HARD USAGE, LISTED FOR OUTDOOR USE, WATER RESISTANT AND SUNLIGHT RESISTANT AS PER NEC 690.31C.
- FITTINGS AND CONNECTOR SHALL BE DESIGNED AND SIZED PER SPECIFIC CABLE BEING CONNECTED AND SHALL COMPLY WITH NEC 690.32 AND NEC 690.33.
- NOT USED.
- ALL JUNCTION BOXES AND HARDWARE SHALL BE STAINLESS STEEL TYPE.
- SOLAR PANEL TO BE INSTALLED AT AN INCLINATION OF 26 DEGREES FACING SOUTH.
- ALL CONDUCTORS SHALL BE COPPER. NO ALUMINUM ALLOWED UNLESS SPECIFICALLY INDICATED ON DRAWINGS.
- THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS, INSPECTIONS AND APPROVALS AND TO INCLUDE ALL FEES AS PART OF HIS BID IF NOT OTHERWISE NOTED.
- WORKING CLEARANCES FOR ELECTRICAL EQUIPMENT SHALL BE IN COMPLIANCE WITH NEC 110.26.
- THE ELECTRICAL CONTRACTOR SHALL FURNISH A COMPLETE SET OF AS-BUILT DRAWINGS, SHOWING ALL CHANGES AND DEVIATIONS TO THE ARCHITECT/ENGINEER PRIOR TO COMPLETION OF THE PROJECT.
- ARCHITECTURAL AND/OR ENGINEERING EXPENSES THAT ARE INCURRED DUE TO REVISIONS OR SUBSTITUTIONS REQUESTED BY THE CONTRACTOR SHALL BE PAID FOR BY THAT CONTRACTOR.
- PHOTOVOLTAIC SYSTEM SHALL COMPLY WITH NEC 690.
- OVERCURRENT DEVICES, EITHER FUSES OR CIRCUIT BREAKERS, USED IN ANY DC PORTION OF A PV SYSTEM SHALL BE LISTED FOR USE IN DC CIRCUITS AND SHALL HAVE THE APPROPRIATE VOLTAGE, CURRENT AND INTERRUPTING RATING, AS PER NEC 690.9.
- ALL CONDUITS SHALL BE MINIMUM 1/2" R.G.S. OR LIQUID TIGHT AS INDICATED. ALL LIQUID TIGHT CONDUIT LENGTHS SHALL NOT EXCEED 18" IN LENGTH. BELOW GRADE APPLICATIONS RUN SCHEDULE 40 PVC CONDUIT.
- PHOTOVOLTAIC DISCONNECTING MEANS SHALL COMPLY WITH NEC 690.14(A) THROUGH (D).
- MARKING FOR PV MODULES SHALL BE IN COMPLIANCE WITH NEC 690.51.
- WHERE CONDUIT EMERGES FROM CONCRETE ENCASEMENT, USE A PVC SCHEDULE 40 ELBOW WITH A PVC TERMINAL ADAPTER AND STAINLESS STEEL THREADED COUPLING. INSTALL THE TOP OF THE STAINLESS STEEL COUPLING FLUSH WITH TOP OF CONCRETE. INSERT A PVC PLUG INTO THE OPEN END OF THE COUPLING TO PREVENT DEBRIS FROM ENTERING THE CONDUIT DURING CONSTRUCTION. USE A PVC CONDUIT NIPPLE ATOP THE ELBOW FOR HEIGHT ADJUSTMENT. CONDUIT SHALL EMERGE FROM THE CONCRETE PERPENDICULARLY TO THE SURFACE WHENEVER POSSIBLE.
- PROVIDE WATERTIGHT SEAL AROUND WIRES WHERE CONDUIT TERMINATES IN PULL BOX.
- MAINTAIN CLEARANCE OF AT LEAST 12 INCHES FROM ALL UNDERGROUND METAL PIPING OR STRUCTURES, EXCEPT WHERE CONNECTIONS THERETO ARE SPECIFICALLY INDICATED.
- MINIMUM DEPTH FOR DIRECT BURIAL OF RACEWAYS SHALL BE IN COMPLIANCE WITH NEC 300.5 AND TABLE 300.5
- A METALLIC BACKED MARKING TAPE SHALL BE INSTALLED 12 INCHES ABOVE ALL UNDERGROUND CONDUITS.
- CONTRACTOR SHALL USE DIRECTIONAL BORING OR SIMILAR TECHNIQUES TO INSTALL UNDERGROUND CONDUITS WITHOUT DISRUPTING TRAFFIC FLOW INTO THE CONVESSION AREA. CONTRACTOR IS RESPONSIBLE TO CONTACT AN UNDERGROUND UTILITY LOCATING SERVICE BEFORE STARTING UNDERGROUND WORK TO DETERMINE LOCATION OF EXISTING BURIED UTILITIES IN THE WORK AREA.

### GROUNDING NOTES

- ALL CONNECTIONS TO GROUND RODS SHALL BE MADE WITH U.L. APPROVED EXOTHERMIC WELDED CONNECTIONS, UNLESS NOTED OTHERWISE. THE CONTRACTOR SHALL FORM A GROUNDING ELECTRODE SYSTEM AS PER NEC 250.50.
- INSTALL GROUND ROD BY DRIVING AND NOT DRILLING.
- GROUNDING SHALL BE IN COMPLIANCE WITH NEC 690.41 THROUGH NEC 690.50. GROUND ALL ELECTRICAL ENCLOSURES BY DIRECT CONNECTION TO THE BURIED GROUND GRID SYSTEM.
- GROUND CONDUCTOR USE SIZE NO LESS THAN #2 AWG IF BURIED IN EARTH/CAST CONCRETE OR #6 AWG AT OTHER LOCATIONS.
- EQUIPMENT GROUNDING CONDUCTORS FOR PV SOURCE AND PV OUTPUT CIRCUITS SHALL BE SIZED IN ACCORDANCE WITH NEC 690.45(A) OR (B).
- WHERE ONLY ONE PERMITTED ELECTRODE SYSTEM IS INSTALLED THAT DOES NOT HAVE A RESISTANCE TO GROUND OF 25 OHMS OR LESS SHALL BE AUGMENTED BY ONE ADDITIONAL PERMITTED ELECTRODE, AS PER NEC 250.53 AND NEC 250.56
- THE SOLAR PANEL HAS A DEDICATED #6 AWG GROUND BOND WIRE CONNECTED TO THE MAIN GROUND OR TO THE GROUND ROD.

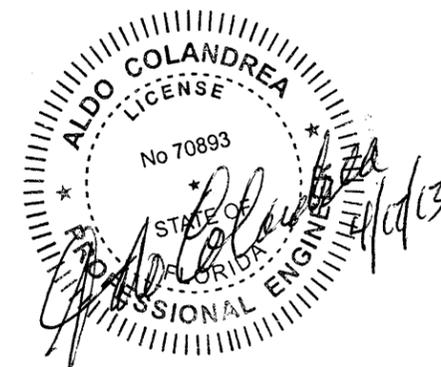
### EQUIPMENT SCHEDULE

- PHOTOVOLTAIC MODULE: SOLARLAND SLP085S-24M HIGH EFFICIENT MONOCRYSTALLINE 85 WATTS, 24 VDC, SHELTER MOUNTED MODULE.
- PVC CIRCUIT BREAKER: THERMO-MAGNETIC CIRCUIT BREAKER SWITCH TYPE, SINGLE POLE, FAST BLOW DIN RAIL MOUNTED 8 AMP, 65 VDC PHOENIX CONTACT TMC1/F1/100/8 OR EQUAL.
- LIGHT FIXTURE: LUMA SMART 24 VDC, 6 WATTS/FOOT, 600 LUMENS/FOOT, 500 MILLIAMPS.
- JUNCTION BOX: PROVIDE 4" X 4" STAINLESS STEEL JUNCTION BOX TO ACCOMMODATE LIGHT FIXTURE WIRES.
- CHARGER CONTROLLER: MORNINGSTAR'S SUNLIGHT SOLAR LIGHTING CONTROLLER SL-10L-24V FOR AUTOMATIC LIGHTING CONTROL FUNCTIONS.
- BATTERY: DEKA GEL MODEL No. 8G24 12 VDC BATTERY.
- BATTERY PACK: STAINLESS STEEL OR ALUMINUM NEMA TYPE 3R ENCLOSURE TO ACCOMMODATE BATTERIES, CONTROLLER, BATTERY CIRCUIT BREAKER, FUSE, DIN RAIL, PV CIRCUIT BREAKER, LOAD CIRCUIT BREAKER.
  - DIN RAIL: PHOENIX CONTACT DIN RAIL PART #08-01-73-3, 35mm, PERFORATED OR EQUAL.
  - TERMINAL BLOCK: PHOENIX CONTACT PART #30-04-36-2, UK 5N, FEED-THRU, MODULAR OR EQUAL.
  - TERMINAL BLOCK UNIVERSAL GROUND: PHOENIX CONTACT PART #04-41-50-4 OR EQUAL.
  - BRACKET: BRACKET, E/NS 35 N, DIN RAIL, END PHOENIX CONTACT PART #08-00-88-6 OR EQUAL.
- BATTERY CIRCUIT BREAKER: BREAKER 10 AMP, TWO POLES, THERMO-MAGNETIC CIRCUIT, PHOENIX CONTACT PART #55-11-17-0 OR EQUAL.
- LIGHT CIRCUIT BREAKER: BREAKER 3 AMP, TWO POLES, THERMO-MAGNETIC CIRCUIT, PHOENIX CONTACT OR EQUAL.
- GROUND BAR: GBK520 (5)14-4, (1)8-2/0 CONDUCTOR CUTLER-HAMMER OR EQUAL.
- LOAD CABLE: 2# 12. 1# 12 G AWG THWN-2 CONDUCTORS RATED 90°C
- PHOTOVOLTAIC CABLE: PV MULTICONDUCTOR STRANDED COPPER, WET RATED, SUNLIGHT AND MOISTURE RESISTANT, 600 V, PVC INSULATION, RATED 90°C, UL RATING. PROVIDE 2/C #8 AWG.
- GROUND ROD: 1/2"X10' CU-CLAD GROUND ROD.
- FLEXIBLE CORD AND CABLE FITTING: WEATHER-RESISTENT, LIQUID-TIGHT CABLE STRAIN RELIEF FITTING BLACK NYLON WITH FLEXIBLE RUBBER BUSHING.
- CABLE BUSHING: CONNECTOR, STRAIGHT, WEATHER STABILIZED NYLON, CORD, 3/4" BLACK BEAUTY, LIQUID TIGHT CORD, THOMAS & BETTS PART NUMBER 2694 OR EQUAL.
- GROUND TEST BOX
- BATTERY CABLE: 2# 12 AWG SIS
- GROUND CONDUCTOR: 1# 6 AWG THWN-2 GROUND CONDUCTOR, RATED 90°C
- BARE GROUND CONDUCTOR: 1# 2/0 AWG BARE GROUND CONDUCTOR

### ELECTRICAL SYMBOL LEGEND

SYMBOL	DESCRIPTION
A	<b>LIGHTING</b> (REFER TO EQUIPMENT SCHEDULE) LIGHT FIXTURE DESIGNATION. LED LIGHTING FIXTURE, SURFACE MOUNTED
	<b>BASIC MATERIALS</b> DUPLEX RECEPTACLE, 20 AMP., 125V., (M.H.=18"A.F.F.)
	GFCI DUPLEX RECEPTACLE, 20 AMP., 125V., (M.H.=18"A.F.F.)
	JUNCTION BOX, MOUNTING AS SHOWN
	DISCONNECT SWITCH, SIZE AS NOTED
	# OF POLES AMP RATING/FUSE SIZE (* DENOTES AS PER MANUFACTURER)
	GROUND OR GROUND ROD AS NOTED
	CONDUIT TURNING UP
	CONDUIT TURNING DOWN
	CONDUIT STUB
	CONDUIT CONTINUED
	<b>SERVICE AND DISTRIBUTION</b> ELECTRICAL BRANCH CIRCUIT PANELBOARD, SURFACE MOUNTED. (SEE PANEL SCHEDULE FOR DETAILS)
	TRANSFORMER, SIZE AS NOTED
	EXISTING EQUIPMENT TO REMAIN NEW EQUIPMENT OR WORK OF THIS PROJECT
	TIME SWITCH
	UL LISTED PULL-OUT FUSE HOLDER
	PHOTOCELL - INSTALL FACING NORTH
	CIRCUIT BREAKER ONE-POLE
	CIRCUIT BREAKER TWO-POLE
	LIGHT FIXTURE

NOTE: SOME SYMBOLS SHOWN ON THIS LEGEND MAY NOT PERTAIN TO THIS PROJECT.



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CUSTOMER: BROWARD COUNTY TRANSIT DIVISION

PROJECT: BROWARD COUNTY TRANSIT BUS SHELTER

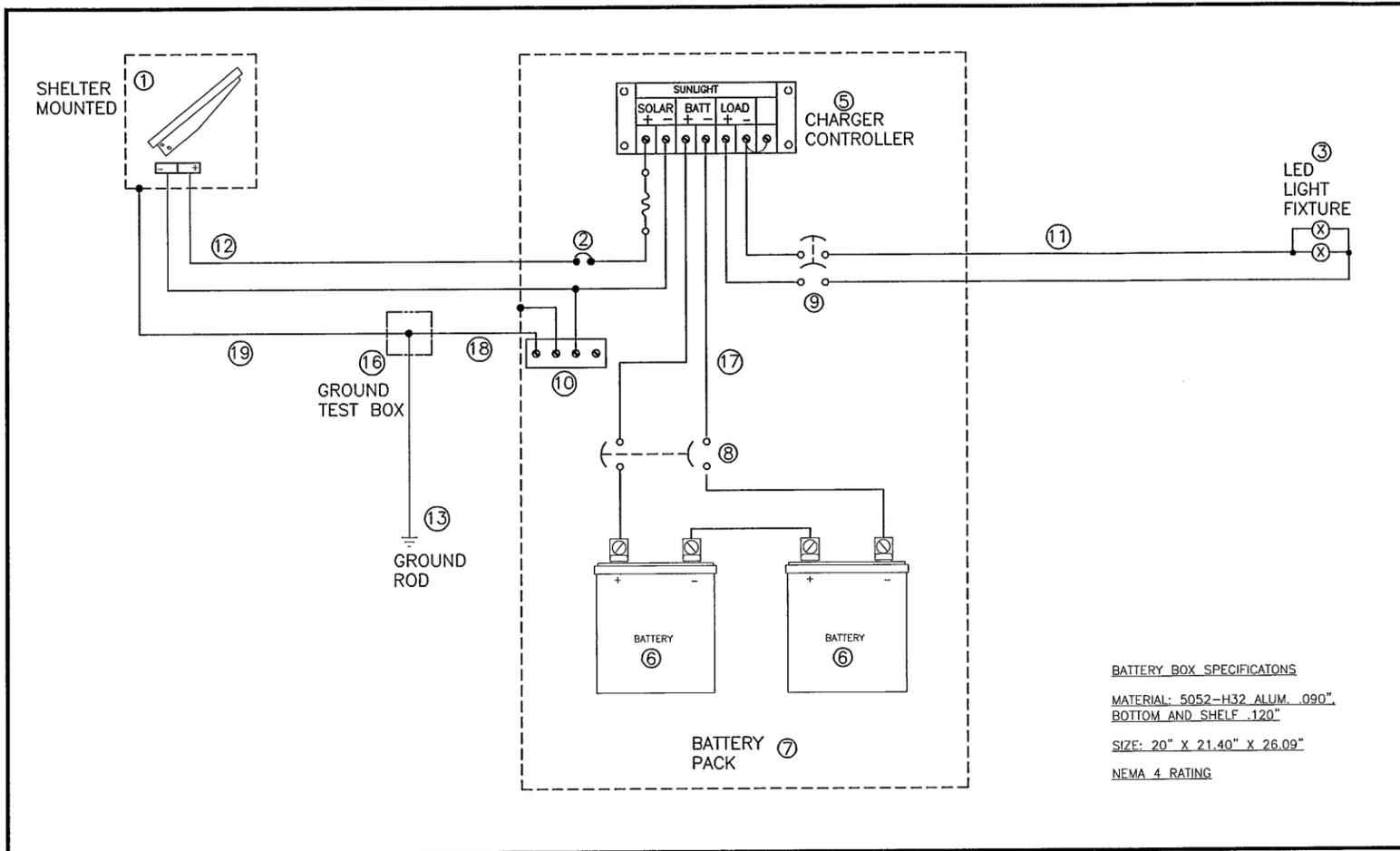
MODEL: ELECTRICAL PLAN (GENERAL NOTES)

DESIGNER: BMB  
CHECKER: PN

DATE: 2-14-13  
DATE: 2-15-13

SHEET: 18  
REVISION: A

JOB #



### CALCULATIONS

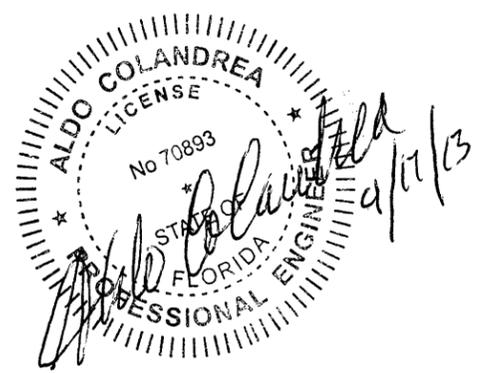
**LOAD CALCULATION**  
 - 24 VDC LED LIGHTS 2 (6 W/FT \* 2 FT) = 24 W.

**POWER REQUIREMENTS**  
 - 24 W \* 10 H/DAY \* 7/DAYS/WK = 1680 WH/WK  
 - MULTIPLY BY 1.2 TO COMPENSATE FOR SYSTEM LOSSES DURING BATTERY CHARGE/DISCHARGE CYCLE.  
 - 1.2 \* 1680 WH/WK = 2016 WH/WK

**POWER CONSUMPTION**  
 - 2016 WH/WK ÷ 24 VDC = 84 AH/WK  
 - 84 AH/WK ÷ 7 DAYS = 12 AH/DAY

**BATTERY SIZE**  
 - 12 AH/DAY  
 - 3 = MAXIMUM NUMBER OF CONSECUTIVE CLOUDY WEATHER DAYS EXPECTED  
 - 12 AH/DAY \* 3 = 36 AH SYSTEM NEEDS TO STORE  
 - 0.5 = DEPTH OF DISCHARGE FOR BATTERY  
 - 36 AH ÷ 0.5 = 72 AH  
 - 1.04 = AVERAGE WINTERTIME MULTIPLIER OF 70°F TEMPERATURE  
 - 72 AH \* 1.04 = 74.8 AH  
 - 84.5 AH RATING FOR THE BATTERY CHOSEN DEKA 8G24  
 - 74.8 AH ÷ 84.5 AH = 0.88 ≈ 1 BATTERY WIRED IN PARALLEL  
 - 24 VDC (SYSTEM VOLTAGE) ÷ 12 VDC (BATTERY VOLTAGE) = 2 BATTERIES WIRED IN SERIES  
 - 0.88 \* 2 = 1.76 ≈ 2 BATTERIES REQUIRED

**PV SIZE**  
 - 12 AH/DAY  
 - 5.62 YEAR ROUND AVERAGE SUN HOURS PER DAY IN SOUTH FLORIDA  
 - 12 AH/DAY ÷ 5.62 = 2.13 A REQUIRED FROM THE PV  
 - 2.47 A CURRENT AT MAXIMUM POWER FOR (SLP085S-24M SORLAND PV MODULES)  
 - 2.13 A + 2.47 A = 0.86 PV MODULES  
 - 1 PV MODULE REQUIRED ON SITE



### ABBREVIATIONS

A.C.	ABOVE COUNTER	IG	H	HOUR
A.F.F.	ABOVE FINISHED FLOOR			ISOLATED GROUND (ORANGE DEVICE)
A.F.	ARC FAULT		L.C.	LOCKABLE COVER
AMP, A	AMPERE		M.H.	MOUNTING HEIGHT
AH	AMP-HOUR		N	NEW DEVICE
A.S.W.	ABOVE SHOW WINDOW RCPT.		N.F.	NON FUSED
B.F.C.	BELOW FINISHED CEILING	NL		NIGHT LIGHT
B.F.G.	BELOW FINISHED GRADE		PH	PHASE
C.B.	CIRCUIT BREAKER	RGS		RIGID GALVANIZED STEEL
CL	CENTER LINE		T.C.	TERMINAL CABINET
D	DEDICATED FOR COMPUTER, PROVIDE DEDICATED GROUND AND NEUTRAL		T.S.	TIME SWITCH
EM	PROVIDE EMERGENCY BATTERY PACK W/FIXTURE, CONNECT AHEAD OF ALL SWITCHES.		U.O.N.	UNLESS OTHERWISE NOTED
E/R	EXISTING RELOCATED		V	VOLTAGE
F	FOOT		W	WATT
G	GROUND		WH	WATT-HOUR
G.F.I.	GROUND FAULT INTERRUPTER		WK	WEEK
			WP	WEATHER PROOF ENCLOSURE
			XFMR	TRANSFORMER.

NOTE: SOME ABBREVIATIONS SHOWN ON THIS LEGEND MAY NOT PERTAIN TO THIS PROJECT.

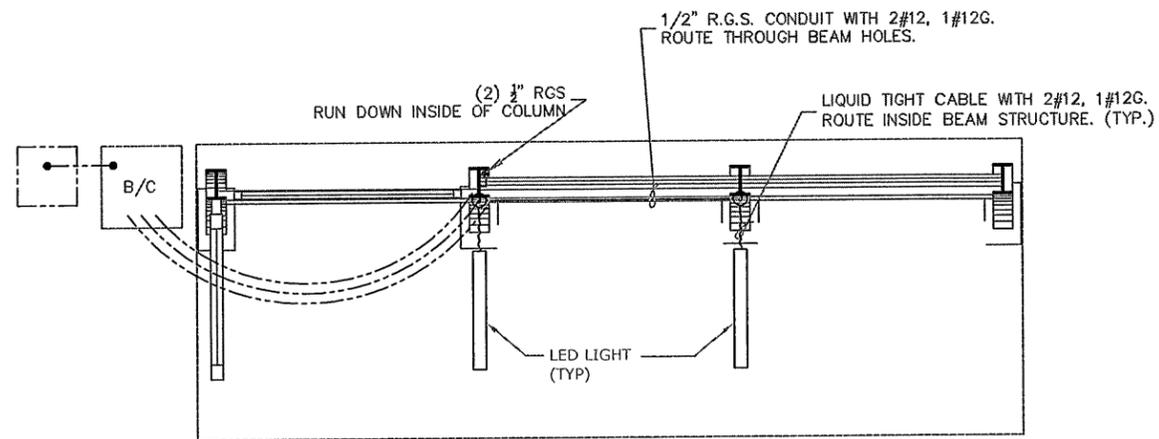


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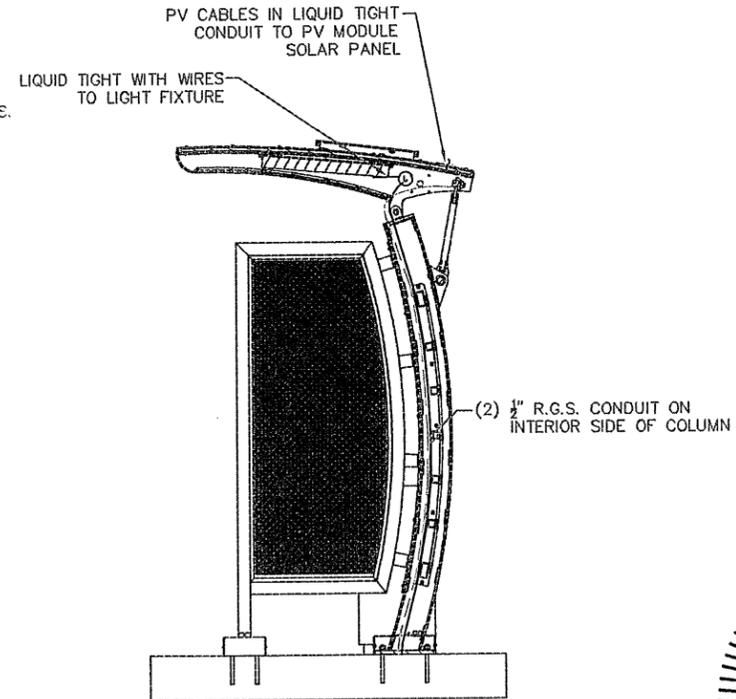
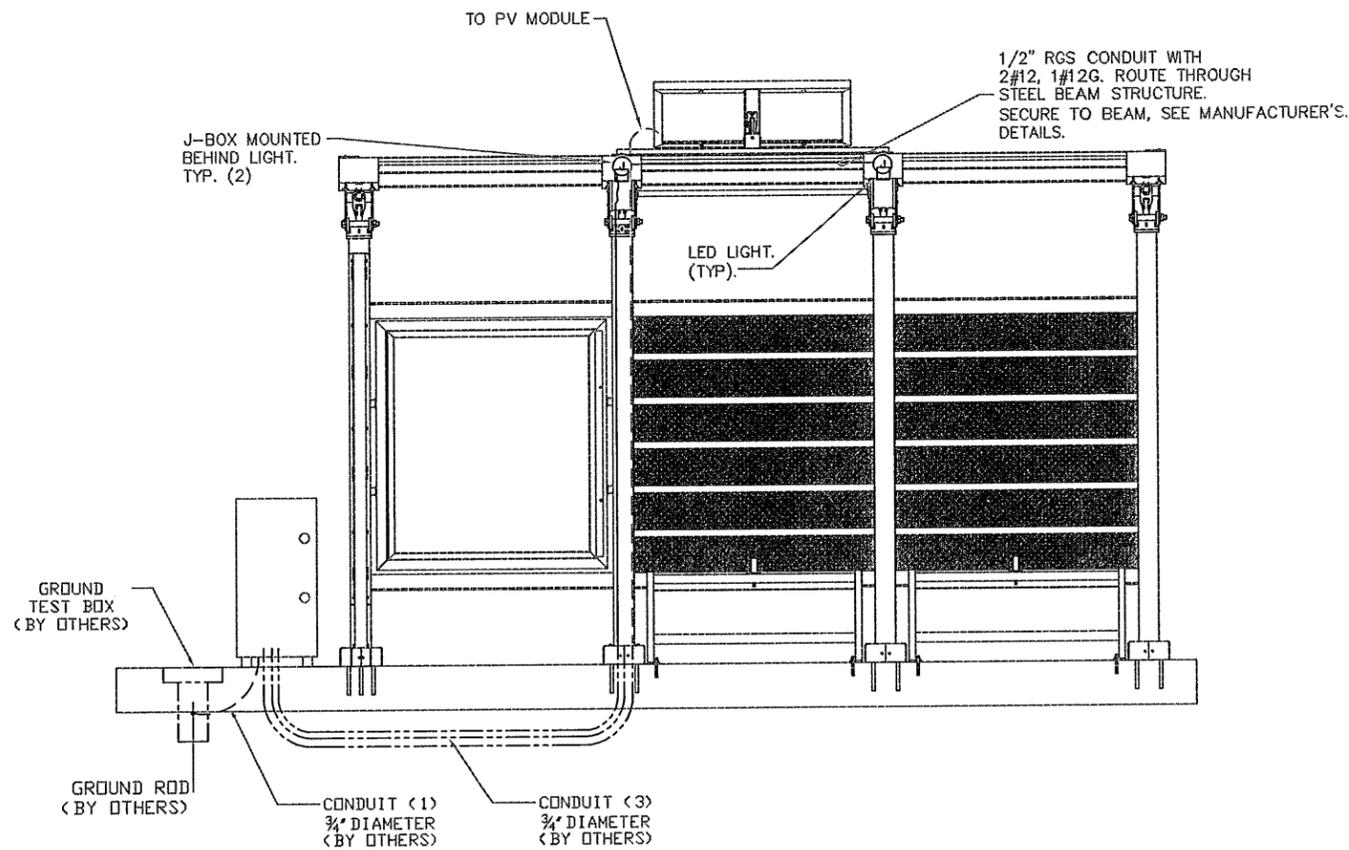
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CUSTOMER: BROWARD COUNTY TRANSIT DIVISION  
 PROJECT: BROWARD COUNTY TRANSIT BUS SHELTER  
 MODEL: ELECTRICAL PLAN (ELECTRICAL SCHEMATIC)

DESIGNER: BMB  
 CHECKER: PN  
 DATE: 2-14-13  
 SHEET: 19  
 JOB #  
 DATE: 2-15-13  
 REVISION: A



NOTE:  
CONDUITS FOR GROUND TEST  
BOX SHOWN GRAPHICALLY  
FOR REFERENCE ONLY



LAYOUT TYPICAL FOR ALL SHELTER SIZES



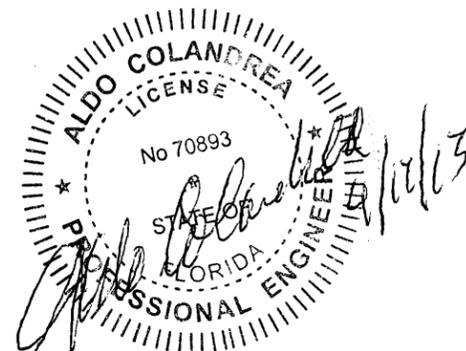
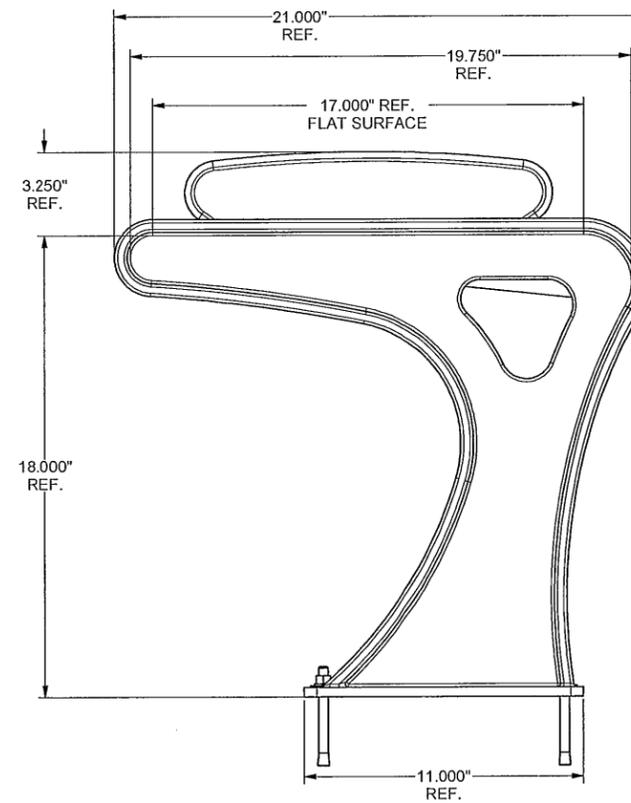
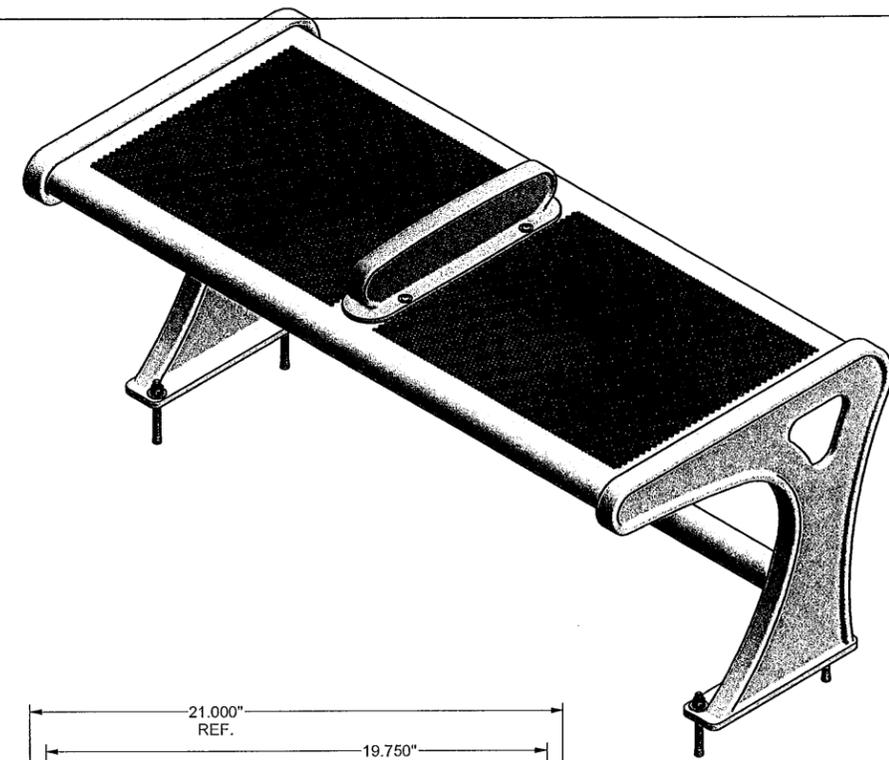
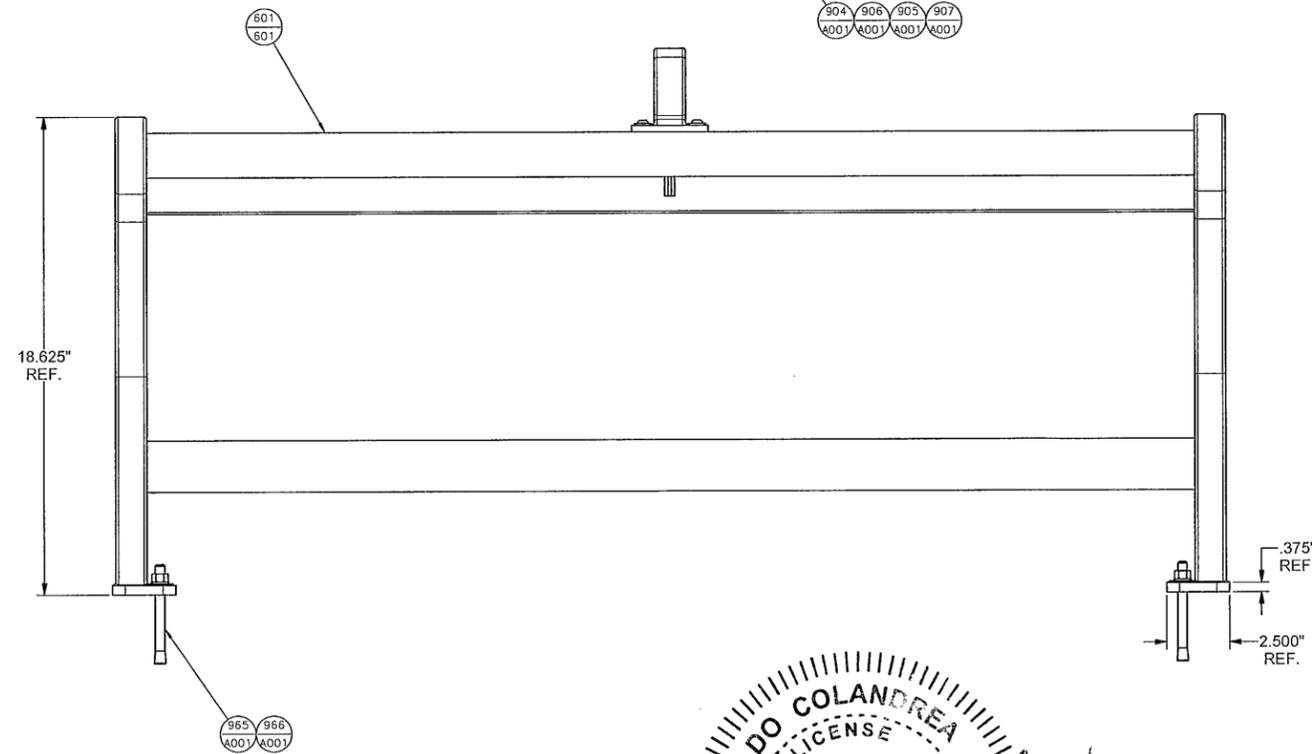
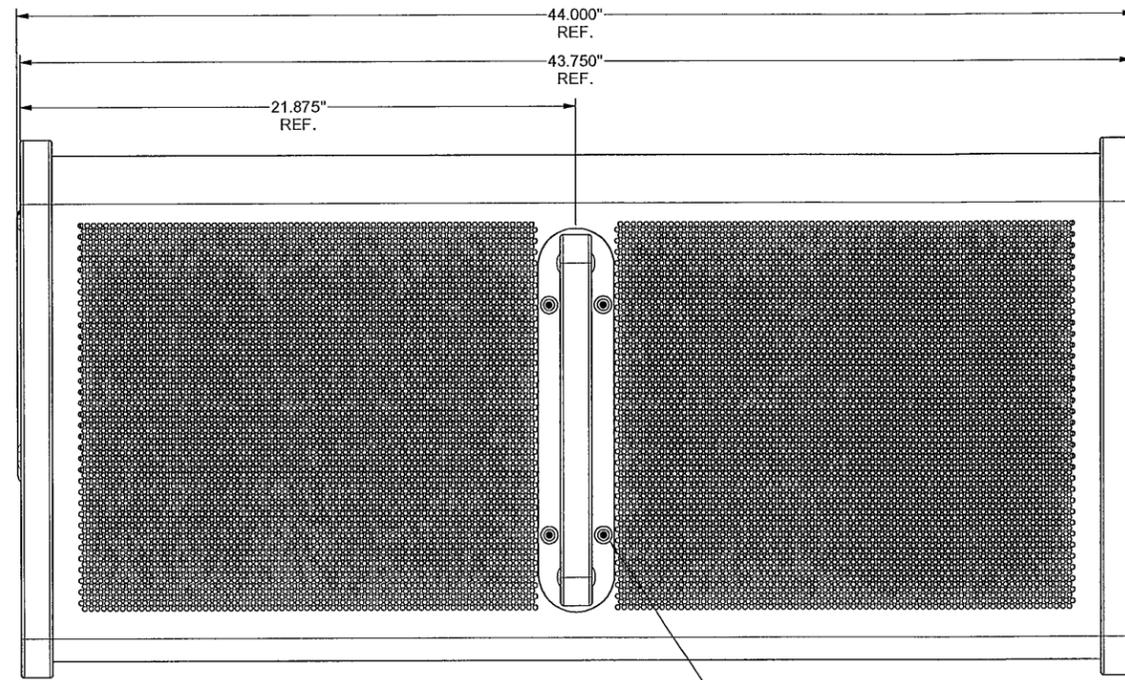
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CUSTOMER:	BROWARD COUNTY TRANSIT DIVISION
PROJECT:	BROWARD COUNTY TRANSIT BUS SHELTER
MODEL:	ELECTRICAL PLAN (ELECTRICAL SCHEMATIC)

DESIGNER:	CHECKER:
BMB	PN
DATE:	DATE:
2-14-13	2-15-13
SHEET:	REVISION:
20	A

JOB #



600 INTERLUDE BACKLESS BENCH  
(SEE BOM) REQ'D - SUB ASSEMBLY  
SEE PARTS LIST

BRASCO INTERNATIONAL SUB ASSEMBLY PARTS LIST					
ITEM	QTY	SHT	DESCRIPTION	PART NUMBER	NOTES
966	4	A001	3/8" S.S. LOCK WASHER	F1057	
965	4	A001	3/8"-16 X 3 3/4" S.S. WEDGE ANCHOR BOLT	F1183	
906	4	A001	1/4"-20 X 1" LG. S.S. TAMPER RESISTANT BUTTON SOCKET CAP SCREW	F1137	
904	4	A001	1/4" S.S. FLAT WASHER	F1052	
905	4	A001	1/4" S.S. LOCKWASHER	F1055	
907	4	A001	1/4"-20 S.S. NUT	F1059	
601	1	601	BENCH WELDMENT		SEE DWG.
611	1	611	ARMREST		SEE DWG.

	<b>BRASCO INTERNATIONAL, INC.</b> 32400 INDUSTRIAL DR. MADISON HEIGHTS, MICHIGAN 48071 1-800-893-3665 WWW.BRASCO.COM		CUSTOMER:	BROWARD COUNTY TRANSIT DIVISION	DESIGNER:	BMB	CHECKER:	SJT	
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			MODEL:	INTERLUDE BACKLESS BENCH (ELEVATION VIEWS)	JOB #	SHEET:	21	REVISION:	A

**APPENDIX E**

**TIDFLEX STORMWATER CHECK VALVE –  
PROPRIETARY PRODUCT CERTIFICATION AND SPECIFICATIONS**



Florida's Warmest Welcome

Public Works Department  
Robert A. McCaughan, Public Works Director

City of Pompano Beach, Florida

1201 N.E. 5th Avenue, Pompano Beach, Florida 33060 | P: 954.786.4097 | F: 954.786.4028

January 15, 2015

Ms. Ellen Daniel, P.E.  
FDOT Local Agency Program Engineer  
Florida Department of Transportation – District IV  
3400 W. Commercial Blvd.  
Ft. Lauderdale, Florida 33309  
Ph. (954) 777-4780

**RE: MLK Jr. Blvd. (Educational Corridor) Roadway Improvements  
MLK Jr. Blvd. (Hammondville Rd.) from Blount Rd. to SR 845 (Powerline Rd.)  
Improvements (City of Pompano Beach) (Section 33, Township 48S, Range 42E)  
FDOT FPID No. 432861-1**

**Subject: Request for Proprietary Product Certification  
Tideflex Stormwater Check Valve**

Dear Ms. Daniel:

The City of Pompano Beach kindly requests the “proprietary” use of **Tideflex Stormwater Check Valve** products as identified on the construction plans for the above referenced project. This “proprietary” product is necessary for the satisfactory operation and maintenance in perpetuity of the existing roadway and proposed drainage infrastructure by the City of Pompano Beach Public Works Department.

This request is made as a functional requirement since the City of Pompano Beach Public Works Department is significantly concerned with maintenance of a small diameter stormwater overflow pipe connection (via a 4-inch pipe and 3-inch bleeder connection) into the FDOT drainage system along Powerline Road (refer to Sheets C-13 and C-23). In coordination between the City of Pompano Beach and the Florida Department of Transportation, FDOT approved this drainage connection to help alleviate existing regular ponding occurring at the eastbound right turn lane on MLK Blvd. onto Powerline Road (S.R. 845). This is a regular occurrence and the ponding extends across the width of the right turn lane and into the through lane.

The maintenance concerns are associated with the small diameter stormwater overflow pipe connecting into an existing curb inlet located at the southwest corner of MLK Blvd. and Powerline Rd. (S.R. 845) and the amount of debris that enters this existing curb inlet which could potentially clog the small diameter pipe connection. The City of Pompano Beach Public Works Department believes that using this **Tideflex Stormwater Check Valve** will alleviate the potential of clogging the small pipe.

The City of Pompano Beach has successfully implemented similar **Tideflex Stormwater Check Valve** in other areas of the City, mainly for the use in outfalls into tidal waters to prevent back-up flow.

I hope this justification is to your satisfaction. If you have any questions or concerns, please do not hesitate to contact me at 954-786-4097 or by e-mail at [robert.mccaughan@copbfl.com](mailto:robert.mccaughan@copbfl.com).

Sincerely,

Robert A. McCaughan,  
Public Works Director



Public Works Department  
Robert A. McCaughan, Public Works Director

City of Pompano Beach, Florida

1201 N.E. 5th Avenue, Pompano Beach, Florida 33060 | P: 954.786.4097 | F: 954.786.4028

### Proprietary Product Certification

To: Ellen Daniel, PE,  
Local Program Engineer

Date: 1/15/2015

Financial Project ID: 432861-1

Road Number and/or Name: Martin Luther King Boulevard (A.K.A. Hammondville Road)

County: Broward

Full Federal Oversight: No  Yes  Note: if Yes, submit to FHWA Director

The request is for the proprietary use of **Tideflex Stormwater Check Valve** product being proposed as part of the above referenced project. The proprietary product is necessary for the satisfactory operation of the existing facility. The attached supporting documentation demonstrates that the proposed materials satisfy with the requirements of 23 CFR 635.411 (a) (2):

- Function** - the proprietary product is necessary for the satisfactory operation of the existing facility
- Aesthetics** - proprietary product is necessary to match the visual appearance of existing facilities
- Logistics** — the proprietary product is interchangeable with products within the agency’s existing maintenance inventory

A justification and supporting document is attached to this document.

I, Public Works Director  
Position/Title

City of Pompano Beach  
Name of Agency

do hereby certify that in accordance with the requirements of 23 CFR 635.411 (a) (2),

- that this patented or proprietary item is essential for synchronization with existing highway facilities.
- that no equally suitable alternative exists for this patented or proprietary item.

Robert A McCaughan  
Signature

1/15/15  
Date

**For Department Use Only**

"I Howard Webb, P.E., District IV Design Engineer, of the Florida Department of Transportation, do hereby approve this certification request made in accordance with the requirements of 23 CFR 635.411(a)(2),

- that this patented or proprietary item is essential for synchronization with existing highway facilities.
- that no equally suitable alternative exists for this patented or proprietary item.

Identify any conditions and limitations:

Christine M. Fasiska  
Signature

1/21/2015  
Date

**CHRISTINE M. FASISKA ADMINISTRATOR**

Concurrence: "I, Ellen Daniel, PE, Local Program Engineer of the Florida Department of Transportation, do hereby recommend approval of this certification request."

Christine M Fasiska  
Signature

1/21/2015  
Date

### Series 35—Flanged Check Valve

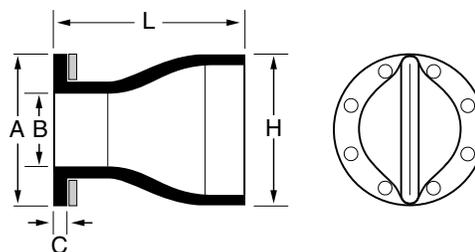
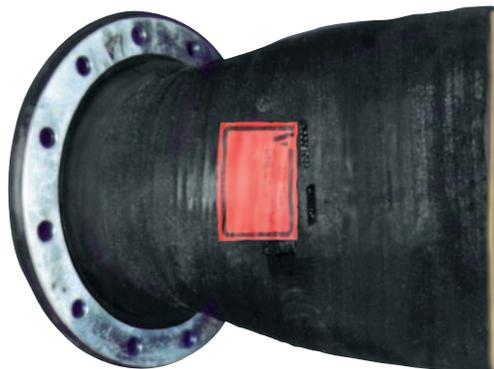
#### Materials of Construction

- Pure Gum Rubber, Neoprene, Chlorobutyl, Buna-N, Polyurethane  
Hypalon, Viton, EPDM, Food Grade
- Galvanized Steel, Stainless Steel

The Tideflex® Technologies Series 35 Check Valve is manufactured identically to the Tideflex® Check Valve, with the addition of an integral elastomer flange as part of the valve. The standard flange size drilling conforms to ANSI B16.5 and ANSI B16.47, Class 150 standards. All other domestic and international standards, as well as customer specified flange dimensions, are available. The Series 35 Check Valve is furnished complete with 3/8" thick steel back-up rings for installation.

In some applications and installations, a slip-over pipe Check Valve is not feasible because of an existing flange in the piping system or an existing flange cemented in the outfall piping system vault. In these cases, the Series 35 Check Valve is the solution.

The Tideflex® Technologies Series 35 Check Valve is simple in design, with only one part - the all-rubber duck bill check sleeve. There are no seats or interference fits to corrode or freeze valve operation, making the Series 35 virtually maintenance free. The Series 35 seals completely around solids, making it ideal for fly ash, raw sewage, sludge, lime, mining slurries, and many other abrasive and corrosive slurries.



#### DIMENSIONS SERIES 35

ANSI FLANGE SIZE	FLANGE O.D. A	INSIDE DIAMETER B	FLANGE THICKNESS C	MAXIMUM LENGTH L	MAXIMUM HEIGHT H
1/2"	3-1/2"	1/2"	1/2"	2-1/2"	1-1/4"
3/4"	3-7/8"	3/4"	1/2"	3"	1-1/2"
1"	4-1/4"	1"	1/2"	3"	1-1/2"
1-1/4"	4-5/8"	1-1/4"	1/2"	5-3/4"	2-3/4"
1-1/2"	5"	1-1/2"	1/2"	5-3/4"	3-5/8"
2"	6"	2"	1/2"	5-3/4"	3-5/8"
2-1/2"	7"	2-1/2"	1/2"	7-1/2"	4-5/8"
3"	7-1/2"	3"	3/4"	9"	5-3/8"
4"	9"	4"	3/4"	12"	7"
5"	10"	5"	3/4"	15-1/4"	8-7/8"
6"	11"	6"	1"	15-5/8"	10-3/8"
8"	13-1/2"	8"	1"	16-1/2"	13"
10"	16"	10"	1"	21-1/2"	16-7/8"
12"	19"	12"	1"	26-1/2"	20-1/8"
14"	21"	14"	1"	25-3/8"	21-1/2"
16"	23-1/2"	15-1/4"	1"	27-1/2"	22-1/4"
18"	25"	17-1/2"	1-1/2"	30"	26-3/4"
20"	27-1/2"	19-1/4"	1-1/2"	32-3/8"	32-1/2"
22"	29-1/2"	21-1/4"	1-1/2"	35-1/2"	32-1/2"
24"	32"	24"	1-1/2"	40-1/2"	37"
30"	38-3/4"	29-1/2"	1-1/2"	43"	49-1/2"
32"	41-3/4"	32"	1-1/2"	51-3/8"	46"
36"	46"	35-1/4"	1-1/2"	54"	58"
42"	53"	42"	2"	60-1/4"	72-1/2"
48"	59-1/2"	48"	2"	59"	77-1/2"
60"	73"	60"	2"	72"	96-3/4"
72"	86-1/2"	72"	2"	95"	102"
84"	99-3/4"	84"	2"	92"	110-1/2"

# SERIES 35/35-1 CHECK VALVE

## Installation, Operation, and Maintenance Manual



The revolutionary design of the Series 35/35-1 Check Valve provides absolute backflow protection. This unique "duck bill" design eliminates costly backflow from oceans, rivers or storm water and is the ideal valve for effluent diffuser systems.

Series 35/35-1 Check Valves seal "drop tight" on entrapped solids and debris without jamming. Unlike traditional flap gates there are no hinged gates to hang open and no warping or freezing. They're maintenance-free.

The Series 35/35-1 Check Valve is available in a wide variety of elastomers and is designed to meet your exact flow specifications.

### **IMPORTANT**

Please take a moment to **review this manual. Before performing any maintenance on the valve be sure the pipeline has been de-pressurized.** The improper installation or use of this product may result in personal injury, product failure, or reduced product life. Tideflex® Technologies can accept NO liability resulting from the improper use or installation of this product. If you have any questions or problems, please call the customer service department at (412) 279-0044. We appreciate your comments. Thank you for choosing Tideflex® Technologies.

### **TIDEFLEX® TECHNOLOGIES WARRANTY**

#### WARRANTIES - REMEDIES - DISCLAIMERS - LIMITATION OF LIABILITY

Unless otherwise agreed to in writing signed by Tideflex® Technologies, all Products supplied by Tideflex® Technologies will be described in the specifications set forth on the face hereof.

THE WARRANTIES SET FORTH IN THIS PROVISION ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES WHETHER STATUTORY, EXPRESS OR IMPLIED (INCLUDING ALL WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND ALL WARRANTIES ARISING FROM COURSE OF DEALING OR USAGE OR TRADE).

Tideflex® Technologies Products are guaranteed for a period of one year from date of shipment, against defective workmanship and material only, when properly installed, operated and serviced in accordance with Tideflex® Technologies' recommendations. Replacement for items of Tideflex® Technologies' manufacture will be made free of charge if proved to be defective within such year; but not claim for transportation, labor or consequential damages shall be allowed. We shall have the option of requiring the return of the defective product to our factory, with transportation charges prepaid, to establish the claim and our liability shall be limited to the repair or replacement of the defective product, F.O.B. our factory. Tideflex® Technologies will not assume costs incurred to remove or install defective products nor shall we incur backcharges or liquidated damages as a result of warranty work. Tideflex® Technologies does not guarantee resistance to corrosion erosion, abrasion or other sources of failure, nor does Tideflex® Technologies guarantee a minimum length of service, or that the product shall be fit for any particular service. Failure of purchaser to give prompt written notice of any alleged defect under this guarantee forthwith upon its discovery, or use, and possession thereof after an attempt has been made and completed to remedy defects therein, or failure to return product or part for replacement as herein provided, or failure to install and operate said products and parts according to instructions furnished by Tideflex® Technologies, or failure to pay entire contract price when due, shall be a waiver by purchaser of all rights under these representations. All orders accepted shall be deemed accepted subject to this warranty which shall be exclusive of any other or previous warranty, and shall be the only effective guarantee or warranty binding on Tideflex® Technologies, anything on the contrary contained in purchaser's order, or represented by any agent or employee of Tideflex® Technologies in writing or otherwise, notwithstanding implied warranties. TIDEFLEX® TECHNOLOGIES MAKES NO WARRANTY THAT THE PRODUCTS, AUXILIARIES AND PARTS ARE MERCHANTABILITY OR FIT FOR ANY PARTICULAR PURPOSE.

# INSTALLATION

The valve end with the rubber flange face should be installed on the pressure side of the system using the split backup rings provided. The sleeve split should be installed facing downstream, with the split in the vertical position.

The installation bolt torque on the end flange bolts are listed in the table below.

## RECOMMENDED MINIMUM BOLT TORQUE

Valve Size	Bolt Size	Torque (ft*lb.)
1"	1/2" - 13NC	20
1-1/2"	1/2" - 13NC	20
2"	5/8" - 11NC	30
2-1/2"	5/8" - 11NC	40
3"	5/8" - 11NC	40
4"	5/8" - 11NC	30
5"	3/4" - 10NC	40
6"	3/4" - 10NC	30
8"	3/4" - 10NC	40
10"	7/8" - 9NC	40
12"	7/8" - 9NC	50
14"	1" - 8NC	50
16"	1" - 8NC	50
18"	1-1/8" - 7NC	30
20"	1-1/8" - 7NC	30
24"	1-1/4" - 7NC	40
30"	1-1/4" - 7NC	30
36"	1-1/2" - 6NC	40
42"	1-1/2" - 6NC	50
48"	1-1/2" - 6NC	55
54"	1-3/4" - 5NC	60
60"	1-3/4" - 5NC	80
72"	1-3/4" - 5NC	100

Torque values are suggested minimum values. Torque all flange bolts in a star pattern, first to 50% of tabulated values, then retorque to 100% of tabulated values. If greater torque is required, continue retorquing in increments of 50% of tabulated values. Use of a high quality anti-seize compound on all bolt threads is recommended.

Variables such as the surface finish on bolt threads, type of anti-seize compound used, and surface finish of the mating flanges all have an effect on the minimum torque required to obtain a leak-tight flange seal.

# OPERATION

The Series 35/35-1 Check Valve is a self-contained check valve for use on low back pressure systems. Back pressures in excess of rated pressure can invert the sleeve and cause valve failure.

Tideflex® Technologies check valves are custom made products intended for a specific application and have been designed to respond to criteria unique to that purpose, such as line pressure, minimum and maximum backflow pressure, and chemical compatibility. Should the conditions for which the valve has been designed be altered or change in any way, it could affect the normal operation of the valve, and/or prevent the valve from draining completely. Valves made to withstand high back pressure may not self-drain completely.

# MAINTENANCE

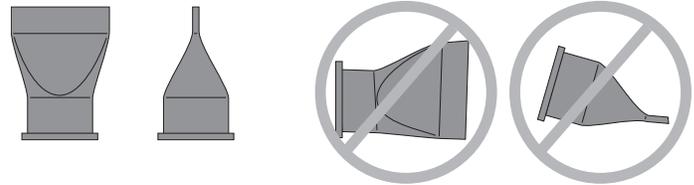
The Series 35/35-1 Check Valve should remain trouble free for the life of the system.

# STORAGE

Rubber Check Valves should be stored in a cool, dry location on original shipping pallet with the bill facing upward (not on side) (Figure #1). Do not drop, bend or twist the Check Valve or damage may occur.

1. Store the valve in a cool, clean, dry location.
2. Avoid exposure to light, electric motors, dirt or chemicals. Resilient Check Valves are subject to deterioration when exposed to ozones and non-compatible chemicals.
3. Store Installation Operation Manual with product so it will be readily available for installation.

FIGURE 1



Store Vertically

NEVER Store Horizontally

# TROUBLESHOOTING

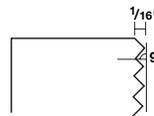
During installation you may need to retorque the flange bolts several times for a proper seal. This will overcome any leaks due to the cold flow of the rubber sleeve flange.

A.



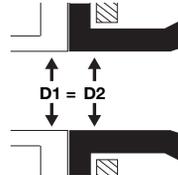
A. Standard check valves are built to schedule 40 pipe I.D. and to ANSI Class 125/150# flange and bolt circle specifications. It is recommended that the mating flanges are flat and full faced.

B.



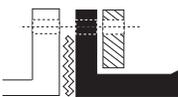
B. It is recommended that the mating flange be serrated to "grip" the rubber flange. The serrations should be cut 1/16" deep, with a 90° angle tool point. The pitch should be 8 (eight) cuts per inch.

C.



C. Mating flange ID must match the Check Valve sleeve ID.

D.



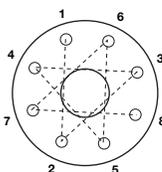
D. When installing a check valve to a rubber, PVC, or any "slick" mating flange, we recommend that you install a metal serrated gasket between the two flanges to assist in the seal.

E.



E. When bolting a check valve to a PVC or synthetic mating flange, use a split back-up retaining ring, since the mating flange will yield prior to generating enough force on the flange faces for a proper seal.

F.



F. Always use a "star" pattern when bolting a check valve.

**APPENDIX F**

**RAIN BIRD IRRIGATION EQUIPMENT –  
PROPRIETARY PRODUCT CERTIFICATION**



Public Works Department  
Robert A. McCaughan, Public Works Director

City of Pompano Beach, Florida

1201 N.E. 5th Avenue, Pompano Beach, Florida 33060 | P: 954.786.4097 | F: 954.786.4028

Ms. Ellen Daniel, P.E.  
FDOT Local Agency Program Engineer  
Florida Department of Transportation – District IV  
3400 W. Commercial Blvd.  
Ft. Lauderdale, Florida 33309  
Ph. (954) 777-4780

**RE: MLK Jr. Blvd. (Educational Corridor) Roadway Improvements  
MLK Jr. Blvd. (Hammondville Rd.) from Blount Rd. to SR 845 (Powerline Rd.)  
Improvements (City of Pompano Beach) (Section 33, Township 48S, Range 42E)  
FDOT FPID No. 432861-1**

**Subject: Request for Proprietary Product Certification  
Rain Bird Irrigation Equipment**

Dear Ms. Daniel:

The City of Pompano Beach kindly requests the “proprietary” use of **Rain Bird Irrigation Equipment** products as identified on the construction plans for the above referenced project. This “proprietary” product is necessary for the satisfactory operation and maintenance in perpetuity by the City of Pompano Beach Public Works Department of the proposed irrigation improvements.

This request is made as a logistical requirement since this manufacturer (Rain Bird) and the specifically identified irrigation equipment shown on the irrigation plans is used across City limits and would significantly facilitate maintenance by City of Pompano Beach staff of the irrigation system for this particular project.

I hope this justification is to your satisfaction. If you have any questions or concerns, please do not hesitate to contact me at 954-786-4097 or by e-mail at [Robert.mccaughan@copbfl.com](mailto:Robert.mccaughan@copbfl.com).

Sincerely,

Robert A. McCaughan,  
Public Works Director



Public Works Department  
Robert A. McCaughan, Public Works Director

City of Pompano Beach, Florida

1201 N.E. 5th Avenue, Pompano Beach, Florida 33060 | P: 954.786.4097 | F: 954.786.4028

### Proprietary Product Certification

To: Ellen Daniel, PE,  
Local Program Engineer

Date: 10/24/2014

Financial Project ID: 432861-1

Road Number and/or Name: Martin Luther King Boulevard (A.K.A. Hammondville Road)

County: Broward

Full Federal Oversight: No  Yes  Note: if Yes, submit to FHWA Director

The request is for the proprietary use of Rainbird Irrigation Equipment product being proposed as part of the above referenced project. The proprietary product is necessary for the satisfactory operation of the existing facility. The attached supporting documentation demonstrates that the proposed materials satisfy with the requirements of 23 CFR 635.411 (a) (2):

- Function** - the proprietary product is necessary for the satisfactory operation of the existing facility
- Aesthetics** - proprietary product is necessary to match the visual appearance of existing facilities
- Logistics** — the proprietary product is interchangeable with products within the agency’s existing maintenance inventory

A justification and supporting document is attached to this document.

I, Public Works Director  
Position/Title

City of Pompano Beach  
Name of Agency

do hereby certify that in accordance with the requirements of 23 CFR 635.411 (a) (2),

- that this patented or proprietary item is essential for synchronization with existing highway facilities.
- that no equally suitable alternative exists for this patented or proprietary item.

Robert A. McCaughan  
Signature

10/24/14  
Date

For Department Use Only

"I Howard Webb, P.E., District IV Design Engineer, of the Florida Department of Transportation, do hereby approve this certification request made in accordance with the requirements of 23 CFR 635.411(a)(2),

that this patented or proprietary item is essential for synchronization with existing highway facilities.

that no equally suitable alternative exists for this patented or proprietary item.

Identify any conditions and limitations:



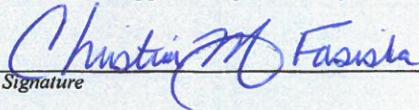
Signature

1/21/2015

Date

CHRISTINE M. FASISKA ADMINISTRATOR

Concurrence: "I, ~~Ellen Daniel, PE~~, Local Program Engineer of the Florida Department of Transportation, do hereby recommend approval of this certification request."



Signature

1/21/2015

Date

**APPENDIX G**

**UTILITY CERTIFICATIONS AND WORK SCHEDULES**



December 17, 2014

Ms. Arleen V. Dano  
Program Coordinator  
Program Management-FDOT District Four  
(954) 777-4619  
arleen.dano@dot.state.fl.us

**Financial Project ID:** 432861-1-58-01  
**County:** Broward  
**Local Road:** Dr. Martin Luther King Boulevard (aka Hammondville Road)  
**Limits:** N.W. 31<sup>st</sup> Ave. to Powerline Road

Dear Ms. Dano:

This is to certify that all utility work has been completed or that all necessary arrangements have been made to undertake and complete this project based on October 31, 2014 plans as required for proper coordination with the physical construction schedule.

The package includes appropriate coordination with the Utility Agencies which identifies all utility work, including the status and/or schedule for completion for each company involved within the limits of this project. The following utilities and involvement are listed as follows:

Utility Agencies	Disposition	Status
AT&T Distribution	Involved/ Utility Work Schedule	Executed 11/24/14
Comcast Cable	Involved/ Utility Work Schedule	Executed 12/15/14
Teco Peoples Gas	Involved/ Utility Work Schedule	Executed 11/24/14
FP&L Distribution	Involved/ Utility Work Schedule	Executed 11/24/14
City of Pompano Beach	Involved/ Utility Work Schedule	Executed 12/17/14
FP&L Fibernet	Involved/ Utility Work Schedule	Executed 11/24/14
Broward County Water and Wastewater	Not Involved/ No Conflict Letter	Received 12/10/14

Sincerely,

Alessandra Delfico, PE CFM  
City Engineer

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION  
**UTILITY WORK SCHEDULE**

<b>Financial Project ID:</b> 432861-1-58-01	<b>Federal Project ID:</b> N/A
<b>County:</b> Broward	<b>State Road No.:</b> MLK
<b>District Document No:</b> 1	
<b>Utility Agency/Owner (UAO):</b> AT&T	

**A. Summary of Utility Work And Execution**

	Estimated Time (calendar days)
Total Time Prior To FDOT Project Construction	<u>0</u>
Total Time During FDOT Project Construction	<u>42</u>

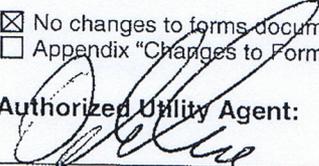
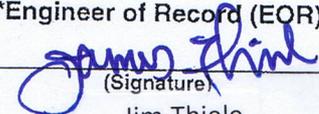
This document has been developed as the method for a Utility Agency/Owner (UAO) to transmit to the Florida Department of Transportation (FDOT), the FDOT's Contractor, and other right-of-way users, the location, relocation, adjustment, installation, and/or protection of their facilities, on this FDOT project. The following data is based on FDOT preliminary construction plans dated Oct. 2014. Any deviation by the FDOT or its contractor from the plans, as provided, may render this work schedule null and void. Upon notification by FDOT of such change, this utility may require additional days for assessment and negotiation of a new work schedule. This UAO is not responsible for events beyond the control of the UAO that could not reasonably be anticipated by the UAO and which could not be avoided by the UAO with the exercise of due diligence at the time of the occurrence. The UAO agrees to notify the Department in writing prior to starting, stopping, resuming, or completing work.

UAO Project Representative: Otis Keeve Telephone Number: 954 723-2540  
 UAO Field Representative: N/A Telephone Number: \_\_\_\_\_

This document is a printout of an FDOT form maintained in an electronic format and all revisions thereto by the UAO in the form of additions, deletions or substitutions are reflected only in an Appendix entitled "Changes to Form Document" and no change is made in the text of the document itself. Hand notations on affected portions of this document may refer to changes reflected in the above-named Appendix but are for reference purposes only and do not change the terms of the document. By signing this document, the UAO hereby represents that no change has been made to the text of this document except through the terms of the appendix entitled "Changes to Form Document".

You MUST signify by selecting or checking which of the following applies:

- No changes to forms document.
- Appendix "Changes to Forms Document" is attached. \_\_\_\_\_ Number of Attachment Pages.

<p><b>Authorized Utility Agent:</b></p> <p><u></u>                  (Signature)</p> <p><u>Otis Keeve</u>                  (Printed Name)</p> <p><u>Utility Coordinator</u>                  (Title)</p> <p><u>12/04/14</u>                  (Date)</p>	<p><b>**Engineer of Record (EOR):</b></p> <p><u></u>                  (Signature)</p> <p><u>Jim Thiele</u>                  (Printed Name)</p> <p><u>Professional Engineer</u>                  (Title)</p> <p><u>11/24/14</u>                  (Date)</p>	<p><b>Acceptance by District Utilities:</b></p> <p>_____                  (Signature)</p> <p><u>N/A</u>                  (Printed Name)</p> <p><u>N/A</u>                  (Title)</p> <p><u>11/24/14</u>                  (Date)</p>
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(\*\*When requested by the District, the EOR will attest to compatibility of plans, specifications and Utility Work Schedule)

## UTILITY WORK SCHEDULE

Financial Project ID: 432861-1-58-01	Federal Project ID: N/A
County: Broward	State Road No.: MLK
District Document No: 1	
Utility Agency/Owner (UAO): AT&T	
B.	Special Conditions / Constraints
<p>1. All AT&amp;T Florida work will be completed during our normal working hours, 8:00 AM to 4:00 PM, Monday through Friday. However, if night work is required it must be coordinated 10 business days in advance.</p> <p>2. The roadway contractor must maintain access to all AT&amp;T Florida facilities at all times during road construction.</p> <p>3. All cable damage must be reported to the repair department at 611 or 1-800-432-1424 from a cell phone.</p> <p>4. If there is any concern of a conflict through out construction call Corriette Callender 954 830-8272 to arrange for an inspector.</p> <p>5. Call Sunshine One Call 811 two (2) business days prior to digging</p> <p>6. Certain event "Acts of God" may require AT&amp;T to suspend its work on this project. AT&amp;T will notify FDOT's representative when these conditions exist.</p> <p>7. Work days shown are actual number of estimated work days and not consecutive calendar days.</p> <p>8. Please provide a minimum of 2 weeks advanced notice for scheduling work that is dependant on other activities .</p> <p>9. The new elevation must be staked at each location.</p> <p>10. This work is dependant on the location of the new FPL pole and/or anchor/ downguy. If a new pole is placed AT&amp;T cannot start its tranfer until all other utilities work is completed.</p> <p>11. This is a double lid MH located within the curb and gutter and has existing curb doors. Curb doors may need to be replaced if they can't be reused after adjustments to the new elevation.</p>	

## UTILITY WORK SCHEDULE

Financial Project ID: 432861-1-58-01		Federal Project ID: N/A		
County: Broward		State Road No.: MLK		
District Document No.: 1				
Utility Agency/Owner (UAO): AT&T				
C. Disposition of Facilities (List All Existing & Proposed) on Project:				
UTILITY FACILITIES BY STATUS/ TYPE/SIZE/MATERIAL/OFFSET TO BASELINE FROM STA TO STA	DESCRIPTION OF UTILITY WORK	DEPENDENT ACTIVITIES	M.O.T. PHASE NUMBER	CONSECUTIVE CALENDAR DAYS
16+65 30' RT manhole W 23 1/2	To be adjusted by AT&T during construction	See note # 9	During const.	2
16+70 30' RT manhole W HR 1	To be adjusted by AT&T during construction	See note # 9	During const.	2
16+65 45' RT manhole W 23 1/2 A	To be adjusted by AT&T during construction	See note # 9	During const.	2
19+85 35' RT manhole W 23	To be adjusted by AT&T during construction	See note # 9	During const.	2
25+30 45' RT manhole HR 2	To be adjusted by AT&T during construction	See note # 9	During const.	2
27+20 35" RT manhole W 22	To be adjusted by AT&T during construction	See note # 9	During const.	2
33+80 35' RT manhole W 21	To be adjusted by AT&T during construction	See note # 9	During const.	2
34+30 50' RT manhole HR 3	To be adjusted by AT&T during construction	See note # 9	During const.	2
40+40 40' LT anchor/down guy, overhead guy	Transfer to the new FPL pole	See note # 10	During const.	5
41+20 35' RT manhole W 20	To be adjusted by AT&T during construction	See note # 9	During const.	2
42+45 40 RT manhole HR 4	To be adjusted by AT&T during construction	See note # 9	During const.	2
48+60 35' RT manhole W 19	To be adjusted by AT&T during construction	See note # 9	During const.	2
50+70 40' RT anchor/ downguy	To be adjusted by AT&T during construction	See note # 10	During const.	3
51+00 45' RT manhole HR 5	To be adjusted by AT&T during construction	See note # 9	During const.	2
55+90 35' RT manhole W 18	To be adjusted by AT&T during construction	See note # 9	During const.	2
57+20 30' RT manhole W 17 1/2 A	To be adjusted by AT&T during construction	See note # 9	During const.	2
57+20 30' RT manhole W 17 1/2	To be adjusted by AT&T during construction	See note # 9	During const.	2
58+85 40' RT DUCT 6-4" PVC	To be determined by designer (conflict structure)	N/A	During const.	N/A
60+00 50' RT dbl lid manhole W 17 3/4	To be adjusted by AT&T during construction	See note # 9&11	During const.	4

**UTILITY WORK SCHEDULE**

Financial Project ID: 432861-1-58-01		Federal Project ID: N/A		
County: Broward		State Road No.: MLK		
District Document No: 1				
Utility Agency/Owner (UAO): AT&T				
C. Disposition of Facilities (List All Existing & Proposed) on Project:				
UTILITY FACILITIES BY STATUS/ TYPE/SIZE/MATERIAL/OFFSET TO BASELINE FROM STA TO STA	DESCRIPTION OF UTILITY WORK	DEPENDENT ACTIVITIES	M.O.T. PHASE NUMBER	CONSECUTIVE CALENDAR DAYS

<b>Financial Project ID: 432861-1-58-01</b>	<b>Federal Project ID: N/A</b>
<b>County: Broward</b>	<b>State Road No.: MLK</b>
<b>District Document No: 1</b>	
<b>Utility Agency/Owner (UAO): Comcast_muid_6519_B MLK Blvd Powerline to FL TPK</b>	

**A. Summary of Utility Work And Execution**

	Estimated Time (calendar days)
Total Time Prior To FDOT Project Construction	<u>4</u>
Total Time During FDOT Project Construction	_____

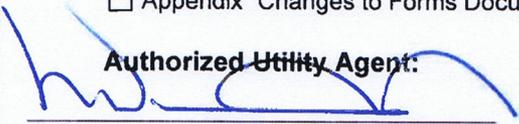
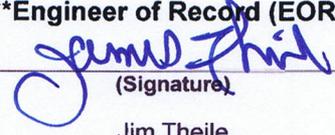
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UAO Project Representative:	<u>Leonard Maxwell-Newbold</u>	Telephone Number:	<u>1-954-447-8405</u>
UAO Field Representative:	<u>Chuck Huston</u>	Telephone Number:	<u>1-954-410-2054</u>

This document is a printout of an FDOT form maintained in an electronic format and all revisions thereto by the UAO in the form of additions, deletions or substitutions are reflected only in an Appendix entitled "Changes to Form Document" and no change is made in the text of the document itself. Hand notations on affected portions of this document may refer to changes reflected in the above-named Appendix but are for reference purposes only and do not change the terms of the document. By signing this document, the UAO hereby represents that no change has been made to the text of this document except through the terms of the appendix entitled "Changes to Form Document".

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- No changes to forms document.
- Appendix "Changes to Forms Document" is attached. \_\_\_\_ Number of Attachment Pages.

<p><b>Authorized Utility Agent:</b></p> <p>                  _____                  (Signature)</p> <p><u>Leonard Maxwell-Newbold</u>                  _____                  (Printed Name)</p> <p>Utility Coordinator                  _____                  (Title)</p> <p><u>12/15/14</u>                  _____                  (Date)</p>	<p><b>**Engineer of Record (EOR):</b></p> <p>                  _____                  (Signature)</p> <p><u>Jim Theile</u>                  _____                  (Printed Name)</p> <p>Professional Engineer                  _____                  (Title)</p> <p><u>12/17/14</u>                  _____                  (Date)</p>	<p><b>Acceptance by District Utilities:</b></p> <p>_____                  (Signature)</p> <p>N/A                  _____                  (Printed Name)</p> <p>N/A                  _____                  (Title)</p> <p>_____                  (Date)</p>
---	---	---

**(\*\*When requested by the District, the EOR will attest to compatibility of plans, specifications and Utility Work Schedule)**

**UTILITY WORK SCHEDULE**

Financial Project ID: 432861-1-58-01	Federal Project ID: N/A
County: Broward	State Road No.: MLK
District Document No: 1	
Utility Agency/Owner (UAO): Comcast_muid_6519_B MLK Blvd Powerline to FL TPK	
<b>B.</b>	<b>Special Conditions / Constraints</b>
<p>Comcast has existing / active aerial plant within the limits of this project Comcast will be required to transfer its facilities to the new FP&amp;L concrete poles, within the limits of this project.</p> <p>Construction days lost due to unsafe weather conditions or delays by the FDOT's or County's contractor may void the time frames to completing our ( Comcast ) scheduled relocation effort within this project.</p> <p>Comcast existing plant shall remain active during this process</p> <p>Please contact / notify Comcast in advance ( 3 days ) for any scheduled joint utility onsite review of potential conflict locations that might impact Comcast facilities within the limits of this project.</p> <p>The contractor shall maintain access to Comcast facilities within the limits of this project at all time.</p> <p>Comcast ID Number ( muid_6519_B ) lmn ( 12/15/2014 pm )</p>	

**UTILITY WORK SCHEDULE**

Financial Project ID: 432861-1-58-01		Federal Project ID: N/A		
County: Broward		State Road No.: MLK		
District Document No: 1				
Utility Agency/Owner (UAO): Comcast_muid_6519_B MLK Blvd Powerline to FL TPK				
C. Disposition of Facilities (List All Existing & Proposed) on Project:				
UTILITY FACILITIES BY STATUS/ TYPE/SIZE/MATERIAL/OFFSET TO BASELINE FROM STA TO STA	DESCRIPTION OF UTILITY WORK	DEPENDENT ACTIVITIES	M.O.T. PHASE NUMBER	CONSECUTIVE CALENDAR DAYS
46+55 45' RT	Coordinate transfer of equipment to new FP&L self-supporting poles and the removal of down guys and anchors from existing wood poles.	New Utility Pole Installation	Prior To Construction	2 Days
50+70 40' RT	Coordinate transfer of equipment to new FP&L self- supporting poles and the removal of down guys and anchors from existing wood poles.	New Utility Pole Installation	Prior To Construction	2 Days

**UTILITY WORK SCHEDULE**

Financial Project ID: 432861-1-58-01		Federal Project ID: N/A		
County: Broward		State Road No.: MLK		
District Document No: 1				
Utility Agency/Owner (UAO): Comcast_muid_6519_B MLK Blvd Powerline to FL TPK				
C. Disposition of Facilities (List All Existing & Proposed) on Project:				
UTILITY FACILITIES BY STATUS/ TYPE/SIZE/MATERIAL/OFFSET TO BASELINE FROM STA TO STA	DESCRIPTION OF UTILITY WORK	DEPENDENT ACTIVITIES	M.O.T. PHASE NUMBER	CONSECUTIVE CALENDAR DAYS

Financial Project ID: 432861-1-58-01	Federal Project ID: N/A
County: Broward	State Road No.: MLK
District Document No: 1	
Utility Agency/Owner (UAO): TECO Peoples Gas	

**A. Summary of Utility Work And Execution**

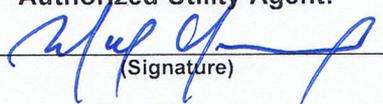
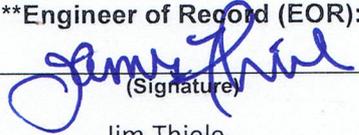
	Estimated Time (calendar days)
Total Time Prior To FDOT Project Construction	_____
Total Time During FDOT Project Construction	2

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UAO Project Representative: Max Chamorro Telephone Number: 954.453.0812  
 UAO Field Representative: SAME AS ABOVE Telephone Number: \_\_\_\_\_

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- No changes to forms document.
  - Appendix "Changes to Forms Document" is attached. \_\_\_ Number of Attachment Pages.

<p><b>Authorized Utility Agent:</b></p> <p style="text-align: center;"> _____ (Signature)</p> <p style="text-align: center;">Max Chamorro _____ (Printed Name)</p> <p style="text-align: center;">Utility Coordinator _____ (Title)</p> <p style="text-align: center;">11/24/14 _____ (Date)</p>	<p><b>**Engineer of Record (EOR):</b></p> <p style="text-align: center;"> _____ (Signature)</p> <p style="text-align: center;">Jim Thiele _____ (Printed Name)</p> <p style="text-align: center;">Professional Engineer _____ (Title)</p> <p style="text-align: center;">11/24/14 _____ (Date)</p>	<p><b>Acceptance by District Utilities:</b></p> <p style="text-align: center;">_____ (Signature)</p> <p style="text-align: center;">N/A _____ (Printed Name)</p> <p style="text-align: center;">N/A _____ (Title)</p> <p style="text-align: center;">11/24/14 _____ (Date)</p>
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(\*\*When requested by the District, the EOR will attest to compatibility of plans, specifications and Utility Work Schedule)

Financial Project ID: 432861-1-58-01	Federal Project ID: N/A
County: Broward	State Road No.: MLK
District Document No: 1	
Utility Agency/Owner (UAO): TECO Peoples Gas	
B.	Special Conditions / Constraints
<b>N/A</b>	

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION  
**UTILITY WORK SCHEDULE**

Financial Project ID: 432861-1-58-01		Federal Project ID: N/A		
County: Broward		State Road No.: MLK		
District Document No: 1				
Utility Agency/Owner (UAO): TECO Peoples Gas				
<b>Disposition of Facilities (List All Existing &amp; Proposed) on Project:</b>				
UTILITY FACILITIES BY STATUS/ TYPE/SIZE/MATERIAL/OFFSET TO BASELINE FROM STA TO STA	DESCRIPTION OF UTILITY WORK	DEPENDENT ACTIVITIES	M.O.T. PHASE NUMBER	CONSECUTIVE CALENDAR DAYS
19+75 RT valve	To be adjusted as necessary during construction	N/A	N/A	2

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION  
**UTILITY WORK SCHEDULE**

Financial Project ID: 432861-1-58-01	Federal Project ID: N/A
County: Broward	State Road No.: MLK
District Document No: 1	
Utility Agency/Owner (UAO): FPL	

**A. Summary of Utility Work And Execution**

	Estimated Time (calendar days)
Total Time Prior To FDOT Project Construction	<u>0</u>
Total Time During FDOT Project Construction	<u>30</u>

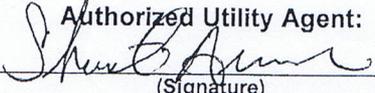
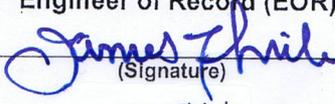
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UAO Project Representative: Shavonti Archer Telephone Number: 954-956-2036  
 UAO Field Representative: n/a Telephone Number: n/a

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You MUST signify by selecting or checking which of the following applies:

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<p><b>Authorized Utility Agent:</b></p> <p><u></u>                  (Signature)</p> <p><u>Shavonti Archer</u>                  (Printed Name)</p> <p><u>Associate Engineer - FPL</u>                  (Title)</p> <p><u>11/24/14</u>                  (Date)</p>	<p><b>**Engineer of Record (EOR):</b></p> <p><u></u>                  (Signature)</p> <p><u>Jim Thiele</u>                  (Printed Name)</p> <p><u>Professional Engineer</u>                  (Title)</p> <p><u>11/24/14</u>                  (Date)</p>	<p><b>Acceptance by District Utilities:</b></p> <p>_____                  (Signature)</p> <p><u>N/A</u>                  (Printed Name)</p> <p><u>N/A</u>                  (Title)</p> <p><u>11/24/14</u>                  (Date)</p>
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(\*\*When requested by the District, the EOR will attest to compatibility of plans, specifications and Utility Work Schedule)

## UTILITY WORK SCHEDULE

Financial Project ID: 432861-1-58-01	Federal Project ID: N/A
County: Broward	State Road No.: MLK
District Document No: 1	
Utility Agency/Owner (UAO): FPL	
B.	Special Conditions / Constraints
<p>All FPL overhead electrical facilities to remain energized and in place. Table A Minimum Clearance Distances specified in Subpart CC of OSHA Rule 29 CFR Part 1926 (as they pertain to crane/derrick operations), and/or those minimum distances specified in 29 CFR 1910.333(c)(3) for work in proximity to power lines not covered by this Subpart CC, must be maintained.</p> <ol style="list-style-type: none"> <li>1 Estimated time prior to and during construction is based on an FDOT construction start of 4/1/15.</li> <li>2 FPL design time is 6 to 8 weeks, approval is 3 weeks, material and resource acquisition is 3 weeks.</li> <li>3 FPL design starts 12/15/14. Full size scaled drawing as well as CAD files (.DWG files) were received on 12/4/14. Construction start will be dependant of obtaining all appropriate permit approval for installation and removal of FPL poles and anchors.</li> <li>4 All FPL work will be completed during normal business hours Monday through Friday, 8AM to 3PM. If work is required outside of these hours it must be coordinated in advance.</li> <li>5 The roadway contractor must maintain access to all FPL facilities at all times during construction</li> <li>6 When excavating in the vicinity of FPL facilities (poles, anchors, underground cables/conduits, etc), the FDOT contractor should employ the construction techniques (sheeting, trench box, etc) necessary to protect FPL facilities from damage or displacement. Any damage to FPL facilities must be reported to 1800-4-OUTAGE</li> <li>7 Certain conditions may require FPL to suspend work on this project. FPL will notify FDOT when these conditions occur.</li> <li>8 Work days shown are estimates and may not be consecutive calendar days. Any design changes during construction of this project that places any FPL facilities in conflict will void the time frame as given in Section "C" of the approved UWS</li> <li>9 Changes in the schedule or design may require 3 weeks for demobilization and remobilization.</li> <li>10 New pole locations will be staked based on FPL final design. If conflicts occur then pole locations will be resolved by FPL representative and DOT coordinator field meeting.</li> <li>11 Final pole removal is dependant of transfer to ATT, CATV and any other joint use companies. All other utilities attached to be removed prior to FPL removal of pole. Min 6-8 weeks required for scheduling crew once notified.</li> <li>12 FPL requires 14 calendar days advance notice to "hold" poles. The requesting party will be billed for all pole holding costs unless otherwise agreed to by FPL. (FDOT is exempted from this provision provided request is directly related to roadway improvement &amp; pole holding has not previously been designated as reimbursable).</li> </ol>	

## UTILITY WORK SCHEDULE

Financial Project ID: 432861-1-58-01		Federal Project ID: N/A		
County: Broward		State Road No.: MLK		
District Document No.: 1				
Utility Agency/Owner (UAO): FPL				
Disposition of Facilities (List All Existing & Proposed) on Project:				
UTILITY FACILITIES BY STATUS/ TYPE/SIZE/MATERIAL/OFFSET TO BASELINE FROM STA TO STA	DESCRIPTION OF UTILITY WORK	DEPENDENT ACTIVITIES	M.O.T. PHASE NUMBER	CONSECUTIVE CALENDAR DAYS
40+40 40' LT pole (Site # 18)	FP&L to relocate the existing pole to north side of sidewalk with self-supporting pole and eliminate the down guy and anchor.	See notes 1 thru 12	N/A	5
44+05 45' RT down guy and anchor (Site # 20)	FP&L to replace the existing pole with self-supporting pole to the north side of sidewalk and eliminate the down guy and anchor or install sidewalk guy on existing anchor	See notes 1 thru 12	N/A	5
46+55 45' RT down guy and anchor (Site # 22)	FP&L to replace the existing pole with self-supporting pole to the north side of sidewalk and eliminate the down guy and anchor or install sidewalk guy on existing anchor	See notes 1 thru 12	N/A	5
50+70 40' RT down guy and anchor (Site # 25)	FP&L to replace the existing pole with self-supporting pole to the north side of sidewalk and eliminate the down guy and anchor or install sidewalk guy on existing anchor	See notes 1 thru 12	N/A	5
52+80 40' RT down guy and anchor (Site # 26)	FP&L to replace the existing pole with self-supporting pole to the north side of sidewalk and eliminate the down guy and anchor or install sidewalk guy on existing anchor	See notes 1 thru 12	N/A	5

<b>Financial Project ID: 432861-1-58-01</b>	<b>Federal Project ID: N/A</b>
<b>County: Broward</b>	<b>State Road No.: MLK</b>
<b>District Document No: 1</b>	
<b>Utility Agency/Owner (UAO): City of Pompano Beach</b>	

**A. Summary of Utility Work And Execution**

	Estimated Time (calendar days)
Total Time Prior To FDOT Project Construction	<u>180</u>
Total Time During FDOT Project Construction	<u>0</u>

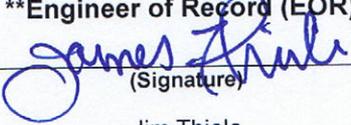
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UAO Project Representative: <u>John Sfiropoulos, P.E.</u>	Telephone Number: <u>954-545-7009</u>
UAO Field Representative: <u>William Herrmann</u>	Telephone Number: <u>954-786-5511</u>

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<p><b>Authorized Utility Agent:</b></p> <p>                  _____                  (Signature)</p> <p><u>A. Randolph Brown</u>                  _____                  (Printed Name)</p> <p><u>Utilities Director</u>                  _____                  (Title)</p> <p><u>12/17/14</u>                  _____                  (Date)</p>	<p><b>**Engineer of Record (EOR):</b></p> <p>                  _____                  (Signature)</p> <p><u>Jim Thiele</u>                  _____                  (Printed Name)</p> <p><u>Professional Engineer</u>                  _____                  (Title)</p> <p><u>11/24/14</u>                  _____                  (Date)</p>	<p><b>Acceptance by District Utilities:</b></p> <p>_____                  (Signature)</p> <p><u>N/A</u>                  _____                  (Printed Name)</p> <p><u>N/A</u>                  _____                  (Title)</p> <p><u>11/24/14</u>                  _____                  (Date)</p>
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STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION  
**UTILITY WORK SCHEDULE**

Financial Project ID: 432861-1-58-01		Federal Project ID: N/A
County: Broward		State Road No.: MLK
District Document No: 1		
Utility Agency/Owner (UAO): City of Pompano Beach		
B.	Special Conditions / Constraints	
N/A		

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION  
**UTILITY WORK SCHEDULE**

Financial Project ID: 432861-1-58-01		Federal Project ID: N/A		
County: Broward		State Road No.: MLK		
District Document No: 1				
Utility Agency/Owner (UAO): City of Pompano Beach				
Disposition of Facilities (List All Existing & Proposed) on Project:				
UTILITY FACILITIES BY STATUS/ TYPE/SIZE/MATERIAL/OFFSET TO BASELINE FROM STA TO STA	DESCRIPTION OF UTILITY WORK	DEPENDENT ACTIVITIES	M.O.T. PHASE NUMBER	CONSECUTIVE CALENDAR DAYS
29+60 40' RT 12" Asbestos Concrete Waterline	To be adjusted by the City of Pompano Beach prior to the start of construction	N/A	N/A	60
29+20 30' RT 12" Asbestos Concrete Waterline	To be adjusted by the City of Pompano Beach prior to the start of construction	N/A	N/A	60
18+00 45' RT - 34+50 40' RT 12" Asbestos Concrete Waterline	To be adjusted by the City of Pompano Beach prior to the start of construction	N/A	N/A	60

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION  
**UTILITY WORK SCHEDULE**

Financial Project ID: 432861-1-58-01	Federal Project ID: N/A
County: Broward	State Road No.: MLK
District Document No: 1	
Utility Agency/Owner (UAO): FP&L Fibernet	

**A. Summary of Utility Work And Execution**

	Estimated Time (calendar days)
Total Time Prior To FDOT Project Construction	<u>0</u>
Total Time During FDOT Project Construction	<u>6</u>

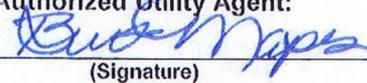
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UAO Project Representative: Burt Mapes Telephone Number: 561-818-8685  
 UAO Field Representative: N/A Telephone Number: \_\_\_\_\_

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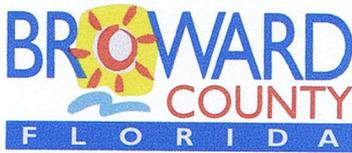
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- Appendix "Changes to Forms Document" is attached. \_\_\_\_ Number of Attachment Pages.

<b>Authorized Utility Agent:</b>	<b>**Engineer of Record (EOR):</b>	<b>Acceptance by District Utilities:</b>
		
_____ (Signature)	_____ (Signature)	_____ (Signature)
Burt Mapes (Printed Name)	Jim Thiele (Printed Name)	N/A (Printed Name)
Utility Coordinator (Title)	Professional Engineer (Title)	N/A (Title)
11/24/14 (Date)	11/24/14 (Date)	11/24/14 (Date)

(\*\*When requested by the District, the EOR will attest to compatibility of plans, specifications and Utility Work Schedule)

Financial Project ID: 432861-1-58-01	Federal Project ID: N/A
County: Broward	State Road No.: MLK
District Document No: 1	
Utility Agency/Owner (UAO): FP&L Fibernet	
B.	Special Conditions / Constraints
Part C adjustments are to FPL/FiberNet hand holes. Adjustments will be made to grade during construction. Please have contractor call Burt Mapes 561-818-3685 5 business days before sidewalk restoration to allow scheduling of adjustments.	

Financial Project ID: 432861-1-58-01		Federal Project ID: N/A		
County: Broward		State Road No.: MLK		
District Document No: 1				
Utility Agency/Owner (UAO): FP&L Fibernet				
Disposition of Facilities (List All Existing & Proposed) on Project:				
UTILITY FACILITIES BY STATUS/ TYPE/SIZE/MATERIAL/OFFSET TO BASELINE FROM STA TO STA	DESCRIPTION OF UTILITY WORK	DEPENDENT ACTIVITIES	M.O.T. PHASE NUMBER	CONSECUTIVE CALENDAR DAYS
19+70 40' RT	To be adjusted by FP&L Fibernet during construction	None	N/A	1
20+00 40' RT - 21+80 40' RT	Cover to be reviewed by FP&L Fibernet. Typically FP&L satisfied with a minimum of 3' of cover *** TO REMAIN ***	None		0
27+60 45" RT	Cover to be reviewed by FP&L Fibernet. Typically FP&L satisfied with a minimum of 3' of cover *** TO REMAIN ***	None		0
33+90 35' RT	To be adjusted by FP&L Fibernet during construction	None		1
34+30 -35+00 40' RT	Cover to be reviewed by FP&L Fibernet. Typically FP&L satisfied with a minimum of 3' of cover *** TO REMAIN ***	None		0
34+75 40' RT	To be adjusted by FP&L Fibernet during construction	None		1
43+40 50' RT	To be adjusted by FP&L Fibernet during construction	None		1
46+25 50' RT	To be adjusted by FP&L Fibernet during construction	None		1
52+05 45' RT	To be adjusted by FP&L Fibernet during construction	None		1



Public Works Department • Water and Wastewater Services  
**WATER AND WASTEWATER ENGINEERING DIVISION**  
2555 West Copans Road • Pompano Beach, Florida 33069 • 954-831-0745 • FAX 954-831-0798/0925

December 10, 2014

Anne Endsley  
Senior Utility Coordinator  
Keith and Associates, Inc.  
301 East Atlantic Blvd.  
Pompano Beach, FL 33060-6643

**RE: ADJUSTMENT OF UTILITIES – LETTER OF NO CONFLICT  
MARTIN LUTHER KING JR. BLVD. (HAMMONDVILLE RD.)  
FROM NW 31<sup>ST</sup> AVE. TO POWERLINE RD.  
FIN PROJECT ID 432861-1-58-01**

Dear Ms. Endsley:

I hereby certify that Broward County Water and Wastewater Services (UAO) has existing facilities (utilities) within the above project limits.

Based on the Construction Plans dated October, 2014, it has been determined that no relocation or adjustment to our facilities will be necessary for this construction.

If there are any questions on this matter, please do not hesitate to contact me at (954) 831-0934 or [jjclark@broward.org](mailto:jjclark@broward.org).

Sincerely,

A handwritten signature in blue ink that reads "Jeff Clark".

Jeff Clark  
Engineer I

JC/bad

cc: D. O'Connor, WWED  
Project File FDOT 432861-1-58-01 [8.88]