3.12 PLACING AND SPREADING OF BACKFILL MATERIALS

A. Backfill materials shall be placed and spread evenly in layers. When compaction is achieved using mechanical equipment the layers shall be evenly spread so that when compacted each layer shall not exceed 6 inches in thickness.

B. During spreading each layer shall be thoroughly mixed as necessary to promote uniformity of material in each layer. Pipe zone backfill materials shall be manually spread around the pipe so that when compacted the pipe zone backfill will provide uniform bearing and side support.

C. Where the backfill material moisture content is below the optimum moisture content water shall be added before or during spreading until the proper moisture content is achieved.

D. Where the backfill material moisture content is too high to permit the specified degree of compaction the material shall be dried until the moisture content is satisfactory.

3.13 COMPACTION - GENERAL

A. Compact each layer of fill in designated areas with approved equipment to achieve a maximum density at optimum moisture, AASHTO T 180 - latest edition.

1. Building Pads: compaction shall be to 98% of maximum density, unless otherwise shown on the drawings or specifications. Building pads shall be within plus or minus one-tenth (0.1) of a foot of the elevations shown on the plans.

2. Refer to Sections 02513 Asphaltic Concrete Paving and 02515 Portland Cement Concrete Paving for compaction requirements in the affected areas.

3. Under landscaped area, compaction shall be to density as specified in Paragraph 3.14.I., unless otherwise shown on the Drawings.

B. No backfill shall be placed against any masonry or other exposed building surface until permission has been given by the CITY'S Representative, and in no case until the masonry has been in place seven days.

C. Heavy construction equipment will not be permitted within ten (10) feet of any masonry or other exposed building surface.

D. Compaction in limited areas shall be obtained by the use of mechanical tampers or approved hand tampers. When hand tampers are used, the materials shall be deposited in layers not more than four inches thick. The hand tampers used shall be suitable for this purpose and shall have a face area of not more than 100 square inches. Special precautions shall be taken to prevent any wedging action against masonry, or other exposed building surfaces.

3.14 COMPACTION OF FILL, BACKFILL, AND EMBANKMENT MATERIALS

A. Each layer of Types, A, B, C, G, H, I, and K backfill materials as defined herein, where the material is graded such that at least 10 percent passes a No. 4 sieve, shall be mechanically compacted to the specified percentage of maximum density. Equipment that is consistently

capable of achieving the required degree of compaction shall be used and each layer shall be compacted over its entire area while the material is at the required moisture content.

B. Each layer of Type D, E, F, and J backfill materials shall be compacted by means of at least 2 passes from a flat plate vibratory compactor. When such materials are used for pipe zone backfill, vibratory compaction shall be used at the top of the pipe zone or at vertical intervals of 24 inches, whichever is the least distance from the subgrade.

C. Type L material requires mechanical spreading and placement to fill voids but does not require mechanical compaction or vibration.

D. Fill on reservoir and structure roofs shall be deposited at least 30 days after the concrete roof slab has been placed. Equipment weighing more than 10,000 pounds when loaded shall not be used on a roof. A roller weighing not more than 8,000 pounds shall be used to compact fill on a roof.

E. Flooding, ponding, or jetting shall not be used for fill on roofs, backfill around structures, backfill around reservoir walls, for final backfill materials, or aggregate base materials.

F. Pipe zone backfill materials that are granular may be compacted by a combination of flooding and vibration using concrete vibrators or by jetting, when acceptable to the ENGINEER.

G. Pipeline trench zone backfill materials, containing 5 percent or less of material passing a No. 200 sieve, may be compacted using flooding and jetting or vibration if the CONTRACTOR uses effective procedures that yield the specified compaction test results. Flooding and jetting shall not be done in such a manner that the pipe or nearby utilities are damaged, in areas of poorly draining or expansive soils, or where the use of the procedure is prohibited by any agency having jurisdiction over the street or right-of-way. Approved jet pipes or immersible vibrators shall be used so that each backfill layer is saturated and consolidated to its full depth before the next layer is placed. Jet pipes shall be kept at least 6 inches away from the pipe where the backfills being consolidated and 2 feet away from other pipes or utilities.

H. Equipment weighing more than 10,000 pounds shall not be used closer to walls than a horizontal distance equal to the fill at that time. Hand operated power compaction equipment shall be used where use of heavier equipment is impractical or restricted due to weight limitations.

I. Compaction Requirements: The following compaction test requirements shall be in accordance with AASHTO T-180. Where agency or utility company requirements govern, the highest compaction standards shall apply.

Location or Use of Fill	Percentage of Maximum Density
Pipe zone backfill portion above bedding for flexible pipe.	98
Pipe zone backfill bedding and over-excavated zones under bedding/pipe for flexible pipe, including trench plugs.	98
Pipe zone backfill portion above bedding for rigid pipe.	98

Pipe zone backfill bedding and over-excavated zones under bedding/pipe for rigid pipe.	98
Final backfill, beneath paved areas or structures	98
Final backfill, not beneath paved areas or structures	95
Trench zone backfill, not beneath paved areas or structures, including trench plugs	95
Embankments	98
Embankments, beneath paved areas or structures	98
Backfill beneath structures, hydraulic structures	98
Backfill around structures	98

Location or Use of Fill	Percentage of Maximum Density
Topsoil (Type K material)	80
Aggregate base or subbase Type G or M material)	98

J. Trench Backfill Requirements: the pipe has been structurally designed based upon the trench configuration specified herein.

K. The CONTRACTOR shall maintain the indicated trench cross section up to a horizontal plane lying 6 inches above the top of the pipe.

L. If, at any location under said horizontal plane, the CONTRACTOR slopes the trench walls or exceeds the maximum trench widths indicated in the Contract Documents, the pipe zone backfill shall be "improved" or the pipe class increased as specified herein, at no additional cost to the CITY. "Improved" backfill shall mean sand-cement backfill or other equivalent materials acceptable to the ENGINEER.

M. If the allowable deflection specified for the pipe is exceeded, the CONTRACTOR shall expose and reground or replace the pipe, repair all damaged lining and coating, and reinstall the pipe zone material and trench backfill as specified at no additional expense to the CITY.

3.15 PIPE AND UTILITY TRENCH BACKFILL

A. Pipe zone Backfill: The pipe zone is defined as that portion of the vertical trench cross-section lying between a plane 6 inches below the bottom surface of the pipe, i.e., the trench subgrade, and a plane at a point 6 inches above the top surface of the pipe. The bedding for flexible pipe is defined as that portion of pipe zone backfill material between the trench subgrade and the bottom of the pipe. The bedding for rigid pipe is defined as that portion of the pipe zone backfill material between the trench subgrade and a level line which varies from the bottom of the pipe to the springline as shown.

B. Bedding shall be provided for all sewers, drainage pipelines, and other gravity flow pipelines. Unless otherwise specified or shown, for other pipelines the bedding may be omitted if all the following conditions exist.

1. The pipe bears on firm, undisturbed native soil, which contains only particles that will pass a one-inch sieve.

2. The trench excavation is not through rock or stones.

3. The trench subgrade soils are classified as suitable fill and backfill materials per Paragraph 2.01.

4. The trench subgrade soils have, as a maximum, a moisture content that allows compaction.

C. Where bedding is required, after compacting the bedding the CONTRACTOR shall perform a final trim using a stringline for establishing grade, such that each pipe section when first laid will be continually in contact with the bedding along the extreme bottom of the pipe. Excavation for pipe bells and welding shall be made as required.

D. The pipe zone shall be backfilled with the specified backfill material. The CONTRACTOR shall exercise care to prevent damage to the pipeline coating, cathodic bonds, or the pipe itself during the installation and backfill operations.

E. Trench Zone Backfill: After the pipe zone backfill has been placed as specified above, and after all excess water has completely drained from the trench, backfilling of the trench zone may proceed. The trench zone is defined as that portion of the vertical trench cross-section lying between a plane 6 inches above the top surface of the pipe and a plane at a point 18 inches below the finished surface grade, or if the trench is under pavement, 18 inches below the roadway subgrade. If flooding, ponding, or jetting is used the pipe shall be filled with water to prevent flotation.

F. Final Backfill: Final backfill is all backfill in the trench cross-sectional area within 18 inches of finished grade, of if the trench is under pavement, all backfill within 18 inches of the roadway subgrade.

3.16 EMBANKMENT CONSTRUCTION

A. The area where an embankment is to be constructed shall be cleared of all vegetation, roots and foreign material. Following this, the surface shall be moistened, scarified to a depth of 6 inches, and rolled or otherwise mechanically compacted as specified in Paragraph 3.14.I. Embankment fill material shall be placed and spread evenly in approximately horizontal layers. Each layer

shall be moistened or aerated, as necessary. Unless otherwise approved by the ENGINEER, each layer shall not exceed 6 inches of compacted thickness. The embankment fill and the scarified layer of underlying ground shall be compacted to 95 percent of maximum density under structures and paved areas, and 90 percent of maximum density elsewhere.

B. When an embankment fill is to be made and compacted against hillsides or fill slopes steeper than 4:1, the slopes of hillsides or fills shall be horizontally benched to key the embankment fill to the underlying ground. A minimum of 12 inches normal to the slope of the hillside or fill shall be removed and recompacted as the embankment fill is brought up in layers. Material thus cut shall be recompacted along with the new fill material at the CONTRACTOR's expense. Hillside of fill slopes 4:1 or flatter shall be prepared in accordance with Paragraph A, above.

C. Where embankment or structure fills are constructed over pipelines, the first 4 feet of fill over the pipe shall be constructed using light placement and compaction equipment that does not damage the pipe. Heavy construction equipment shall maintain a minimum distance from the edge of the trench equal to the depth of the trench until at least 4 feet of fill over the pipe has been completed.

3.17 CORRECTION OF GRADE

A. Bring to required grade levels areas where settlement, erosion or other grade changes occur.

3.18 MAINTENANCE AND PROTECTION OF WORK

A. While construction is in progress adequate drainage for the roadbed shall be maintained at all times.

The CONTRACTOR shall maintain all earthwork construction throughout the life of the contract, unless otherwise provided, and shall take all reasonable precautions to prevent loss of material from the roadway due to the action of wind or water. CONTRACTOR shall repair at CONTRACTOR'S expense, except as otherwise provided herein, any slides, washouts, settlement, subsidence, or other mishap which may occur prior to final acceptance of the work.

All channels excavated as a part of the contract work shall be maintained against natural shoaling or other encroachments to the lines, grades, and cross sections shown on the plans, until final acceptance of the project.

3.19 AS-BUILT SURVEY

A. At the completion of the work and prior to final inspection of the area, the CONTRACTOR shall provide the ENGINEER with an as-built topographic survey made by a registered Surveyor, of the State of Florida.

B. The surveyor is to certify on the survey whether or not the as-built conditions conform to the elevations shown on the Drawings to within plus or minus two-hundredth (0.02) of a foot.

3.20 MEASUREMENT AND PAYMENT

A. There shall be no special measurement or payment for the work under this section, it shall be included in the unit price per square yard bid for compaction of subgrade when constructing new

roads and shall be included in the cost of all other work called out in the bid schedule requiring earth work.

END OF SECTION 02200

SECTION 02210
SITE GRADING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. All applicable provisions of the Bidding and Contract Requirements, and Division 1 - General Requirements shall govern the work under this section.

1.02 WORK INCLUDED

A. The work covered by this section shall include all labor, equipment, services and materials necessary for bringing the entire site to elevations shown in the plans. The work included in this section shall include all necessary excavations for streets, ditches and swales. It shall include the construction of embankments and fills by the loading, movement, deposition and compaction of suitable fill materials resulting from above listed excavations. It shall include stockpiling of any excess material to an on-site location as specified by the CITY.

B. It shall include rough grading within the roadways and parking lots to the elevations or cross-section details shown on the drawings.

C. It shall include the erection and maintenance of any barricades that are required for accident prevention and property protection.

D. It shall include removal and legal disposal of muck, rock boulders or any foreign material interfering with construction.

1.03 RELATED WORK

A. Section 02110 - Clearing

B. Section 02200 - Earthwork

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 GENERAL

A. The CONTRACTOR shall be familiar with all work to be performed as specified and shown on the Drawings. CONTRACTOR shall ascertain where all excavation will be required and shall be solely responsible for all excavating to complete the Contract.

3.02 PAYMENT

A. No extra payment will be allowed for type or classification of material in excavation.

3.03 MATCHING EXISTING GRADES

A. Where existing roadbed surfaces are not at the elevation required prior to subgrade compaction, the CONTRACTOR shall perform any such excavation, filling, earthmoving and grading as may

be necessary to attain the proper compacted subgrade elevation before proceeding with base course construction.

3.04 UNSUITABLE MATERIAL

A. All muck, large rocks and boulders encountered during the work under this Contract shall be removed and legally disposed of in a manner approved by the CITY'S Representative.

3.05 EXCAVATION

A. All excavation shall be unclassified regardless of material encountered.

B. The CONTRACTOR shall make probings or sounding for subsurface rock to ascertain its location and depth.

C. It shall be the CONTRACTOR's responsibility to be familiar with soil conditions on the site. Borings, in addition to those provided by others, if any, shall be acquired by the CONTRACTOR, at the CONTRACTOR's expense.

D. Any wet excavated materials shall be drained before hauling or moving.

3.06 EMBANKMENT (FILL)

A. Embankment shall be constructed from suitable materials resulting from roadway or site excavation or approved materials furnished from off-site borrow areas.

B. Embankments shall be placed in successive layers of not more than eight inches in thickness, measured loose, for the full width of the embankment.

C. Each layer of the material used in the formation of roadbed embankments shall be compacted at optimum moisture content to a density as specified in Section 02200, Paragraph 3.14.I.

D. The existing material on the site may vary as to stability. The CONTRACTOR shall be familiar with the soil characteristics by site inspection borings, probings, etc., prior to bidding, as to the subsurface character of the material.

E. All unstable soil shall be removed and shall be replaced by material approved by the ENGINEER.

3.07 GRADING

A. The material excavated shall be transported and spread over the entire work site and shall be graded so that the finished grade shall be within $\pm$0.1 feet of the grades indicated by the grade stakes and control point elevations shown on the plans and by the cross-sections. Due to the minimal slope of the roadways, swale grades shall be within $\pm$0.05 feet of the grades indicated on the plans.

B. The disposal of large rocks in excess of 8", within roadways and parking areas is prohibited. Where allowable, the disposal of large rocks by burial in areas designated by the ENGINEER shall have a minimum 30 inches of cover below finished grade elevation.

3.08 FINISH GRADING

A. Following completion of the paving work, all swales, etc., adjacent to the roadway shall be shaped and graded to the elevations and cross-sections shown on the drawings. The finished surface shall be maintained until seeding and mulching work is completed.

3.09 SURVEYS

A. All initial surveys, including detail construction stakes, will be furnished by the CONTRACTOR.

B. The CONTRACTOR will carefully maintain bench marks, monuments, stakes and other reference points, and if disturbed or destroyed, be replaced as directed at the CONTRACTOR's expense.

3.10 MEASUREMENT AND PAYMENT

A. Measurement and payment for this item will be made per square yard and will include clearing of the swales per Section 02110.

END OF SECTION 02210

SECTION 02221
EXCAVATION AND BACKFILLING FOR UTILITIES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. All applicable provisions of the Bidding and Contract Requirements, and Division 1 - General Requirements shall govern the work under this section.

1.02 WORK INCLUDED

A. The work shall consist of furnishing all materials, labor and equipment for excavation, trenching and backfilling for utilities. "Utilities" shall include storm water drains, culverts, water mains, gravity sewers, sewage force mains and appurtenant structures.

1.03 RELATED WORK

A. 02050 - Demolition

B. 02200 - Earthwork

C. 02210 - Site Grading

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 EXCAVATION

A. General: This work shall consist of the excavation of whatever substances shall be encountered to the depths as shown on the plans. Excavated materials not required for fill or backfill shall be removed from the work site as directed by the ENGINEER and shall be considered to be a part of the bid price of the utility pipe for which excavation and backfill is required.

B. Excavation for structures and other accessories shall have a minimum clearance of twelve inches and a maximum clearance of twenty-four inches on all sides.

C. Excavation shall not be carried below the required depths as indicated by the plans. Excess excavation below the required level shall be backfilled at the CONTRACTOR's expense with sharp sand, gravel or other suitable material thoroughly compacted and approved by the ENGINEER.

D. Any unstable soil shall be removed and shall be replaced by material acceptable to the ENGINEER. The removal and replacement of such unstable soil shall be considered to be part of the bid price of the pipe for which excavation and backfill is required.

E. Water shall not be permitted to accumulate in the excavated area. It shall be removed by pumping or other means as approved by the ENGINEER. The removal of water shall be considered to be a part of the bid price of the pipe for which excavation and backfill is required.

Well points, pumps or other approved means shall be used to keep the ground water sufficiently low in the opinion of the ENGINEER to permit the placing of concrete, masonry or pipe in first

class condition, and sufficiently long thereafter to protect the concrete, masonry or joints against washing or damage.
The CONTRACTOR shall also use such other means as may be necessary to keep the excavation in satisfactory condition for the construction of the work, and the use of well points, or other approved method, will not relieve the CONTRACTOR of CONTRACTOR'S responsibility to make structures water tight.

F. Banks and trenches shall be vertical unless shown otherwise on plans. The width of the trench shall be no less than 8" and no more than twelve inches, or as approved by the ENGINEER, on each side of the pipe bell for pipe up to 16" diameter. Bell holes shall be accurately excavated by hand.

G. If the bottom of the trench is rock, the excavation shall be carried eight inches below the invert of the pipe and backfilled with thoroughly compacted sharp sand, gravel or other suitable material approved by the ENGINEER.

H. Rock excavation shall include any rock encountered, which cannot be removed with a 3/4-yard backhoe under normal operating conditions. Rock excavation shall be incidental to construction of all piping systems and no separate payment will be made.

I. Whenever it is necessary, in the interest of safety, to brace or shore the sides of the trench, such bracing or shoring shall be considered to be part of the bid price of the pipe for which excavation and backfill is required.

The CONTRACTOR shall furnish, put in place and maintain such sheeting, bracing, as may be required to support the side of the excavation, and to prevent any movement which can in any way damage the work or endanger adjacent structures. If the ENGINEER is of the opinion that supports are insufficient, the ENGINEER may order additional supports. The compliance with such order shall not release the CONTRACTOR from CONTRACTOR'S responsibility for the sufficiency of the sheeting. The CONTRACTOR shall leave all sheeting in place. The ENGINEER may require sheeting to be cut off at any specified elevation, but in no case will any sheeting be left closer than two (2) feet below the natural surface, nor cut off below the elevation of the top of the pipe.

3.02 BACKFILLING

A. After pipes, structures and other appurtenances have been installed, the trench or opening shall be backfilled with material free from large stones or clods of a quality acceptable to the ENGINEER.

B. Backfill around the pipe and to a point twelve inches above the top of the pipe shall be placed in six inch layers compacted with 20 pound hand tampers or mechanical tampers suitable for this purpose. Backfilling shall follow lying closely, and shall not be more than one hundred (100) feet behind completed lying. Backfill over pipe shall be carefully placed by experienced labor and thoroughly consolidated without shock to the pipe, and carried up uniformly on both sides of the pipe. No backfilling with bulldozers will be permitted adjacent to pipe line.

C. Within roadway right-of-ways, or within areas where pavements are to be constructed over the pipe, the remainder of the trench shall be placed in six-inch layers (compacted thickness) and shall be compacted to that as noted in Section 02200. CONTRACTOR will be responsible for correcting settlement in all backfilled areas whether under the pavement or otherwise.

D. In areas where no pavement is to be constructed, the backfill above the twelve inch line above the pipe shall be compacted to a firmness approximately equal to that of the soil adjacent to the pipe trench or to that as noted in Section 02200. Backfill below the 12-inch line shall be compacted in 6-inch layers (compacted thickness) and shall be compacted to 98% of maximum density as determined by AASHTO T-180.

3.03 EXPLOSIVES

A. The use of explosives will not be permitted.

3.04 PAYMENT AND MEASUREMENT

A. No separate payment is provided for work covered by this Section. All costs in connection with Excavation and Backfilling, including testing, shall be included in the bid price of any item for which excavation and backfilling is required.

END OF SECTION 02221

SECTION 02284
TOPSOIL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. All applicable provisions of the Bidding and Contract Requirements, and Division 1 - General Requirements shall govern the work under this Section.

1.02 WORK INCLUDED

A. Provide all labor, materials, necessary equipment and services to complete the work, as indicated on the drawings, as specified herein or both.

B. Including but not necessarily limited to the following:

1. Topsoil Stripping.

2. Topsoil Mixing and Spreading.

C. There shall be no classification of excavation for measurement of payment regardless of materials encountered.

1.03 RELATED WORK

A. Section 02110 - Clearing.

B. Section 02200 - Earthwork.

C. Section 02210 - Site Grading.

PART 2 - PRODUCTS

2.01 TOPSOIL

A. Topsoil shall be obtained from any previously established stockpile on site, to the extent that suitable material is available.

B. Additional topsoil, if required, shall be obtained by mixing existing on-site sandy fill with imported muck or compost (or approved equal).

C. Topsoil, whether obtained from stockpile, or mixed as described in "B" above, shall be sandy loam, and shall have the following characteristics:

1. 95% of topsoil shall pass a 2-mm. sieve.

2. Topsoil shall be free of stones 1" in longest dimensions, earth clods, plant parts, and debris.

3. Organic matter content shall be 4% to 12% of total dry weight.

4. pH and nutrient content shall be adjusted as necessary to conform to recommendations made by testing laboratory. (See 2.01 (D))

D. Samples shall be submitted to CITY for testing. Test shall indicate compliance with the specifications and recommendations as to the type and quantity of soil additives required to bring the nutrient content and pH to satisfactory levels for planting specified plant material. Tests shall be required at a rate of one per 500 cubic yards of material placed, for the first 5,000 cubic yards of material, and may be reduced at the ENGINEER discretion thereafter. Sampling shall be done in the presence of the ENGINEER. The CONTRACTOR shall be responsible for the cost of testing.

PART 3 - EXECUTION

3.01 JOB CONDITIONS

A. Protection: Use all means necessary to protect existing objects and vegetation. In the event of damage, immediately make all repairs, and replacements necessary to the acceptance of the ENGINEER.

3.02 FILLING AND GRADING:

A. Topsoil shall be spread in a uniform 2" layer after compaction, over all sodded and pervious areas, and finished to grades shown on the plans, making allowance, where necessary, for sod. Grades shown include 0.2' for thickness of sod in all sodded areas.

3.03 MEASUREMENT AND PAYMENT

A. Topsoil shall be measured and paid for by the square yard of actual top soil in place as more specifically discussed and described in SECTION 01025 for MEASUREMENT AND PAYMENT.

END OF SECTION 02284

SECTION 02400
STORM DRAINAGE FACILITIES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. All applicable provisions of the “INFORMATION TO BIDDERS”, “STANDARD FORM OF AGREEMENT”, and Division 1 - General Requirements shall govern the work under this section.

1.02 WORK INCLUDED

A. Provide all labor, materials, necessary equipment and services to complete the Storm Drainage Facilities work, as indicated on the drawings, as specified herein or both, except as for items specifically indicated as "NIC ITEMS".

1.03 RELATED WORK

A. Section 02110 - Clearing

B. Section 02200 - Earthwork

C. Section 02601 - Subterranean Structures

1.04 CLEARING

A. Clearing or installation of pipe and all drainage structures shall be confined within the working limits of the trenches. Trees, utility poles, survey monuments, underground and overhead utilities shall be suitably protected and preserved.

1.05 EXISTING UTILITIES

A. Furnish temporary support, adequate protection and maintenance of all underground and surface utility structures, drains, sewers, cables, etc., and other obstructions encountered in the progress of the work.

B. When the grade of alignment of the pipe is obstructed by existing utility structures, such as conduits, ducts, pipes, branch connections to water or sewer mains, and other obstructions, the obstructions shall be permanently supported, relocated, removed or reconstructed by the CONTRACTOR in cooperation with the owners of such structures. The ENGINEER shall make no deviation from the required line or grade except as directed in writing.

C. It shall be the responsibility of the CONTRACTOR to notify the owners of existing utilities in the area of construction a minimum of 48 hours prior to any excavation adjacent of such utilities, so that field locations of said utilities may be established.

D. It shall be the responsibility of the contractor to maintain positive drainage on the surface and to ensure that the existing under ground drainage system continues to function as intended during the construction of the new drainage system. The contractor shall submit a plan to maintain the existing drainage patterns and under ground system for the approval of the ENGINEER prior to beginning any work on the existing or new drainage systems.

PART 2 - PRODUCTS

2.01 PIPE

A. REINFORCED CONCRETE CULVERT PIPE:

1. A reputable manufacturer, engaged in the full time business of manufacturing concrete pipe, shall produce the concrete pipe. Pipe manufacturer shall produce the pipe from an approved, permanent plant acceptable to the ENGINEER.

2. All concrete pipe shall be reinforced and shall conform to the requirements of A.S.T.M. C-76. Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe." Pipe shall be Class III. Pipe shall have an interior surface, which is smooth, uniform and free from rough spots, irregularities and projections. Nominal pipe lengths shall be 8' unless authorized otherwise by the CITY'S Representative. Lifting holes will not be permitted.

3. Concrete pipe shall be either bell or spigot, unless approved by ENGINEER.

4. Internal rubber gasket joints will be used at CONTRACTOR'S option. The internal rubber gasket joint shall be supplied by the pipe manufacturer and shall be completely compatible in every respect with the pipe furnished. The pipe manufacturer shall install the rubber gasket on the inside of the bell or groove on the pipe at the plant. All materials and accessories for the rubber gasket joint and the methods of jointing shall be in strict conformance with the pipe manufacturer's direction and recommendation. Joint must be completely watertight.

5. Cement grout joints shall be completely water tight and acceptable to the CITY'S Representative. A full bed of mortar shall be placed in the bell and/or groove and on the tongue and/or spigot. The annular space in the pipe joint shall be wiped with cement mortar to ensure the joint is filled and to present a smooth surface. The complete exterior periphery of the joint shall have a standard cement grout diaper joint. Diaper shall be installed within the aid of an approved cloth ring. Cement mortar joints shall be made in the dry. Mortar and grout shall be one part Portland Cement to two parts by weight of sand. Mortar shall have enough water to make a stiff mixture that can be molded and worked. Cement mortar joints shall not be covered until inspected and approved by the CITY'S Representative.

B. ADS HP STORM

1. ADS HP Storm pipe shall have a smooth interior and annular exterior corrugations. • 12- through 60-inch (300 to 1500 mm) pipe shall meet ASTM F2881 or AASHTO M330 • Manning's "n" value for use in design shall be 0.012.

2. Pipe shall be joined using a bell & spigot joint meeting the requirements of ASTM F2881 or AASHTO M330. The joint shall be watertight according to the requirements of ASTM D3212. Gaskets shall meet the requirements of ASTM F477. Gasket shall be installed by the pipe manufacturer and covered with a removable, protective wrap to ensure the gasket is free from debris. A joint lubricant available from the manufacturer shall be used on the

gasket and bell during assembly. 12- through 60-inch (300 to 1500 mm) diameters shall have an exterior bell wrap installed by the manufacturer.

3. Fittings shall conform to ASTM F2881 or AASHTO M330. Bell and spigot connections shall utilize a welded or integral bell and valley or inline gaskets meeting the watertight joint performance requirements of ASTM D3212.

4. To assure watertightness, field performance verification may be accomplished by testing in accordance with ASTM F1417 or ASTM F2487. Appropriate safety precautions must be used when field-testing any pipe material. Contact the manufacturer for recommended leakage rates.

5. Polypropylene compound for pipe and fitting production shall be impact modified copolymer meeting the material requirements of ASTM F2881, Section 5 and AASHTO M330, Section 6.1.

2.02 SUBMITTALS.

A. Submit copies of product and material information and data.

PART 3 - EXECUTION

3.01 EXCAVATIONS

A. Trenches shall be kept as nearly vertical as possible and, if required, shall be properly sheeted and braced. Where, in the opinion of the ENGINEER, damage could result from withdrawing sheeting, the sheeting shall be left in place. Not more than 100 feet of trench shall be opened at any one time or in advance of pipe laying unless permitted by the ENGINEER.

1. Except in rock, water-bearing earth or where a granular or concrete base is to be used, mechanical excavation of trenches shall be stopped above the final grade elevation so that the pipe may be laid on a firm, undisturbed native earth bed. If over digging occurs, all loosened earth shall be removed and the trench bottom brought back to grade with granular material.

2. Excavations and trenches in rock shall be carried to a depth of not less than 12" below the pipe bottom. This space shall be filled with granular material or washed rock.

3. Width of trenches shall be such as to provide adequate space for placing and jointing pipe properly, but in every case the trench shall be kept to a minimum width.

4. Any unstable soil encountered shall be removed and replaced with gravel, crushed rock or rock and sand suitably compacted.

3.02 PREPARATION TO TRENCH BOTTOM

A. Water shall not be allowed in the trenches while the trench bottom is being prepared or while pipe is being installed, unless directed by the ENGINEER.

B. A continuous trough shall be shaped to receive the bottom quadrant of the pipe barrel. Bell holes shall be excavated so that after placement, only the barrel of the pipe receives bearing pressure from the trench bottom.

C. Preparation of the trench bottom and placement of the pipe shall be placed in the trench bottom a minimum of 8" below the bottom of the pipe, and a trough as described above shall be formed to uniformly support the bottom quadrant of the pipe barrel.

3.03 INSTALLATION OF DRAINAGE PIPE

A. Pipe shall be protected during handling against impact shocks and free falls. Pipe shall be kept clean at all times and no pipe shall be used that does not conform to the Specifications.

B. The laying of the pipe shall be commenced at the lowest point with spigot ends pointing in the direction of flow. All pipes shall be laid with ends abutting and true to line and grade. They shall be laid in accordance with manufacturer's requirements as approved by the ENGINEER.

C. Pipe shall be laid accurately to the line and grade as designated on the plans. Preparatory to making pipe joints, all surfaces of the portions of the pipe to be jointed or of the factory made jointing material shall be clean and dry. Lubricant, primers, adhesive, or approved equals, shall be used as recommended by the pipe or joint manufacturer's specifications. The jointing materials or factory-fabricated joints shall then be placed, fitted, joined and adjusted in such a manner as to obtain a water tight line. As soon as possible after the joint is made, sufficient backfill material shall be placed along each side of the pipe to prevent movement of pipe off line and grade.

D. The exposed ends of all pipes shall be suitably plugged to prevent earth, water, or other substances from entering the pipe when construction is not in progress.

E. ADS HP STORM - Installation shall be in accordance with ASTM D2321 and ADS recommended installation guidelines, with the exception that minimum cover in traffic areas for 12- through 48-inch (300 to 1200 mm) diameters shall be one foot (0.3 m) and for 60-inch (1500 mm) diameter the minimum cover shall be 2 ft. (0.6 m) in single run applications. Backfill for minimum cover situations shall consist of Class 1 (compacted), Class 2 (minimum 90% SPD), or Class 3 (minimum 95%) material. Maximum fill heights depend on embedment material and compaction level. Contact your local ADS representative or visit our website at www.ads-pipe.com for a copy of the latest installation guidelines.

3.04 BACKFILLING TRENCHES

A. No trenches or excavations shall be backfilled until the trench and installation has been inspected and written approval given by the CITY'S Representative. Under no circumstances shall water be permitted to rise in unbackfilled trenches after pipe has been placed. Trenches shall be backfilled with approved material, free of large clods, stones or rocks and carefully deposited in layers not to exceed 6 inches until enough fill has been placed to provide a cover of not less than 1' above the pipe. Each layer shall be placed, then carefully and uniformly tamped, so as to eliminate the possibility of pipe displacement. The remainder of backfill materials shall then be placed, moistened and compacted in 6 inch layers to density as specified in Section 02200, Paragraph 3.14.I.

B. Whenever the trenches have been improperly filled or if settlement occurs, they shall be refilled, compacted, smoothed off and made to conform to grade. Unless otherwise directed or shown on the plans, backfill in trenches in or through roadways shall be made as specified above, except that the entire fill above 1' over the pipe shall be deposited in layers not to exceed 8" in thickness, moistened, and compacted to density equal to or greater than that of adjacent material so that pavement can be placed immediately.

3.05 CONCRETE ENCASEMENT OF DRAINAGE PIPE

A. Trenches in which encasement for pipe are to be placed, may be excavated completely with mechanical equipment. Prior to formation of the encasement, temporary supports consisting of timber wedges or masonry shall be used to support the pipe in place. Temporary supports shall have minimum dimensions and shall support the pipe at no more than two places, one at the bottom of the barrel of the pipe adjacent to the shoulder of the socket and the other near the spigot end.

3.06 DRAINAGE STRUCTURES

A. All structures shall be built to the line and grade shown on drawings. All reinforced concrete work shall be in strict conformance with the concrete specifications contained herein. After erection of the forms and placing of the steel, the CONTRACTOR must have inspection and approval from the ENGINEER before placing any concrete. After removal of the forms, the CONTRACTOR shall backfill around each structure with approved granular fill. The fill shall be placed in layers not exceeding 8" in depth measured loose and compacted to density as specified in Section 02200, Paragraph 3.14.I. No defects of any kind in the pipe section will be accepted. All pipe stubs shall be made of the same type of pipe. Pipe stubs shall be sealed with a concrete plug, water tight. The ends of the pipes, which enter masonry, shall be neatly cut to fit the inner face of the masonry. Cutting shall be done before the pipes are built in.

3.07 INSPECTION

A. All storm sewers shall be lamped and physically inspected by the ENGINEER prior to acceptance of the work. Repairs or misalignment shown necessary by the tests shall be corrected at the CONTRACTOR'S expense. All sewers shall be thoroughly cleaned before being placed into use and shall be kept clean until final acceptance by the ENGINEER.

3.08 RESTORATION OF SURFACES AND/OR STRUCTURES

A. The CONTRACTOR shall restore and/or replace paving, curbing, sidewalks, fences and survey points, or any other disturbed surfaces or structures to a condition equal to that before the work was begun and to the satisfaction of the ENGINEER. Relative to restoration of surfaces and/or structures, the CONTRACTOR shall comply with all requirements of governing agencies including CITY, county, and state.

3.09 ABANDONMENT OF PIPELINE IN PLACE

A. All drainage pipelines or structures shown on the drawings to be abandoned in place shall be properly cut and plugged after new mains and provisions for proper drainage are installed. The pipeline shall be filled with concrete one foot from end of pipe as specified in Division 3 -

Concrete, and section 03010. Excavation, backfill, and restoration shall be executed in accordance with requirements for removing existing and installing new pipelines.

3.10 MEASUREMENT AND PAYMENT

A. Measurement and payment will be based on the actual quantities installed as more specifically discussed and described in SECTION 01025 for MEASUREMENT AND PAYMENT.

END OF SECTION 02400

SECTION 02401
EXFILTRATION TRENCH DRAINS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. All applicable provisions of the Bidding and Contract Requirements, and Division 1 - General Requirements shall govern the work under this section.

1.02 WORK INCLUDED

A. Provide all labor, materials, necessary equipment and services to complete the Exfiltration Trench System work, as indicated on the Drawings,, as specified herein or both, except as for items specifically indicated as "NIC ITEMS".

1.03 RELATED WORK

A. Section 02221 - Excavation and Backfilling for Utilities

B. Section 02400 - Storm Drainage Facilities

C. Section 02601 - Subterranean Structures

1.04 EXISTING UTILITIES

A. Locate and stake all existing underground utilities that may be in the area of the Drainage System.

1.05 SUBMITTALS

A. Submit Plan Drawings showing the locations of all piping and underground utilities that may be in conflict with the Drainage System.

B. Submit samples of the 3/4" washed rock for approval.

C. Submit samples and product data of filter fabric.

PART 2 - PRODUCTS

2.01 DRAINAGE PIPE AND BALLAST ROCK

A. Drainage pipe shall be in conformance with material as specified in Section 02400 and have the maximum number of perforations allowable per the manufacturers recommendations.

B. Ballast rock shall be from fresh water and washed free of deleterious matter.

2.02 FILTER FABRIC

A. Filter fabric shall be a non woven fabric consisting of polypropylene fibers treated to resist biological degradation.

B. Manufacturers (or approved equal):
1. Amoco Propox 4545

2. Trevira 1115
3. Mirafi 140 NC

PART 3 - EXECUTION

3.01 INSTALLATION

A. Lay out Exfiltration Trench System as shown on the Plans.

B. The bottom of the trench shall provide a minimum of 12" of ballast rock below the drain pipe.

C. Drain pipes shall terminate a minimum of two feet beyond the end of the trench.

D. Cover temporary pipe ends with No. 10 galvanized or aluminum screen with openings no larger than 1/2" x 1/2".

E. Bottom, sides and top of trench to be lined with trench lining material with a minimum of 2 feet of overlap at the top of the trench.

F. A minimum of 4 feet of solid drain pipe shall be installed between drainage structures and the beginning of the trench.

3.02 CLEANUP

A. Remove all excess rock, liner and pipe from the site.

3.03 MEASUREMENT AND PAYMENT

Measurement and payment will be based on the actual quantities installed as more specifically discussed and described in SECTION 01025 for MEASUREMENT AND PAYMENT.

END OF SECTION 02401

SECTION 02510
CONCRETE SIDEWALK

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. All applicable provisions of the Bidding and Contract Requirements, and Division 1 - General Requirements shall govern the work under this Section.

1.02 WORK INCLUDED

A. The work specified in this Section consists of the construction of concrete sidewalk in accordance with these Specifications and in conformity with the lines, grades, dimensions and notes shown on the plans.

1.03 RELATED WORK

A. Section 02110 - Clearing

B. Section 02200 - Earthwork

C. Section 02515 - Portland Cement Concrete Paving

D. Section 03010 - Concrete

E. Section 03300 - Cast-In-Place Concrete

F. Section 03370 - Concrete Curing

PART 2 - PRODUCTS

2.01 CONCRETE

A. Concrete shall be Class I Concrete, with a minimum compressive strength of 3,000 psi in accordance with Section 345, Florida Department of Transportation Standard Specifications for Road and Bridge Construction.

2.02 FORMS

A. Forms for this work shall be made of either wood or metal and shall have a depth equal to the plan dimensions for the depth of concrete being deposited against them. They shall be straight, free from warp or bends, and of sufficient strength when staked, to resist the lateral pressure of the concrete without displacement from lines and grade. Forms shall be cleaned each time they are used and shall be oiled prior to placing the concrete.

2.03 SUBGRADE AND GRADING

A. Excavation shall be made to the required depth, and the foundation material upon which the sidewalk is to be set shall be compacted to a firm, even surface, true to grade and cross-section, and shall be moist at the time that the concrete is placed.

2.04 JOINTS

A. Contraction joints may be of the open type or may be sawed. Staking a metal bulkhead in place and depositing the concrete on both sides shall form open type contraction joints. After the concrete has set sufficiently to preserve the width and shape of the joint, the bulkhead shall be removed. After the sidewalk has been finished over the joint, the slot shall be edged with a tool having a 1/2-inch radius.

If the CONTRACTOR elects to saw the contraction joints, a slot approximately 1/8 inch wide and not less than 1-1/2 inches deep shall be cut with a concrete saw after the concrete has set, and within the following periods of time:

Contraction joints shall be constructed at not more than 20-foot intervals, and shall be in place within 12 hours after finishing.

PART 3 - EXECUTION

3.01 PLACING

A. The concrete shall be placed in the forms to the required depth and shall be vibrated and spaded until mortar entirely covers its surface.

3.02 FINISHING

A. Screeding: The concrete shall be struck-off by means of a wood screed, used perpendicular to the forms, and floated in order to obtain the required grade and remove surplus water and laitance.

B. Surface requirements: The concrete shall be given a broom finish. The surface variations shall not be more than 1/4 inch under a ten-foot straightedge, nor more than 1/8 inch on a five-foot transverse section. The exposed edge of the slab shall be carefully finished with an edging tool having a radius of 1-1/2 inch.

3.03 CURING

A. The concrete shall be continuously cured for a period of at least 72 hours. Curing shall be commenced after finishing has been completed and as soon as the concrete has hardened sufficiently, to permit application of the curing material without marring the surface.

B. Wet burlap, white-pigmented curing compound, waterproof paper or polyethylene sheets may be used for the curing of grey concrete only.

3.04 COLORED CONCRETE (NOT USED)

A. Colored – Conditioned Concrete shall be placed, finished, and cured in strict accordance with applicable requirements of this Section and Sections 03010, 03370, and the requirements of the chosen manufacturer.

3.05 MEASUREMENT AND PAYMENT

A. Measurement and payment will be based on the actual quantities installed as more specifically discussed and described in Section 01025 for MEASUREMENT AND PAYMENT.

END OF SECTION 02510

SECTION 02513
ASPHALTIC CONCRETE PAVING - GENERAL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. All applicable provisions of the bidding and Contract Requirements, and Division 1 - General Requirements shall govern the work under this section.

1.02 WORK INCLUDED

A. This section of the specifications covers the control and general conduct of asphalt paving construction for roads, parking, walks and court areas.

B. All work within the right-of-way shall be constructed using materials and methods in accordance with the drawings, Broward County and Florida Department of Transportation Standard Specifications for Road and Bridge Construction.

C. Provide all labor, materials, necessary equipment and services to complete the Asphaltic Concrete Paving work, as indicated on the drawings, as specified herein or both, except as for items specifically indicated as "NIC ITEMS".

D. Including, but not necessarily limited to the following:

1. Preparation of subgrade.
2. Installation and compaction of base course.
3. Spreading of asphalt surface course.

1.03 RELATED WORK

A. Section 02200 - Earthwork

B. Section 02400 - Storm Drainage Facilities

C. Section 02515 - Portland Cement Concrete Paving

1.04 TRAFFIC CONTROL

A. The CONTRACTOR shall provide and maintain access to and from all properties along the line of CONTRACTOR'S work. The CONTRACTOR shall also provide temporary bypasses and maintain them in a safe and usable condition whenever the public cannot do detouring of traffic to parallel routes without hardship or excessive increases in travel.

1.05 SPECIAL SUBGRADE CONDITIONS

A. When special subgrade conditions are encountered for which these "Asphaltic Concrete Paving Specifications" are not applicable, portions of these specifications shall be deleted or revised to provide a properly finished paved surface. A requested revision or deletion of the specifications shall be accompanied with reports and laboratory tests on existing field conditions. Any change from these "Asphaltic Concrete Paving Specifications" shall be approved by the ENGINEER and shall be in effect only for a specified area or paving project.

SECTION 02513
ASPHALTIC CONCRETE PAVING - GENERAL

1.06 QUALITY ASSURANCE

A. D.O.T. Standard Specifications.

1. Work and materials shall conform to all applicable requirements of Florida Department of Transportation "Standard Specifications for Road and Bridge Construction - 1982" (referred to herein as D.O.T.).

B. American Society for Testing and Materials.

1. ASTM 3515-80 "Standard Specification for Hot-Mixed, Job Laid, Bituminous Paving mixtures."

1.07 SUBMITTALS

A. Provide copies of materials, notarized certificates of compliance signed by material producer and CONTRACTOR, certifying that each material item complies with, or exceeds, specified requirements.

1.08 JOB CONDITIONS

A. Apply prime and tack coats when ambient temperature is above 50 degrees, and when temperature has not been below 35 degrees for 12 hours immediately prior to application. Do not apply when base is wet or contains an excess of moisture.

B. Construct asphalt concrete surface course only when atmospheric temperature is above 40 degrees, and when base is dry. Base course may be placed when air temperature is above 30 degrees, and rising.

1.09 LOCATIONS, LAYOUT AND GRADES

A. Locate and layout paved areas and right-of-ways with reference to benchmarks, property lines or buildings according to the drawings and as accepted by the ENGINEER.

B. Determine locations of paved edges and right-of-way line from surveyor's permanent reference monuments and information on the drawings.

C. Where permanent reference monuments are not available, obtain proper line locations from authorities having jurisdiction.

D. Establish and maintain required lines and elevations.

PART 2 - PRODUCTS

2.01 FILL

A. All fill shall be clean rock and sand (maximum rock size = 1 inch).

B. Fill shall be compacted thoroughly as per Section 02200 - Earthwork.

2.02 LIMEROCK

A. Limerock shall be obtained from pits for which all overburden has been removed previous to blasting and shall show no tendency to air slake and must undergo the following chemical requirements.

		Percent
1.	Carbonates of Calcium	Min.70.0 (Miami Limerock) and Magnesium.
		95.0 (Ocala Limerock)
2.	Oxides of Iron and Aluminum	Max. 2.0
3.	Organic Matter	Max. 0.5

4. Any constituents of other than the above shall be silica or inert material.

5. The material shall be crushed to such size that not less than 97% shall pass a 3-1/2" sieve and it shall be graded uniformly down to dust. All fine material shall consist entirely of dust of fracture.

6. Limerock from on-site may be used if the material meets the requirements of this section of the specifications.

B. All limerock shall comply with requirements set forth under D.O.T. Section 911.

C. Equipment: The equipment for constructing the rock base shall be in first class working condition and shall include:

1. Three wheel roller weighing not less than ten tons.

2. Self-propelled blade grader weighing not less than three tons. The wheelbase shall be not less than fifteen feet and blade length not less than ten feet.

3. Scarifiers shall have teeth space not to exceed 4-1/2 inches.

   a. Provision for furnishing water at the construction site by tank or hose at a rate not less than 50 gallons per minute.

2.03 PRIME COAT

A. Prime coat shall be Grade RC-70, cut-back asphalt, D.O.T. Section 916-2 (or approved equal).

B. Prime coat shall have full compatibility with surface treatment asphalt.

C. The bituminous material shall conform to the requirements of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Section 300-2.

D. The sand for cover shall be clean dry sand.

2.04 TACK COAT

A. The bituminous material to be used for the tack coat shall conform to the requirements of the Florida Department of Transportation Standard Specifications for Road and Bridge Construction, Section 300-2.

2.05 ASPHALT

A. The asphaltic concrete surface course shall be in accordance with Broward County, Florida Department of Transportation Standard Specifications for Type S-1 and Type S-3 Asphaltic Concrete Surface Course (or approved equal).

B. Pavement within public road right-of-way, which has been disturbed by this construction, shall be replaced with the same type and thickness to match the existing pavement section.

C. General composition of mixtures:

1. The aggregate in the asphaltic concrete shall be crushed stone and manufactured sand screening of natural sand or combination of both when necessary to meet requirements of composition of mix. All aggregate shall have a Los Angeles abrasion loss of less than 40%.

2. The mineral aggregate shall be so graded, and the prescribed constituents, prepared as hereinafter set out, shall be combined in such proportions as to produce a mixture conforming to the following general composition limits by weight:

Constituent	Passing Sieve	S-1 Percent by Weight	S-3 Percent by Weight
Course Aggregate	3/4"	100	100
	1/2"	80-100	100
	3/8"	75-93	88-100
	No. 4	47-75	60-90
Total Course Aggregate	No. 10	31-53	40-70
Fine Aggregate	No. 40	19-35	20-45
	No. 80	7-21	10-30
Filler	No. 200	2-6	2-6

	Percent Constituent	by Weight
Total Fine Aggregate and Filler No. 10	100	100
Total Mineral Aggregate	100	100
Total Mix	100	100
Total Mineral Aggregate	91-95	
Asphalt Cement	5-9*	
(Bitumen) Total Mix	100	

*For highly absorptive aggregates the upper limit may be raised.

2.06 SEAL COATING

A. Homogeneous mixture of emulsified coal tar pitch, asbestos, sand and other inert fillers. It shall be easily remixed if settlement occurs in storage (except in the case of freezing). It shall be capable of application and complete coverage by rubber squeegee, brush, or approved mechanical method, to the surface of bituminous pavements at the spreading rate of point two (.2) to point three (.3) gallons per square yard in two (2) coats.

B. Approved product: "TARFEX" manufactured by Bitucote Products Co. (or approved equal).

PART 3 - EXECUTION

3.01 BARRICADES

A. Provide substantial temporary barricades around all areas of operation and maintain until work under this section is completed and approved.

B. Install temporary traffic markers, signals, and signs as per Broward County Highway Construction and Engineering Services Division Standard Specification to:

1. Eliminate potentially hazardous conditions.

2. Maintain adequate traffic patterns free of conflict with work under this Contract.

3.02 PREPARATION OF SUBGRADE

A. This work consists of bringing the bottom of excavations and top of embankments of the roadway between the outer limits of the shoulders or base course to a surface conforming to the grades, lines, and cross sections shown on the plans. The subgrade shall be of uniform density ready to receive the rock base of the paving course.

B. All soft and yielding material and other portions of the subgrade which will not compact readily shall be removed and replaced with suitable material and the entire subgrade brought to line and grade to provide a foundation of uniform compaction and supporting power.

C. Stumps, roots, and other deleterious organic matter encountered in the preparation of the subgrade shall be removed.

D. Where fills are required on areas covered or partly covered by existing paving, the entire area of such existing paving shall be scarified to a depth of at least six inches, and the scarified material spread evenly over the area to be filled to a width not less than that of the proposed paving.

E. Material for fills shall consist of sand or other suitable material approved by the ENGINEER free from stumps, roots, brushes, and other deleterious organic matter.

F. Where fill is more than one foot (1') in depth, the backfill material above the ground water table shall be compacted on one (8") depth lifts. Each individual layer of fill under the rock base shall have a density as specified in Section 02200, Paragraph 3.14.I. unless shown otherwise on the plans. Each individual layer of fill under the shoulder area shall have a density as specified in Section 02200, Paragraph 3.14.I., unless shown otherwise on the plans.

G. The bottom of all excavated areas and the top of all fills where rock base is to be constructed shall be thoroughly compacted by rolling. Water shall be used to insure thorough compaction. The stability of the top 12 inch thickness of the subgrade immediately under the base, for the full base width plus one foot (1') on each side, shall be at least LBR 40 as determined by AASHTO T-180.

H. Bring subgrade, which has been properly filled and shaped to a firm unyielding surface, by rolling an entire area with an approved vibratory power roller weighing a minimum of 10 tons.

1. Thoroughly compact area inaccessible to the roller with approved hand tamper.

2. Apply water sufficiently to compact the subgrade where the subgrade is of a dry, sandy nature and cannot be rolled.

I. The subgrade shall be maintained free from ruts, depressions or other irregularities until rock base material is spread.

J. For all roads and streets other than State Highway, the stabilized subgrade shall have a minimum Limerock Bearing Ratio (LBR) of 40, unless otherwise noted on the plans.

K. Where the bearing value of the existing subgrade is adequate without addition of stabilizing material, the subgrade shall be scarified and disked, harrowed, bladed or tilled for removal of boulders, roots, etc. to assure uniformity and thorough mixing of material to the full width and depth of required stabilization. The compacted subgrade shall conform to the lines, grades and cross-section shown on the plans.

L. Test subgrade for crown and elevation after preparation and immediately before base of paving course is laid.

1. Remove or add material and compact to bring to a correct elevation and uniform bearing if the subgrade is found not to be at the specified elevation at all points.

2. Adjust the manhole rims, catch basin frames and valve boxes where necessary to match proposed finish grade.

3.03 CONSTRUCTION OF BASE COURSE

A. This work consists of construction of lime rock base course for the asphaltic concrete wearing surface. The base course shall be constructed on the prepared subgrade in a 8" thick limerock bases constructed in two four inch lifts as shown on the drawings. Twelve (12) inch thick limerock bases shall be constructed in two six-inch lifts. The limerock base shall be a minimum LBR of 100.

B. Spreading Rock: The rock shall be transported to the points where it is to be used over rock previously placed, and dumped on the end of the preceding spread. It shall then be spread uniformly with hand tools, or mechanical equipment. In no case shall rock be dumped directly on the subgrade. No hauling shall be done over the subgrade.

C. Compacting Rock

1. Following spreading, the rock shall be rolled with a three wheel roller weighing not less than ten tons, water being added as required, until the entire depth of base is compacted into a dense unyielding mass.

2. No greater area of rock base shall be placed during any one day than that which can be rolled and compacted on the same day.

D. Finishing Base

1. After watering and rolling, the entire surface shall be thoroughly scarified to a depth not less than four inches (4") and shaped to exact crown and cross section, re-watered and again thoroughly rolled. Rolling shall continue until the entire depth of base is bonded and compacted into a dense, unyielding mass, true to grade and cross section.

a. Any irregularities, which may develop in the surface during such finishing, shall be corrected by the removal or addition of rock as the case may be.

b. If at any time the subgrade material becomes churned up and mixed with the base rock, the CONTRACTOR shall dig out and remove the mixture, reshape and compact the subgrade and replace the materials removed with clean rock which shall be watered and rolled until satisfactorily compacted.

c. Where cracks or checks appear in the base either before or after priming, which in the opinion of the ENGINEER would impair the structural efficiency of the base course, the CONTRACTOR shall remove such cracks or checks by re-scarifying, reshaping, watering, rolling and adding rock where necessary.

d. During final compacting operations, if grading of any areas is necessary to obtain the true grade and cross section, the compacting operations for such areas shall be completed prior to making the density tests on the finished base.

E. Inferior Rock: If in the opinion of the ENGINEER at any time during the progress of the work, rock of inferior quality is being delivered to the construction site, a laboratory analysis of the rock shall be made. Should the results of such tests indicate that the rock does not conform to specifications, the CONTRACTOR shall, at CONTRACTOR's own expense, remove such inferior material from the area indicated and deliver and spread satisfactory rock on said area.

F. Testing Surface: The finished surface of the rock base shall be true to the required cross section. Any irregularities in the grade greater than 1/4", as determined by placing a ten foot straight edge parallel with the centerline, shall be corrected by scarifying to a depth of three inches (3"), removing or adding rock as may be required and again watering, rolling, and compacting the scarified area. In testing the surface for irregularities, the measurements under the straight edge shall not be taken in small holes caused by individual pieces of rock having been pulled out by the road grader.

G. Thickness Determination: Thickness of the base shall be measured by intervals as required by the ENGINEER. Measurements shall be taken at various points on the cross section. The measurements shall be taken in holes through the base of not less than three inches (3") in diameter. Where the base is more than 1/2" less than the required compacted thickness, the CONTRACTOR shall correct such areas by scarifying and adding rock. The affected areas shall then be watered, rolled and brought to a satisfactory state of completion, and of required thickness and cross section.

H. Density: Density determinations shall be made by the CONTRACTOR or at intervals required by the ENGINEER. An average required density shall be as specified in Section 02200, Paragraph 3.14.I. No section of base shall be accepted when more than 10% of tests fall below 98% of maximum density and in no case shall a density of less than 96% of maximum be accepted.

I. Testing: The CONTRACTOR shall coordinate with ENGINEER for all testing. One test shall be made in accordance with AASHTO, T-180 for each class of material in the subgrade and base.

1. In place density tests in accordance with AASHTO T-147 shall be made in the locations shown on the plans. Two copies of the test reports will be sent directly to the ENGINEER for evaluation.

2. Any material, which fails to meet these specifications, shall be removed, replaced, and retested, all at the CONTRACTOR's expense.

3. Tests shall be taken at least every 100 feet and taken at locations and lifts as directed by the ENGINEER.

3.04 PRIME COAT FOR BASE COURSE

A. Cleaning the prepared base:

1. Before any bituminous material is applied, all loose material: dust, dirt, caked clay and foreign matter which might prevent proper bond with the existing surface shall be moved to the shoulders, to the full width of the treatment, by means of revolving brooms or approved mechanical sweepers and by mechanical blowers, of approved types, supplemented by hand sweeping. Dust and other loose materials not removed by mechanical means shall be removed with hand brooms. Particular care shall be taken to

clean the outer edges of the strip to be treated in order to insure that the prime coat will adhere. Sweeping and blowing shall be continued until all the loose dust and dirt is removed from the surfaces.

2. Application of bituminous material shall be made during the same day surface has been swept and as soon as practical thereafter.

B. Application for prime coat:

1. The bituminous material shall be applied to the clean dry surface of the rock base at such temperature as will insure uniform distribution. The amount applied will be at the rate of approximately 0.10 to 0.20 gallons per square yard of base area. The application shall be made by means of self-propelled pressure distributor operating under a pressure not less than 20 pounds per square inch. Application of bituminous material shall be made on only one-half of the width of base at one time.

2. The primed base shall then be covered with a uniform layer of clean sand, and kept thoroughly and uniformly covered by additional sand or sweeping until it shows no signs of picking up under traffic. For a period of one week after priming, the CONTRACTOR shall again broom any area where insufficient cover sand or excess of bituminous material causes "bleeding" and, if necessary, spread additional sand on such area.

C. Prime coat finish: After prime has cured or sat and been sanded, the shoulder shall be shaped to conform to all grade lines and cross sections and the entire area shall be rolled and compacted with a rubber tired roller or a power roller before asphalt surface is laid on the finished base.

3.05 BITUMINOUS TACK COAT

A. Before applying any bituminous material, all loose material: dust, dirt and foreign material, which might prevent proper bond with the existing surface, shall be removed for the full width of the application.

B. Application for tack coat:

1. The surface to receive the tack coat shall be clean and dry. The tack coat shall be clean and dry. The tack coat shall be applied with a pressure distributor except that on small jobs, if approved by the ENGINEER, the application may be made by other approved mechanical methods or by hand methods. The pressure distributor shall operate at a pressure not less than 20 pounds per square inch and at a consistency such that it can be properly pumped and sprayed uniformly over the surface.

2. The bituminous material shall be applied in a thin uniform layer. The rate of application shall be between 0.02 and 0.10 gallon per square yard. The tack coat shall be applied sufficiently in advance of the laying of the wearing surface to permit drying, but shall not be applied so far in advance that it might lose adhesiveness as a result of being covered with dust or other foreign material. The tack coat surface shall be kept free from traffic until the wearing surface is laid.

3.06 ASPHALTIC CONCRETE WEARING SURFACE COURSE

SECTION 02513
ASPHALTIC CONCRETE PAVING - GENERAL

A. Cleaning and preparing base:

1. Prior to the laying of the asphaltic concrete, the base of pavement to be covered shall be cleaned of all loose deleterious material by the use of power brooms or blowers. A tack coat shall be applied on all pavements. The tack coat shall not be applied so far in advance of laying operations as to allow shifting and sand or weather conditions to nullify its effectiveness.

2. After the surface has been thoroughly cleaned, all holes shall be filled with asphaltic concrete, if necessary, and thoroughly compacted to conform to the existing surface and to form a smooth surface.

B. Placing asphaltic concrete: The asphaltic concrete surface course shall be applied after the tack coat may be permitted a reasonable time for drying but not to an extent that the tack coat is allowed to lose its adhesiveness.

1. Machine spreading: Upon arrival the mixture shall be dumped into the approved mechanical spreader and immediately spread and struck off to the full width required and to such appropriate loose depth for each successive course that when the work is completed the required weight of the mixture per square yard or the specified thickness will be secured. An excessive amount of mixture shall be carried ahead of the screen at all times. Hand raking shall be done behind the machine as required.

2. Hand spreading: In limited areas, where, on account of irregularities or unavoidable obstacles, the use of mechanical spreading and finishing equipment is impractical, the mixture may be spread by hand, when so authorized by the ENGINEER.

3. The mixture shall be laid only when the surface to be covered is dry and only when weather conditions are suitable.

4. All structures which will be in actual contact with asphaltic mixture, including the face or surface of curbs or gutters and their vertical faces of existing pavements, shall be painted with a uniform coating of asphalt material to provide a closely bonded, watertight joint.

5. Where necessary, due to the traffic requirements, the mixture shall be laid in strips in such manner as to provide for the passage of traffic.

6. Any mixtures caught in transit by a sudden rain may be laid at the CONTRACTOR's risk. In no case shall the mixture be laid while rain is falling or when there is water on the surface to be covered.

7. The depth of the layer being spread shall be gauged as directed, and where the thickness fails to average the specified thickness, immediate steps shall be taken to correct the depth.

8. Before any rolling is started, the course surface shall be checked, any inequalities adjusted, and all drippings, fat sand accumulations from the screed and fat spots from any source shall be removed and replaced with satisfactory material.

9. Straight-edging and back patching shall be done after initial completion has been obtained and while the material is still hot. Any irregularity greater than 1/4" either longitudinally or traversely shall be corrected at this time.

10. No skin patching shall be done. When a depression is to be corrected while the mixture is hot, the surface shall be well scarified before the addition of fresh mixture. If irregularities occur and are not corrected while the mixture is still hot, the irregularities shall be cut out the full depth of the layer and replaced with fresh mixture.

C. Compacting mixture: After the spreading, the mixture shall be rolled when it has set sufficiently or come to the proper condition to be rolled, and when the rolling does not cause undue displacement or shoving.

1. The motion of the roller shall at all times be slow enough to avoid displacement and shall at once be corrected by the use of rakes and fresh mixture where required. The rolling shall include all transverse, longitudinal, and diagonal rolling, as may be necessary to obtain the maximum density.

2. The seal rolling with tandem steel rollers weighing from five to eight tons shall follow as close behind the spreader as is possible without picking up, or displacing or blistering the material.

3. Rolling with the self-propelled pneumatic-tired rollers shall follow as soon as possible and as close behind the seal rolling as the heat of the mixture will permit. The rolling shall be done while pavement temperature is between 175^{o} and 240^{o}F, and to such an extent that the self-propelled traffic roller shall cover every area of the surface with at least ten passes. Final rolling with tandem steel rollers shall be done after the rolling with self-propelled pneumatic tired rollers is completed. This final rolling shall be done before the pavement temperature is lower than 175^{o}F., and shall be continued until all roller marks or tire marks are eliminated.

4. Self-propelled pneumatic rollers shall be used for the rolling of patching and leveling courses. At the option of the CONTRACTOR, a steel-wheeled roller may be used to supplement the self-propelled pneumatic-tired rollers but not more than one steel-wheeled roller may be used in conjunction with the necessary number of self-propelled pneumatic-tired rollers. After final completion, the finished pavement shall at no point have a density less than 95% of the laboratory compacted density.

5. Rolling with the self-propelled pneumatic-tired roller shall proceed at a speed from six to twelve miles per hour and the rate of rolling shall not exceed 3,000 square yards per hour per roller. A sufficient number of self-propelled pneumatic-tired rollers shall be used so that the rolling of the surface for the required number of 10 passes within this maximum rolling rate shall not delay any other phase of the placing operation and not result in excessive cooling of the mixture before the rolling is complete. In the event that the rolling is not properly maintained to schedule as outlined above, the laying operation shall be discontinued until the rolling operations are sufficiently caught up.

6. In all places inaccessible to a roller, such as adjacent to curbs, headers, gutters, bridges, MAS'S, etc., the required compaction shall be secured with tamps. Depressions, which

may develop before the completion of the rolling, shall be remedied by loosening the mixture laid and adding new material to bring such depressions to a true surface.

7. Should any depressions remain after final compaction has been obtained, the mixture shall be removed sufficiently and new material added to form a true and even surface. All high spots, high joints and honeycombs shall be adjusted as directed by the ENGINEER.

8. The mixture, after compaction, shall be of the thickness shown on the plans. The surface, after compactions, at no place shall snow an excess of asphalt and any area showing such excess or other defect, shall be cut out and replaced with fresh mixture and immediately compacted to conform with the surrounding area. Any mixture which becomes loose or broken, mixed with dirt in the wearing course shall be removed and replaced with fresh mixture which shall be immediately compacted to conform with surrounding areas.

9. Gasoline or oil from rollers shall not be allowed to deposit on the pavement and any pavement damaged by such deposits shall be removed and replaced as directed by the ENGINEER.

10. Any mixture remaining unbonded after rolling shall be removed and replaced.

D. Protection of pavement: After the completion of the pavement, no vehicular traffic of any kind shall be permitted on the pavement until it has set sufficiently as approved by the ENGINEER.

3.07 ABUTTING EXISTING PAVING

A. Meet elevation of existing paving and structures, facilities and utilities where applicable by sawcutting and removing no less than two (2) feet from abuttment. Milling of asphalt for a width of two (2) feet is an alternative if approved by engineer. Do not cover access covers, manhole tops, water meters or other similar devices.

3.08 PAVEMENT EDGES

A. Make edges of paved area conform to details and sections as shown on drawings.

3.09 SEAL COATING

A. Preparation of surface: Pavement to be sealed must be sound and free of loose dust, dirt, stones, or other foreign matter:

1. Repair any breaks or holes.

2. Scrape off accumulations of oil or fuel drippings and scrub with detergent and water. Remove all traces of detergent.

3. Soft or damaged spots must be repaired.

4. Flush entire area with clean water.

5. Pavement should be damp (no puddles or excess water) when seal coating is applied.

B. MIXING: Stir seal coating to a uniform consistency, use no solvents for thinning. Dilute seal coating with ten (10) percent to twenty (20) percent clean water, stirring to uniform consistency.

C. Application:

1. Seal coat may be applied to dampened surface with a rubber squeegee, soft bristled push broom, or approved mechanized equipment.

2. Seal coating may be poured directly onto pavement in a ribbon or windrow. Squeegee is placed on pavement at a slight angle to edge line of pavement and pulled in a window along pavement in parallel lines, always working excess material toward bottom edge of squeegee.

3. Seal coating should be applied in two (2) thin coats. After first coat is completely dry to touch, a second coat may be applied at right angles to the first. Rate of application will depend on porosity of surface.

4. Allow to cure for twenty-four (24) hours before opening to traffic.

5. Do not apply seal coating when temperature is below fifty (50) degrees Fahrenheit, or falling, before sealer is dry, or rain appears imminent or forecast.

6. Apply in strict accord with manufacturers published instructions.

3.10 FIELD QUALITY CONTROL

A. Test in place asphalt concrete course for compliance with requirements for thickness and surface smoothness. Repair or remove and replace unacceptable paving as directed by CITY'S Representative and ENGINEER.

1. In-place compacted thickness will not be acceptable if exceeding following allowable variation from required thickness:

a. Base Course: Not greater than 1/2" of specified thickness.
b. Surface Course: Not greater than 1/4" of specified thickness.

2. Test finished surface of each asphalt concrete course for smoothness, using 10' straight edge applied parallel with, and at right angles to centerline of paved area. Surfaces will not be acceptable if exceeding the following tolerances for smoothness.

a. Base Course Surface: 1/4".
b. Wearing Course Surface: 1/8".

B. Check surface area at intervals as directed by the ENGINEER.

C. Finish grade shall be within ±0.01 feet of the grades indicated on the plans or ± 0.05 feet as long as no ponding of water is observed after final paving.

3.11 CLEAN UP

A. Remove all debris and excess material immediately from project site.

B. Take down all barricades and temporary traffic markers, signals and signs only after all work included in this section is finished and inspected, and only after so directed by the ENGINEER.

C. Leave project area clean, orderly and free of any hazardous conditions.

3.12 CONSTRUCTION OF SWALES

A. This work consists of regrading existing swales and construction of new swales adequate for conveying storm water along the right-of-way to catch basins. The swale shall be shaped according to the cross section shown on the plan. In areas adjacent to existing roadways all swales shall be regraded to match their existing condition prior to construction, unless otherwise noted.

B. Requirements: All soft and yielding material and other portions of the swale which will not compact readily shall be removed and replaced with suitable material and the entire swale area brought to the proper grade. Stumps, roots, and other deleterious organic matter encountered during the shaping for the swale shall be removed.

C. The bottom of all excavated areas and the top of all fills of swale areas shall be thoroughly compacted by rolling. Water shall be used as necessary to insure thorough compaction. The stability of the top 12" thickness of swale area shall be at least LBR 40 as determined by ASSHTO T-180. Sufficient stabilizing material shall be added to swale area soil as required to provide the specified stability.

D. The CONTRACTOR shall place sod over existing areas damaged by construction. The sod shall match the existing sod type in the affected areas.

3.13 MEASUREMENT AND PAYMENT

A. Measurement and payment will be based on the actual quantities installed as more specifically discussed and described in SECTION 01025 for MEASUREMENT AND PAYMENT.

END OF SECTION 02513

SECTION 02515
PORTLAND CEMENT CONCRETE PAVING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. All applicable provisions of the Bidding and Contract Requirements, and Division 1 - General Requirements shall govern the work under this Section.

1.02 WORK INCLUDED

A. Provide all labor, materials, necessary equipment and services to complete the Portland Cement Concrete Paving work, as indicated on the drawings, as specified herein or both, except as for items specifically indicated as "NIC ITEMS".

B. Including, but not necessarily limited to the following:

1. Fill, subgrade, and limerock base.

2. Concrete formwork.

3. Concrete reinforcement.

4. Expansion and contraction joints.

5. Concrete paving.

1.03 RELATED WORK

A. Section 02200 - Earthwork

B. Section 02513 - Asphaltic Concrete Paving - General

1.04 QUALITY ASSURANCE

A. Requirements of Regulatory Agencies: Perform work in accordance with local building and other applicable codes.

B. Applicator Qualifications: Minimum of five years experience on 5 comparable concrete projects.

C. Inspection and Testing: Performed in accordance with Section 01410 unless otherwise specified.

1. Test cylinders - as per ASTM C-39.

a. Minimum of three (3) concrete test cylinders shall be taken for every 75 or less cubic yards of concrete placed.

b. Minimum of one (1) additional test cylinder shall be taken during any cold weather concreting, and be cured on job site under same conditions as the concrete it represents.

2. Slump test - as per ASTM C-143:

a. Minimum of one (1) slump test shall be taken for each set of test cylinders taken.

1.05 SUBMITTALS

A. Test Reports: Reports of concrete compression, yield, air content, and slump tests.

B. Certificates:

1. Manufacturer's certification that materials meet specification requirements.

2. Material content per cubic yard of each class of concrete furnished.

a. Dry weights of cement.
b. Saturated surface-dried weights of fine and coarse aggregate.
c. Quantities, type and name of admixtures.
d. Weight of water.

3. Ready-mix delivery tickets, ASTM C-94.

C. Shop Drawings:

1. Show sizes and dimensions for fabrication and placing of reinforcing steel and bar supports.

2. Indicate bar schedules, stirrup spacing, and diagrams of bend bars.

3. Detail items of form systems affecting appearance of Architectural concrete surfaces such as joints, tie holes liners, patterns and textures. Show items in relation to entire form system.

1.06 DELIVERY, STORAGE AND HANDLING

A. Deliver reinforcement to project site in bundles marked with metal tags indicating bar size and length.

B. Handle and store materials to prevent contamination.

1.07 JOB CONDITIONS

A. Allowable concrete temperatures:

1. Hot weather: Maximum 90 degrees F as per ASTM C-94.

B. Do not place concrete during rain, unless protection is provided.

PART 2 - PRODUCTS

2.01 FILL

A. As specified in Section 02513 - Asphaltic Concrete Paving - general.

2.02 SUBGRADE

A. As specified in Section 02513 - Asphaltic Concrete Paving – general.

2.03 LIMEROCK BASE

A. As specified in Section 02513 - Asphaltic Concrete Paving - general.

2.04 READY-MIXED CONCRETE

A. Cement: ASTM C-150, normal Type 1.

B. Admixtures:

1. Air entraining: ASTM C-260.
2. Chemical: Type (as required) ASTM C-494.
3. Fly ash and pozzolans: ASTM C-618.

C. Coarse aggregate: Not less than 50% clean, hard, crushed stone conforming to requirements of Table 2, size number 467 ASTM C-33.

D. Slump Range: 2-4 inches - tested according to ASTM designation C143 (AASHTO T119).

E. Air content: 5% + 1%.

F. Mix proportioning:

1. 28 day compressive strength of cured laboratory samples 3,000 psi.
2. Minimum cement content 5-sacks/cubic yard.

G. Curing Material: Liquid membrane, ASTM C-309, Type 1.

H. Mixes:

1. ASTM C-94.
2. Mix concrete only in quantities for immediate use.
3. Do not retemper or use set concrete.

2.05 REINFORCEMENT

A. Reinforcing Steel Bars: 60 psi yield strength; deformed billet steel bars; ASTM A-615, plain finish.

B. Welded Steel Wire Fabric: Plain type, ASTM A-185, hot dip galvanized, plain finish.

C. Tie Wire: FS QQ-W-461-G, annealed steel, black, 16-gage minimum.

D. Bar Supports: Conform to "Bar Support Specifications," CRSI Manual of Standard Practice.

2.06 FORMWORK AND ACCESSORIES

A. Formwork: Matched, tight fitting and adequately stiffened to support weight of concrete without deflection detrimental to tolerances and appearance of concrete, conform with ACU 347, Chapter 3, Material and Form Work.

B. Lumber:

1. Softwood framing lumber: Kiln dried, PS-20.

2. Boards less than 1-1/2 inch thick and 2 inches wide, used for basic forms and form liners: Kiln dried.

3. Grade marked by grading rules agency approved by American Lumber Standards Committee.

4. Light framing or studs for board or plywood forms, 2 inches to 4 inches width and thickness, construction standard grade.

5. Boards for basic forms, construction standard grade.

6. Board surface: Smooth.

C. Plywood:

1. Exterior type softwood plywood, PS 1-66.

2. Each panel stamped or branded indicating veneer grades, species, type and identification.

3. Wood faced plywood for Architectural concrete surfaces.

a. Panel veneer grades: B-C.
b. Mill-oiled sides and mill-sealed edges of panels.

D. Ties:

1. Material: Steel
2. Type: Snap ties
3. Depth of breakback: 1 in.
4. Maximum diameter, 1/4 in.

E. Form coatings:

1. Non-staining type.
2. Agent: Pine oil derivative.

2.07 EXPANSION AND CONTRACTION JOINTS

A. Minimum 3/4-inch thick asphaltic impregnated fiberboard as per ASTM D-1751.

2.08 OTHER

A. Water: Clean and potable.

PART 3 - EXECUTION

3.01 BARRICADES

A. Provide substantial temporary barricades around all areas of operation and maintain until work under this section is completed and approved.

B. Install temporary traffic, markers, signals, and signs as per D.O.T. Standard Specifications to:

1. Eliminate potentially hazardous conditions.

2. Maintain adequate traffic patterns free of conflict with work under this Contract.

3.02 PREPARATION OF SUBGRADE

A. Ensure rough grading has brought subgrade to required elevations.

B. Fill soft spots and hollows with additional fill.

C. Level and compact subgrade, to receive limerock base for concrete walks, curbs and gutters, to a density as specified in Section 02200, Paragraph 3.14.I.

3.03 FORMWORK

A. CONTRACTOR is responsible for the design, construction, removal and complete safety of formwork and shoring.

B. Form construction shall be provided to shape, lines dimensions of members shown: substantial, tight enough to prevent leakage, and properly braced or tied to maintain position and size, form sides and bottoms of members unless specifically excepted.

C. Fill voids of plywood joints with sealant and tool smooth.

D. Form vertical surfaces to full depth and securely position to required lines and levels. Ensure form ties are not placed so as to pass through concrete.

E. Arrange and assemble formwork to permit easy dismantling and stripping, and to prevent damage to concrete during formwork removal.

3.04 REINFORCING

A. Reinforce concrete curbs and gutters. Allow for minimum 1-1/2 inch concrete cover.

B. Do not extend reinforcing through expansion and contraction of joints. Provide dowelled joints through expansion and contraction joints, with one end of dowels fitted with capping sleeve to allow free movement.

3.05 FORMING EXPANSION AND CONTRACTION JOINTS

A. Place expansion and contraction joints at 20 foot intervals or as indicated on drawings. Where possible, make joints of curbs coincide with joints in paving slabs. When sidewalks abut building, provide continuous joint filled.

B. Fill joints with filler of required profiles set perpendicular to longitudinal axis of walks, curbs and gutters. Recess 1/2 inch below finished concrete surface.

3.06 INSPECTION

A. Assure that excavation and formwork are completed, and excess water is removed.

B. Check that reinforcement is secured in place.
C. Verify that expansion joint material, anchors, and other embedded items are secured in position.

3.07 PREPARATION FOR PLACEMENT

A. Notify the ENGINEER and other inspectors at least 36 hours prior to inspection.

B. Equipment forms, and reinforcing shall be clean and wet down, reinforcing firmly secured in place, runways set up and not resting on or displacing reinforcing.

3.08 PLACING CONCRETE

A. Place concrete, screed and wood float surfaces to a smooth and uniform finish, free of open texturing and exposed aggregate.

B. Avoid working mortar to surface.

C. Round all edges, including edges of expansion and contraction joints, with 1/2 inch of radius edging tool.

D. Where concrete curbs are adjacent to pavement slabs, make concrete curbs and gutters integral with slabs. Make expansion and contraction joints of curbs coincide with slab joints.

E. Ensure finished surfaces do not vary from true lines, levels or grade by more than 1/8 inch in 10 feet when measured with straightedge.

F. Apply curing compound on finished surfaces immediately after finishing. Apply in accordance with manufacturer's recommendations.

3.09 PROTECTION OF COMPLETED WORK

A. During curing period, protect concrete from damaging mechanical disturbances, water flow, loading, shock, and vibration.

3.10 CLEAN UP

A. Remove all debris and excess material immediately from project site.

B. Take down all barricades and temporary traffic markers, signals and signs only after all work included in this section is finished and inspected, and only after so directed by CITY'S Representative.

C. Leave project area neat, orderly and free of any hazardous conditions.

3.11 MEASUREMENT AND PAYMENT

A. Measurement and payment will be based on the actual quantities installed as more specifically discussed and described in SECTION 01025 for MEASUREMENT AND PAYMENT.

END OF SECTION 02515

SECTION 02577
PAVEMENT MARKING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. All applicable provisions of the bidding and Contract Requirements, and Division 1 - General Requirements shall govern the work under this section.

1.02 WORK INCLUDED

A. The work covered by this section shall include the furnishing of all labor, equipment and materials necessary to construct and install all pavement marking, striping and car stops in accordance with the plans and these specifications.

1.03 RELATED WORK

A. Section 02513 - Asphaltic Concrete Paving - General

B. Section 02515 - Portland Cement Concrete Paving

1.04 QUALITY ASSURANCE

A. Perform all work in accordance with the requirements of local agencies.

1.05 SUBMITTALS

A. Submit copies of product and material information and data..

PART 2 - PRODUCTS

2.01 Chlorinated rubber-alkyd type, as per Fed Spec. No. TT-P-115, Type III, or shall be Code T-1, conforming to Section 971-12.2 of the Florida Department of Transportation Standard Specifications.

1. Paint shall be factory mixed, quick drying and non-bleeding type.

2. Color shall be as per D.O.T. requirements.

3. Striping, arrows, lane markers and stop bars shall be provided with paint containing reflective additive.

2.02 Thermoplastic paint shall conform to the applicable Technical Specifications (Section 711) of the Florida Department of Transportation and Broward County Standards

2.03 Traffic paint shall conform to the applicable Technical Specifications (Section 710) of the Florida Department of Transportation and Broward County Standards

2.04 Car stops shall be of the size and dimensions shown on the plans. Concrete for car stops shall have a minimum compressive strength of 2,500 psi.

2.05 Reflectors shall be in accordance with Broward County Minimum Standards.

PART 3 - EXECUTION

3.01 TRAFFIC AND LANE MARKINGS

A. Sweep dust and loose material from the sealed surface.

B. Apply paint striping as indicated on the drawings, with suitable mechanical equipment to produce uniform straight edges.

1. Apply in not less than (2) two coats as per manufacturer's recommended rates of applications.

C. Protect pavement markings until completely dry in accordance with manufacturers recommendations.

3.02 MEASUREMENT AND PAYMENT

A. Measurement and payment will be based on the actual quantities installed as more specifically discussed and described in SECTION 01025 for MEASUREMENT AND PAYMENT.

END OF SECTION 02577

SECTION 02601
SUBTERRANEAN STRUCTURES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. All applicable provisions of the Bidding and Contract Requirements, and Division 1 - General Requirements shall govern the work under this section.

1.02 WORK INCLUDED

A. The work covered by this section shall include the furnishing of all labor, equipment, services, materials, products and tests to perform all operations in connection with the construction of all new structures or modifications or abandonment of existing structures as shown on the plans, defined in these specifications and subject to the terms and conditions of this contract, including, but not limited to, maintenance access structure's (MAS's), catch basins, and inlets.

1.03 RELATED WORK

A. Section 02200 - Earthwork

B. Section 02221 - Excavation and Backfilling for Utilities

C. Section 02400 - Storm Drainage Facilities

1.04 SUBMITTALS

A. The CONTRACTOR shall furnish the ENGINEER shop drawings of the precast drainage structures and MAS's for approval. Shop drawings should illustrate all dimensions, reinforcements and specifications for the complete manual.

PART 2 - PRODUCTS

2.01 MORTAR

A. Mortar for use in constructing and plastering sewer structures shall conform to ASTM C-270, "Specifications for Mortar for Unit Masonry". A Portland cement-hydrated lime mixture or a masonry cement may be used provided that the same materials are used throughout the project.

B. Mortar materials shall be proportioned by volume and shall consist of one part Type II Portland Cement to two parts aggregate (sand). Portland Cement shall conform to ASTM C-150, "Specifications for Portland Cement". Aggregate shall conform to ASTM C-144, "Specifications for Aggregate for Masonry Units."

2.02 PRECAST CONCRETE MANHOLES

A. Precast manhole sections shall conform to ASTM C-478, Specifications for Precast Reinforce Concrete Manhole Sections as modified thereto. Concrete shall attain a minimum compressive strength of 4,000 psi at 28 days. Minimum wall thickness shall be 8 inches.

B. Unless otherwise specified on the plans, all joints shall be made with neoprene or rubber "O" ring compression joints; mastic joint sealing compound. After assembly, all joints shall be filled with mortar and pointed to provide a smooth surface without joint voids.

C. The base and walls that compose the bottom section of precast manholes shall be of monolithic construction, minimum 8 inches thick, and the edge of the base slab shall project a minimum 4 inches beyond the outside diameter of the wall.

D. Holes for piping shall be 6" inches larger than the outside diameter of the respective pipe. After the pipe is set, the void space between the pipe and the hole perimeter shall be completely filled with non-shrinking, quick-setting, waterproof cement mortar and struck smooth.

E. The minimum height of precast base section shall be 36 inches from the bottom of the base slab; however, no holes for piping shall be cast less than 8 inches from the top of the base section or less than 2 inches from the top of the base slab.

2.03 ENDWALLS, CATCH BASINS, INLETS AND JUNCTIONS BOXES

A. Endwalls, valve vaults, catch basins, inlets and junction boxes shall be constructed at the locations shown and to the dimensions indicated on site plans. Unless otherwise specified on the plans, inlets, junction boxes, catch basins, valve vaults and similar structures may be constructed of brick, concrete block, poured concrete or precast concrete. Precast catch basins shall conform to latest A.C.H.A. and P.C.A. specifications. Concrete shall have not less than 4,000-PSI compressive strength at 28 days.

B. Unless otherwise specified on the plans, all concrete for these structures shall be Class I concrete as specified in the Florida Department of Transportation "Standard Specifications for Road and Bridge Construction", latest revision, Section 345. Mortar for use in constructing and plastering shall be as previously set forth in this section.

C. Brick shall be solid hard-burned clay conforming to ASTM Serial C-32-73, Grade MA. Concrete brick shall conform to ASTM Serial C-55-75, Grade P-I. Concrete block shall conform to ASTM Serial C-90-78, Grade PI.

D. All brick or concrete block structures covered in this Section shall be plastered inside and outside with 1/2 inch of cement mortar. Inside surfaces shall be smooth and even.

E. Base slabs and walls of concrete structures shall be constructed in a continuous pour between expansion joints.

F. For each grate type inlet, two layers of Mirafi 140 fabric of "Poly Filter X" polypropylene material (or approved equal), shall be sandwiched between 2 x 2 x 10/10 welded wire fabric cut to the grate size and attached to the underside of the grate. The sandwiched filter material shall be wired to the cross members of the grate each way on 4-inch centers. After inlet construction and the roadway construction is completed and the project site work (including landscaping) has been established, the filter material and fabric shall be removed with any retained silt or sand.

2.04 CASTINGS (INCLUDING FRAMES, COVERS AND GRATINGS)

A. Iron castings shall conform to ASTM A-48, "Specifications for Gray Iron Castings", and shall be Class 30. Frames and grates may be Class 20.

B. All castings shall be made of clean, even grain, tough grey cast iron. The castings shall be smooth, true to pattern and free from projections, san holes, warp and other defects. The horizontal surface of the frame cover seats and the under surface of the frame cover seat which rests upon the cover seat shall be machined. After machining, it shall not be possible to rock any after it has been seated in any position in its associated frame. Machining shall be required only on those frames and covers intended for vehicular traffic.

C. Bearing surfaces between cast frames, covers and grates shall be machined and fitted together to assure a true and even fit. Within areas of vehicular traffic, the frames, covers and gratings shall be machined-ground so that irregularity of contact will be reduced to a minimum and will be rattle-proof.

D. All manhole covers shall be provided with concealed pick holes. Manufacturer's name and catalog number shall be cast on all frames, covers, grates, etc. Covers shall be lettered "Storm Sewer" or "Sanitary Sewer" as applicable and shall be plainly visible. The manhole frames and covers shall be flush with finished grade.

E. Grates and covers for inlets shall be as shown on the plans, set to the grades indicated and conforming with the requirements of the castings described above. Grates shall be furnished complete with frames specifically constructed to provide full bearing at all points of contract.

PART 3 - EXECUTION

3.01 CHANNELS

A. Channels shall be accurately and smoothly formed in accordance with the plans. Channels shall be constructed of concrete with trowel-finished surfaces. The upper surface of the manhole shall be sloped toward the channels as shown.

B. Drop pipe at sanitary sewer MAS's shall be installed when the difference in elevation between the pipe invert and the invert at the center of the manhole exceeds two feet (2'), or where directed by the ENGINEER. The drop manhole structure shall be built according to the plans and specifications.

C. After channels are formed and section joints are pointed, the interior of the sanitary sewer manhole shall be painted with two coats of Koppers Bitumastic 300-M (7 mils per coat) (or approved equal). The exterior shall be painted in a similar manner, if required by local regulations.

D. Storm drainage structures are not required to be painted inside or outside. Provide finish and water proofing as specified in 3.02 and 3.03 below.

3.02 BRICKS

A. All bricks shall be thoroughly wetted before being laid. Brick shall be laid by the above shove joint method so as to bond them thoroughly into the mortar. Headers and stretcher courses shall

be so arranged as to bond and mass thoroughly. Joints shall be finished smooth and shall be not less than 1/4 inch or more than 1/2 inch in thickness.

3.03 MANHOLES AND OTHER STRUCTURES

A. All joints shall be finished watertight; all openings for sewers, frames, etc., in precast manhole access structures and catch basins shall be cast at time of manufacture. Spaces around all piping entering or leaving manhole access structures shall be completely filled with Embeco mortar (or approved equal).

B. All mas's shall be set plumb to line and grade and shall rest on a firm carefully graded subgrade which shall provide uniform bearing under base.

C. Grout for manhole bottoms shall consist of broken block, brick and 2:1 cement mortar.

3.04 CLEANING AND MAINTENANCE

A. All structures shall be cleaned and maintained in workable condition until accepted by the ENGINEER

3.05 ABANDONMENT OF EXISTING STRUCTURES IN PLACE

A. All structures shown on the drawings to be abandoned in place shall be removed to a minimum of 3 feet below existing grade and properly filled with material as in section 02200 paragraph 3.14. Excavation, backfill, and restoration shall be executed in accordance with requirements for removing existing and installing new structures.

3.06 MEASUREMENT AND PAYMENT

A. Measurement and payment will be based on the actual quantities installed as more specifically discussed and described in SECTION 01025 for MEASUREMENT AND PAYMENT.

END OF SECTION 02601

SECTION 02610
PIPING, GENERAL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. All applicable provisions of the Bidding and Contract Requirements, and Division 1 - General Requirements shall govern the work under this Section.

1.02 WORK INCLUDED

A. The CONTRACTOR shall furnish and install all piping systems shown and specified, in accordance with the requirements of the Contract Documents. Each system shall be complete with all necessary fittings, hangers, supports, anchors, expansion joints, flexible connectors, valves, accessories, heat tracing, insulation, lining and coating, testing, disinfection, excavation, backfill and encasement, to provide a functional installation.

B. The piping shown is intended to define the general layout, configuration, routing, method of support, pipe size, and pipe type. The mechanical drawings are not pipe construction or fabrication drawings. It is the CONTRACTOR's responsibility to develop the details necessary to construct all mechanical piping systems, to accommodate the specific equipment provided, and to provide and install all spools, spacers, adapters, connectors, etc., for a complete and functional system.

1.03 RELATED WORK

A. Division 2 as applicable.

B. Section 02200 - Earthwork.

C. Section 02221 - Excavation and Backfilling Utilities

D. Section 02400 - Storm Drainage Facilities

E. Section 02601 - Subterranean Structures

1.04 REFERENCE STANDARDS

A. Codes: All codes, as referenced herein are specified in Section 01090, "Reference Standards".

B. Commercial Standards:

ANSI/ASME B1.20.1	Pipe Threads, General Purpose (inch).
ANSI B16.5	Pipe Flanges and Flanged Fittings, Steel Nickel Alloy and other Special Alloys.
ANSI/AWWA C207	Steel Pipe Flanges for Water Works Service, Sizes 4 in through 144 in.
ANSI/AWWA C606	Grooved and Shouldered Joints.

ANSI/AWS D1.1	Structural Welding Code.
ASTM A 307	Specification for Carbon Steel Bolts and Studs, 6,000 PSI Tensile.
ASTM A 325	Specification for High-Strength Bolts for Structural Steel Joints.
ASTM D 792	Test Methods for Specific Gravity and Density of Plastics by Displacement.
ASTM D 2000	Classification System for Rubber Products in Automotive Applications.

1.05 SUBMITTALS

A. The CONTRACTOR shall submit complete shop drawings and certificates, test reports, affidavits of compliance, of all piping systems, in accordance with the requirements in Section 01340, "Shop Drawings, Product Data and Samples", and as specified in the individual sections. The shop drawings shall include all necessary dimensions and details on pipe joints, fittings, fitting specials, valves, appurtenances, design calculations, and material lists. The submittals shall include detailed layout, spool, or fabrication drawings which show all pipe spools, spacers, adapters, connectors, fittings, and pipe supports necessary to accommodate the equipment and valves provided in a complete and functional system.

B. All expenses incurred in making samples for certification of tests shall be borne by the CONTRACTOR.

C. The CONTRACTOR shall submit as part of the shop drawings a certification from the pipe fabricator stating that all pipes will be fabricated subject to a recognized Quality Control Program. An outline of the program shall be submitted to the ENGINEER for review prior to the fabrication of any pipe

1.06 QUALITY ASSURANCE

A. Inspection: All pipes shall be subject to inspection at the place of manufacture. During the manufacture of the pipe, the ENGINEER shall be given access to all areas where manufacturing is in progress and shall be permitted to make all inspections necessary to confirm compliance with the Specifications.

B. Tests: Except where otherwise specified, all materials used in the manufacture of the pipe shall be tested in accordance with the applicable Specifications and Standards. [Welds shall be tested as specified.] The CONTRACTOR shall perform all tests at no additional cost to the CITY.

C. Welding Requirements: All welding procedures used to fabricate pipe shall be pre-qualified under the provisions of ANSI/AWS D1.1. Welding procedures shall be required for, but not necessarily limited to, longitudinal and girth or spiral welds for pipe cylinders, spigot and bell ring attachments, reinforcing plates and ring flange welds, and plates for lug connections.

D. Welder Qualifications: skilled welders, welding operators, and tackers who have had adequate experience in the methods and materials to be used shall do all welding. Welders shall be qualified under the provisions of ANSI/AWS D1.1 by an independent local, approved testing agency not more than 6 months prior to commencing work on the pipeline. Machines and electrodes similar to those used in the WORK shall be used in qualification tests. The CONTRACTOR shall furnish all material and bear the expense of qualifying welders.

1.07 MANUFACTURER'S SERVICE REPRESENTATIVE

A. Where the assistance of a manufacturer's service representative is advisable, in order to obtain perfect pipe joints, supports, or special connections, the CONTRACTOR shall furnish such assistance at no additional cost to the CITY

1.08 MATERIAL DELIVERY, STORAGE, AND HANDLING

A. All piping materials, fittings, valves, and accessories shall be delivered in a clean and undamaged condition and stored off the ground, to provide protection against oxidation caused by ground contact. All defective or damaged materials shall be replaced with new materials.

1.09 CLEANUP

A. After completion of the work, all remaining pipe cuttings, joining and wrapping materials, and other scattered debris, shall be removed from the site. The entire piping system shall be handed over in a clean and functional condition.

PART 2 - PRODUCTS

2.01 GENERAL

A. All pipes, fittings, and appurtenances shall be furnished in accordance with the requirements of the applicable Sections of Division 2 and as specified herein.

B. Lining: All requirements pertaining to thickness, application, and curing of pipe lining, are in accordance with the requirements of the applicable Sections of Division 2, unless otherwise specified.

C. Coating: All requirements pertaining to thickness, application, and curing of pipe coating, are in accordance with the requirements of the applicable Sections of Division 2, unless otherwise specified. Pipes above ground or in structures shall be field-painted as directed by the ENGINEER.

D. Grooved Piping Systems: Piping systems with grooved joints and fittings may be provided in lieu of screwed, flanged, welded, or mechanical joint systems for ductile iron yard piping. (All piping above and below ground within the property limits of treatment plants, pump stations, and similar installations). All grooved couplings on buried piping must be bonded. To assure uniform and compatible piping components, all grooved fittings, couplings, and valves shall be from the same manufacturer. The CONTRACTOR shall make the coupling manufacturer responsible for the selection of the correct style of coupling and gasket for each individual location.

2.02 PIPE FLANGES

A. Flanges: Where the design pressure is 150 psi or less, flanges shall conform to either ANSI/AWWA C207 Class D or ANSI B16.5 150-lb class. Where the design pressure is greater than 150 psi, up to a maximum of 275 psi, flanges shall conform to ANSI/AWWA C207 Class E, Class F, or ANSI B16.5 150-lb class. However, AWWA flanges shall not be exposed to test pressure greater than 125 percent of rated capacity. For higher test pressures, the next higher rated AWWA flange or an ANSI-rated flange shall be selected. Where the design pressure is greater than 275 psi up to a maximum of 700 psi, flanges shall conform to ANSI B16.5 300-lb class. Flanges shall have flat faces and shall be attached with boltholes straddling the vertical axis of the pipe unless otherwise shown. Attachment of the flanges to the pipe shall conform to the applicable requirements of ANSI/AWWA C207. Flanges for miscellaneous small pipes shall be in accordance with the standards specified for these pipes.

B. Blind Flanges: Blind flanges shall be in accordance with ANSI/AWWA C207, or with the standards for miscellaneous small pipes. All blind flanges for pipe sizes 12 inches and over shall be provided with lifting eyes in form of welded or screwed eyebolts.

C. Flange Coating: All machined faces of metal blind flanges and pipe flanges shall be coated with a temporary rust-inhibitive coating to protect the metal until the installation is completed.

D. Flange Bolts: All bolts and nuts shall conform to pipe manufacturers recommendations. Studs and bolts shall extend through the nuts a minimum of 1/4-inch. All-thread studs shall be used on all valve flange connections, where space restrictions preclude the use of regular bolts.

E. Insulating Flanges: Insulated flanges shall have boltholes 1/4-inch diameter greater than the bolt diameter.

F. Insulating Flange Sets: Insulating flange sets shall be provided where shown. Each insulating flange set shall consist of an insulating gasket, insulating sleeves and washers and a steel washer. Insulating sleeves and washers shall be one piece when flange bolt diameter is 1-1/2-inch or smaller and shall be made of acetal resin. For bolt diameters larger than 1-1/2-inch, insulating sleeves and washers shall be 2-piece and shall be made of polyethylene or phenolic. Steel washers shall be in accordance with ASTM A 325. Insulating gaskets shall be full-face.

G. Insulating Flange Manufacturers, or approved equal:

1. JM Red Devil, Type E;
2. Maloney Pipeline Products Co., Houston;
3. PSI Products, Inc., Burbank, California.

H. Flange Gaskets: Gaskets for flanged joints shall be full-faced, 1/16-inch thick compressed sheets of aramid fiber base, with nitrile binder and non-stick coating, suitable for temperatures to 700 degrees F, a pH of one to eleven, and pressures to 1000 psig. Blind flanges shall have gaskets covering the entire inside face of the blind flange and shall be cemented to the blind flange. Ring gaskets shall not be permitted.

I. Flange Gasket Manufacturers, or approved equal:

1. John Crane, style 2160;

2. Garlock, style 3000.

J. Water Stop Gasket: Water stop gaskets for HDPE pipe are to be used to seal and prevent the infiltration and exfiltration of water at manhole connections. The recommended minimum concrete structure hole diameter for a 18" pipe is to be 26.50". The pipe is to be cleaned prior to attaching the gasket which is to be positioned on the valley of the corrugation. The take up clamp screws are to be positioned 180 degrees from each other. A good quality bonding agent is required at the structures opening. Water stop gasket is to meet the requirements of ASTM C923.

2.03 THREADED INSULATING CONNECTIONS

A. General: Threaded insulating bushings, unions, or couplings, as appropriate, shall be used for joining threaded pipes of dissimilar metals and for piping systems where corrosion control and cathodic protection are involved.

B. Materials: Threaded insulating connections shall be of nylon, Teflon, polycarbonate, polyethylene, or other non-conductive materials, and shall have ratings and properties to suit the service and loading conditions.

2.04 MECHANICAL-TYPE COUPLINGS (GROOVED OR BANDED PIPE)

A. General: Cast mechanical-type couplings shall be provided where shown. The couplings shall conform to the requirements of ANSI/AWWA C606. All gaskets for mechanical-type couplings shall be compatible with the piping service and fluid utilized, in accordance with the coupling manufacturer's recommendations. The wall thickness of all grooved piping shall conform with the coupling manufacturer's recommendations to suit the highest expected pressure. To avoid stress on equipment, all equipment connections shall have rigid-grooved couplings, or harness sets in sizes where rigid couplings are not available, unless thrust restraint is provided by other means. The CONTRACTOR shall have the coupling Manufacturer's service representative verify the correct choice and application of all couplings and gaskets, and the workmanship, to assure a correct installation.

B. Couplings for Steel Pipe, Manufacturers, or approved equal:

1. Gustin-Bacon (banded or grooved);
2. Victaulic Style 41 or 44 (banded, flexible);
3. Victaulic Style 77 or 07 (grooved).

C. Ductile Iron Pipe Couplings, Manufacturers, or approved equal:

1. Gustin-Bacon;
2. Victaulic Style 31.

Note: Ductile iron pipe couplings shall be furnished with flush seal gaskets.

2.05 SLEEVE-TYPE COUPLINGS

A. Construction: Sleeve-type couplings shall be provided where shown, in accordance with ANSI/AWWA C219 unless otherwise specified, and shall be of steel with steel bolts, without pipe stop, and shall be of sizes to fit the pipe and fittings shown. The middle ring shall be not less than 1/4-inch in thickness and shall be either 5 or 7 inches long for sizes up to and including 30

inches and 10 inches long for sizes greater than 30 inches, for standard steel couplings, and 16 inches long for long-sleeve couplings. The followers shall be single-piece contoured mill section welded and cold expanded as required for the middle rings. They shall be of sufficient strength to accommodate the number of bolts necessary to obtain adequate gasket pressures without excessive rolling. The shape of the follower shall be of such design as to provide positive confinement of the gasket. Buried sleeve-type couplings shall be epoxy-coated at the factory as specified.

B. Pipe Preparation: The ends of the pipe, where specified or shown, shall be prepared for flexible steel couplings. Plain ends for use with couplings shall be smooth and round for a distance of 12 inches from the ends of the pipe, with outside diameter not more than 1/64-inch smaller than the nominal outside diameter of the pipe. The middle ring shall be tested by cold-expanding a minimum of one percent beyond the yield point, to proof-test the weld to the strength of the parent metal. The weld of the middle ring shall be subjected to air test for porosity.

C. Gaskets: Gaskets for sleeve-type couplings shall be rubber-compound material that will not deteriorate from age or exposure to air under normal storage or use conditions. Gaskets for wastewater and sewerage applications shall be Buna "N," grade 60, or equivalent suitable elastomer. The rubber in the gasket shall meet the following specifications:

1. Color - Jet Black
2. Surface - Non-blooming
3. Durometer Hardness - 74 ± 5
4. Tensile Strength - 1000 psi Minimum
5. Elongation - 175 percent Minimum

The gaskets shall be immune to attack by impurities normally found in water or wastewater. All gaskets shall meet the requirements of ASTM D 2000, AA709Z, meeting Suffix B13 Grade 3, except as noted above. All gaskets shall be compatible with the piping service and fluid utilized.

D. Insulating Couplings: Where insulating couplings are required, both ends of the coupling shall have a wedge-shaped gasket which assembles over a rubber sleeve of an insulating compound in order to obtain insulation of all coupling metal parts from the pipe.

E. Restrained Joints: All sleeve-type couplings on pressure lines shall be harnessed unless thrust restraint is provided by other means. Harnesses shall be in accordance with the requirements of the appropriate reference standard, or as shown.

F. Manufacturers or approved equal:

1. Dresser, Style 38;
2. Ford Meter Box Co., Inc., Style FC1 or FC3;
3. Smith-Blair, Style 411.

2.06 FLEXIBLE CONNECTORS

A. Flexible connectors shall be installed in all piping connections to engines, blowers, compressors, and other vibrating equipment, and where shown. Flexible connectors for service temperatures up to 180 degrees F shall be flanged, reinforced Neoprene or Butyl spools, rated for a working pressure of 40 to 150 psi, or reinforced, flanged duck and rubber, as best suited for the application. Flexible connectors for service temperatures above 180 degrees F shall be flanged

braided stainless steel spools with inner, annular, corrugated stainless steel hose, rated for minimum 150 psi working pressure, unless otherwise shown. The connectors shall be 9 inches long, face-to-face flanges, unless otherwise shown. The manufacturer shall approve the final material selection. The CONTRACTOR shall submit manufacturer's shop drawings and calculations.

2.07 EXPANSION JOINTS

A. All piping subject to expansion and contraction shall be provided with sufficient means to compensate for such movement, without exertion of undue forces to equipment or structures. This may be accomplished with expansion loops, bellow-type expansion joints, or sliding-type expansion joints. Expansion joints shall be of stainless steel, monel, rubber, or other materials, best suited for each individual service. The CONTRACTOR shall submit detailed calculations and manufacturer's shop drawings, guaranteeing satisfactory performance of all proposed expansion joints, piping layouts showing all anchors and guides, and information on materials, temperature and pressure ratings.

2.08 PIPE THREADS

A. All pipe threads shall be in accordance with ANSI/ASME B1.20.

PART 3 - EXECUTION

3.01 GENERAL

A. All pipes, fittings, and appurtenances shall be installed in accordance with the requirements of the applicable Section of Divisions 2. The lining manufacturer shall take full responsibility for the complete, final product and its application. All pipe ends and joints at screwed flanges shall be epoxy-coated, to assure continuous protection.

B. Where core drilling is required for pipes passing through existing concrete, core drilling locations shall be determined by radiograph of concrete construction to avoid damage to embedded raceways and rebars.

C. All exposed piping shall be painted. All piping to be painted shall be color coded in accordance with CITY'S standard color code. Color samples shall be submitted to ENGINEER for final color selection.

3.02 MEASUREMENT AND PAYMENT

A. Measurement and payment will be based on the actual quantities installed as more specifically discussed and described in SECTION 01025 for measurement and payment.

END OF SECTION 2610

SECTION 02900
LANDSCAPE WORK

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. All applicable provisions of the Bidding and Contract Requirements, and Division 1 - General Requirements shall govern the work under this Section.

1.02 WORK INCLUDED

A. The work included in this section consists of furnishing all labor, supplies equipment and materials necessary to complete the installation of all landscaping as shown on the Plans as base bid including the installation of sod and seeding as shown, as well as all other related responsibilities as described in these Specifications and accompanying plans.

B. Installation: All plant materials included shall be of the specific size and quality indicated on the plans and in these specifications and shall be installed in strict accordance with sound nursery practices and shall include maintenance and watering for all work outlined on the plans and specifications until final acceptance.

C. Quantities and Locations: The ENGINEER reserves the right to adjust the number and locations of the designated types and species to be used at any of the locations shown in order to provide for any modifications which might become necessary.

1.03 RELATED WORK

A. Section 02050 - Demolition

B. Section 02210 - Site Grading

C. Section 02284 - Topsoil

D. Section 02910 - Sodding

1.04 QUALITY ASSURANCE

A. Responsibility for Assuring Quality Work: The CONTRACTOR'S Superintendent shall be well versed in Florida plant material, planting operations, blue print reading, and coordination with other performing contracts or services in the job area.

All employees shall be competent and highly skilled in their particular job in order to properly perform the work assigned to them. The CONTRACTOR shall be responsible for maintaining the quality of the material on the job throughout the duration of the CONTRACT.

B. Correct Grade of Plants: In the event that it becomes apparent that any nursery supplying plants for this work has knowingly and consistently represented the grade of plants as being higher than their actual grades as determined under these provisions, all plants already delivered from such sources shall be removed from the job at the CONTRACTOR'S expense, and no further plants will be accepted from such nursery until written evidence is submitted and confirmed that all material for delivery has been inspected and approved by inspectors of the State Plant Board as being of the grade as represented.

C. Authority for Nomenclature, Species, Etc.: All plant material shall conform to the names given in Hortus Third, 1976 edition. Names of varieties not included therein conform generally with names accepted in the nursery trade.

D. Grade Standards: All plant materials shall be nursery grown except where specified as collected material, and shall comply with all required inspections, grading standards and plant regulations as set forth by the Florida Department of Agriculture's "Grades and Standards for Nursery Plants" revised 1973, or with any superseding specifications that may be called for on the Plans or in the Specifications. ALL PLANTS NOT LISTED IN THE GRADES AND STANDARDS FOR NURSERY PLANTS, shall conform to a Florida No. 1 as to: (1) Health and Vitality, (2) Condition of Foliage, (3) Root System, (4) Freedom from Pest or Mechanical Damage, (5) Heavily Branched and Densely Foliated according to the accepted normal shape of the species, or sport, (6) Form and branching habit.

E. Balled and Burlapped (B&B) and Wire Balled and Burlapped (WB&B) Plants: These plants shall be properly protected until they are planted. The plant shall be handled only by the earth ball and not be the plant itself.

Any (B&B) or (WB&B) plant which shows evidence of having handled by a method other than the method outlined above, and resulting in a cracked or broken ball or of the roots being loosened within the ball shall be rejected.

For plants grown in soil of loose texture, which does not readily adhere to the root system, (especially in the case of large plant material), WB&B plants may be specified. For WB&B plants, before plant is removed from the hole, sound hog wire shall be placed around the burlapped ball and looped and tensioned until the burlapped ball is substantially packaged by the tightened wire netting, such as to prevent disturbing of the loose soil around the roots during handling. Any wire, synthetic material or chemically treated material will be removed from the rootball at planting time, all ties shall be removed from the rootball and around the trunk at planting.

F. Container Grown Plants (CG): Any Container Grown (CG) plants, which have became "pot bound" or for which the top system is out of proportion (larger) to the size of the container, will not be acceptable.

With metal containers, unless the root-ball system slips easily and unbroken from the can, a nursery can-cutter shall be used to slit the can in such a way that the can may be opened fully.

CG plants shall not be removed from the can until immediately before planting, and with all due care to prevent damage to the root system.

G. Submit to the ENGINEER the names and locations of nurseries proposed as sources of acceptable plant material. The ENGINEER reserves the right to visit the nursery to inspect and/or select the specified material.

H. The ENGINEER will be included in the hand selecting of all Live Oaks for the project.

1.05 DELIVERY, STORAGE AND HANDLING

A. Inspection and Transporting: Movement of nursery stock shall comply with all Federal, State, and local laws and regulations. Therefore, required inspection certificates shall accompany each shipment, and shall be filed with the ENGINEER.

Wrap root balls with burlap. Wire wraps burlap if root ball is not sufficiently compacted. Palms will not require burlap wrapping if the following requirements are met:

1. Dug from marl or heavy soil that adheres to roots and retains shape without shattering.

2. Moistened material used to cover ball and roots not exposed to wind and sun.
3. Transport material on vehicles large enough to allow plants not to be crowded. Plants shall be covered to prevent wind damage during transit and shall be kept moist, fresh and protected at all times. Such protection shall encompass the entire period, which the plants are in transit, being handled, or are in temporary storage.

B. All plant material shall not remain on the work site longer than two (2) days prior to being installed.

1.06 SUBSTITUTIONS

A. Substitutions of plant types or change in the size of plant material will only be permitted upon submission of documented proof that the particular plant type and size specified is not obtainable.

B. Where B&B or WB&B plants are specified, CG plants of the same species, etc., will not be accepted. Where a B&B or WB&B is not specified on a particular plant material, B&B, WB&B or CG plants may be used provided they meet all specifications.

1.07 GUARANTEE

A. All plant material shall be guaranteed for a minimum of one (1) calendar year from the time of final acceptance.

1.08 REPLACEMENT

A. The guaranteeing of plant material shall be construed to mean the complete and immediate replacement of plant material if it is:

1. Not in a healthy growing condition.

2. There is a question to its survival ability at the end of the guarantee period.

3. It is dead.

1.09 SIZE, QUALITY AND GRADE OF REPLACEMENT

A. Replacement plant material shall be of the same species, quality and grade as that of the plant to be replaced. The size of the replacement shall not necessarily be the same size as the original specified plant at its initial planting but shall closely match specimens of the same species. Replacements shall be guaranteed for a period equal to the originally specified guarantee. This guarantee period shall begin at time of plant replacement.

1.10 GUARANTEE NULL AND VOID

A. The guarantee shall be null and void for plant material which is damaged or dies as a result of "Act of God" limited to hail, freeze, lightening, winds which exceed hurricane force, and lethal yellowing, providing the plant was in a healthy growing condition prior to these "Acts of God".

PART 2 - MATERIALS

2.01 PLANT MATERIAL

A. Florida No. 1: Except where another grade is specifically called for in the Plans, all plant material shall be no less than Florida No. 1 at the time of final inspection immediately prior to the acceptance by the CITY.

B. Habit of Growth: All plant material shall have a habit of growth that is normal for that species and shall be sound, healthy, vigorous and free from insects, plant diseases, injuries, and dead limbs.

C. Branching, Leafing, Measurements and Ball Sizes:

1. Trees and Shrubs: Requirements for the measurement, branching character, ball diameter, depth and other standards shall follow the Code of Standards recommended by the American Association of Nursery Stock, Bulletin Z-60.1-1973 and as revised.

2. Palms: Requirements for the measurement of clear trunk, clear wood and graywood ball diameter and depth shall comply with requirements as set forth by the Florida department of Agriculture's "Grades and Standards for Nursery Plants, Part II for Palms and Trees".

D. Die-Back and Leaf-Drop: Plant material showing signs of die-back or leaf-drop will not be accepted and must be removed from the job immediately if so directed by the ENGINEER. Therefore, any plant material with tendencies toward leaf-drop or dieback must be root pruned early enough to provide a sound network of hair roots prior to relocation to the job site.

E. Mechanical Destruction of Foliage: Mechanical destruction of foliage resulting from root pruning shall not effect more than 10% of the total foliage prior to planting on the job site. Loss of foliage caused by seasonal change will be accepted.

F. Spanish Moss: If Spanish Moss (Tillandsia usneoides) exists on plant material, it shall be completely removed prior to planting on the job site.

G. Palms: Before transporting, see Delivery, Storage and Handling; for requirements related to wrapping of root balls.

1. Remove a minimum of fronds from the crown of the palms to facilitate transporting and handling.

2. Palms with burn marks, nail holes, and frond boots on trunk shall not be accepted.

3. Using untreated burlap strip or untreated cotton twine, tie Sabal Palmetto buds and leave in place until Palmetto is established. Tying shall be as set forth in Florida Department of

Agriculture's "Grades and Standards for Nursery Plants". Tying of other palms shall be at the option of the CONTRACTOR.

4. To reduce head volume, Palm fronds may be taper trimmed by not more than one-third (1/3).

5. Palm trees showing cable or chain marks and equipment scars shall be rejected.

H. Chlorosis: The allowable level of Chlorosis in foliage shall be as set forth in the Florida Department of Agriculture's "Grades and Standards for Nursery Plants".

2.02 PLANTING SOILS

A. General Type: All plant material with the exception of Sabal palmetto shall be planted with planting soil mixed with 50% original soil, if the soil is of good quality, as determined by the ENGINEER. The planting soils shall be sandy loam (50% sand, and 50% muck) typical of the locality. The soil must be taken from ground that has never been stripped, with a slight acid reaction (5.5 to 6.5 ph) and without an excess of calcium or carbonate. Soil shall be delivered in a loose friable condition.

B. Special Type: Planting soil for palms shall be a good grade of salt free sand, which is free of all weeds.

2.03 WATER

A. Water shall be potable, from municipal water supplies or other sources, which are approved by a public health department.

2.04 MULCH

A. Mulch shall be Eucalyptus mulch or other approved non-native tree bark mulch. It must be uniformly shredded and be free from pieces of bark larger than 1", foreign matter, weed seeds and any other organic or inorganic material. Submit sample for approval. CONTRACTOR shall apply one application at initial installation and a second application prior to final acceptance.

2.05 FERTILIZER

A. New Plant Material: Trees, palms and shrubs, fertilize with Agriform planting tablets, 20-20-5 formula, 21 gram (or approved equal).

B. New Ground Covers: Fertilize with an approved fertilizer of fifty percent (50%) or greater organic 6-6-6 or 8-8-8 with minor elements including, but not limited to, iron zinc and manganese.

C. Composition of Quality: All fertilizer shall be uniform in composition and dry. Granular fertilizer shall be free flowing and delivered in manufacturers standard container with name of material, weight and guaranteed analysis printed on container. Tabletized fertilizer shall be delivered in unopened containers or boxes. All bags, containers or boxes shall be fully labeled with the manufacturer's analysis. Submit labels to ENGINEER for approval prior to placement of fertilizer.

D. All shall comply with the State of Florida fertilizer laws.

2.06 PRUNING PAINT

A. Pruning Paint shall be commercial tree paint, which is waterproof, antiseptic, adhesive, elastic and free of kerosene, water, cresol and any other substances harmful to plant material.

2.07 VEGETATIVE ROOT INHIBITOR

A. A vegetative root inhibitor shall consist of a polypropylene fabric (or approved equal) with root control time-release modules of Trifluralin with an effective life of 100 years (or approved equal).

B. Vegetative root inhibitor shall Bio-Barrier as manufactured by Reemay, Inc. (or approved equal).

PART 3 - EXECUTION

3.01 INSPECTION

A. Utilities: The location and existence of utilities (overhead and underground) shall be thoroughly investigated and verified by the CONTRACTOR before the work begins in the area of said utilities. The CONTRACTOR shall exercise care in digging and work so as not to damage existing utilities in said areas, such as underground pipes, cables, wires, etc. Should such overhead or underground obstructions be encountered which interfere with planting, the ENGINEER shall be consulted immediately in order for a decision to made on the relocations of plant material to clear such obstruction. The CONTRACTOR shall be responsible for the immediate repair of any damage to utilities caused by CONTRACTOR's work.

3.02 PREPARATION

A. Staking Plant Locations: Plant locations must be staked or marked prior to plant hole excavation or placing on deck, by scaling the plants from existing features found on-site and shown on the plans or by given dimensions if shown.

B. Spacing of Shrubs: Shrub beds located next to another bed, walkway, structure, etc., shall have the plants along the perimeter spaced so that the plants can mature properly without growing into the other bed, walkway, structure, etc.

C. Excavation of Plant Holes: Excavation of plant holes shall be roughly cylindrical in shape with the sides approximately vertical. The ENGINEER reserves the right to adjust the size and shape of the plant hole and the location of the plant in the hole to compensate for unanticipated structures or unanticipated factors. All plant holes shall be sufficiently deep to allow the rootball to set on existing soil and have root collar at grade level. Plants shall be centered in the holes with the tree trunk locations scaled from existing permanent structures as shown on the drawings. Plants shall be set straight or plumb in locations. All plant holes to accommodate plants with ball sizes less than 24" in diameter shall be at least 18" greater than the diameter of the ball. All plants holes to accommodate plants with ball sizes two feet (2') and larger in diameter shall be at least twice the diameter of the ball. The excavated material from the plant holes may not be used to back-fill around the plant material. Such material shall be disposed of either on the project site or off the site as directed by the ENGINEER. Plant holes for shrub material planted in mass shall

meet all requirements listed above for plant holes. However, they shall not be individual holes but one continuous hole or excavation. Plant holes for hedge material shall also meet all requirements listed above for plant holes, however, a continuous trench shall be used in lieu of individual holes.

3.03 INSTALLATION

A. Setting of Plants:

1. When lowered into the hole the plant shall rest on the prepared hole bottom such that the roots after settlement are level, or slightly above the level of its previous growth condition and the final level of the ground around the plant shall conform to the surrounding grade. The plants shall be set straight or plumb or normal to the relationship of their growth prior to transplanting. The ENGINEER reserves the right to realign any plant material after it has been set.

2. Palms of the Sabal species may be set deeper than the depth of their original growth condition in order to lessen the necessity for support or bracing. For such deeper planting however, it will be required that the underlying soil be friable and that the clear trunk requirements set forth in the plant list be maintained from the finished grade and NOT from the previous grade of the palm trees before it was transplanted.

3. Plant material of the shrub category and smaller must be handled by the ball only. Plant material too large for hand handling, if moved by winch or crane, must be thoroughly protected from chain, rope or cable marks, girdling, bark slippage, limb breakage and any other damage that might occur by improper handling or negligence.

4. All palm trees handled by the trunks must be wrapped with burlap and wood battens, held in place by banding strips as called for in the details.

B. Backfilling:

1. Use planting soils specified in Article 2.02, Planting Soil. Backfill to the bottom two thirds of the planting hole and firmly tamp and settle by watering as backfilling progresses. After having tamped and settled the bottom two thirds (2/3) of the hole, thoroughly puddle with water and fill remaining one third (1/3) of the hole with planting soil, tamping and watering to eliminate air pockets.

C. Application of Fertilizer:

1. Fertilize New Planting (Trees, Palms and Shrubs) as follows:

a.

Specified Container Size	Application Rate
1 gallon container	1 tablet
3 gallon container	2 tablets
5 gallon container	3 tablets
7 gallon container	5 tablets

b. Large tubs or boxes and B&B material shall receive one (1) tablet for each one-half (1/2) inch of trunk diameter (measured three (3) feet from ground). For large shrubs, one (1) tablet for each one (1) foot of height or spread.

D. Mulch: Within 24 hours after planting, planting areas must be mulched as called for in these specifications. The mulch shall be uniformly applied to a depth of two (2) inches over all shrub, tree and groundcover areas and any areas indicated on the plans.

E. Staking and Guying shall be installed within 24 hours; in accordance with details.

F. Initial Watering: Initially, water the plant material to develop uniform coverage and deep-water penetration of at least six inches (6"). Avoid erosion, puddling, and washing soil away from plant roots.

G. Hand Watering: Provide hand watering of plant material as necessary subject to weather conditions, to maintain healthy growing conditions until final acceptance. This shall be in addition to water received from irrigation system, if any.

H. Pruning:

1. The amount of general pruning shall be limited to the minimum necessary to remove dead or injured twigs and branches and to compensate for the loss of roots as a result of transplanting operations. Pruning shall be done in such a manner as not to change the natural habit of shape of a plant, and in accordance with National Arborist Association standards for pruning.

2. All broken or damaged roots shall be cut off smoothly. The tops of all trees shall be pruned in a manner complying with standard horticultural practices. All cut surfaces of one-half inch (1/2") or more in diameter above ground level shall be treated with approved commercial tree paint.

I. Weeding: In the event that weeds or undesirable vegetation becomes prevalent to such an extent that they threaten plant material, they shall be removed as directed by the ENGINEER. If necessary, the plant material and/or planting soil shall be replaced as needed to eliminate the weeds at the expense of the CONTRACTOR.

3.04 CLEANING AND PROTECTION

A. Disposal of Trash: All debris and other objectionable material created through planting operations and landscape construction shall be removed completely on a daily basis from the job or as directed by the ENGINEER. Excess soil shall be disposed of as directed by the ENGINEER.

B. Responsibility for Protection and Restoration of Property: The CONTRACTOR shall be responsible for all damage to property whether it is accidental or necessary for the completion of the contract.

C. Protection Against Mechanical Damage: The CONTRACTOR's responsibility for protection against mechanical damage shall include providing protection from vehicles and providing warning signs and barricades as might be necessary and CONTRACTOR shall repair, restore and

replace any planting areas which become damaged as a result of any negligence of the CONTRACTOR or CONTRACTOR's employees in complying with these requirements. Coordination shall be with the CITY and the ENGINEER.

D. Responsibility Prior to Final Acceptance:

1. Maintenance shall begin immediately after each plant is planted and continue until final acceptance.

2. Plants shall be watered by hose, soaking thoroughly each day for the first two weeks (14 calendar days) and every other day for the following two week period. Soaking then shall continue on a twice weekly basis for another period of three (3) weeks for material over five feet (5') height, amounting to a total of 28 days after installation of planting under five feet (5') and a total of 45 days for plants over five feet (5'). All watering is required without regard to an irrigation system.

3. Plant maintenance shall include watering, pruning, weeding, cultivating, mulching, tightening and repairing of guys, stakes, braces, etc., replacement of sick or dead plants, resetting plants to proper grades or upright position and maintenance of the watering saucer, and all other care needed for proper growth of the plants. Plant material rejected during the course of the construction shall be removed within five (5) working days and replaced before the inspection for completion will be scheduled.

4. During the maintenance period and up to the issuance of Certificate of Final Acceptance, the CONTRACTOR shall do all seasonal spraying and/or dusting of all planting. The materials and methods shall be in accordance with the highest standard nursery practices and as recommended by the CITY, or Horticultural Engineer and approved by the ENGINEER, prior to implementation.

5. Planting areas and plants shall be protected against trespassing and damage. If any plants become damaged or injured they shall be treated or replaced, as directed and in compliance with this specification. No work shall be done within or over planting areas or adjacent to plants without proper safeguards and protection.

3.05 MEASUREMENT AND PAYMENT

A. Measurement and payment will be based on actual quantities installed as more specifically discussed and described in SECTION 01025 of MEASUREMENT AND PAYMENT.

END OF SECTION 02900

SECTION 02910
SODDING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. All applicable provisions of the Bidding and Contract Requirements, and Division 1 - General Requirements shall govern the work under this Section.

1.02 WORK INCLUDED

A. The work included in this section consists of furnishing all labor, supplies, equipment and materials necessary to complete the installation of sod and associated materials herein after listed and as shown on the plans.

1.03 RELATED WORK

A. Section 02200 - Earthwork.

B. Section 02210 - Site Grading.

C. Section 02284 - Top Soil.

D. Section 02900 - Landscape Work.

1.04 QUALITY ASSURANCE

A. Sodding work shall be performed by a firm specializing in sodding.

B. Source Quality Control: Ship sod with certificates of inspection as required by governing authorities.

Do not make substitutions. If specified sod is not obtainable, submit proof of non-availability to ENGINEER, together with proposal for use of equivalent material.

C. Analysis and Standards: Package standard products with manufacturer have certified analysis. For other materials, provide analysis by recognized laboratory made in accordance with methods established by the Association of Official Agriculture Chemists, wherever applicable.

1.05 SUBMITTALS

A. Submit the following in accordance with Conditions of Contract and Division 1 Specification Sections.

B. Plant and Material Certifications:

1. Certificate of inspection as required by governmental authorities.
2. Manufacturer's or vendor's certified analysis for soil amendments or fertilizer materials.

1.06 DELIVERY, STORAGE AND HANDLING

A. Packaged Materials: Deliver packaged materials in containers showing weight, analysis, and name of manufacturer. Protect materials from deterioration during delivery, and while stored at site.

B. Sod: Time delivery so that sod will be placed within 24 hours after stripping. Protect sod against drying.

C. Transporting:

1. Sod transported to the project in open vehicles shall be covered with tarpaulin or other suitable covers securely fastened to the body of the vehicle to prevent injury to the sod material. Closed vehicles shall be adequately ventilated to prevent overheating of the sod. Evidence of inadequate protection against drying out in transit shall be cause for rejection.

2. Sod shall be kept moist, fresh and protected at all times. Such protection shall encompass the entire period during which the sod is in transit, being handled, or in temporary storage.

3. Upon arrival at the temporary storage location or the site of work, sod shall be inspected for proper shipping procedures. Should the roots be dried out, the ENGINEER will reject the sod. When sod has been rejected, the CONTRACTOR shall remove it at once from the area of the work and replace it.

4. Unless otherwise authorized by the ENGINEER, the CONTRACTOR shall notify the ENGINEER at least 48 hours in advance of the anticipated delivery date of sod material. A legible copy of the invoice, showing species and variety of sod included for each shipment shall be submitted to the ENGINEER. Certificate of Inspection must accompany each sod shipment.

1.07 JOB CONDITIONS

A. Begin installation of sod after preceding related work is accepted.

B. Environmental Requirements:

1. Install sod during months acceptable to the ENGINEER.
2. Do not install sod on saturated soil.

C. Protection: Erect signs and barriers to control vehicular traffic.

D. Utilities: Determine location of underground utilities and perform work in a manner which will avoid possible damage. Hand excavate, as required. Maintain grade stakes set by others until parties concerned mutually agree upon removal.

1.08 SEQUENCING AND SCHEDULING

A. Correlate planting with specified maintenance periods to provide maintenance from date of substantial completion.

B. Coordination with sodding: Plant trees, palms and shrubs after final grades are established and prior to planting of sod, unless otherwise acceptable to ENGINEER. If planting of trees, palms and shrubs occurs after sod work, protect sod areas and promptly repair damage to lawns resulting from planting operations.

1.09 SPECIAL PROJECT WARRANTY

A. Warranty sod through specified lawn maintenance period, and until final acceptance.

PART 2 - PRODUCTS

2.01 PLANTING SOIL

A. Provide new planting soil that is fertile, friable, natural loam, surface soil, reasonably free of subsoil, clay lumps, brush, weeds and other litter, and free of roots, stumps, stones larger than 1 inch in any dimension, and other extraneous or toxic matter harmful to plant growth.

B. Obtain planting soil from local sources or from areas having similar soil characteristics to that found at project site.

C. Refer to Section 162 of the "FDOT Standard Specifications for Road and Bridge Construction" dated 1991 for Topsoil Specifications.

2.02 COMMERCIAL FERTILIZER

A. For sod, provide fertilizer with percentage of nitrogen required to provide not less than 1 pound of actual nitrogen per 1,000 sq. ft. of lawn area and not less than 4 percent phosphoric acid and 2 percent potassium. Provide nitrogen in a form that will be available to sod during initial period of growth; at least 50 percent of nitrogen to be organic form.

2.03 SOD

A. Provide strongly rooted sod, not less than 2 years old, free of weeds and undesirable native grasses, and machine cut to pad thickness of 1-1/2 inch (plus or minus 1/4 inch), excluding top growth and thatch. Provide only sod capable of vigorous growth and development when planted (viable, not dormant).

B. Provide sod uniform pad sizes with maximum 5 percent deviation in either length or width. Broken pads with uneven ends will not be acceptable. Sod pads incapable of supporting their own weight when suspended vertically with a firm grasp on upper 10 percent of pad will be rejected.

C. Provide sod composed of the following (or approved equal):

1. Bahia sod
2. St. Augustine

D. Sod shall be nursery grown on cultivated mineral agricultural soils. Sod shall have been mowed regularly and carefully maintained from planting to harvest.

E. American Sod Producers Association (ASPA) Grade: Nursery Grown or Approved. Field grown sod is not acceptable.

F. Furnished in pads:

1. Size:

a. Length: 24 inches plus or minus 5%.
b. Width: 18 inches plus or minus 5%
c. Thickness: 1-1/2 inches excluding top growth and thatch.

2. Not stretched, broken or torn.

G. Uniformly mowed height when harvested: 2 inches.

H. Thatch: Maximum 1/2 inch uncompressed.

I. Inspected and found free of disease, nematodes, pests, and pest larvae, by entomologist of State Department of Agriculture.

J. Weeds:

1. Free of Bermuda grass, nut grass or other objectionable weeds.

K. Uniform in color, leaf texture, and density.

2.04 WATER

A. Water shall be potable, from municipal water supplies or other sources which are approved by a public health department.

2.05 FERTILIZER

A. FS O-F-241c (1), Grade A or B.

B. The chemical designation shall be 1-8-8, with at least 50 percent of the nitrogen from a non-water-soluble organic source.

2.06 HERBICIDES

A. As recommended by the State Department of Agriculture.

2.07 STAKES

A. Softwood, 3/4-inch diameter, 8-inch length.

PART 3 - EXECUTION

3.01 PREPARATION OF GROUND SURFACE

A. Before mixing, clean planting soil of roots, plants, sods, stones, clay lumps, and other extraneous material harmful or toxic to plant growth.

B. Mix specified fertilizers with planting soil as necessary at rates specified. Delay mixing fertilizer if planting will not allow placing of planting soil within a few days.

C. For sod, mix planting soil either prior to planting or apply on surface of topsoil and mix thoroughly before planting.

3.02 PREPARATION OF PLANTING BEDS

A. Loosen subgrade of lawn areas to a minimum depth of 4 inches. Remove stones measuring over 1 1/2 inches in any dimension. Remove sticks, stones, rubbish, and other extraneous matter. Limit preparation to areas, which will be planted promptly after preparation.

B. Spread planting soil to minimum depth of 2" or as required meeting lines, grades, and elevations shown, after light rolling and natural settlement. Add specified fertilizer and mix thoroughly into upper 4 inches of topsoil.

C. Place approximately 1/2 of total amount of topsoil required. Work into top of loosened subgrade to create a transition layer and then place remainder of planting soil. Add specified soil amendments and mix thoroughly into upper 4 inches.

D. Where sod is to be planted in areas that have not been altered or disturbed by excavating, grading, or stripping operations, prepare soil for lawn planting as follows: Till to a depth of not less than 6 inches. Apply fertilizers as specified. Remove high areas and fill in depressions. Till soil to a homogenous mixture of fine texture, free of lumps, clods, stones, roots and other extraneous matter.

E. Prior to preparation of unchanged areas, remove existing grass, vegetation and turf. Dispose of such material outside of CITY'S property. Do not turn existing vegetation over into soil being prepared for lawns.

F. Allow for sod thickness in areas to be sodded.

G. Apply specified commercial fertilizer at rates specified and thoroughly mix into upper 2 inches of topsoil. Delay application of fertilizer if lawn planting will not follow within a few days.

H. Fine grade sod areas to smooth, even surface with loose, uniformly fine texture. Roll, rake, and drag lawn areas, remove ridges and fill depressions, as required to meet finish grades. Limit fine grading to areas, which can be planted immediately after grading.

I. Moisten prepared sod areas before planting if soil is dry. Water thoroughly and allow surface to dry before planting lawns. Do not create a muddy soil condition.

J. Restore sod areas to specified condition, if eroded or otherwise disturbed, after fine grading and prior to planting.

3.03 SODDING NEW LAWNS

A. Lay sod within 24 hours from time of stripping.

B. Lay sod to form solid mass with tightly fitted joints. Butt ends and sides of sod strips; do not overlap. Stagger strips to offset joints in adjacent courses. Work from boards to avoid damage to subgrade or sod. Tamp or roll lightly to ensure contact with subgrade. Work sifted soil into minor cracks between pieces of sod; remove excess to avoid smothering of adjacent grass.

C. Anchor sod on slopes with wood pegs to prevent slippage.

D. Water sod thoroughly with a fine spray immediately after planting.

3.04 MAINTENANCE

A. Begin maintenance immediately after planting.

B. Maintain lawns for not less than 30 days after substantial completion, and longer as required to establish an acceptable lawn.

C. Maintain sod by watering, fertilizing, weeding, mowing, trimming, and other operations such as rolling, regrading and replanting as required to establish a smooth, acceptable lawn, free of eroded or bare areas.

D. Mowing:

1. Whenever grass reaches a height of 3 inches, it shall be cut back to 2" with all clippings removed.

2. After two mowings, CONTRACTOR shall topdress the sod with an application of fertilizer at the rate of 1 pound of actual nitrogen per 1,000 square feet.

3.05 CLEANUP AND PROTECTION

A. During sodding work, keep pavements clean and work area in an orderly condition.

B. Protect sodding work and materials from damage due to landscape operations, operations by other CONTRACTORs and trades, and trespassers. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged sod work as directed.

3.06 INSPECTION AND ACCEPTANCE

A. Sod areas will be accepted when in compliance with all the following conditions:

1. The roots are thoroughly attached to the soil.
2. Absence of visible joints.
3. All areas show a uniform stand of specified grass in healthy condition.
4. At least 60 days have elapsed since the completion of the work in this section.

B. When inspected sod work does not comply with requirements, replace rejected work and continue specified maintenance until reinspected by ENGINEER and found to be acceptable. Remove rejected plants and materials promptly from project site.

C. Procedure:

1. The CONTRACTOR shall submit a request for acceptance in writing to the ENGINEER. Request must be received not less than 10 days before the anticipated date for final inspection.

2. Upon completion of all repairs and/or renewals required by ENGINEER at the inspection, the ENGINEER will verify the completeness of the work and then notify the CITY in writing that the work is accepted.

3. Upon completeness, the CITY will assume maintenance of all sod areas.

3.07 MEASUREMENT AND PAYMENT

A. Measurement and payment will be based on actual quantities installed as more specifically discussed and described in SECTION 01025 of MEASUREMENT AND PAYMENT.

END OF SECTION 02910

SECTION 03010
CONCRETE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. All applicable provisions of the Bidding and Contract Requirements, and Division 1 - General Requirements shall govern the work under this Section.

1.02 WORK INCLUDED

A. Provide all labor, materials, necessary equipment and services to complete the concrete work, as indicated on the drawings, as specified herein or both, except as for items specifically indicated as "NIC ITEMS".

B. Including but not necessarily limited to the following:

1. Form work, shoring, bracing and anchorage.

2. Concrete reinforcement and accessories.

3. Cast-in-place concrete.

4. Plugging abandoned pipelines and/or structures in place.

1.03 RELATED WORK

A. Section 02510 - Concrete sidewalk

B. Section 02513 - Asphaltic Concrete Paving - General

C. Section 02515 - Portland Cement Concrete Paving.

D. Section 03300 - Cast-in-Place Concrete.

E. All applicable sections of Division 1, 2, 3 and 4.

1.04 QUALITY ASSURANCE

A. All work shall be in accordance with ACI 301, latest edition, a copy of which shall be maintained on site.

B. Requirements of Regulatory Agencies: perform work in accordance with local building and other applicable codes.

C. Installation: Performed only by skilled workmen with satisfactory record of performance on completed projects of comparable size and quality.

D. Inspection and Testing:

1. Test Cylinders - As per ASTM C-39.

a. Minimum of three (3) concrete test cylinder shall be taken for every 75 or less cubic yards of concrete placed each day.

b. Minimum of one (1) slump test shall be taken during any cold weather concreting, and be cured on job site under same conditions as the concrete it represents.

2. Slump Test - As per ASTM C-143.

a. Minimum of one (1) slump test shall be taken for each set of test cylinders taken.

1.05 SUBMITTALS

A. Test Reports: Reports of concrete compression, yield, air content and slump tests.

B. Certificates:

1. Manufacturer's certification that materials meet specification requirements.

2. Material content per cubic yards of each class of concrete furnished.

a. Dry weights of cement.
b. Saturated surface-dried weights of fine and course aggregate.
c. Quantities, type and name of all mixtures.
d. Weight of water.

3. Ready-mix delivery tickets as per ASTM C-94.

C. Shop Drawings:

1. Show sizes and dimensions for fabrication and placing of reinforcing steel and bar supports.

2. Indicate reinforcement sizes, spaces, locations and quantities or reinforcing steel, and wire fabric, bending and cutting schedules, splicing and supporting and spacing devices.

3. Indicate formwork dimensioning, materials, arrangement of joints and ties.

4. Shop drawings shall be prepared under seal of a Professional Structural Engineer, registered in the State of Florida.

1.06 DELIVERY, STORAGE AND HANDLING

A. Deliver reinforcement to project site in bundles marked with metal tags indicating bar size and length.

B. Handle and store materials to prevent contamination.

1.07 JOB CONDITIONS

A. Allowable concrete temperatures:

1. Hot weather: Maximum 90 degrees F as per ASTM C-94.

B. Do not place concrete during rain, unless protection is provided.

PART 2 - PRODUCTS

2.01 FORM MATERIALS

A. Materials shall conform to ACI 301, latest edition.

B. Plywood forms: Douglas Fir Species, solid one side, form grade, sound undamaged sheets.

C. Lumber: Southern Pine Species, No. 2 Grade, with grade stamp clearly visible.

D. Form Ties: Removable, snap-off metal, of fixed and adjustable length, cone ends.

E. Tubular Column Type: Round, spirally wound laminated fiber material, clearly visible.

2.02 REINFORCING STEEL

A. Reinforcing steel shall conform to ASTM A615, 60 ksi yield grade billet steel reformed bars; uncoated finish.

B. Welded steel wire fabric shall conform to ANSI/ASTM A185, plain type; coiled rolls, uncoated finish.

2.03 CONCRETE MATERIALS

A. Cement: shall conform to ASTM C150, normal Type II Portland, gray color.

B. Fine and coarse aggregate shall conform to ASTM C33.

C. Water: clean and not detrimental to concrete.

2.04 ADMIXTURES

A. Air Entraining: ASTM C-260

B. Chemical: Type (as required) ASTM C-494.

C. Fly Ash and Pozzolans: ASTM C-618

D. Color - Conditioned Concrete: ASTM C-494 and ASTM C-979

2.05 ACCESSORIES

A. Non-shrink grout: pre-mixed compound with non-metallic aggregate, cement, water reducing and plasticing agents; capable of minimum compressive strength of 3500 psi.

B. Construction joints: locate and install construction joints, which are not shown on drawings, so as not to impair strength and appearance of the structure, as acceptable to the ENGINEER. Place construction joints perpendicular to the main reinforcement, continue reinforcement across construction joints.

C. Expansion joints: shall be a minimum of 3/4-inch thick asphalt impregnated fiberboard as per ASTM D-1751.

D. Form release agent shall be a colorless material, which will not stain concrete, absorb moisture or impair natural bonding or color characteristics of coating intended for use on concrete.

E. Water shall be clear and potable.

2.06 CURING MATERIALS

A. Water shall be clean and potable.

B. Absorptive mat shall be burlap fabric of 9 oz./sq. yd. clean, roll goods complying with AASHTO M182, Class 3.

C. Membrane curing compound shall conform to ASTM C309.

D. Clear Sealer: "Clear Bond" as manufactured by Guardian Chemical Co., Dayton Day-Chem Cure-W (J-9-A) (or approved equal).

E. Color curing compound shall be liquid membrane-forming conforming to ASTM C 309 two-component Lithochrome Colorwax by L.M. Scofield Company, (or approved equal), color to match admixture for color-conditioned concrete.

2.07 CONCRETE MIX

A. Mix concrete in accordance with ASTM C94.

B. Concrete:

1. Compressive strength (28 days): 3000 psi.

2. Slump: 4(±) 1 inch.

C. Concrete / Flowable fill for grouting and plugging:

1. Compressive strength (28 days) 2000 psi.

2. Slump: as required to grout and plug.

PART 3 - EXECUTION

3.01 FORMWORK ERECTION

A. Verify lines, levels, and measurement before proceeding with formwork.

B. Hand trimmed sides and bottom of earth forms; remove loose dirt.

C. Align form joints.

D. Do not apply form release agent where concrete surfaces receive special finishes or applied coatings, which may be affected by agent.

E. Coordinate work of other sections in forming and setting openings, slots, recesses, chases, sleeves, bolts, anchors and other inserts.

3.02 REINFORCING

A. Place, support and secure reinforcement against displacement.

3.03 PLACING CONCRETE

A. Color Conditioned concrete, when batching, shall not be less than one-third of the capacity of the mixing drum (a minimum of four yards for a ten yard mixer) and will be in full cubic yard increments.

B. Notify ENGINEER minimum 24-hours prior to commencement of concreting operations.

C. Scratch, float, trowel, broom or belt finish surfaces, as scheduled or indicated on the Drawings.

D. Place 2000 psi concrete for pugging and grouting pipelines and structures in-place as required after proper connection to new service and function of system is complete.

3.04 TOLERANCES

A. Provide Class B tolerance to floor slabs according to ACI 301. Pitch to drains 1/4 inch per foot.

3.05 FINISHES FOR EXPOSED SURFACES

A. Provide exposed surfaces with finishes as called for on the Drawings.

3.06 CONCRETE CURING

A. Curing for standard grey work after finishing, cure concrete by keeping moist for one (1) week after placement. Floors and vertical surfaces may be sprayed with an approved curing compound to retard evaporation of water, if spraying is not objectionable because of future finishing requirements. Begin curing operations as soon as concrete has attained its initial set. Keep exposed concrete surface moist for at least one (1) week.

B. Apply a liquid membrane-forming compound, conforming with ASTM C 309, color to match that of the color condition concrete. Apply on flat work immediately after the finishing operation pursuant to the manufacturers recommendations.

3.07 MEASUREMENT AND PAYMENT

A. No separate measurement and payment is provided for work covered by this Section. All costs in connection with concrete work shall be included in the bid price of any item in the bid schedule for which concrete products, materials, or appurtenances are required.

END OF SECTION 03010

SECTION 03100
CONCRETE FORM WORK

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. All applicable provisions of the Bidding and Contract Requirements, and Division 1 - General Requirements shall govern the work under this Section.

1.02 WORK INCLUDED

A. Formwork for Cast-In-Place Concrete, with shoring, bracing, and anchorage.

B. Openings for other affected work.

C. Form accessories.

D. Stripping forms.

1.03 RELATED WORK

A. Section 03010 - Concrete.

B. Section 03200 - Concrete Reinforcement.

C. Section 03300 - Cast-In-Place Concrete.

1.04 SYSTEM DESCRIPTION

A. Design, engineer and construct formwork, shoring and bracing to meet design code requirements, so that resultant concrete conforms to required shapes, lines, and dimensions.

1.05 QUALITY ASSURANCE

A. Construct and erect concrete formwork in accordance with ACI 301 and 347.

1.06 SUBMITTALS

A. Indicate pertinent dimensions, materials, and arrangement of joints and ties.

B. Prepare shop drawings under seal of Professional Structural Engineer registered in the State of Florida.

C. Manufacturers certification that materials meet specification requirements.

1.07 DELIVERY, STORAGE AND HANDLING

A. Deliver, store and handle materials in accordance with manufacturers recommendations.

B. Deliver form materials in manufacturer's packaging with installation instructions.

C. Store off ground in ventilated and protected area to prevent deterioration from moisture or damage.

D. Remove packaging from void forms.

PART 2 - PRODUCTS

2.01 FORM MATERIALS

A. Plywood: Douglas Fir Species; medium density overlaid one side grade; sound, undamaged sheets with straight edges.

B. Lumber: Southern Pine Species; No. 2 grade; with grade stamp clearly visible.

C. Tubular Column: Round, of spirally wound laminated fiber type; surface treated with release agent; of size required.

2.02 FORMWORK ACCESSORIES

A. Form Ties: Snap-off metal of adjustable length; cone type; 1 1/2 inch break back dimension; free of defects that will leave holes no larger than 1-1/4 inches diameter in concrete surface.

B. Form Release Agent: Colorless material which will not stain concrete, absorb moisture, or impair natural bonding in color characteristics of coating intended for use on concrete.

C. Fillets for Chamfered Corners: Wood strips or rigid PVC plastic in maximum possible lengths.

D. Nails, Spikes, Lag Bolts, Through Bolts, Anchorages: Sized as required; or strength and character to maintain formwork in place while placing concrete.

PART 3 - EXECUTION

3.01 INSPECTION

A. Verify lines, levels, and measurements before proceeding with formwork.

3.02 PREPARATION

A. Hand-trim sides and bottoms of earth forms; remove loose dirt prior to placing concrete.

B. Minimize form joints. Symmetrically align joints and make weathertight to prevent leakage of mortar.

C. Arrange and assemble formwork to permit dismantling, stripping, so that concrete is not damaged during its removal.

D. Arrange forms to allow stripping without removal of principal shores, where required to remain in place.

3.03 ERECTION

A. Provide bracing to ensure stability of formwork. Strengthen formwork liable to be overstressed by construction loads.

B. Camber slabs and beams to achieve ACI 301 tolerances.

C. Provide temporary ports in formwork to facilitate cleaning and inspection. Locate openings at bottom of forms to allow flushing water to drain. Close ports with tight fitting panels, flush with inside face of forms, neatly lifted so that joints will be apparent in exposed concrete surfaces.

D. Provide expansion strips on external corners of beams and columns, where exposed.

E. Install void forms. Protect from moisture before concrete placement. Protect from crushing during concrete placement.

F. Construct formwork to maintain tolerances in accordance with ACI 301.

3.04 APPLICATION OF FORM RELEASE AGENT

A. Apply form release agent on formwork in accordance with manufacturer's instructions. Apply prior to placing reinforcing steel, anchoring devices, and embedded items.

B. Do not apply form release agent where concrete surfaces are scheduled to receive special finishes or applied coverings, which may be affected by agent. Soak contact surfaces of untreated forms with clean water. Keep surfaces wet prior to placing concrete.

3.05 INSERTS, EMBEDDED PARTS, AND OPENINGS

A. Provide formed openings where required for work embedded in or passing through concrete.

B. Coordinate work of other sections in forming and setting openings, slots, recesses, chases, sleeves, bolts, anchors, and other inserts.

C. Install accessories in accordance with manufacturer's instructions, level and plumb. Ensure items are not disturbed during concrete placement.

3.06 FORM REMOVAL

A. Notify ENGINEER prior to removing formwork.

B. Do not remove forms and shoring until concrete has sufficient strength to support its own weight, and construction and design loads which may be imposed upon it. Remove load-supporting forms when concrete has attained 75 percent of required 28-day compressive strength, provided construction is reshored.

C. Formwork not supporting weight of concrete, such as sides of beams, walls, columns, and similar parts of the work, may be removed after cumulatively curing at not less than 50 degrees F for 24-hours after placing concrete, provided concrete is sufficiently hard to not be damaged by form removal operations, and provided curing and protection operations are maintained.

D. Formwork supporting weight of concrete, such as beam soffits, joints, slabs and other structural elements, may not be removed in less than 14 days and until concrete has attained design minimum compressive strength at 28-days. Determine potential compressive strength of inplace concrete by testing field-cured specimens representative of concrete location of members.

E. Reshore structural members due to design requirements or construction conditions to permit successive construction.

F. Remove formwork progressively so no unbalanced loads are imposed on structure.

G. Do not damage concrete surfaces during form removal.

H. Store reusable forms for exposed architectural concrete to prevent damage to contact surfaces.

I. Remove formwork in same sequence as concrete placement to achieve similar concrete surface coloration.

3.07 CLEANING

A. Clean forms to remove foreign matter as erection proceeds.

B. Ensure that water and debris drain to exterior through clean-out ports.

3.08 MEASUREMENT AND PAYMENT

A. No separate measurement and payment is provided for work covered by this Section. All costs in connection with concrete formwork shall be included in the bid price of any item in the bid schedule for which concrete formwork is required.

END OF SECTION 03100

SECTION 03200
CONCRETE REINFORCEMENT

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. All applicable provisions of the Bidding and Contract Requirements, and Division 1 - General Requirements shall govern the work under this Section.

1.02 WORK INCLUDED

A. Reinforcing steel bars, welded steel wire fabric, fabricated steel bar or rod mats for cast-in-place concrete.

B. Support chairs, bolsters, bar supports, spaces, for supporting reinforcement.

1.03 RELATED WORK

A. Section 03010 - Concrete.

B. Section 03100 - Concrete Formwork.

C. Section 03300 - Cast-In-Place Concrete.

1.04 QUALITY ASSURANCE

A. Perform concrete reinforcement work in accordance with CRSI Manual and Standard Practice, and Documents 63 and 65.

B. Conform to ACI 301.

1.05 SUBMITTALS

A. Indicate sizes, spacings, locations and quantities of reinforcing steel, bending and cutting schedules, splicing, stirrup spacing, supporting and spacing devices.

B. Prepare shop drawings under seal of Professional Structural ENGINEER registered in the State of Florida.

C. Submit mill test certificates and supplied concrete reinforcing, indicating physical and chemical analysis.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Reinforcing Steel: ASTM A615, 60-ksi-yield grade billet-steel, deformed bars, uncoated finish.

B. Welded Steel Wire Fabric: ANSI/ASTM A185 plain type; in coiled rolls; uncoated finish.

C. Stirrup Steel: ANSI/ASTM A82.

2.02 ACCESSORY MATERIALS

A. Tie Wire: Minimum 16 gauge annealed type.
B. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for strength and support of reinforcement during installation and placement of concrete, including load bearing pad on bottom to prevent vapor barrier puncture.

C. Chairs, Bolsters, Bar Supports, Spacers Adjacent to Architectural Concrete Surfaces: Plastic coated or stainless steel type; sized and shaped as required.

2.03 FABRICATION

A. Fabricate in accordance with ACI 315, providing concrete cover specified in Section 03300.

B. Locate reinforcing splices not indicated on Drawings at points of minimum stress. Indicate location of splices on shop drawings.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Before placing concrete, clean reinforcement of foreign particles or coatings.

B. Place, support, and secure reinforcement against displacement. Do not deviate from alignment or measurement.

C. Do not dispose or damage vapor barrier required by Section 03300.

3.08 MEASUREMENT AND PAYMENT

A. No separate measurement and payment is provided for work covered by this Section. All costs in connection with concrete reinforcement work shall be included in the bid price of any item in the bid schedule for which concrete reinforcement is required.

END OF SECTION 03200

SECTION 03300
CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. All applicable provisions of the Bidding and Contract Requirements, and Division 1 - General Requirements shall govern the work under this Section.

1.02 WORK INCLUDED

A. Provide all labor, materials, necessary equipment and services to complete the Cast-In-Place Concrete Work, as indicated on the drawings, as specified herein or both except as for items specifically indicated as "NIC ITEMS".

B. Including but not necessarily limited to the following:

1. Cast-In-Place concrete walls, footings, foundation walls, paving, walks, slabs, formwork, reinforcing and all other components as indicated on the Drawings.

1.03 RELATED WORK

A. Section 03010 - Concrete.

B. Section 03100 - Concrete Form work.

C. Section 03200 - Concrete Reinforcement.

D. Section 03370 - Concrete Curing.

E. Section 02510 - Concrete Sidewalk

1.04 QUALITY ASSURANCE

A. Applicator Qualifications: Minimum of five years experience on 5 comparable concrete projects.

B. Requirements of Regulatory Agencies: Perform work in accordance with local building codes.

C. Allowable Tolerances: Flat work true to plane 1/8 inch in 10 feet.

D. Slump tests as per ASTM C-143, and test cylinders as per ASTM C-39.

1.05 TESTS

A. Submit proposed mix design of each class of concrete to appointed firm for review prior to commencement of work.

B. Testing firm will take cylinders and perform slump and air entrainment tests in accordance with ACI 301.

C. Tests of cement and aggregates will be performed to ensure conformance with requirements stated herein.

D. Three (3) concrete test cylinders will be taken for every 75 cu. yds. or less of each class of concrete placed each day.

E. One (1) slump test will be taken for each set of test cylinders taken.

F. All testing shall be at the expense of the CONTRACTOR.

1.06 SUBMITTALS

A. Provide product data for specified products.

B. Test Reports: Reports of concrete compression, yield, air content, and slump tests.

C. Certificates:

1. Manufacturer's certification that materials meet specification requirements.

2. Material content per cubic yard of each class of concrete furnished.

   a. Dry weights of cement.
   b. Saturated surface-dried weights of fine and coarse aggregate.
   c. Quantities, type and name of admixtures.
   d. Weight of water.

3. Ready-mix delivery tickets, ASTM C-94.

D. Shop Drawings:

1. Show sizes and dimensions for fabrication and placing of reinforcing steel and bar supports.

2. Indicate bar schedules, stirrup spacing, and diagrams of bend bars.

3. Detail items of form systems affecting appearance of architectural concrete surfaces such as joints, tie holes, liners, patterns and textures. Show items in relation to entire form system.

1.07 DELIVERY, STORAGE AND HANDLING

A. Deliver reinforcement to project site in bundles marked with metal tags indicating bar size and length.

B. Handle and store materials to prevent contamination.

1.08 ENVIRONMENTAL REQUIREMENTS

A. Allowable concrete temperatures:
- Hot Weather: Maximum 90□ as per after C-94.

B. Do not place concrete during rain, unless protection is provided.

PART 2 - PRODUCTS

2.01 MATERIALS & MANUFACTURERS

A. Concrete Ready-Mix concrete ASTM C-94.

1. Cement:

a. ASTM C 150, Type II

2. Admixtures:

a. Air entraining: ASTM C-260
b. Chemical: Type (as required) ASTM C-494.
c. Fly ash and pozzolans: ASTM C-618
d. Vapor Barrier: 6-mil thick film of type recommended for below grade application.

3. Coarse aggregate: Not less than 50% clean, hard, crushed stone conforming to requirements of Table 2, size number 467 ASTM C-33.

4. Slump 4 in. maximum; plus tolerance 0, minus tolerance 1 in.

5. Air content: 5% + 1%.

6. Mix proportioning:

a. In accordance with ASTM C-94.
b. 28 day compressive strength of moist cured laboratory samples 3,000 PSI.
c. Use set retarding admixtures during hot weather only when approved by ENGINEER.
d. Minimum cement contents 5 sacks/cubic yards.
e. Add air-entraining agent to concrete work exposed to exterior.

7. Curing Material: Liquid membrane, ASTM C-309, Type 1.

8. Mixes:

a. ASTM C-94.
b. Mix concrete only in quantities for immediate use.
c. Do not retemper or use set concrete.

B. Bars.

1. Deformed billet steel: ASTM A 615, Grade 60.

C. Wire Fabric:

1. Welded Wire Fabric Steel: ASTM A 185

D. Tie Wire: FS QQ-W-461-G, annealed steel, black 16 ga. minimum.

E. Bar supports: Conform to "Bar Support Specification," CRSI Manual of Standard Practice.

F. Forms:

1. Conform with ACI 347, Chapter 3, Material and Form Work.

2. Lumber:

a. Softwood framing lumber: Kiln dried, PS-20.
b. Boards less than 1 1/2 in. thick and 2 in. wide, used for basic forms and form liners: Kiln dried.
c. Grade marked by grading rules agency approved by American Lumber Standards Committee.
d. Light framing or studs for board or plywood forms, 2 in. to 4 in. width and thickness Construction Standard grade.
e. Boards for basic forms Construction Standard grade.
f. Board surface: Smooth.

3. Plywood:

a. Exterior type softwood plywood, PS 1-66.
b. Each panel stamped or branded indicating veneer grades, species, type and identification.
c. Wood faced plywood for architectural concrete surfaces.
(1). Panel veneer grades: B - C.
(2). Mill-oiled sides and mill-sealed edges of panels.

4. Ties:

a. Materials: Stainless Steel.
b. Type: Snap Ties.
c. Depth of breakback: 1 in.
d. Maximum diameter 1/4 in.

5. Form coatings:

a. Non-staining type.
b. Agent: Pine oil derivative.

G. Water: Clean and potable.

PART 3 - EXECUTION

3.01 FORMWORK

A. Conform to ACI 347, Chapter 2, Construction; and Article 4.2, architectural Concrete.

B. Framing, Bracing and Plywood Form Liners: APA Form V 345-72.

C. Provide temporary openings in framework for concrete placement.

D. Fill voids of plywood joints with sealant and tool smooth.

E. CONTRACTOR is responsible for the design, construction, removal and complete safety of formwork and shoring.

F. Form construction shall be provided to shape, lines dimensions of members shown; substantial, tight enough to prevent leakage, and properly braced or tied to maintain position and size, form sides and bottoms of members unless specifically excepted.

3.02 REINFORCING

A. Fabrication shall be provided to latest ACI Manual of Practice ACI-315.

B. Reinforcing free from excessive rust, scale or coating reducing bond. Bars bent cold in fabrication plant. Chairs, support bars, and other accessories furnished to carry and provide coverage as required by ACI Manual.

C. Unless otherwise indicated the minimum coverage is 3 in. for footings (slabs to have 3/4 in. minimum). Call any "crowding" of reinforcement to ENGINEERs attention during placing.

D. Splices shall be Mesh 6 in. lap, bars 30 diameter minimum.

E. Conduit or pipes embedded in concrete must have specific approval and be located to avoid cracking or reduction in strength. Provide extra strong pipe sleeves where pipes are allowed to pierce concrete beams or walls.

F. Placement:

1. Bar supports: CRSI 65.

2. Reinforcing bars: CRSI 63.

G. Steel Adjustment:

1. Move within allowable tolerances to avoid interference with other reinforcing steel, conduits, expansion joints, or embedded items.

2. Do not move bars beyond allowable tolerances without concurrence of ENGINEER.

3. Do not heat, bend or cut bars without concurrence of ENGINEER.

H. Splices:

1. Lap splices: Tie securely with wire to prevent displacement of splices during placement of concrete.

2. Splice devices: Install in accordance with manufacturer's written instructions.

3. Welding: Perform in accordance with AWS Standards.

4. Do not splice bars except at locations shown on drawings without concurrence of ENGINEER.

I. Wire Fabric:

1. Install in longest practicable length.

2. Lap adjoining pieces one full mesh minimum, and lay splices with 16-gage wire.

3. Offset end laps in adjacent widths to prevent continuous laps.

J. Cleaning: Remove dirt, grease, oil, loose mill scale, excessive rust, and foreign matter that will reduce bond with concrete.

K. Protection During Concreting: Keep reinforcing steel in proper position during concrete placement.

3.03 JOINTS

A. Construction pours shall be continuous pours except where joints are indicated. No additional joints except by special acceptance in writing by the ENGINEER. Allow no construction or interrupted pour joints in any exposed surface, unless treated as part of design.

1. Where indicated and as detailed, provide saw cut type construction joints of sizes as called for on the drawings.

B. Expansion joints shall be constructed as shown on drawings.

1. Expansion material shall be 1/2" continuous full depth strips set 1/2" below finish surface with 1/2" x 1/2" joint sealant filler above.

3.04 BUILT-IN ANCHORING DEVICES, FIXTURES, PIPE SLEEVES AND OTHER INSERTS

A. Build-in and coordinate as required and called for on the drawings all items to be constructed into concrete such as anchoring devices, fixtures, piping, sleeves and other inserts and items as required for a complete installation.

3.05 INSPECTION

A. Assure that excavation and formwork are completed, with smooth rubbed finish, and that excess water is removed.

B. Check that reinforcement is secured in place.

C. Verify that expansion joint material, anchors, and other embedded items are secured in position.

D. Verify anchors, seats, plates, reinforcement, and other items to be cast into concrete are accurately placed, held securely, and will not cause hardship in placing concrete.

3.06 CONCRETE QUALITY

A. Design of mix shall be a laboratory designed mix to satisfy the following requirements and shall be approved by the ENGINEER.

1. Ready mixed concrete as per ASTM C-94 with 28 day strength 3,000 PSI minimum, for all standard grey concrete work.

2. Proportion the concrete to work readily into forms and around reinforcement, without excessive manipulation, segregation or water gain. Approved additives may be used to achieve the above results.

3. Slump shall be maximum 3 in. for footings, and for all other concrete shall be 3 in. to 5 in.

4. Submit for approval representative test results by independent laboratory to substantiate proposed mix design.

3.07 PREPARATION FOR POURS

A. Notify the CITY'S Representative, ENGINEER and other inspectors at least 36 hours prior to inspection.

B. Equipment forms, and reinforcing shall be clean and wet down, reinforcing firmly secured in place, runways set up and not resting on or displaying reinforcing.

C. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent. Apply bonding agent in accordance with manufacturer's instruction.

D. At locations where new concrete is dowelled to existing work, drill holes in existing concrete, insert steel dowels, and pack solid with non-shrink grout.

3.08 PLACING

A. Mixing and conveying shall be as per ASTM C-94 and as follows:

1. Maximum elapsed time from addition of water to placing in forms -60 minutes, (total mixing time).

2. Concrete handled and placed by methods, which keep concrete plastic, prevent separation of materials, and do not displace reinforcement.

B. Deposit as close as possible to final position to avoid segregation of materials. Restrict drop to 3 foot maximum (less for exposed concrete), using tremie if necessary.

1. Compact by mechanical vibration to thoroughly work around reinforcing and eliminate honeycomb.

C. Place concrete in accordance with ACI 301.

D. Hot Weather Placement: ACI 301.

E. Cold Weather Placement: ACI 301.

F. Ensure reinforcement, inserts, embedded parts and formed joints are not disturbed during concrete placement.

G. Maintain concrete cover around reinforcing as follows:

Item	Coverage
Beams	1 1/2 inch
Supported Slabs	3/4 inch
Column Ties	1 1/2 inch
Walls (exposed to weather or backfill)	2 inch
Footings and Concrete Formed Against Earth	3 inch
Slabs on Fill	2 inch

H. Place concrete continuously between predetermined construction and control joints. Do not break or interrupt successive pours such that cold joints occur.

I. Saw cut control joints at an optimum time after finishing. Use 3/16 inch thick blade, cutting 1/3 depth of slab thickness.

J. Separate exterior slabs on fill from vertical surfaces with joint filler. Extend joint filler from bottom of slab to within 1/2 inch of finished slab surface.

K. Excessive honeycomb or embedded debris in concrete is not acceptable. Notify ENGINEER upon discovery.

3.09 CONCRETE CURING

A. Curing for standard grey work after finishing, cure concrete by keeping moist for one (1) week after placement. Floors and vertical surfaces may be sprayed with an approved curing compound to retard evaporation of water, if spraying is not objectionable because of future finishing requirements. Begin curing operations as soon as concrete has attained its initial set. Keep exposed concrete surface moist for at least one (1) week.

B. Apply a liquid membrane-forming compound, conforming to ASTM C 309, color to match that of the color condition concrete. Apply on flat work immediately after the finishing operation pursuant to the manufacturers recommendations.

3.10 CONCRETE FINISHING

A. Unexposed concrete work shall be patched and repaired immediately after removal of forms.

1. Cut off metal ties a minimum of 1 in. back from surface of concrete.

2. Moderate honeycomb cut out and prepared for patching. Severe honeycomb with exposed steel reinforcing is to be removed or "united" at the discretion of the ENGINEER.

3. Wet areas for patching and pack carefully with rich mortar rubbed to match surface.

B. Provide concrete surfaces to be left exposed, walls, columns, beams, with smooth rubbed finish.

C. Provide Class B tolerances to floor slabs and toppings according to ACI 301.

D. Pitch to drains 1/4 inch per foot.

E. Exposed concrete work shall be patched and repaired as accepted by ENGINEER after consultation. Patching and rubbing will be kept to a minimum if possible, but when necessary will be done with great care to obtain maximum degree of matching in color and texture to adjacent finished concrete surfaces.

F. Monolithic finish using care to obtain a level surface; floors out of level or with variation greater than 1/8 in. in 10 feet shall be corrected.

G. All finishes shall be as called for on the drawings.

3.11 SEPARATE FLOOR TOPPINGS

A. Prior to placing, roughen concrete base course and remove foreign materials. Broom and vacuum clean.

B. Place dividers, edge strips, reinforcing and other items to be cast in.

C. Apply bonding agent on base course in accordance with manufacturer's instructions. Apply sand and cement slurry coat on base course immediately prior to placing toppings.

D. Place concrete floor toppings to required lines and levels.

3.12 PATCHING

A. Notify ENGINEER immediately upon removal of forms.

B. Patch imperfections.

3.13 DEFECTIVE CONCRETE

A. Modify or replace concrete not conforming to required levels and lines, details, and elevations.

B. Repair or replace concrete not properly placed or of the specified type.

3.14 FIELD QUALITY CONCRETE

A. Maintain records of placed concrete items. Record date, location of pour, quantity, air temperature, and test samples taken.

3.15 PROTECTION

A. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.

B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.

C. During curing period, protect concrete from damaging mechanical disturbances, water flow, loading, shocking, and vibration.

3.16 APPLICATION OF BOND COAT FOR CONCRETE LEVELING COAT FOR PAVERS AND TEXTURED SURFACES

A. Provide installation as per manufacturer's standard printed specifications, instructions and recommendations.

3.17 MEASUREMENT AND PAYMENT

A. No separate measurement and payment is provided for work covered by this Section. All cast in place concrete shall be included in the bid price of the relevant item in the bid schedule.

END OF SECTION 03300

SECTION 03370
CONCRETE CURING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. All applicable provisions of the Bidding and Contract Requirements, and Division 1 - General Requirements shall govern the work under this Section.

1.02 WORK INCLUDED

A. Maintenance of conditions for proper concrete curing.

1.03 RELATED WORK

A. Section 02510 - Concrete Sidewalk

B. Section 03010 - Concrete

C. Section 03300 - Cast-in-Place Concrete

1.04 QUALITY ASSURANCE

A. Conform to requirements of ACI 301.

1.05 REFERENCES

A. ACI 301 - Specifications for Structural Concrete for Buildings.

B. ASTM C309 - Liquid Membrane-Forming Compounds for Curing Concrete.

1.06 SUBMITTALS

A. Provide product data for specified products.

1.07 ENVIRONMENTAL REQUIREMENTS

A. Maintain ambient temperature at 70 degrees F. for three (3) days.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Water: Clean and not detrimental to concrete.

B. Absorptive Mat: Burlap fabric of 9 oz./sq. yd. clean, roll goods.

C. Curing Compound: As per ASTM C309.

PART 3 - EXECUTION

SECTION 03370
CONCRETE CURING

3.01 INSPECTION

A. Verify concrete surfaces are ready for curing.

3.02 CURING COMPOUND

A. Apply curing compound in two (2) coats with second coat at right angles to first.

B. Apply in accordance with manufacturer's instructions.

3.03 SPRAYING

A. Spray water over slab areas; maintain wet for three (3) days.

3.04 ABSORPTIVE MAT

A. Saturate burlap side of burlap fabric mat. Place over slab areas, burlap side down; lap edges and ends 12 inches. Maintain in place for seven (7) days.

3.05 CONCRETE CURING

A. Curing for standard grey work after finishing, cure concrete by keeping moist for one (1) week after placement. Floors and vertical surfaces may be sprayed with an approved curing compound to retard evaporation of water, if spraying is not objectionable because of future finishing requirements. Begin curing operations as soon as concrete has attained its initial set. Keep exposed concrete surface moist for at least one (1) week.

B. Apply a liquid membrane-forming compound, conforming with ASTM C 309, color to match that of the color condition concrete. Apply on flat work immediately after the finishing operation pursuant to the manufacturers recommendations.

C. Cure concrete as scheduled or indicated.

D. Remove absorptive mat after curing.

3.06 MEASUREMENT AND PAYMENT

A. No separate measurement and payment is provided for work covered by this Section. All costs in connection with concrete curing shall be included in the bid price of any item in the bid schedule for which concrete curing is required.

END OF SECTION 03370

REPORT OF
GEOTECHNICAL EXPLORATION

PROPOSED STORMWATER IMPROVEMENTS
VICINITY OF NE 27TH AVENUE AND NE 16TH STREET
POMPANO BEACH, FLORIDA

FOR

CHEN-MOORE AND ASSOCIATES
500 CYPRESS CREEK ROAD
SUITE 630
FORT LAUDERDALE, FLORIDA 33309

PREPARED BY

NUTTING ENGINEERS OF FLORIDA, INC.
1310 NEPTUNE DRIVE
BOYNTON BEACH, FLORIDA 33426

ORDER NO. 14436.50

SEPTEMBER 2020

Nutting Engineers of Florida Inc. | Established 1967
Your Project is Our Commitment

Geotechnical & Construction Materials
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Environmental Services

Offices throughout the state of Florida

www.nuttingengineers.com info@nuttingengineers.com

September 17, 2020

Mr. Jason McClair, P.E.
Chen-Moore and Associates
500 West Cypress Creek Road, Suite 630
Fort Lauderdale, Florida 33309
Phone: 954-730-0707 Email: jmcclair@chenmoore.com

Subject: Report of Geotechnical Exploration
Proposed Stormwater Improvements
Vicinity of NE 27th Avenue and NE 16th Street
Pompano Beach, Florida

Dear Mr. McClair:

Nutting Engineers of Florida, Inc. (NE), has performed a Geotechnical Exploration for the proposed stormwater improvements along the above referenced neighborhood area in Pompano Beach, Florida. This exploration was performed in accordance with the written authorization to proceed provided by Chen Moore and Associates, Inc. dated August 10, 2020. This study was performed to develop information regarding existing subsurface conditions at specific test locations. This information along with proposed construction information provided was used to develop opinions regarding the proposed improvements. This report presents our findings and recommendations based upon the information examined at the time of this evaluation.

PROJECT INFORMATION

Based on discussions with you, we understand that during heavy rain events the subject neighborhood area incurs heavy flooding. There is currently no positive outfall or drainage structures in the area. It is therefore planned to develop new stormwater structures to address the drainage concerns within the afflicted area. It is our understanding that the subject area is bounded by NE 24th Avenue from the west, NE 22nd Street from the north, NE 28th Avenue from the east, and NE 16th Street from the south.

We note that the depth, size, and makeup of the proposed new pipes were not known at the time of this report. It is anticipated that the drainage pipes will be installed within six feet of existing surface grades and our subsurface exploration reflects this. If this information is incorrect our office must be notified in writing in order to perform additional test borings to address the correct depths for the proposed construction.

1310 Neptune Drive · Boynton Beach, Florida 33426 · (561) 736-4900 · Fax (561) 737-9975
Broward (954) 941-8700 · Port St. Lucie (772) 408-1050 · Miami Dade (305) 624-0060

Based on current site elevations and review of plans provided to our office, we estimate that existing grades are within approximately six inches of final elevations; however, the final elevations shall be determined by a civil engineer, or other qualified party. NE should be notified in writing by the client of any changes in the proposed construction along with a request to amend our analysis and/or recommendations within.

GENERAL SUBSURFACE CONDITIONS

Soil Survey Maps

As part of the geotechnical exploration, we have reviewed available Natural Resources Conservation Service (NRCS) online soil survey map for Broward County. The USDA online NRCS mapping provides qualitative information about potential general shallow soil conditions in the project vicinity.

This information was derived from approximately 6 ft. deep manual auger borings, aerial photo and surface feature interpretation at some point in the past. The NRCS data may or may not reflect actual current site conditions. As indicated in the online Soil Survey Mapping at the time the survey was conducted, one main soil description was identified within the subject roadway section. The soil type is outlined below.

Immokalee fine sand

This series consists of nearly level, poorly drained soil that has a layer of well-coated organic matter at a depth of approximately 30 inches or more. These soils are on broad, low ridges in the eastern part of the survey. Included in this soil mapping are small areas of Basinger, Pompano, and Margate fine sands. We note that the maximum depth of the soil survey is approximately six feet.

Subsurface Exploration

NUTTING ENGINEERS OF FLORIDA, INC. performed two Standard Penetration Test (SPT) borings (ASTM D-1586) to depths of ten feet below the land surface. The locations of the test borings, which were determined by your office, are indicated on the boring location plan presented in the Appendix of this report. The boring locations were identified in the field using approximate methods; namely, a measuring wheel and available surface controls. As such the soil boring locations should be considered to be approximate.

In addition, two 'Usual Open-Hole' exfiltration tests were performed in accordance with South Florida Water Management District specifications. The exfiltration tests were completed to depths of six feet.

Pavement Section Cores

In order to better identify the pavement section materials and thicknesses, a total of five 4-inch pavement section cores was performed along the roadway. Within each of the core locations, Nutting Engineers of Florida, Inc. then augered down to a depth of approximately one foot below land surface to evaluate the approximate basecourse thickness. The locations of the asphalt cores are indicated on the Test Location Plan (Figure 1) in the Appendix of this report. The core locations were identified in the field using approximate methods; namely, a measuring wheel and available surface controls. As such the core locations should be considered to be approximate. Photographs of the core holes are also included in the Appendix section of this report. Please refer to the Report of Asphalt Thickness in the Appendix section of this report.

Test Boring Results

In general, the soil boring locations recorded loose to very loose dark brown sand with limestone fragments in the upper one to two feet, underlain by loose to very loose brown sand to a depth ten feet, the maximum depth explored. Please see the enclosed soil classification sheet in the Appendix of this report for additional important information regarding these descriptions, the field evaluation and other related information.

Note: Substantially different subsurface conditions may exist at other areas of the site. Buried debris may or may not be identified or adequately delineated by soil borings. Test pit excavation can provide more insight into such conditions and rock lithology if present. Such conditions may be revealed during site development activities (e.g. proof rolling, utility & foundation excavation activities) or other related activities. Should additional assurance be desired by the client, further subsurface investigation could be performed.

Asphalt Core Findings

In summary, the thickness of the asphalt ranged from 2.71 to 6.21 inches. The asphalt was generally observed to consist of multiple lifts of asphalt material depending upon the core thickness and the cores were found to separate during the coring process (loose bonding between lifts). The cores were generally observed to be in fair condition based on the segmentation between lifts or the cores falling apart during coring operations.

The base course material in the cores consisted of a mix of sand and limerock fragments and varied in thickness from approximately five to greater than twelve inches. Confirmation of actual LBR value of the base course was not part of our scope of services but may be desired if further evaluation is warranted.

Exfiltration Results

Two 'Usual Open-Hole' exfiltration tests were performed in accordance with South Florida Water Management District (SFWMD) specifications to depths of six feet below the existing ground surface. The tests were performed in order to determine the hydraulic conductivity of the in situ subsurface soils to evaluate drainage requirements for the project. The hydraulic conductivity values were determined to range from approximately 2.64×10^{-4} to 2.52×10^{-4} cubic feet per second, per square foot, per foot of head. Detailed soil descriptions and flow rates are presented in the Appendix.

Groundwater Information

The immediate groundwater level was measured at the boring locations at the time of drilling. The groundwater level was encountered at approximately two and a half to four and a half feet below the existing ground surface.

The immediate depth to groundwater measurements presented in this report will not provide a reliable indication of stabilized or more long term depth to groundwater at this site. Water table elevations can vary dramatically with time through rainfall, droughts, storm events, flood control activities, nearby surface water bodies, tidal activity, pumping and many other factors. For these reasons, this immediate depth to water data **should not** be relied upon alone for project design considerations.

ANALYSIS AND RECOMMENDATIONS

Based on the borings performed for this project, it is our opinion that the proposed new drainage improvements along the roadway sections explored may be supported on the existing in place soils using conventional installation and compaction techniques. It appears that with exception to any un-recorded poor soils or foreign debris, the excavated soils as recorded in the borings may be used for pipe bedding and general backfill. During the excavation process, any questionable soils, or other unforeseen conditions encountered should be evaluated by a representative of Nutting Engineers.

If dewatering is to be performed, it is recommended that such work be designed, permitted and executed by qualified knowledgeable parties thoroughly experienced with similar local dewatering operations. Because the depth of excavation is not known, it cannot be determined at this time if dewatering will be necessary for the project.

Fill needed to bring the site to back to grade may be placed in lifts not exceeding twelve inches in loose thickness. Each lift should be thoroughly compacted until densities equivalent to at least 95 percent of the modified Proctor maximum dry density (ASTM D-1557) are uniformly obtained. Fill should consist of granular soil, with less than ten percent passing the No. 200 sieve, free of rubble, organics (five percent or less) clay, debris and other unsuitable material. The fill should have ASTM designation (D-2487) of GP, GW, SP, or SW, with a maximum particle size of no more than three inches or as otherwise approved by the geotechnical engineer.

Trench Excavations

Excavations of five feet or more will need to be sloped or shored in accordance with State of Florida and OSHA recommendations. An unsupported excavation may cause the collapse of the sidewalls when workmen are in the excavations. Therefore, in our opinion and following the current regulations established by OSHA for excavations, cut slopes are required. If slopes cannot be maintained, or are not practical, then the excavation must be cased or shored. Shoring procedures should conform to those presented in the Occupational Safety and Health Administration (OSHA) standards.

It is our opinion that if the excavation remains dry, temporary side slopes of 3 horizontal to 1 vertical may be used for this project. Where existing utilities, roadways or other obstructions prevent sloping the soils, shoring will be required. Where temporary shoring will be required, the soil parameter table should be used for earth pressure determinations.

For a Generalized Asphalt Pavement Section: The following would apply within pavement areas which require trench repair. The pavement areas should be compacted to a minimum of 98 percent of the modified Proctor maximum dry density to a depth of at least 12 inches below the subgrade level. We recommend that stabilized subgrade having a minimum Limerock Bearing Ratio (LBR) of 40 be placed to a depth of approximately one foot below the base course. The base course will range from approximately 6 to 8 inches, and should have a minimum LBR of 100. The pavement material and thickness should be based on design requirements as determined by the project Civil Engineer.

The project Civil Engineer should review our findings in order to provide final pavement section specifications for the proposed roadway construction.

GENERAL INFORMATION

Our client for this geotechnical evaluation was:

Mr. Jason McClair, P.E.
Chen-Moore and Associates
500 West Cypress Creek Road, Suite 630
Fort Lauderdale, Florida 33309

The contents of this report are for the exclusive use of the client, the client's design & construction team and governmental authorities for this specific project exclusively. Information conveyed in this report shall not be used or relied upon by other parties or for other projects without the expressed written consent of Nutting Engineers of Florida, Inc. This report discusses geotechnical considerations for this site based upon observed conditions and our understanding of proposed construction for foundation support. Environmental issues including (but not limited to), soil and/or groundwater contamination, and other environmental considerations are beyond our scope of service for this project. As such, this report should not be used or relied upon for evaluation of environmental issues.

If conditions are encountered which are not consistent with the findings presented in this report, this office shall be notified immediately so that the condition or change can be evaluated and appropriate action taken.

The vibratory compaction equipment may cause vibrations that could be felt by persons within nearby buildings and could potentially induce structural settlements. Additionally, preexisting settlements may exist within these structures that could be construed to have been caused or worsened by the proposed vibratory compaction after the fact. Pre- and post conditions surveys of these structures along with the vibration monitoring during vibratory compaction could be performed to better evaluate this concern. The contractor should exercise due care during the performance of the vibratory compaction work with due consideration of potential impacts on existing structures.

Nutting Engineers of Florida, Inc. (NE), recommends that we be contracted to provide input to the design team and owner during the earthwork design process and that we review final drawings and specifications to verify that our report recommendations and design intent have been properly implemented. NE shall also perform testing and inspections during the earthwork construction as recommended in this report. If NE is not engaged to perform these services as detailed herein, the Client agrees that NE shall bear no liability for the interpretation, implementation of our report, its recommendations and/or inspection and testing services as described in this report if implemented by others.

The Geotechnical Engineer warrants that the findings, recommendations, specifications, or professional advice contained herein, have been presented after being prepared in accordance with general accepted professional practice in the field of foundation engineering, soil mechanics and engineering geology. No other warranties are implied or expressed.

We appreciate the opportunity to be of service on this project. If we can be of any further assistance, or if you need additional information, please contact us at your convenience.

Sincerely,
NUTTING ENGINEERS OF FLORIDA, INC.

Richard C. Wohlfarth, P.E.
Director of Engineering

9/18/2020

Christopher E. Gworek, P.E. #69947
Senior Engineer

Appendix:
- Boring Location Plan
- Test Boring Results
- Exfiltration Test Results
- Report of Asphalt Thickness
- Core Photographs
- Limitations of Liability
- Soil Classification Criteria

NUTTING ENGINEERS OF FLORIDA, INC. ESTABLISHED 1967	Chen Moore & Associates, Inc. **Stormwater Improvements** NW 27th Avenue and NE 16th Street Pompano Beach, Florida ORDER NO. 14436.50	APPROXIMATE TEST	GEOTECHNICAL EXPLORATION — ***Not to Scale*** —	FIG. 1

Nutting Engineers of Florida Inc. | Established 1967
Your Project Is Our Commitment
1310 Neptune Drive
Boynton Beach Fl., 33426
Telephone: 561-736-4900
Fax: 561-737-9975

BORING NUMBER B-1

PROJECT NUMBER 14436.50
CLIENT Chen Moore & Associates
PROJECT NAME Stormwater Improvements
PROJECT LOCATION NE 27thb Avenue and NE 16th Street, Pompano Beach, Florida

DATE STARTED 9/5/20 COMPLETED 9/5/20
SURFACE ELEVATION REFERENCE Approx. @ Road Crown
DRILLING METHOD Standard Penetration Boring
GROUND WATER LEVELS:
LOGGED BY Dancor Group CHECKED BY C. Gworek
▽ AT TIME OF DRILLING 2.5 ft
APPROXIMATE LOCATION OF BORING As located on site plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲ 10 20 30 40 / PL MC LL 20 40 60 80 / □ FINES CONTENT (%) □ 20 40 60 80
0.0		Dk. brown fine SAND, trace limestone fragments and root				
		Brown fine SAND	SS 1	4-3-2-2	5	▲
2.5		▽	SS 2	4-3-1-5	7	▲
5.0			SS 3	2-3-4-3	7	▲
			SS 4	3-4-1-4	8	▲
7.5			SS 5	2-3-3-4	6	▲
10.0		Bottom of hole at 10.0 feet.				

TEST NUTTING BOREHOLE 1-14436.50 CHEN MOORE & ASSOCIATES - STORMWATER IMPROVEMENTS NE 27TH AVE AND NE 16 ST POMPANO BEACH.GPJ GINT US.GDT 9/14/20

Disclaimer Nutting Engineers of Florida, Inc. accepts no liability for the consequences of the independent interpretation of drilling logs by others.

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Boynton Beach Fl., 33426
Telephone: 561-736-4900
Fax: 561-737-9975

BORING NUMBER B-2

PROJECT NUMBER 14436.50
CLIENT Chen Moore & Associates
PROJECT NAME Stormwater Improvements
PROJECT LOCATION NE 27thb Avenue and NE 16th Street, Pompano Beach, Florida

DATE STARTED 9/5/20 COMPLETED 9/5/20
SURFACE ELEVATION REFERENCE Approx. @ Road Crown
DRILLING METHOD Standard Penetration Boring
GROUND WATER LEVELS:
LOGGED BY Dancor Group CHECKED BY C. Gworek
▽ AT TIME OF DRILLING 3.5 ft
APPROXIMATE LOCATION OF BORING As located on site plan

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	Blows	N-Value	▲ SPT N VALUE ▲ 10 20 30 40 / PL MC LL 20 40 60 80 / □ FINES CONTENT (%) □ 20 40 60 80
0.0		Dk. brown fine SAND, trace root and limestone fragments	AU 1			
2.5		Brown fine SAND ▽	AU 2			
5.0			SS 3	1-2-2-2	4	▲
7.5			SS 4	1-1-1-2	2	▲
10.0			SS 5	1-1-3-5	4	▲
		Bottom of hole at 10.0 feet.				

TEST NUTTING BOREHOLE 1-14436.50 CHEN MOORE & ASSOCIATES - STORMWATER IMPROVEMENTS NE 27TH AVE AND NE 16 ST POMPANO BEACH.GPJ GINT US.GDT 9/14/20

Disclaimer Nutting Engineers of Florida, Inc. accepts no liability for the consequences of the independent interpretation of drilling logs by others.

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Geotechnical & Construction Materials
Engineering, Testing, & Inspection
Environmental Services

Offices throughout the state of Florida

www.nuttingengineers.com info@nuttingengineers.com

Report of Exfiltration Test

Client:	Chen Moore & Associates	Order No	14436.50
Project:	Stormwater Improvements	Report No	1
Location:	NE 27th Avenue and NE 16th Street	Date:	9/5/20
	Pompano Beach, Florida		
Test:	Usual Open Hole Exfiltration Test		
Surface Elevation:	Approx. @ Road Crown	Water table from ground surface:	4.5'
Casing Diameter:	6"		
Tube Depth:	6'		

Sample Location: Approx. as located on site plan.

Material:

0-6"	Dk. brown fine SAND, some root
6"-2'	Lt. brown fine SAND and LIMESTONE fragments
2'-6'	Dk. brown fine SAND

EXFIL NO. 1	One Minute Increme	Pump Rate in Gal/Min
	1	4.0
	2	3.5
	3	3.5
	4	3.5
	5	3.0
	6	3.0
	7	3.0
	8	3.0
	9	3.0
	10	3.0

$K = 2.64 \times 10^{-4}$ cfs/ft^{2}ft.head

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Report of Exfiltration Test

Client:	Chen Moore & Associates	Order No	14436.50
Project:	Stormwater Improvements	Report No	2
Location:	NE 27th Avenue and NE 16th Street	Date:	9/5/20
	Pompano Beach, Florida		
Test:	Usual Open Hole Exfiltration Test		
Surface Elevation:	Approx. @ Road Crown	Water table from ground surface:	4.2'
Casing Diameter:	6"		
Tube Depth:	6'		

EXFIL NO. 2	One Minute Increme	Pump Rate in Gal/Min
	1	4.0
	2	2.5
Sample Location: Approx. as located on site plan.	3	3.0
	4	3.0
	5	2.5
Material: 0-1' Dk. brown fine SAND, trace limestone fragments and root	6	3.0
	7	3.0
1'-6' Brown fine SAND	8	3.0
	9	3.0
	10	3.0

$K = 2.52 \times 10^{-4}$ cfs/ft^{2}ft.head

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REPORT OF ASPHALT THICKNESS

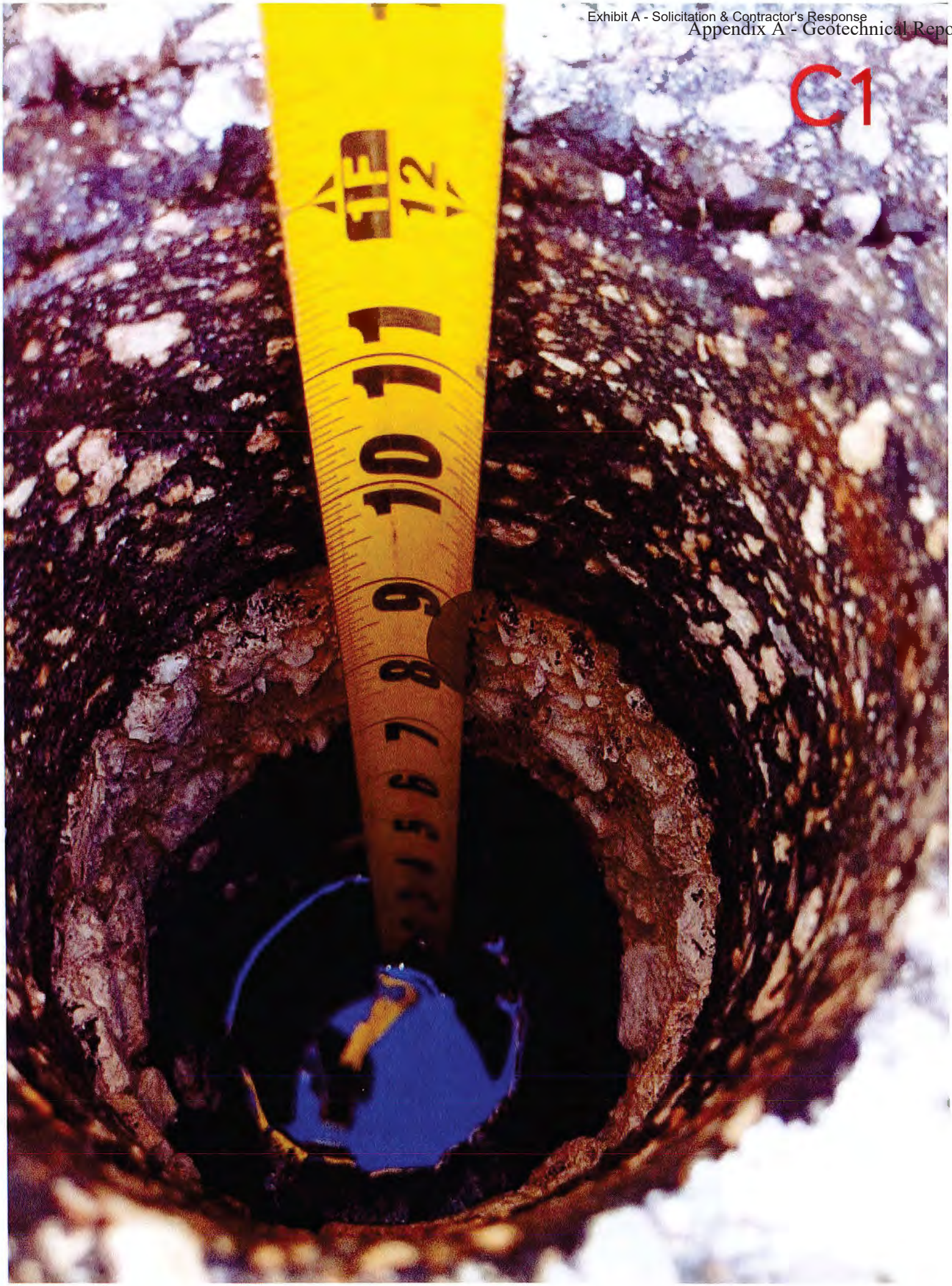
Client: Chen Moore & Associates
Project Name: Stormwater Improvements
Project Location: NE 27th Avenue and NE 16th Street, Pompano Beach, Florida
Order No. 14436.5

Asphalt Core No.	Thickness #1	Thickness #2	Thickness #3	Thickness #4	Average Thickness (inches)	Base Course Thickness (Approx. inches)
AC-1	3.580	3.534	3.569	3.728	3.60	9
AC-2	2.737	2.740	2.636	2.734	2.71	12
AC-3	3.381	3.354	3.369	3.311	3.35	8
AC-4	4.028	4.415	4.217	4.107	4.19	8
AC-5	6.325	6.105	6.197	6.225	6.21	5

Note: Asphalt Thickness was Determined Using Caliper. Base Course measured as an approximate. Refer to Photos of Cores for Basecourse Observations.

TABLE ASPHALT THICKNESS CHEN MOORE NE 27TH AVE STOMRWATER POMPANO CEG

C1



C2


C3

C4

C5

LIMITATIONS OF LIABLILITY

WARRANTY

We warranty that the services performed by Nutting Engineers of Florida, Inc. are conducted in a manner consistent with that level of care and skill ordinarily exercised by members of the profession in our area currently practicing under similar conditions at the time our services were performed. ***No other warranties, expressed or implied, are made.*** While the services of Nutting Engineers of Florida, Inc. are a valuable and integral part of the design and construction teams, we do not warrant, guarantee or insure the quality, completeness, or satisfactory performance of designs, construction plans, specifications we have not prepared, nor the ultimate performance of building site materials or assembly/construction.

SUBSURFACE EXPLORATION

Subsurface exploration is normally accomplished by test borings; test pits are sometimes employed. The method of determining the boring location and the surface elevation at the boring is noted in the report. This information is represented in the soil boring logs and/or a drawing. The location and elevation of the borings should be considered accurate only to the degree inherent with the method used and may be approximate.

The soil boring log includes sampling information, description of the materials recovered, approximate depths of boundaries between soil and rock strata as encountered and immediate depth to water data. The log represents conditions recorded specifically at the location where and when the boring was made. Site conditions may vary through time as will subsurface conditions. The boundaries between different soil strata as encountered are indicated at specific depths; however, these depths are in fact approximate and dependent upon the frequency of sampling, nature and consistency of the respective strata. Substantial variation between soil borings may commonly exist in subsurface conditions. Water level readings are made at the time and under conditions stated on the boring logs. Water levels change with time, precipitation, canal level, local well drawdown and other factors. Water level data provided on soil boring logs shall not be relied upon for groundwater based design or construction considerations.

LABORATORY AND FIELD TESTS

Tests are performed in *general* accordance with specific ASTM Standards unless otherwise indicated. All criteria included in a given ASTM Standard are not always required and performed. Each test boring report indicates the measurements and data developed at each specific test location.

ANALYSIS AND RECOMMENDATIONS

The geotechnical report is prepared primarily to aid in the design of site work and structural foundations. Although the information in the report is expected to be sufficient for these purposes, it shall not be utilized to determine the cost of construction nor to stand alone as a construction specification. Contractors shall verify subsurface conditions as may be appropriate prior to undertaking subsurface work.

Report recommendations are based primarily on data from test borings made at the locations shown on the test boring reports. Soil variations commonly exist between boring locations. Such variations may not become evident until construction. Test pits sometimes provide valuable supplemental information that derived from soil borings. If variations are then noted, the geotechnical engineer shall be contacted in writing immediately so that field conditions can be examined and recommendations revised if necessary.

The geotechnical report states our understanding as to the location, dimensions and structural features proposed for the site. ***Any significant changes of the site improvements or site conditions must be communicated in writing to the geotechnical engineer immediately*** so that the geotechnical analysis, conclusions, and recommendations can be reviewed and appropriately adjusted as necessary.

CONSTRUCTION OBSERVATION

Construction observation and testing is an important element of geotechnical services. The geotechnical engineer's field representative (G.E.F.R.) is the "owner's representative" observing the work of the contractor, performing tests and reporting data from such tests and observations. ***The geotechnical engineer's field representative does not direct the contractor's construction means, methods, operations or personnel.*** The G.E.F.R. does not interfere with the relationship between the owner and the contractor and, except as an observer, does not become a substitute owner on site. The G.E.F.R. is responsible for his/her safety, but has no responsibility for the safety of other personnel at the site. The G.E.F.R. is an important member of a team whose responsibility is to observe and test the work being done and report to the owner whether that work is being carried out in general conformance with the plans and specifications. The enclosed report may be relied upon solely by the named client.

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SOIL AND ROCK CLASSIFICATION CRITERIA

SAND/SILT

N-VALUE (bpf)	RELATIVE DENSITY
0 – 4	Very Loose
5 – 10	Loose
11 – 29	Medium
30 – 49	Dense
>50	Very dense
100	Refusal

CLAY/SILTY CLAY

N-VALUE (bpf)	UNCONFINED COMP. STRENGTH (tsf)	CONSISTENCY
<2	<0.25	v. Soft
2 – 4	0.25 – 0.50	Soft
5 – 8	0.50 – 1.00	Medium
9 – 15	1.00 – 2.00	Stiff
16 – 30	2.00 – 4.00	v. Stiff
>30	>4.00	Hard

ROCK

N-VALUE (bpf)	RELATIVE HARDNESS	ROCK CHARACTERISTICS
N≥ 100	Hard to v. hard	Local rock formations vary in hardness from soft to very hard within short vertical and horizontal distances and often contain vertical solution holes of 3 to 36 inch diameter to varying depths and horizontal solution features. Rock may be brittle to split spoon impact, but more resistant to excavation
25≤ N ≤ 100	Medium hard to hard	
5≤ N ≤ 25	Soft to medium hard	

PARTICLE SIZE

Boulder	>12 in
Cobble	3 to 12 in.
Gravel	4.76 mm to 3 in
Sand	0.074 mm to 4.76 mm
Silt	0.005 mm to 0.074 mm
Clay	<0.005 mm

DESCRIPTION MODIFIERS

0 – 5%	Slight trace
6 – 10%	Trace
11 – 20%	Little
21 – 35%	Some
>35%	And

Major Divisions			Group Symbols	Typical names
Coarse-grained soils (More than half of material is larger than No. 200 sieve size)	Gravels (More than half of coarse fraction is larger than No. 4 sieve size)	Clean gravels (Little or no fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
			GP	Poorly graded gravels, gravel-sand mixtures, little or no fines
		Gravels with fines (Appreciable amount of fines)	GW* d / u	Silty gravels, gravel-sand-silt mixtures
			GC	Clayey gravels, gravel-sand-clay mixtures
	Sands (More than half of coarse fraction is smaller than No. 4 sieve size)	Clean sands (Little or no fines)	SW	Well-graded sands, gravelly sands, little or no fines
			SP	Poorly graded sands, gravelly sands, little or no fines
		Sands with fines (Appreciable amount of fines)	SM* d / u	Silty sands, sand-silt mixtures
			SC	Clayey sands, sand-clay mixtures
Fine-grained soils (More than half of material is smaller than No. 200 sieve size)	Silts and clays (Liquid limit less than 50)		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL	Organic silts and organic silty clays of low plasticity
	Silts and clays (Liquid limit greater than 50)		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
			CH	Inorganic clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity, organic silts
	Highly organic soils		PT	Peat and other highly organic soils

Laboratory classification criteria

Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:

Less than five percent.....GW, GP, SW, SP
More than 12 percent.....GM, GC, SM, SC
5 to 12 percent.....Borderline cases requiring dual systems**

$C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{(D_{30})^2}{D_{10} x D_{60}}$ between 1 and 3

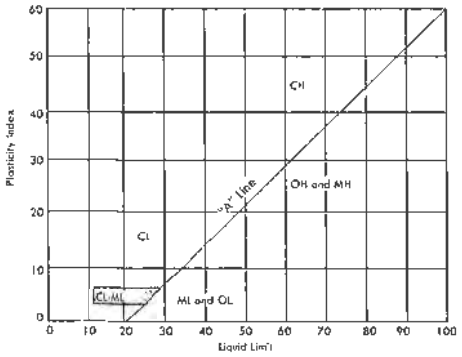
Not meeting all gradation requirements for GW

Atterberg limits below "A" line or P.I. less than 4	Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols.
Atterberg limits above "A" line with P.I. greater than 7	

$C_u = \frac{D_{60}}{D_{10}}$ greater than 6; $C_c = \frac{(D_{30})^2}{D_{10} x D_{60}}$ between 1 and 3

Not meeting all gradation requirements for SW

Atterberg limits below "A" line or P.I. less than 4	Limits plotting in hatched zone with P.I. between 4 and 7 are borderline cases requiring use of dual system.
Atterberg limits above "A" line with P.I. more than 7	



Plasticity Chart

PUBLIC WORKS DEPARTMENT
TRAFFIC ENGINEERING DIVISION
2300 W. Commercial Boulevard • Fort Lauderdale, Florida 33309 • 954-847-2600

July 27, 2021

Mr. Craig Wallander
Chen Moore And Associates
500 W. Cypress Creek Road, Suite 630
Fort Lauderdale, FL 33309

Re: NE 27 Avenue & NE 16 Street - Storm Water Improvements
CIP# 19-352
Pompano, Florida
BCTED Reference No. 210505060

Dear Mr. Wallander,

Broward County Traffic Engineering Division has reviewed the above referenced plan and finds the pavement marking and signing portion of the plan to be acceptable. There are no fiber optic communication/interconnect, copper communication/interconnect, school/pedestrian and or signal design comments.

A copy of the Pavement Marking and Signing Inspection Procedure and a copy of the Specifications for Retro-Reflective Sign Materials are attached for your use.

Reviewed by:

Signal Design: Rebecca Martinez @ 954-847-2619 or remartinez@broward.org
Systems Communications: Robert Blount @ 954-847-2745 or rblount@broward.org
School/Pedestrians: Stephon Ramoutar @ 954-847-2671 or sramoutar@broward.org
Traffic Calming: Lei Cai @ 954-847-2653 or lcai@broward.org

Please submit two signed and sealed plan sets to me, Carmelo Caratozzolo, at the Broward County Traffic Engineering Division, for sign-off.

You may call me at 954-847-2618 or contact me by e-mail at ccaratozzolo@broward.org, if you have any questions.

Sincerely,

Carmelo Caratozzolo, P.E.
Engineering Unit Supervisor

M E M O R A N D U M

TO: Lei Cai - ***LC, 07-27-21, no comments***

FROM: Albara Abrams

DATE: July 16, 2021

SUBJECT: **NE 27 Avenue & NE 16 Street - Storm Water Improvements**
CIP# 19-352
Pompano, Florida
BCTED Reference No. 210505060

Please check the resubmitted plan, to see if it meets with your approval. Initial and advise if the plan is acceptable. If there are comments please mark them on the plan and I will forward the comments to the engineer for corrections.

Due date: July 29, 2021

Thank you.

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 Subcontractor 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 Liana Carmona. 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 or by E-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
TRAFFIC ENGINEERING DIVISION
2300 W. Commercial Boulevard • Fort Lauderdale, Florida 33309 • 954-847-2600

TO: Public Works Department/Traffic Engineering Division Personnel

FROM: Andrew Sebo, Interim Director, Traffic Engineering Division

DATE: November 4, 2020

SUBJECT: **Traffic Engineering Division Technical Policy Memo No. TPM-20-001**
Specifications for Retroreflective Traffic Sign Materials

EFFECTIVE: November 4, 2020
EXPIRES: December 31, 2022
PRIOR EFFECTIVE: December 9, 2016 through September 30, 2018

In response to recent directives established by the Federal Highway Administration (FHWA), and in accordance with Section 2A.08 of the 2009 Manual on Uniform Traffic Control Devices (MUTCD) pertaining to minimum standards of retroreflectivity for roadway traffic signs, it shall be the policy of the Traffic Engineering Division to fabricate, install and maintain all traffic control signs under its jurisdiction with the highest grade of retroreflective materials available in the industry. The use of the highest quality materials will ensure optimal levels of retroreflectivity throughout the life of the subject traffic control signs, reduce field maintenance and life-cycle replacement, and improve overall safety for system users.

Therefore, effective November 4, 2020, the Traffic Engineering Division shall continue to only install and approve traffic control signs that meet all of the following:

1. Meet the criteria outlined in Section 2A.08 of the 2009 MUTCD.
2. Meet the specifications outlined in Section 700 and 994 of the 2021 Standard Specifications of the Florida Department of Transportation (FDOT).
3. Consist of sheeting materials certified to meet the reflective sheeting requirements outlined in the 2019 version of ASTM D4956 for Type XI (FDOT Type XI) retroreflective sheeting materials made with prisms, except for school zone, bicycle, pedestrian, and shared use path signs which shall be comprised of reflective fluorescent yellow-green sheeting certified to meet ASTM D4956 Type IV (FDOT Type IV) reflective sheeting requirements.
4. Consist of retroreflective sheeting materials that have a valid FDOT Approved Product List certification for Specification 700 Highway Signing for FDOT Sheeting Type XI (or Type IV for school zone, bicycle, pedestrian, and shared use path signs), approved for jobs let after December 31, 2020.

These specifications shall be applied to all County, municipal and privately-installed traffic control signs to be maintained by the Traffic Engineering Division, and shall be applicable to all sign types and colors, except fluorescent pink emergency management signs that shall be covered by a future policy memorandum.

Traffic Engineering Division Technical Policy Memo # TPM-20-001 Specifications for Retroreflective Traffic Sign Materials

EFFECTIVE DATE

This policy shall be in effect through December 31, 2022, unless superseded by an updated technical policy memorandum.

APPROVED

Andrew Sebo, P.E., PTOE
Interim Director

11.04.2020
Date

C. Yves d'Anjou, Assistant Director, Traffic Engineering Division
Carmelo Caratozzolo, Traffic Operations Engineer, Traffic Engineering Division
Ron Delello, Signs and Pavement Marking Superintendent, Traffic Engineering Division
Kaylee Kildare, Sign Shop Supervisor, Traffic Engineering Division

Environmental Protection and Growth Management Department
ENVIRONMENTAL ENGINEERING AND PERMITTING DIVISION
1 North University Drive, Mailbox 201, Plantation, Florida 33324 • 954-519-1483 • FAX 954-519-1412

June 4, 2021

Anthony Alhashemi
City of Pompano Beach
1201 NE 5th Avenue
Pompano Beach, FL 33060

RE: Approval for Construction Dewatering Activity
City of Pompano Beach Stormwater System Improvements
Between North Federal Highway and Intracoastal Waterway, and Between Northeast 16th Street and Northeast 22nd Court, Pompano Beach. Broward County Dewatering Project ID 21304843

Dear Mr. Alhashemi:

The Environmental Engineering and Permitting Division (Division) has reviewed the revised Dewatering Plan (Dewatering Plan), dated May 26, 2021 (received May 28, 2021), as well as additional information dated and received June 4, 2021, prepared and submitted by Chen Moore and Associates. The Dewatering Plan was submitted to evaluate the impact of construction dewatering on pollutant migration, as required by Section 27-355(4), Broward County Code (the Code).

The Division hereby approves the referenced Dewatering Plan. This approval is based upon and subject to the following conditions:

1. The Dewatering Plan proposed is specific to the construction of stormwater system improvements at the referenced location.

2. The dewatering depths ("Draw Down Required") presented in the table starting on page 6 of the Dewatering Plan and duration (6 months) are approved as proposed and should not be exceeded. In the event that it becomes necessary to exceed the approved scope of work, you must contact this office immediately for approval. Please be advised that additional permits that are outside the scope of this review may be required by other regulatory authorities and must be obtained prior to commencing dewatering activities.

3. The technical review performed by the Division is limited to the possibility of contaminant plume migration from the following nearby sites:

   Site No. 2795, 1990 Associates, 2050 N. Federal Hwy., Pompano Beach; FDEP Facility ID 069808955.
   Site No. 2118, Sears Auto Center #6226, 2251 N. Federal Hwy., Pompano Beach; FDEP Facility ID 068626156.
   Site No. 1545, Mobil Station, 1600 N. Federal Hwy., Pompano Beach; FDEP Facility ID 068502781.
   Site No. 1452, Chevron Station #47236, 1400 N. Federal Hwy., Pompano Beach; FDEP Facility ID 068501686.
   Site No. 1651, Pompano Golf Course-Maint., 1401 N. Federal Hwy., Pompano Beach; FDEP Facility ID NA.
   Site No. 1188, Shell #1161, 1360 N. Federal Hwy., Pompano Beach; FDEP Facility ID 068502625.

4. Upon discovery of previously undocumented contamination in wellpoints, on the exposed water table, or in excavated soils, whether by the presence of staining, free product, or by receipt of any available analytical results exceeding applicable Cleanup Target Levels (CTLs) of Chapter 62-777, Florida Administrative Code (F.A.C.), the Division will be notified and dewatering activities shall cease immediately. Similarly, if any available analytical results indicate that dewatering discharge (effluent) contains contaminants at concentrations exceeding applicable CTLs of Chapter 62-777, F.A.C., the Division shall be notified and dewatering activities shall cease immediately.

If contamination is discovered to have been caused, exacerbated, or spread a result of dewatering at the referenced project, the City of Pompano Beach agrees to conduct, with the property owner's permission, site investigations to ascertain the degree of the contamination and, based upon the results of such investigations, ensure cleanup of the contamination to the extent required by existing regulations. Costs of site investigations and cleanup of the contamination, if required, shall be borne by the City of Pompano Beach.

5. The dewatering effluent is to be monitored for the purposes of ensuring compliance with applicable turbidity standards. The Dewatering Plan states that certain preventative measures will be employed (turbidity curtains) during the dewatering activities to ensure that applicable water quality standards are met. Should the water quality standards be exceeded, the Division shall be notified and dewatering activities shall cease immediately.

6. Please note that the Division requires advance written notification a minimum of three (3) days prior to the initiation of dewatering operations (email or facsimile is adequate).

7. A Dewatering Report is to be submitted to the Division within thirty (30) days of completing the activities approved herein. The Dewatering Report should contain a summary of all activities and groundwater monitoring results in tabular form.

As acceptance of these conditions, please sign, notarize, and return page 3 of the Dewatering Approval. If you do not agree to the terms of this approval, please notify this office in writing within 3 working days of receipt. If you have any questions or require additional information, please contact the undersigned at (954) 519-1237 or narrazola@broward.org.

Sincerely,
ENVIRONMENTAL ENGINEERING AND PERMITTING DIVISION

NORMAN R. ARRAZOLA LICENSE No. 46538 STATE OF FLORIDA PROFESSIONAL ENGINEER

Norman Arrazola, P.E.
Florida Professional Engineer No. 46538
Broward County Environmental Engineering and Permitting Division

JUNE 4, 2021
Date

ec: David Sheehan, P.E., Broward County Development and Environmental Regulation Division
Ashok Raichoudhury, P.E., Broward County Development and Environmental Regulation Division
Rex Robinson, Chen Moore and Associates

I, _____, do hereby agree to the terms and conditions of the Dewatering Plan Approval Letter, as specified in the preceding pages 1 and 2 and in the Code (for and on behalf of Company, signed by an authorized representative).

_____ (signature and title)

STATE OF _____

COUNTY OF _____

Subscribed and sworn to (or affirmed) before me, by means ☐ physical presence or ☐ online notarization of this day,

_____
(Date)

by _____, who (Check one):

___ is personally known to me OR

___ has produced _____ as identification.
(type of identification)

_____ Commission No.
(signature of Notary)

_____
(SEAL ABOVE)

_____
(name of Notary typed, printed or stamped)

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
WATER USE INDIVIDUAL PERMIT

APPLICATION NO: 210514-2 **PERMIT NUMBER:** 06-08146-W

DATE ISSUED: June 7, 2021 **EXPIRATION DATE:** June 7, 2023

PERMITTEE: CITY OF POMPANO BEACH
1201 N E 5TH AVENUE
POMPANO BEACH, FL 33060

PROJECT NAME: NE 27TH AVENUE & NE 16TH STREET STORMWATER IMPROVEMENTS

PROJECT LOCATION: Broward County, S30/T48S/R43E

PROJECT DESCRIPTION/AUTHORIZING:

Dewatering of the water table aquifer to facilitate installation of drainage pipe, exfiltration trenches, and associated maintenance access structures.

This is to notify you of South Florida Water Management District's (District) agency action concerning Permit Application Number 210514-2, received May 14, 2021. This action is taken pursuant to Chapter 373, Part II, Florida Statutes (F.S.), Rule 40E-1.603 and Chapter 40E-2, Florida Administrative Code (F.A.C.). Based on the information provided, District rules have been adhered to and a Water Use Individual Permit is in effect for this project subject to:

1. Not receiving a filed request for an administrative hearing pursuant to Section 120.57, F.S. and Section 120.569, F.S., or a request for a judicial review pursuant to Section 120.68, F.S.
2. The attached 32 permit conditions.
3. The attached 6 exhibits.

By acceptance and utilization of the water authorized under this permit, the Permittee agrees to hold and save the District and its successors harmless from any and all damages, claims or liabilities that may arise by reason of the construction, maintenance or use of activities authorized by this permit. Should you object to the permit, please refer to the attached "Notice of Rights" that addresses the procedures to be followed if you desire a public hearing or other review of the proposed agency action. Should you wish to object to the proposed agency action or file a petition or request, please provide written objections, petitions, requests and/or waivers to: Office of the District Clerk, South Florida Water Management District, 3301 Gun Club Road, West Palm Beach, FL 33406, or by email to clerk@sfwmd.gov.

CERTIFICATION OF SERVICE

I HEREBY CERTIFY THAT this written notice has been mailed or electronically transmitted to the Permittee (and the persons listed in the attached distribution list) this 7th day of June, 2021, in accordance with Section 120.60(3), F.S. Notice was also electronically posted on this date through a link on the home page of the District's website (my.sfwmd.gov/ePermitting).

BY: Nicholas Vitani
Nicholas M. Vitani, P.G.
Section Leader
Water Use Bureau

SPECIAL PERMIT CONDITIONS

1. This permit is issued to:
   CITY OF POMPANO BEACH
   1201 NE 5TH AVENUE
   POMPANO BEACH, FL 33060

2. This permit shall expire on June 7, 2023.

3. Use classification is:

   Dewatering

4. Dewatering is authorized by this permit for a duration of one year from the date provided to the District by the Permittee in accordance with the notification requirements as stated in the Special Permit Conditions of this permit.

5. Source classification is:

   Surface Water from:
   Water Table aquifer

6. Pursuant to Subsection 2.3.2.B.2 of the Applicant's Handbook for Water Use Permit Applications within the South Florida Water Management District, neither maximum monthly nor annual allocation volumes are specified.

7. Withdrawal facilities:

   Surface Water - Proposed:

   2 - 10" x 70 HP X 1200 GPM Diesel Turbine Pumps

8. The Permittee shall submit all data as required by the implementation schedule for each of the permit conditions to: SFWMD at www.sfwmd.gov/ePermitting, or Regulatory Support, 3301 Gun Club Road, West Palm Beach, FL 33406.

9. The Permittee must submit the appropriate application form incorporated by reference in Rule 40E-2.101, F.A.C., to the District prior to the permit expiration date in order to continue the use of water.

10. The excavation shall be constructed using sound engineering practices. If the excavation or dewatering activities endanger the properties of adjacent owners (through erosion, side wall collapse, flooding, etc.), the Permittee shall cease operations until a method to prevent such occurrences is found and instituted. The Permittee shall be responsible for finding and instituting

methods to stop such occurrences.

11. The Permittee shall immediately cease dewatering when continued dewatering would create a condition hazardous to the health, safety, and general welfare of the people of the District.

12. The Permittee shall be responsible for clearing shoaling, if the Permittee's dewatering operation creates shoaling in adjacent water bodies.

13. The Permittee shall conduct dewatering activities in adherence to the following operating plan:

    The dewatering plans and calculatons are shown on Exhibit 4 (Application #210514-2).

14. Off-site discharge may be made via the facilities and conditions that follow:

    Dewatering effluent will be routed off-site to the secondary canals at the north and south ends of the Project. The secondary canals are connected to the Intracoastal Waterway.

15. Turbidity measurements of the dewatering water shall be made daily at the point of discharge and a background location (upstream) in the receiving water body. If turbidity levels in the dewatering water exceed 29 NTU above background conditions in the receiving water body, or 0 NTU above background for discharge to Outstanding Florida Waters, the Permittee is required to correct the situation and cease dewatering operations until monitoring demonstrates turbidity standards are met. All turbidity data shall be retained on-site for inspection by District Staff.

16. The Permittee shall construct the proposed recharge trenches prior to dewatering and maintain water levels during active dewatering operations within one foot below land surface. Obstructions and sediments within the recharge trenches shall be removed to maintain the effectiveness of the recharge trenches.

17. The Permittee shall not lower the water table below the following depths:

    -5.55 feet NAVD or approximately 9.24 feet below land surface

18. The Permittee shall submit to the District an updated "Summary of Groundwater (Well) or Surface Water (Pump or Culvert) Facilities" table ("Section IV - Sources of Water", Water Use Permit Application Form 1379) at least 30 days prior to a change in any facility status (e.g. installation, relocation, abandonment) to include all specifications of the well, pump or culvert (e.g. actual total and cased depths, pump manufacturer and model numbers, pump types, intake depths and type of meters, culvert type, length, cross-section, diameter, height, width, invert elevation, control device, and water use accounting method).

19. At least 72 hours prior to initial dewatering, the Permittee shall contact the District to allow for a

site visit to verify:

a. The location and design of the recharge trenches and on-site retention areas where dewatering water will be retained;

b. The location of monitoring facilities; and,

c. Other site-specific issues related to the protection of the resource or other existing legal users.

Failure of the Permittee, or the Permittee's representative, to notify the District before dewatering commences will result in enforcement action. If necessary, the District shall conduct a site visit.

Notification of commencement of dewatering can be made by contacting: wucompliance@sfwmd.gov

20. A copy of the permit, its conditions, and dewatering plan is required to be kept on site at all times during dewatering operations by the lead contractor or site manager.

21. Within 30 days of completion of the dewatering operation, all dewatering facilities (such as impoundments, conveyances, and recharge trenches) shall be filled and regraded to ground elevation or to otherwise comply with the Environmental Resource Permit.

STANDARD PERMIT CONDITIONS

1. All water uses authorized by this permit shall be implemented as conditioned by this permit, including any documents incorporated by reference in a permit condition. The District may revoke this permit, in whole or in part, or take enforcement action, pursuant to Section 373.136 or 373.243, F.S., unless a permit modification has been obtained to address the noncompliance.

   The Permittee shall immediately notify the District in writing of any previously submitted material information that is later discovered to be inaccurate.

2. The Permittee is advised that this permit does not relieve any person from the requirement to obtain all necessary federal, state, local and special district authorizations.

3. The Permittee shall notify the District in writing within 30 days of any sale, transfer, or conveyance of ownership or any other loss of permitted legal control of the Project and/or related facilities from which the permitted consumptive use is made. Where Permittee's control of the land subject to the permit was demonstrated through a lease, the Permittee must either submit a new or modified lease showing that it continues to have legal control or documentation showing a transfer in control of the permitted system/project to the new landowner or new lessee. All transfers of ownership are subject to the requirements of Rule 40E-1.6107, F.A.C. Alternatively, the Permittee may surrender the consumptive use permit to the District, thereby relinquishing the right to conduct any activities under the permit.

4. Nothing in this permit should be construed to limit the authority of the District to declare a water shortage and issue orders pursuant to Chapter 373, F.S. In the event of a declared water shortage, the Permittee must adhere to the water shortage restrictions, as specified by the District. The Permittee is advised that during a water shortage, reports shall be submitted as required by District rule or order. The Permittee is advised that during a water shortage, pumpage, water levels, and water quality data shall be collected and submitted as required by District orders issued pursuant to Chapter 40E-21, F.A.C.

5. This permit does not convey to the Permittee any property rights or privileges other than those specified herein, nor relieve the permittee from complying with any applicable local government, state, or federal law, rule, or ordinance.

6. With advance notice to the Permittee, District staff with proper identification shall have permission to enter, inspect, observe, collect samples, and take measurements of permitted facilities to determine compliance with the permit conditions and permitted plans and specifications. The Permittee shall either accompany District staff onto the property or make provision for access onto the property.

7. A. The Permittee may seek modification of any term of an unexpired permit. The Permittee is advised that Section 373.239, F.S., and Rule 40E-2.331, F.A.C., are applicable to permit modifications.

   B. The Permittee shall notify the District in writing 30 days prior to any changes to the project that

could potentially alter the reasonable demand reflected in the permitted allocation. Such changes include, but are not limited to, change in irrigated acreage, crop type, irrigation system, large users agreements, or water treatment method. Permittee will be required to apply for a modification of the permit for any changes in permitted allocation.

8. If any condition of the permit is violated, the permit shall be subject to review and modification, enforcement action, or revocation pursuant to Chapter 373, F.S.

9. The Permittee shall mitigate interference with existing legal uses that was caused in whole or in part by the Permittee's withdrawals, consistent with the approved mitigation plan. As necessary to offset the interference, mitigation will include pumpage reduction, replacement of the impacted individual's equipment, relocation of wells, change in withdrawal source, or other means.

   Interference to an existing legal use is defined as an impact that occurs under hydrologic conditions equal to or less severe than a 1-in-10 year drought event that results in the:

   A. Inability to withdraw water consistent with provisions of the permit, such as when remedial structural or operational actions not materially authorized by existing permits must be taken to address the interference; or

   B. Change in the quality of water pursuant to primary State Drinking Water Standards to the extent that the water can no longer be used for its authorized purpose, or such change is imminent.

10. The Permittee shall mitigate harm to the natural resources caused by the Permittee's withdrawals, as determined through reference to the conditions for permit issuance. When harm occurs, or is imminent, the District will require the Permittee to modify withdrawal rates or mitigate the harm. Harm, as determined through reference to the conditions for permit issuance includes:

    A. Reduction in ground or surface water levels that results in harmful lateral movement of the fresh water/salt water interface,

    B. Reduction in water levels that harm the hydroperiod of wetlands,

    C. Significant reduction in water levels or hydroperiod in a naturally occurring water body such as a lake or pond,

    D. Harmful movement of contaminants in violation of state water quality standards, or

    E. Harm to the natural system including damage to habitat for rare or endangered species.

11. The Permittee shall mitigate harm to existing off-site land uses caused by the Permittee's withdrawals, as determined through reference to the conditions for permit issuance. When harm occurs, or is imminent, the District will require the Permittee to modify withdrawal rates or mitigate the harm. Harm as determined through reference to the conditions for permit issuance, includes:

A. Significant reduction in water levels on the property to the extent that the designed function of the water body and related surface water management improvements are damaged, not including aesthetic values. The designed function of a water body is identified in the original permit or other governmental authorization issued for the construction of the water body. In cases where a permit was not required, the designed function shall be determined based on the purpose for the original construction of the water body (e.g. fill for construction, mining, drainage canal, etc.)

B. Damage to agriculture, including damage resulting from reduction in soil moisture resulting from consumptive use; or,

C. Land collapse or subsidence caused by reduction in water levels associated with consumptive use.

NOTICE OF RIGHTS

As required by Chapter 120, Florida Statutes, the following provides notice of the opportunities which may be available for administrative hearing pursuant to Sections 120.569 and 120.57, Florida Statutes, or judicial review pursuant to Section 120.68, Florida Statutes, 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. Some of the legal proceedings detailed below may not be applicable or appropriate for your situation. 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 South Florida Water Management District's (District) action has the right to request an administrative hearing on that action pursuant to Sections 120.569 and 120.57, Florida Statutes. Persons seeking a hearing on a District decision which affects or may affect their substantial interests shall file a petition for hearing in accordance with the filing instructions set forth herein 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, Florida Statutes; or (2) within 14 days of service of an Administrative Order pursuant to Section 373.119(1), Florida Statutes. "Receipt of written notice of agency decision" means receipt of written notice through mail, electronic mail, posting, or publication that the District has taken or intends to take final agency action. Any person who receives written notice of a District 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.

If the District takes final agency action that materially differs from the noticed intended agency decision, persons who may be substantially affected shall, unless otherwise provided by law, have an additional point of entry pursuant to Rule 28-106.111, Florida Administrative Code.

Any person to whom an emergency order is directed pursuant to Section 373.119(2), Florida Statutes, shall comply therewith immediately, but on petition to the board shall be afforded a hearing as soon as possible.

A person may file a request for an extension of time for filing a petition. The District may grant the request for good cause. Requests for extension of time must be filed with the District 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 whether the District and any other parties agree to or oppose the extension. A timely request for an extension of time shall toll the running of the time period for filing a petition until the request is acted upon.

FILING INSTRUCTIONS

A petition for administrative hearing must be filed with the Office of the District Clerk. Filings with the Office of the District Clerk may be made by mail, hand-delivery, or e-mail. Filings by facsimile will not be accepted. A petition for administrative hearing or other document is deemed filed upon receipt during normal business hours by the Office of the District Clerk at the District's headquarters in West Palm Beach, Florida. The District's normal business hours are 8:00 a.m. – 5:00 p.m., excluding weekends and District holidays. Any document received by the Office of the District Clerk after 5:00 p.m. shall be deemed 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 Office of the District Clerk, 3301 Gun Club Road, West Palm Beach, Florida 33406.

- Filings by hand-delivery must be delivered to the Office of the District Clerk. Delivery of a petition to the District's security desk does not constitute filing. It will be necessary to request that the District's security officer contact the Office of the District Clerk. An employee of the District's Clerk's office will receive and process the petition.
- Filings by e-mail must be transmitted to the Office of the District Clerk at clerk@sfwmd.gov. The filing date for a document transmitted by electronic mail shall be the date the Office of the District Clerk receives the complete document.

INITIATION OF AN ADMINISTRATIVE HEARING

Pursuant to Sections 120.54(5)(b)4. and 120.569(2)(c), Florida Statutes, and Rules 28-106.201 and 28-106.301, Florida Administrative Code, initiation of an administrative hearing shall be made by written petition to the District in legible form and on 8 1/2 by 11 inch white paper. All petitions shall contain:

1. Identification of the action being contested, including the permit number, application number, District file number or any other District identification number, if known.
2. The name, address, any email address, any facsimile number, and telephone number of the petitioner, petitioner's attorney or qualified representative, if any.
3. An explanation of how the petitioner's substantial interests will be affected by the agency determination.
4. A statement of when and how the petitioner received notice of the District'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 District's proposed action.
7. A statement of the specific rules or statutes the petitioner contends require reversal or modification of the District'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 District to take with respect to the District's proposed action.

MEDIATION

The procedures for pursuing mediation are set forth in Section 120.573, Florida Statutes, and Rules 28-106.111 and 28-106.401–.405, Florida Administrative Code. The District is not proposing mediation for this agency action under Section 120.573, Florida Statutes, at this time.

RIGHT TO SEEK JUDICIAL REVIEW

Pursuant to Section 120.68, Florida Statutes, and in accordance with Florida Rule of Appellate Procedure 9.110, a party who is adversely affected by final District action may seek judicial review of the District's final decision by filing a notice of appeal with the Office of the District Clerk in accordance with the filing instructions set forth herein within 30 days of rendition of the order to be reviewed, and by filing a copy of the notice with the appropriate district court of appeals via the Florida Courts E-Filing Portal.

WATER USE STAFF REPORT

Application Number: 210514-2

Permit Number: 06-08146-W

Project Name: NE 27TH AVENUE & NE 16TH STREET STORMWATER IMPROVEMENTS

Location: BROWARD COUNTY, S30/T48S/R43E

Applicant's Name and Address: CITY OF POMPANO BEACH
1201 N E 5TH AVENUE
POMPANO BEACH, FL 33060

Water Use Classification: Dewatering

Sources:

Surface Water from: Water Table aquifer

Proposed Withdrawal Facilities - Surface Water

Source: Water Table aquifer
2 - 10" X 70 HP X 1200 GPM Diesel Turbine Pumps

Rated Capacity Source	Status Code	GPM	MGM	MGY
Water Table aquifer	P	2,400	105.1	1,261
Totals:		**2,400**	**105.1**	**1,261**

PURPOSE

The purpose of this application is to obtain a water use permit for dewatering water supply to facilitate installation of drainage pipe, exfiltration trenches, and associated maintenance access structures. Withdrawals are from the water table aquifer.

PROJECT DESCRIPTION

NE 27th Avenue & NE 16th Street Stormwater Improvements (Project) is proposed dewatering operation located in a neighborhood bounded by Federal Highway to the west, N.E. 16th Street to the south, the Intracoastal Waterway to the east, and N.E. 22nd Court to the north, in Broward County, as shown on Exhibits 1 and 2. Dewatering is necessary to facilitate installation of approximately 9,600 linear feet of drainage pipe, 740 linear feet of exfiltration trenches, and associated maintenance access structures within the neighborhood to reduce the flooding depth and duration during significant storm events. Dewatering will occur via well points and trench pumping and effluent will be routed off-site to the secondary canals at the north and south ends of the Project. The secondary canals are connected to the Intracoastal Waterway. A floating turbidity curtain will be placed during dewatering procedures at the discharge points and turbidity

PROJECT DESCRIPTION (CONTINUED)

monitoring shall occur during dewatering activities. Pump specifications are shown on Exhibit 3 and dewatering plans and calculations are shown on Exhibit 4. The maximum extent of dewatering will be to a groundwater elevation of -5.55 feet North American Vertical Datum (NAVD), which is approximately 9.24 feet below the average land surface elevation of 3.69 feet NAVD. The anticipated duration necessary to complete all dewatering activities is 180 days. The maximum daily pumpage is estimated to be 2.88 million gallons (MG) and the total Project pumpage is not expected to exceed 518.51 MG. If exceptional storm conditions occur that exceed the capacity of the dewatering effluent disposal systems, the Permittee is required to cease dewatering operations until adequate storage is available to contain all dewatering discharge. Due to the minimal drawdown associated with short term dewatering projects, the potential for harm to the resource, existing legal users, wetlands, saline water, or movement of contamination is considered minimal as a result of the Project's proposed dewatering activities.

Wetland Environments:
There are no state jurisdictional wetlands on-site or within close proximity of the Project site. Dewatering effluent will be discharged into residential canals connected to the Intracoastal Waterway. Turbidity curtains will be placed at the outfall, and a turbidity monitoring plan will be required during the dewatering activities. Based upon application of the narrative standard that the hydrologic alteration of the water use shall not adversely impact the values of wetland functions so as to cause harm to the abundance, diversity and habitat of fish, wildlife and listed species, the potential for harm to occur to wetlands as a result of the dewatering operations is considered minimal.

Migration of Saline Water:
The Project is located east of the saline water interface (chloride concentration greater than 250 milligrams per liter) and approximately 0.1 miles west of the Intracoastal Waterway. Groundwater is likely to be saline and tidally influenced beneath this Project. Considering the dewatering is localized and temporary, the potential for this dewatering to incur further saltwater intrusion or upconing is minimal.

Sources of Pollution:
According to Florida Department of Environmental Protection records, petroleum contamination exists near the Project. Dewatering will occur along roadways and will occur for a short duration at each location. The dewatering plans were approved by Broward County Environmental Engineering and Permitting Division on June 4, 2021. Therefore, the potential for this dewatering to cause harmful movement of pollution is minimal.

ENVIRONMENTAL RESOURCE PERMIT STATUS:
Not Applicable

RIGHT OF WAY PERMIT STATUS:
Not Applicable

RECOMMENDATIONS

Project Name: NE 27TH AVENUE & NE 16TH STREET STORMWATER IMPROVEMENTS

Application Number: 210514-2

Permit Number: 06-08146-W

RECOMMENDATION

Dewatering of the water table aquifer to facilitate installation of drainage pipe, exfiltration trenches, and associated maintenance access structures.

STAFF EVALUATION

REVIEWER:

MReins

Morgan Reins, NRM

Stephanie Lancaster

Stephanie Lancaster, P.G., WU

SUPERVISOR:

Laura Layman for

Barbara J. Conmy, NRM

Nicholas Vitani

Nicholas M. Vitani, P.G., WU

SPECIAL PERMIT CONDITIONS

1. This permit is issued to:
   CITY OF POMPANO BEACH
   1201 NE 5TH AVENUE
   POMPANO BEACH, FL 33060

2. This permit shall expire on June 7, 2023.

3. Use classification is:

   Dewatering

4. Dewatering is authorized by this permit for a duration of one year from the date provided to the District by the Permittee in accordance with the notification requirements as stated in the Special Permit Conditions of this permit.

5. Source classification is:

   Surface Water from:
   Water Table aquifer

6. Pursuant to Subsection 2.3.2.B.2 of the Applicant's Handbook for Water Use Permit Applications within the South Florida Water Management District, neither maximum monthly nor annual allocation volumes are specified.

7. Withdrawal facilities:

   Surface Water - Proposed:

   2 - 10" x 70 HP X 1200 GPM Diesel Turbine Pumps

8. The Permittee shall submit all data as required by the implementation schedule for each of the permit conditions to: SFWMD at www.sfwmd.gov/ePermitting, or Regulatory Support, 3301 Gun Club Road, West Palm Beach, FL 33406.

9. The Permittee must submit the appropriate application form incorporated by reference in Rule 40E-2.101, F.A.C., to the District prior to the permit expiration date in order to continue the use of water.

10. The excavation shall be constructed using sound engineering practices. If the excavation or dewatering activities endanger the properties of adjacent owners (through erosion, side wall collapse, flooding, etc.), the Permittee shall cease

SPECIAL PERMIT CONDITIONS

operations until a method to prevent such occurrences is found and instituted. The Permittee shall be responsible for finding and instituting methods to stop such occurrences.

11. The Permittee shall immediately cease dewatering when continued dewatering would create a condition hazardous to the health, safety, and general welfare of the people of the District.

12. The Permittee shall be responsible for clearing shoaling, if the Permittee's dewatering operation creates shoaling in adjacent water bodies.

13. The Permittee shall conduct dewatering activities in adherence to the following operating plan:

    The dewatering plans and calculatons are shown on Exhibit 4 (Application #210514-2).

14. Off-site discharge may be made via the facilities and conditions that follow:

    Dewatering effluent will be routed off-site to the secondary canals at the north and south ends of the Project. The secondary canals are connected to the Intracoastal Waterway.

15. Turbidity measurements of the dewatering water shall be made daily at the point of discharge and a background location (upstream) in the receiving water body. If turbidity levels in the dewatering water exceed 29 NTU above background conditions in the receiving water body, or 0 NTU above background for discharge to Outstanding Florida Waters, the Permittee is required to correct the situation and cease dewatering operations until monitoring demonstrates turbidity standards are met. All turbidity data shall be retained on-site for inspection by District Staff.

16. The Permittee shall construct the proposed recharge trenches prior to dewatering and maintain water levels during active dewatering operations within one foot below land surface. Obstructions and sediments within the recharge trenches shall be removed to maintain the effectiveness of the recharge trenches.

17. The Permittee shall not lower the water table below the following depths:

    -5.55 feet NAVD or approximately 9.24 feet below land surface

18. The Permittee shall submit to the District an updated "Summary of Groundwater (Well) or Surface Water (Pump or Culvert) Facilities" table ("Section IV - Sources of Water", Water Use Permit Application Form 1379) at least 30 days prior to a change in any

SPECIAL PERMIT CONDITIONS

facility status (e.g. installation, relocation, abandonment) to include all specifications of the well, pump or culvert (e.g. actual total and cased depths, pump manufacturer and model numbers, pump types, intake depths and type of meters, culvert type, length, cross-section, diameter, height, width, invert elevation, control device, and water use accounting method).

19. At least 72 hours prior to initial dewatering, the Permittee shall contact the District to allow for a site visit to verify:

    a. The location and design of the recharge trenches and on-site retention areas where dewatering water will be retained;

    b. The location of monitoring facilities; and,

    c. Other site-specific issues related to the protection of the resource or other existing legal users.

    Failure of the Permittee, or the Permittee's representative, to notify the District before dewatering commences will result in enforcement action. If necessary, the District shall conduct a site visit.

    Notification of commencement of dewatering can be made by contacting: wucompliance@sfwmd.gov

20. A copy of the permit, its conditions, and dewatering plan is required to be kept on site at all times during dewatering operations by the lead contractor or site manager.

21. Within 30 days of completion of the dewatering operation, all dewatering facilities (such as impoundments, conveyances, and recharge trenches) shall be filled and regraded to ground elevation or to otherwise comply with the Environmental Resource Permit.

STANDARD PERMIT CONDITIONS

1. All water uses authorized by this permit shall be implemented as conditioned by this permit, including any documents incorporated by reference in a permit condition. The District may revoke this permit, in whole or in part, or take enforcement action, pursuant to Section 373.136 or 373.243, F.S., unless a permit modification has been obtained to address the noncompliance.

   The Permittee shall immediately notify the District in writing of any previously submitted material information that is later discovered to be inaccurate.

2. The Permittee is advised that this permit does not relieve any person from the requirement to obtain all necessary federal, state, local and special district authorizations.

3. The Permittee shall notify the District in writing within 30 days of any sale, transfer, or conveyance of ownership or any other loss of permitted legal control of the Project and/or related facilities from which the permitted consumptive use is made. Where Permittee's control of the land subject to the permit was demonstrated through a lease, the Permittee must either submit a new or modified lease showing that it continues to have legal control or documentation showing a transfer in control of the permitted system/project to the new landowner or new lessee. All transfers of ownership are subject to the requirements of Rule 40E-1.6107, F.A.C. Alternatively, the Permittee may surrender the consumptive use permit to the District, thereby relinquishing the right to conduct any activities under the permit.

4. Nothing in this permit should be construed to limit the authority of the District to declare a water shortage and issue orders pursuant to Chapter 373, F.S. In the event of a declared water shortage, the Permittee must adhere to the water shortage restrictions, as specified by the District. The Permittee is advised that during a water shortage, reports shall be submitted as required by District rule or order. The Permittee is advised that during a water shortage, pumpage, water levels, and water quality data shall be collected and submitted as required by District orders issued pursuant to Chapter 40E-21, F.A.C.

5. This permit does not convey to the Permittee any property rights or privileges other than those specified herein, nor relieve the permittee from complying with any applicable local government, state, or federal law, rule, or ordinance.

6. With advance notice to the Permittee, District staff with proper identification shall have permission to enter, inspect, observe, collect samples, and take measurements of permitted facilities to determine compliance with the permit conditions and permitted plans and specifications. The Permittee shall either accompany District staff onto the property or make provision for access onto the property.

7. A. The Permittee may seek modification of any term of an unexpired permit. The Permittee is advised that Section 373.239, F.S., and Rule 40E-2.331, F.A.C., are applicable to permit modifications.

   B. The Permittee shall notify the District in writing 30 days prior to any changes to the project that could potentially alter the reasonable demand reflected in the permitted allocation. Such changes include, but are not limited to, change in irrigated acreage, crop type, irrigation system, large users agreements, or water treatment method. Permittee will be required to apply for a modification of the permit for any changes in permitted allocation.

8. If any condition of the permit is violated, the permit shall be subject to review and modification, enforcement action, or revocation pursuant to Chapter 373, F.S.

9. The Permittee shall mitigate interference with existing legal uses that was caused in whole or in part by the Permittee's withdrawals, consistent with the approved mitigation plan. As necessary to offset the interference, mitigation will include pumpage reduction, replacement of the impacted individual's equipment, relocation of wells, change in withdrawal source, or other means.

   Interference to an existing legal use is defined as an impact that occurs under hydrologic conditions equal to or less severe than a 1-in-10 year drought event that results in the:

   A. Inability to withdraw water consistent with provisions of the permit, such as when remedial structural or operational actions not materially authorized by existing permits must be taken to address the interference; or

   B. Change in the quality of water pursuant to primary State Drinking Water Standards to the extent that the water can no longer be used for its authorized purpose, or such change is imminent.

10. The Permittee shall mitigate harm to the natural resources caused by the Permittee's withdrawals, as determined through reference to the conditions for permit issuance. When harm occurs, or is imminent, the District will require the Permittee to modify withdrawal rates or mitigate the harm. Harm, as determined through reference to the conditions for permit issuance includes:

    A. Reduction in ground or surface water levels that results in harmful lateral movement of the fresh water/salt water interface,

    B. Reduction in water levels that harm the hydroperiod of wetlands,

    C. Significant reduction in water levels or hydroperiod in a naturally occurring water body such as a lake or pond,

D. Harmful movement of contaminants in violation of state water quality standards, or

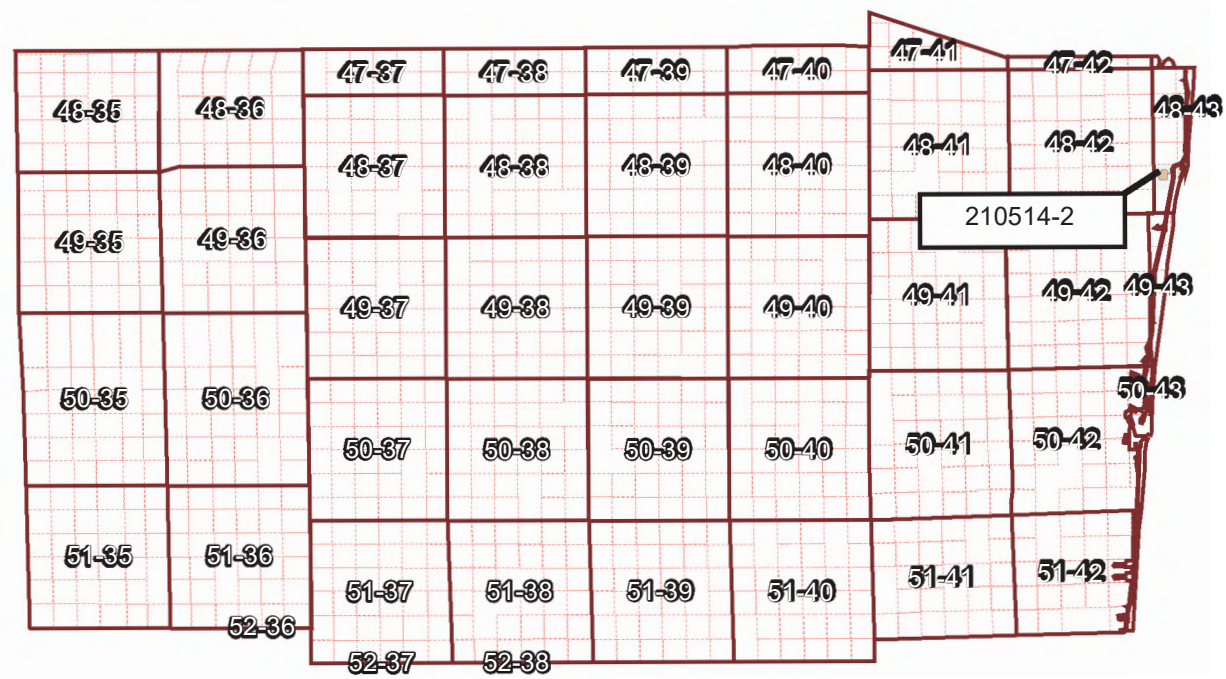
E. Harm to the natural system including damage to habitat for rare or endangered species.

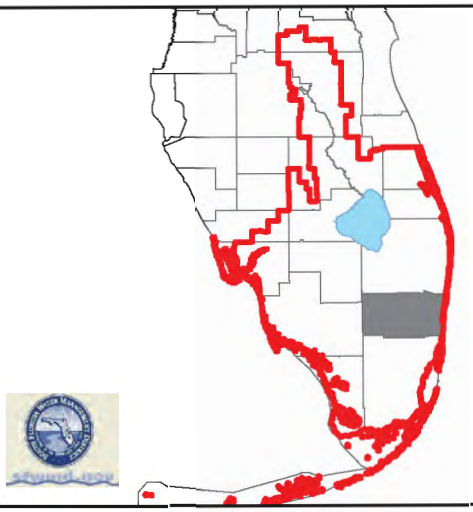
11. The Permittee shall mitigate harm to existing off-site land uses caused by the Permittee's withdrawals, as determined through reference to the conditions for permit issuance. When harm occurs, or is imminent, the District will require the Permittee to modify withdrawal rates or mitigate the harm. Harm as determined through reference to the conditions for permit issuance, includes:

    A. Significant reduction in water levels on the property to the extent that the designed function of the water body and related surface water management improvements are damaged, not including aesthetic values. The designed function of a water body is identified in the original permit or other governmental authorization issued for the construction of the water body. In cases where a permit was not required, the designed function shall be determined based on the purpose for the original construction of the water body (e.g. fill for construction, mining, drainage canal, etc.)

    B. Damage to agriculture, including damage resulting from reduction in soil moisture resulting from consumptive use; or,

    C. Land collapse or subsidence caused by reduction in water levels associated with consumptive use.





BROWARD COUNTY, FLORIDA

N

Map Date: 2021-05-18

Application No: 210514-2

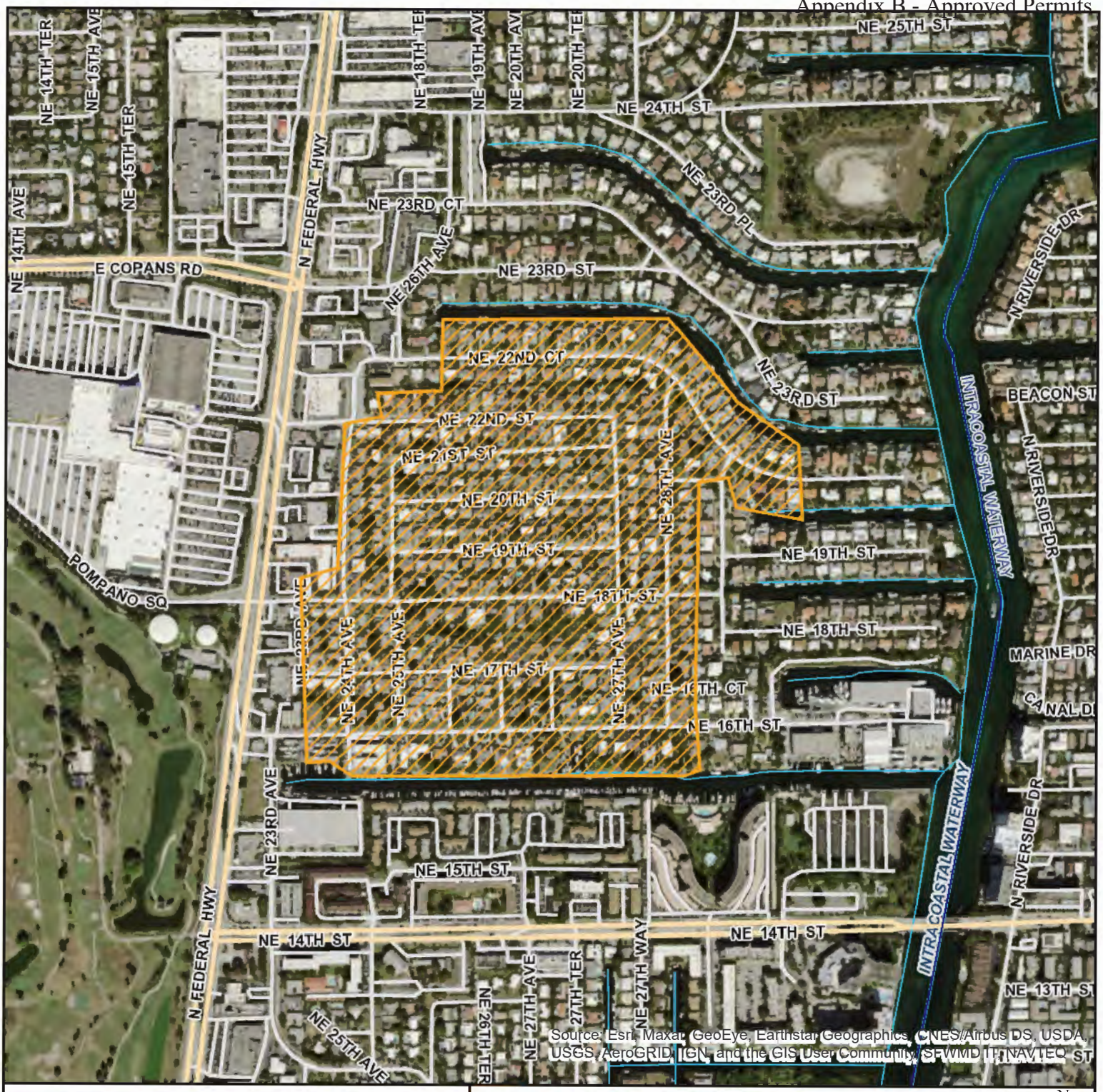
Permit No: 06-08146-W

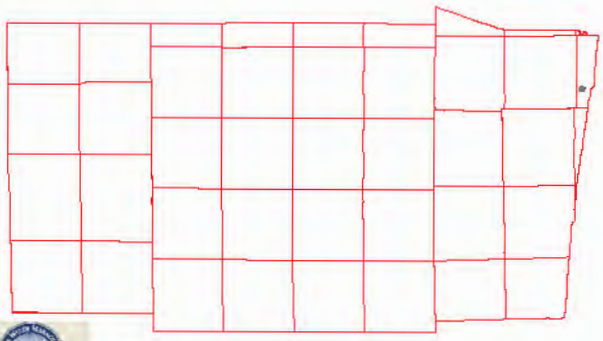
Sec 30 / Twp 48 / Rge 43

Project Name: NE 27TH AVENUE & NE 16TH STREET STORMWATER IMPROVEMENTS

0 10 20 Miles

Exhibit No: 1





Application

BROWARD COUNTY, FLORIDA

N

Map Date: 2021-05-18

Application No: 210514-2

Permit No: 06-08146-W

Sec 30 / Twp 48 / Rge 43

Project Name: NE 27TH AVENUE & NE 16TH STREET STORMWATER IMPROVEMENTS

0 0.15 0.3 Miles

Exhibit No: 2

TABLE - B

Description Of Surface Water Pumps

Application Number: **210514-2**

Pump ID	287446	287447
Name	Pump 1	Pump 2
Map Designator		
Facility Group		
Existing/Proposed	P	P
Pump Type	Diesel Turbine	Diesel Turbine
Diameter(Inches)	10	10
Pump Capacity(GPM)	1,200	1,200
Pump Horse Power	70	70
Two Way Pump ?		
Elevation (ft. NGVD)	-10	-10
Planar Location		
Source		
Feet East		
Feet North		
Accounting Method	None	None
Use Status	Primary	Primary
Water Use Type	Mining / Dewatering	Mining / Dewatering
Surface Water Body	Water Table aquifer	Water Table aquifer

Exhibit No: 3

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Office: +1 (954) 730-0707

chen moore and associates

Project Description

The City of Pompano Beach's Stormwater Improvements along NE 27th Avenue and NE 16th Street involves the installation of approximately 9,600 linear feet of drainage pipe, 740 linear feet of exfiltration trenches, and associated maintenance access structures (MASs). Please refer to "NE 27th Ave & NE 16th St Stormwater Improvements" map. The Stormwater Improvement Project is bounded by Federal Highway to the west, NE 16th Street to the south, Intracoastal Waterway to the east, and NE 22nd Court to the north. The project area consists of primarily single-family residential properties with a limited existing drainage system serving the public right of way areas. The current stormwater facilities within the project area does not have adequate level of service to the right of way. Based on results of existing conditions stormwater model along with the observation by City staff, the flooding issues are most critical along NE 27th Avenue, NE 16th Street, and the adjacent intersecting roadways. The project aims to reduce the flooding depth and duration during significant storm events. Short term dewatering, using well-points, will be necessary to ensure that the Maintenance Access Structures (MASs) and the deeper piping runs are assembled in-the-dry under safe and stable conditions. Chen Moore & Associates prepared a SFWMD General Mining/Dewatering Permit Application in accordance with the District's Basis of Review Manual.

Trench Dewatering Description

Trench Dewatering will be required for the majority of the new Stormwater drainage piping runs. Please refer to the Stormwater Improvement Design Plans, for the rim elevations and stormwater drainage pipe invert elevations at Maintenance Access Structures (MASs). For Computational purposes it was assumed that any piping run with an invert elevation below +1.50 NAVD will require well-point dewatering. Trench dewatering will be accomplished in 200- or 300-foot increments depending on the trench depth. Well-points will be spaced at approximately 12-foot intervals. The swing connection from the well-point riser to the header pipe will include a flexible suction hose, a disconnect union and an adjusting cock (control valve) for tuning. A flow meter will be installed on the pump's discharge line. The expected duration of the dewatering is six months.

Turbidity Monitoring Plan

The dewatering water will be discharged through the nearby drainage outfalls into the secondary canal system connecting to the Intercoastal. A floating turbidity curtain will be placed during dewatering procedures at dewatering discharge point. Turbidity Measurements of the effluent shall be made daily at the point of discharge and a background condition (upstream) in the receiving water body. Please see draft dewatering plan map with location of dewatering discharge point and planned monitoring locations. If turbidity levels in the effluent exceed 10 NTU above background conditions of the received water body the Permittee is required to correct the situation and cease dewatering operations until monitoring demonstrated turbidity meet the requirements of Chapter 27-195 and 27-196 BCC. All dewatering activities will cease during a storm or major rain event.

Permittee shall comply with turbidity and general water quality standards for surface discharge into receiving streams, as established by Chapter 62-302, Florida Administration Code.

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Radius of Influence Calculations

The Sichart empirical equation (Powers, J.P., "Construction De-watering", 2nd Edition, John Wiley & Sons, Inc., 1992, page 104) was used to calculate the radii of influence (R_o) from dewatering at the most 5 pertinent (critical) locations. These locations are deemed "critical" because of their proximity to the nearby contamination sites. Note that due to the relatively deep invert elevation most of the project piping will required well-point pumping. Table 1 below presents a summary of the input data to the Sichart equation:

TABLE 1
SUMMARY OF RADIUS OF INFLUENCE (R_o) COMPUTATION INPUT DATA
Maintenance Access Structures – NE 27th Avenue & NE 16th Street Stormwater Improvements Project (Elevations in ft. NAVD)

INPUT DATA	**S-1**	**S-32**	**S-85**	**S-99**	**S-107**
Rim Elevation	6.13	6.28	4.66	4.28	3.69
Water Table Elev.	1.5	1.5	1.5	1.5	1.5
Lowest Pipe Invert Elev.	0.38	0.24	0.22	-1.95	-4.05
Bottom of Structure	-1.12	-1.42	-1.47	-3.45	-5.55
Draw Down Required	2.62	2.92	3.98	4.95	7.05
Effective Aquifer Head "H"	167	167	167	167	167
De-watered Aquifer Head "h"	164.38	164.08	163.02	162.05	159.95
Hydraulic Conductivity "K"*	12	12	12	12	12

* Average value from field testing.

The data in Table 1 was converted to metric and input to the following Sichart empirical equation:

$$Ro = 3{,}000\ (H - h)\ \sqrt{K}$$

in order to calculate an approximate radius of influence (R_o) from dewatering at each of the pertinent MASs. To consider the rectangular area for the dewatering activities of the project, the radius of influence is added to the equivalent radius of influence, (r_e) calculated from the equation:

$$r_e = \sqrt{\frac{a * b}{\pi}}$$

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TABLE 2 SUMMARY OF (R_o) COMPUTATION RESULTS NE 27th Avenue & NE 16th Street Stormwater Improvements Project					
INPUT DATA	**S-1**	**S-32**	**S-85**	**S-99**	**S-107**
Radius of Influence (R_o) (m)	15.589	17.3746	23.6819	29.4536	41.9491
Radius of Influence (R_o) (ft)	51.147	57.0034	77.6964	96.6325	137.628
a (ft)	20	20	20	20	20
b (ft)	400	400	400	400	400
r_e (ft)	50.463	50.463	50.526	50.463	50.463
Total Radius of Influence (ft)	101.61	107.466	128.222	147.095	188.091
Distance to EAR (ft) (closest)	581.34	658.32	1852.48	1790.97	1468.82
Result	***Pass***	***Pass***	***Pass***	***Pass***	***Pass***

As shown in Table 2, the total radius of influence calculated are significantly less than the distance to the closest contaminated site. Therefore, the District may be reasonably assured that the proposed dewatering at NE 27th Ave & NE 16th Street Stormwater Improvement Project will not cause any contamination plumes existing at the site to mitigate.

The requisite flow rates were subsequently calculated. The "direct calculation" detailed in Exhibit III of the Broward County Environmental Assessment and Remediation Section Standard Operating Procedure for Dewatering was used to estimate the pumping rate required to maintain the desired de-watering depth:

$$H^2 - h^2 = \frac{nq}{\pi k}(\ln R_0 - \ln r_e)$$

The results for each phase section are summarized in Table 3:

TABLE 3 SUMMARY OF PUMPING RATE COMPUTATIONS NE 27th Avenue & NE 16th Street Stormwater Improvements Project					
INPUT DATA	**S-1**	**S-32**	**S-85**	**S-99**	**S-107**
nq (m^3/s)	0.561	0.069	0.027	0.022	0.020
nq ($gal./\min$)	8893.1	1093.9	420.4	344.8	315.1
n	33.0	57.0	109.0	123.0	130.0
q (gal/min)	269.5	19.2	3.9	2.8	2.4

Assumptions: Dewatering Trench Size: 400 ft x 20 ft, well point every 12 ft, total of 33 well points (n).

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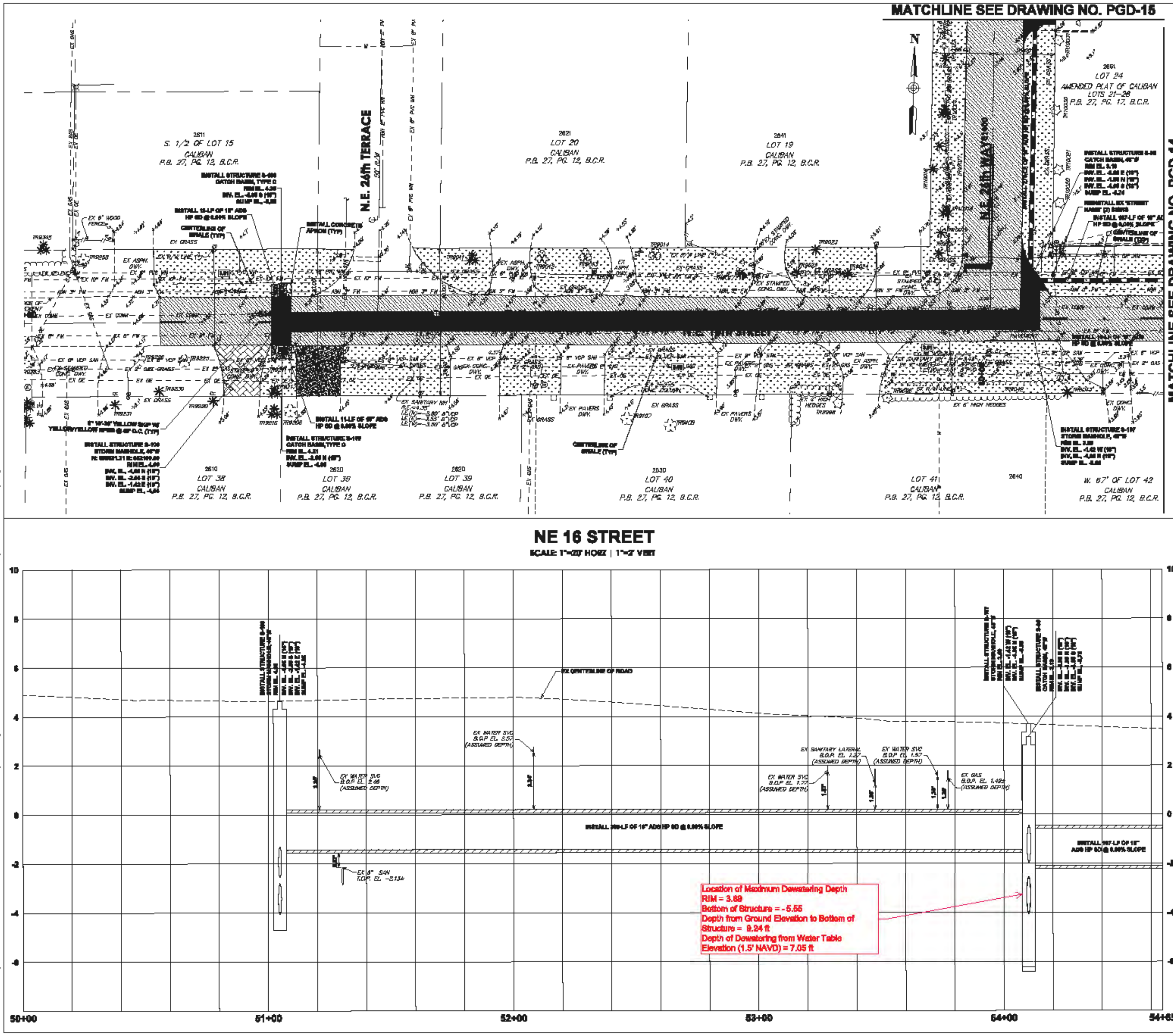
The hydraulic conductivity value “K” was taken from the Report of Preliminary Geotechnical Exploration performed by Nutting Engineers, and the aquifer thickness value “H” are taken from the Broward County PPRAQD data base. These values had been previously derived from pumping well tests and slug tests performed prior to the installation of groundwater remediation systems. These values have proven to be representative of the shallow subsurface formations in Broward County.

The average flow rate of each site is 2,000.4 GPM (2.88 MGD)

The estimated total project pumpage (180 day project duration) = 518.51 million gallons



KEY MAP
N.T.S.

HATCH LEGEND

- ROAD / ASPHALT RESTORATION
- PROPOSED ASPHALT OVERLAY
- CONCRETE RESTORATION
- SPECIALTY DRIVEWAY RESTORATION
- PROPOSED SWALE

PERMIT SET
MUST BE ON SITE AT ALL TIMES DURING CONSTRUCTION

MATERIAL
ALL MATERIAL USED AND INSTALLED WITHIN THE PUBLIC RIGHT-OF-WAY OR EASEMENTS SHALL BE IN ACCORDANCE WITH THE CITY OF POMPANO BEACH MINIMUM STANDARDS.

VERTICAL DATUM INFORMATION
ALL ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

GRAPHIC SCALE
1 INCH = 20 FEET (22"x34")
1 INCH = 40 FEET (11"x17")

THE FOLLOWING ITEMS ARE NOT REVIEWED OR ACCEPTED BY BROWARD COUNTY:

1. BROWARD COUNTY TRAFFIC ENGINEERING DIVISION DOES NOT REVIEW AND APPROVE, OR INSPECT AND ACCEPT THE FOLLOWING ITEMS FOR MAINTENANCE: PAVEMENT MARKINGS ON OR ADJACENT TO PAVER BRICKS, PAINTED ASPHALT, STAMPED ASPHALT OR PAVEMENT MARKINGS MADE OF PAVER BRICKS, RAISED INTERSECTIONS AND RELATED MARKINGS AND SIGNING, UN-WARRANTED CROSSWALKS AND RELATED MARKINGS AND SIGNING, PAINTED / DECORATIVE CROSSWALKS, RAISED CROSSWALKS AND RELATED MARKINGS AND SIGNING, ADVANCED WARNING PAVEMENT MARKINGS FOR SPEED TABLES, BLINKER SIGNS, RECTANGULAR RAPID FLASHER BEACONS AND RELATED MARKINGS AND SIGNING, ON-STREET PARKING AND RELATED MARKINGS AND SIGNING, IN-ROAD LIGHTING AND RELATED MARKINGS AND SIGNING, GREEN BIKE LANES, FLEXIBLE DELINEATORS, DECORATIVE SIGNS AND DECORATIVE SIGN POSTS, PLANTERS, ON-SITE PAVEMENT MARKINGS AND SIGNING, OFF-SITE PAVEMENT MARKINGS AND SIGNING IN RIGHT-OF-WAY THAT IS NOT DEDICATED FOR PUBLIC USE, SIDEWALK WORK OR ASPHALT WORK.

2. THE CITY ENGINEER IS RESPONSIBLE FOR THE REVIEW AND APPROVAL OF THE DESIGN AND OPERATION OF THE PROJECT, AND FOR THE INSPECTION AND ACCEPTANCE OF THE FOLLOWING ITEMS THAT WILL BE MAINTAINED BY THE CITY: PAVEMENT MARKINGS ON OR ADJACENT TO PAVER BRICKS, PAINTED ASPHALT, STAMPED ASPHALT OR PAVEMENT MARKINGS MADE OF PAVER BRICKS, PAVEMENT AND SIGNING, UN-WARRANTED MID-BLOCK CROSSWALKS AND RELATED MARKINGS AND SIGNING, UN-WARRANTED CROSSWALKS AND RELATED MARKINGS AND SIGNING, PAINTED / DECORATIVE CROSSWALKS, RAISED CROSSWALKS AND RELATED MARKINGS AND SIGNING, ADVANCED WARNING PAVEMENT MARKINGS FOR SPEED TABLES, BLINKER SIGNS, RECTANGULAR RAPID FLASHER BEACONS AND RELATED MARKINGS AND SIGNING, ON-STREET PARKING AND RELATED MARKINGS AND SIGNING, IN-ROAD LIGHTING AND RELATED MARKINGS AND SIGNING, GREEN BIKE LANES, FLEXIBLE DELINEATORS, DECORATIVE SIGNS AND DECORATIVE SIGN POSTS, PLANTERS, ON-SITE PAVEMENT MARKINGS AND SIGNING, OFF-SITE PAVEMENT MARKINGS AND SIGNING IN RIGHT-OF-WAY THAT IS NOT DEDICATED FOR PUBLIC USE, SIDEWALK WORK AND ASPHALT WORK.

3. ALL TRAFFIC CONTROL DEVICES MAINTAINED BY BROWARD COUNTY, THAT ARE REMOVED OR DAMAGED BY CONSTRUCTION, SHALL BE REPLACED BY CONTRACTOR USING CURRENT BROWARD COUNTY TRAFFIC ENGINEERING DIVISION STANDARDS.

90% SUBMITTAL

cma
chen moore and associates
500 West Cypress Creek Road Suite 630
Ft. Lauderdale, FL 33309
954.730.0707
www.chenmoore.com

REGISTRATION
JENNIFER L. SMITH, PE
REGISTRATION NO. 72232
DATE: 4/8/2021

This seal is only valid on printed copies that are dated with an original of the licensee's signature. Scanned or electronic copies are not considered signed and sealed.

CLIENT
pompano beach
Florida's Warmest Welcome

PROJECT INFORMATION
NE 27 AVENUE AND NE 16 STREET STORMWATER IMPROVEMENTS
CITY OF POMPANO BEACH, FL

PROJECT NUMBER
20-092.066

CLIENT PROJECT NUMBER
19-352

VERIFY SCALES
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

REVISIONS

DATE OF ISSUE
04/09/2021

DESIGNED BY
JLS

DRAWN BY
—

CHECKED BY
JM

DRAWING TITLE
PAVING, GRADING AND DRAINAGE PLAN

DRAWING NUMBER
PGD-13
30 OF 89

Plot Date: 4/8/2021 4:06:52 PM Username: adaytan Layout Name: PGD-13
Folder Path: V:\Projects\2020\20-092.066 - NE 27th Ave & NE 16 St Stormwater Imprmt\Design\CAD\Sheets Filename: 20-092.066 DRAINAGE PLAN (SHTS 1-33 AND 22-24).dwg

cma
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pompano beach
Florida's Warmest Welcome

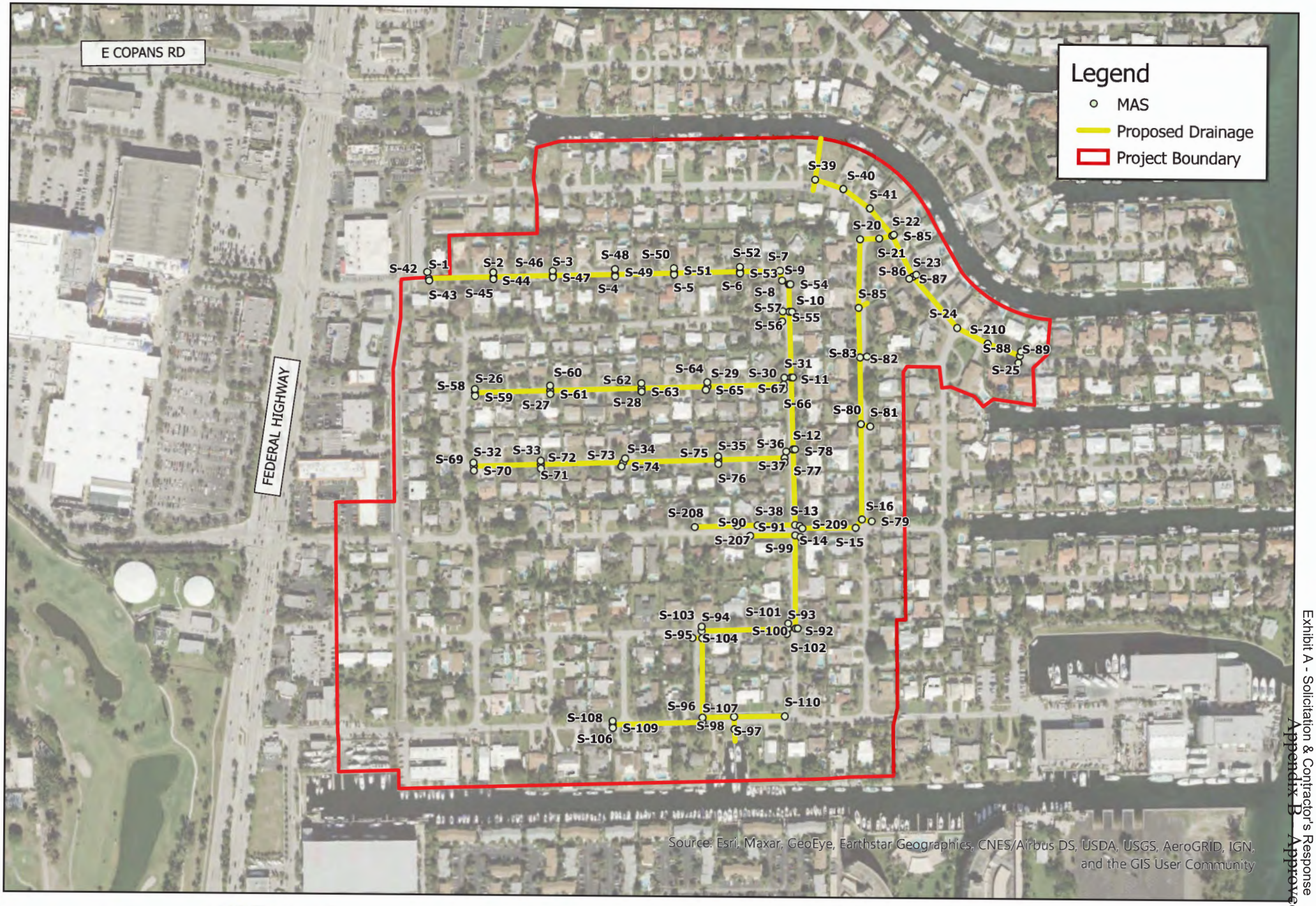
City of Pompano Beach
NE 27th Avenue & NE 16th Street Stormwater Improvements
Location Map

0 160 320 640 Feet

N
W
S

Exhibit No. 4 Page 6

Exhibit A - Solicitation & Contractor's Response
Appendix B - Approved Permits



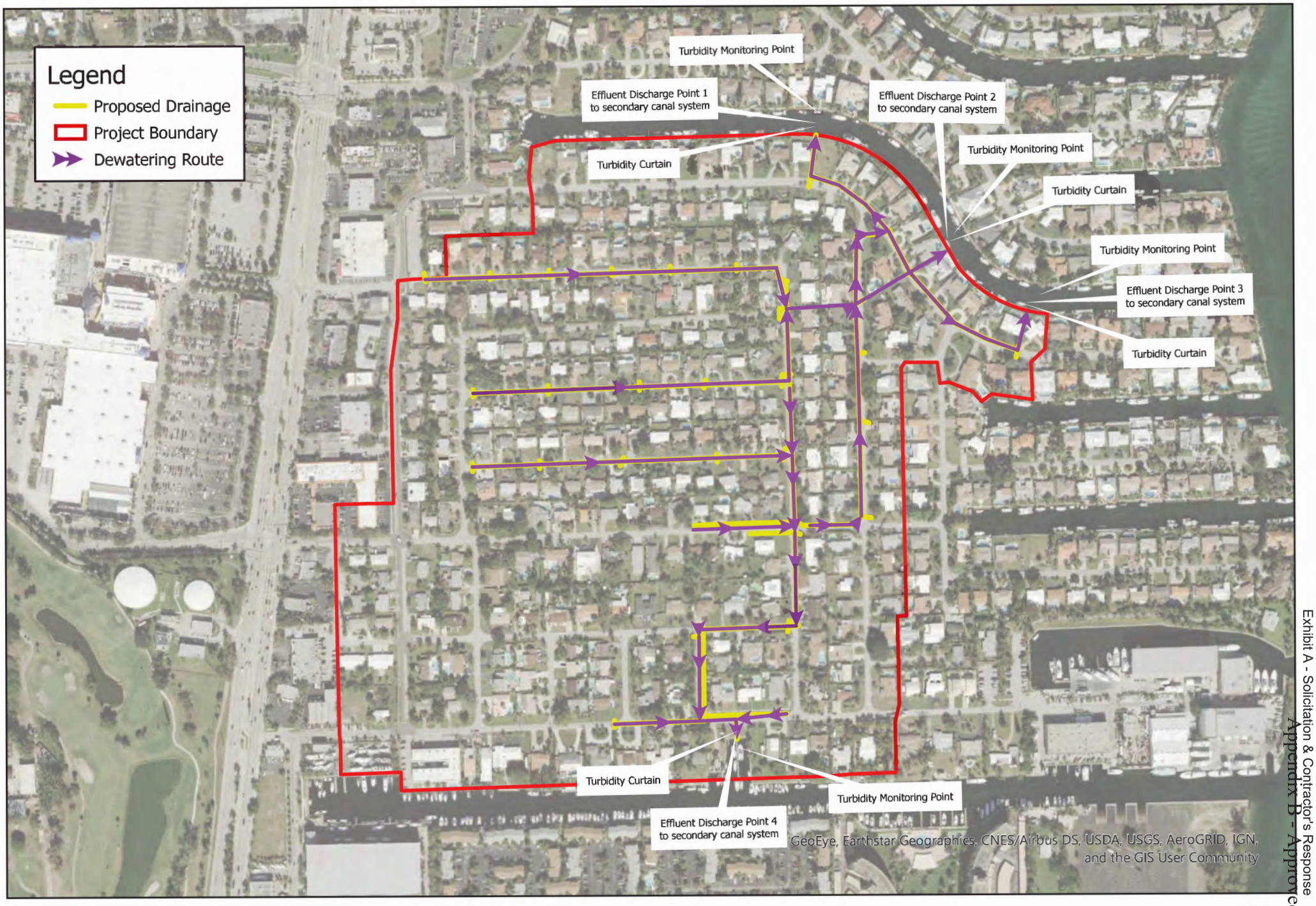
cma
chen moore and associates

pompano beach
Florida's Warmest Welcome

City of Pompano Beach
NE 27th Avenue & NE 16th Street Stormwater Improvements
Proposed Drainage System

0 165 330 660 Feet

N W E S



cma chen moore and associates

pompano beach Florida's Warmest Welcome

City of Pompano Beach
NE 27th Avenue & NE 16th Street Stormwater Improvements
Proposed Dewatering Plan

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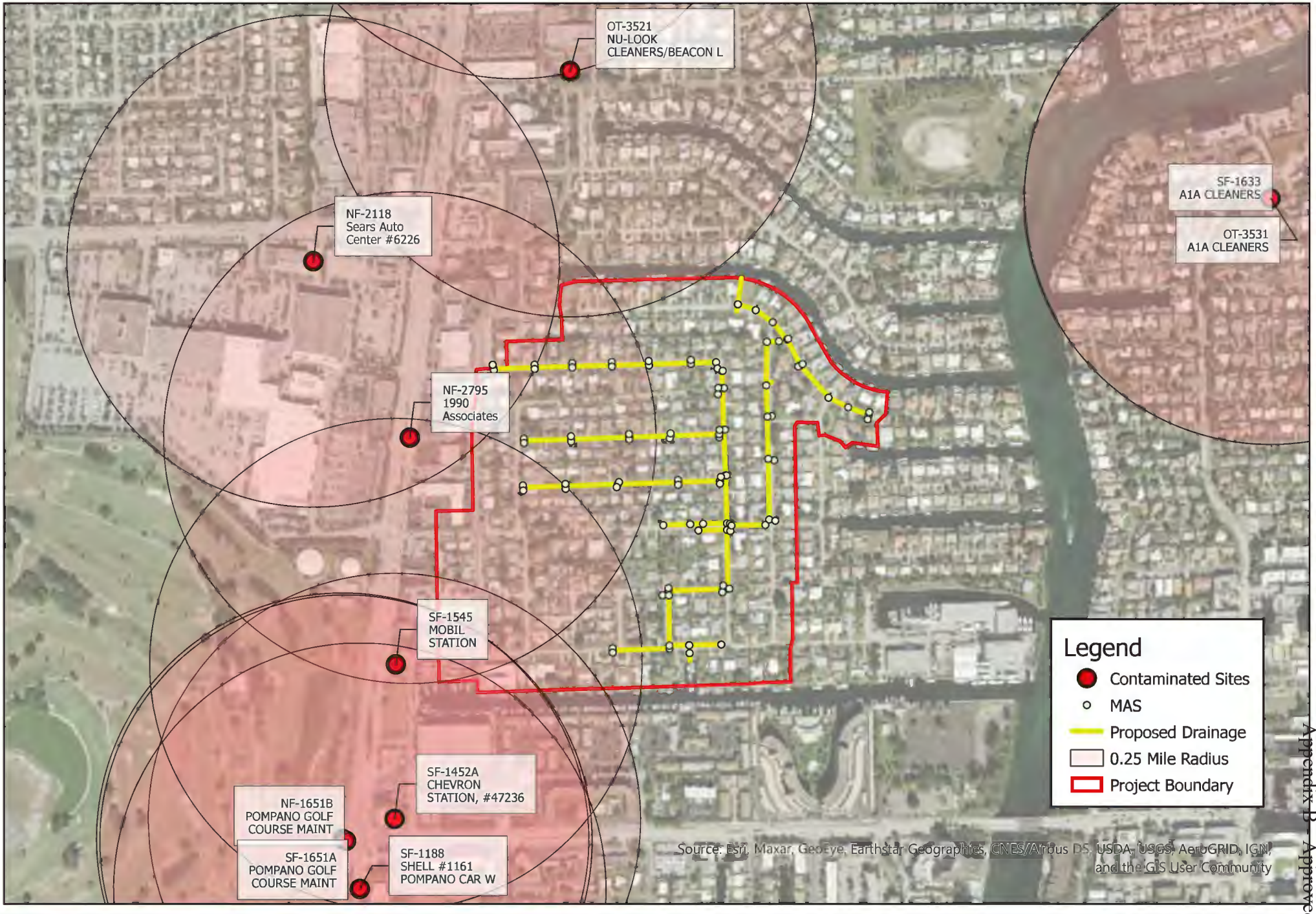
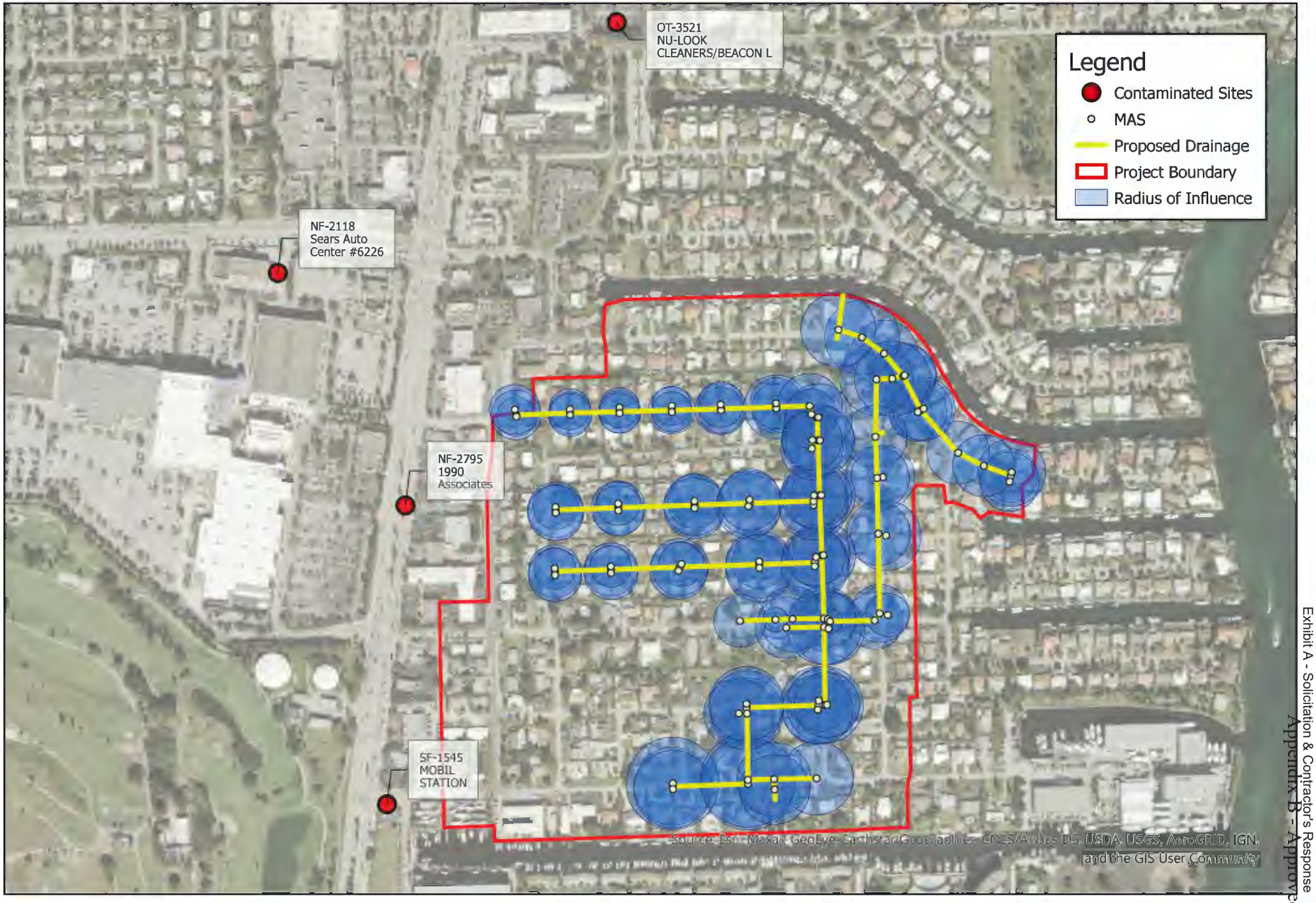
N W S



City of Pompano Beach
NE 27th Avenue & NE 16th Street Stormwater Improvements
Contaminated Sites

0 275 550 1,100 Feet

N W S



City of Pompano Beach
NE 27th Avenue & NE 16th Street Stormwater Improvements
Radius of Influence

0 195 390 780 Feet

N W S

Requirement by Permit Condition Report

App No: 210514-2
Permit No: 06-08146-W
Project Name: NE 27TH AVENUE & NE 16TH STREET STORMWATER IMPROVEMENTS

Permit Condition No: 15 **Permit Condition Code:** WUDWT002-4

Facility Name	Requirement Name	Col Freq	Sub Freq	Due Date
PERMIT	Turbidity level at discharge point PERMIT	Daily	Data Held On Site	01-OCT-2021
PERMIT	Background turbidity level for PERMIT	Data Held On Site	Data Held On Site	01-OCT-2021

Permit Condition No: 19 **Permit Condition Code:** WUDWT014-1

Facility Name	Requirement Name	Col Freq	Sub Freq	Due Date
PERMIT	Dewatering Commencement Notification	One time Only	One time Only	01-OCT-2021

Exhibit No: 5

STAFF REPORT DISTRIBUTION LIST

NE 27TH AVENUE & NE 16TH STREET STORMWATER IMPROVEMENTS

Application No: 210514-2

Permit No: 06-08146-W

INTERNAL DISTRIBUTION

X Stephanie Lancaster, P.G.

EXTERNAL DISTRIBUTION

X Permittee - City Of Pompano Beach
X Agent - Chen Moore And Associates

GOVERNMENT AGENCIES

X Broward County - Director, Water Mgmt Div
X Dept of Environmental Protection - West Palm Beach
X FDEP Div of Recreation and Park - District 5

OTHER INTERESTED PARTIES

X Natural Resources Defense Council

Exhibit No:6

Sign Detail:

CITY OF POMPANO BEACH

PROJECT NAME

FUNDING PROVIDED BY:
U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA) AND
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP)
CLEAN WATER STATE REVOLVING FUND (CWSRF) PROGRAM

PROJECT BY: CITY OF POMPANO BEACH

PROJECT COST: TBD PER BID OPENING

ESTIMATED COMPLETION: TBD

DESIGNED BY:

CONSULANT INFO

CONSTRUCTED BY: TBD PER BID

OPENING

SUPPLEMENTARY CONDITIONS

1. PERFORMANCE BOND AND PAYMENT BOND:

The City will require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder. All bonding and insurances are to be included in the Contractors bid cost.

2. CHANGE ORDERS:

All Change Order requests must be accompanied by backup documents supporting the Change Order. Contingency and Allowances must have proper documentation and approval by the Owner.

3. CLOSE OUT DOCUMENTATION:

All close-out documents must be hard copy and digital, including USB or CD. As-built drawings must be in CAD and PDF format, and they must be approved and accepted by the Designer, Governing Authorities, and the City.

4. MEETINGS:

The contractor must have an assigned project-knowledgeable representative at bi-weekly and State Revolving Fund project progress meetings. The meeting schedule will be determined before the Notice to Proceed is issued. The contractor must provide meeting minutes to the Owner of each progress meeting no later than seven days after the meeting. The contractor will be required to attend a community outreach meeting prior to construction.

5. PAY APPLICATION:

The Owner may include Contingency line items in the Schedule of Values. Pay applications submitted to the owner must have supporting documents as backups showing the breakdown of the contingency usage. The Pay Application submissions require a progress schedule, Release of Lien, and Contingency Log.

6. AS-BUILTS:

The contractor is to update and maintain the as-built drawings throughout the project. The Contractor must be able to supply as-built drawings as requested.

7. EXISTING AND NEW UTILITIES:

The contractor must pothole ahead of construction for existing lateral utilities to avoid conflict. The contractor must assume a variance in existing utilities. The contractor must confirm with utility companies prior to digging for any utility conflicts that may not be shown on the plans.

The contractor will be required to coordinate with utility providers prior to and throughout the construction duration for utility connections and supplies needed for the project. This may include but is not limited to, Florida Power and Light (FPL), internet-low-voltage technology, water, sewer, and gas utility suppliers.

8. MOBILIZATION OF TRAFFIC, HURRICANE, PHASING, STAGING AND SAFETY PLANS:

The contractor is to have the Mobilization of Traffic plan (if applicable) approved by Broward County. The contractor will also provide safety, phasing, staging, and hurricane plans for approval by the City before construction. The staging plan will require a permit from the City of Pompano Beach. The Staging area must include a perimeter security fence with a windscreen and proper safety signage. Caution tape will not suffice. Fencing must prevent pedestrian access in the working and staging areas.

The contractor is to provide tree protection and restore the staging site using Bahia sod or other approved landscape material. Seeding will not be allowed.

9. REPORTS.

The contractor will maintain daily progress reports and stormwater pollution reports. Stormwater pollution reports must be submitted to the Owner weekly.

.LCPtracker provides construction compliance management, certified payroll and workforce reporting The City uses LCPtracker to collect workforce utilization information on projects subject to the Workforce Training & Hiring Program requirements. Certified payrolls are required to be submitted on a weekly basis via LCPTracker. Prime Contractors are responsible for monitoring all subcontractor certified payrolls in LCPtracker with a role of Prime Approver. Prime Approvers

must approve all payrolls submitted for the project. If you are unfamiliar with this prime approver role you can access training in LCPtracker. the City will provide training to Prime Contract Holders on using LCP Tracker.

10. PROPERTY MAINTENANCE:

The contractor is responsible for the safety and maintenance of the property within the project limits and must provide daily clean-up in areas used by the contractor.

If the Engineer wants to include the requirement for a Performance and Payment bond even though it is a small project include this paragraph otherwise delete

11. PERMITTING:

The Contractor is responsible for acquiring all permits required for the project. Permits may include, but are not limited to, City, County, and State permits and any other permits that govern the project. The city will issue a Notice to Proceed for the permitting process.

12. PUBLIC SERVICES:

The contractor must coordinate with local public services to not interrupt public access. Services include, but are not limited to: police, fire, medical, and waste services.

13. ACCESSIBILITY:

Stakeholders located in the work zone must have pedestrian and vehicle access during working and non-working hours. All open trenches must be road-plated to allow access for high-load/ industrial trucking operations. The Contractor must coordinate with stakeholders and the City to minimize any interruption to operations. One lane must be operational at all times, with proper traffic maintenance implemented to coordinate traffic. In the event that a lane must be temporarily closed, the Contractor must have written approval prior to any full lane closures.

14. COMMUNITY OUTREACH:

The contractor is to provide flyer/door hangers to any impacted properties (7) days before any construction commencing in the area. Flyers must be provided to the City for approval before distribution.

SUPPLEMENTARY CONDITIONS (EQUIPMENT/MATERIALS)

Florida Department of Environmental Protection

State Revolving Fund Program

Supplementary Conditions

for

Formally Advertised

Equipment/Materials Procurement

Revised August 2022

TABLE OF CONTENTS FOR THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION SUPPLEMENTARY CONDITIONS (EQUIPMENT/MATERIALS)

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
SUPPLEMENTARY CONDITIONS

The intent of the Florida Department of Environmental Protection (FDEP) Supplementary Conditions is to complement and supplement other provisions of the Bidding Documents. However, if there is any conflict between the FDEP Supplementary Conditions and other provisions of the Bidding Documents, the FDEP Supplementary Conditions shall take precedence over the other provisions except when the other provisions are similar to, but more stringent than, the FDEP Supplementary Conditions. When other provisions of the Bidding Documents are similar to, but more stringent than, the FDEP Supplementary Conditions, the more stringent provisions shall apply.

ARTICLE 1 - DEFINITIONS

1.1. Wherever used in these Supplementary Conditions (except in the appendix to these Supplementary Conditions), the following terms have the meanings indicated, which are applicable to both the singular and plural thereof.

1.1.1. Addendum - A written or graphic instrument that is issued prior to the opening of bids and that clarifies, corrects, or changes the Bidding Documents.

1.1.2. Agreement or Contract - The written agreement between the Owner and the Contractor covering the furnishing of the Goods and Special Services; these Supplementary Conditions and other Contract Documents are attached to the Agreement/Contract and made a part thereof as provided therein.

1.1.3. Application for Payment - The form that is accepted by the Engineer and used by the Contractor in requesting progress and/or final payments and that is to include such supporting documentation as is required by the Contract Documents.

1.1.4. Bid - The offer or proposal of a bidder submitted on the prescribed form and setting forth the price(s) for furnishing the Goods and Special Services.

1.1.5. Bidder - Any person, firm, or corporation that submits a bid directly to the Owner.

1.1.6. Bidding Documents - The Advertisement for Bids or the Invitation to Bid, the Instructions to Bidders or the Information for Bidders, the Bid Form, the proposed Contract Documents, and all addenda.

1.1.7. Change Order - A document that is recommended by the Engineer and signed by the Contractor and the Owner; that authorizes an addition, deletion, or revision in the Goods or Special Services or an adjustment in the Contract Price or the Contract Time; and that is issued on or after the Effective Date of the Agreement/Contract.

1.1.8. Contract Documents - The Agreement/Contract; the Contractor's Bid when attached as an exhibit to the Agreement/Contract; the General Conditions; the Supplementary Conditions (including these Supplementary Conditions); the Specifications (written technical descriptions of material, equipment, standards, and workmanship as applied to the Goods and Special Services and certain administrative details applicable thereto); any Drawings (drawings that show the character and scope of the Goods to be furnished); all addenda that pertain to the Contract Documents; and all change orders.

1.1.9. Contract Price - The moneys payable by the Owner to the Contractor under the Contract Documents as stated in the Agreement/Contract.

1.1.10. Contract Time - The number of days or the date(s) stated in the Contract Documents for furnishing the Goods and Special Services.

1.1.11. Contractor - The person, firm, or corporation with whom or which the Owner enters into the Agreement/Contract.

1.1.12. Effective Date of the Agreement/Contract - The date indicated in the Agreement/Contract on which the Agreement/Contract becomes effective, or if no such date is indicated in the Agreement/Contract, the date on which the Agreement/Contract is signed and delivered by the last of the two parties to sign and deliver the Agreement/Contract.

1.1.13. Engineer - The person, firm, or corporation named as such in the Contract Documents.

1.1.14. Goods - All material, equipment, and other tangible personal property required to be furnished under the Contract Documents.

1.1.15. Minority Business Enterprise (MBE) - A historically Black college or university or a business that is (a) certified as socially and economically disadvantaged by the Small Business Administration, (b) certified as an MBE by a state or Federal agency, or (c) an independent business concern which is at least 51-percent owned and controlled by minority group members. (A minority group member is an individual who is a citizen of the United States and one of the following: [i] Black American; [ii] Hispanic American [with origins from Puerto Rico, Mexico, Cuba, or South or Central America]; [iii] Native American [American Indian, Eskimo, Aleut, or native Hawaiian]; or [iv] Asian-Pacific American [with origins from Japan, China, the Philippines, Vietnam, Korea, Samoa, Guam, the U.S. Trust Territories of the Pacific, Northern Marianas, Laos, Cambodia, Taiwan, or the Indian Subcontinent].)

1.1.16. Owner - The local government (municipality, county, district, or authority; or any agency thereof; or a combination of two or more of the foregoing acting jointly) with which the Florida Department of Environmental Protection may execute, or has executed, a State revolving fund loan agreement and to which the Goods and Special Services are to be furnished.

1.1.17. Project - The total construction or facilities described in a State revolving fund loan agreement between the Florida Department of Environmental Protection and the Owner, of which the Goods and Special Services to be furnished under the Contract Documents may be the whole or a part.

1.1.18. Special Services - All field services to be furnished by the Contractor as required by the Contract Documents.

1.1.19. Subcontract - A direct contract between a subcontractor and the Contractor, or any other subcontractor at any tier, for the furnishing of any of the Goods or Special Services required by the Contract Documents.

1.1.20. Subcontractor - A person, firm, or corporation having a direct contract with the Contractor, or any other subcontractor at any tier, for the furnishing of any of the Goods or Special Services required by the Contract Documents.

1.1.21. Successful Bidder - The lowest responsive, responsible bidder to whom or which the Owner intends to award the Agreement/Contract.

1.1.22. Women's Business Enterprise (WBE) - A business that is (a) certified as a WBE by a state or Federal agency or (b) an independent business concern which is at least 51-percent owned and controlled/operated by women. (Determination of whether a business is at least 51-percent owned by women shall be made without regard to community property laws [e.g., an otherwise qualified WBE that is 51-percent owned by a married woman in a community property state will not be disqualified because the married woman's husband has a 50-percent interest in the married woman's share of the business; similarly, a business that is 51-percent owned by a married man and 49-percent owned by women will not become a qualified WBE by virtue of the married man's wife having a 50-percent interest in the married man's share of the business].)

ARTICLE 2 - PRIVITY OF AGREEMENT/CONTRACT

2.1. The Owner expects to finance this Agreement/Contract with assistance from the Florida Department of Environmental Protection, which administers a State revolving fund loan program supported in part with funds directly made available by grants from the United States Environmental Protection Agency. Neither the State of Florida nor the United States (nor any of their departments, agencies, or employees) will be a party to this Agreement/Contract or any lower-tier subcontract.

ARTICLE 3 - PROCUREMENT REQUIREMENTS

3.1. This Agreement/Contract and the Owner's solicitation and award of this Agreement/Contract are subject to requirements contained in Chapter 62-503 (Clean Water State Revolving Fund Loan Program) or Chapter 62-552 (Drinking Water State Revolving Fund Loan Program), Florida Administrative Code as applicable.

ARTICLE 4 - RESOLUTION OF PROTESTS AND CLAIMS/DISPUTES

Resolution of Protests Concerning the Owner's Solicitation and/or Award of this Agreement/Contract:

4.1. Protests concerning the Owner's solicitation and/or award of this Agreement/Contract must be filed in writing with the Owner to be considered.

4.2. All timely written protests concerning the Owner's solicitation and/or award of this Agreement/Contract are to be resolved in accordance with the Owner's dispute resolution process. A copy of the ordinance(s), resolution(s), or written policy (policies) that set forth the Owner's dispute resolution process is included elsewhere in the Bidding Documents or is to be made available by the Owner upon request.

4.3. Neither the Florida Department of Environmental Protection (FDEP) nor the United States Environmental Protection Agency (USEPA) will become a party to, or have any role in resolving, protests concerning the Owner's solicitation and/or award of this Agreement/Contract. Protest decisions made by the Owner can not be appealed to the FDEP or the USEPA.

Resolution of Claims and Disputes between the Owner and the Contractor:

4.4. Unless otherwise provided in the Contract Documents, all claims and disputes between the Owner and the Contractor arising out of, or relating to, the Contract Documents or the breach thereof are to be decided by arbitration (if the Owner and the Contractor mutually agree) or in a court of competent jurisdiction within the State of Florida.

4.5. Neither the Florida Department of Environmental Protection nor the United States Environmental Protection Agency will become a party to, or have any role in resolving, claims and disputes between the Owner and the Contractor.

ARTICLE 5 - CHANGES TO THE BIDDING AND CONTRACT DOCUMENTS

5.1. All changes to the Bidding Documents made subsequent to the Florida Department of Environmental Protection's (FDEP's) acceptance of the Bidding Documents and prior to the opening of bids are to be documented via addendum (addenda) to the Bidding Documents; all changes to the Contract Documents made after the opening of bids are to be documented by change order(s) to the Contract Documents. The Owner shall submit all addenda and change orders to the FDEP.

ARTICLE 6 - ADVERTISEMENT FOR BIDS; SUBMISSION OF BIDS; OPENING OF BIDS

Advertisement for Bids:

6.1. At a minimum, this Agreement/Contract is to be advertised for bids in local and statewide newspapers.

Submission of Bids:

6.2. Bidders shall submit their bids at the place and by the deadline indicated elsewhere in the Bidding Documents.

Opening of Bids:

6.3. Bids are to be opened and read aloud publicly at the time and place indicated elsewhere in the Bidding Documents.

ARTICLE 7 - AWARD OF AGREEMENT/CONTRACT

7.1. If this Agreement/Contract is awarded, it is to be awarded to the lowest responsive, responsible bidder. A fixed-price (lump-sum or unit-price or both) agreement/contract is to be used. A clear explanation of the method of evaluating bids and the basis for awarding this Agreement/Contract are included elsewhere in the Bidding Documents. All bids may be rejected when in the best interest of the Owner.

ARTICLE 8 - CONTRACT TIME

8.1. The number of days within which, or the date(s) by which, the Goods and Special Services are to be furnished and ready for final payment (the Contract Time) is set forth elsewhere in the Contract Documents. Unless otherwise provided in the Contract Documents, the Contract Time will commence to run on the Effective Date of this Agreement/Contract.

ARTICLE 9 - PROGRESS AND PAYMENT SCHEDULES

9.1. The Contractor shall submit progress and payment schedules to the Owner within ten calendar days after the Effective Date of this Agreement/Contract.

9.1.1. The progress schedule is to indicate the Contractor's estimated dates for furnishing the various Goods and Special Services and is to show both the projected cost of Goods and Special Services furnished and the projected percentage of Goods and Special Services furnished versus Contract Time.

9.1.2. The payment schedule is to show the Contractor's projected progress and/or final payment(s) cumulatively by month.

ARTICLE 10 - INSURANCE

10.1. Unless otherwise provided in the Contract Documents, the Contractor shall assume all risk of loss or damage to the Goods prior to the Owner's acceptance of delivery of the Goods and shall purchase and maintain, during fabrication and/or delivery of the Goods, such property insurance upon the Goods as the Owner requires or as the Contractor deems appropriate, whichever is greater.

10.2. Unless otherwise provided in the Contract Documents, the Owner shall assume all risk of loss or damage to the Goods after it accepts delivery of the Goods. After assuming all risk of loss or damage to the Goods, the Owner shall purchase and maintain property insurance upon the Goods. This insurance is to be in the amount recommended by a competent insurance counselor and is to insure against such risks as are customarily insured against in connection with the storage or operation of like goods (to the extent that such insurance is obtainable from time to time against any one or more such risks). In addition, this insurance is to be obtained from responsible insurance companies licensed to do business in the State of Florida.

ARTICLE 11 - APPLICATION(S) FOR PAYMENT

11.1. The Contractor's application(s) for payment are to be accompanied by such certificates or documents as may be reasonably required. The Owner shall forward a copy of such certificates or documents as may be reasonably required to the Florida Department of Environmental Protection.

ARTICLE 12 - ACCESS TO RECORDS

12.1. Authorized representatives of the Owner, the Florida Department of Environmental Protection, and the United States Environmental Protection Agency shall have access to, for the purpose of inspection, any books, documents, papers, and records of the Contractor that are pertinent to this Agreement/Contract. The Contractor shall retain all books, documents, papers, and records pertinent to this Agreement/Contract for a period of five years after receiving and accepting final payment under this Agreement/Contract.

NOTE: ARTICLE 13 ONLY APPLIES TO FEDERAL CAP GRANT PROJECTS

ARTICLE 13 - MINORITY AND WOMEN'S BUSINESS ENTERPRISES

13.1. A goal of five percent of the Contract Price is established for Minority Business Enterprise (MBE) participation in the furnishing of the Goods and Special Services, and a goal of five percent of the Contract Price is established for Women's Business Enterprise (WBE) participation in the furnishing of the Goods and Special Services. If bidders or prospective contractors (including the Contractor) intend to let any lower-tier subcontracts for any portion of the furnishing of the Goods and Special Services, they shall physically include these percentage goals for MBE and WBE participation in all solicitations for subcontracts and shall take affirmative steps to assure that MBEs and WBEs are utilized, when possible, as sources of the Goods and Special Services. Affirmative steps are to include the following: (a) including small, minority, and women's businesses on solicitation lists; (b) assuring

that small, minority, and women's businesses are solicited whenever they are potential sources; (c) dividing total requirements, when economically feasible, into small tasks or quantities to permit maximum participation by small, minority, and women's businesses; (d) establishing delivery schedules, when requirements permit, that will encourage participation by small, minority, and women's businesses; and (e) using the services of the Small Business Administration and the Office of Minority Business Enterprise of the United States Department of Commerce as appropriate.

13.2. Within ten calendar days after being notified of being the apparent Successful Bidder, the apparent Successful Bidder shall submit to the Owner documentation of the affirmative steps it has taken to utilize Minority and Women's Business Enterprises (MBEs and WBEs) in the furnishing of the Goods and Special Services and documentation of its intended use of MBEs and WBEs in the furnishing of the Goods and Special Services. The Owner shall keep this documentation on file and shall forward to the Florida Department of Environmental Protection a copy of the apparent Successful Bidder's documentation concerning its intended use of MBEs and WBEs in the furnishing of the Goods and Special Services.

13.3. Minority and Women's Business Enterprise (MBE and WBE) participation in the furnishing of the Goods and Special Services is to be considered in the award of this Agreement/Contract. The Owner shall not execute this Agreement/Contract until the Florida Department of Environmental Protection has approved the extent of MBE and WBE participation in the furnishing of the Goods and Special Services.

ARTICLE 14 - VIOLATING FACILITIES (SECTION 306 OF THE CLEAN AIR ACT, SECTION 508 OF THE CLEAN WATER ACT, AND EXECUTIVE ORDER 11738)

14.1. The Contractor, and all subcontractors at any tier, shall comply with all applicable standards, orders, or requirements issued under Section 306 of the Clean Air Act (42 U.S.C. 1857[h]), Section 508 of the Clean Water Act (33 U.S.C. 1368), Executive Order 11738 (Administration of the Clean Air Act and the Federal Water Pollution Control Act with Respect to Federal Contracts, Grants, or Loans), and 40 CFR Part 15, which prohibit the use, under nonexempt Federal contracts, grants, or loans, of facilities included on the United States Environmental Protection Agency's List of Violating Facilities.

14.2. In accordance with 40 CFR Part 15, if the price of this Agreement/Contract exceeds $100,000 and/or if this Agreement/Contract is otherwise nonexempt from 40 CFR Part 15, the Contractor agrees to the following:

14.2.1. The Contractor will not use any facility on the United States Environmental Protection Agency's List of Violating Facilities in the performance of this Agreement/Contract for the duration of time that the facility remains on the List;

14.2.2. The Contractor will notify the Florida Department of Environmental Protection/United States Environmental Protection Agency (USEPA) if a facility it intends to use in the performance of this Agreement/Contract is on the USEPA's List of Violating Facilities or if it knows that a

facility it intends to use in the performance of this Agreement/Contract has been recommended to be placed on the USEPA's List of Violating Facilities; and

14.2.3. In the performance of this Agreement/Contract, the Contractor will comply with all requirements of the Clean Air Act and the Clean Water Act, including the requirements of Section 114 of the Clean Air Act and Section 308 of the Clean Water Act, and all applicable clean air standards and clean water standards.

14.3. If the Contractor, or any subcontractor at any tier, awards any lower-tier subcontracts for any portion of the Goods or Special Services, it shall physically include in all such subcontracts the following provision:

14.3.1. The Subcontractor shall comply with all applicable standards, orders, or requirements issued under Section 306 of the Clean Air Act (42 U.S.C. 1857[h]), Section 508 of the Clean Water Act (33 U.S.C. 1368), Executive Order 11738 (Administration of the Clean Air Act and the Federal Water Pollution Control Act with Respect to Federal Contracts, Grants, or Loans), and 40 CFR Part 15, which prohibit the use, under nonexempt Federal contracts, grants, or loans, of facilities included on the United States Environmental Protection Agency's (USEPA's) List of Violating Facilities. In accordance with 40 CFR Part 15, if the price of this Subcontract exceeds $100,000 and/or if this Subcontract is otherwise nonexempt from 40 CFR Part 15, the Subcontractor agrees to the following: (a) the Subcontractor will not use any facility on the USEPA's List of Violating Facilities in the performance of this Subcontract for the duration of time that the facility remains on the List; (b) the Subcontractor will notify the Florida Department of Environmental Protection/USEPA if a facility it intends to use in the performance of this Subcontract is on the USEPA's List of Violating Facilities or if it knows that a facility it intends to use in the performance of this Subcontract has been recommended to be placed on the USEPA's List of Violating Facilities; and (c) in the performance of this Subcontract, the Subcontractor will comply with all requirements of the Clean Air Act and the Clean Water Act, including the requirements of Section 114 of the Clean Air Act and Section 308 of the Clean Water Act, and all applicable clean air standards and clean water standards. In addition, if the Subcontractor awards any lower-tier goods or special services subcontracts under this Subcontract, the Subcontractor shall physically include this provision in all such subcontracts.

ARTICLE 15 - DEBARMENT AND SUSPENSION (EXECUTIVE ORDER 12549)

15.1. If the price of this Agreement/Contract equals or exceeds $25,000, the Owner shall not award this Agreement/Contract, nor permit any lower-tier goods or special services subcontract with a price equaling or exceeding $25,000 to be awarded, to any party that is debarred or suspended or is otherwise excluded from, or ineligible for participation in, Federal assistance programs under Executive Order 12549 (Debarment and Suspension).

15.2. The attention of all bidders or prospective contractors (including the Contractor) is directed to the certification/clause entitled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions", which has been extracted from Appendix B to 40 CFR Part 32 and included as Appendix B to these Supplementary Conditions. The certification/clause entitled "Certification Regarding Debarment, Suspension, Ineligibility and

Voluntary Exclusion - Lower Tier Covered Transactions" is applicable to this Agreement/Contract if the price of this Agreement/Contract equals or exceeds $25,000.

15.3. If bidders or prospective contractors (including the Contractor), or any prospective subcontractors at any tier, intend to let any lower-tier subcontracts for any portion of the Goods or Special Services, they shall physically include the certification/clause entitled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions", which is included as Appendix B to these Supplementary Conditions, in all lower-tier goods and special services subcontracts with a price equaling or exceeding $25,000 and in all solicitations for such subcontracts.

ARTICLE 16 – AMERICAN IRON AND STEEL PROVISION

Contracts being constructed with assistance from the State Revolving Fund Program are currently required to comply with the American Iron and Steel Provision as provided in Appendix C. Signing Appendix A certifies compliance with the American Iron and Steel provision.

ARTICLE 17 - PROHIBITED LOCAL GOVERNMENT CONSTRUCTION PREFERENCES

A. Pursuant to Section 255.0991, F.S., for a competitive solicitation for construction services in which 50 percent or more of the cost will be paid from state-appropriated funds which have been appropriated at the time of the competitive solicitation, a state, college, county, municipality, school district, or other political subdivision of the state may not use a local ordinance or regulation that provides a preference based upon:

1. The contractor's maintaining an office or place of business within a particular local jurisdiction;
2. The contractor's hiring employees or subcontractors from within a particular local jurisdiction; or
3. The contractor's prior payment of local taxes, assessments, or duties within a particular local jurisdiction.

B. For any competitive solicitation that meets the criteria in Paragraph A., a state college, county, municipality, school district, or other political subdivision of the state shall disclose in the solicitation document that any applicable local ordinance or regulation does not include any preference that is prohibited by Paragraph A.

NOTE: ARTICLE 18 ONLY APPLIES TO FEDERAL CAP GRANT PROJECTS

ARTICLE 18 – BUILD AMERICA, BUY AMERICA PROVISION

Contracts being constructed with assistance from the State Revolving Fund Program are currently required to comply with The Build America, Buy America provision as provided in Appendix D. Signing Appendix A certifies compliance with the Build America, Buy America provision if the project is a Federal Cap Grant project.

APPENDIX A TO THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION SUPPLEMENTARY CONDITIONS

CERTIFICATION OF COMPLIANCE WITH THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION SUPPLEMENTARY CONDITIONS

This certification relates to an equipment/materials contract proposed by _____, (insert the name of the Owner) which expects to finance the proposed equipment/materials contract with assistance from the Florida Department of Environmental Protection (which administers a State Revolving Fund loan program supported in part with funds directly made available by grants from the United States Environmental Protection Agency). I am the undersigned prospective equipment/materials contractor or subcontractor.

I certify that I have read the Florida Department of Environmental Protection's Supplementary Conditions and agree to incorporate the following articles into the bid and/or contract:

ARTICLE 15 DEBARMENT AND SUSPENSION (EXECUTIVE ORDER 12549)
ARTICLE 16 AMERICAN IRON AND STEEL PROVISION
ARTICLE 18 BUILD AMERICA, BUY AMERICA PROVISION – IF A FEDERAL CAP GRANT PROJECT

I agree that I will obtain identical certifications from prospective lower-tier construction subcontractors prior to the award of any lower-tier construction subcontracts. I also agree that I will retain such certifications in my files.

_____ _____
(Signature of Authorized Official) (Date)

_____
(Name and Title of Authorized Official [Print or Type])

_____
(Name of Prospective Construction Contractor or Subcontractor [Print or Type])

_____
(Address and Telephone Number of Prospective Equipment/Materials Contractor or Subcontractor [Print or Type])

_____
(Employer Identification Number of Prospective Construction Contractor or Subcontractor)

APPENDIX B TO THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION SUPPLEMENTARY CONDITIONS

CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION - LOWER TIER COVERED TRANSACTIONS

[Note: This certification/clause has been extracted from Appendix B to 40 CFR Part 32 and is applicable to all FDEP-assisted goods and services (including construction) contracts and subcontracts with a price equaling or exceeding $25,000; this certification/clause is to be included in all FDEP-assisted goods and services (including construction) contracts and subcontracts with a price equaling or exceeding $25,000 and in all solicitations for such contracts and subcontracts.]

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions

(1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

(2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

(3) The prospective lower-tier participant also certifies that it and its principals:

(a) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State anti-trust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(b) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (3)(a) of this certification; and

(c) Have not within a three-year period preceding this proposal had one or more public transactions (Federal, State or local) terminated for cause or default. Where the prospective lower-tier participant is unable to certify to any of the above, such prospective participant shall attach an explanation to this proposal.

APPENDIX C TO THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION SUPPLEMENTARY CONDITIONS

AMERICAN IRON AND STEEL PROVISION

The Contractor acknowledges to and for the benefit of the _____ ("Owner") and the State of Florida (the "State") that it understands that iron and steel products to be installed as a part of this contract must be in compliance with the requirements in H.R. 3547, "Consolidated Appropriations Act, 2014," (Appropriations Act). H.R. 3547 includes the following language in Division G, Title IV, Sec. 436, under the heading, "Use of American Iron and Steel,":

(a) (1) None of the funds made available by a State water pollution control revolving fund as authorized by title VI of the Federal Water Pollution Control Act (33 U.S.C. 1381 et seq.) or made available by a drinking water treatment revolving loan fund as authorized by section 1452 of the Safe Drinking Water Act (42 U.S.C. 300j-12) shall be used for a project for the construction, alteration, maintenance, or repair of a public water system or treatment works unless all of the iron and steel products used in the project are produced in the United States.

(2) In this section, the term "iron and steel products" means the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials.

(b) Subsection (a) shall not apply in any case or category of cases in which the Administrator of the Environmental Protection Agency (in this section referred to as the "Administrator") finds that--

(1) applying subsection (a) would be inconsistent with the public interest;

(2) iron and steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or

(3) inclusion of iron and steel products produced in the United States will increase the cost of the overall project by more than 25 percent.

(c) If the Administrator receives a request for a waiver under this section, the Administrator shall make available to the public on an informal basis a copy of the request and information available to the Administrator concerning the request, and shall allow for informal public input on the request for at least 15 days prior to making a finding based on the request. The Administrator shall make the request and accompanying information available by electronic means, including on the official public Internet Web site of the Environmental Protection Agency.

(d) This section shall be applied in a manner consistent with United States obligations under international agreements.

Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Purchaser or State to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney's fees) incurred by the Purchaser or State resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the State or any damages owed to the State by the Purchaser). While the Contractor has no direct contractual privity with the State, as a lender to the Purchaser for the funding of its project, the Purchaser and the Contractor agree that the State is a third-party beneficiary and neither this paragraph (nor any other provision of this Agreement necessary to give this paragraph force or effect) shall be amended or waived without the prior written consent of the State.

APPENDIX D TO THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION SUPPLEMENTARY CONDITIONS

Build America, Buy America Requirement

The Contractor acknowledges to and for the benefit of the _____ ("Owner") and the State of Florida (the "State") that it understands that the products to be installed as a part of this contract must be in compliance with the Infrastructure Investment and Jobs Act ("IIJA"), Pub. L. No. 117-58, which includes the Build America, Buy America Act ("the Act"). Pub. L. No. 117-58, §§ 70901-52. The Act requires the following Buy America preference:

1. All iron and steel used in the project are produced in the United States. This means all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.
2. All manufactured products used in the project are produced in the United States. This means the manufactured product was manufactured in the United States, and the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55 percent of the total cost of all components of the manufactured product, unless another standard for determining the minimum amount of domestic content of the manufactured product has been established under applicable law or regulation.
3. All construction materials are manufactured in the United States. This means that all manufacturing processes for the construction material occurred in the United States.

The Contractor hereby presents and warrants to and for the benefit of the Owner and State that (a) the Contractor has reviewed and understands the Build America, Buy America Requirement, (b) all of the products used in the project will be and/or have been produced in the United States in a manner that complies with the Build America, Buy America Requirement, unless a waiver of the requirement is approved, and (c) the Contractor will provide any further verified information, certification or assurance of compliance with this Acknowledgement, or information necessary to support a waiver of the Build America, Buy America Requirement, as may be requested by the Owner or the State.

Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Purchaser or State to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney's fees) incurred by the Purchaser or State resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the State or any damages owed to the State by the Purchaser). While the Contractor has no direct contractual privity with the State, as a lender to the Purchaser for the funding of its project, the Purchaser and the Contractor agree that the State is a third-party beneficiary and neither this paragraph (nor any other provision of this Agreement necessary to give this paragraph force or effect) shall be amended or waived without the prior written consent of the State.

SUPPLEMENTARY CONDITIONS (CONSTRUCTION)

Florida Department of Environmental Protection

State Revolving Fund Program

Supplementary Conditions

for

Formally Advertised

Construction Procurement

Revised August 2022

TABLE OF CONTENTS FOR THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION SUPPLEMENTARY CONDITIONS

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
SUPPLEMENTARY CONDITIONS

The intent of the Florida Department of Environmental Protection (FDEP) Supplementary Conditions is to complement and supplement other provisions of the Bidding Documents. However, if there is any conflict between the FDEP Supplementary Conditions and other provisions of the Bidding Documents, the FDEP Supplementary Conditions shall take precedence over the other provisions except when the other provisions are similar to, but more stringent than, the FDEP Supplementary Conditions. When other provisions of the Bidding Documents are similar to, but more stringent than, the FDEP Supplementary Conditions, the more stringent provisions shall apply.

ARTICLE 1 - DEFINITIONS

Wherever used in these Supplementary Conditions (except in the appendices to these Supplementary Conditions), the following terms have the meanings indicated, which are applicable to both the singular and plural thereof.

1.1 Addendum -A written or graphic instrument that is issued prior to the opening of bids and that clarifies, corrects, or changes the Bidding Documents.

1.2 Agreement or Contract - The written agreement between the Owner and the Contractor covering the Work to be performed and furnished; these Supplementary Conditions and other Contract Documents are attached to the Agreement/Contract and made a part thereof as provided therein.

1.3 Bid - The offer or proposal of a bidder submitted on the prescribed form and setting forth the price(s) for the Work to be performed and furnished.

1.4 Bidder - Any person, firm, or corporation that submits a bid directly to the Owner.

1.5 Bidding Documents - The Advertisement for Bids or the Invitation to Bid, the Instructions to Bidders or the Information for Bidders, the Bid Form, the proposed Contract Documents, and all addenda.

1.6 Bond - An instrument of security.

1.7 Change Order - A document that is recommended by the Engineer and signed by the Contractor and the Owner; that authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Time; and that is issued on or after the Effective Date of the Agreement/Contract.

1.8 Contract Documents - The Agreement/Contract; the Contractor's Bid when attached as an exhibit to the Agreement/Contract; the Performance and Payment Bond(s); the General Conditions; the Supplementary Conditions (including these Supplementary Conditions); the Specifications (written technical descriptions of material, equipment, construction systems, standards, and workmanship as applied to the Work and certain administrative details applicable thereto); the Drawings (drawings that show the character and scope of the Work to be performed and furnished); all addenda that pertain to the Contract Documents; and all change orders.

1.9 Contract Time - The number of days or the date stated in the Contract Documents for completion of the Work.

1.10 Contractor - The person, firm, or corporation with whom or which the Owner enters into the Agreement/Contract.

1.11 Effective Date of the Agreement/Contract - The date indicated in the Agreement/Contract on which the Agreement/Contract becomes effective, or if no such date is indicated in the Agreement/Contract, the date on which the Agreement/Contract is signed and delivered by the last of the two parties to sign and deliver the Agreement/Contract.

1.12 Engineer - The person, firm, or corporation named as such in the Contract Documents.

1.13 Minority Business Enterprise (MBE) - A historically Black college or university or a business that is (a) certified as socially and economically disadvantaged by the Small Business Administration, (b) certified as an MBE by a state or federal agency, or (c) an independent business concern which is at least 51-percent owned and controlled by minority group members. (A minority group member is an individual who is a citizen of the United States and one of the following: [i] Black American; [ii] Hispanic American [with origins from Puerto Rico, Mexico, Cuba, or South or Central America]; [iii] Native American [American Indian, Eskimo, Aleut, or native Hawaiian]; or [iv] Asian-Pacific American

[with origins from Japan, China, the Philippines, Vietnam, Korea, Samoa, Guam, the U.S. Trust Territories of the Pacific, Northern Marianas, Laos, Cambodia, Taiwan, or the Indian Subcontinent].)

1.14 Notice to Proceed -The written notice given by the Owner to the Contractor fixing the date on which the Contract Time will commence to run and on which the Contractor shall start to perform its obligations under the Contract Documents.

1.15 Owner - The local government (municipality, county, district, or authority; or any agency thereof; or a combination of two or more of the foregoing acting jointly) with which the Florida Department of Environmental Protection (FDEP) may execute, or has executed, a State Revolving Fund loan agreement and for which the Work is to be provided.

1.16 Project - The total construction or facilities described in a State Revolving Fund loan agreement between the FDEP and the Owner, of which the Work to be provided under the Contract Documents may be the whole or a part.

1.17 Sponsor – The recipient of the State Revolving Fund loan agreement that provides funds for the project.

1.18 Subcontract - A direct contract between a subcontractor and the Contractor, or any other subcontractor at any tier, for the furnishing of goods (material and equipment) or the performance of services (including construction) necessary to complete the Work.

1.19 Subcontractor - A person, firm, or corporation having a direct contract with the Contractor, or any other subcontractor at any tier, for the furnishing of goods (material and equipment) or the performance of services (including construction) necessary to complete the Work.

1.20 Successful Bidder - The lowest responsive, responsible bidder to whom or which the Owner intends to award the Agreement/Contract.

1.21 Women's Business Enterprise (WBE) - A business that is (a) certified as a WBE by a state or federal agency or (b) an independent business concern which is at least 51-percent owned and controlled/operated by women. (Determination of whether a business is at least 51-percent owned by women shall be made without regard to community property laws [e.g., an otherwise qualified WBE that is 51-percent owned by a married woman in a community property state will not be disqualified because the married woman's husband has a 50-percent interest in the married woman's share of the business; similarly, a business that is 51-percent owned by a married man and 49-percent owned by women will not become a qualified WBE by virtue of the married man's wife having a 50-percent interest in the married man's share of the business].)

1.22 Work - The entire completed construction or the various separately identifiable parts thereof required to be performed and furnished under the Contract Documents; Work is the result of performing services, furnishing labor, furnishing material and equipment, and incorporating material and equipment into the construction as required by the Contract Documents.

ARTICLE 2 - PRIVITY OF AGREEMENT/CONTRACT

2.1. The Owner expects to finance this Agreement/Contract with assistance from the FDEP, which administers a State Revolving Fund loan program supported in part with funds directly made available by grants from the United States Environmental Protection Agency (USEPA). Neither the State of Florida nor the United States (nor any of their departments, agencies, or employees) will be a party to this Agreement/Contract or any lower-tier subcontract.

ARTICLE 3 - PROCUREMENT REQUIREMENTS

3.1. This Agreement/Contract and the Owner's solicitation and award of this Agreement/Contract are subject to requirements contained in Chapter 62-503 (Revolving Loan Program) and/or Chapter 62-552, Florida Administrative Code as applicable.

ARTICLE 4 - RESOLUTION OF PROTESTS AND CLAIMS/DISPUTES

Resolution of Protests Concerning the Owner's Solicitation and/or Award of this Agreement/Contract:

4.1. Protests concerning the Owner's solicitation and/or award of this Agreement/Contract must be filed in writing with the Owner to be considered.

4.2. All timely written protests concerning the Owner's solicitation and/or award of this Agreement/Contract are to be resolved in accordance with the Owner's dispute resolution process. A copy of the ordinance(s), resolution(s), or written policy (policies) that set forth the Owner's dispute resolution process is included elsewhere in the Bidding Documents or is to be made available by the Owner upon request.

4.3. Neither the (FDEP) nor the USEPA will become a party to, or have any role in resolving, protests concerning the Owner's solicitation and/or award of this Agreement/Contract. Protest decisions made by the Owner cannot be appealed to the FDEP or the USEPA.

Resolution of Claims and Disputes Between the Owner and the Contractor:

4.4. Unless otherwise provided in the Contract Documents, all claims and disputes between the Owner and the Contractor arising out of, or relating to, the Contract Documents or the breach thereof are to be decided by arbitration (if the Owner and the Contractor mutually agree) or in a court of competent jurisdiction within the State of Florida.

4.5. Neither the FDEP nor the USEPA will become a party to, or have any role in resolving, claims and disputes between the Owner and the Contractor.

ARTICLE 5 - CHANGES TO THE BIDDING AND CONTRACT DOCUMENTS

5.1. All changes to the Bidding Documents made subsequent to the FDEP's acceptance of the Bidding Documents and prior to the opening of bids are to be documented via addendum (addenda) to the Bidding Documents; all changes to the Contract Documents made after the opening of bids are to be documented by change order(s) to the Contract Documents. The Owner shall submit all addenda and change orders to the FDEP.

ARTICLE 6 - BONDS AND INSURANCE

Bid Guarantees:

6.1. Each bidder's bid is to be accompanied by a bid guarantee made payable to the Owner in an amount at least equal to five percent of the bidder's maximum bid price and in the form of a certified check or bid bond.

Performance and Payment Bond(s):

6.2. The Contractor shall furnish a combined performance and payment bond in an amount at least equal to 100 percent of the Contract Price (or, if required elsewhere in the Contract Documents, the Contractor shall furnish separate performance and payment bonds, each in an amount at least equal to 100 percent of the Contract Price) as security for the faithful performance and payment of all the Contractor's obligations under the Contract Documents. This(these) bond(s) are to be delivered to the Owner by the Contractor along with the executed Agreement/Contract. The Owner shall forward a copy of this (these) bond(s) to the FDEP.

Insurance:

6.3. The Owner and/or the Contractor (as required elsewhere in the Contract Documents) shall purchase and maintain, during the period of construction, such liability insurance as is appropriate for the Work being performed and furnished and as will provide protection from claims that may arise out of, or result from, the Contractor's performance and furnishing of the Work (whether the Work is to be performed or furnished by the Contractor or any subcontractor at the Work site) and the Contractor's other obligations under the Contract Documents. This insurance is to include workers' compensation insurance, comprehensive general liability insurance, comprehensive automobile liability insurance, and contractual liability insurance applicable to the Contractor's indemnification obligations and is to be written for not less than the limits of liability and coverages determined by the Owner or required by law, whichever is greater.

6.4. The Owner and/or the Contractor (as required elsewhere in the Contract Documents) shall purchase and maintain, during the period of construction, property insurance upon the Work at the Work site in an amount equal to the full replacement cost of the Work or the full insurable value of the Work. This insurance is to include the interests of the Owner, the Contractor, and all subcontractors at the Work site (all of whom are to be listed as insured or additional insured parties); is to insure against the perils of fire and extended coverage; and is to include "all-risk" insurance for physical loss or damage due to theft, vandalism and malicious mischief, collapse, water damage, and/or all other risks against which coverage is obtainable.

6.5. Before any Work at the Work site is started, the Contractor shall deliver to the Owner certificates of insurance that the Contractor is required to purchase and maintain in accordance with Paragraphs 6.3 and 6.4 of this Article and other provisions of the Contract Documents, and the Owner shall deliver to the Contractor certificates of insurance that the Owner is required to purchase and maintain in accordance with Paragraphs 6.3 and 6.4 of this Article and other provisions of the Contract Documents.

ARTICLE 7 - AWARD OF AGREEMENT/CONTRACT

7.1. If this Agreement/Contract is awarded, it is to be awarded to the lowest responsive, responsible bidder. A fixed price (lump sum or unit price or both) agreement/contract is to be used. A clear explanation of the method of evaluating bids and the basis for awarding this Agreement/Contract are included elsewhere in the Bidding Documents. All bids may be rejected when in the best interest of the Owner. After the contract has been awarded, the Owner shall give the Contractor a notice to proceed fixing the date on which the Contract Time will commence to run. The Owner shall forward a copy of this notice to proceed to the FDEP.

ARTICLE 8 - ITEMIZED CONSTRUCTION COST BREAKDOWN; CONSTRUCTION AND PAYMENT SCHEDULES

8.1. The Contractor shall submit to the Owner, within ten calendar days after the Effective Date of this Agreement/Contract, an itemized construction cost breakdown and construction and payment schedules.

8.1.1. The itemized construction cost breakdown, or schedule of values, is to include quantities and prices of items aggregating the Contract Price and is to subdivide the Work into component parts in sufficient detail to serve as the basis for progress payments during construction. Such prices are to include an appropriate amount of overhead and profit applicable to each item of Work.

8.1.2. The construction, or progress, schedule is to indicate the Contractor's estimated starting and completion dates for the various stages of the Work and is to show both the projected cost of Work completed and the projected percentage of Work completed versus Contract Time.

8.1.3. The payment schedule is to show the Contractor's projected payments cumulatively by month.

ARTICLE 9 – FDEP/USEPA ACCESS TO RECORDS AND PROJECT SITE

9.1. Authorized representatives of the Owner, the FDEP, and the USEPA shall have access to, for the purpose of inspection, the Work site(s), any books, documents, papers, and records of the Contractor that are pertinent to this Agreement/Contract at any reasonable time. The Contractor shall retain all books, documents, papers, and records pertinent to this Agreement/Contract for a period of five years after receiving and accepting final payment under this Agreement/Contract.

NOTE: ARTICLE 10 ONLY APPLIES TO FEDERAL CAP GRANT PROJECTS

ARTICLE 10 - DISADVANTAGED BUSINESS ENTERPRISES

The goal percent and timetable for Minority Business Enterprise (MBE) and Women's Business Enterprise (WBE) participation in the Work are found in Appendix B. If bidders or prospective contractors (including the Contractor) intend to let any lower-tier goods or services (including construction) subcontracts for any portion of the Work, they shall physically include these percentage goals for MBE and WBE participation in all solicitations for subcontracts and shall take good faith

efforts to assure that MBEs and WBEs are utilized, when possible, as sources of goods and services. Good faith efforts are to include the following:

10.1.1. Require Disadvantaged Business Enterprises (DBEs) are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities. For Indian Tribal, State and Local and Government recipients, this will include placing DBEs on solicitation lists and soliciting them whenever they are potential sources.

10.1.2. Make information on forthcoming opportunities available to DBEs and arrange time frames for contracts and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process. This includes, whenever possible, posting solicitations for bids or proposals for a minimum of 30 calendar days before the bid or proposal closing date.

10.1.3. Consider in the contracting process whether firms competing for large contracts could subcontract with DBEs. For Indian Tribal, State and local Government recipients, this will include dividing total requirements when economically feasible into smaller tasks or quantities to permit maximum participation by DBEs in the competitive process.

10.1.4. Encourage contracting with a consortium of DBEs when a contract is too large for one of these firms to handle individually.

10.1.5. Use the services and assistance of the Small Business Administration and the Minority Business Development Agency of the Department of Commerce.

10.1.6. If the prime contractor awards subcontracts, require the prime contractor to take the steps in paragraphs 10.1.1 through 10.1.5 of this section.

10.2. Within ten calendar days after being notified of being the apparent Successful Bidder, the apparent Successful Bidder shall submit to the Owner documentation of the affirmative steps it has taken to utilize Minority and Women's Business Enterprises (MBEs and WBEs) in the Work and documentation of its intended use of MBEs and WBEs in the Work. The Owner shall keep this documentation on file and shall forward to the FDEP a copy of the apparent Successful Bidder's documentation concerning its intended use of MBEs and WBEs in the Work.

ARTICLE 11 - DEBARMENT AND SUSPENSION (EXECUTIVE ORDER 12549)

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions

11.1. The bidder certifies, by submission of this proposal, that neither the bidder nor its principals, nor the bidder’s subcontractors nor their principals, are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal department or agency.

11.2. Where the bidder is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

11.3. The bidder also certifies that it and its principals and the bidder’s subcontractors and their principals:

11.3.1. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (federal, state or local) transaction or contract under a public transaction; violation of federal or state anti-trust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

11.3.2. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (federal, state or local) with commission of any of the offenses enumerated in paragraph 11.3.1 of this certification; and

11.3.3. Have not within a three-year period preceding this proposal had one or more public transactions (federal, state or local) terminated for cause or default. Where the bidder is unable to certify to any of the above, such owner shall attach an explanation to this proposal.

11.3.4. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the federal government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

11.3.5. The bidder shall incorporate the foregoing requirements 11.1 through 11.3 in all subcontracts.

ARTICLE 12 - EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)

12.1. **Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246).** (Applicable to contracts/subcontracts exceeding $10,000)

12.1.1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.

12.1.2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in Florida, are as follows:

Goal for female participation: 6.9 percent statewide

Goal for minority participation: (See Appendix B at FDEP-15 for goals for each county)

These goals are applicable to all the Contractor's construction work (whether or not it is federal or federally assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and non-federally involved construction.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

12.1.3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of $10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

12.1.4. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is the State of Florida.

12.1.5. Contractors shall incorporate the foregoing requirements in all subcontracts.

12.2. **Equal Opportunity Clause** (Applicable to contracts/subcontracts exceeding $10,000)

During the performance of this contract, the contractor agrees as follows:

12.2.1. The Contractor shall not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor shall take affirmative action to ensure that applicants for employment are employed, and that employees are treated during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.

12.2.2. The Contractor shall post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this nondiscrimination clause. The notice can be obtained online at https://www.dol.gov/sites/dolgov/files/ofccp/regs/compliance/posters/pdf/eeopost.pdf. The Contractor shall state that all qualified applicants be considered without regard to race, color, religion, sex or national origin.

12.2.3. The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive considerations for employment without regard to race, color, religion, sex, or national origin.

12.2.4. The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

12.2.5. The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

12.2.6. The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

12.2.7. In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

12.2.8. The contractor will include the portion of the sentence immediately preceding paragraph (1) and the provisions of paragraphs 12.2.1 through 12.2.8 in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

12.3. **The Standard Federal Equal Employment Opportunity Construction Contract Specifications** (Executive Order 11246)

12.3.1. As used in these specifications:

a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;

b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;

c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

d. "Minority" includes:

(i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
(ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
(iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and

(iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

12.3.2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of $10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

12.3.3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

12.3.4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction Contractors performing construction work in geographical areas where they do not have a federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the FEDERAL REGISTER in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from federal procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

12.3.5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

12.3.6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

12.3.7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefore, along with whatever additional actions the Contractor may have taken.

d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 12.3.7b above.

f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with onsite supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's work force.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

12.3.8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (12.3.7a through 12.3.7p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

12.3.9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).

12.3.10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

12.3.11. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12.3.12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

12.3.13. The Contractor, in fulfilling its obligation under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

12.3.14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

12.3.15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

12.4. Pursuant to 41 CFR 60-1.7, if the price of this bid exceeds $10,000, the bidder, by signing and submitting this proposal, certifies the following:

12.4.1. Affirmative action programs pursuant to 41 CFR 60-2 have been developed and are on file;

12.4.2. Documentation of a previous contract or subcontract subject to the equal opportunity clause is available;

12.4.3. All reports due under the applicable filing requirements have been filed with the Joint Reporting Committee, the Deputy Assistant Secretary or the Equal Employment Opportunity Commission; and

12.4.4. Each prospective construction subcontractor that may be awarded a lower-tier construction subcontract with a price exceeding $10,000 shall meet the above requirements 12.4.1 through 12.4.3.

12.5. Pursuant to 41 CFR 60-1.8, if the price of this bid exceeds $10,000, the bidder, by signing and submitting this proposal, certifies the following:

12.5.1. That he/she does not maintain or provide for his/her employees any segregated facility at any of his/her establishments;

12.5.2. That he/she does not permit employees to perform their services at any location, under his/her control, where segregated facilities are maintained;

12.5.3. That he/she will not maintain or provide for employees any segregated facilities at any of his/her establishments;

12.5.4. That he/she will not permit employees to perform their services at any location under his/her control where segregated facilities are maintained;

12.5.5. That a breach of this certification is violation of the Equal Opportunity Clause of this contract; and

12.5.6. That he/she will obtain identical certifications from proposed Subcontractors prior to the award of Subcontracts exceeding $10,000 which are not exempt from the provisions of the Equal Opportunity clause, and that he will retain such certifications in his/her files.

As used in this certification, the term “segregated facilities” means any waiting rooms, work eating areas, time clocks, locker rooms, and other storage or dressing areas, transportation and housing facilities provided for employees which are in fact segregated on the basis of race, color, religion, or otherwise.

12.6. If the price of this Agreement/Contract exceeds $10,000, the Owner shall give written notice to the Director of the Office of Federal Contract Compliance Programs within ten working days of award of this Agreement/Contract. The notice is to include the name, address, and telephone number of the Contractor; the employer identification number of the Contractor; the dollar amount of this Agreement/Contract; the estimated starting and completion dates of this Agreement/Contract; the number of this Agreement/Contract; and the geographical area in which the Work is to be performed.

12.7. If the price of this Agreement/Contract equals or exceeds $50,000 and if the Contractor has 50 or more employees, the Contractor shall electronically file Standard Form 100 (EEO-1) online at https://egov.eeoc.gov/eeo1/eeo1.jsp within 30 calendar days after the award of this Agreement/Contract , unless the Contractor has submitted such a report within 12 months preceding the date of award of this Agreement/Contract. In addition, the Contractor shall ensure that each construction subcontractor having 50 or more employees and a lower-tier construction subcontract with a price equaling or exceeding $50,000 also electronically files this form within 30 calendar days after the award to it of the lower-tier construction subcontract, unless the construction subcontractor has submitted such a report within 12 months preceding the date of award of the lower-tier construction subcontract.

ARTICLE 13 - IMMIGRATION REFORM AND CONTROL ACT OF 1986 (STATE OF FLORIDA EXECUTIVE ORDER 11-116)

The Immigration Reform and Control Act of 1986 prohibits employers from knowingly hiring illegal workers. The Contractor shall only employ individuals who may legally work in the United States – either U.S. citizens or foreign citizens who are authorized to work in the U.S. The Contractor shall use the U.S. Department of Homeland Security's E-Verify Employment Eligibility Verification system (https://www.e-verify.gov/) to verify the employment eligibility of:

- all new employees, during the term of this Agreement, to perform employment duties within Florida; and,
- all new employees (including subcontractors and subrecipients) assigned by the Contractor to perform work pursuant to this Agreement.

The Contractor shall include this provision in all subcontracts/subgrants it enters into for the performance of work under this Agreement.

ARTICLE 14 – ENVIRONMENTAL COMPLIANCE

The Contractor, and all subcontractors at any tier, shall comply with all applicable standards, orders, or requirements issued under Section 306 of the Clean Air Act (42 U.S.C. 1857[h]), Section 508 of the Clean Water Act (33 U.S.C. 1368), Executive Order 11738 (Administration of the Clean Air Act and the Federal Water Pollution Control Act with Respect to Federal Contracts, Grants, or Loans).

ARTICLE 15 – FEDERAL LABOR STANDARDS PROVISION

Contracts being constructed with assistance from the State Revolving Fund Program are currently required to comply with the Federal Labor Standards Provisions as provided in Appendix C. Signing Appendix A certifies compliance with these provisions.

ARTICLE 16 – AMERICAN IRON AND STEEL PROVISION

Contracts being constructed with assistance from the State Revolving Fund Program are currently required to comply with The American Iron and Steel Provision as provided in Appendix D. Signing Appendix A certifies compliance with these provisions.

ARTICLE 17 - PROHIBITED LOCAL GOVERNMENT CONSTRUCTION PREFERENCES

A. Pursuant to Section 255.0991, F.S., for a competitive solicitation for construction services in which 50 percent or more of the cost will be paid from state-appropriated funds which have been appropriated at the time of the competitive solicitation, a state, college, county, municipality, school district, or other political subdivision of the state may not use a local ordinance or regulation that provides a preference based upon:

   1. The contractor's maintaining an office or place of business within a particular local jurisdiction;
   2. The contractor's hiring employees or subcontractors from within a particular local jurisdiction; or
   3. The contractor's prior payment of local taxes, assessments, or duties within a particular local jurisdiction.

B. For any competitive solicitation that meets the criteria in Paragraph A., a state college, county, municipality, school district, or other political subdivision of the state shall disclose in the solicitation document that any applicable local ordinance or regulation does not include any preference that is prohibited by Paragraph A.

NOTE: ARTICLE 18 ONLY APPLIES TO FEDERAL CAP GRANT PROJECTS

ARTICLE 18 – BUILD AMERICA, BUY AMERICA PROVISION

Contracts being constructed with assistance from the State Revolving Fund Program are currently required to comply with The Build America, Buy America provision as provided in Appendix E. Signing Appendix A certifies compliance with the Build America, Buy America provision if the project is a Federal Cap Grant project.

APPENDIX A TO THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION SUPPLEMENTARY CONDITIONS

CERTIFICATION OF COMPLIANCE WITH THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION SUPPLEMENTARY CONDITIONS

This certification relates to a construction contract proposed by _____,
(insert the name of the Owner)
which expects to finance the proposed construction contract with assistance from the Florida Department of Environmental Protection (which administers a State Revolving Fund loan program supported in part with funds directly made available by grants from the United States Environmental Protection Agency). I am the undersigned prospective construction contractor or subcontractor.

I certify that I have read the Florida Department of Environmental Protection's Supplementary Conditions and agree to incorporate the following articles into the bid and/or contract:

ARTICLE 11 DEBARMENT AND SUSPENSION (EXECUTIVE ORDER 12549)
ARTICLE 12 EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)
ARTICLE 13 IMMIGRATION REFORM AND CONTROL ACT (FLORIDA EXECUTIVE ORDER 11-116)
ARTICLE 14 ENVIRONMENTAL COMPLIANCE
ARTICLE 15 FEDERAL LABOR STANDARDS PROVISION
ARTICLE 16 AMERICAN IRON AND STEEL PROVISION
ARTICLE 18 BUILD AMERICA, BUY AMERICA PROVISION – IF A FEDERAL CAP GRANT PROJECT

I agree that I will obtain identical certifications from prospective lower-tier construction subcontractors prior to the award of any lower-tier construction subcontracts with a price exceeding $2,000. I also agree that I will retain such certifications in my files.

_____ _____
(Signature of Authorized Official) (Date)

_____
(Name and Title of Authorized Official [Print or Type])

_____
(Name of Prospective Construction Contractor or Subcontractor [Print or Type])

_____
(Address and Telephone Number of Prospective Construction Contractor or Subcontractor [Print or Type])

_____
(Employer Identification Number of Prospective Construction Contractor or Subcontractor)

APPENDIX B TO THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION SUPPLEMENTARY CONDITIONS

GOALS AND TIMETABLES FOR MINORITIES AND FEMALES

[Note: These goals and timetables are the goals and timetables referred to in Paragraph 2 of the "Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity (Executive Order 11246)"; these goals and timetables are to be included in all FDEP assisted construction contracts and subcontracts with a price exceeding $10,000 and in all solicitations for such contracts and subcontracts.]

The following goals and timetables for female utilization shall be included in all federal and federally assisted construction contracts and subcontracts in excess of $10,000. The goals are applicable to the contractor's aggregate on-site construction workforce whether or not part of that workforce is performing work on a federal or federally assisted construction contract or subcontract.

Area covered: Goals for Women apply nationwide.

Goals and Timetables

Timetable	Goals (percent)
Indefinite	6.9

Goals for minority utilization can be found in the Department of Labor's Construction Contractors Technical Assistance Guide (October 2019), available on the internet at https://www.dol.gov/sites/dolgov/files/OFCCP/Construction/508_cctag_12032020.pdf. These goals shall be included for each craft and trade in all federal or federally assisted construction contracts and subcontracts in excess of $10,000 to be performed in the respective geographical areas. The goals are applicable to each nonexempt contractor's total onsite construction workforce, regardless of whether or not part of that workforce is performing work on a federal, federally assisted or non-federally related project, contract or subcontract.

Construction contractors which are participating in an approved Hometown Plan (see 41 CFR 60-4.5) are required to comply with the goals of the Hometown Plan with regard to construction work they perform in the area covered by the Hometown Plan. With regard to all their other covered construction work, such contractors are required to comply with the applicable SMSA or EA goal contained in this Appendix.

APPENDIX C
TO THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION SUPPLEMENTARY CONDITIONS

Davis-Bacon Requirements

FEDERAL LABOR STANDARDS PROVISIONS
(Davis-Bacon Act, Copeland Act, and Contract Works Hours & Safety Standards Act)

The Project to which the construction work covered by this contract pertains is being assisted by the United States of America and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such federal assistance.

1 Minimum Wages.

(i) All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act, 29 CFR Part 3, the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period.

Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR Part 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein; provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR Part 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(ii) (a) The sponsor, on behalf of EPA, shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The FDEP shall approve a request for an additional classification and wage rate and fringe benefits; therefore, only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(b) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the sponsor(s) agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the sponsor to the FDEP. The FDEP will transmit the request to the Administrator of the Wage and Hour Division, employment Standards Administration, U. S. Department of Labor. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional

classification action within 30 days of receipt and so advise the FDEP or will notify FEDP within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB control number 1215-0140.)

(c) In the event that the Contractor, the laborers or mechanics to be employed in the Classification or their representatives, and the sponsor do not agree on the proposed classification and wage rate (including the amount designed for fringe benefits, where appropriate), the FDEP shall refer the request and the local wage determination, including the views of all interested parties and the recommendation of FDEP, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt of the request and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

(d) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(b) or (c) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program. Provided, that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account, assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

2. Withholding.

The sponsor shall, upon written request of the EPA or an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract or any other federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract, EPA may, after written notice to the contractor, sponsor, applicant, or owners, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and Basic Records.

(i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs. (Approved by the Office of Management and Budget under OMB Control Numbers 1215-0140 and 1215-0017).

(ii) (a) The contractor shall submit weekly for each week in which any contract work is performed, a copy of all payrolls to the sponsor. Such documentation shall be available upon request by FDEP. As to each payroll copy received, the sponsor shall provide a certification that the project is in compliance with the requirements of 29 CFR 5.5(a)(1) with each disbursement request. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR Part 5.5(a)(3)(I), except that full social security numbers and home addresses shall not be included on the weekly payrolls. Instead, the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site http://www.dol.gov/whd/forms/wh347instr.htm or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current addresses of each covered worker, and shall provide them upon request to the sponsor for transmission to the FDEP or EPA if requested by EPA, the FDEP, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the sponsor. (Approved by the Office of Management and Budget under OMB Control Number 1215-0149).

(b) Each payroll submitted shall be accompanied by a Statement of Compliance, signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under 29 CFR Part 5.5(a)(3)(ii), the appropriate information is being maintained under 29 CFR Part 5.5 (a)(3)(I), and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(c) The weekly submission of a properly executed certification set forth on the reverse side of Option Form WH-347 shall satisfy the requirement for submission of the Statement of Compliance required by paragraph A. 3(ii)(b) of this section.

(d) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under paragraph A.3(I) of this section available for inspection, copying, or transcription by authorized representatives of the FDEP or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FDEP may, after written notice to the contractor, or sponsor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request to make such records available may be grounds for debarment action pursuant to 29 CFR Part 5.12.

4. Apprentices and Trainees.

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U. S. Department of Labor, the Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio

of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program, shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with the determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U. S. Department of Labor, the Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program the contract will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal Employment Opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

5. Compliance with Copeland Act Requirements.

The contractor shall comply with the requirements of 29 CFR Part 3 which are incorporated by reference in this contract.

6. Subcontracts.

The contractor or subcontractor will insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as EPA determines may be appropriate, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR Part 5.5.

7. Contract Termination, Debarment.

A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act Requirements.

All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3 and 5 are herein incorporated by referenced in this contract.

9. Disputes Concerning Labor Standards.

Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6 and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the sponsor, FDEP, EPA, the U. S. Department of Labor, or the employees or their representatives.

10. Certification of Eligibility.

(i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded EPA contracts or participate in EPA programs pursuant to Executive Order 12549.

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a government contract by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded EPA contracts or participate in EPA programs pursuant to Executive Order 12549.

(iii) The penalty for making false statements is prescribed in the U. S. Criminal Code, 18 U. S. C. 1001. Additionally, U. S. Criminal Code, Section 1010, Title 18, U. S. C., Federal Housing Administration transactions, provides in part "Whoever, for the purpose of . . . influencing in any way the action of such Administration . . . makes, utters or publishes any statement, knowing the same to be false . . . shall be fined not more than $5,000 or imprisoned not more than two years, or both".

11. Complaints, Proceedings, or Testimony by Employees.

A. No laborer or mechanic to whom the wage, salary, or other labor standards provisions of this contract are applicable shall be discharged or in any other manner discriminated against by the contractor or any subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or relating to the labor standards applicable under this contract to his employer.

B. Contract Work Hours and Safety Standards Act. The sponsor shall insert the following clauses set forth in paragraphs B.(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of $100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by item 3 above or 29 CFR 4.6. As used in the paragraph, the terms laborers and mechanics include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in subparagraph (1) of this paragraph, the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in subparagraph (1) of this paragraph, in the sum of $10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in subparagraph (1) of this paragraph.

(3) Withholding for unpaid wages and liquidated damages. The sponsor, upon written request of the FDEP or an authorized representative of the Department of Labor, may withhold or cause to be withheld, from any moneys payable on

account of work performed by the contractor or subcontractor under any such contract or any other federal contract with the same prime contract, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (2) of this paragraph.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraph (1) through (4) of this paragraph and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in subparagraphs (1) through (4) of this paragraph.

C. Health and Safety

(1) No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.

(2) The contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 (formerly part 1518) and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act (Public Law 91-54.83 State 96).

(3) The contractor shall include the provisions of this Article in every subcontract so that such provisions will be binding on each subcontractor. The contractor shall take such action with respect to any subcontract as the Secretary of Housing and Urban Development or the Secretary of Labor shall direct as a means of enforcing such provisions.

12. Guidance to Contractor for Compliance with Labor Standards Provisions

a) Contracts with Two Wage Decisions

If the contract includes two wage decisions, the contractor, and each subcontractor who works on the site, must submit either two separate payrolls (one for each wage decision) or one payroll which identifies each worker twice and the hours worked under each wage decision. One single payroll, reflecting each worker once, may be submitted provided the Contractor uses the higher rate in the wage decisions for each identical job classification. However, where a job classification is not listed in a wage decision and is needed for that portion of the work, the classification **must** be added to the wage decision. A worker may not be paid at the rate for a classification using the hourly rate for that same classification in another wage decision. After the additional classification is approved, the contractor may pay the higher of the two rates and submit one payroll, if desired.

b) Complying with Minimum Hourly Amounts

1) The minimum hourly amount due to a worker in each classification is the total of the amounts in the Rates and Fringe Benefits (if any) columns of the applicable wage decision.

2) The contractor may satisfy this minimum hourly amount by any combination of cash and bona fide fringe benefits, regardless of the individual amounts reflected in the Rates and Fringe Benefits columns.

3) A contractor payment for a worker which is required by law is not a fringe benefit in meeting the minimum hourly amount due under the applicable wage decision. For example, contractor payments for FICA or unemployment insurance are not a fringe benefit; however, contractor payments for health insurance or retirement are a fringe benefit. Generally, a fringe benefit is bona fide if (a) it is available to most workers and (b) involves payments to a third party.

4) The hourly value of the fringe benefit is calculated by dividing the contractor's annual cost (excluding any amount contributed by the worker) for the fringe benefit by 2080. Therefore, for workers with overtime, an additional payment may be required to meet the minimum hourly wages since generally fringe benefits have no value for any time worked over 40 hours weekly. (If a worker is paid more than the minimum rates required by the wage decision, this should not be a problem. As long as the total wages received by a worker for straight time equals the hours worked times the minimum hourly rate in the wage decision, the requirement of the Davis-Bacon and Related Acts has been satisfied.)

c) Overtime

For any project work over 40 hours weekly, a worker generally must be paid 150% of the actual hourly cash rate received, not the minimum required by the wage decision. (The Davis-Bacon and Related Acts only establishes minimum rates and does not address overtime. The Contract Work Hours Act contains the overtime requirement and uses basic rate of pay as the base for calculation, not the minimum rates established by the Davis-Bacon and Related Acts.)

d) Deductions

Workers who have deductions, not required by law, from their pay must authorize these deductions in writing. The authorization must identify the purpose of each deduction and the amount, which may be a specific dollar amount or a percentage. A copy of the authorization must be submitted with the first payroll containing the deduction. If deducted amounts increase, another authorization must be submitted. If deducted amounts decrease, no revision to the original authorization is needed. Court-ordered deductions, such as child support, may be identified by the responsible payroll person in a separate document. This document should identify the worker, the amount deducted and the purpose. A copy of the court order should be submitted.

e) Classifications Not Included in the Wage Decision

If a classification not in the wage decision is required, please advise the owner's representative in writing and identify the job classification(s) required. In some instances, the state agency may allow the use of a similar classification in the wage decision.

Otherwise, the contractor and affected workers must agree on a minimum rate, which cannot be lower than the lowest rate for any trade in the wage decision. Laborers (including any subcategory of the laborer classification) and truck drivers are not considered a trade for this purpose. If the classification involves a power equipment operator, the minimum cannot be lower than the lowest rate for any power equipment operator in the wage decision. The owner will provide forms to document agreement on the minimum rate by the affected workers and contractor.

The U.S. Department of Labor (USDOL) must approve the proposed classification and rate. The contractor may pay the proposed rate until the USDOL makes a determination. Should the USDOL require a higher rate, the contractor must make wage restitution to the affected worker(s) for all hours worked under the proposed rate.

f) Supervisory Personnel

Foremen and other supervisory personnel who spend at least 80% of their time supervising workers are not covered by the Davis-Bacon and Related Acts. Therefore, a wage decision will not include such supervisory classifications and their wages are not subject to any minimums under the Davis-Bacon and Related Act or overtime payments under the Contract Work Hours and Safety Standards Act. However, foremen and other supervisory personnel who spend less than 80% of their time engaged in supervisory activities are considered workers/mechanics for the time spent engaged in manual labor and must be paid at least the minimum in the wage decision for the appropriate classification(s) based on the work performed.

g) Sole Proprietorships / Independent Contractors / Leased Workers

The nature of the relationship between a prime contractor and a worker does not affect the requirement to comply with the labor standards provisions of this contract. The applicability of the labor standards provisions is based on the nature of the work performed.

If the work performed is primarily manual in nature, the worker is subject to the labor standards provisions in this contract. For example, if John Smith is the owner of ABC Plumbing and performs all plumbing work himself, then Mr. Smith is subject to the labor standards provisions, including minimum wages and overtime. His status as owner is irrelevant for labor standards purposes.

If a worker meets the IRS standards for being an independent contractor, and is employed as such, this means that the worker must submit a separate payroll as a subcontractor rather than be included on some other payroll. The worker is still subject to the labor standards provisions in this contract, including minimum wages and overtime.

If a contractor or subcontractor leases its workers, they are subject to the labor standards provisions in this contract, including minimum wages and overtime. The leasing firm must submit payrolls and these payrolls must reflect information required to determine compliance with the labor standards provisions of this contract, including a classification for each worker based on the nature of the work performed, number of regular hours worked, and number of overtime hours worked.

h) Apprentices / Helpers

A worker may be classified as an apprentice **only if participating in a federal or state program**. Documentation of participation must be submitted. Generally, the apprentice program specifies that the apprentice will be compensated at a percentage of journeyman rate. For Davis-Bacon Act purposes, the hourly rate cannot be lower than the percentage of the hourly rate for the classification in the applicable wage decision.

If the worker does not participate in a federal or state apprentice program, then the worker must be classified according to duties performed. This procedure may require classification in the trade depending on tools used, or as a laborer if specialized tools of the trade are not used. The contractor may want to consult with the Wage and Hour Division of the U.S. Department of Labor located in most large cities regarding the appropriate classification.

Presently, no worker may be classified as a helper. As with apprentices not participating in a formal apprentice program, the worker must be classified according to duties performed and tools used.

APPENDIX D TO THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION SUPPLEMENTARY CONDITIONS

American Iron and Steel Requirement

The Contractor acknowledges to and for the benefit of the _____ ("Owner") and the State of Florida (the "State") that it understands that iron and steel products to be installed as a part of this contract must be in compliance with the requirements in H.R. 3547, "Consolidated Appropriations Act, 2014," (Appropriations Act). H.R. 3547 includes the following language in Division G, Title IV, Sec. 436, under the heading, "Use of American Iron and Steel,":

(a) (1) None of the funds made available by a State water pollution control revolving fund as authorized by title VI of the Federal Water Pollution Control Act (33 U.S.C. 1381 et seq.) or made available by a drinking water treatment revolving loan fund as authorized by section 1452 of the Safe Drinking Water Act (42 U.S.C. 300j-12) shall be used for a project for the construction, alteration, maintenance, or repair of a public water system or treatment works unless all of the iron and steel products used in the project are produced in the United States.

(2) In this section, the term "iron and steel products" means the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials.

(b) Subsection (a) shall not apply in any case or category of cases in which the Administrator of the Environmental Protection Agency (in this section referred to as the "Administrator") finds that--

(1) applying subsection (a) would be inconsistent with the public interest;

(2) iron and steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or

(3) inclusion of iron and steel products produced in the United States will increase the cost of the overall project by more than 25 percent.

(c) If the Administrator receives a request for a waiver under this section, the Administrator shall make available to the public on an informal basis a copy of the request and information available to the Administrator concerning the request, and shall allow for informal public input on the request for at least 15 days prior to making a finding based on the request. The Administrator shall make the request and accompanying information available by electronic means, including on the official public Internet Web site of the Environmental Protection Agency.

(d) This section shall be applied in a manner consistent with United States obligations under international agreements.

Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Purchaser or State to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney's fees) incurred by the Purchaser or State resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the State or any damages owed to the State by the Purchaser). While the Contractor has no direct contractual privity with the State, as a lender to the Purchaser for the funding of its project, the Purchaser and the Contractor agree that the State is a third-party beneficiary and neither this paragraph (nor any other provision of this Agreement necessary to give this paragraph force or effect) shall be amended or waived without the prior written consent of the State.

APPENDIX E TO THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION SUPPLEMENTARY CONDITIONS

Build America, Buy America Requirement

The Contractor acknowledges to and for the benefit of the _____ ("Owner") and the State of Florida (the "State") that it understands that the products to be installed as a part of this contract must be in compliance with the Infrastructure Investment and Jobs Act ("IIJA"), Pub. L. No. 117-58, which includes the Build America, Buy America Act ("the Act"). Pub. L. No. 117-58, §§ 70901-52. The Act requires the following Buy America preference:

1. All iron and steel used in the project are produced in the United States. This means all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.
2. All manufactured products used in the project are produced in the United States. This means the manufactured product was manufactured in the United States, and the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55 percent of the total cost of all components of the manufactured product, unless another standard for determining the minimum amount of domestic content of the manufactured product has been established under applicable law or regulation.
3. All construction materials are manufactured in the United States. This means that all manufacturing processes for the construction material occurred in the United States.

The Contractor hereby presents and warrants to and for the benefit of the Owner and State that (a) the Contractor has reviewed and understands the Build America, Buy America Requirement, (b) all of the products used in the project will be and/or have been produced in the United States in a manner that complies with the Build America, Buy America Requirement, unless a waiver of the requirement is approved, and (c) the Contractor will provide any further verified information, certification or assurance of compliance with this Acknowledgement, or information necessary to support a waiver of the Build America, Buy America Requirement, as may be requested by the Owner or the State.

Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Purchaser or State to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney's fees) incurred by the Purchaser or State resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the State or any damages owed to the State by the Purchaser). While the Contractor has no direct contractual privity with the State, as a lender to the Purchaser for the funding of its project, the Purchaser and the Contractor agree that the State is a third-party beneficiary and neither this paragraph (nor any other provision of this Agreement necessary to give this paragraph force or effect) shall be amended or waived without the prior written consent of the State.

"General Decision Number: FL20240107 04/12/2024

Superseded General Decision Number: FL20230107

State: Florida

Construction Type: Heavy

County: Broward County in Florida.

HEAVY CONSTRUCTION PROJECTS (Including Sewer and Water Lines)

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least $17.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2024.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least $12.90 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2024.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at http://www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/05/2024
1	04/12/2024

* ELEC0728-006 03/01/2024

	Rates	Fringes
ELECTRICIAN	$ 37.90	14.61

ENGI0487-023 07/01/2023

	Rates	Fringes
OPERATOR: Crane		
All Cranes 75 Tons and below	$ 37.07	14.90
All Cranes Over 300 Ton, Electric Tower, Luffing Boom Cranes	$ 40.40	14.90
Cranes 130-300 Ton	$ 39.38	14.90
Cranes 76 ton to 129 Ton	$ 37.57	14.90

ENGI0487-026 07/01/2023

	Rates	Fringes
OPERATOR: Drill		
Drill Rig, Truck Mounted, Sterling Class	$ 27.00	14.90
Drill Rig, Truck Mounted, Watson Class	$ 32.75	14.90
OPERATOR: Oiler	$ 27.53	14.90

IRON0272-005 10/01/2023

	Rates	Fringes
IRONWORKER, STRUCTURAL	$ 27.75	15.27

LABO1652-004 05/01/2018

	Rates	Fringes
LABORER: Grade Checker	$ 22.05	7.27

PAIN0365-007 06/01/2021

	Rates	Fringes
PAINTER: Brush, Roller and Spray	$ 20.21	12.38

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* SUFL2009-146 06/24/2009

	Rates	Fringes
CARPENTER, Includes Form Work	$ 17.00 **	2.51
CEMENT MASON/CONCRETE FINISHER	$ 15.00 **	8.64
LABORER: Common or General	$ 9.87 **	3.24
LABORER: Landscape	$ 7.25 **	0.00
LABORER: Pipelayer	$ 14.00 **	2.42
LABORER: Power Tool Operator (Hand Held Drills/Saws,		

Jackhammer and Power Saws
Only).....$ 10.63 ** 2.20

OPERATOR: Asphalt Paver.....$ 11.59 ** 0.00

OPERATOR: Backhoe Loader
Combo.....$ 16.10 ** 2.44

OPERATOR: Backhoe/Excavator.....$ 18.77 1.87

OPERATOR: Bulldozer.....$ 14.95 ** 0.81

OPERATOR: Grader/Blade.....$ 16.00 ** 2.84

OPERATOR: Loader.....$ 14.00 ** 2.42

OPERATOR: Mechanic.....$ 14.32 ** 0.00

OPERATOR: Roller.....$ 10.95 ** 0.00

OPERATOR: Scraper.....$ 11.00 ** 1.74

OPERATOR: Trackhoe.....$ 20.92 5.50

OPERATOR: Tractor.....$ 10.54 ** 0.00

TRUCK DRIVER, Includes Dump
Truck.....$ 9.60 ** 0.00

TRUCK DRIVER: Lowboy Truck.....$ 12.73 ** 0.00

TRUCK DRIVER: Off the Road
Truck.....$ 12.21 ** 1.97

WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.

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** Workers in this classification may be entitled to a higher
minimum wage under Executive Order 14026 ($17.20) or 13658
($12.90). Please see the Note at the top of the wage
determination for more information. Please also note that the
minimum wage requirements of Executive Order 14026 are not
currently being enforced as to any contract or subcontract to
which the states of Texas, Louisiana, or Mississippi, including
their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave
for Federal Contractors applies to all contracts subject to the
Davis-Bacon Act for which the contract is awarded (and any
solicitation was issued) on or after January 1, 2017. If this
contract is covered by the EO, the contractor must provide
employees with 1 hour of paid sick leave for every 30 hours
they work, up to 56 hours of paid sick leave each year.
Employees must be permitted to use paid sick leave for their
own illness, injury or other health-related needs, including
preventive care; to assist a family member (or person who is
like family to the employee) who is ill, injured, or has other
health-related needs, including preventive care; or for reasons
resulting from, or to assist a family member (or person who is
like family to the employee) who is a victim of, domestic
violence, sexual assault, or stalking. Additional information
on contractor requirements and worker protections under the EO

is available at
https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those

classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board

U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

==========

END OF GENERAL DECISION"

Florida Department of Environmental Protection

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Rick Scott
Governor

Carlos Lopez-Cantera
Lt. Governor

Jonathan P. Steverson
Secretary

AMERICAN IRON AND STEEL GUIDANCE FOR STATE REVOLVING FUND PROJECTS

Florida State Revolving Fund Programs

November 2016

P.L. 113-76, Consolidated Appropriations Act, 2014 (Act), includes an "American Iron and Steel (AIS)" requirement in section 436 that requires Clean Water State Revolving Loan Fund (CWSRF) and Drinking Water State Revolving Loan Fund (DWSRF) assistance recipients to use iron and steel products that are produced in the United States for projects for the construction, alteration, maintenance, or repair of public water system or treatment works if the project is funded through an assistance agreement executed beginning January 17, 2014 (enactment of the Act), through the end of Federal Fiscal Year 2014.

Section 436 also sets forth certain circumstances under which the Environmental Protection Agency (EPA) may waive the AIS requirement. Furthermore, the Act specifically exempts projects where engineering plans and specifications were approved by a State agency prior to January 17, 2014.

The approach described below explains how EPA will implement the requirement. The guidance will be in the form questions and answers that address AIS, the types of projects that must comply with the AIS requirement, the types of products covered by the AIS requirement, and compliance.

Implementation

1) What is American Iron and Steel?

The "American Iron and Steel (AIS)" provision requires State Revolving Fund (SRF) projects to use iron and steel products that are produced in the United States. AIS *IS NOT* "Buy American" from the Stimulus of 2009 or "Buy American" that is used by agencies such as the Florida Department of Transportation.

2) What projects need to comply with AIS?

All projects funded with a SRF agreement need to comply with AIS. AIS compliance applies to the entirety of the project, regardless when the construction begins or ends. One dollar in SRF funds requires AIS compliance on the entire project. AIS compliance applies to all parts of the project, regardless of the source of funding.

3) What is an iron or steel product?

The term "iron or steel products" means the following products made primarily of iron or steel:

- Lined or unlined pipes or fittings
- Manhole Covers
- Municipal Castings
- Hydrants
- Tanks
- Flanges
- Pipe clamps and restraints
- Valves
- Structural steel
- Reinforced precast concrete
- Construction materials

4) What is the definition of "primarily iron or steel"?

A product that is primarily iron or steel is a product that is made of greater than 50% iron or steel, measured by cost. The cost should be based on the material costs. If a product is not listed in the AIS provision but is composed of more than 50% iron or steel, it does not have to be produced in the United States.

5) What is an iron or steel product?

An iron or steel product is one that is primarily made of iron or steel that is permanently incorporated. Equipment which are eventually removed from the project upon completion are not required to comply with AIS.

6) What does "produced in the United States" mean?

Produced in the United States means that all manufacturing processes, including application of coatings, must take place in the United States, except for metallurgical processes involving refinement of steel additives. All manufacturing processes includes processes such as melting, refining, forming, rolling, drawing, finishing, fabricating and

coating. Raw materials such as iron ore, limestone and iron and steel scrap are not covered by the AIS requirement. Non-iron or steel components of an iron and steel product may come from non-US sources.

7) What components are not covered by AIS?

Mechanical and electrical components, equipment and systems do not have to comply with AIS. Mechanical equipment is typically that which has motorized parts and/or is powered by a motor. Electrical equipment is typically any machine powered by electricity and includes components that are part of the electrical distribution system.

8) What are some examples of components not covered by AIS?

Examples of components that do not need to comply with AIS include: pumps, motors, gear reducers, drives (including variable frequency drives (VFDs)), electric/pneumatic/manual accessories used to operate valves (such as electric valve actuators), mixers, gates, motorized screens (such as traveling screens), blowers/aeration equipment, compressors, meters, sensors, controls and switches, supervisory control and data acquisition (SCADA), membrane bioreactor systems, membrane filtration systems, filters, clarifiers and clarifier mechanisms, rakes, grinders, disinfection systems, presses (including belt presses), conveyors, cranes, HVAC (excluding ductwork), water heaters, heat exchangers, generators, cabinetry and housings (such as electrical boxes/enclosures), lighting fixtures, electrical conduit, emergency life systems, metal office furniture, shelving, laboratory equipment, analytical instrumentation, and dewatering equipment.

9) What are the steps to document AIS compliance?

- Contract language - the specific contract language given in the FDEP Supplementary Conditions, Appendix D, must be included in each contract, including purchase agreements.
- Step Certification Process – each handler (supplier, fabricator, manufacturer, processor, etc.) of the iron and steel products certifies that their step in the process was performed domestically.
- Paper Trail – including the originating purchase order, the delivery of service via a bill of lading, and invoice from the manufacturer.

10) What does the certification letter need to contain?

The certification letter should identify:

- What the product is - The letter should list the specific product(s) delivered to the project site.
- Where it was made - The letter should include the manufacturing location of the product(s).
- To whom it was delivered - The letter should include the name of the project and jurisdiction where the project was delivered.

- Signature of a representative who has the authority to speak on behalf of the company.

11) What is the waiver process?

The EPA has the ability to issue waivers when the following can be documented:

- That applying the AIS requirements would be inconsistent with the public interest;

OR

- Iron and steel products are not produced in the United States in sufficient and reasonably available quantitates and of a satisfactory quality;

OR

- Inclusion of iron and steel products produced in the United States will increase the cost of the overall project by more than 25%.

12) What are the steps to request a waiver?

- The waiver request is emailed to the SRF program.
- After review, the SRF program will forward the application to the EPA Headquarters.
- After evaluation and review of public comments, EPA Headquarters will either approve or disapprove the waiver request.
- EPA Headquarters will send notification to the SRF program and the decision will be posted online.

13) What are national waivers?

The EPA has the authority to issue national waivers. The national waivers that have been approved to date include:

- De minimis waiver - allows a small percentage of incidental products of unknown or non-domestic origin to be incorporated. Users of the de minimis waiver should maintain documentation of all the de minimis items in a project.
- Plans and Specifications Waiver - exempts projects with plans and specifications approved by a state agency prior to January 17, 2014 and between and including January 17 and April 15, 2014 (the date the waiver was signed).
- Product waiver for pig iron and direct reduced iron -permits the use of pig iron and direct reduced iron manufactured outside the US to be used in the manufacturing process for iron and steel products.
- Short-term waiver for stainless steel nuts and bolts used in pipe couplings, restraints, joints, flanges, and saddles.

14) What are the penalties for not complying with AIS?

Failure to comply with the AIS requirements may delay, limit, or prevent the disbursement of SRF funds. The SRF program will require corrective actions by the

Contractor as a result of violations of AIS compliance, including the replacement of the deficient products, compensation for costs, and other damages that may result. Violations may subject the Owners, the Contractors, and suppliers to enforcement actions from the EPA and other federal agencies.

15) Where can further information be obtained about AIS?

The EPA has a website to address questions and concerns about AIS and can be found at

http://water.epa.gov/grants_funding/aisrequirement.cfm

Appendix: Sample Certification

The following information is provided as a sample letter of **step** certification for AIS compliance. Documentation must be provided on company letterhead.

Date
Company Name
Company Address
City, State Zip

Subject: American Iron and Steel Step Certification for Project (XXXXXXXXXX)

I, (company representative), certify that the (melting, bending, coating, galvanizing, cutting, etc.) process for (manufacturing or fabricating) the following products and/or materials shipped or provided for the subject project is in full compliance with the American Iron and Steel requirement as mandated in EPA's State Revolving Fund Programs.

Item, Products and/or Materials:

1. Xxxx
2. Xxxx
3. Xxxx

Such process took place at the following location:

_____

If any of the above compliance statements change while providing material to this project we will immediately notify the prime contractor and the engineer.

Signed by company representative

BCTED 210505060

NE 27 AVENUE & NE 16 STREET STORMWATER IMPROVEMENTS

CIP #19-352

CITY OF POMPANO BEACH, FLORIDA

BID SET

DATE OF ISSUE: 5/28/2024

pompano beach
Florida's Warmest Welcome

CITY OF POMPANO BEACH
100 WEST ATLANTIC BOULEVARD
POMPANO BEACH, FL 33060
954-786-4600

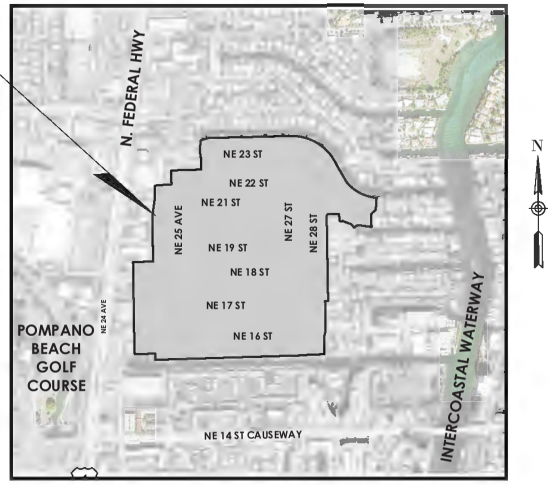
CITY COMMISSION/COUNCIL

REX HARDIN	MAYOR
ANDREA McGEE	VICE MAYOR
RHONDA SIGERSON-EATON	COMMISSIONER
ALISON FOURNIER	COMMISSIONER
BEVERLY PERKINS	COMMISSIONER
BARRY MOSS	COMMISSIONER

CITY MANAGER AND STAFF

GREG HARRISON	CITY MANAGER
A. RANDOLPH BROWN	UTILITY DIRECTOR
NATHANIEL WATSON	UTILITY FIELD SUPERINTENDENT
MICHAEL TAYLOR	STORMWATER MANAGER

PROJECT LOCATION



SECTION 30, TOWNSHIP 48S, RANGE 43E
LOCATION MAP
N.T.S

Sunshine811
Call 811 or www.sunshine811.com two full business days before digging to have utilities located and marked.
Check positive response codes before you dig!

INDEX OF DRAWINGS

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18 - 41	PGD-1 - PGD-24	PAVING, GRADING AND DRAINAGE PLAN
42 - 45	PRO-1 - PRO-4	PROFILES
46 - 47	PPP-1 - PPP-2	POLLUTION PREVENTION PLAN
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71 - 75	TPD-15 - TPD-19	TREE DISPOSTION NOTES AND DETAILS
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91	LNP-15	LANDSCAPE NOTES AND DETAILS
92	LNP-16	LANDSCAPE MITIGATION
93	LNP-17	LANDSCAPE SPECIFICATIONS

cma
chen moore and associates
500 West Cypress Creek Road,
Suite 630
Ft. Lauderdale, FL 33309
954.730.0707
www.chenmoore.com

REGISTRATION
This item has been digitally signed and sealed by JENNIFER L. SMITH, PE, on the date adjacent to the seal.
Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

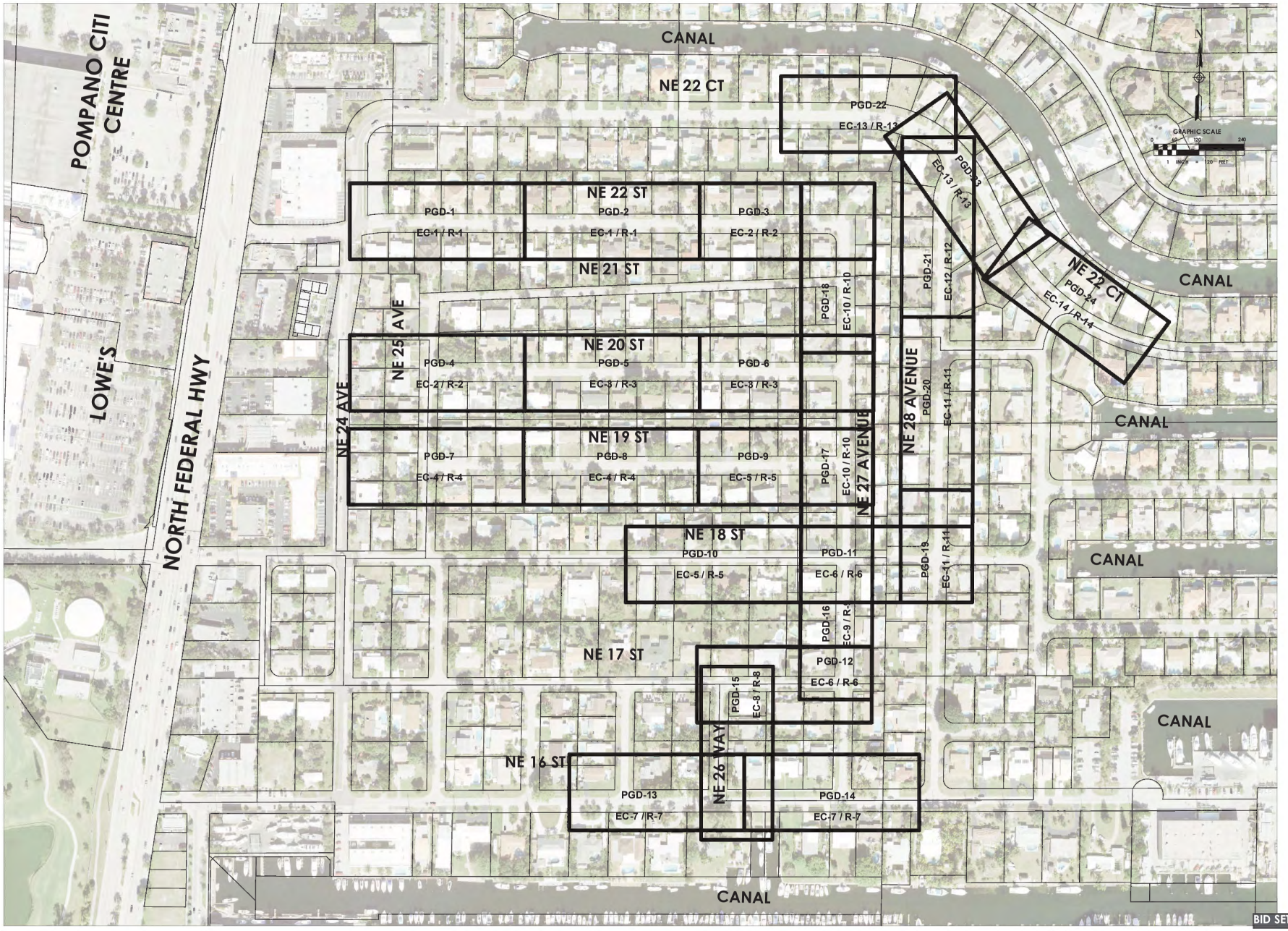
JENNIFER L. SMITH LICENSE No. 72232 STATE OF FLORIDA PROFESSIONAL ENGINEER

PROJECT NUMBER
20-092.066

CLIENT PROJECT NUMBER
19-352

DRAWING NUMBER
COV-1
01 OF 93

BCTED 210505060



BID SET

cma
chen moore and associates
500 West Cypress Creek Road
Suite 630
Ft. Lauderdale, FL 33309
954.730.0707
www.chenmoore.com

REGISTRATION

This item has been digitally signed and sealed by **JENNIFER L. SMITH, PE**, on the date adjacent to the seal.

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

JENNIFER L. SMITH LICENSE No. 72232 STATE OF FLORIDA PROFESSIONAL ENGINEER

CLIENT

pompano beach
Florida's Warmest Welcome

PROJECT INFORMATION

NE 27 AVENUE AND NE 16 STREET STORMWATER IMPROVEMENTS

CITY OF POMPANO BEACH, FL

PROJECT NUMBER
20-092.066

CLIENT PROJECT NUMBER
19-352

VERIFY SCALES
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

REVISIONS

DATE OF ISSUE
5/28/2024

DESIGNED BY
JLS

DRAWN BY

CHECKED BY
JM

DRAWING TITLE
KEY MAP

DRAWING NUMBER
KEY-1
02 OF 93

Plot Date: 5/28/2024 8:09:59 AM Username: jhubbard Layout Name: KEY-1
Folder Path: V:\Projects\2020\20-092.066 - NE 27th Ave & NE 16 St Stormwater Imprmnt\Design\CAD\Sheets Filename: 20-092.066 KEY MAP.dwg

BCTED 210505060

GENERAL NOTES

1. LOCATIONS OF EXISTING UNDERGROUND UTILITIES WERE OBTAINED FROM AVAILABLE RECORDS. NEITHER THE CITY NOR ENGINEER ASSUMES ANY RESPONSIBILITY FOR UTILITIES NOT SHOWN OR NOT LOCATED WHERE SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF ALL EXISTING UTILITIES. CONTRACTOR SHALL FIELD VERIFY THE LOCATIONS AND ELEVATIONS OF ALL UNDERGROUND UTILITIES BEFORE COMMENCING CONSTRUCTION WORK. THE EXACT LOCATION SHALL BE DETERMINED BY THE CONTRACTOR. CONTRACTOR SHALL ALSO PROVIDE THE ENGINEER WITH RECORD INFORMATION ON ALL FIELD VERIFICATION MEASUREMENTS AS SPECIFIED. IN ADDITION, THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY IF OTHER UTILITIES (NOT SHOWN ON THE PLANS) EXIST WITHIN THE AREA OF CONSTRUCTION. CONTRACTOR SHALL PROVIDE THE CONSULTANT INFORMATION ON ALL FIELD VERIFICATION MEASUREMENTS AS SPECIFIED. IF AN EXISTING UTILITY IS FOUND TO CONFLICT WITH THE PROPOSED CONSTRUCTION UPON EXCAVATION, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE CITY SO THAT APPROPRIATE MEASURES CAN BE TAKEN. THIS WORK BY THE CONTRACTOR SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.
2. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONARY MEASURES TO PROTECT EXISTING UTILITIES WHETHER SHOWN OR NOT.
3. THE CONTRACTOR SHALL NOTIFY THE CITY IN ADVANCE OF MAKING ANY CONNECTION TO AN ACTIVE PIPELINE OR UTILITY SYSTEM.
4. ALL EXISTING UTILITIES SHALL BE MAINTAINED IN SERVICE DURING CONSTRUCTION UNLESS APPROVED OTHERWISE IN WRITING BY THE UTILITY OWNERS.
5. CONTRACTOR SHALL NOTIFY ADJACENT PROPERTY OWNERS TWO (2) BUSINESS DAYS PRIOR TO COMMENCING ANY PORTION OF THE WORK TO BE PERFORMED DURING OFF-PEAK HOURS (NIGHTS AND SUNDAYS).
6. ALL ELEVATIONS SHOWN ON THE CONSTRUCTION DRAWINGS ARE BASED ON NAVD 1988 DATUM.
7. CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES PRIOR TO CONSTRUCTION. CONTRACTOR SHALL PROTECT ALL UTILITIES AND OTHER PROPERTY AND SHALL BE RESPONSIBLE FOR ANY DAMAGES INCURRED DURING CONSTRUCTION AND SHALL REPAIR SAID DAMAGES AT THE CONTRACTOR'S EXPENSE.
8. THE CONTRACTOR WILL HOLD A PRE-CONSTRUCTION MEETING PRIOR TO THE START OF ANY CONSTRUCTION INCLUDING A REPRESENTATIVE FROM THE RESPECTIVE ENGINEERING AND UTILITY DEPARTMENTS, OWNER AND OTHER APPLICABLE AGENCIES.
9. ALL DEVIATIONS FROM PLANS ARE TO BE APPROVED IN WRITING PRIOR TO CONSTRUCTION AND FOR ALL INSPECTIONS AND TESTING.
10. THE CITY MUST BE GIVEN A MINIMUM 48 HOURS NOTICE FOR ALL INSPECTIONS UNLESS OTHERWISE AGREED UPON.
11. THE CONTRACTOR SHALL BE RESPONSIBLE AT ALL TIMES THROUGHOUT THE DURATION OF CONSTRUCTION FOR THE PROTECTION OF EXISTING AND NEWLY INSTALLED UTILITIES AND IMPROVEMENTS FROM DAMAGES, DISRUPTION OF SERVICE OR DESTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING SUCH MEASURES AS NECESSARY TO PROTECT THE HEALTH, SAFETY AND WELFARE OF THOSE PERSONS HAVING ACCESS TO THE WORK SITE.
12. EXISTING SECTION CORNERS AND OTHER LAND MARKERS OR MONUMENTS LOCATED WITHIN PROPOSED CONSTRUCTION ARE TO BE MAINTAINED BY THE CONTRACTOR AND/OR RESET AFTER CONSTRUCTION UNDER CERTIFICATION BY A FLORIDA REGISTERED SURVEYOR.
13. THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" SHALL BE USED AS THE STANDARD FOR ANY SIGNAGE AND PAVEMENT MARKING REQUIREMENTS OF THE PROJECT.
14. THE EXISTING ELEVATIONS SHOWN HEREIN ARE FOR THE PURPOSE OF INDICATING THE GROUND ELEVATION ONLY AT THE POSITION SHOWN AND IN NO WAY SHOULD INDICATE ELEVATION AT ANY OTHER POINT OTHER THAN THAT SHOWN.
15. THE CONTRACTOR SHALL PROVIDE MAINTENANCE OF TRAFFIC (M.O.T.) FOR ANY WORK PERFORMED ON PUBLIC RIGHT-OF-WAY. NOTIFY THE CITY 48 HOURS PRIOR TO BEGIN WORK. ALL M.O.T. WORK SHALL BE AS PER FDOT INDEX NO. 600 SERIES.
16. EXISTING CONDITIONS PRESENTED ARE BASED ON A TOPOGRAPHIC SURVEY PROVIDED BY STONER & ASSOCIATES, INC., PROJECT 20-9056 DATED 10/22/2020. ADDITIONAL INFORMATION WAS OBTAINED FROM AS-BUILTS AND RECORD DRAWINGS PROVIDED BY UTILITY COMPANIES.
17. ALL WATER METER, COMMUNICATION BOX, CABLE TV BOX, ETC, DAMAGED DURING CONSTRUCTION OF PROPOSED IMPROVEMENTS SHALL BE REPLACED WITH IDENTICAL OR BETTER AT UTILITY OWNER SATISFACTION.
18. THE WORDS 'NEW', 'PROPOSED', 'INSTALL', 'PROVIDE', OR WORDS WITH SIMILAR MEANING, ON ANY PART OF THESE CONSTRUCTION DOCUMENTS, SHALL BE INTERPRETED, UNLESS OTHERWISE SPECIFICALLY STATED, TO MEAN 'FURNISHING AND INSTALL COMPLETE IN PLACE AND READY FOR SERVICE'.
19. THESE CONSTRUCTION DOCUMENTS ARE COMPLEMENTARY. WORK DEPICTED UNDER A PARTICULAR DISCIPLINE MAY TRIGGER WORK UNDER A DIFFERENT DISCIPLINE. SUCH WORK REQUIRED FOR THE INTENDED AND PROPER FUNCTION OF THE IMPROVEMENTS, SHALL BE CONSIDERED INCIDENTAL AND PART OF THE CONTRACTOR'S BID PRICE. NO ADDITIONAL PAYMENT WILL BE MADE FOR SUCH ITEMS.
20. CONTRACTOR IS TO VERIFY THE EXACT LOCATION OF ALL EXISTING TREES, STRUCTURES, AND UTILITIES WHICH MAY NOT BE SHOWN ON PLANS. ANY EXISTING STRUCTURE, PAVEMENT, TREES OR OTHER EXISTING IMPROVEMENT NOT SPECIFIED FOR REMOVAL WHICH IS TEMPORARILY DAMAGED, EXPOSED OR IN ANY WAY DISTURBED BY CONSTRUCTION PERFORMED UNDER THIS CONTRACT, SHALL BE REPAIRED, PATCHED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.
21. CONTRACTOR SHALL CONTACT SUNSHINE STATE ONE CALL OF FLORIDA AT 811 LEAST 48 HOURS PRIOR TO PERFORMING ANY DIGGING TO VERIFY THE EXACT LOCATION OF EXISTING UTILITIES.
22. EXISTING GRADES WERE TAKEN FROM THE BEST AVAILABLE DATA AND MAY NOT ACCURATELY REFLECT PRESENT CONDITIONS. CONTRACTOR SHALL BE RESPONSIBLE FOR FAMILIARIZING THEMSELVES WITH CURRENT SITE CONDITIONS, AND SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO STARTING WORK.
23. IT IS THE INTENT OF THESE PLANS TO BE IN ACCORDANCE WITH APPLICABLE CODES AND AUTHORITIES HAVING JURISDICTION. ANY DISCREPANCIES BETWEEN THESE PLANS AND APPLICABLE CODES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER.
24. THE CONTRACTOR SHALL PREPARE AND SUBMIT SHOP DRAWINGS FOR ALL ITEMS LISTED IN PROJECT SPECIFICATION.
25. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR LEAVE EXCAVATED TRENCHES, OR PORTIONS OF WORK, EXPOSED OR OPEN AT THE END OF THE WORKING DAY, WEEKENDS, HOLIDAYS OR OTHER TIMES. WHEN THE CONTRACTOR IS NOT WORKING, UNLESS OTHERWISE DETERMINED, ANY TRENCH SHALL BE COVERED, FIRMLY SECURED AND MARKED ACCORDINGLY FOR PEDESTRIAN TRAFFIC.
26. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL ADJACENT PROPERTIES AT ALL TIMES.
27. ALL EXCAVATED MATERIAL REMOVED FROM THIS PROJECT SHALL BE DISPOSED OF PROPERLY BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
28. CAST IRON PRODUCTS: HEAVY DUTY CLASSIFICATION SUITABLE FOR HIGHWAY TRAFFIC LOADS, OR 16,000 LB. WHEEL LOADS.
29. STEEL GRATING AND COVERS: TRAFFIC CLASSIFICATION H-20 AASHTO H20: 16,000 LBS OVER 8" X 20" AREA.
30. ALL STRUCTURES MUST BE CAPABLE OF SUSTAINING HEAVY TRAFFIC LOADS.
31. ALL GRASS AREAS AFFECTED BY CONSTRUCTION SHALL BE RE-SODDED AND MATCH EXISTING ADJACENT SOD.
32. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROVISION, INSTALLATION AND MAINTENANCE OF ALL TRAFFIC CONTROL AND SAFETY DEVICES. IN ADDITION, THE CONTRACTOR IS RESPONSIBLE FOR THE RESETTING OF ALL TRAFFIC CONTROL AND INFORMATION SIGNING REMOVED DURING CONSTRUCTION PERIOD.
33. EXCAVATED OR OTHER MATERIAL STORED ADJACENT TO OR PARTIALLY UPON A ROADWAY PAVEMENT SHALL BE ADEQUATELY MARKED FOR TRAFFIC SAFETY AT ALL TIMES.
34. TEMPORARY PATCH MATERIAL MUST BE ON THE JOB SITE WHENEVER PAVEMENT IS CUT, NO PAVEMENT WORK WILL BE ALLOWED WITHOUT PROPER MATERIAL AVAILABLE FOR TEMPORARY RESTORATION.
35. CONTRACTOR SHALL MAINTAIN TRAFFIC ACCORDING TO CORRESPONDING TYPICAL CONTROL DETAIL AS OUTLINED IN FLORIDA DEPARTMENT OF TRANSPORTATION REQUIREMENTS.
36. CONTRACTOR SHALL NOTIFY LAW ENFORCEMENT, FIRE PROTECTION SERVICES AND WASTER/RECYCLING SERVICES TWENTY-FOUR (24) HOURS IN ADVANCE OF THE DETOUR IN ACCORDANCE WITH SECTION 336.048 OF FLORIDA STATUTES.
37. COMPLETE AS-BUILT INFORMATION RELATIVE TO LOCATION AND DEPTH OF PIPES, MANHOLES, ETC. SHALL BE ACCURATELY RECORDED BY THE CONTRACTOR AND PROVIDED TO THE CITY PRIOR TO FINAL ACCEPTANCE OF THE WORK.
38. ALL WORK TO BE IN COMPLIANCE WITH CITY OF POMPANO BEACH DESIGN STANDARDS AND SPECIFICATIONS (LATEST VERSION), MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (LATEST VERSION), FLORIDA DEPARTMENT OF TRANSPORTATION DESIGN STANDARDS AND SPECIFICATIONS (LATEST EDITION) AND BROWARD COUNTY TRAFFIC ENGINEERING DIVISION.
39. DURING CONSTRUCTION IF SOIL OR GROUNDWATER CONTAMINATION IS ENCOUNTERED OR A SPILL OF A HAZARDOUS MATERIAL OR OIL/GASOLINE OCCURS PLEASE STOP WORK IN THAT AREA AND IMMEDIATELY CONTACT ERMD AT 954-965-4380 OR 963-763-4128. IF SUSPECTED CONTAMINATION OR HAZARDOUS MATERIAL IS FOUND ON THE PROJECT OR ENCOUNTERED DURING CONSTRUCTION THE CONTRACTOR SHALL CEASE OPERATIONS IN THAT AREA. IMMEDIATELY NOTIFY THE CITY ENGINEER, AND PROTECT THE IMMEDIATE AREA OF SUSPECT CONTAMINATED OR HAZARDOUS MATERIAL FROM FURTHER ACCESS. THE CITY ENGINEER WILL ARRANGE FOR THE INVESTIGATION, IDENTIFICATION AND/OR REMOVAL/REMEDIATION OF THE MATERIAL IN QUESTION AS NEEDED.
40. UPON DEVELOPMENT OF A SITE-SPECIFIC STORMWATER POLLUTION PREVENTION PLAN (SWPPP), CONTRACTORS/OPERATORS MUST COMPLETE AND SUBMIT A NOTICE OF INTENT (NOI) TO THE EPA FOR STORMWATER DISCHARGES FROM CONSTRUCTION SITES OVER ONE ACRE. THE EPA REQUIRES 14 DAY NOTICE PRIOR TO COMMENCEMENT OF ANY WORK ON THE PROJECT. THE NOI MUST BE SUBMITTED ONLINE AND INFORMATION ON THIS SUBMITTAL IS AVAILABLE AT http://water.epa.gov/polwaste/npdes/stormwater/EPAs-Electronic-Construction-General-Permit-Notice-of-Intent-eNOI-Home-Page.cfm. PLEASE COPY THE CITY OF POMPANO BEACH ON YOUR SUBMITTAL SO THIS OFFICE IS AWARE THAT YOU HAVE APPLIED FOR THE PERMIT AND THAT CONSTRUCTION IS BEGINNING SOON.

    THE CONTRACTOR SHALL COORDINATE SELECTION AND REVIEW OF ANY PROPOSED STAGING AREAS ASSOCIATED WITH THIS PROJECT WITH THE CITY OF POMPANO BEACH. A STAGING PLAN WILL BE REQUIRED, PERIMETER FENCE SHALL BE SCREENED.
41. NO STAGING OF EQUIPMENT/VEHICLES OR MATERIALS WILL BE ALLOWED WITHIN OR ADJACENT TO PRIVATE PROPERTY OR OTHER ENVIRONMENTALLY SENSITIVE AREAS. CONTRACTOR IS REQUIRED TO PROVIDE A PLAN FOR STAGING AND/OR STORAGE OF MATERIALS.
42. IF SUSPECTED CONTAMINATION OR HAZARDOUS MATERIAL IS FOUND ON THE PROJECT OR ENCOUNTERED DURING CONSTRUCTION THE CONTRACTOR SHALL CEASE OPERATIONS IN THAT AREA. IMMEDIATELY NOTIFY THE CITY ENGINEER, AND PROTECT THE IMMEDIATE AREA OF SUSPECT CONTAMINATED OR HAZARDOUS MATERIAL FROM FURTHER ACCESS. THE CITY ENGINEER WILL ARRANGE FOR THE INVESTIGATION, IDENTIFICATION AND/OR REMOVAL/REMEDIATION OF THE MATERIAL IN QUESTION AS NEEDED.
43. CONTRACTOR SHALL PROVIDE A PLAN DEMONSTRATING PATH OF CONSTRUCTION EQUIPMENT TRAVEL.
44. THE CONTRACTOR SHALL NOT BRING ANY HAZARDOUS MATERIALS ONTO THE PROJECT. SHOULD THE CONTRACTOR REQUIRE SUCH FOR PERFORMING THE CONTRACTED WORK, THE CONTRACTOR SHALL REQUEST, WRITTEN PERMISSION FROM THE PROJECT ENGINEER. THE CONTRACTOR SHALL PROVIDE A COPY OF THE REQUEST TO THE CITY ENGINEER, WITH A COPY OF THE MATERIAL SAFETY DATA SHEET (MSDS) FOR EACH HAZARDOUS MATERIAL PROPOSED FOR USE, AND PROVIDE A DESCRIPTION OF THE SPECIFIC MANNER IN WHICH THE MATERIAL WILL BE USED. THE PROJECT ENGINEER SHALL COORDINATE WITH THE CITY ENGINEER, PRIOR TO ISSUING WRITTEN APPROVAL TO THE CONTRACTOR. BECAUSE STATE LAW DOES NOT TREAT PETROLEUM PRODUCTS THAT ARE PROPERLY CONTAINERIZED AS HAZARDOUS MATERIALS, SUCH PRODUCTS DO NOT REQUIRE AN MSDS SUBMITTAL. ALL BULK PETROLEUM PRODUCTS STORED ON SITE SHALL REQUIRE PROPER STORAGE WHICH INCLUDES SECONDARY CONTAINMENT.
45. WORK SHALL BE PERFORMED ENTIRELY WITHIN THE EXISTING RIGHT-OF-WAY.
46. ALL EXISTING SIGNALIZATION EQUIPMENT IS ASSUMED TO BE IN GOOD WORKING ORDER UNLESS BCTED IS NOTIFIED IN WRITING PRIOR TO THE START OF CONSTRUCTION. ANY SUBSEQUENT DAMAGE TO THE SIGNAL EQUIPMENT SHALL BE REPAIRED BY THE CONTRACTOR.

DEMOLITION NOTES

1. DRAIN, PURGE, OR OTHERWISE REMOVE, COLLECT, AND DISPOSE OF CHEMICALS, GASES, EXPLOSIVES, ACIDS, FLAMMABLES, OR OTHER DANGEROUS MATERIALS BEFORE PROCEEDING WITH DEMOLITION OPERATIONS.
2. CONDUCT DEMOLITION OPERATIONS AND REMOVE DEBRIS TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKS, AND OTHER ADJACENT OCCUPIED AND USED FACILITIES.
3. DO NOT CLOSE OR OBSTRUCT STREETS, WALKS, OR OTHER ADJACENT OCCUPIED OR IN-USE FACILITIES WITHOUT PERMISSION FROM OWNER, THE CITY AND AUTHORITIES HAVING JURISDICTION. PROVIDE ALTERNATE ROUTES AROUND CLOSED OR OBSTRUCTED TRAFFIC WAYS AS REQUIRED BY GOVERNING REGULATIONS. AN MOT PLAN WILL BE REQUIRED FOR SAFE PEDESTRIAN AND VEHICULAR ACCESSIBILITY.
4. CONDUCT DEMOLITION OPERATIONS SAFELY TO PREVENT INJURY TO PEOPLE AND DAMAGE TO ADJACENT BUILDINGS AND FACILITIES TO REMAIN. ENSURE SAFE PASSAGE OF PEOPLE AROUND DEMOLITION AREA.
5. ERECT TEMPORARY PROTECTION, SUCH AS WALKS, FENCES, BARRIERS, RAILINGS, OR APPROVED EQUALS WHERE REQUIRED BY AUTHORITIES HAVING JURISDICTION.
6. PROTECT EXISTING SITE IMPROVEMENTS, APPURTENANCES, AND LANDSCAPING TO REMAIN.
7. ADJACENT IMPROVEMENTS SHALL BE CLEANED OF DUST, DIRT, AND DEBRIS CAUSED BY DEMOLITION OPERATIONS. RETURN ADJACENT AREAS TO CONDITION EXISTING BEFORE START OF DEMOLITION.
8. FOR SELECTIVE DEMOLITION, USE CUTTING METHODS LEAST LIKELY TO DAMAGE CONSTRUCTION TO REMAIN OR ADJOINING CONSTRUCTION. TO MINIMIZE DISTURBANCE OF ADJACENT SURFACES, USE HAND OR SMALL POWER TOOLS DESIGNED FOR SAWING OR GRINDING, NOT HAMMERING OR CHOPPING. TEMPORARILY COVER OPENINGS TO REMAIN.
9. DEMOLISH CONCRETE IN SMALL SECTIONS. CUT CONCRETE AT JUNCTURES WITH CONSTRUCTION TO REMAIN, USING POWER-DRIVEN MASONRY SAW OR HAND TOOLS; DO NOT USE POWER-DRIVEN IMPACT TOOLS.
10. INFORMATION SHOWN ON THE DRAWINGS AS TO THE LOCATION OF EXISTING UTILITIES HAS BEEN PREPARED FROM THE MOST RELIABLE DATA AVAILABLE TO THE ENGINEER; HOWEVER, THIS INFORMATION IS NOT GUARANTEED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE LOCATION, CHARACTER, AND DEPTH OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL ASSIST THE UTILITY COMPANIES, BY EVERY MEANS POSSIBLE, TO DETERMINE SAID LOCATIONS AND THE LOCATIONS OF RECENT ADDITIONS TO THE SYSTEMS NOT SHOWN.
11. REMOVAL, DEMOLITION, HAULING, AND DISPOSAL SHALL COMPLY WITH REGULATIONS BY F.D.E.P., E.P.A., AND ANY OTHER AUTHORITY HAVING JURISDICTION.
12. ALL EXISTING STREET LIGHTING WILL REMAIN IN PLACE AND REMAIN IN SERVICE DURING CONSTRUCTION OPERATIONS. CONTRACTOR SHALL USE CARE TO ENSURE EXISTING CONDUIT, PULLBOXES, AND CONTROL ARE NOT DAMAGED DURING DEMOLITION OPERATIONS.
13. CONTRACTOR TO PROVIDE TEMPORARY PARKING IF DRIVEWAY IS OBSTRUCTED DURING CONSTRUCTION.

EARTHWORK NOTES

1. THE CONTRACTOR'S BID FOR EARTHWORK SHALL INCLUDE THE EXCAVATION, REMOVAL AND DISPOSAL OF ALL MATERIALS, OF WHATEVER CHARACTER, WITHIN THE LIMITS OF CONSTRUCTION.
2. ALL TOPSOIL THAT IS SUITABLE FOR LANDSCAPING OR SODDING OPERATIONS MAY BE STOCKPILED NEARBY FOR SUCH USE IF APPROVED BY THE CITY.
3. WHERE MUCK, ROCK, CLAY, OR OTHER MATERIAL WITHIN THE LIMITS OF CONSTRUCTION IS UNSUITABLE IN ITS ORIGINAL POSITION THE CONTRACTOR SHALL EXCAVATE SUCH MATERIAL IN ITS ENTIRETY AND BACKFILL WITH GRANULAR MATERIAL COMPACTED TO 98% OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180, METHOD 'D'. GRANULAR BACKFILL TO BE TYPE D (COURSE ROCK BACKFILL); CRUSHED ROCK OR GRAVEL WITH 100% PASSING A 1-INCH SIEVE AND NOT MORE THAN 10% PASSING A NUMBER 4 SIEVE; OR BETTER.
4. THE CONTRACTOR SHALL MAKE HIS OWN ESTIMATE ON THE VOLUME OF MATERIAL ACTUALLY REQUIRED TO OBTAIN THE CROSS SECTIONS OR GRADES AS SHOWN ON THE PLANS.
5. THE CONTRACTOR SHALL REMOVE ALL MUCK, YIELDING MATERIAL ROOTS, VEGETATION AND OTHER DEGRADABLE MATERIAL IN ITS ENTIRETY, WITHIN THE PAVEMENT UNITS AND BELOW ALL STRUCTURES AND UTILITIES TO FULL EXCAVATED TRENCH WIDTH. SAID MATERIAL SHALL BE REPLACED WITH CLEAN ORGANIC FREE MATERIAL WITH ROCKS SMALLER THAN ONE INCH IN DIAMETER COMPACTED TO NOT LESS THAN 98% MAXIMUM DENSITY AT OPTIMUM MOISTURE. AASHTO T-180 METHOD "D" WITH MAXIMUM LIFTS OF TWELVE INCHES COMPACTED THICKNESS.
6. TRENCH BACKFILL AND COMPACTION SHALL FOLLOW THE CONTRACT SPECIFICATIONS.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING APPROPRIATE SAFETY PRECAUTIONS DURING EXCAVATION AND TRENCHING OPERATIONS AS REQUIRED BY THE "TRENCH SAFETY ACT".
8. THIS WORK SHALL INCLUDE THE EXCAVATION OF WHATEVER SUBSTANCES THAT SHALL BE ENCOUNTERED TO THE DEPTHS AS SHOWN ON THE PLANS. EXCAVATED MATERIALS NOT REQUIRED FOR FILL OR BACKFILL SHALL BE REMOVED FROM THE WORK SITE AS DIRECTED BY THE ENGINEER AND SHALL BE CONSIDERED TO BE A PART OF THE BID PRICE OF THE UTILITY PIPE FOR WHICH EXCAVATION AND BACKFILL IS REQUIRED.
9. WATER SHALL NOT BE PERMITTED TO ACCUMULATE IN THE EXCAVATED AREA. IT SHALL BE REMOVED BY PUMPING OR OTHER MEANS AS APPROVED BY THE ENGINEER. THE REMOVAL OF WATER SHALL BE CONSIDERED TO BE A PART OF THE BID PRICE OF THE UTILITY PIPE FOR WHICH EXCAVATION AND BACKFILL IS REQUIRED. CONTRACTOR TO OBTAIN DEWATERING PERMITS FROM APPLICABLE JURISDICTIONAL AGENCIES (SFWMD, ETC.) IF REQUIRED.
10. IF THE BOTTOM OF THE TRENCH IS ROCK, THE EXCAVATION SHALL BE CARRIED EIGHT INCHES BELOW THE INVERT OF THE PIPE AND BACKFILLED WITH THOROUGHLY COMPACTED SAND, GRAVEL, OR OTHER SUITABLE MATERIAL APPROVED BY THE ENGINEER.
11. ROCK EXCAVATION SHALL INCLUDE ANY ROCK ENCOUNTERED WHICH CANNOT BE REMOVED WITH A 3/4 YARD BACKHOE UNDER NORMAL OPERATING CONDITIONS. ROCK EXCAVATION SHALL BE INCIDENTAL TO CONSTRUCTION OF ALL PIPING SYSTEMS AND NO SEPARATE PAYMENT WILL BE MADE.
12. WHENEVER IT IS NECESSARY, IN THE INTEREST OF SAFETY, TO BRACE OR SHORE THE SIDES OF THE TRENCH, SUCH BRACING OR SHORING SHALL BE CONSIDERED TO BE PART OF THE BID PRICE OF UTILITY PIPE FOR WHICH EXCAVATION AND BACKFILL IS REQUIRED.
13. THE CONTRACTOR SHALL FURNISH, PUT IN PLACE AND MAINTAIN SUCH SHEETING, BRACING, AS MAY BE REQUIRED TO SUPPORT THE SIDE OF THE EXCAVATION, AND TO PREVENT ANY MOVEMENT WHICH CAN IN ANY WAY DAMAGE THE WORK OR ENDANGER ADJACENT STRUCTURES.
14. IF FIELD CONDITIONS, TYPE OF SHEETING OR CONSTRUCTION METHODS MAKE REMOVAL OF SHEETING IMPRACTICABLE, AT NO ADDITIONAL COST TO THE OWNER, THE CONTRACTOR MAY LEAVE ALL SHEETING IN PLACE. THE ENGINEER MAY REQUIRE SHEETING TO BE CUT OFF AT ANY SPECIFIED ELEVATION BUT IN NO CASE WILL ANY SHEETING BE LEFT CLOSER THAN TWO (2) FEET BELOW THE NATURAL SURFACE, NOR CUT OFF BELOW THE ELEVATION OF THE TOP OF THE PIPE.
15. AFTER PIPES, STRUCTURES, AND OTHER APPURTENANCES HAVE BEEN INSTALLED, THE TRENCH OR OPENING SHALL BE BACKFILLED WITH MATERIAL IN CONFORMANCE WITH THE SPECIFICATION.
16. IN AREAS WHERE PAVEMENTS ARE TO BE CONSTRUCTED OVER THE PIPE. THE REMAINDER OF THE TRENCH SHALL BE PLACED IN SIX INCH LAYERS (COMPACTED THICKNESS) AND SHALL BE COMPACTED TO 98 PERCENT OF MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180. CONTRACTOR WILL BE RESPONSIBLE FOR CORRECTING DAMAGE FROM SETTLEMENT IN THE BACKFILLED AREAS WHETHER UNDER THE PAVEMENT OR OTHERWISE.
17. IN AREAS WHERE NO PAVEMENT IS TO BE CONSTRUCTED, THE BACKFILL ABOVE THE TWELVE INCH LINE ABOVE THE PIPE SHALL BE COMPACTED TO A FIRMNESS APPROXIMATELY EQUAL TO THAT OF THE SOIL ADJACENT TO THE PIPE TRENCH.
18. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING REQUIRED SAFETY BARRIER AND PROTECTIVE STEEL PLATE COVERINGS FOR OPEN TRENCHES.
19. SOIL BORING INFORMATION WILL BE PROVIDED TO THE CONTRACTOR. THE SOIL BORING DATA PROVIDED IS FOR THE CONTRACTOR'S INFORMATION. THE ENGINEER DOES NOT MAKE ANY REPRESENTATION REGARDING EXISTING SUBSOIL CONDITIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PERFORM ADDITIONAL SOIL BORINGS TO VERIFY THE LIMITS OF UNSUITABLE MATERIAL ON-SITE.
20. SEE SOILS EVALUATION OF THE PROJECT AREA ON GEOTECHNICAL INVESTIGATION REPORT PERFORMED BY NUTTING ENGINEERS OF FLORIDA, INC, SEPTEMBER 2020.

STORMWATER NOTES

1. LIFT HOLES THROUGH PRECAST STRUCTURES ARE NOT PERMITTED.
2. ALL CEMENT USED ON DRAINAGE STRUCTURES SHALL BE A TYPE II PORTLAND CEMENT, CONFORMING TO ASTM SPECIFICATION C-150 AASHTO DESIGNATION M-85.
3. UNLESS OTHERWISE SPECIFIED ON THE PLANS, STRUCTURES SHALL BE PRECAST CONCRETE SECTIONS.
4. MORTAR FOR USE IN CONSTRUCTION AND PLASTERING STRUCTURES SHALL CONFORM TO ASTM C-270 SPECIFICATIONS FOR MORTAR FOR UNIT MASONRY. A PORTLAND CEMENT HYDRATED LIME MIXTURE OR A MASONRY CEMENT MAY BE USED PROVIDED THAT THE SAME MATERIALS ARE USED THROUGHOUT THE PROJECT.
5. MORTAR MATERIALS SHALL BE PROPORTIONED BY VOLUME AND SHALL CONSIST OF ONE PART TYPE II PORTLAND CEMENT TO TWO PARTS AGGREGATE (SAND). PORTLAND CEMENT SHALL CONFORM TO ASTM C-150, "SPECIFICATIONS FOR PORTLAND CEMENT", AGGREGATE SHALL CONFORM TO ASTM C-144 "SPECIFICATIONS FOR AGGREGATE FOR MASONRY UNITS".
6. PRECAST MANHOLE SECTIONS SHALL CONFORM TO ASTM C-478, SPECIFICATIONS FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS AS MODIFIED THERETO. CONCRETE SHALL ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS. MINIMUM WALL THICKNESS SHALL BE 8 INCHES AND MINIMUM INSIDE DIAMETER SHALL BE 48 INCHES. THE INSIDE OF ALL STRUCTURES SHALL BEAR THE APPROVAL OF A CERTIFIED TESTING LABORATORY WHEN DELIVERED TO THE JOB SITE.
7. ALL PIPE SHALL BE CAREFULLY LAID, TRUE TO THE LINES AND GRADES GIVEN. ANY PIPE THAT IS NOT IN TRUE ALIGNMENT OR WHICH SHOWS ANY SETTLEMENT AFTER INSTALLATION SHALL BE RE-INSTALLED AT NO ADDITIONAL COST TO THE CITY.
8. THE BASE AND WALLS THAT COMPOSE THE BOTTOM SECTION OF THE PRECAST STRUCTURES SHALL BE OF MONOLITHIC CONSTRUCTION, 8 INCHES THICK AND THE EDGE OF THE BASE SLAB SHALL PROJECT A MINIMUM 4 INCHES BEYOND THE OUTSIDE DIAMETER OF THE WALL.
9. HOLES FOR PIPING SHALL BE MIN. 6 INCHES LARGER THAN THE OUTSIDE DIAMETER OF THE RESPECTIVE PIPES. AFTER THE PIPE IS SET, THE VOID SPACE BETWEEN THE PIPE AND THE HOLE PERIMETER SHALL BE COMPLETELY FILLED WITH NON-SHRINKING, QUICK-SETTING, WATERPROOF CEMENT MORTAR AND STRUCK SMOOTH.
10. THE MINIMUM HEIGHT OF PRECAST BASE SECTION SHALL BE 36 INCHES FROM THE BOTTOM OF THE BASE SLAB; HOWEVER, NO HOLES FOR PIPING SHALL BE CAST LESS THAN 8 INCHES FROM THE TOP OF THE BASE SECTION OR LESS THAN 2 INCHES ABOVE THE TOP OF THE BASE SLAB.
11. THE CONTRACTOR SHALL FURNISH THE ENGINEER SHOP DRAWINGS OF THE PRECAST STRUCTURES (AND CERTIFICATION FROM A TESTING LABORATORY) FOR APPROVAL. SHOP DRAWINGS SHOULD ILLUSTRATE ALL DIMENSIONS, REINFORCEMENT, AND SPECIFICATIONS FOR THE COMPLETE STRUCTURE.
12. ALL CASTING SHALL BE TRUE TO PATTERN AND DIMENSIONS, FREE FROM FAULTS OR DEFECTS AND WELL CLEANED.
13. BEARING SURFACES BETWEEN CAST FRAMES, COVERS AND GRATES SHALL BE MACHINED AND FITTED TOGETHER TO ASSURE A TRUE AND EVEN FIT. WITHIN AREAS OF VEHICULAR TRAFFIC THE FRAMES, COVERS AND GRATING SHALL BE MACHINE-GROUND SO THAT IRREGULARITY OF CONTACT WILL BE REDUCED TO A MINIMUM AND WILL BE RATTLE PROOF.
14. CONTRACTOR IS TO PREVENT INTRODUCTION OF DEBRIS OR DIRT INTO EXISTING STORM DRAINAGE AND/OR SANITARY SEWER SYSTEM AS A RESULT OF CONSTRUCTION ACTIVITIES. ALL LINES AND STRUCTURES SHALL BE CLEANED PRIOR TO FINAL INSPECTION AND ACCEPTANCE.
15. LOCATION OF DRAINAGE STRUCTURES GOVERN. ADJUST PIPE LENGTHS AS REQUIRED.
16. WALL REINFORCEMENT AND THICKNESS FOR PRECAST STRUCTURES SHALL BE IN ACCORDANCE WITH ASTM C-478.
17. ALL STRUCTURES SHALL BE SET PLUMB TO LINE AND GRADE AND SHALL REST ON A FIRM CAREFULLY GRADED SUB GRADE WHICH SHALL PROVIDE UNIFORM BEARING UNDER BASE.
18. PIPE BEDDING SHALL BE SAND, GRAVELLY SAND, OR 1-INCH MINUS CRUSHED LIMESTONE, NOT MORE THAN 10% OF WHICH PASSES A NO. 200 SIEVE.
19. CONTRACTOR TO WRAP ALL PIPE JOINTS AND PIPE CONNECTIONS TO STRUCTURES WITH APPROVED FILTER FABRIC.
20. SHOP DRAWINGS FOR ALL STRUCTURES AND MATERIALS TO BE USED ON THE PROJECT SHALL BE SUBMITTED TO THE RESPECTIVE ENGINEERING AND UTILITY DEPARTMENTS FOR APPROVAL PRIOR TO CONSTRUCTION OR INSTALLATION.
21. PROTECT COMPLETED DRAINAGE STRUCTURES FROM CONTAMINATION BY SILT AND CONSTRUCTION DEBRIS. PLACE FILTER FABRIC BETWEEN THE FRAME AND INLET GRATE UNTIL SITE CONSTRUCTION OPERATIONS ARE FINISHED.
22. CONTRACTOR SHALL INSPECT AND CLEAN ALL EXISTING STRUCTURES AND PIPES WITHIN THE PROJECT LIMITS. IF EXISTING STRUCTURES AND PIPES ARE DAMAGED, CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO CONNECTION WITH THE NEW PIPE OR STRUCTURE. CONTRACTOR TO ENSURE ALL STORM WATER PIPING AND STRUCTURES ARE CLEANED PRIOR TO PROJECT CLOSEOUT.
23. ADJUST ALL EXISTING STRUCTURES TO NEW GRADE ELEVATIONS.
24. ALL DRAINAGE CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF POMPANO BEACH.
25. CATCH BASINS, SEEPAGE DRAINS, PAVEMENT RESTORATION AND PAVEMENT AROUND CATCH BASINS TO BE ACCORDING TO THE DETAILS AND APPLICABLE REQUIREMENTS OF THE CITY OF POMPANO BEACH PUBLIC WORKS DEPARTMENT.
26. PIPE MATERIAL SUBSTITUTIONS MUST BE APPROVED BY THE CITY OF POMPANO BEACH. NO CHANGES TO PIPE TYPE WILL BE ALLOWED ON ANY PIPE RUNS WITH GREATER OR LESS THAN AN ANGLE OF 90 DEGREES.

PAVEMENT MARKINGS AND SIGNAGE

1. ALL PAVEMENT MARKINGS SHALL BE THERMOPLASTIC AND IN COMPLIANCE WITH BROWARD COUNTY TRAFFIC ENGINEERING DIVISION.
2. ALL EXISTING MARKINGS IN CONFLICT WITH THE PROPOSED DESIGN SHALL BE REMOVED.
3. TRAFFIC SIGNS:
   A. MATERIALS: FOLLOW SECTION 700 OF THE FDOT "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION," LATEST EDITION; AND THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) BY THE U.S. DEPARTMENT OF TRANSPORTATION, LATEST EDITION.
   B. PLACEMENT: IN ACCORDANCE WITH PART 2 OF THE MUTCD.
4. ALL TRAFFIC CONTROL SIGNAGE, EQUIPMENT AND MATERIALS TO BE APPROVED BY BROWARD COUNTY TRAFFIC ENGINEERING DIVISION.
5. BIDIRECTIONAL BLUE/BLUE REFLECTIVE PAVEMENT MARKERS (RPMS) SHALL BE PLACED WITHIN THE ROADWAY IN THE FRONT OF ALL EXISTING FIRE HYDRANTS. THESE RPMS SHALL BE PLACED IN THE MIDDLE OF THE TRAVEL LANE ON THE SIDE OF THE ROAD CLOSES TO THE FIRE HYDRANT.
6. BIDIRECTIONAL RED/RED REFLECTIVE PAVEMENT MARKERS (RPMS) SHALL BE PLACED WITHIN THE ROADWAY IN THE FRONT OF ALL EXISTING FIRE DEPARTMENT CONNECTIONS (FDC). THESE RPMS SHALL BE PLACED IN THE MIDDLE OF THE TRAVEL LANE ON THE SIDE OF THE ROAD CLOSES TO THE FIRE HYDRANT.

AS-BUILT DRAWINGS

1. CONTRACTOR TO SUBMIT AS-BUILT DRAWINGS TO THE CITY OF POMPANO BEACH FOR REVIEW AND APPROVAL. AS-BUILT SHALL FOLLOW THE 2019 DIGITAL RECORD DRAWING STANDARDS AND REQUIREMENTS.
2. FINAL AS-BUILT DRAWINGS TO BE SUBMITTED TO THE CITY OF POMPANO BEACH IN THE FOLLOWING FORMAT:
   - SIX (6) SIGNED AND SEALED HARD COPIES
   - ONE (1) ELECTRONIC FILE (PDF, CAD)

PAVING AND GRADING NOTES

1. UNDERGROUND UTILITIES SHALL BE COMPLETED OR SLEEVING PROVIDED BEFORE ANY PAVEMENT CONSTRUCTION BEGINS.
2. ALL PAVEMENT SUBGRADE MATERIAL SHALL BE COMPACTED TO 98% MAXIMUM DENSITY AT OPTIMUM MOISTURE, AASHTO T-180, METHOD "D" AND SHALL CONFORM TO THE REQUIREMENTS OF F.D.O.T. SPECIFICATIONS, SECTION 120. THE TEST RESULTS SHALL BE ACCEPTED BY THE CITY PRIOR TO PLACEMENT OF BASE MATERIAL.
3. IF THE PLANS INDICATE A LIMEROCK BASE, THE CONSTRUCTION AND THE MATERIAL FOR THE SHELLROCK BASE SHALL CONFORM TO THE REQUIREMENTS OF F.D.O.T. SPECIFICATIONS, SECTION 230. THE SHELLROCK BASE SHALL BE COMPACTED TO 98% MAXIMUM DENSITY AT OPTIMUM MOISTURE. AASHTO T-180, METHOD "D". THE ENGINEER SHALL SPECIFY THE LOCATION AND NUMBER OF DENSITY TESTS REQUIRED. CITY PUBLIC WORKS DEPARTMENT STANDARDS REQUIRE DENSITY TESTS AT 100' O.C. THE TEST RESULTS SHALL BE ACCEPTED BY THE CITY AND ENGINEER PRIOR TO APPLICATION OF THE PRIME AND TACK COATS.
4. THE PRIME AND TACK COAT CONSTRUCTION AND MATERIALS FOR THE PRIME AND TACK COATS SHALL CONFORM TO THE REQUIREMENTS OF F.D.O.T. STANDARD SPECIFICATIONS, SECTION 300. THE PRIME AND TACK COATS SHALL BE APPLIED PRIOR TO CONSTRUCTION OF THE ASPHALT SURFACE COURSE AND SHALL BE SANDED AND ROLLED IN ACCORDANCE WITH SECTION 300. APPLICATION RATES SHALL BE 0.15 GAL/SY FOR LIMEROCK BASE AND 0.25 GAL/SY FOR SHELLROCK BASE.
5. ASPHALTIC CONCRETE SURFACE COURSE SHALL BE AS SHOWN ON THE PLANS. THE MATERIALS FOR THE ASPHALT CONCRETE SURFACE COURSE SHALL CONFORM TO THE REQUIREMENTS OF F.D.O.T. STANDARD SPECIFICATIONS, SECTION 331. ASPHALT SURFACE TO BE PLACED IN TWO LIFTS. FIRST LIFT, SP12.5, 1.5 INCHES, SECOND LIFT, FC9.5, 1 INCH OR APPROVED EQUALS.
6. THE MATERIAL TO BE USED AS A STABILIZER SHALL BE SOIL OF HIGH BEARING VALUE SUCH AS, SAND-CLAY, GROUND LIMESTONE, CRUSHED LIMEROCK, OYSTER SHELL, COQUINA SHELL, ROCK SCREENINGS, OR ANY OTHER MATERIAL WHICH IS SUITABLE FOR STABILIZATION. MUCK SHALL NOT BE USED AS STABILIZING MATERIAL.
7. ALL GRADES SHOWN REFER TO FINISHED ASPHALT PAVEMENT UNLESS OTHERWISE NOTED.
8. MATERIAL HAVING A PLASTICITY INDEX AT MORE THAN 10 OR A LIQUID LIMIT GREATER THAN 40 SHALL NOT BE USED. ALL MATERIAL USED FOR STABILIZING THE ROADBED SHALL PASS A 3-1/2 INCH RING.
9. WHERE THE BEARING VALUE OF THE EXISTING SUBGRADE IS ADEQUATE WITHOUT ADDITION OF STABILIZING MATERIAL, THE SUBGRADE SHALL BE SCARIFIED AND DICED, HARROWED, BLADED, OR TILLED FOR REMOVAL OF BOULDERS, ROOTS, ETC. TO ASSURE UNIFORMITY AND THOROUGH MIXING OF MATERIAL TO THE FULL WIDTH AND DEPTH OF REQUIRED STABILIZATION. THE COMPACTED SUBGRADE SHALL CONFORM TO THE LINES, GRADES AND CROSS-SECTION SHOWN ON THE PLANS.
10. CONTRACTOR SHALL SAW CUT EXISTING PAVEMENT AT THE LIMITS OF REMOVAL OF EXISTING PAVEMENT AND WHERE NEW PAVEMENT CONSTRUCTION MEETS EXISTING PAVEMENT. MEET AND MATCH SHALL ALSO MEAN SAW CUT AND MATCH.
11. THE SUBGRADE TO BE STABILIZED MAY BE PROCESSED IN ONE COURSE, UNLESS THE EQUIPMENT AND METHODS BEING USED DO NOT PROVIDE THE REQUIRED UNIFORMITY, PARTICLE SIZE LIMITATION, COMPACTION AND OTHER DESIGNED RESULTS IN WHICH CASE, THE CITY WILL DIRECT THAT THE PROCESSING BE DONE IN MORE THAN ONE COURSE.
12. PRIOR TO THE BEGINNING OF STABILIZING OPERATIONS, THE AREA TO BE STABILIZED SHALL HAVE BEEN CONSTRUCTED TO AN ELEVATION SUCH THAT UPON COMPLETION OF STABILIZING OPERATIONS, THE COMPLETED STABILIZED SUBGRADE SHALL CONFORM TO THE LINES, GRADES AND CROSS-SECTION SHOWN IN THE PLANS, PRIOR TO THE SPREADING OF ANY ADDITIVE STABILIZING MATERIAL THE SURFACE OF THE ROADBED SHALL BE BROUGHT TO A PLACE APPROXIMATELY PARALLEL TO THE PLANE OF THE PROPOSED FINISHED SURFACE.
13. THE STABILIZING MATERIAL SHALL BE APPLIED IN SUCH QUANTITY AS IS NECESSARY TO PRODUCE THE REQUIRED BEARING VALUE. IT SHALL BE INCORPORATED WITH THE SUBGRADE BY FLOWING, DICING, HARROWING, BLADING OR MIXING WITH ROTARY TILLERS UNTIL THE MIXED MATERIALS ARE OF A UNIFORM BEARING VALUE FOR THE FULL WIDTH AND DEPTH OF THE COURSE BEFORE COMPACTION, REGARDLESS OF THE CHARACTER OR BEARING VALUE. ALL MATERIALS IN THE STABILIZING COURSE THAT WILL NOT PASS A 3-1/2" RING SHALL BE REMOVED OR BROKEN DOWN TO A SIZE NOT LARGER THAN 3-1/2 INCHES
14. COMPACTION SHALL BE ACCOMPLISHED BY ROLLING WITH ANY TYPE OF EQUIPMENT WHICH WILL PRODUCE THE REQUIRED DENSITY. COMPACTION SHALL CONTINUE UNTIL THE ENTIRE DEPTH TO BE STABILIZED HAS A DENSITY OF NOT LESS THAN 98 PERCENT OF THE MAXIMUM DENSITY IN ACCORDANCE WITH AASHTO T-180, FIELD DENSITY TESTS SHALL BE MADE AT INTERVALS NOT GREATER THAN 100 FEET IN EACH COURSE OR LAYER.
15. THE LIMEROCK SHALL BE TRANSPORTED TO THE POINT WHERE IT IS TO BE USED OVER BASE PREVIOUSLY PLACED, IF PRACTICABLE, AND DUMPED ON THE END OF THE PROCEEDING SPREAD, HAULING OVER THE SUBGRADE AND DUMPING ON THE SUB GRADE WILL BE PERMITTED ONLY WHEN IN THE CITYS OPINION THESE OPERATIONS WILL NOT BE DETRIMENTAL TO THE BASE.
16. THE LIMEROCK SHALL BE SPREAD UNIFORMLY, WITH EQUIPMENT ACCEPTABLE TO THE ENGINEER, ALL SEGREGATED OR OTHERWISE UNACCEPTABLE AREAS SHALL BE REMOVED AND REPLACED WITH PROPERLY GRADED ROCK, AFTER SPREADING IS COMPLETED, THE ENTIRE SURFACE SHALL BE SCARIFIED AND THEN SHAPED SO AS TO PRODUCE THE REQUIRED GRADE, THICKNESS AND CROSS-SECTION AFTER COMPACTION. LIFTS SHALL HAVE A MAXIMUM COMPACTED THICKNESS OF SIX INCHES.
17. COMPACTION SHALL BE ACCOMPLISHED AT OPTIMUM MOISTURE. WHEN THE MATERIAL DOES NOT HAVE THE PROPER MOISTURE CONTENT TO ENSURE THE REQUIRED DENSITY, WETTING OR DRYING WILL BE REQUIRED. ADDED WATER SHALL BE UNIFORMLY MIXED TO THE FULL DEPTH OF THE COURSE WHICH IS BEING COMPACTED.
18. BEFORE ANY BITUMINOUS MATERIAL IS APPLIED, ALL LOOSE MATERIAL, DUST, DIRT, CAKED SLAY AND FOREIGN MATERIAL WHICH MIGHT PREVENT PROPER BOND WITH EXISTING SURFACE SHALL BE REMOVED FOR THE FULL WIDTH OF THE APPLICATION, PARTICULAR CARE SHALL BE TAKEN TO CLEAN THE OUTER EDGE OF THE STRIP TO BE TREATED IN ORDER TO ENSURE THAT THE PRIMER WILL ADHERE, WHERE THE PRIMER IS APPLIED ADJACENT TO CURB & GUTTER OR VALLEY GUTTER, SUCH CONCRETE SURFACES ARE TO BE PROTECTED AND KEPT FREE OF BITUMINOUS MATERIAL.
19. NO BITUMINOUS MATERIAL SHALL BE APPLIED WHEN THE TEMPERATURE OF THE AIR IS LESS THAN 40 DEGREES F IN THE SHADE AND FALLING, OR WHEN IN THE OPINION OF THE CITY, THE WEATHER CONDITIONS OR THE CONDITION OF THE EXISTING SURFACE IS UNSUITABLE.
20. THE SURFACE TO BE PRIMED SHALL BE CLEAN AND DRY FOR LIMEROCK BASES. THE GLAZED FINISH SHALL BE REMOVED BEFORE THE APPLICATION OF PRIME COAT.
21. WHERE NEW PAVEMENT MEETS EXISTING, CONNECTION SHALL BE MADE IN A NEAT STRAIGHT LINE AND FLUSH WITH **EXISTING PAVEMENT.**
22. ALL EXISTING UTILITY MH COVERS, ELECTRICAL BOXES, METER BOXES, METERS, DRAINAGE STRUCTURES, ETC. WITHIN PROPOSED AREAS OF IMPROVEMENTS SHALL BE ADJUSTED TO GRADE ELEVATION, UNLESS OTHERWISE NOTED.

Broward County Traffic Engineering Division Communications Notes

To be placed within plan set

"Communications Notes" **(Revised: 10/13/2015)**

The agency responsible for maintenance of the traffic signals and related equipment is Broward County Traffic Engineering Division (BCTED). All system communications equipment, cabling and related material shall comply with Broward County's latest edition of the minimum standards as expressed in the "Standards and Specifications - Communication Infrastructure" document. Please refer to (BCTED's) Communications Policies and Procedures for additional information. Broward County Traffic Engineering Division will not accept any projects that do not meet these standards and specifications. If fiber optic pull boxes already exist at an intersection, no additional fiber optic pull boxes will need to be installed. For a copy of these standards refer to the Broward County web site at www.BROWARD.ORG/TRAFFIC under publications.

If there are Copper Interconnect Cable/s within your project limits or within 1500 feet of your project limits, contact the Communications Manager at tecommunications@broward.org or 954-847-2745.

If there are Fiber Optic Cable/s within your project limits or within 1500 feet of your project limits contact the Communications Manager at tecommunications@broward.org or 954-847-2745.

If there are cellular communications within your project limits, contact the Communications Manager at tecommunications@broward.org or 954-847-2745

All BCTED communications cables/conduit shall be located a minimum of 48 hours in advance.

Broward County Traffic Engineering Division
Procedure for Notification of Communication Disruption

Copper Interconnect Cable Notification Contact Person
When communications to an intersection must be disrupted by a Contractor to perform work, the Contractor shall provide two day advance notice in writing to the Broward County Traffic Engineering Division. This notification shall be conveyed via electronic mail (email) to the Traffic Signal Technician III at tecommunications@broward.org. Notification shall include contact person, telephone number, purpose, location and duration. The disruption shall last for no more than 3 consecutive business days. Where possible, the disruption shall be during off peak hours beginning at 9:00am and ending at 3:00pm.

Fiber Optic Cable Notification Contact Person
When communications to an intersection must be disrupted by a Contractor to perform work, the Contractor shall provide two day advance notice in writing to the Broward County Traffic Engineering Division. This notification shall be conveyed via electronic mail (email) to the Communications Manager at tecommunications@broward.org. Notification shall include contact person, telephone number, purpose, location and duration. The disruption shall last for no more than 3 consecutive business days. Where possible, the disruption shall be during off peak hours beginning at 9:00am and ending at 3:00pm.

Include the following in any notice of utility ownership or within a "Utility Owners/Contact Person" table:

Interconnect Communications Cables - (Robert Blount) Broward County Traffic Engineering Division (BCTED) 954-847-2745

PERMIT SET
MUST BE ON JOBSITE AT ALL TIMES DURING CONSTRUCTION.

NOTICE INSPECTION REQUIRED 24HRS. 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:________ DATE:________
DOES NOT INCLUDE APPROVAL OF PAVEMENT MARKINGS & SIGNS

VERTICAL DATUM INFORMATION
ALL ELEVATIONS SHOWN ON THE DRAWINGS ARE BASED UPON THE NORTH AMERICAN VERTICAL DATUM OF 1988. 0.00' NAVD88 IS EQUIVALENT TO 1.57' NGVD29 IN THIS AREA.

Sunshine811
Call 811 or www.sunshine811.com two full business days before digging to have utilities located and marked.
Check positive response codes before you dig!

BID SET

cma
chen moore and associates
500 West Cypress Creek Road
Suite 630
Ft. Lauderdale, FL 33309
954.730.0707
www.chenmoore.com

REGISTRATION
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JENNIFER L. SMITH LICENSE No. 72232 STATE OF FLORIDA PROFESSIONAL ENGINEER

CLIENT
pompano beach
Florida's Warmest Welcome

PROJECT INFORMATION
NE 27 AVENUE AND NE 16 STREET STORMWATER IMPROVEMENTS
CITY OF POMPANO BEACH, FL

PROJECT NUMBER
20-092.066

CLIENT PROJECT NUMBER
19-352

VERIFY SCALES
0 ——— 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

REVISIONS

DATE OF ISSUE
5/28/2024

DESIGNED BY
JLS

DRAWN BY

CHECKED BY
JM

DRAWING TITLE
GENERAL NOTES

DRAWING NUMBER
GN-1
03 OF 93

BCTED 210505060

TOPOGRAPHIC SURVEYING

- ANCHOR
- AIR RELEASE VALVE IN MANHOLE
- ANTENNA
- BASKETBALL HOOP
- BACK FLOW PREVENTER
- BOLLARD
- CATCH BASIN
- CLEANOUT
- CONCRETE LIGHT POLE
- CONCRETE POWER POLE
- ELECTRIC CABINET
- ELECTRIC OUTLET
- ELECTRIC MARE PULL BOX
- FIBER OPTIC MARE PULL BOX
- FIRE DEPARTMENT CONNECTION
- FIRE HYDRANT
- GATE MOTOR
- FLAG POLE
- GAS METER
- GAS VALVE
- GROUND LIGHT
- GROUND ROD
- IRRIGATION VALVE
- LAMP POST
- MAIL BOX
- METAL LIGHT POLE
- SANITARY SEWER MANHOLE
- SANITARY SEWER VALVE
- SIGN ON POST
- TELEPHONE CABINET
- TELEPHONE MANHOLE
- TELEPHONE VAULT
- UNDERGROUND DRAINAGE/SEWER PIPE CONTINUES
- UTILITY MARKER
- VENT PIPE
- WATER METER
- WATER VALVE
- VALVE ASSEMBLY
- WOOD LIGHT POLE
- WOOD POWER POLE
- YARD DRAIN
- CONTROL POINT NUMBER
- SPOT ELEVATION
- TREE No. 201 (SEE TREE TABLE)
- TREE CLUSTER No. 202 (SEE TREE TABLE)
- PALM No. 203 (SEE TREE TABLE)
- PALM CLUSTER No. 204 (SEE TREE TABLE)

EXISTING STORM DRAINAGE

- EXISTING STORM DRAIN PIPE
- CATCH BASIN OR INLET GRATE
- EXISTING GUTTER INLET
- EXISTING ROUND CATCH BASIN
- EXISTING STORM MANHOLE
- EXISTING ENDWALL OR HEADWALL

DEMOLITION

- EXISTING ASPHALT TO BE REMOVED
- EXISTING ASPHALT TO BE MILLED
- CONCRETE TO BE REMOVED
- EXISTING CONCRETE DRIVEWAY TO BE REMOVED
- EXISTING SPECIALTY DRIVEWAY TO BE REMOVED
- ITEM TO BE ABANDONED
- ITEM TO BE REMOVED

PROPOSED STORM DRAINAGE

- PROPOSED ELEVATION
- PROPOSED SURFACE FLOW ARROW
- PROPOSED STORM DRAIN PIPE
- PROPOSED CATCH BASIN OR INLET
- PROPOSED MANHOLE
- PROPOSED EXFILTRATION TRENCH

RESTORATION

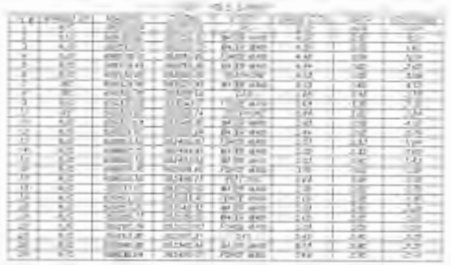
- ROAD / ASPHALT RESTORATION
- PROPOSED ASPHALT OVERLAY
- CONCRETE RESTORATION
- SPECIALTY DRIVEWAY RESTORATION
- SOD RESTORATION (CONTRACTOR TO RESTORE IRRIGATION DAMAGED BY INSTALLATION OF UTILITY IMPROVEMENTS)
- TEST HOLE LOCATION

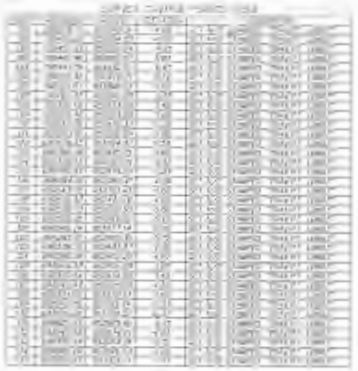
LANDSCAPING

- TREE ID TAG
- ORNAMENTAL PLANT
- EXISTING TREE OR PALM TO REMAIN
- EXISTING TREE OR PALM TO BE REMOVED
- EXISTING TREE OR PALM TO BE RELOCATED

LINE TYPES

- CENTER LINE
- RIGHT-OF-WAY LINE
- PROPERTY LINE
- EASEMENT LINE
- PROJECT BOUNDRY
- EX OE — OVERHEAD ELECTRIC LINES
- EX UE — BURIED ELECTRIC LINES
- EX CATV — CABLE TELEVISION
- EX BFO — BURIED FIBER OPTICS
- EX BT — TELEPHONE
- EX BCTEDCO — BROWARD COUNTY TRAFFIC ENGINEERING DEPARTMENT COMMUNICATIONS
- WOOD FENCE
- CHAIN LINK FENCE
- METAL FENCE





NOTES:
UTILITY DESCRIPTION, SIZE, MATERIAL AND DEPTH PER KEITH (SUBSURFACE UTILITY ENGINEERING CONSULTANT) REFER TO KEITH TEST HOLE INVENTORY REPORT FOR UTILITY SIZE, MATERIAL, DIRECTION, CROSS SECTION VIEW AND COMMENTS. GRADE ELEVATION REFERS TO THE TOP OF TEST HOLE MARKER ELEVATION
UTILITY ELEVATION REFERS TO THE ELEVATION AT THE TOP OF THE UTILITY PIPE/DUCT
N/D DENOTES NAIL & DISK K&A
IRC DENOTES ⅝ IRON ROD AND CAP STAMPED "KEITH"

REFER TO TREE DISPOSITION PLANS FOR TREE INVENTORY

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ABBREVIATIONS

ABN	-	ABANDONED
ACP	-	ASBESTOS CEMENT PIPE
ACCE	-	ACCESS EASEMENT
AE	-	ANCHOR EASEMENT
AERE	-	AERIAL EASMENT
ALUM	-	ALUMINUM
ASPH	-	ASPHALT
A & UE	-	ACCESS & UTILITY EASEMENT
AVE	-	AVENUE
BCR	-	BROWARD COUNTY RECORDS
BCHCED	-	BROWARD COUNTY HIGHWAY CONSTRUCTION ENGINEERING DIVISION
BCTED	-	BROWARD COUNTY TRAFFIC ENGINEERING DEPT
BCWWS	-	BROWARD COUNTY WATER & WASTEWATER SERVICES
BE	-	BURIED ELECTRIC
BFO	-	BURIED FIBER OPTICS
BLDG	-	BUILDING
BT	-	BURIED TELEPHONE
CATV	-	CABLE TELEVISION
CAE	-	CANAL ACCESS EASEMENT
CB	-	CATCH BASIN
CCTV	-	CLOSED CIRCUIT TELEVISION
CIP	-	CAST IRON PIPE
℄	-	CENTER LINE
CLF	-	CHAIN LINK FENCE
CME	-	CANAL MAINTENANCE EASEMENT
CMP	-	CORRUGATED METAL PIPE
CO	-	CLEAN OUT
COMM	-	COMMUNICATIONS
CONC	-	CONCRETE
CORP	-	CORPORATION
CS	-	CONTROL STRUCTURE
DCR	-	DADE COUNTY RECORDS
DE	-	DRAINAGE EASEMENT
DIAM	-	DIAMETER
DIP	-	DUCTILE IRON PIPE
DWG	-	DRAWING
DWY	-	DRIVEWAY
E	-	EAST
EL	-	ELEVATION
ELEC	-	ELECTRIC
EOP	-	EDGE OF PAVEMENT
EX	-	EXISTING
FF	-	FINISHED FLOOR
FFE	-	FINISHED FLOOR ELEVATION
FH	-	FIRE HYDRANT
FM	-	FORCE MAIN
FPL & CE	-	FLORIDA POWER & LIGHT COMPANY EASEMENT
G	-	GAS
GV	-	GATE VALVE
HDPE	-	HIGH DENSITY POLYETHYLENE
ID	-	IDENTIFICATION
IE	-	INVERT ELEVATION
IE & UE	-	INGRESS EGRESS & UTILITY EASEMENT
IEE	-	INGRESS & EGRESS EASEMENT
INSTR	-	INSTRUMENT
INV	-	INVERT
IR	-	IRRIGATION
IRC	-	IRON ROD & CAP
LB	-	LICENSED BUSINESS
LE	-	LANDSCAPE EASEMENT
LF	-	LINEAR FOOT
LGTH	-	LENGTH
MAS	-	MAINTENANCE ACCESS STRUCTURE
MAX	-	MAXIMUM
MB	-	MAIL BOX
ME	-	MAINTENANCE EASEMENT
MF	-	METAL FENCE
MH	-	MANHOLE
MIN	-	MINIMUM
MTR	-	METER
N	-	NORTH
N/D	-	NAIL & DISC
NAVD 88	-	NORTH AMERICAN VERTICAL DATUM OF 1988
NGVD	-	NATIONAL GEODETIC VERTICAL DATUM
NO	-	NUMBER
NO ID	-	NO IDENTIFIABLE SURVEY CAP OR DISC
NTS	-	NOT TO SCALE
O/H	-	OVERHEAD ELECTRIC
ORB	-	OFFICIAL RECORDS BOOK
PB	-	PLAT BOOK
PE	-	POLYETHYLENE
PF	-	PLASTIC PICKET FENCE
PG	-	PAGE
POB	-	POINT OF BEGINNING
POC	-	POINT OF COMMENCEMENT
PROP	-	PROPOSED
PSI	-	POUNDS PER SQUARE INCH
PVC	-	POLYVINYL CHLORIDE
PVMT	-	PAVEMENT
R	-	RADIUS
RCP	-	REINFORCED CONCRETE PIPE
RE	-	RIM ELEVATION
RPM	-	REFLECTIVE PAVEMENT MARKER
RT	-	RIGHT
R/W	-	RIGHT-OF-WAY
S	-	SOUTH
SAN	-	SANITARY SEWER
SD	-	STORM DRAIN
SE	-	SEWER EASEMENT
SFWMD	-	SOUTH FLORIDA WATER MANAGEMENT DEPT
SHT	-	SHEET
SQ FT	-	SQUARE FEET
ST	-	STREET
STA	-	STATION
SWK	-	SIDEWALK
TEL	-	TELEPHONE
TH	-	TEST HOLE
TOC	-	TOP OF CURB
TOP	-	TOP OF PIPE
TYP	-	TYPICAL
UE	-	UTILITY EASEMENT
UNK	-	UNKNOWN
VCP	-	VITRIFIED CLAY PIPE
W	-	WEST
WF	-	WOOD FENCE
WR	-	WHITE & RED
WM	-	WATER MAIN
WME	-	WATER MAIN EASEMENT
WTR	-	WATER
WWED	-	WASTEWATER ENGINEERING DEPARTMENT
WWS	-	WATER & WASTEWATER SERVICES

BID SET

cma
chen moore and associates
500 West Cypress Creek Road
Suite 630
Ft. Lauderdale, FL 33309
954.730.0707
www.chenmoore.com

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JENNIFER L. SMITH — LICENSE — No. 72232 — STATE OF FLORIDA — PROFESSIONAL ENGINEER

CLIENT

pompano beach
Florida's Warmest Welcome

PROJECT INFORMATION

NE 27 AVENUE AND NE 16 STREET STORMWATER IMPROVEMENTS

CITY OF POMPANO BEACH, FL

PROJECT NUMBER
20-092.066

CLIENT PROJECT NUMBER
19-352

VERIFY SCALES
0 ——— 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

REVISIONS

DATE OF ISSUE
5/28/2024

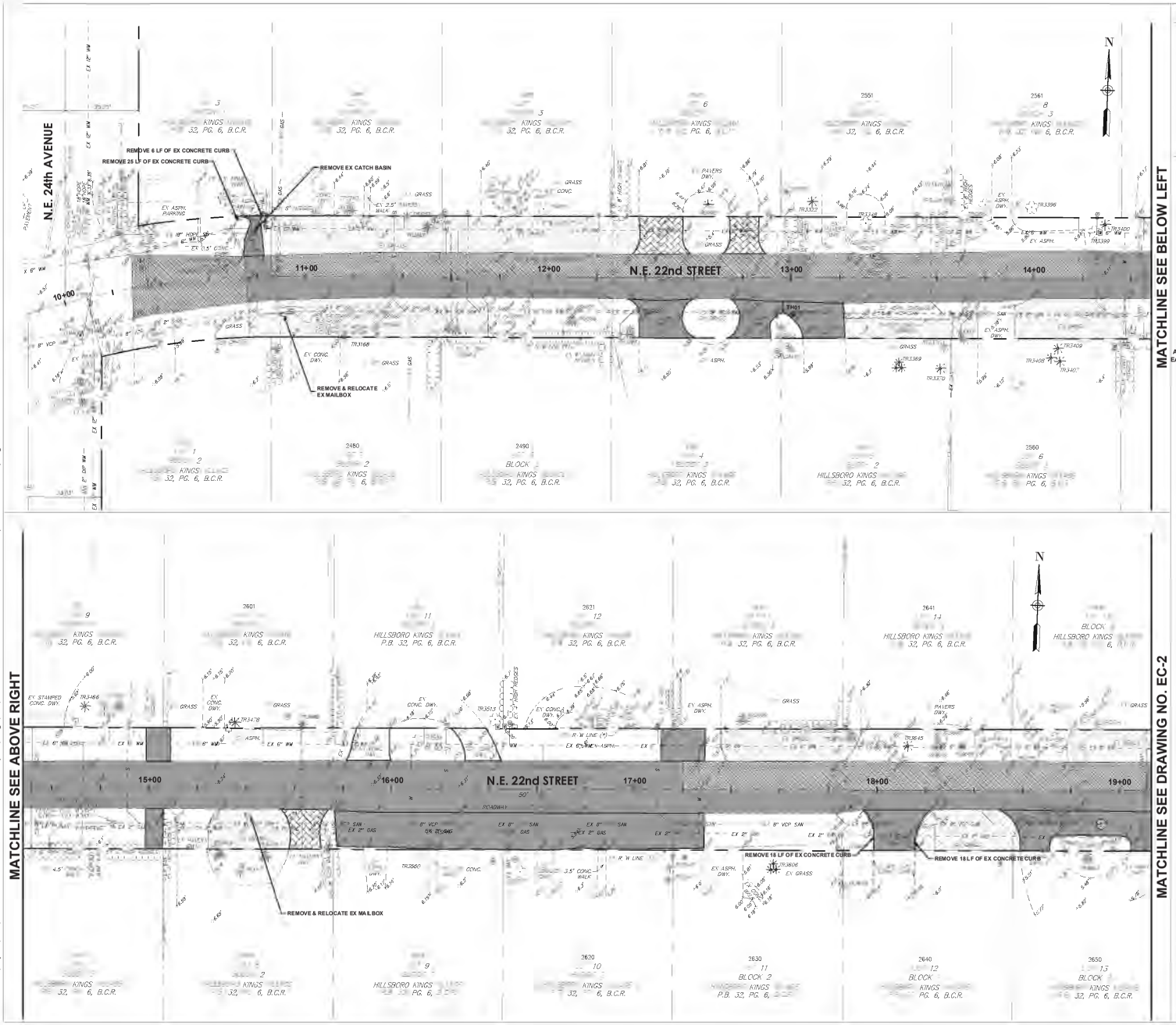
DESIGNED BY
JLS

DRAWN BY

CHECKED BY
JM

DRAWING TITLE
GENERAL NOTES

DRAWING NUMBER
GN-2
04 OF 93



BCTED 210505060

KEY MAP

N.T.S.

HATCH LEGEND

- EXISTING ASPHALT TO BE REMOVED
- EXISTING ASPHALT TO BE MILLED
- EXISTING CONCRETE TO BE REMOVED
- EXISTING SPECIALTY DRIVEWAY TO BE REMOVED
- EXISTING GRAVEL TO BE REMOVED
- EXISTING SWALES TO BE CLEARED
- ITEM TO BE REMOVED

PERMIT SET
MUST BE ON SITE AT ALL TIMES DURING CONSTRUCTION

MATERIAL
ALL MATERIAL USED AND INSTALLED WITHIN THE PUBLIC RIGHT-OF-WAY OR EASEMENTS SHALL BE IN ACCORDANCE WITH THE CITY OF POMPANO BEACH MINIMUM STANDARDS.

VERTICAL DATUM INFORMATION
ALL ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

GRAPHIC SCALE
0 10 20 40
1 INCH = 20 FEET (22"x34")
1 INCH = 40 FEET (11"x17")

TEST HOLE DATA

NO.	EX. GROUND ELEVATION (FT)	TOP OF PIPE ELEVATION (FT)	DESCRIPTION	UTILITY DIRECTION
1	5.52	UNK	2" GAS MAIN	

BID SET

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PROJECT INFORMATION

NE 27 AVENUE AND NE 16 STREET STORMWATER IMPROVEMENTS

CITY OF POMPANO BEACH, FL

PROJECT NUMBER
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5/28/2024

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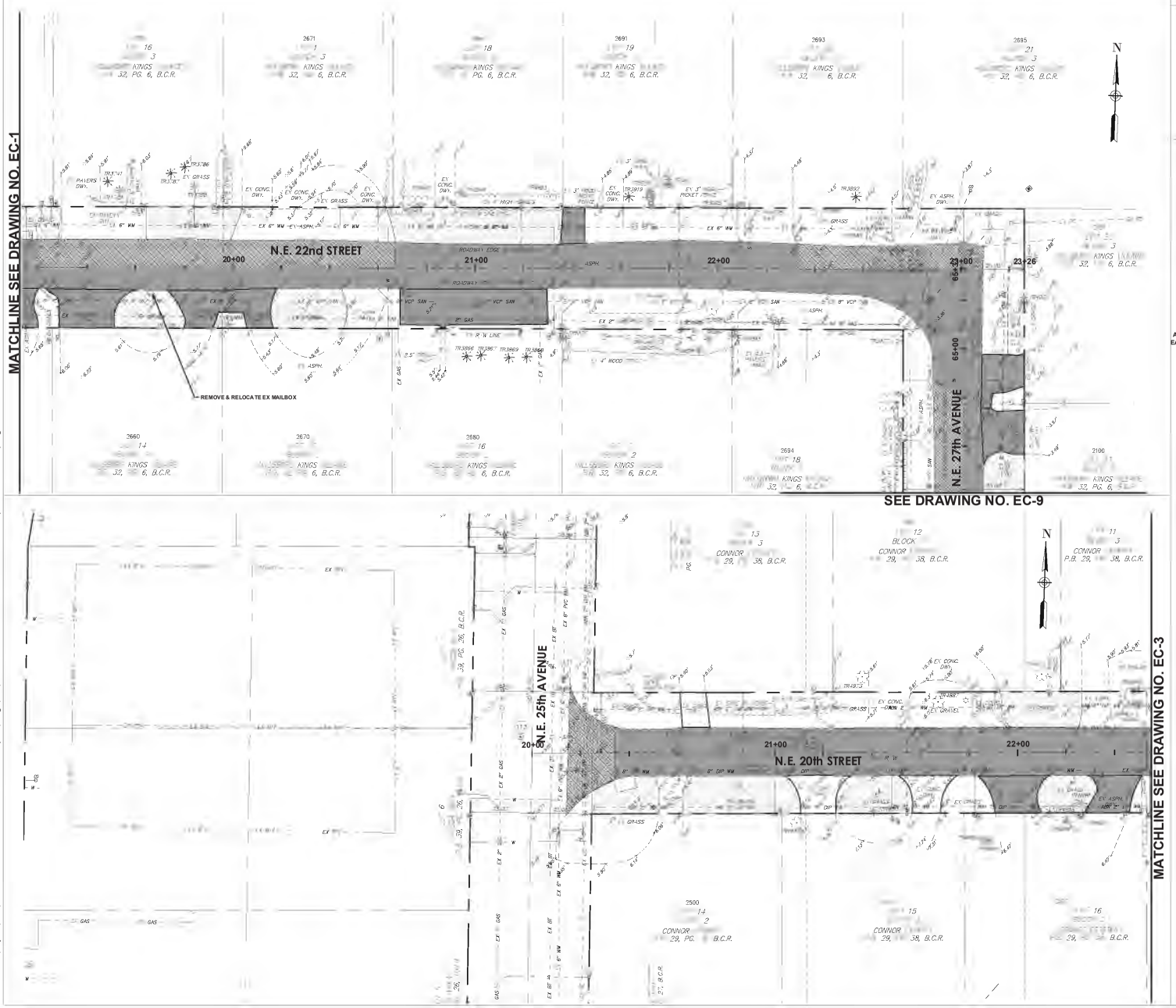
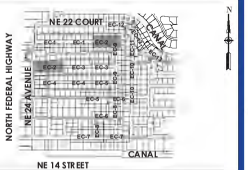
DRAWING TITLE
EXISTING CONDITIONS AND DEMOLITION PLAN

DRAWING NUMBER
EC-1
05 OF 93

Plot Date: 5/28/2024 8:11:00 AM Username: bcastro Layout Name: EC-1
Folder Path: V:\Projects\2020\20-092.066 - NE 27th Ave & NE 16 St Stormwater Improvt\Design\CAD\Sheets Filename: 20-092.066 EXISTING CONDITIONS (SHTS 1-7 AND 13-14).dwg

BCTED 210505060





KEY MAP

N.T.S.

HATCH LEGEND

- EXISTING ASPHALT TO BE REMOVED
- EXISTING ASPHALT TO BE MILLED
- EXISTING CONCRETE TO BE REMOVED
- EXISTING SPECIALTY DRIVEWAY TO BE REMOVED
- EXISTING GRAVEL TO BE REMOVED
- EXISTING SWALES TO BE CLEARED
- ITEM TO BE REMOVED

PERMIT SET
MUST BE ON SITE AT ALL TIMES DURING CONSTRUCTION

MATERIAL
ALL MATERIAL USED AND INSTALLED WITHIN THE PUBLIC RIGHT-OF-WAY OR EASEMENTS SHALL BE IN ACCORDANCE WITH THE CITY OF POMPANO BEACH MINIMUM STANDARDS.

VERTICAL DATUM INFORMATION
ALL ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

GRAPHIC SCALE
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1 INCH = 20 FEET (22"x34")
1 INCH = 40 FEET (11"x17")

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chen moore and associates
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PROJECT INFORMATION

NE 27 AVENUE AND NE 16 STREET STORMWATER IMPROVEMENTS

CITY OF POMPANO BEACH, FL

PROJECT NUMBER
20-092.066

CLIENT PROJECT NUMBER
19-352

VERIFY SCALES
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DATE OF ISSUE
5/28/2024

DESIGNED BY
JLS

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CHECKED BY
JM

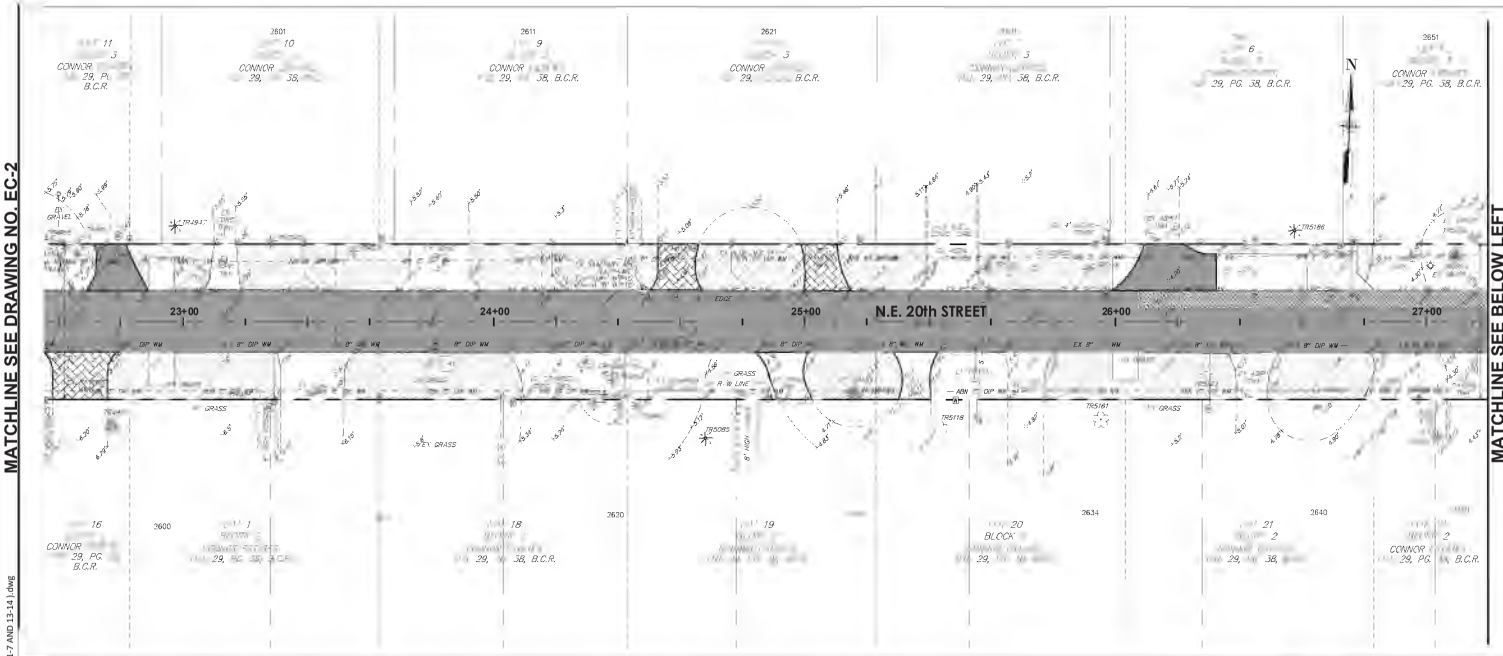
DRAWING TITLE

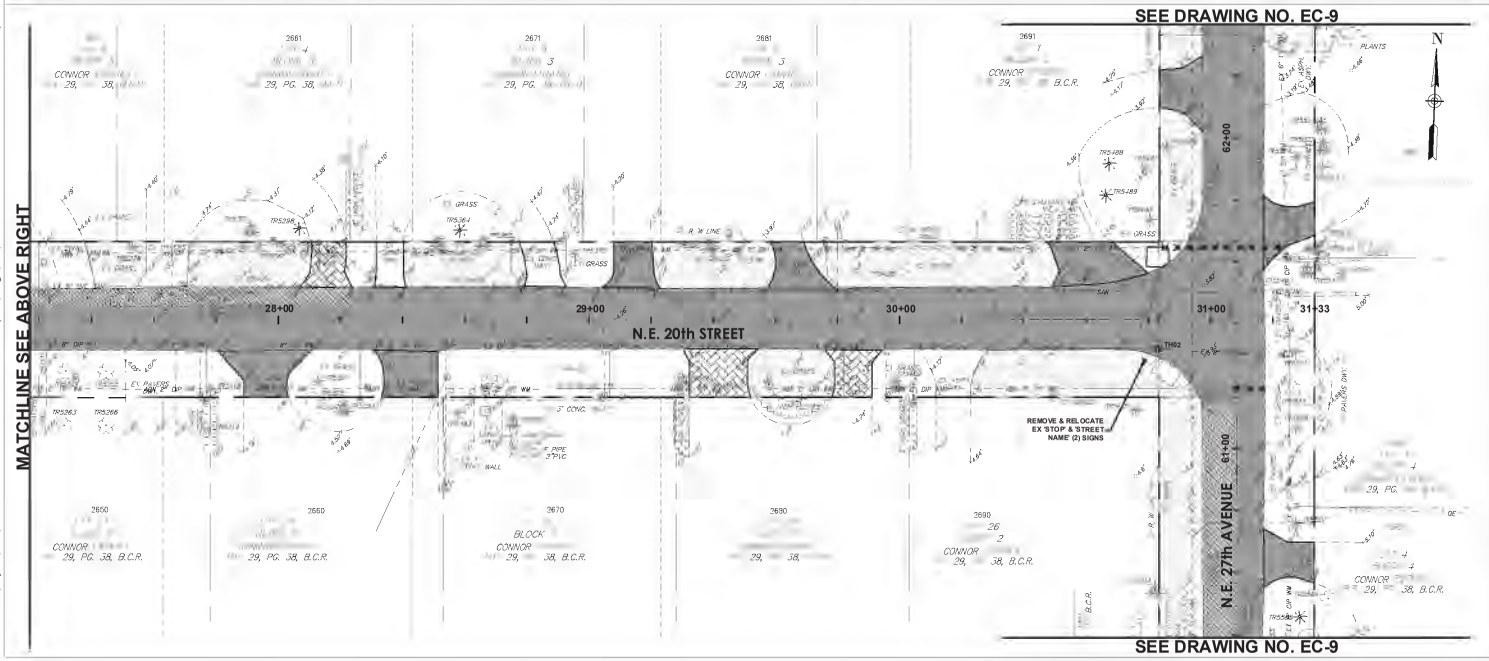
EXISTING CONDITIONS AND DEMOLITION PLAN

DRAWING NUMBER
EC-2
06 OF 93

Plot Date: 5/28/2024 8:11:15 AM Username: bcastro Layout Name: EC-2
Folder Path: V:\Projects\2020\20-092.066 - NE 27th Ave & NE 16 St Stormwater Imprmt\Design\CAD\Sheets Filename: 20-092.066 EXISTING CONDITIONS [SHTS 1-7 AND 13-14].dwg

BCTED 210505060





KEY MAP

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HATCH LEGEND

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VERTICAL DATUM INFORMATION
ALL ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

GRAPHIC SCALE
0 10 20 40
1 INCH = 20 FEET (22"x34")
1 INCH = 40 FEET (11"x17")

TEST HOLE DATA

NO.	EX. GROUND ELEVATION (FT)	TOP OF PIPE ELEVATION (FT)	DESCRIPTION	UTILITY DIRECTION
2	4.07	1.51	8" DIP WM	

BID SET

cma
chen moore and associates
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PROJECT INFORMATION

NE 27 AVENUE AND NE 16 STREET STORMWATER IMPROVEMENTS

CITY OF POMPANO BEACH, FL

PROJECT NUMBER
20-092.066

CLIENT PROJECT NUMBER
19-352

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REVISIONS

DATE OF ISSUE
5/28/2024

DESIGNED BY
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DRAWN BY

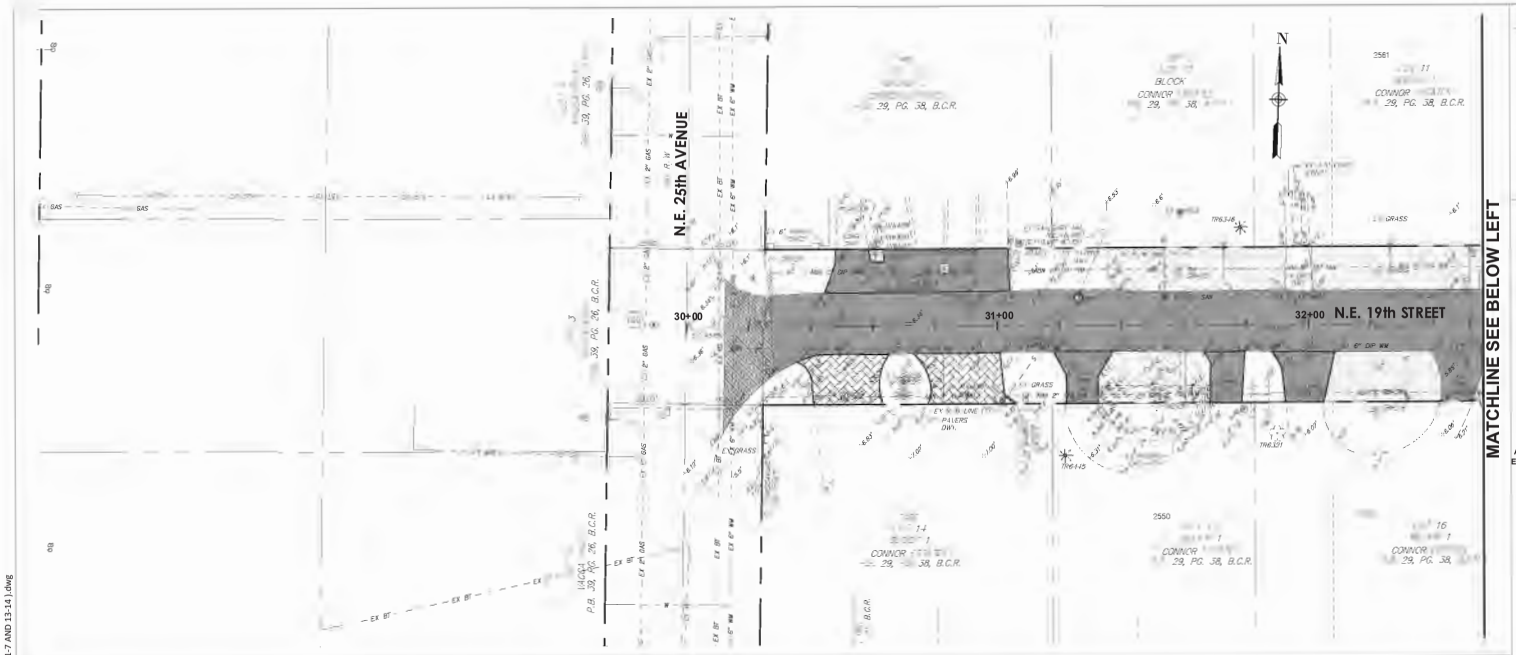
CHECKED BY
JM

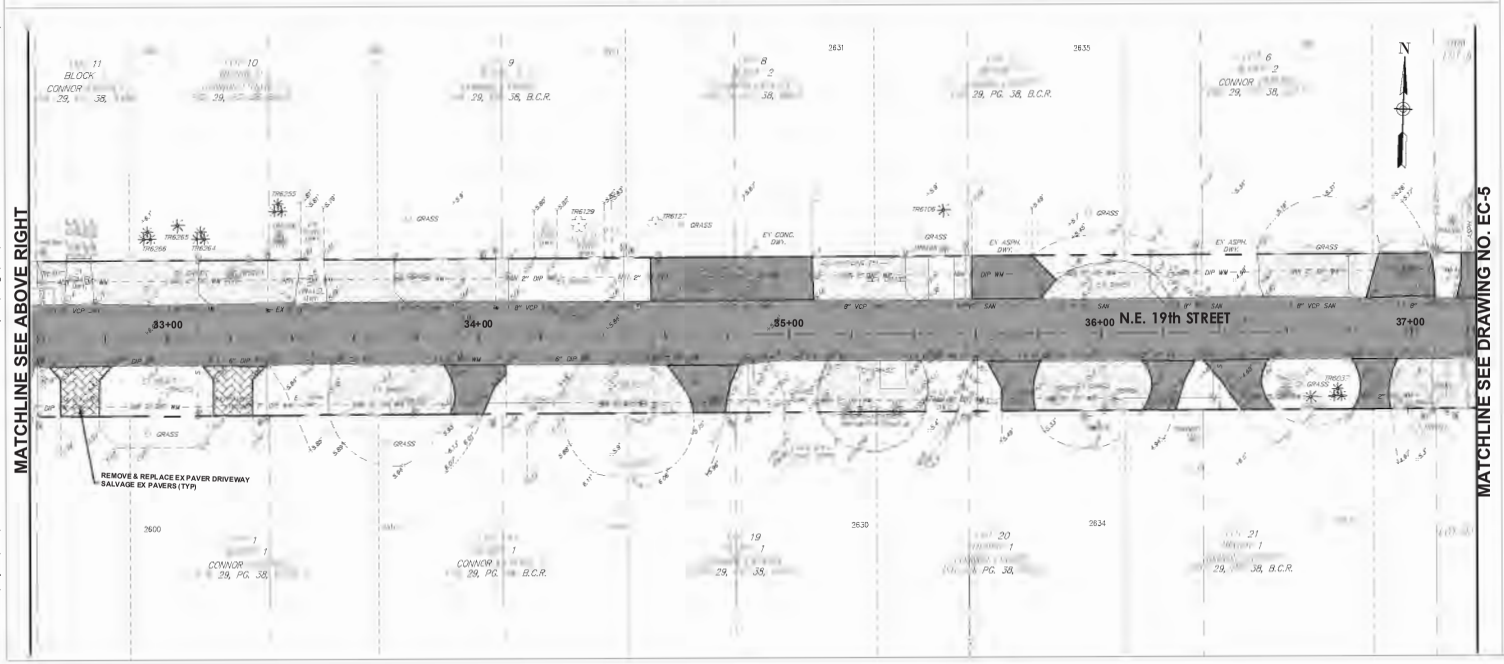
DRAWING TITLE
EXISTING CONDITIONS AND DEMOLITION PLAN

DRAWING NUMBER
EC-3
07 OF 93

Plot Date: 5/28/2024 8:11:30 AM Username: bcastro Layout Name: EC-3
Folder Path: V:\Projects\2020\20-092.066 - NE 27th Ave & NE 16 St Stormwater Imprmt\Design\CAD\Sheets Filename: 20-092.066 EXISTING CONDITIONS (SHTS 1-7 AND 13-14).dwg

BCTED 210505060





KEY MAP
N.T.S.

HATCH LEGEND

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- EXISTING ASPHALT TO BE MILLED
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- EXISTING GRAVEL TO BE REMOVED
- EXISTING SWALES TO BE CLEARED
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GRAPHIC SCALE
0 10 20 40
1 INCH = 20 FEET (22"x34")
1 INCH = 40 FEET (11"x17")

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NE 27 AVENUE AND NE 16 STREET STORMWATER IMPROVEMENTS
CITY OF POMPANO BEACH, FL

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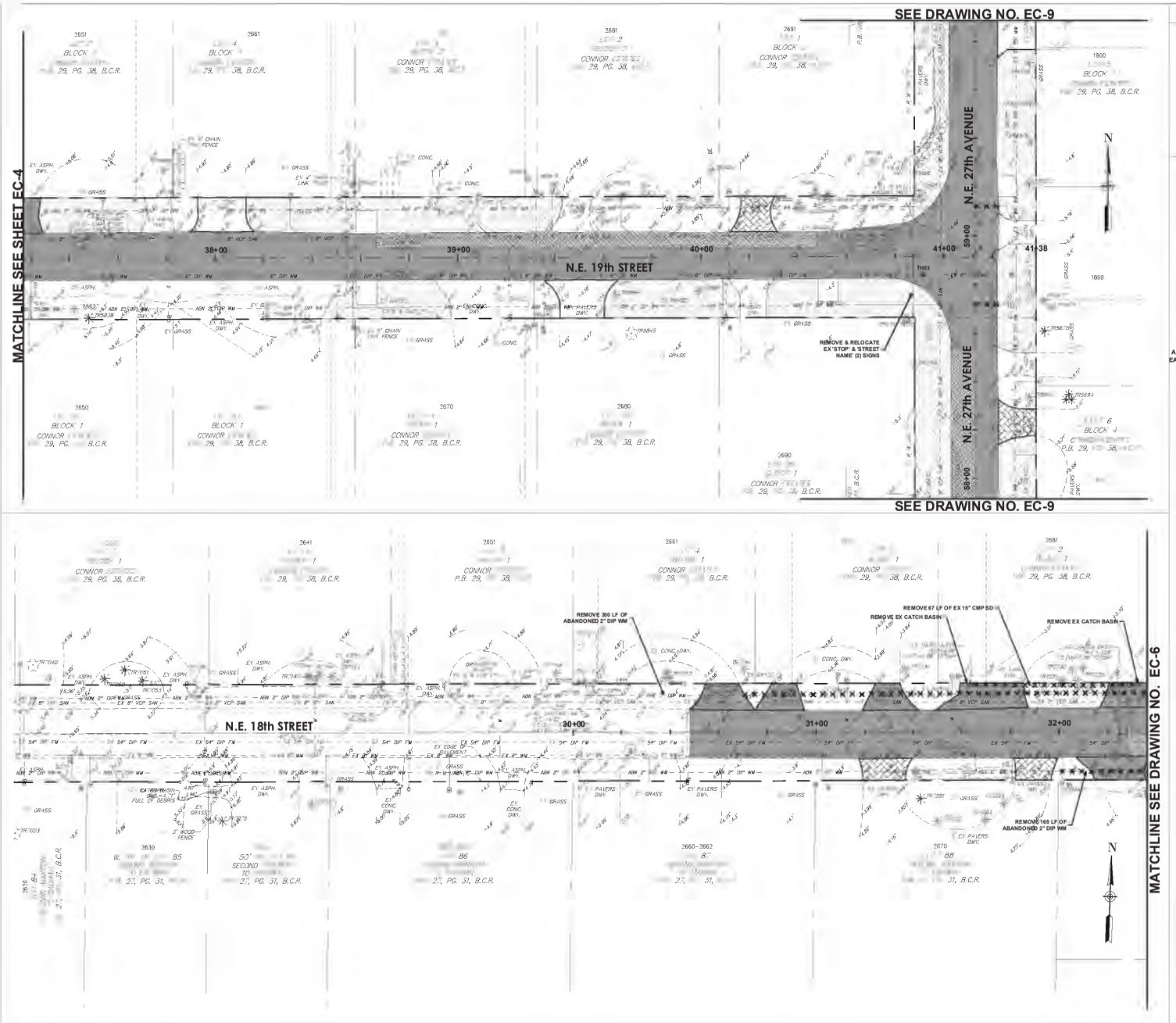
EXISTING CONDITIONS AND DEMOLITION PLAN

DRAWING NUMBER
EC-4
08 OF 93

Plot Date: 5/28/2024 8:11:44 AM Username: bcastro Layout Name: EC-4
Folder Path: V:\Projects\2020\20-092.066 - NE 27th Ave & NE 16 St Stormwater Imprmnt\Design\CAD\Sheets Filename: 20-092.066 EXISTING CONDITIONS (SHTS 1-7 AND 13-14).dwg



BCTED 210505060

KEY MAP

N.T.S.

HATCH LEGEND

- EXISTING ASPHALT TO BE REMOVED
- EXISTING ASPHALT TO BE MILLED
- EXISTING CONCRETE TO BE REMOVED
- EXISTING SPECIALTY DRIVEWAY TO BE REMOVED
- EXISTING GRAVEL TO BE REMOVED
- EXISTING SWALES TO BE CLEARED
- ITEM TO BE REMOVED

PERMIT SET
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MATERIAL
ALL MATERIAL USED AND INSTALLED WITHIN THE PUBLIC RIGHT-OF-WAY OR EASEMENTS SHALL BE IN ACCORDANCE WITH THE CITY OF POMPANO BEACH MINIMUM STANDARDS.

VERTICAL DATUM INFORMATION
ALL ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

GRAPHIC SCALE
0 10 20 40
1 INCH = 20 FEET (22"x34")
1 INCH = 40 FEET (11"x17")

TEST HOLE DATA

NO.	EX. GROUND ELEVATION (FT)	TOP OF PIPE ELEVATION (FT)	DESCRIPTION	UTILITY DIRECTION
3	4.37	1.65	6" PVC WM	

BID SET

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www.chenmoore.com

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PROJECT INFORMATION

NE 27 AVENUE AND NE 16 STREET STORMWATER IMPROVEMENTS

CITY OF POMPANO BEACH, FL

PROJECT NUMBER
20-092.066

CLIENT PROJECT NUMBER
19-352

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EXISTING CONDITIONS AND DEMOLITION PLAN

DRAWING NUMBER
EC-5
09 OF 93

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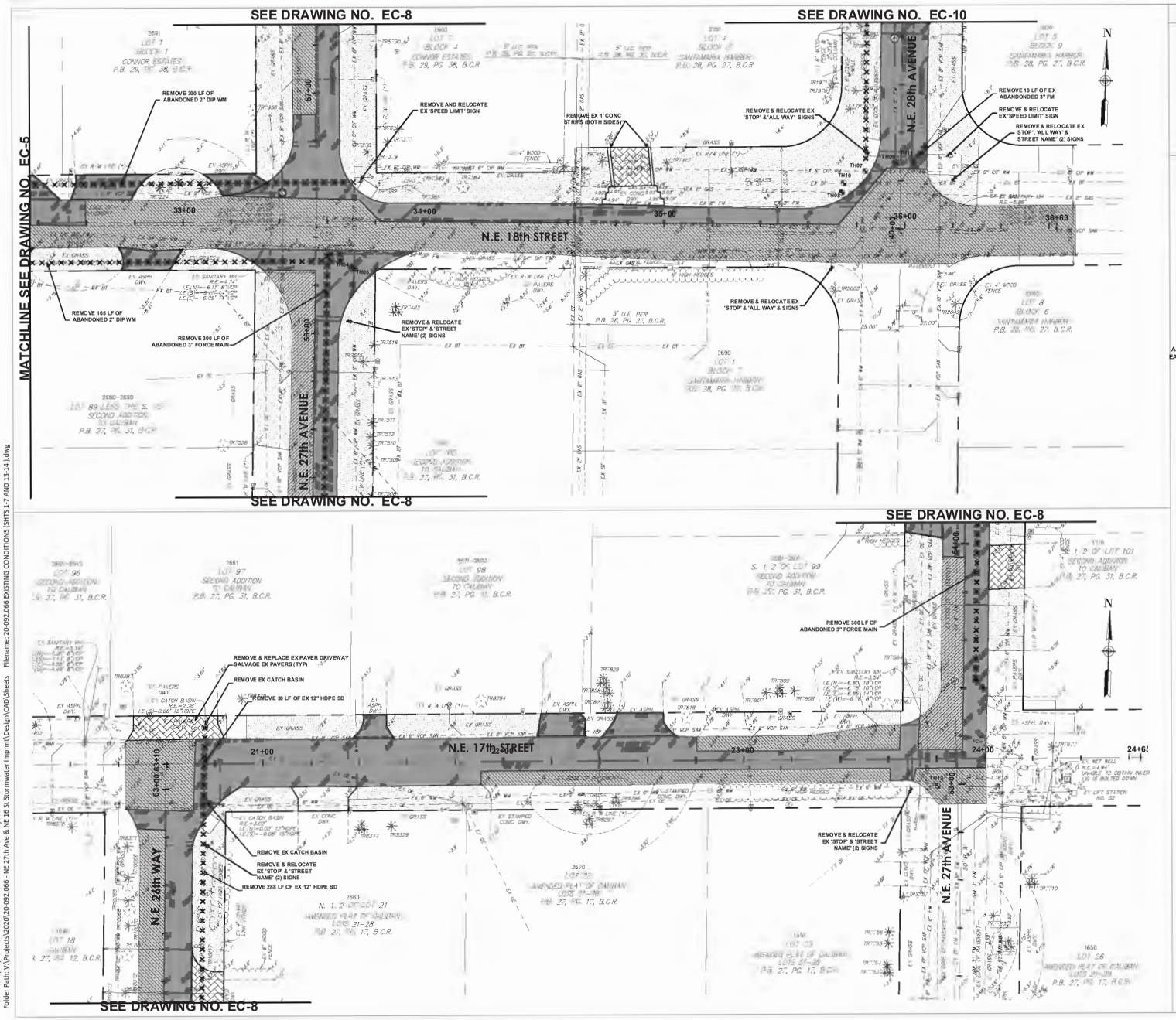
Folder Path: V:\Projects\2020\20-092.066 - NE 27th Ave & NE 16 St Stormwater Improvt\Design\CAD\Sheets Filename: 20-092.066 EXISTING CONDITIONS (SHTS 1-7 AND 13-14).dwg



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KEY MAP

N.T.S.

HATCH LEGEND

- EXISTING ASPHALT TO BE REMOVED
- EXISTING ASPHALT TO BE MILLED
- EXISTING CONCRETE TO BE REMOVED
- EXISTING SPECIALTY DRIVEWAY TO BE REMOVED
- EXISTING GRAVEL TO BE REMOVED
- EXISTING SWALES TO BE CLEARED
- ITEM TO BE REMOVED

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VERTICAL DATUM INFORMATION
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GRAPHIC SCALE
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1 INCH = 40 FEET (11"x17")

TEST HOLE DATA

NO.	EX. GROUND ELEVATION (FT)	TOP OF PIPE ELEVATION (FT)	DESCRIPTION	UTILITY DIRECTION
4	4.46	1.24	8" FM	
5	4.44	2.62	6" CIP WM	
7	5.52	4.12	6" CIP WM	
8	5.68	2.13	2" GAS MAIN	
9	5.68	2.32	8" DIP FM	
10	5.84	2.84	2" BT	
11	5.60	4.02	6" PVC WM	
12	3.44	2.65	6" CIP WM	

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PROJECT INFORMATION

NE 27 AVENUE AND NE 16 STREET STORMWATER IMPROVEMENTS

CITY OF POMPANO BEACH, FL

PROJECT NUMBER
20-092.066

CLIENT PROJECT NUMBER
19-352

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EXISTING CONDITIONS AND DEMOLITION PLAN

DRAWING NUMBER
EC-6
10 OF 93

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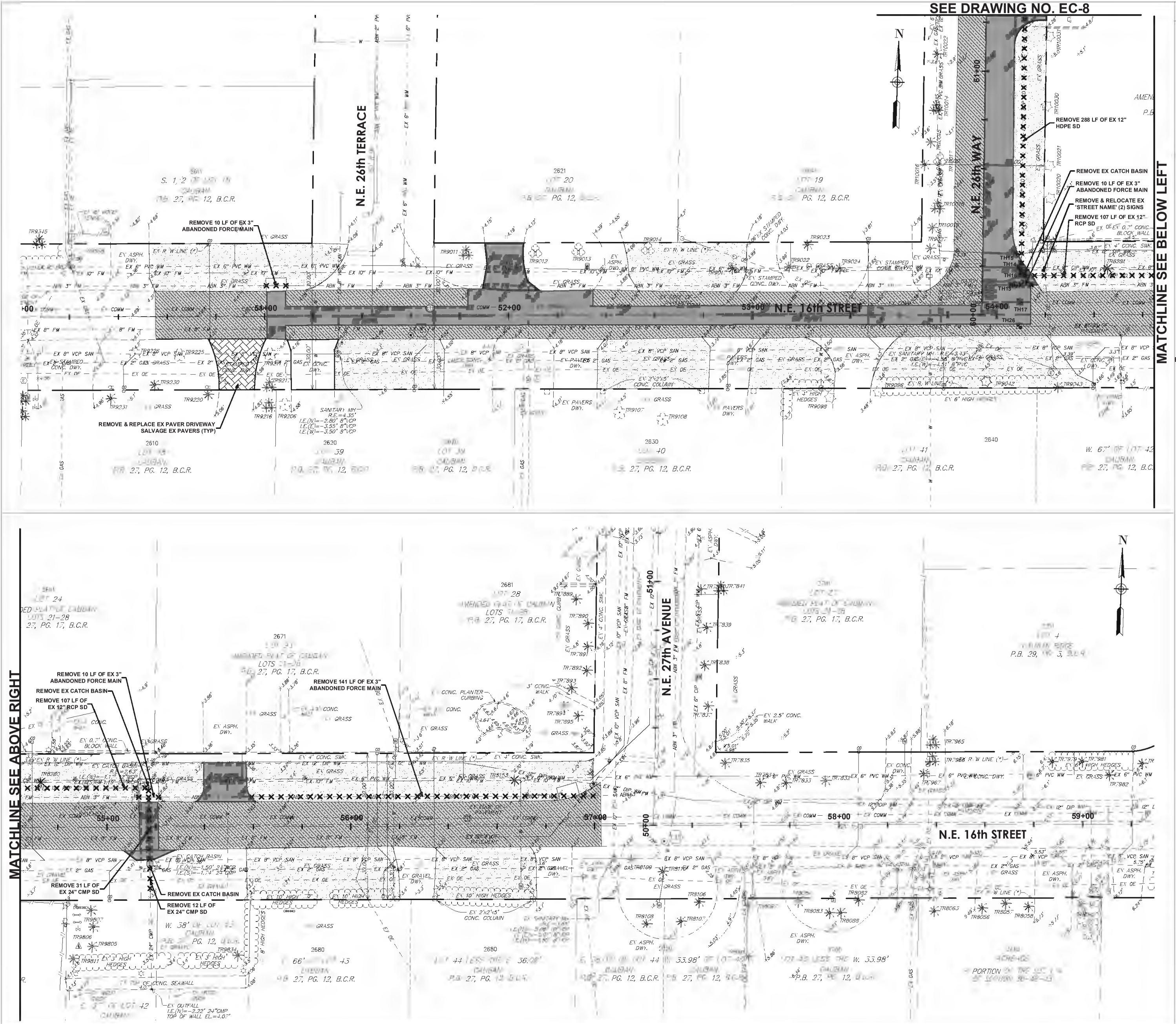
Folder Path: V:\Projects\2020\20-092.066 - NE 27th Ave & NE 16 St Stormwater Imprmt\Design\CAD\Sheets Filename: 20-092.066 EXISTING CONDITIONS (SHTS 1-7 AND 13-14).dwg



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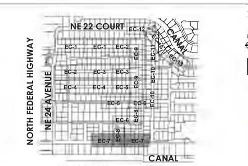

KEY MAP

N.T.S.

HATCH LEGEND

- EXISTING ASPHALT TO BE REMOVED
- EXISTING ASPHALT TO BE MILLED
- EXISTING CONCRETE TO BE REMOVED
- EXISTING SPECIALTY DRIVEWAY TO BE REMOVED
- EXISTING GRAVEL TO BE REMOVED
- EXISTING SWALES TO BE CLEARED
- ·X·X·X·X·X· ITEM TO BE REMOVED

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1 INCH = 20 FEET (22"x34")
1 INCH = 40 FEET (11"x17")

TEST HOLE DATA

NO.	EX. GROUND ELEVATION (FT)	TOP OF PIPE ELEVATION (FT)	DESCRIPTION	UTILITY DIRECTION
13	3.37	1.04	3" CIP FM	
14	3.22	0.90	6" CIP WM	
15	3.33	1.43	12" DIP WM	
16	3.19	1.56	10" CIP FM	
17	3.64	0.16	24" CONC BE	
26	3.64	0.14	8" DIP FM	

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PROJECT INFORMATION
NE 27 AVENUE AND NE 16 STREET STORMWATER IMPROVEMENTS
CITY OF POMPANO BEACH, FL

PROJECT NUMBER 20-092.066

CLIENT PROJECT NUMBER 19-352

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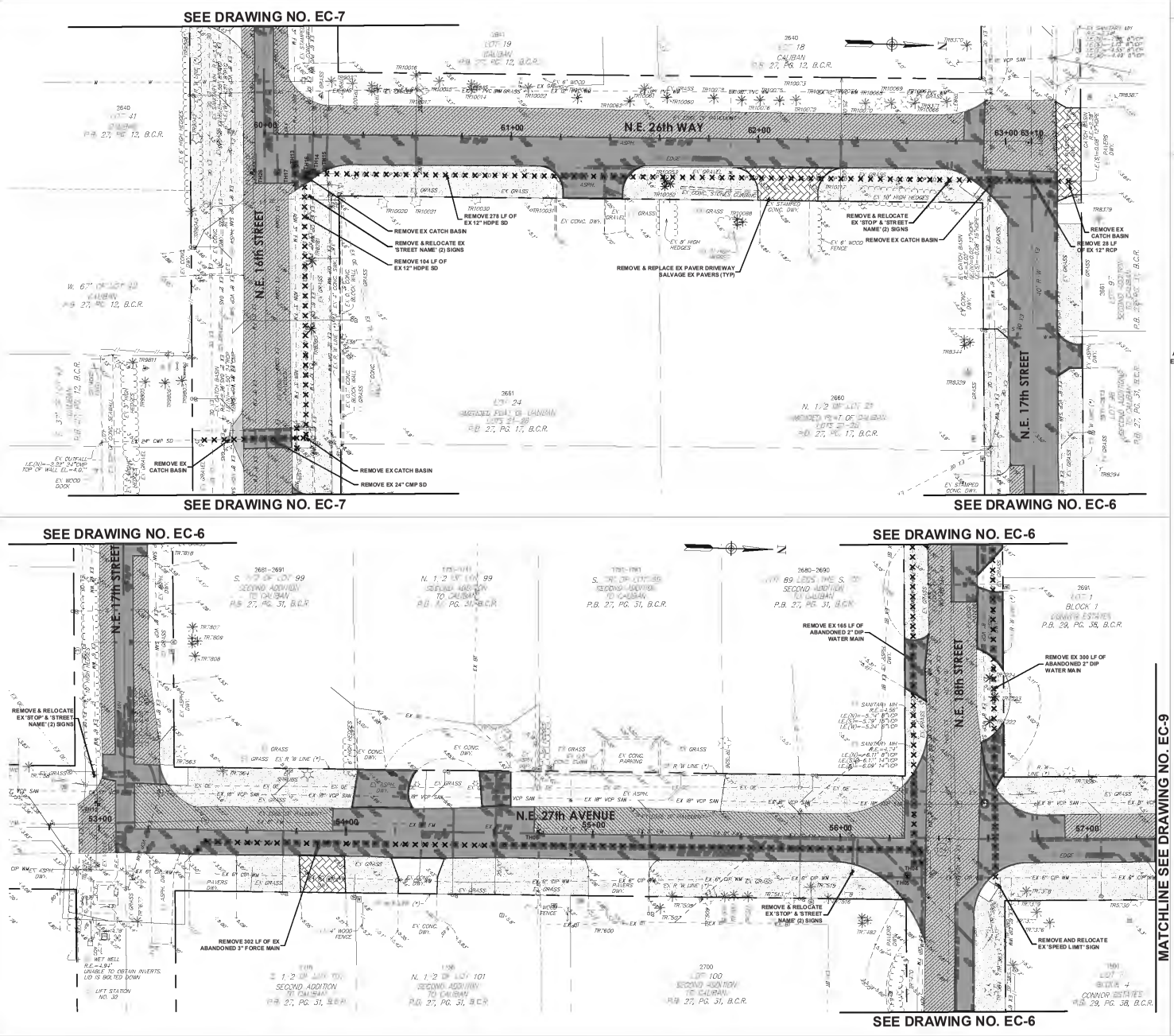
DRAWING NUMBER
EC-7
11 OF 93



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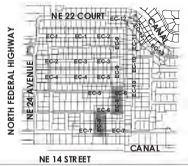

KEY MAP

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TEST HOLE DATA

NO.	EX GROUND ELEVATION (FT)	TOP OF PIPE ELEVATION (FT)	DESCRIPTION	UTILITY DIRECTION
4	4.46	1.24	8" FM	
5	4.44	2.62	6" CIP WM	
6	4.1300	3.08	2" PVC BT	
12	3.44	2.65	6" CIP WM	
13	3.37	1.04	3" DIP FM	
14	3.22	0.90	6" CIP WM	
15	3.33	1.43	12" DIP WM	
16	3.19	1.56	10" CIP FM	
17	3.64	0.16	24" CONC BE	
26	3.64	0.14	8" PVS FM	

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PROJECT INFORMATION
NE 27 AVENUE AND NE 16 STREET STORMWATER IMPROVEMENTS
CITY OF POMPANO BEACH, FL

PROJECT NUMBER
20-092.066

CLIENT PROJECT NUMBER
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DRAWING NUMBER
EC-8
12 OF 93

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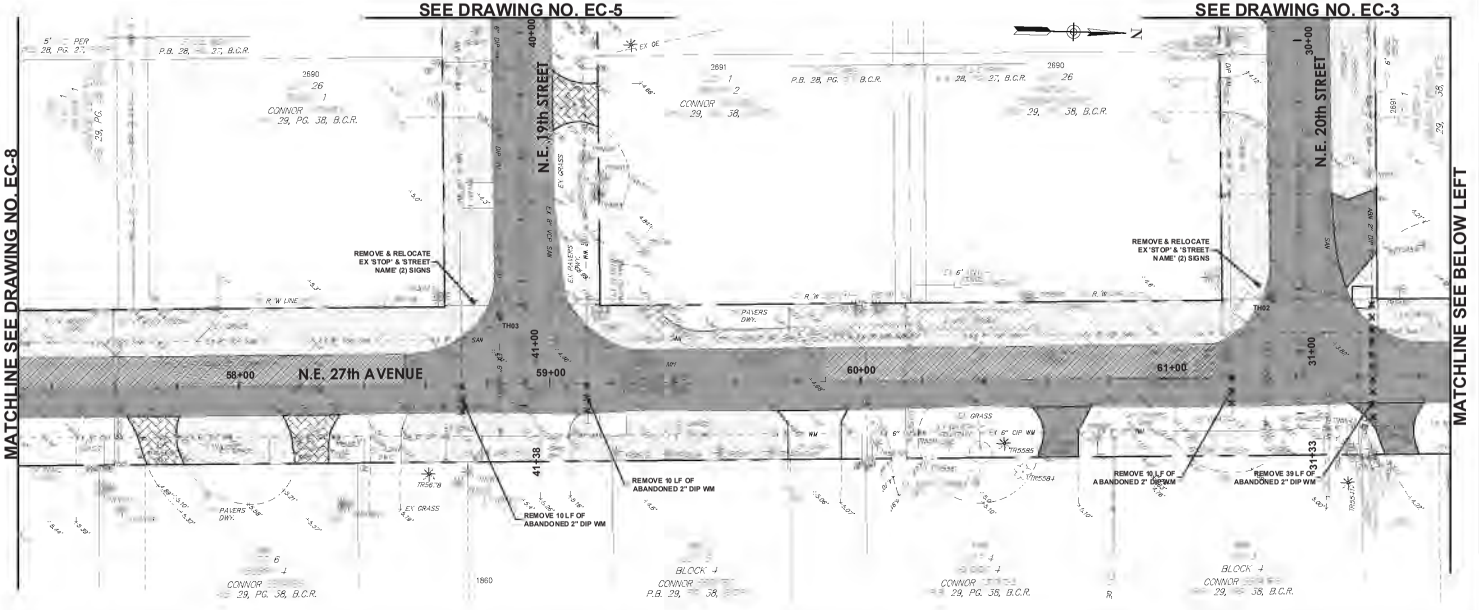

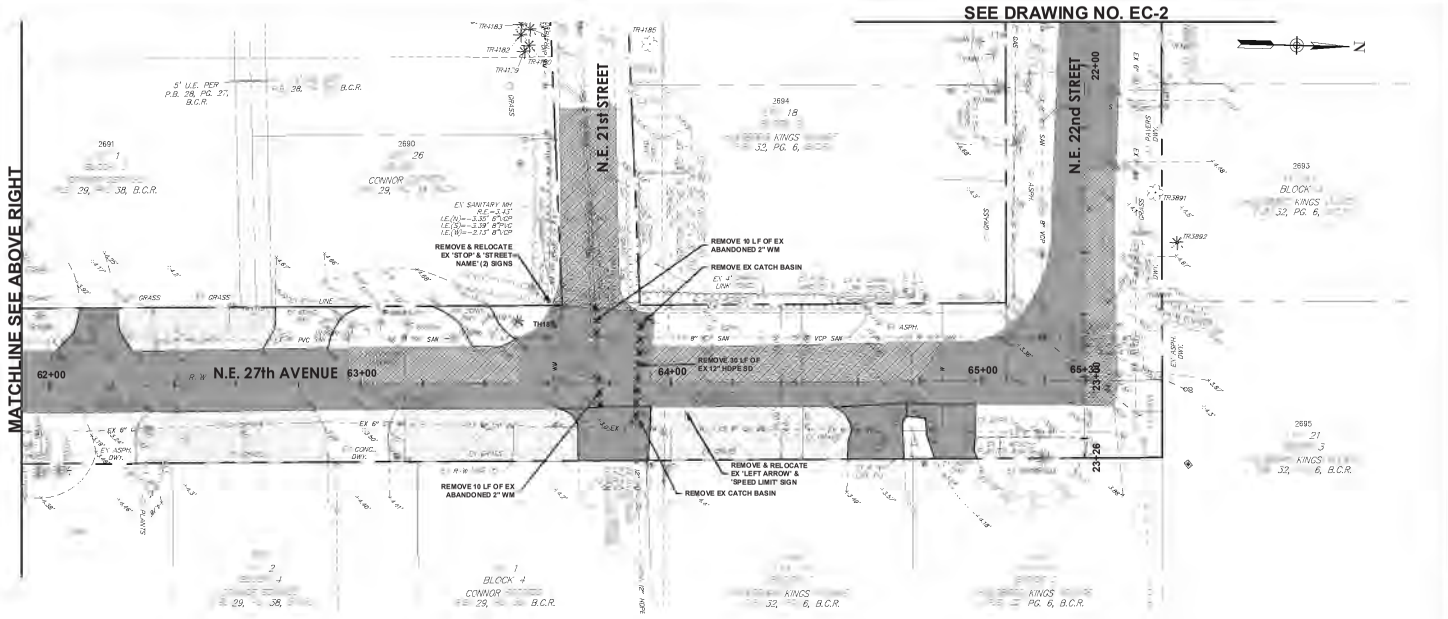

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KEY MAP
N.T.S.

HATCH LEGEND

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- EXISTING ASPHALT TO BE MILLED
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GRAPHIC SCALE
0 10 20 40
1 INCH = 20 FEET (22"x34")
1 INCH = 40 FEET (11"x17")

TEST HOLE DATA

NO.	EX GROUND ELEVATION (FT)	TOP OF PIPE ELEVATION (FT)	DESCRIPTION	UTILITY DIRECTION
2	4.07	1.51	8" DIP WM	
3	4.37	1.65	6" DIP WM	
18	3.36	0.73	8" DIP WM	

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PROJECT INFORMATION
NE 27 AVENUE AND NE 16 STREET STORMWATER IMPROVEMENTS
CITY OF POMPANO BEACH, FL

PROJECT NUMBER
20-092.066

CLIENT PROJECT NUMBER
19-352

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DRAWING NUMBER
EC-09
13 OF 93

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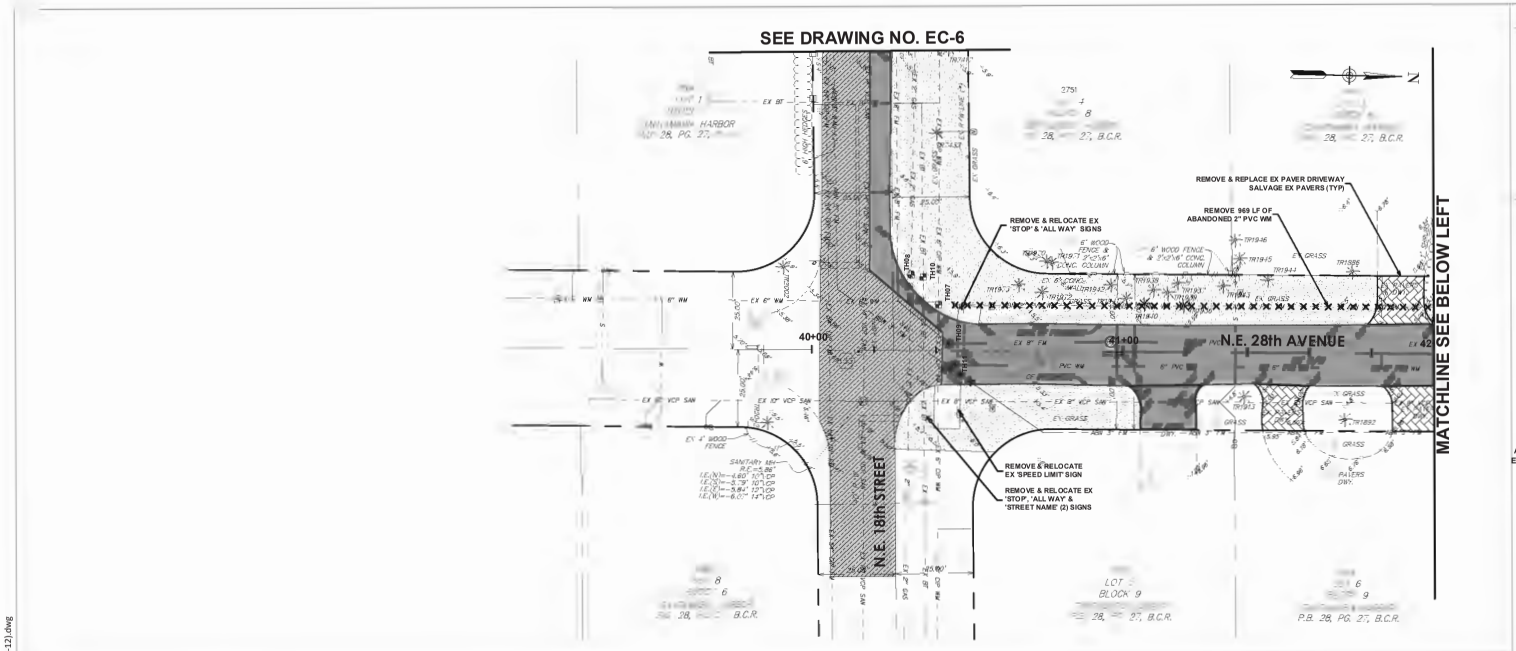

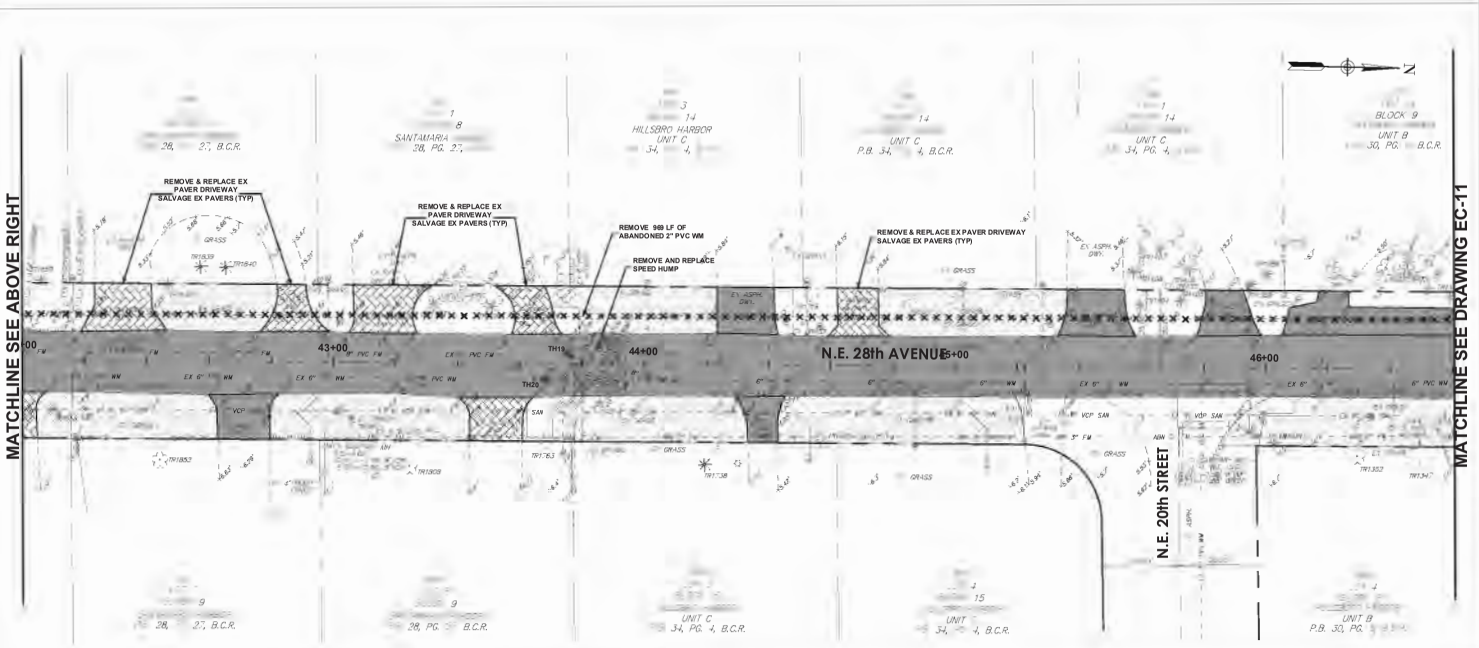

KEY MAP

N.T.S.

HATCH LEGEND

- EXISTING ASPHALT TO BE REMOVED
- EXISTING ASPHALT TO BE MILLED
- EXISTING CONCRETE TO BE REMOVED
- EXISTING SPECIALTY DRIVEWAY TO BE REMOVED
- EXISTING GRAVEL TO BE REMOVED
- EXISTING SWALES TO BE CLEARED
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GRAPHIC SCALE
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1 INCH = 20 FEET (22"x34")
1 INCH = 40 FEET (11"x17")

TEST HOLE DATA

NO.	EX GROUND ELEVATION (FT)	TOP OF PIPE ELEVATION (FT)	DESCRIPTION	UTILITY DIRECTION
7	5.52	4.12	6" CIP WM	
8	5.68	2.13	2" HDPE GM	
9	5.68	2.32	8" DIP FM	
10	5.84	2.84	2" DBC BT	
11	5.60	4.02	6" PVC WM	
19	2.09	1.81	8" DIP FM	
20	5.09	2.28	6" PVC WM	

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PROJECT INFORMATION
NE 27 AVENUE AND NE 16 STREET STORMWATER IMPROVEMENTS
CITY OF POMPANO BEACH, FL

PROJECT NUMBER
20-092.066

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19-352

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EXISTING CONDITIONS AND DEMOLITION PLAN

DRAWING NUMBER
EC-10
14 OF 93

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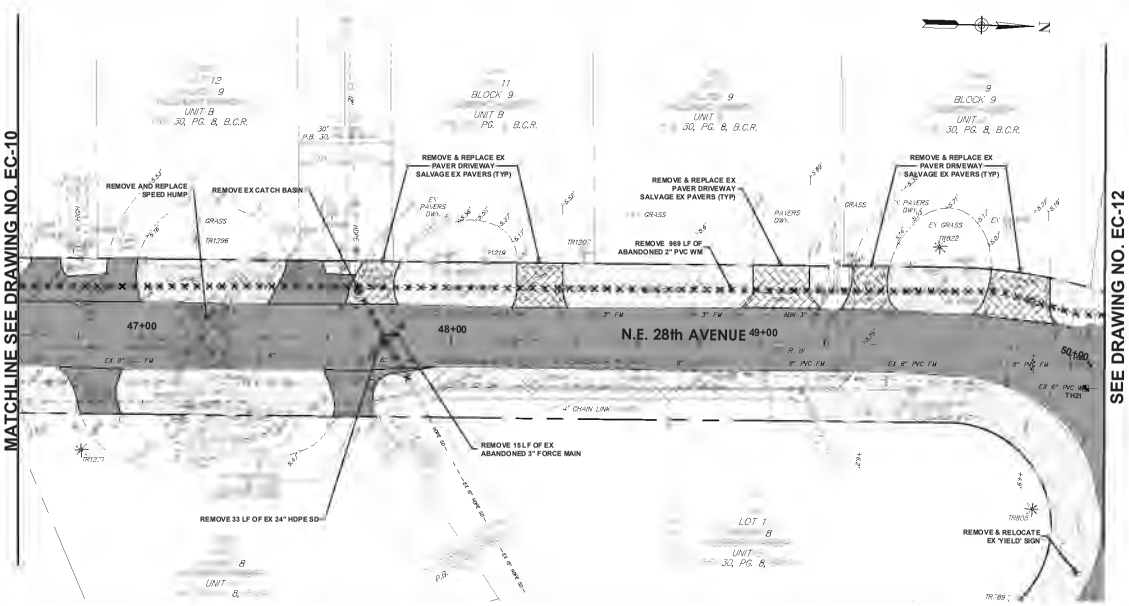

KEY MAP

N.T.S.

HATCH LEGEND

- EXISTING ASPHALT TO BE REMOVED
- EXISTING ASPHALT TO BE MILLED
- EXISTING CONCRETE TO BE REMOVED
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VERTICAL DATUM INFORMATION
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GRAPHIC SCALE
0 10 20 40
1 INCH = 20 FEET (22"x34")
1 INCH = 40 FEET (11"x17")

TEST HOLE DATA

NO.	EX GROUND ELEVATION (FT)	TOP OF PIPE ELEVATION (FT)	DESCRIPTION	UTILITY DIRECTION
21	5.00	1.95	6" PVC WM	
22	5.01	1.50	8" PVC FM	

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PROJECT INFORMATION

NE 27 AVENUE AND NE 16 STREET STORMWATER IMPROVEMENTS

CITY OF POMPANO BEACH, FL

PROJECT NUMBER
20-092.066

CLIENT PROJECT NUMBER
19-352

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EXISTING CONDITIONS AND DEMOLITION PLAN

DRAWING NUMBER
EC-11
15 OF 93

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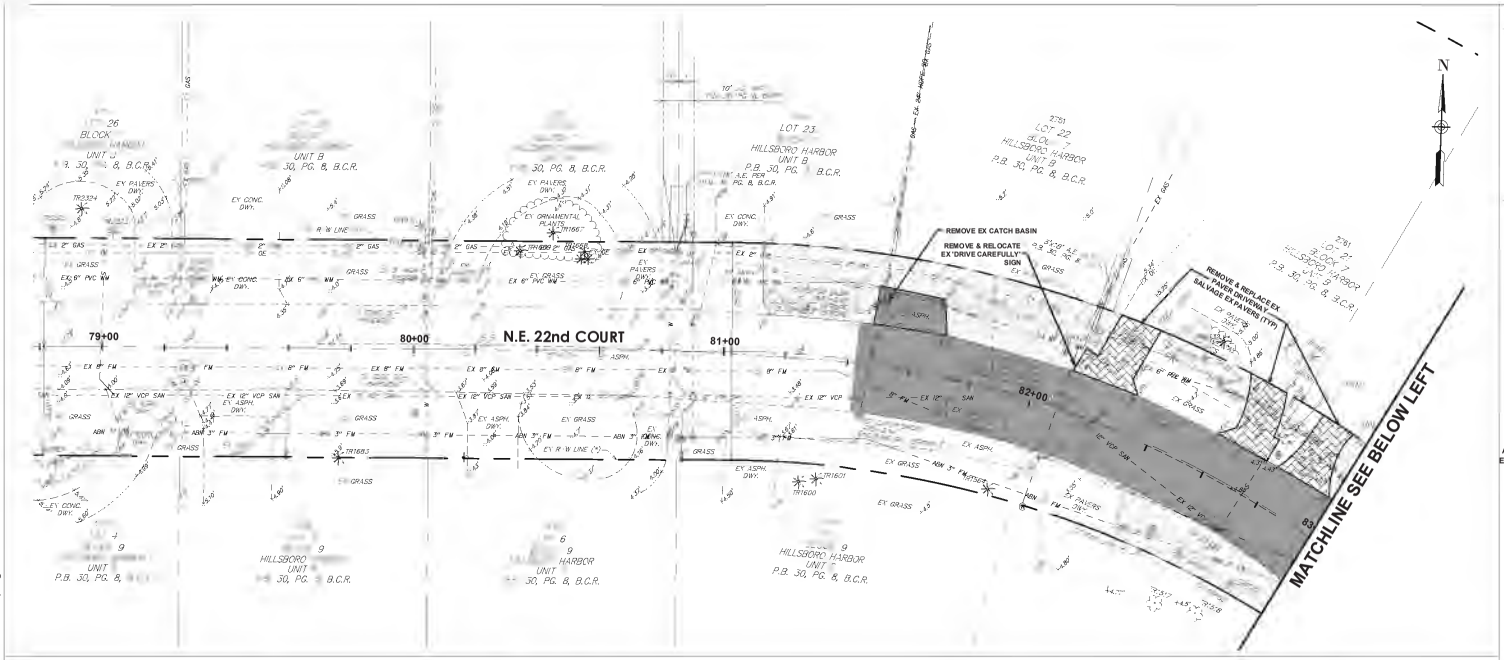

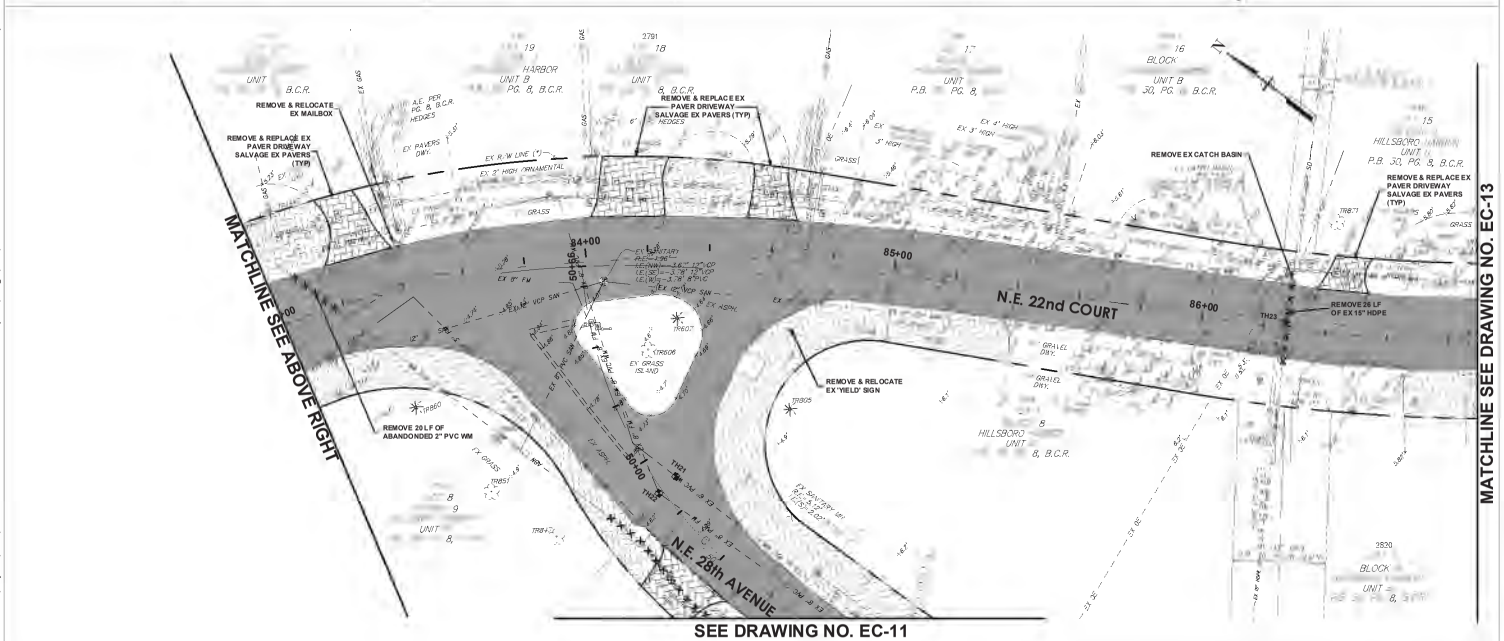

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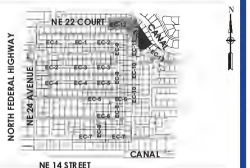

KEY MAP

N.T.S.

HATCH LEGEND

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GRAPHIC SCALE
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1 INCH = 20 FEET (22"x34")
1 INCH = 40 FEET (11"x17")

TEST HOLE DATA

NO.	EX. GROUND ELEVATION (FT)	TOP OF PIPE ELEVATION (FT)	DESCRIPTION	UTILITY DIRECTION
21	2.00	1.95	6" PVC WM	
22	5.01	1.50	8" PVC FM	
23	5.45	3.05	1.5" STL GAS MAIN	

BID SET

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chen moore and associates
500 West Cypress Creek Road
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Ft. Lauderdale, FL 33309
954.730.0707
www.chenmoore.com

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JENNIFER L. SMITH
LICENSE
No. 72232
STATE OF FLORIDA
PROFESSIONAL ENGINEER

CLIENT
pompano beach
Florida's Warmest Welcome

PROJECT INFORMATION

NE 27 AVENUE AND NE 16 STREET STORMWATER IMPROVEMENTS

CITY OF POMPANO BEACH, FL

PROJECT NUMBER
20-092.066

CLIENT PROJECT NUMBER
19-352

VERIFY SCALES
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

REVISIONS

DATE OF ISSUE
5/28/2024

DESIGNED BY
JLS

DRAWN BY

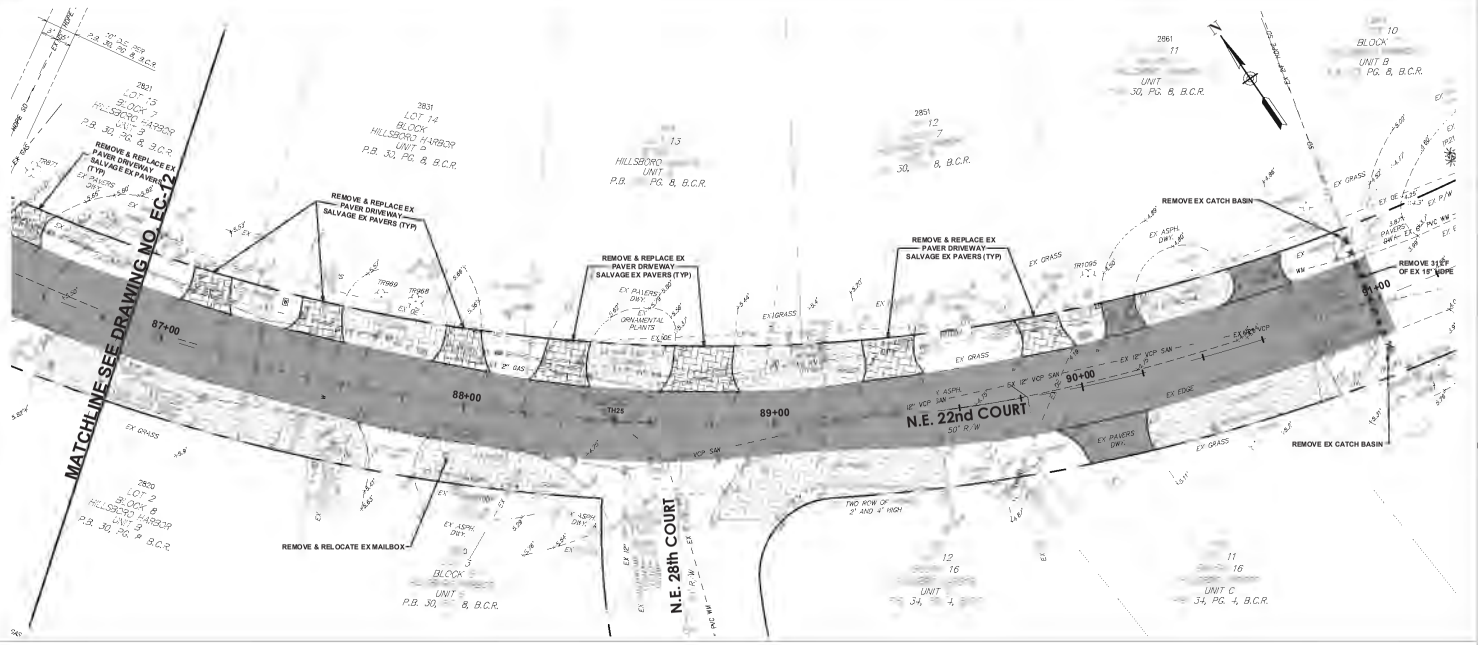
CHECKED BY
JM

DRAWING TITLE
EXISTING CONDITIONS AND DEMOLITION PLAN

DRAWING NUMBER
EC-12
16 OF 93

Plot Date: 5/28/2024 8:14:51 AM Username: bcastro Layout Name: EC-12
Folder Path: V:\Projects\2020\20-092.066 - NE 27th Ave & NE 16 St Stormwater Improvmt\Design\CAD\Sheets Filename: 20-092.066 EXISTING CONDITIONS (SHTS 1-7 AND 13-14).dwg

BCTED 210505060



KEY MAP

N.T.S.

HATCH LEGEND

- EXISTING ASPHALT TO BE REMOVED
- EXISTING ASPHALT TO BE MILLED
- EXISTING CONCRETE TO BE REMOVED
- EXISTING SPECIALTY DRIVEWAY TO BE REMOVED
- EXISTING GRAVEL TO BE REMOVED
- EXISTING SWALES TO BE CLEARED
- ITEM TO BE REMOVED

PERMIT SET
MUST BE ON SITE AT ALL TIMES DURING CONSTRUCTION

MATERIAL
ALL MATERIAL USED AND INSTALLED WITHIN THE PUBLIC RIGHT-OF-WAY OR EASEMENTS SHALL BE IN ACCORDANCE WITH THE CITY OF POMPANO BEACH MINIMUM STANDARDS.

VERTICAL DATUM INFORMATION
ALL ELEVATIONS SHOWN ARE IN NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)

GRAPHIC SCALE
0 10 20 40
1 INCH = 20 FEET (22"x34")
1 INCH = 40 FEET (11"x17")

TEST HOLE DATA

NO.	EX. GROUND ELEVATION (FT)	TOP OF PPE ELEVATION (FT)	DESCRIPTION	UTILITY DIRECTION
25	5.17	2.37	6" CIP WM	/

BID SET

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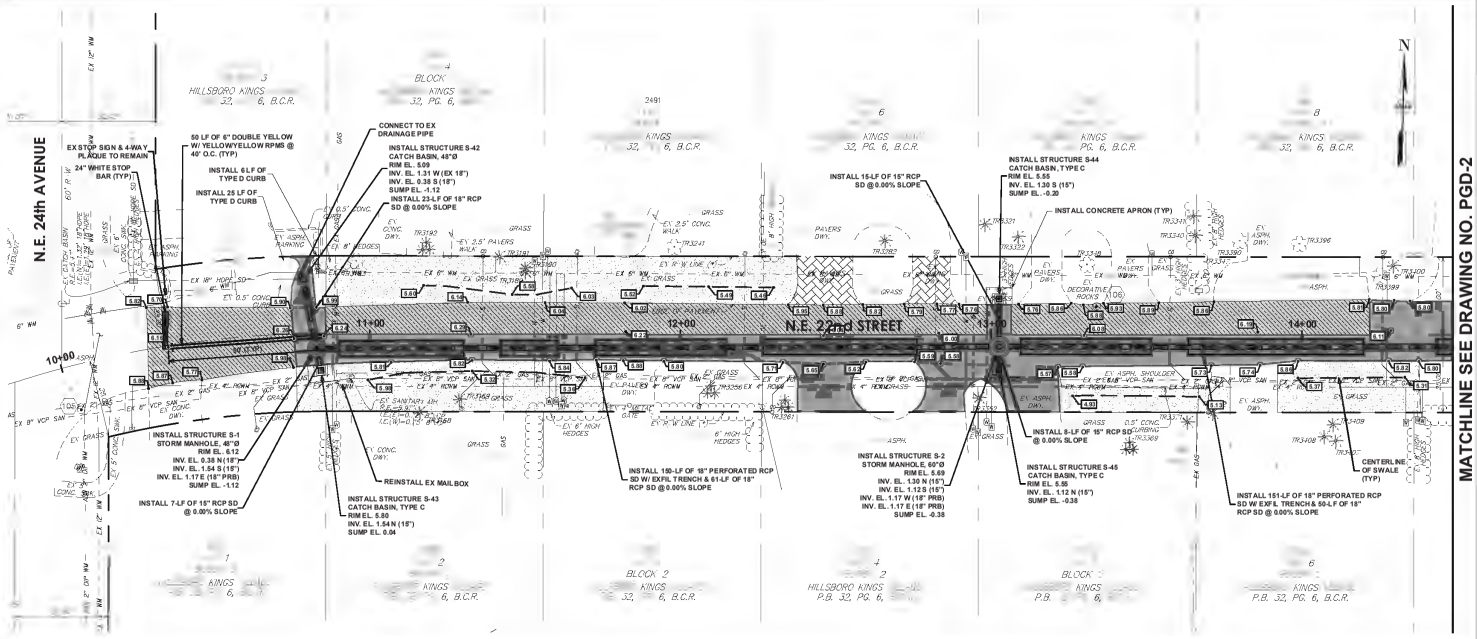
DRAWING TITLE
EXISTING CONDITIONS AND DEMOLITION PLAN

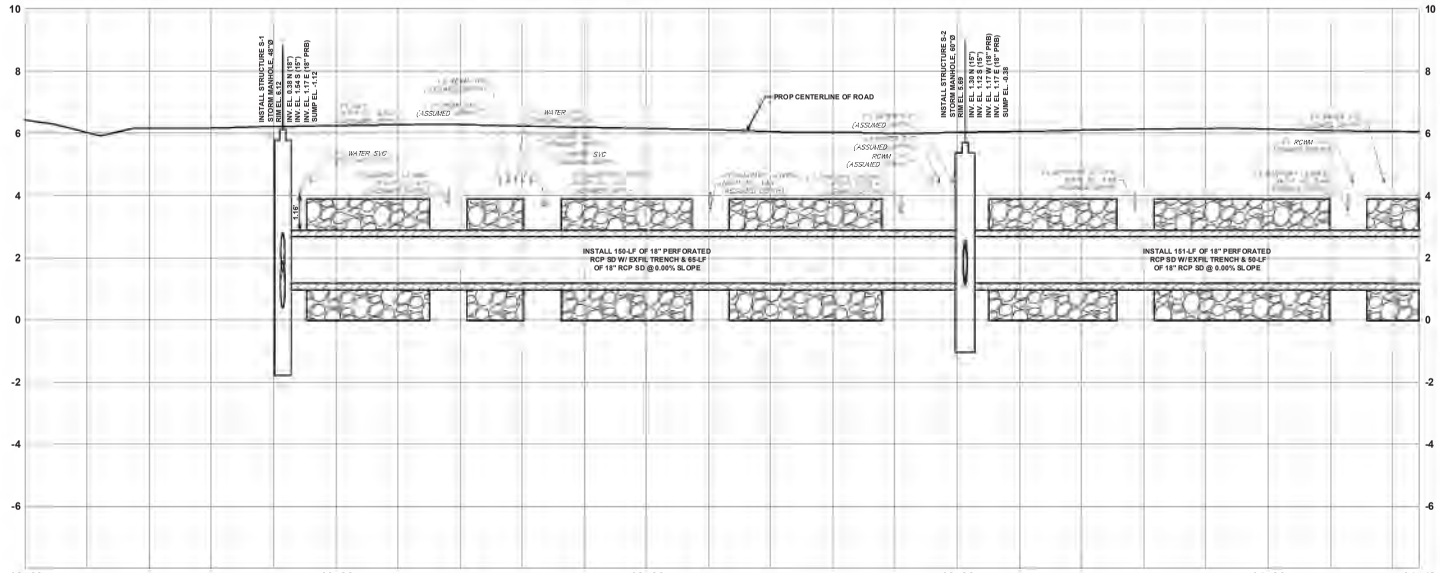
DRAWING NUMBER
EC-13
17 OF 93

Plot Date: 5/28/2024 8:15:05 AM Username: bcastro Layout Name: EC-13
Folder Path: V:\Projects\2020\20-092.066 - NE 27th Ave & NE 16 St Stormwater Imprmnt\Design\CAD\Sheets Filename: 20-092.066 EXISTING CONDITIONS (SHTS 1-7 AND 13-14).dwg



NE 22 ST

SCALE: 1"=20' HORZ | 1"=2' VERT



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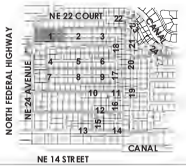

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Florida's Warmest Welcome

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CITY OF POMPANO BEACH, FL

PROJECT NUMBER
20-092.066

CLIENT PROJECT NUMBER
19-352

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REVISIONS

DATE OF ISSUE
5/28/2024

DESIGNED BY
JLS

DRAWN BY

CHECKED BY
JM

DRAWING TITLE
PAVING, GRADING AND DRAINAGE PLAN

DRAWING NUMBER
PGD-1
18 OF 93

Plot Date: 5/28/2024 8:16:22 AM Username: cwallander Layout Name: PGD-1
Folder Path: V:\Projects\2020\20-092.066 - NE 27th Ave & NE 16 St Stormwater Imprmt\Design\CAD\Sheets Filename: 20-092.066 DRAINAGE PLAN (SHTS 1-13 AND 22-24).dwg

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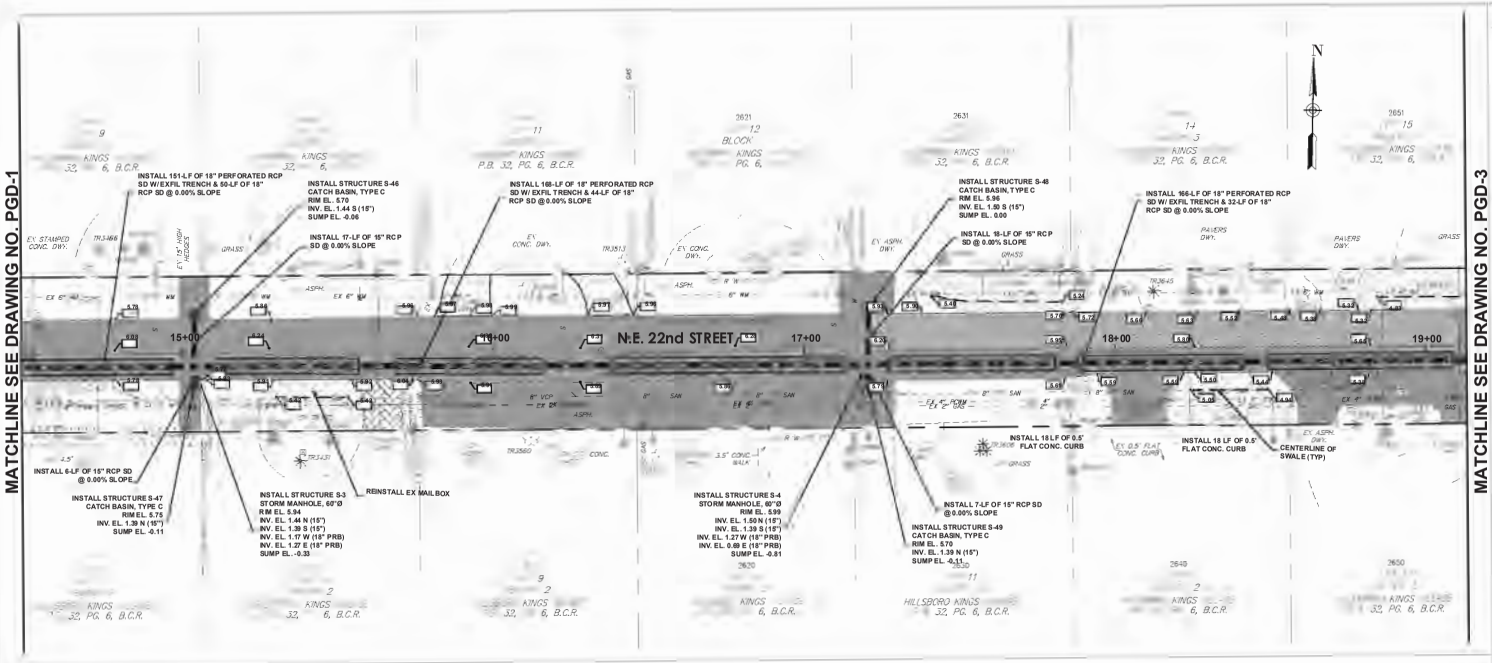
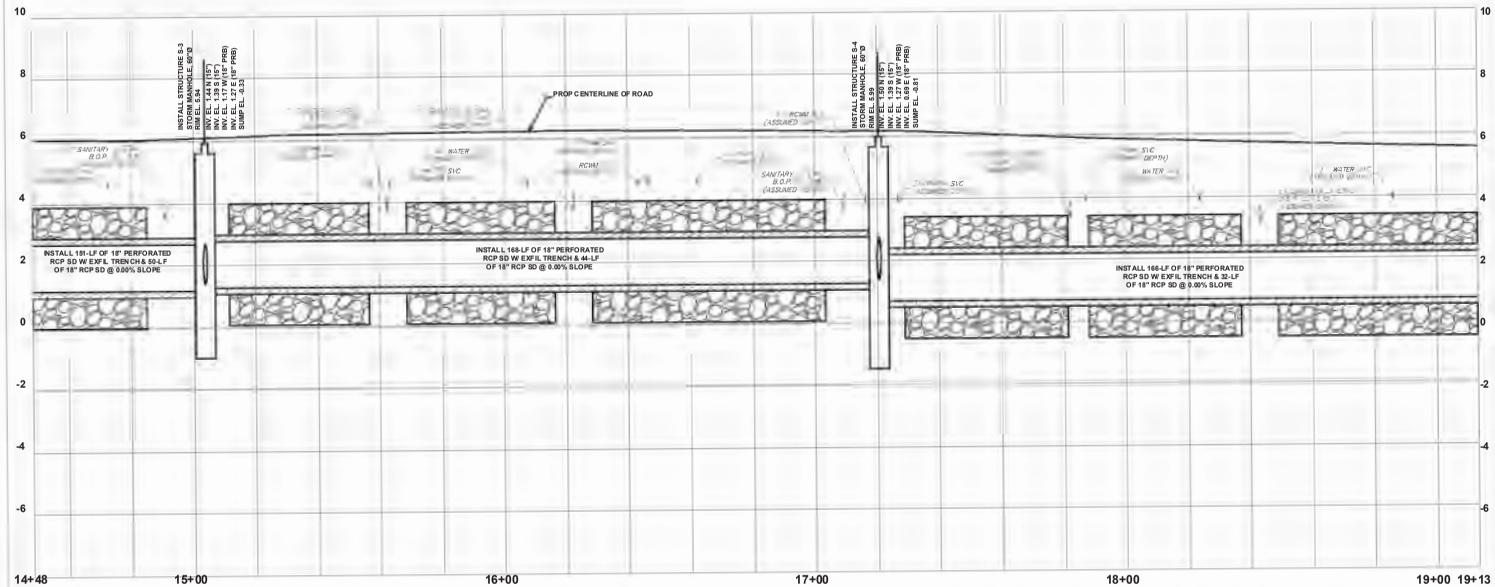
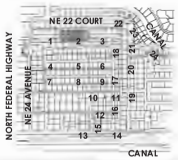


NE 22 ST

SCALE: 1"=20' HORZ | 1"=2' VERT





KEY MAP

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HATCH LEGEND

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CLIENT

pompano beach
Florida's Warmest Welcome

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NE 27 AVENUE AND NE 16 STREET STORMWATER IMPROVEMENTS

CITY OF POMPANO BEACH, FL

PROJECT NUMBER
20-092.066

CLIENT PROJECT NUMBER
19-352

VERIFY SCALES
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REVISIONS

DATE OF ISSUE
5/28/2024

DESIGNED BY
JLS

DRAWN BY

CHECKED BY
JM

DRAWING TITLE

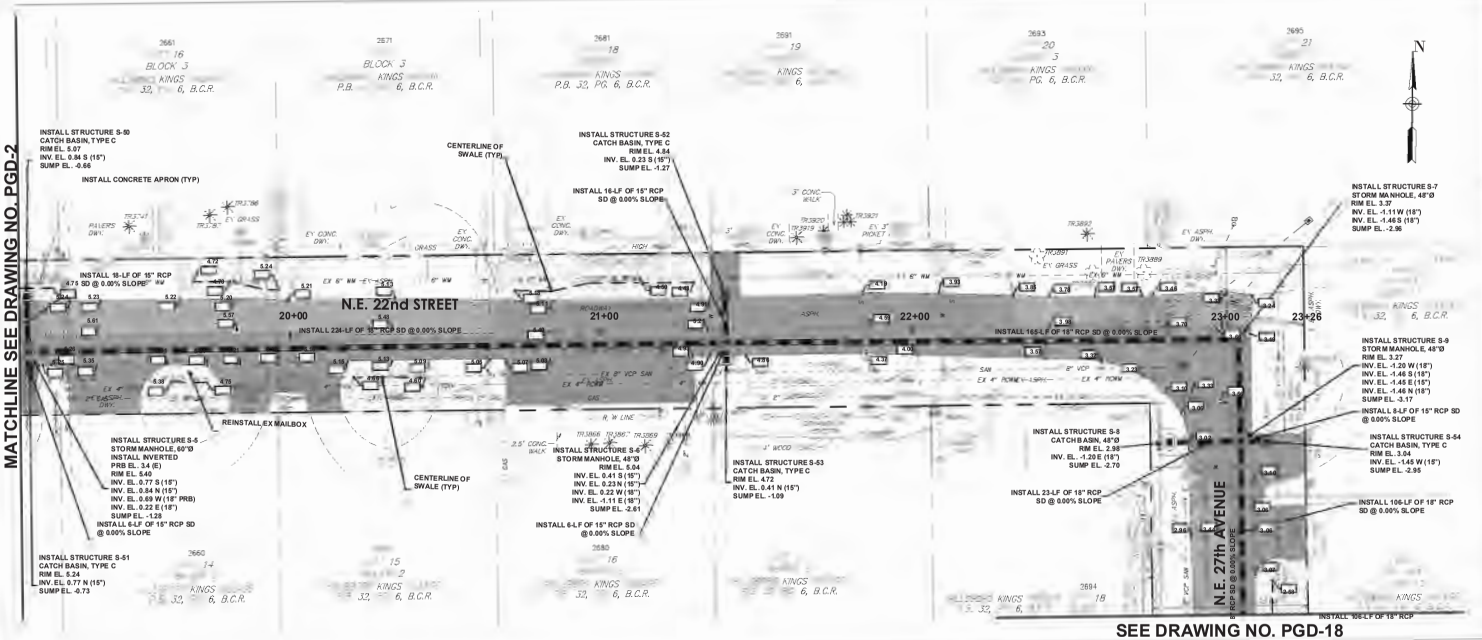
PAVING, GRADING AND DRAINAGE PLAN

DRAWING NUMBER
PGD-2
19 OF 93

Plot Date: 5/28/2024 8:17:04 AM Username: cwallander Layout Name: PGD-2
Folder Path: V:\Projects\2020\20-092.066 - NE 27th Ave & NE 16 St Stormwater Imprmt\Design\CAD\Sheets Filename: 20-092.066 DRAINAGE PLAN (SHTS 1-13 AND 22-24).dwg

BCTED 210505060

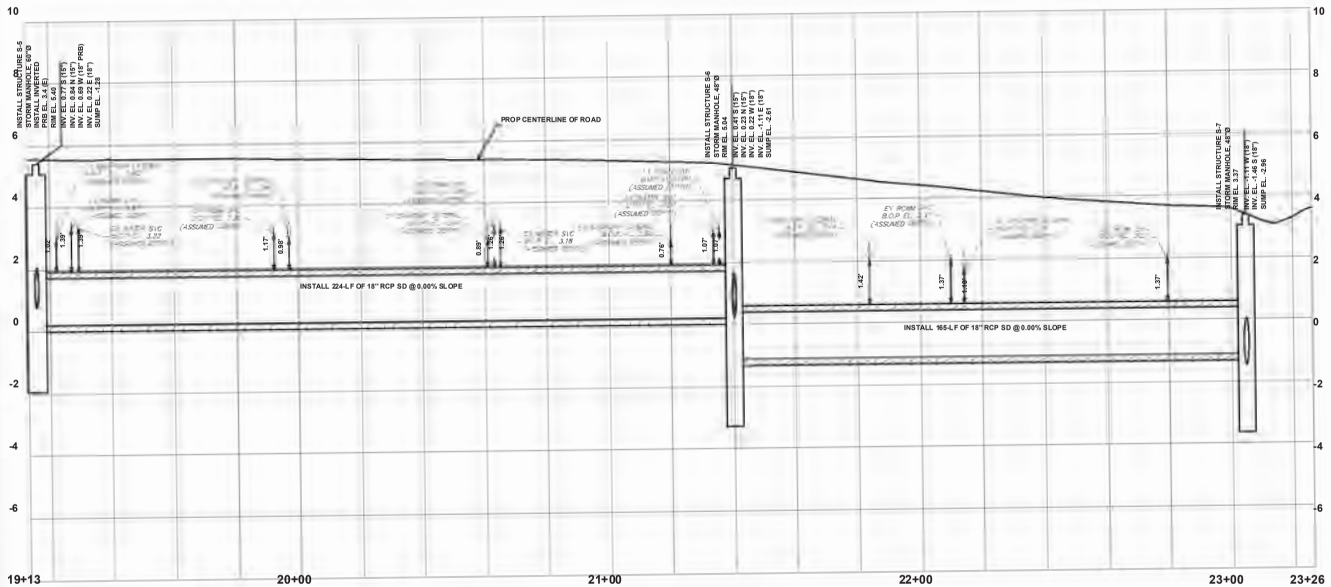
MATCHLINE SEE DRAWING NO. PGD-2

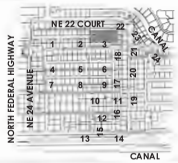


SEE DRAWING NO. PGD-18

NE 22 ST

SCALE: 1"=20' HORZ | 1"=2' VERT





KEY MAP

N.T.S.

HATCH LEGEND

- ROAD / ASPHALT RESTORATION
- PROPOSED ASPHALT OVERLAY
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PERMIT SET
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DESIGNED BY
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DRAWN BY

CHECKED BY
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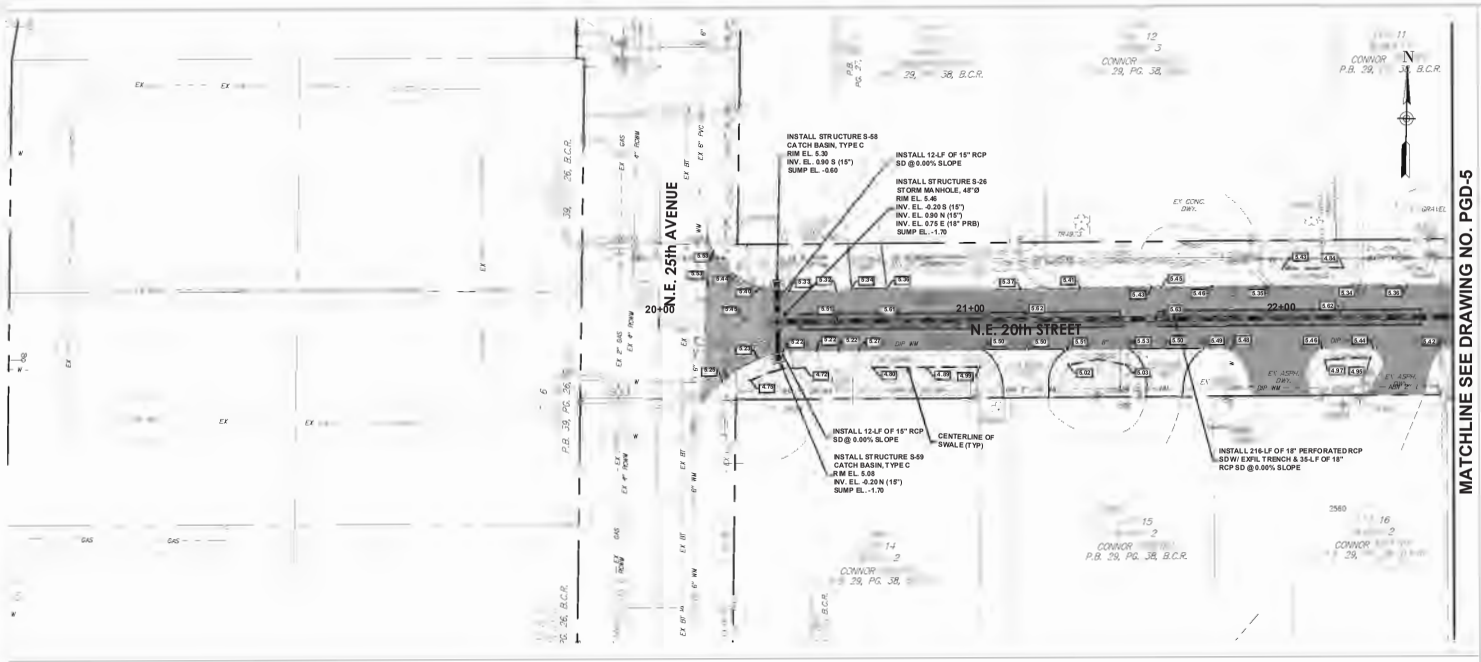
DRAWING TITLE
PAVING, GRADING AND DRAINAGE PLAN

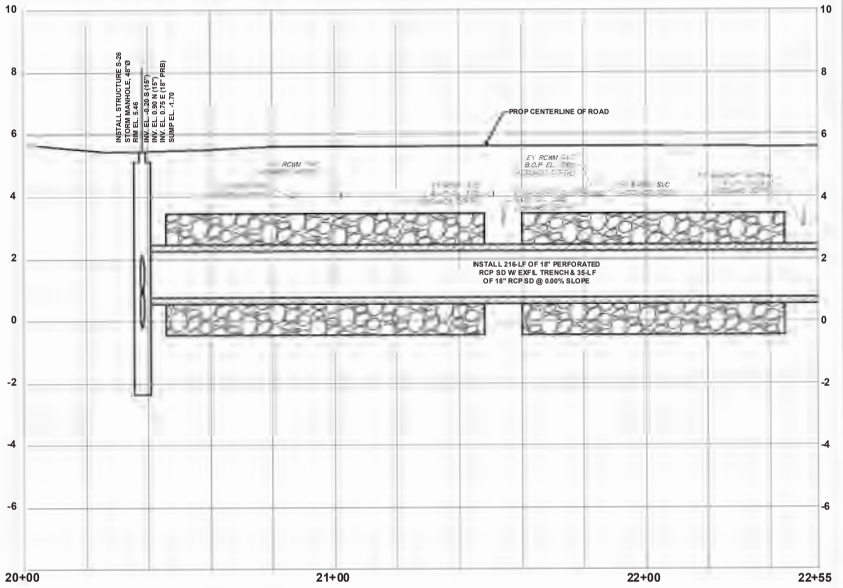
DRAWING NUMBER
PGD-3
20 OF 93

Plot Date: 5/28/2024 8:17:42 AM Username: cwallander Layout Name: PGD-3
Folder Path: V:\Projects\2020\20-092.066 - NE 27th Ave & NE 16 St Stormwater Imprmt\Design\CAD\Sheets Filename: 20-092.066 DRAINAGE PLAN (SHTS 1-13 AND 22-24).dwg



NE 20 ST

SCALE: 1"=20' HORZ | 1"=2' VERT



BCTED 210505060

KEY MAP

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cma
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LICENSE
No. 72232
STATE OF FLORIDA
PROFESSIONAL ENGINEER

CLIENT

pompano beach
Florida's Warmest Welcome

PROJECT INFORMATION

NE 27 AVENUE AND NE 16 STREET STORMWATER IMPROVEMENTS

CITY OF POMPANO BEACH, FL

PROJECT NUMBER
20-092.066

CLIENT PROJECT NUMBER
19-352

VERIFY SCALES
0 1"
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REVISIONS

DATE OF ISSUE
5/28/2024

DESIGNED BY
JLS

DRAWN BY

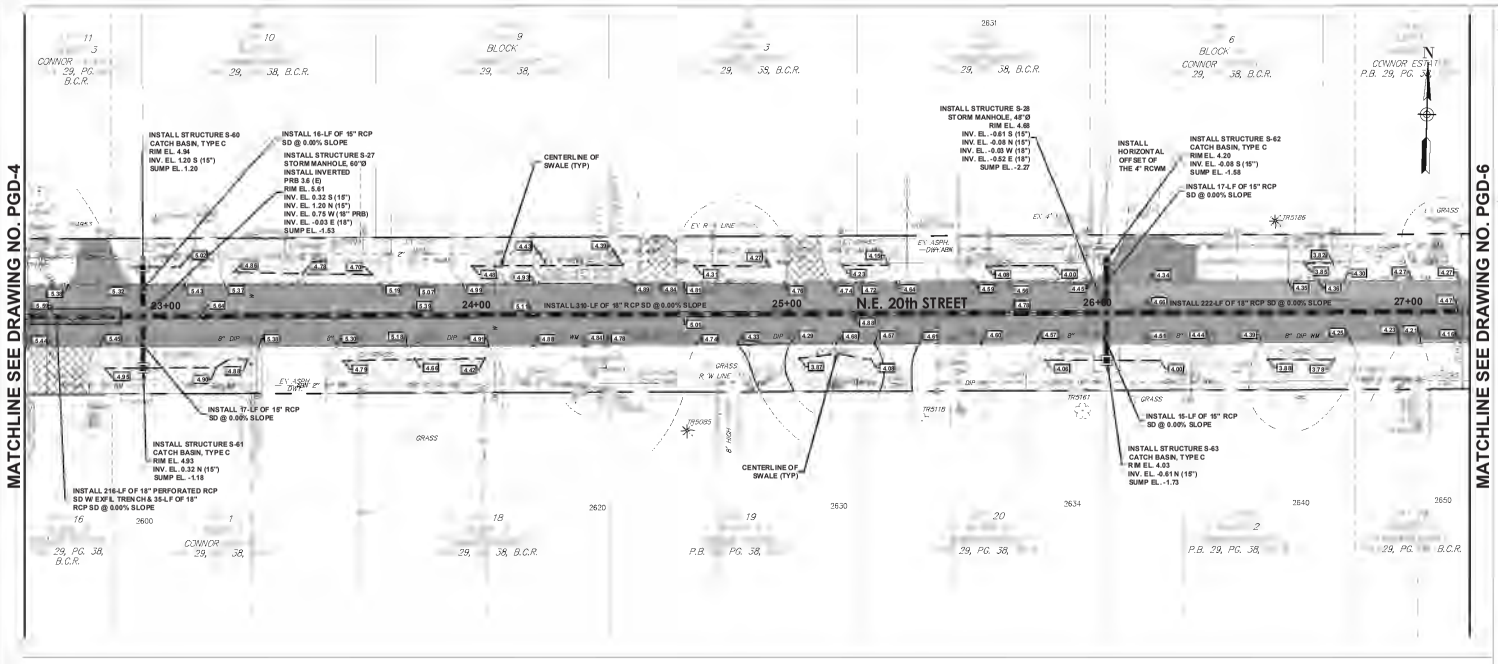
CHECKED BY
JM

DRAWING TITLE

PAVING, GRADING AND DRAINAGE PLAN

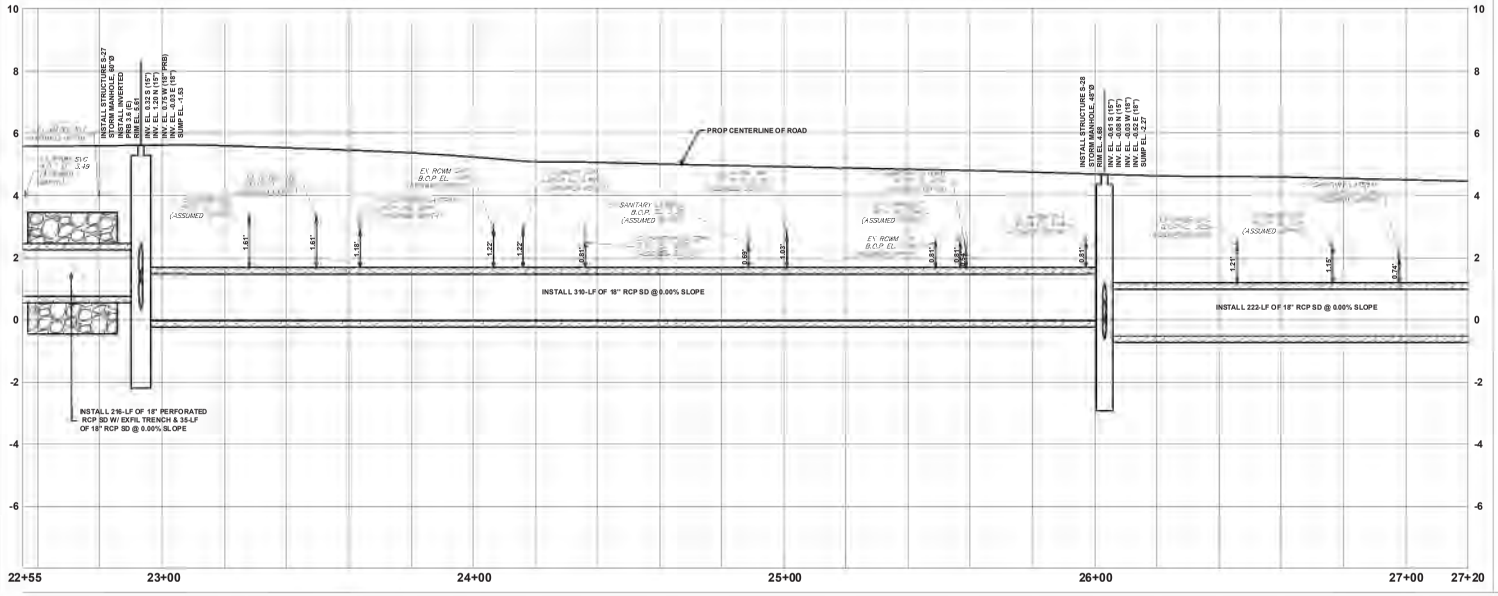
DRAWING NUMBER
PGD-4
21 OF 93

Plot Date: 5/28/2024 8:18:25 AM Username: cwallander Layout Name: PGD-4
Folder Path: V:\Projects\2020\20-092.066 - NE 27th Ave & NE 16 St Stormwater Imprmt\Design\CAD\Sheets Filename: 20-092.066 DRAINAGE PLAN (SHTS 1-13 AND 22-24).dwg



NE 20 ST

SCALE: 1"=20' HORZ | 1"=2' VERT



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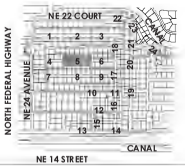

KEY MAP

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HATCH LEGEND

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PROJECT INFORMATION

NE 27 AVENUE AND NE 16 STREET STORMWATER IMPROVEMENTS

CITY OF POMPANO BEACH, FL

PROJECT NUMBER
20-092.066

CLIENT PROJECT NUMBER
19-352

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REVISIONS

DATE OF ISSUE
5/28/2024

DESIGNED BY
JLS

DRAWN BY

CHECKED BY
JM

DRAWING TITLE

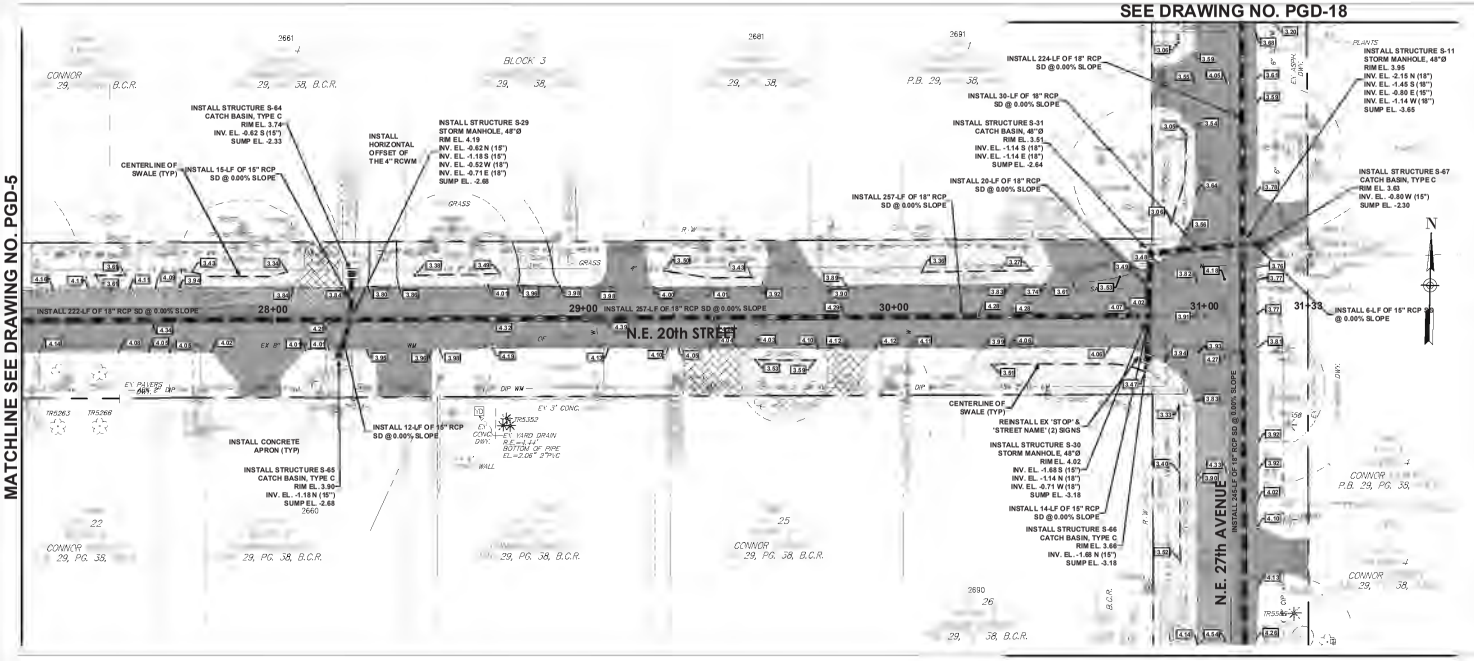
PAVING, GRADING AND DRAINAGE PLAN

DRAWING NUMBER
PGD-5
22 OF 93

Plot Date: 5/28/2024 8:19:06 AM Username: cwallander Layout Name: PGD-5
Folder Path: V:\Projects\2020\20-092.066 - NE 27th Ave & NE 16 St Stormwater Imprmt\Design\CAD\Sheets Filename: 20-092.066 DRAINAGE PLAN (SHTS 1-13 AND 22-24).dwg

SEE DRAWING NO. PGD-18

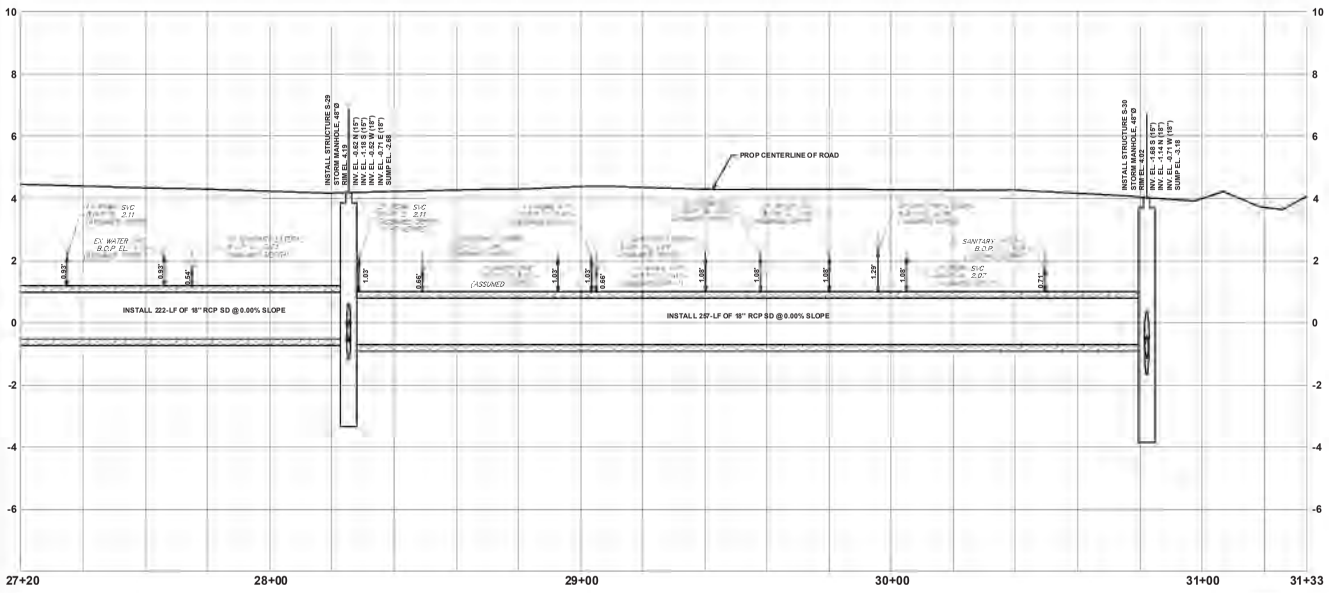
MATCHLINE SEE DRAWING NO. PGD-5



SEE DRAWING NO. PGD-17

NE 20 ST

SCALE: 1"=20' HORZ | 1"=2' VERT



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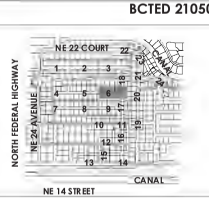

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NE 27 AVENUE AND NE 16 STREET STORMWATER IMPROVEMENTS

CITY OF POMPANO BEACH, FL

PROJECT NUMBER
20-092.066

CLIENT PROJECT NUMBER
19-352

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REVISIONS

DATE OF ISSUE
5/28/2024

DESIGNED BY
JLS

DRAWN BY

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JM

DRAWING TITLE
PAVING, GRADING AND DRAINAGE PLAN

DRAWING NUMBER
PGD-6
23 OF 93

Plot Date: 5/28/2024 8:19:48 AM Username: cwallander Layout Name: PGD-6
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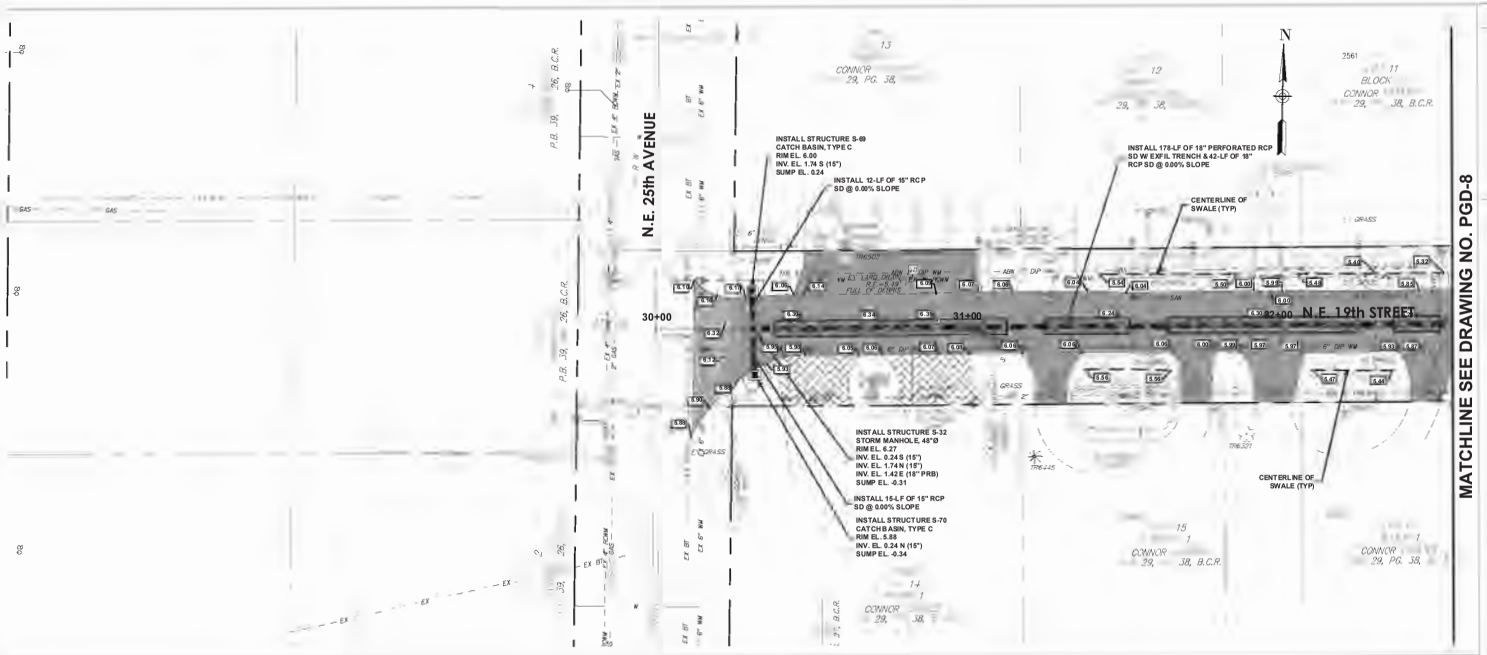
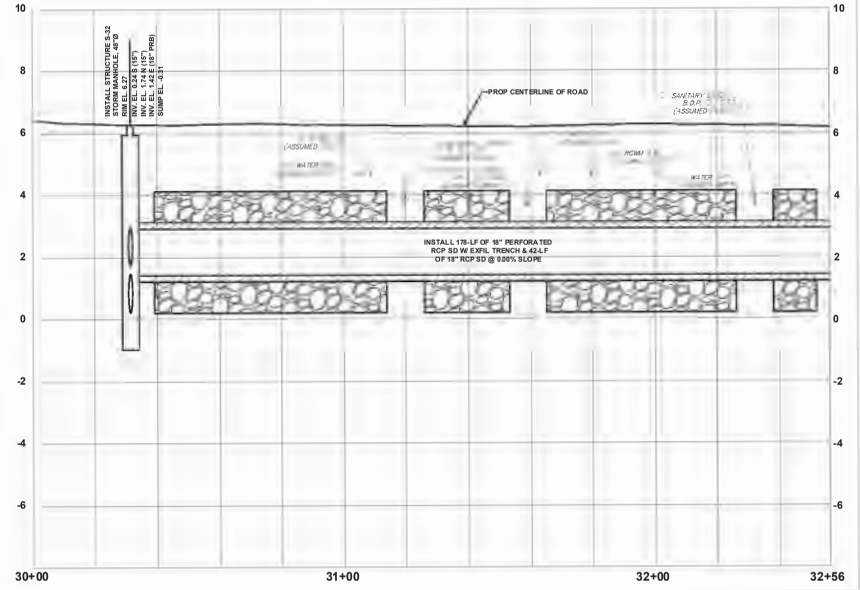


NE 19 ST

SCALE: 1"=20' HORZ | 1"=2' VERT



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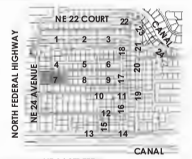

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JLS

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DRAWING NUMBER
PGD-7
24 OF 93

Plot Date: 5/28/2024 8:20:29 AM Username: cwallander Layout Name: PGD-7
Folder Path: V:\Projects\2020\20-092.066 - NE 27th Ave & NE 16 St Stormwater Imprmt\Design\CAD\Sheets Filename: 20-092.066 DRAINAGE PLAN (SHTS 1-13 AND 22-24).dwg

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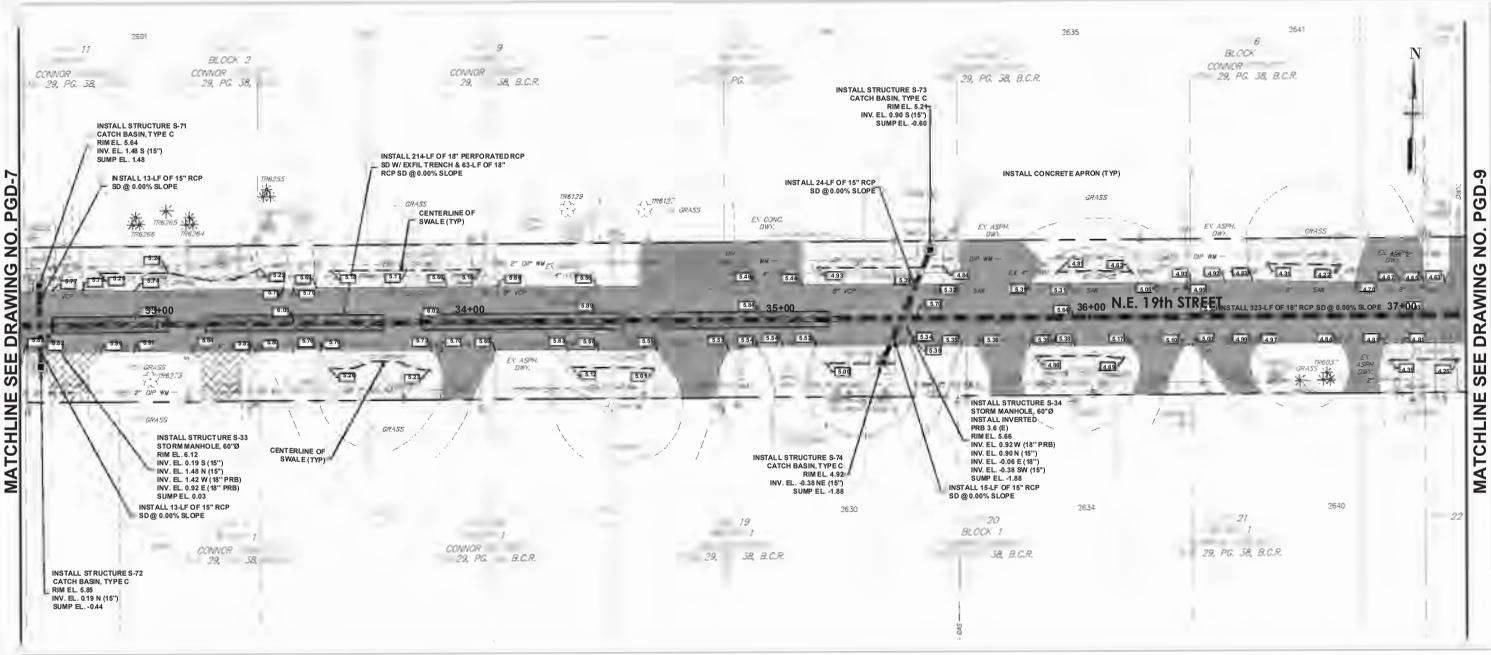

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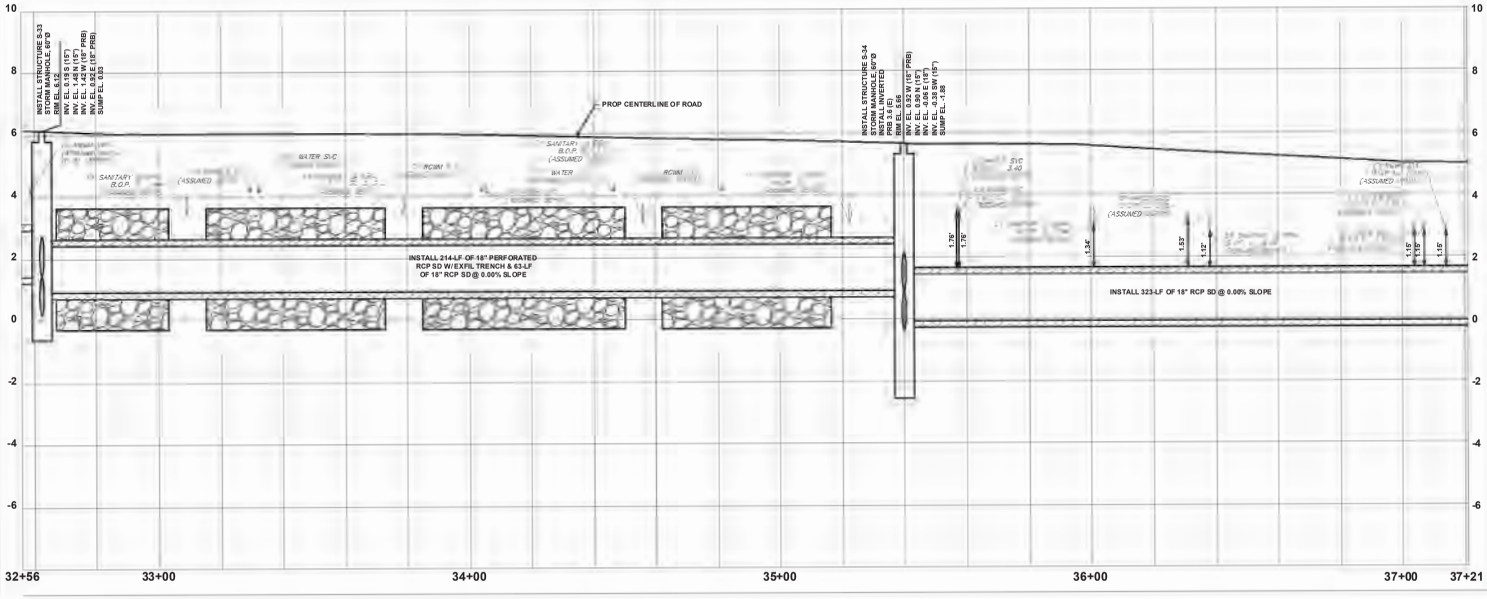

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BID SET

cma
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954.730.0707
www.chenmoore.com

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JENNIFER L. SMITH LICENSE No. 72232 STATE OF FLORIDA PROFESSIONAL ENGINEER

CLIENT

pompano beach
Florida's Warmest Welcome

PROJECT INFORMATION

NE 27 AVENUE AND NE 16 STREET STORMWATER IMPROVEMENTS

CITY OF POMPANO BEACH, FL

PROJECT NUMBER
20-092.066

CLIENT PROJECT NUMBER
19-352

VERIFY SCALES
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REVISIONS

DATE OF ISSUE
5/28/2024

DESIGNED BY
JLS

DRAWN BY

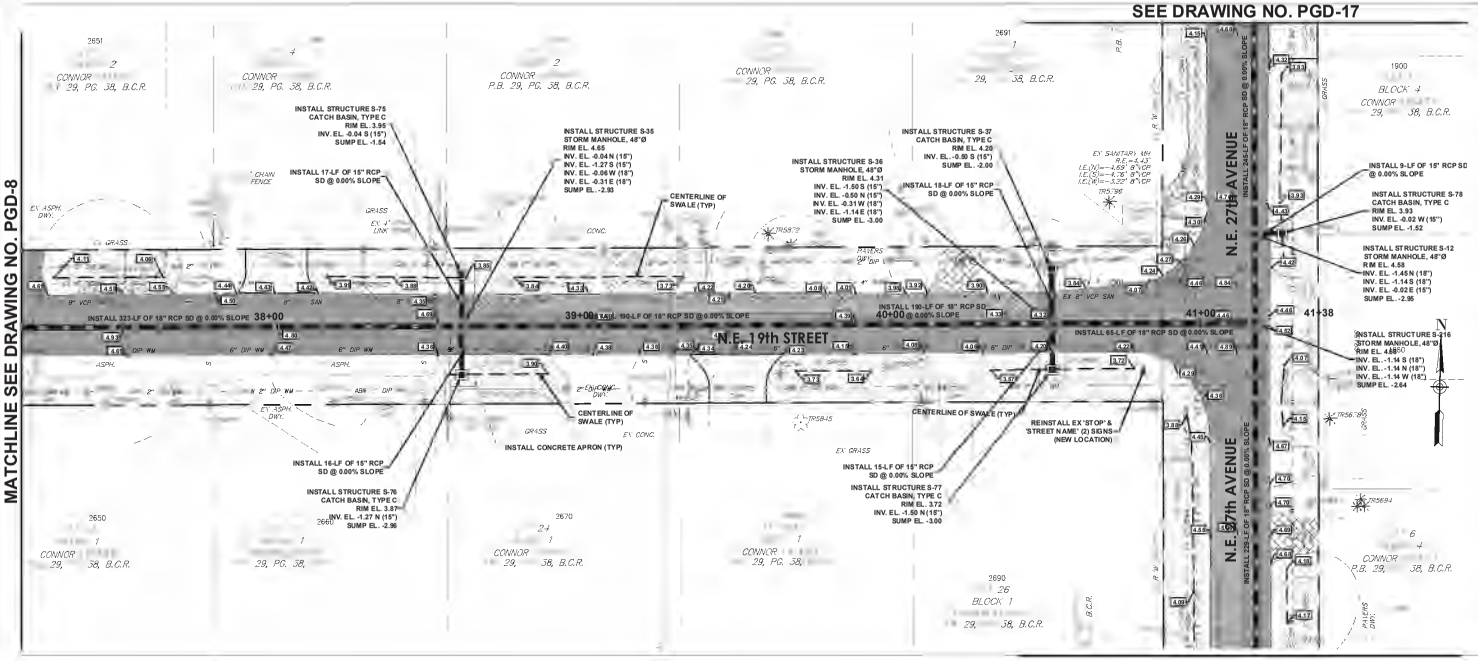
CHECKED BY
JM

DRAWING TITLE
PAVING, GRADING AND DRAINAGE PLAN

DRAWING NUMBER
PGD-8
25 OF 93

Plot Date: 5/28/2024 8:21:11 AM Username: cwallander Layout Name: PGD-8
Folder Path: V:\Projects\2020\20-092.066 - NE 27th Ave & NE 16 St Stormwater Imprmt\Design\CAD\Sheets Filename: 20-092.066 DRAINAGE PLAN (SHTS 1-13 AND 22-24).dwg

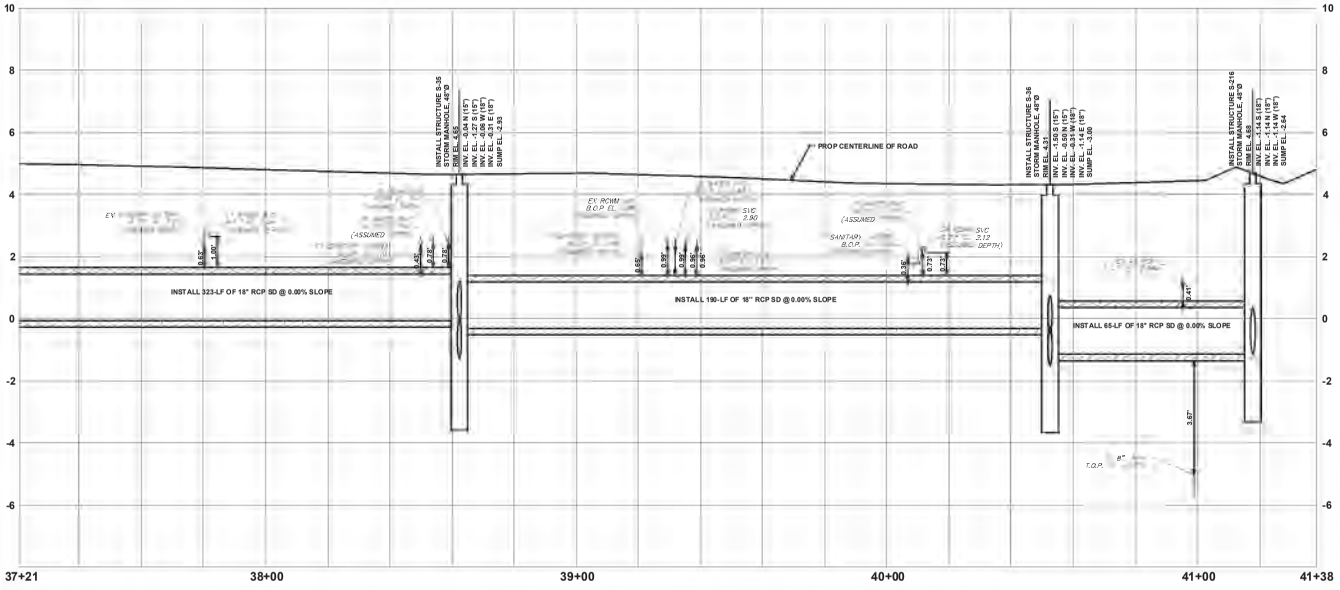
SEE DRAWING NO. PGD-17



SEE DRAWING NO. PGD-17

NE 19 ST

SCALE: 1"=20' HORZ | 1"=2' VERT



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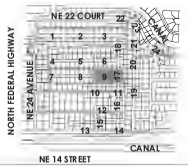

KEY MAP

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HATCH LEGEND

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CLIENT

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PROJECT INFORMATION

NE 27 AVENUE AND NE 16 STREET STORMWATER IMPROVEMENTS

CITY OF POMPANO BEACH, FL

PROJECT NUMBER
20-092.066

CLIENT PROJECT NUMBER
19-352

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REVISIONS

DATE OF ISSUE
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DESIGNED BY
JLS

DRAWN BY

CHECKED BY
JM

DRAWING TITLE
PAVING, GRADING AND DRAINAGE PLAN

DRAWING NUMBER
PGD-9
26 OF 93

Plot Date: 5/28/2024 8:21:54 AM Username: cwallander Layout Name: PGD-9
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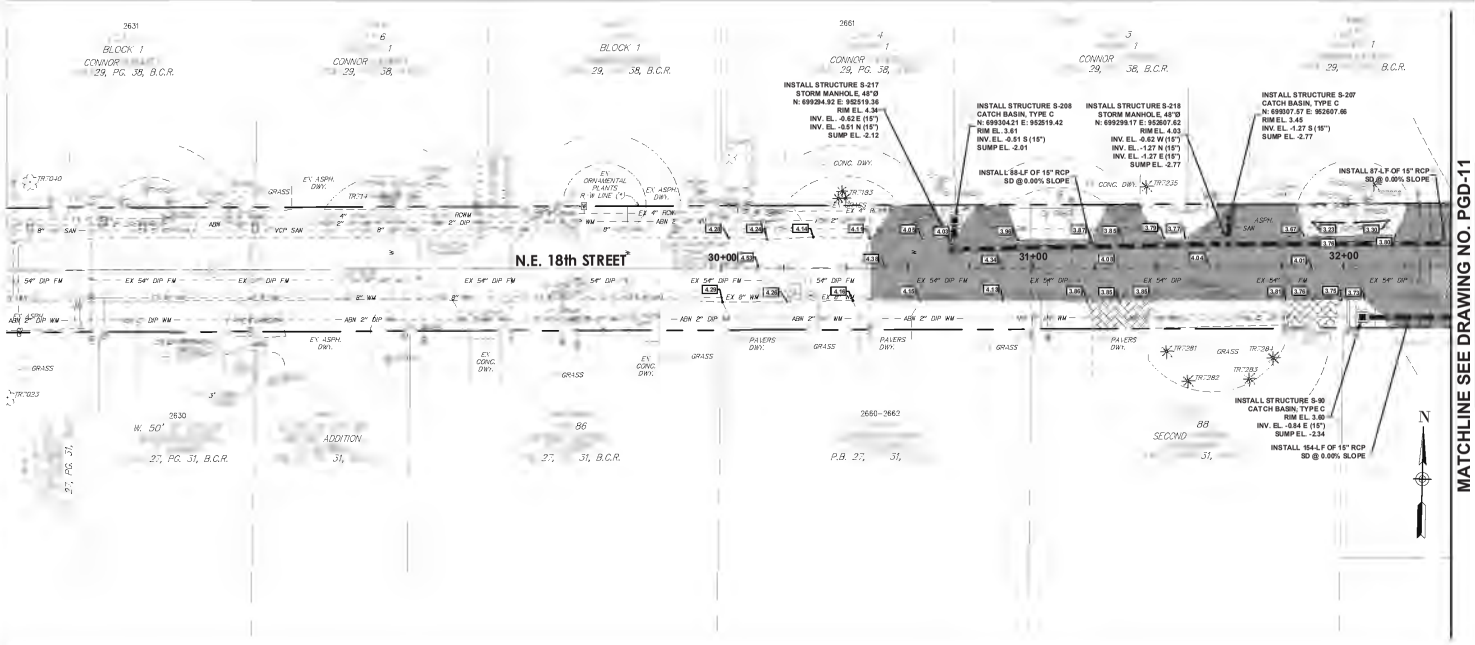
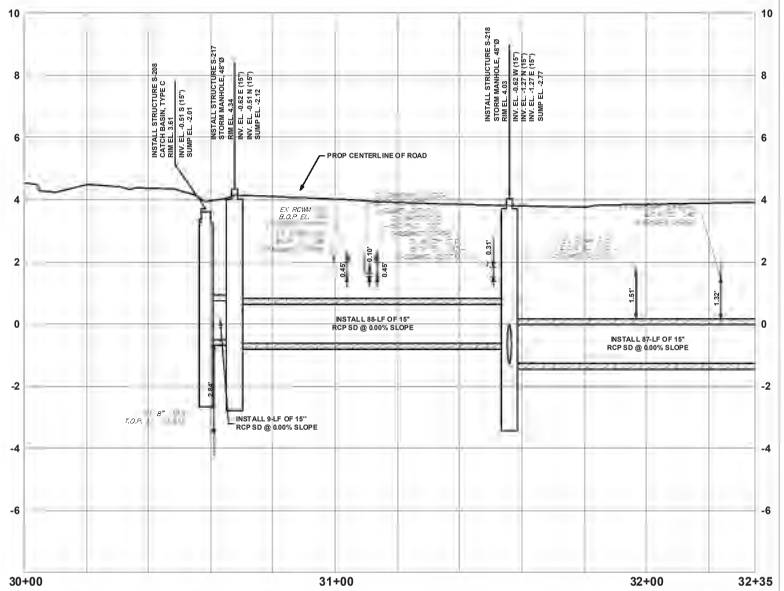


NE 18 STREET

SCALE: 1"=20' HORZ | 1"=2' VERT



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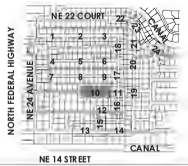

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pompano beach
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PROJECT INFORMATION

NE 27 AVENUE AND NE 16 STREET STORMWATER IMPROVEMENTS

CITY OF POMPANO BEACH, FL

PROJECT NUMBER
20-092.066

CLIENT PROJECT NUMBER
19-352

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DATE OF ISSUE
5/28/2024

DESIGNED BY
JLS

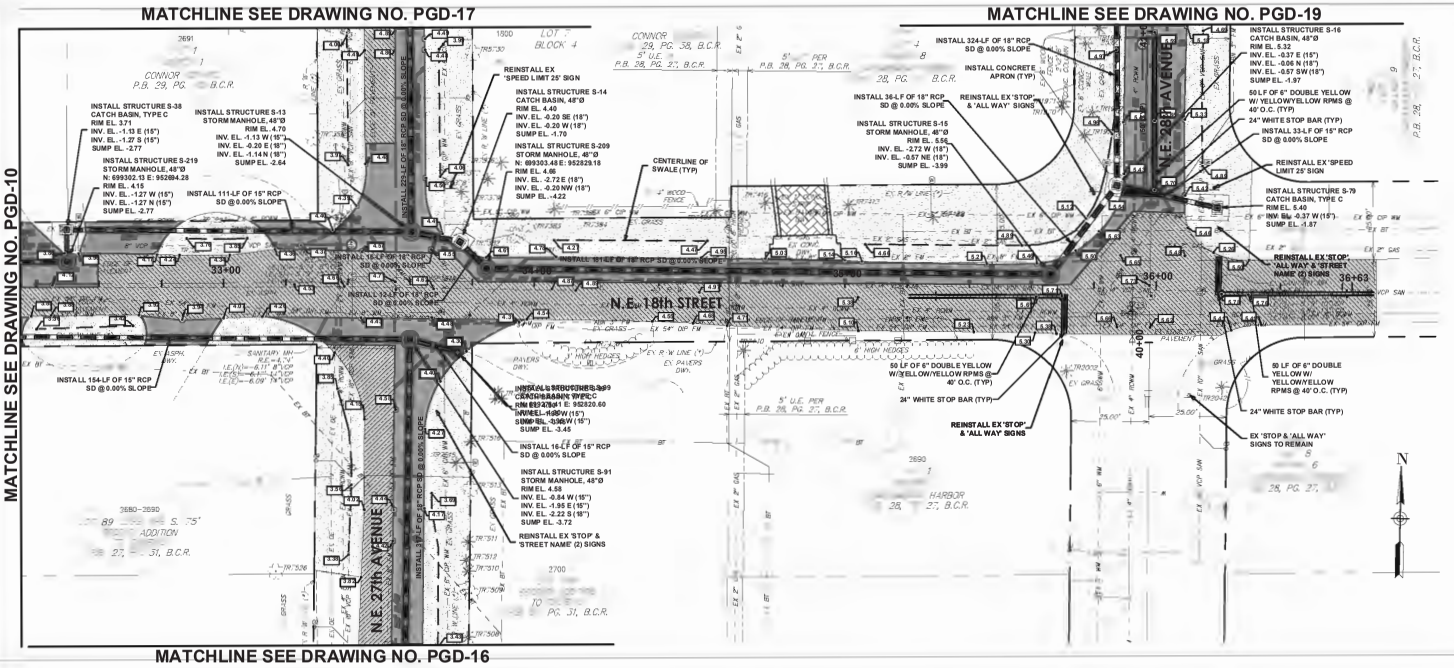
DRAWN BY

CHECKED BY
JM

DRAWING TITLE
PAVING, GRADING AND DRAINAGE PLAN

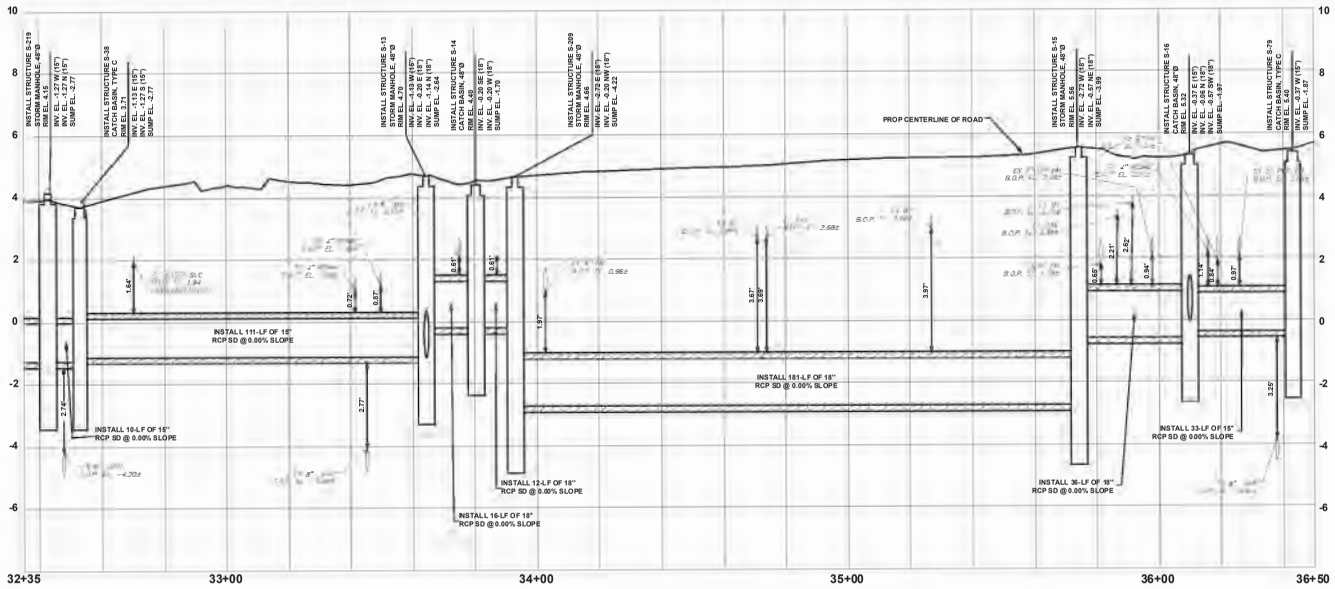
DRAWING NUMBER
PGD-10
27 OF 93

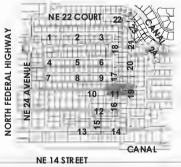
Plot Date: 5/28/2024 8:22:33 AM Username: cwallander Layout Name: PGD-10
Folder Path: V:\Projects\2020\20-092.066 - NE 27th Ave & NE 16 St Stormwater Imprmnt\Design\CAD\Sheets Filename: 20-092.066 DRAINAGE PLAN (SHTS 1-13 AND 22-24).dwg



NE 18 STREET

SCALE: 1"=20' HORZ | 1"=2' VERT





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DRAWN BY

CHECKED BY
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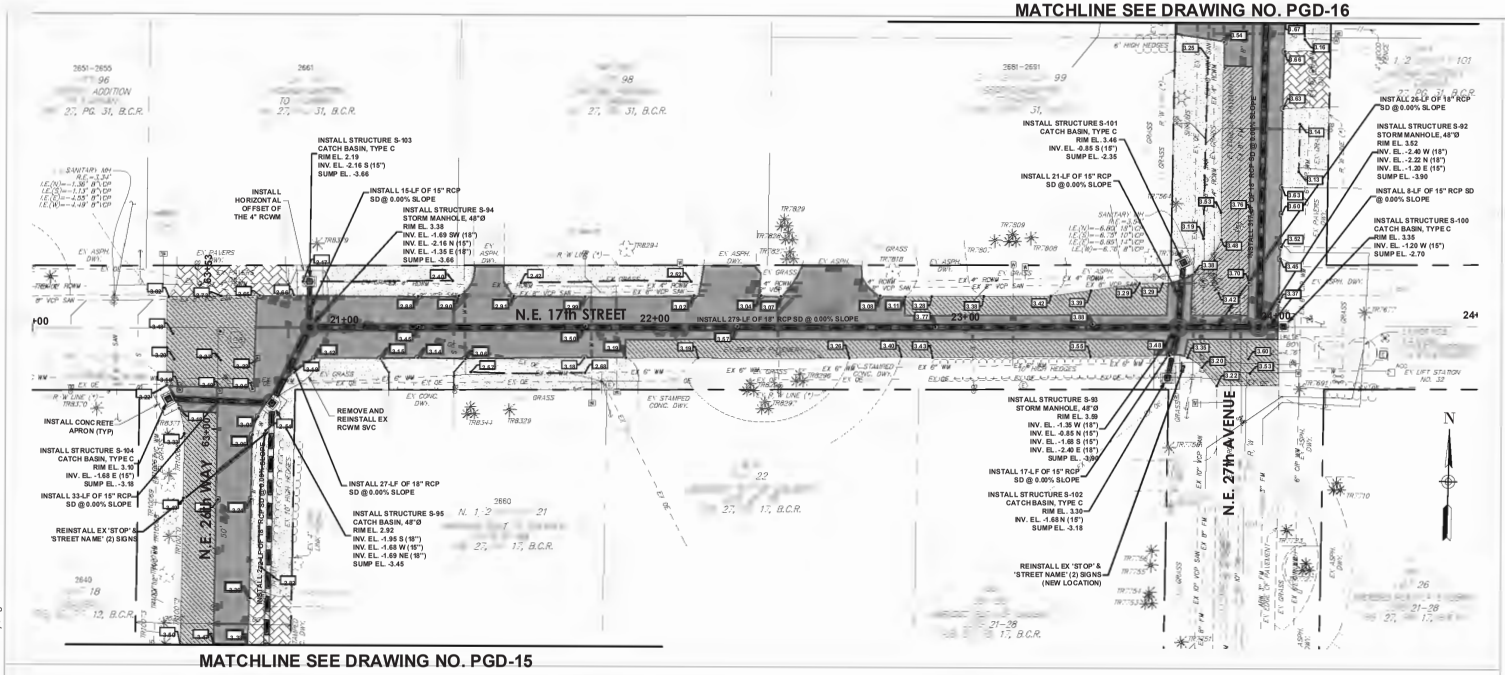
DRAWING TITLE
PAVING, GRADING AND DRAINAGE PLAN

DRAWING NUMBER
PGD-11
28 OF 93

Plot Date: 5/28/2024 8:23:15 AM Username: cwallander Layout Name: PGD-11
Folder Path: V:\Projects\2020\20-092.066 - NE 27th Ave & NE 16 St Stormwater Imprmt\Design\CAD\Sheets Filename: 20-092.066 DRAINAGE PLAN (SHTS 1-13 AND 22-24).dwg

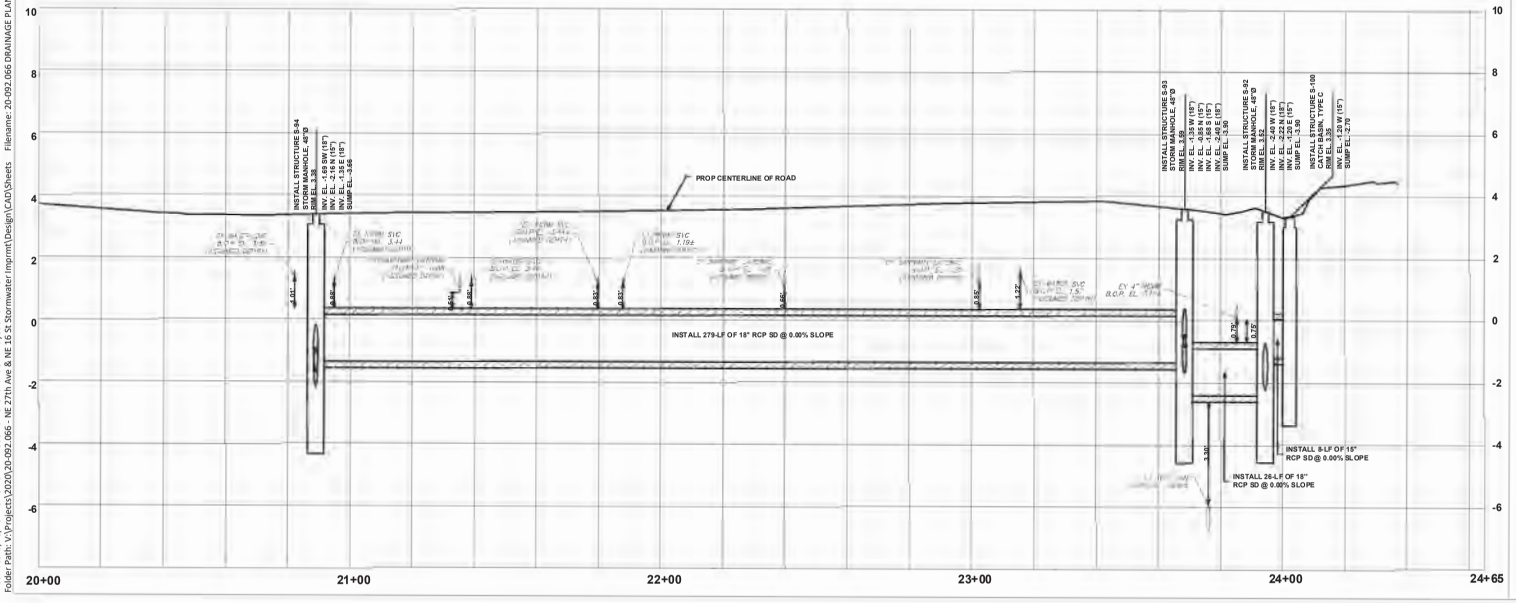
MATCHLINE SEE DRAWING NO. PGD-16



MATCHLINE SEE DRAWING NO. PGD-15

NE 17 STREET

SCALE: 1"=20' HORZ | 1"=2' VERT



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BID SET

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chen moore and associates
500 West Cypress Creek Road
Suite 630
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954.730.0707
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JENNIFER L. SMITH LICENSE No. 72232 STATE OF FLORIDA PROFESSIONAL ENGINEER

CLIENT

pompano beach
Florida's Warmest Welcome

PROJECT INFORMATION

NE 27 AVENUE AND NE 16 STREET STORMWATER IMPROVEMENTS

CITY OF POMPANO BEACH, FL

PROJECT NUMBER
20-092.066

CLIENT PROJECT NUMBER
19-352

VERIFY SCALES
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REVISIONS

DATE OF ISSUE
5/28/2024

DESIGNED BY
JLS

DRAWN BY

CHECKED BY
JM

DRAWING TITLE
PAVING, GRADING AND DRAINAGE PLAN

DRAWING NUMBER
PGD-12
29 OF 93

Plot Date: 5/28/2024 8:23:46 AM Username: cwallander Layout Name: PGD-12
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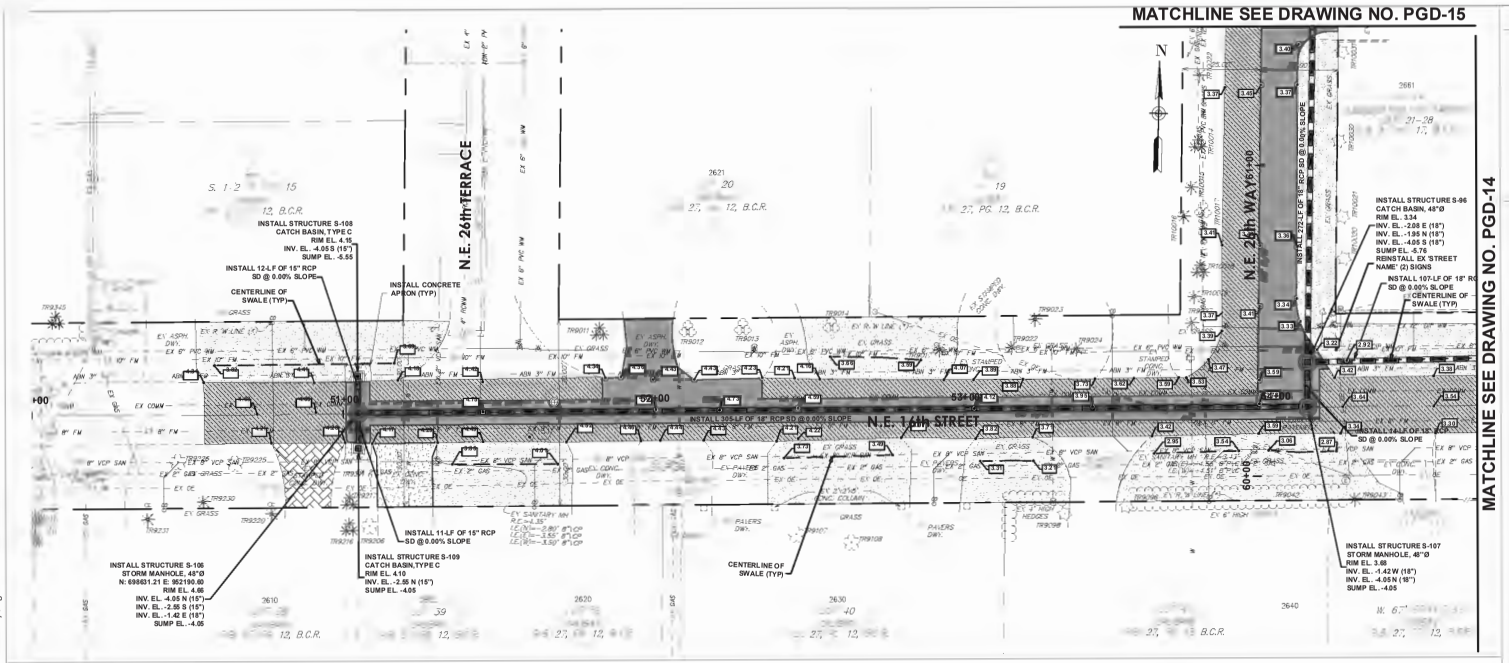
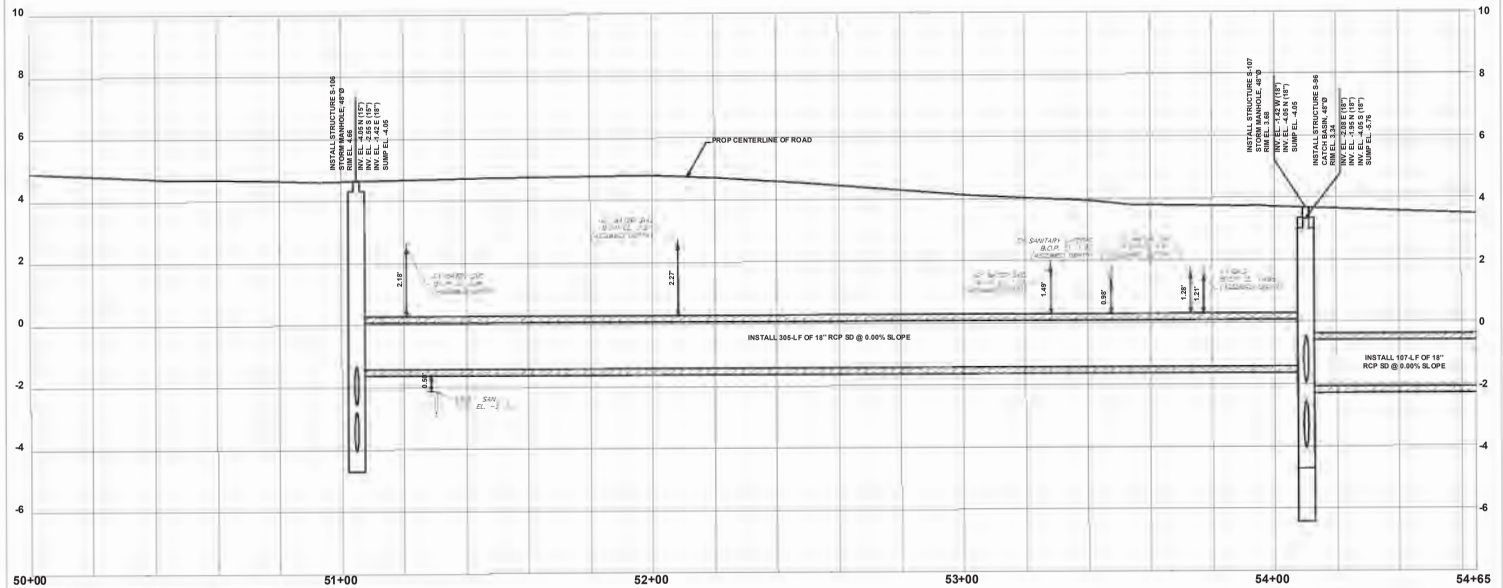


NE 16 STREET

SCALE: 1"=20' HORZ | 1"=2' VERT



BCTED 210505060

KEY MAP
N.T.S.

HATCH LEGEND

- ROAD / ASPHALT RESTORATION
- PROPOSED ASPHALT OVERLAY
- CONCRETE RESTORATION
- SPECIALTY DRIVEWAY RESTORATION
- PROPOSED SWALE

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VERTICAL DATUM INFORMATION
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PROJECT INFORMATION

NE 27 AVENUE AND NE 16 STREET STORMWATER IMPROVEMENTS

CITY OF POMPANO BEACH, FL

PROJECT NUMBER
20-092.066

CLIENT PROJECT NUMBER
19-352

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REVISIONS

DATE OF ISSUE
5/28/2024

DESIGNED BY
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JM

DRAWING TITLE
PAVING, GRADING AND DRAINAGE PLAN

DRAWING NUMBER
PGD-13
30 OF 93

Plot Date: 5/28/2024 8:24:28 AM Username: cwallander Layout Name: PGD-13
Folder Path: V:\Projects\2020\20-092.066 - NE 27th Ave & NE 16 St Stormwater Imprmnt\Design\CAD\Sheets Filename: 20-092.066 DRAINAGE PLAN [SHTS 1-13 AND 22-24].dwg

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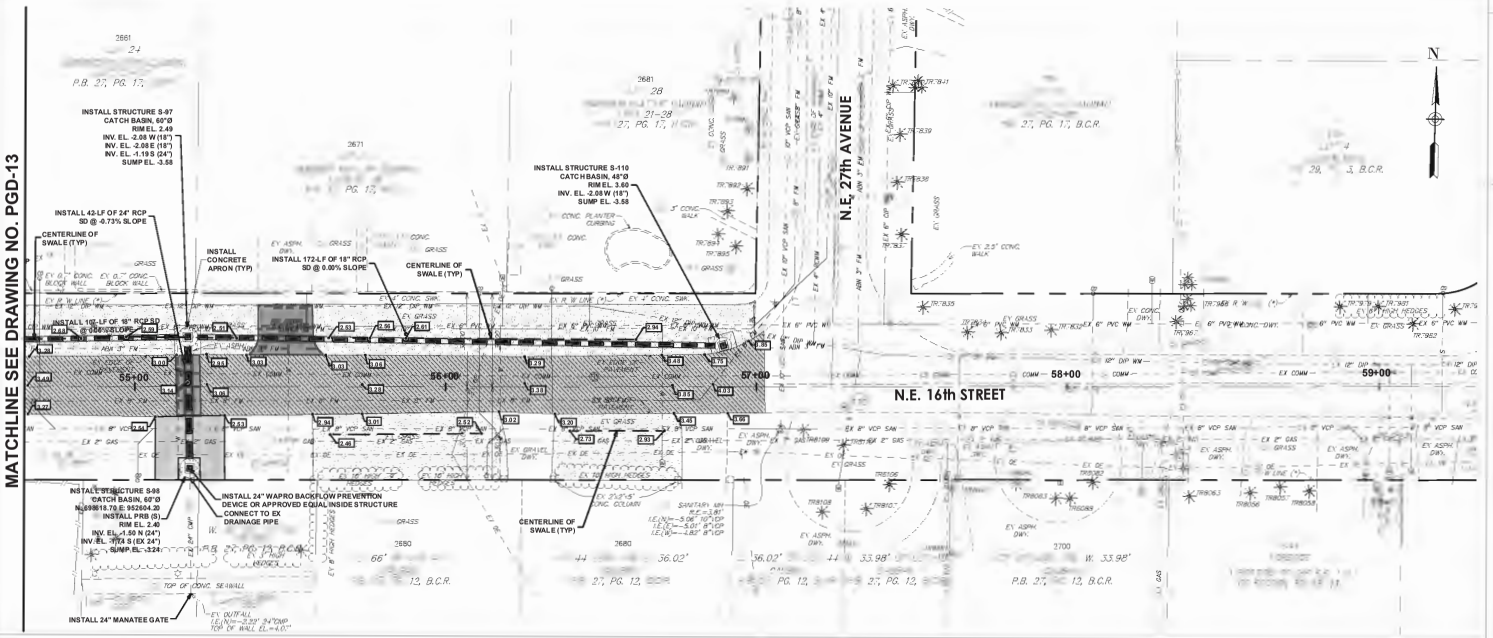

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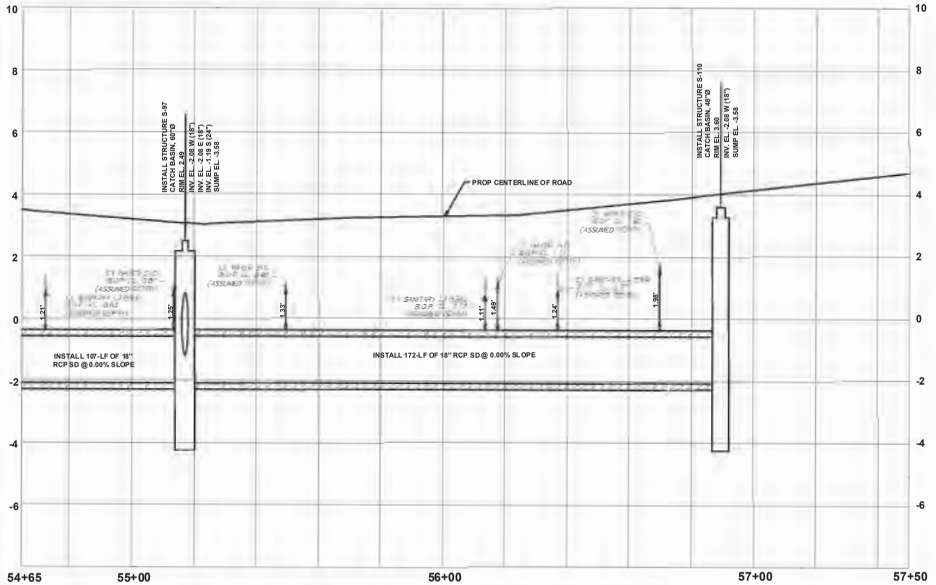

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5/28/2024

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DRAWING TITLE
PAVING, GRADING AND DRAINAGE PLAN

DRAWING NUMBER
PGD-14
31 OF 93

Plot Date: 5/28/2024 8:25:06 AM Username: cwallander Layout Name: PGD-14
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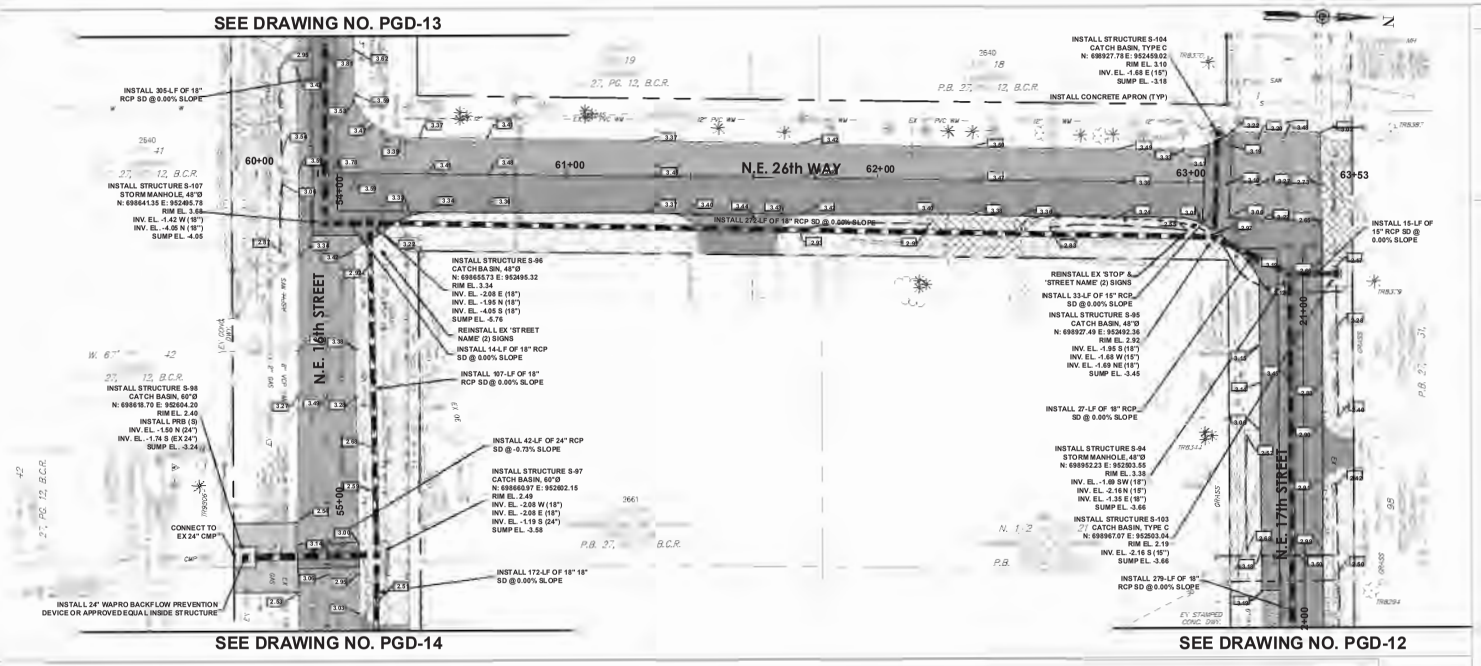

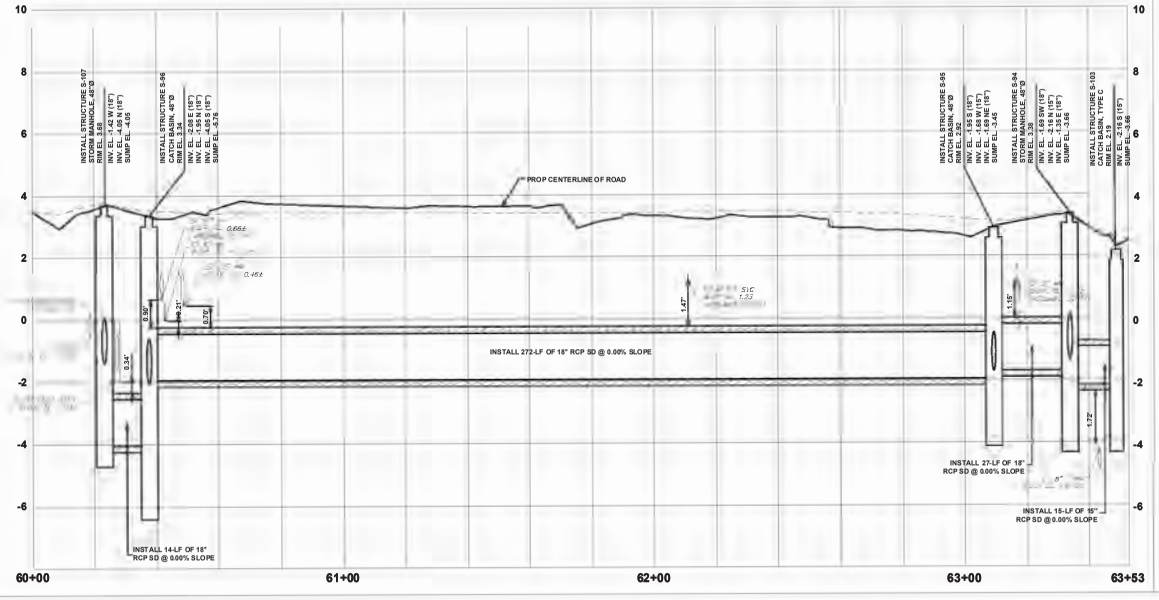

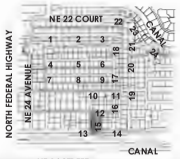

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