



**US Army Corps
of Engineers**
Philadelphia District

Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107-3390
ATTN: CENAP-OP-R

Public Notice

Public Notice No.
CENAP-OP-R-2016-956

Date

Application No.
CENAP-OP-R-2016-956

File No.

CENAP-OP-R-2016-956-85

In Reply Refer to:
REGULATORY BRANCH

This District has received an application for a Department of the Army permit pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) and Section 404 of the Clean Water Act (33 U.S.C. 1344).

The purpose of this notice is to solicit comments and recommendations from the public concerning issuance of a Department of the Army permit for the work described below.

APPLICANT: City of Wilmington, Department of Public Works

AGENT: Rummel, Klepper & Kahl, LLP

WATERWAY: Christina River

LOCATION: South Walnut Street, Wilmington, New Castle County, Delaware
Tax Map Parcels 26-050.00-44, 46, 56, 58, 74, 75, and 80
(Lat. 39.73034°N/Long. -75.54959°W).

ACTIVITY: The applicant is proposing to create a wetland park in south Wilmington bordered by South Walnut Street to the west, A Street to the north, Buttonwood Street to the east, and Garasches Lane to the south as part of a wetland restoration/community resiliency project with the dual goal of creating an accessible, highly functioning wetland system and providing increased stormwater management capacity to Wilmington's Southbridge neighborhood. The design includes excavating approximately 95,000 cubic yards of material, with approximately 16,000 cubic yards of this material to be reused on site. An additional 30,000 cubic yards of clean topsoil will be added. The proposed restoration will permanently impact approximately 4.51 acres of waters of the United States associated with the regrading of the existing wetland. An additional temporary impact of approximately 0.14 acre of impact to waters of the United States is associated with construction access and sediment control measures. The applicant proposes to create approximately 5.35 acres of wetlands and open water, as well as enhance approximately 12.18 acres of wetlands and open water on the site.

Additionally, the applicant proposes to introduce tidal flow from the Christina River by replacing an existing 48" flap gate located under A Street, with a 48", self-regulating tide gate. The self-regulating tide gate will be configured to allow tidal inflow only during the bottom half of the tidal prism, therefore, it will be closed during high tides and tidal surges to prevent tidal flooding of the site and the surrounding low-lying properties. The tidal inflow during the lower half of the tidal prism will inundate the site up to elevation -1.0' which is the lowest elevation of the

proposed marsh. Further, the applicant proposes to add a 48" tidal flap gate to the Christina River in the northeast corner of the site, along the Church Street easement to decrease the residence time of stored flood waters. In order to facilitate the ebb and flow from the self-regulating tide gate, a network of tidal channels will be constructed throughout the site as well as 2 deep water pools that will provide habitat for water-dependent species.

Finally, a trail system will be installed through the wetland to allow for use of the wetland park for recreational purposes, as well as connecting Southbridge to nearby shopping and the Wilmington Riverfront. The trail system will include pile supported, elevated sections over the restored wetlands and tidal channels, as well as at-grade sections along the upland islands. The trail system will be constructed to provide for vehicle usage for maintenance access to an existing utility line within the park.

Prior to the 1800's, the project site consisted of a more expansive wetland and open water system. In order to provide for suitable land, conducive to industry, fill material such as tannery and/or pyrite waste, slag, cinders, ash from incinerators and dredge spoils were added to increase elevation. As a result, the current wetland complex is severely degraded, with a monoculture of *Phragmites australis* and contaminants including arsenic, lead, PCB's, some pesticides, polycyclic aromatic hydrocarbons, volatile organic compounds and semivolatile organic compounds. The monoculture of *Phragmites australis* will be removed via herbicide treatment, mechanical removal, and grading to alter the hydrology. A Proposed Plan of Remedial Action to address the contaminants is currently under review by the Delaware Department of Natural Resources and Environmental Control.

The proposed work and dimensions of the structures are indicated on the attached plans identified as Sheet 1 through Sheet 21.

PURPOSE: The purpose of the project is to create an accessible, highly functioning wetland park system and provide increased stormwater management capacity to Wilmington's Southbridge neighborhood.

AVOIDANCE/MINIMIZATION/COMPENSATION STATEMENT:

On April 10, 2008, the U.S. Army Corps of Engineers and the U.S. Environmental Protection Agency published a *Final Rule on Compensatory Mitigation for the Losses of Aquatic Resources* (33 CFR 325 and 332 and 40 CFR 230). The rule took effect on June 9, 2008. In accordance with 33 CFR Part 325.1(d)(7) of the rule, the applicant has stated that the proposed project has been designed to avoid and minimize adverse effects on the aquatic environment to the maximum extent practicable, and has further documented that compensatory mitigation is not necessary. The following aspects and features of the project demonstrate the applicant's efforts in this regard.

The project is designed to restore and enhance a severely degraded wetland complex as well as establish additional wetlands on site. The project will result in improved wetland function and a net gain of aquatic resources. Consequently, the applicant is not proposing to conduct any compensatory mitigation for the work and the project is considered self-mitigating.

A preliminary review of this application indicates that the proposed work would not affect listed species or their critical habitat pursuant to Section 7 of the Endangered Species Act as amended. As the evaluation of this application continues, additional information may become available which could modify this preliminary determination.

The decision whether to issue a permit will be based on an evaluation of the activity's probable impact including its cumulative impacts on the public interest. The decision will reflect the national concern for both protection and utilization of important resources. The benefits which reasonably may be expected to accrue from the work must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the work will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs and welfare of the people. A Department of the Army permit will be granted unless the District Engineer determines that it would be contrary to the public interest.

The Corps of Engineers is soliciting comments from the public; Federal, State, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Comments on the proposed work should be submitted, in writing, within 15 days to the District Engineer, U.S. Army Corps of Engineers, Philadelphia District, Wanamaker Building, 100 Penn Square East, Philadelphia, Pennsylvania 19107-3390.

Review of the National Register of Historic Places indicates that no registered properties or properties listed as eligible for inclusion therein are located within the permit area of the work. The Philadelphia District has determined that the permit area has been so extensively modified that little likelihood exists for the proposed project to impact a historic property. The District has determined that the project will have no effect on properties eligible for or listed in the National Register of Historic Places.

Essential Fish Habitat: The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act 1996 (Public Law 104-267), requires all Federal agencies to consult with the National Marine Fisheries Service on all actions, or proposed actions, permitted, funded, or undertaken by the agency that may adversely affect Essential Fish Habitat (EFH).

Effects of the Project: The project is not located in Essential Fish Habitat identified in the *Guide to Essential Fish Habitat Designations in the Northeastern United States*.

In accordance with Section 307(c) of the Coastal Zone Management Act of 1972, applicants for Federal Licenses or Permits to conduct an activity affecting land or water uses in a State's coastal zone must provide certification that the activity complies with the State's Coastal Zone Management Program. The applicant has stated that the proposed activity complies with and will be conducted in a manner that is consistent with the approved State Coastal Zone Management (CZM) Program. No permit will be issued until the State has concurred with the applicant's certification or has waived its right to do so. Comments concerning the impact of the proposed and/or existing activity on the State's coastal zone should be sent to this office, with a copy to the State's Office of Coastal Zone Management.

Any person may request, in writing, to the District Engineer, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for a public hearing shall state in writing, with particularity, the reasons for holding a public hearing.

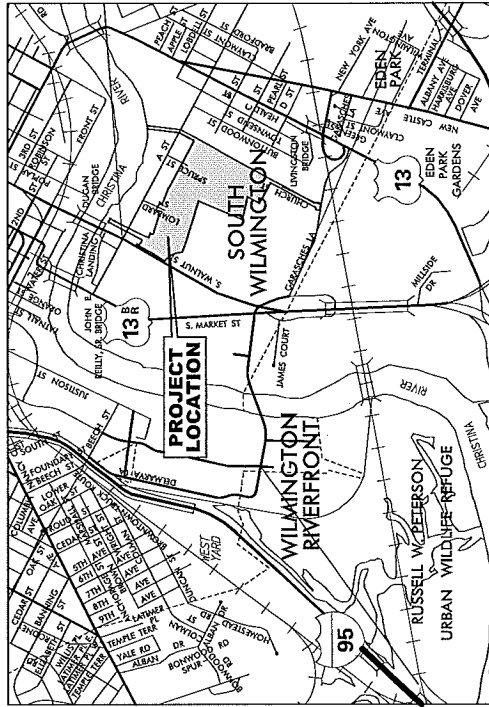
Additional information concerning this permit application may be obtained by calling Michael D. Yost at 302-736-9763, by email at michael.d.yost@usace.army.mil, or by writing this office at the above address.

Edward E. Bonner
Chief, Regulatory Branch



**CITY OF WILMINGTON, DELAWARE
DEPARTMENT OF PUBLIC WORKS
SOUTH WILMINGTON
WETLANDS PARK**

**CONTRACT NO. PW XXXXX
NOVEMBER 7, 2016**



SHEET #	DWG.	INDEX OF DRAWINGS	TITLE
1	T101	TITLE SHEET	
2	GND01	GENERAL NOTES	
3	IS01	LEGEND	
4	IS01	INDEX SHEET	
5-9	GP01-GP05	GRADING PLANS	
10-15	ENV01-ENV06	ENVIRONMENTAL COMPLIANCE PLANS	
16-21	LS01-LS06	LANDSCAPING PLANS	

RUMMEL, KLEPPER & KAHL, LLP

NANCY R. BERGERON, P.E.
DIRECTOR

DELAWARE NO. 16737

**CITY OF WILMINGTON, DELAWARE
DEPARTMENT OF PUBLIC WORKS**

BRYAN LENNON
ASSISTANT WATER DIVISION DIRECTOR

FILE NAME: 101_wetp.dgn
DWG: T101
SHEET NO.: 1 OF 21
DATE: NOVEMBER 7, 2016

LEGEND

DRAINAGE	
	DITCH OR STREAM CENTERLINE
	DIRECTIONAL STREAM FLOW ARROW
	DRAINAGE INLET
	DRAINAGE JUNCTION BOX
	DRAINAGE MANHOLE
	DRAINAGE PIPE AND FLOW ARROW
	DRAINAGE PIPE HEADWALL
	RIPRAP - AREA FEATURE
	RIPRAP - LINEAR FEATURE

MANMADE ROADSIDE FEATURES	
	BOLLARD - STEEL POLE
	BOLLARD - WOOD POST
	CURB
	CURB AND GUTTER
	FENCE - CHAINLINK OR STRANDED
	FENCE - STOCKADE OR SPLIT RAIL
	FLAG POLE
	GUARDRAIL - STEEL BEAM
	GUARDRAIL - WIRE ROPE
	LAMP AND POST - RESIDENTIAL
	WALLBOX
	PARKING METER AND POST
	PAVEMENT - FLEXIBLE
	PAVEMENT - RIGID
	PILE - BRIDGE
	PILLAR OR MISCELLANEOUS POST
	TRAFFIC SIGN AND POST
	WALL - BRICK OR BLOCK
	WALL - STONE

NATURAL ROADSIDE FEATURES	
	GRASS LAWN
	HEDGEROW OR THICKET
	MARSH BOUNDARY LINE
	TREE - CONIFEROUS
	TREE - DECIDUOUS
	TREE STUMP
	SHRUBBERY
	DELINEATED WETLAND BOUNDARY LINE
	WOODS LINE BOUNDARY

RIGHT-OF-WAY SYMBOLS	
	PROPERTY MARKER - CONCRETE MON.
	PROPERTY MARKER - IRON PIPE
	HISTORIC RIGHT-OF-WAY BASE-LINE
	EXISTING RIGHT-OF-WAY
	EXISTING PROPERTY LINE
	EXISTING EASEMENT
	EXISTING DENIAL OF ACCESS
	EXISTING R/W & DENIAL OF ACCESS

SURVEY CONTROL & MONUMENTATION	
	SURVEY BENCHMARK LOCATION
	SURVEY TIE POINT LOCATION
	SURVEY TRAVERSE POINT
	POINT OF CURVATURE OR TANGENCY
	POINT OF INTERSECTING TANGENTS

UTILITY	
	SOIL BORING LOCATION
	UTILITY TEST HOLE LOCATION
	CABLE TV DISTRIBUTION BOX
	ELECTRIC MANHOLE
	ELECTRIC METER
	ELECTRIC TRANSFORMER
	POLE MOUNTED LUMINAIRE
	GAS MANHOLE
	GAS METER
	GAS VALVE
	RAILROAD TRACKS
	SANITARY SEWER MANHOLE
	SANITARY SEWER VALVE
	SANITARY SEWER VENT OR CLEANOUT
	SEPTIC DRAIN FIELD
	TELEPHONE BOOTH
	TELEPHONE MANHOLE
	TELEPHONE TEST POINT
	TRAFFIC - CONDUIT JUNCTION WELL
	TRAFFIC - LIGHT POLE AND BASE
	TRAFFIC - PEDESTRIAN POLE & BASE
	TRAFFIC - SIGNAL CABINET & BASE
	TRAFFIC - SIGNAL POLE AND BASE
	UTILITY BOX
	UTILITY POLE GUY WIRE ANCHOR
	UTILITY POLE
	WATER - FIRE HYDRANT
	WATER METER
	WATER VALVE
	WELL HEAD
	MANHOLE - UNDETERMINED OWNER

UTILITY COMPANY FACILITIES	
	CITY OF WILMINGTON COMBINED SEWER
	CITY OF WILMINGTON STORM DRAIN
	CITY OF WILMINGTON WATER
	DELMARVA POWER-ELECTRIC
	DELMARVA POWER-ELECTRIC OVERHEAD
	VERIZON
	AMERICAN TELEPHONE & TELEGRAPH
	COMCAST
	NEW CASTLE COUNTY SEWER

CONSTRUCTION	
	CONSTRUCTION SAFETY FENCE
	DRAINAGE INLET
	HEADWALL
	TIDAL GATE
	FLARED END SECTION
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	LIMIT OF CONSTRUCTION
	MANHOLE
	PAVEMENT PATCH
	PIPE & DIRECTIONAL FLOW ARROW
	RIPRAP

IDENTIFIERS	
	ADJUST BY CONTRACTOR
	ADJUST BY OTHERS
	CONVERT TO JUNCTION BOX
	CONVERT TO DRAINAGE MANHOLE
	DRAINAGE INLET
	DRAINAGE PIPE
	DO NOT DISTURB
	ENERGY DISSIPATOR
	FLARED END SECTION
	JUNCTION BOX
	MANHOLE
	HEADWALL
	RELOCATE BY OTHERS
	REMOVE BY CONTRACTOR
	REMOVE BY OTHERS

RIGHT-OF-WAY SYMBOLS	
	PROPOSED RIGHT-OF-WAY MONUMENT
	PROPOSED DENIAL OF ACCESS
	PROPOSED PERMANENT EASEMENT
	PROPOSED RIGHT-OF-WAY
	PROPOSED R/W & DENIAL OF ACCESS
	TEMPORARY CONSTRUCTION EASEMENT

ENVIRONMENTAL SYMBOLS	
	PERMANENT IMPACT AREA
	TEMPORARY IMPACT AREA
	WETLAND ENHANCEMENT AREA
	WETLAND CREATION AREA
	OPEN WATER ENHANCEMENT AREA
	OPEN WATER CREATION AREA

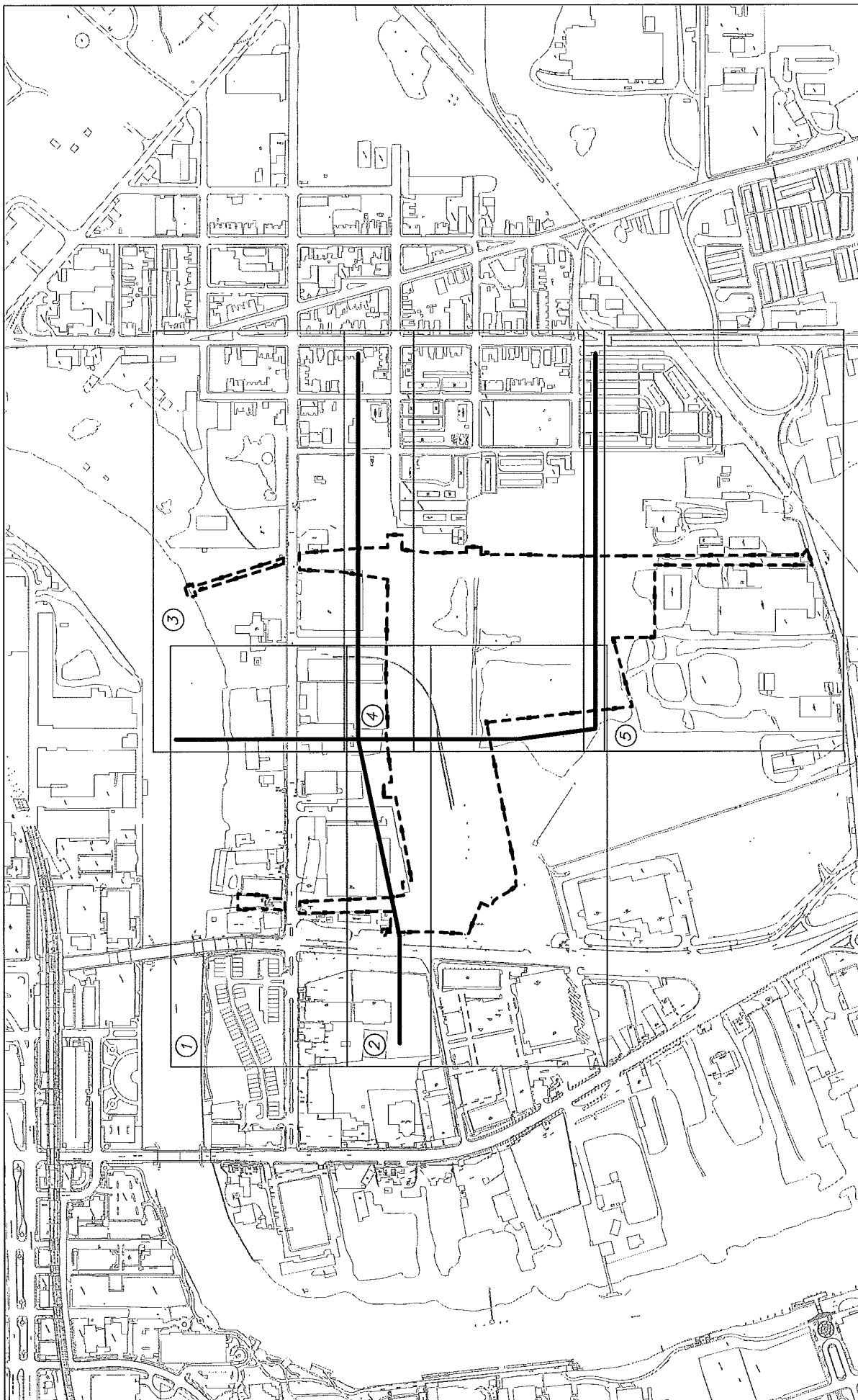
WL - USACE WETLAND BOUNDARY
 SWW - DIRECT STATE MAPPED WETLAND
 NL/NL/SW - DIRECT STATE MAPPED WETLAND AND DIRECT STATE MAPPED WETLAND
 MW - MEAN HIGH WATER
 OHW - ORDINARY HIGH WATER
 MHW/SW - MEAN HIGH WATER AND MEAN HIGH WATER ORDINARY HIGH WATER
 DMS - DIRECT STATE MAPPED WETLAND AND MEAN HIGH WATER
 MHW/SW - MEAN HIGH WATER ORDINARY HIGH WATER
 LOC - LIMIT OF CONSTRUCTION
 ICA - IMPACT AREA TYPE (SEE BELOW)
 ICA - IMPACT AREA TYPE AND/OR NUMBER
 WP = WETLAND - PERMANENT IMPACT
 WT = WETLAND - TEMPORARY IMPACT
 WE = WETLAND - ENHANCEMENT AREA
 WC = WETLAND - CREATION AREA
 OE = OPEN WATER - ENHANCEMENT AREA
 OC = OPEN WATER - CREATION AREA
 OP = OPEN WATER - PERMANENT IMPACT
 OT = OPEN WATER - TEMPORARY IMPACT



NO.	DATE	APP'D	REVISION

RUMMEL, KLEPPER & KAHL, LLP
 Engineers | Construction Managers
 Planners | Scientists
 81 Market Street, Baltimore, MD 21201-4250

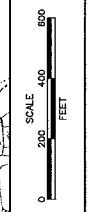
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 DRAWN: RJP
 CHECKED: JTR
 APPROVED: [Signature]



FILE NAME: *1011_1011.dwg*
 DWG: 1011
 SHEET NO.: 4 OF 21
 DATE: NOVEMBER 1, 2015 10:51:52

**SOUTH WILMINGTON
 WETLANDS PARK
 SHEET INDEX PLAN**

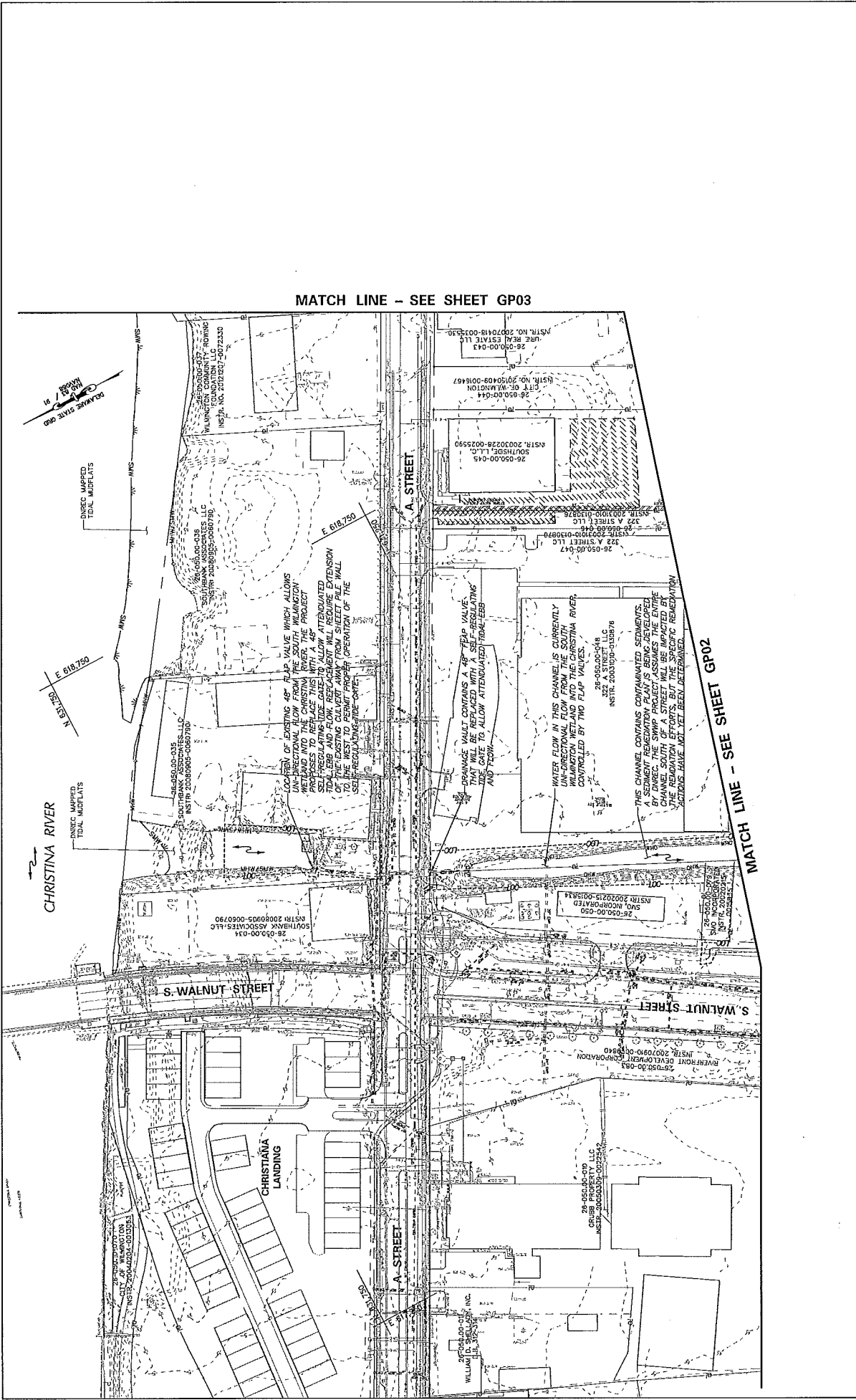
**CITY OF WILMINGTON
 DEPARTMENT OF PUBLIC WORKS
 JEFFREY J. STANLEY, COMMISSIONER
 CONTRACT NO. N/A**



NO.	DATE	APPD.	REVISION

DESIGNED: MRS. RUP
 DRAWN: JTR
 CHECKED: JTR

RK&K
**RUMMEL, KLEPPER
 & KAHL, LLP**
 Engineers, Construction Managers,
 Planning & Scientists
 81 Hooper Street, Baltimore, MD 21277-4250



FILE NAME: GP01	SOUTH WILMINGTON WETLANDS PARK GRADING PLAN
DWG: GP01	CITY OF WILMINGTON DEPARTMENT OF PUBLIC WORKS
SHEET NO.: 5	JEFFREY J. STORKEY COMMISSIONER
DATE: NOVEMBER 7, 2018 REV. 9	CONTRACT NO. N/A

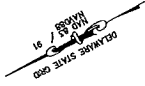
NO.	DATE	APPD	REVISION

APPROVED: MRS. RUMMEL & KAHL, L.P. (Signature)
DESIGNED: MRS. RUMMEL & KAHL, L.P. (Signature)
DRAWN: RUP (Signature)
CHECKED: JTR (Signature)

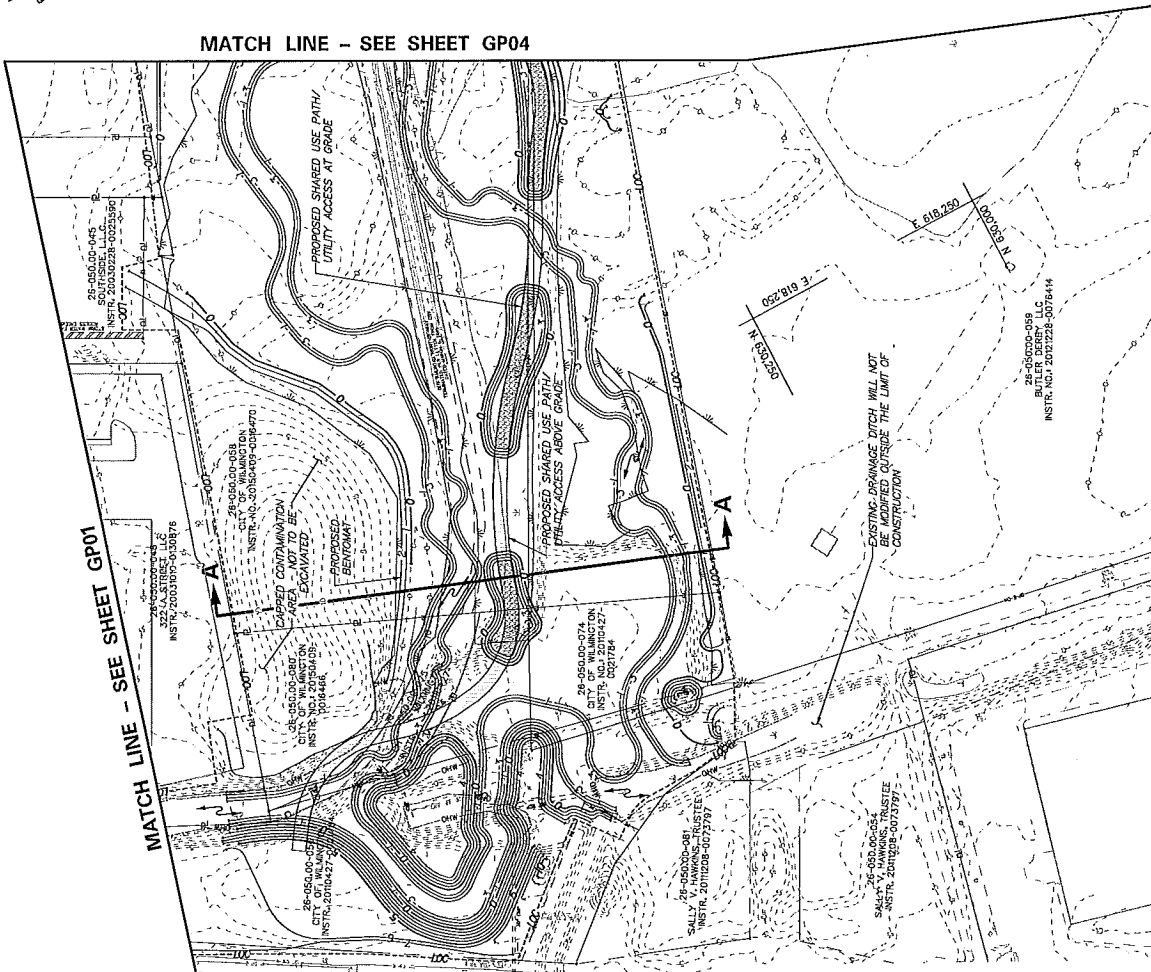
RUMMEL & KAHL, L.P.
Engineers | Construction Managers
Planners | Scientists
81 Mehaner Street - Baltimore, MD 21217-4250

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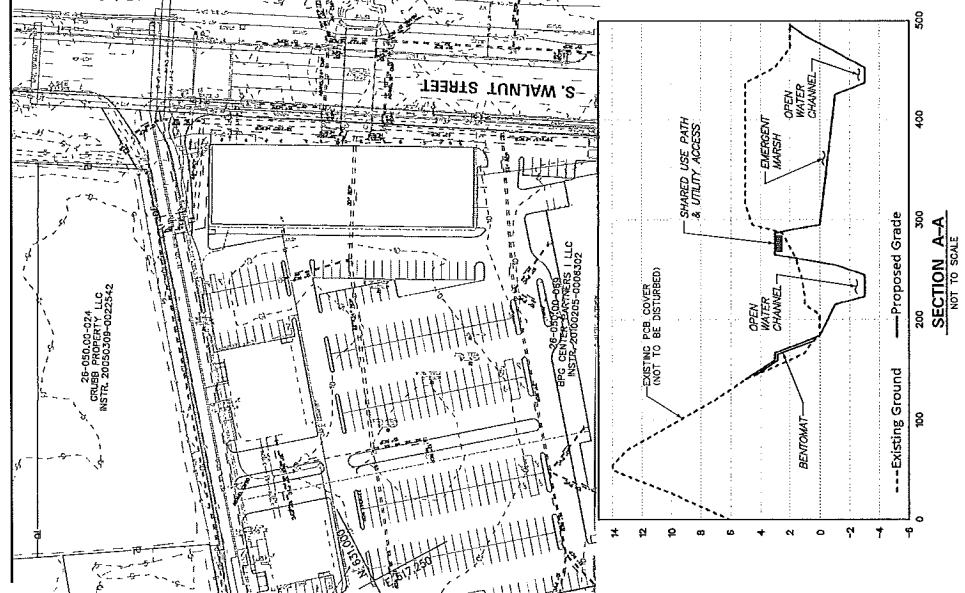
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MATCH LINE - SEE SHEET GP04



MATCH LINE - SEE SHEET GP01



FILE NAME: gpo2_swp.dwg
 DWG: GPO2
 SHEET NO.: 6 OF 21
 DATE: NOVEMBER 7, 2016 | REV. 0

SOUTH WILMINGTON
 WETLANDS PARK
 GRADING PLAN

CITY OF WILMINGTON
 DEPARTMENT OF PUBLIC WORKS
 JEFFREY J. STARKY, COMMISSIONER
 CONTRACT NO. N/A

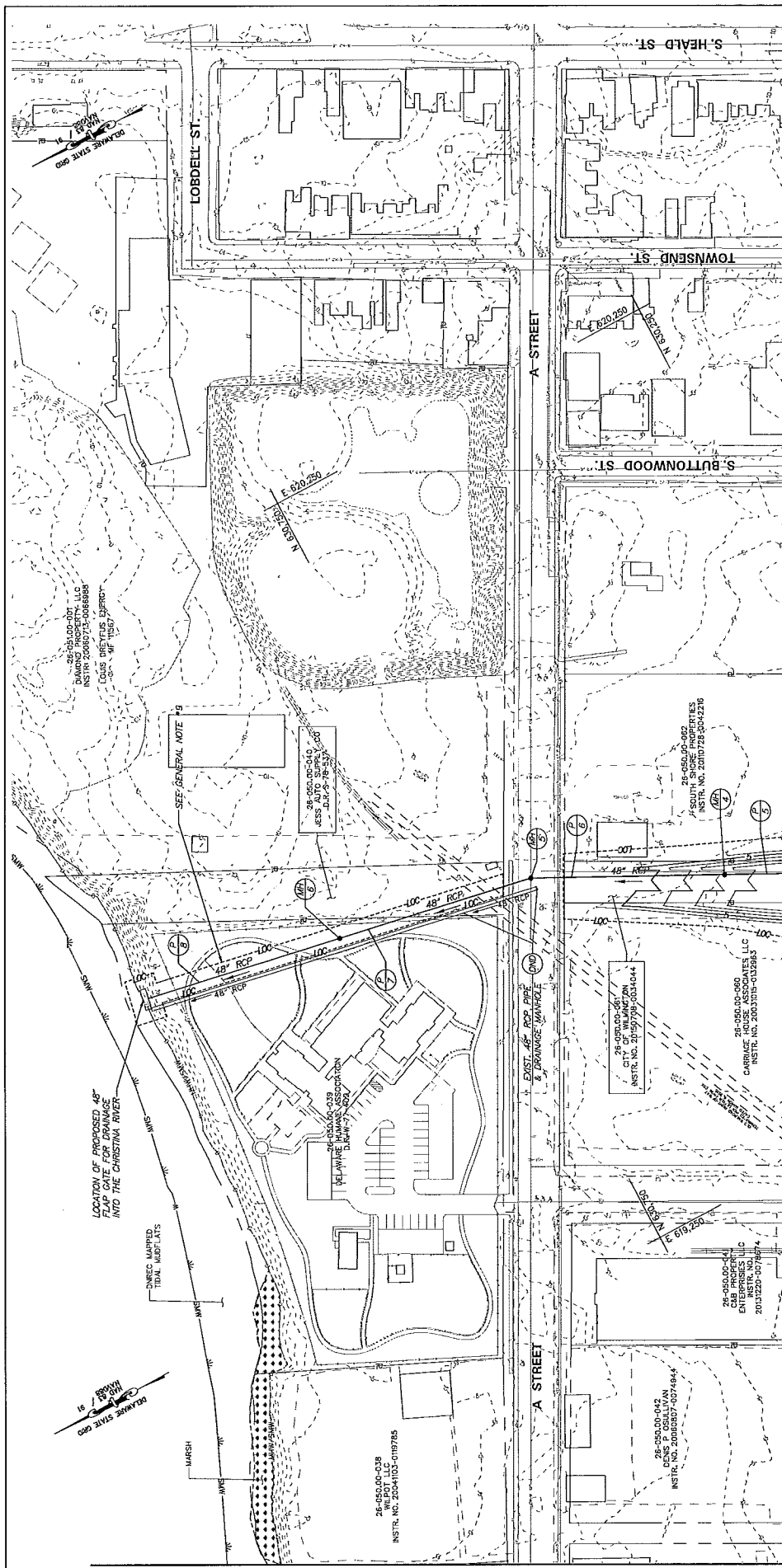


NO.	DATE	APPD	REVISION

RK&K RUMMEL, KLEPPER & KAHL, LLP
 Engineers | Construction Managers
 81 Weather Street, Baltimore, MD 21217-4250

DESIGNED: MRS
 DRAWN: RUP
 CHECKED: JTE

APPROVED



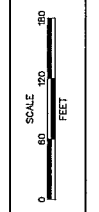
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- NOTES:
1. ALL DRAINAGE PIPE WILL BE 48" DIAMETER RCP.
 2. DISCHARGE ELEVATION FOR PIPE NO. 8 WILL BE -3.50'.

FILE NAME: 0903_2019_050
 DWG: GP03
 SHEET NO. 7 OF 21
 DATE: 03/08/2019 7:28:11 AM

SOUTH WILMINGTON
 WETLANDS PARK
 GRADING PLAN

CITY OF WILMINGTON
 DEPARTMENT OF PUBLIC WORKS
 JEFFREY J. STARKY, COMMISSIONER
 CONTRACT NO. N/A



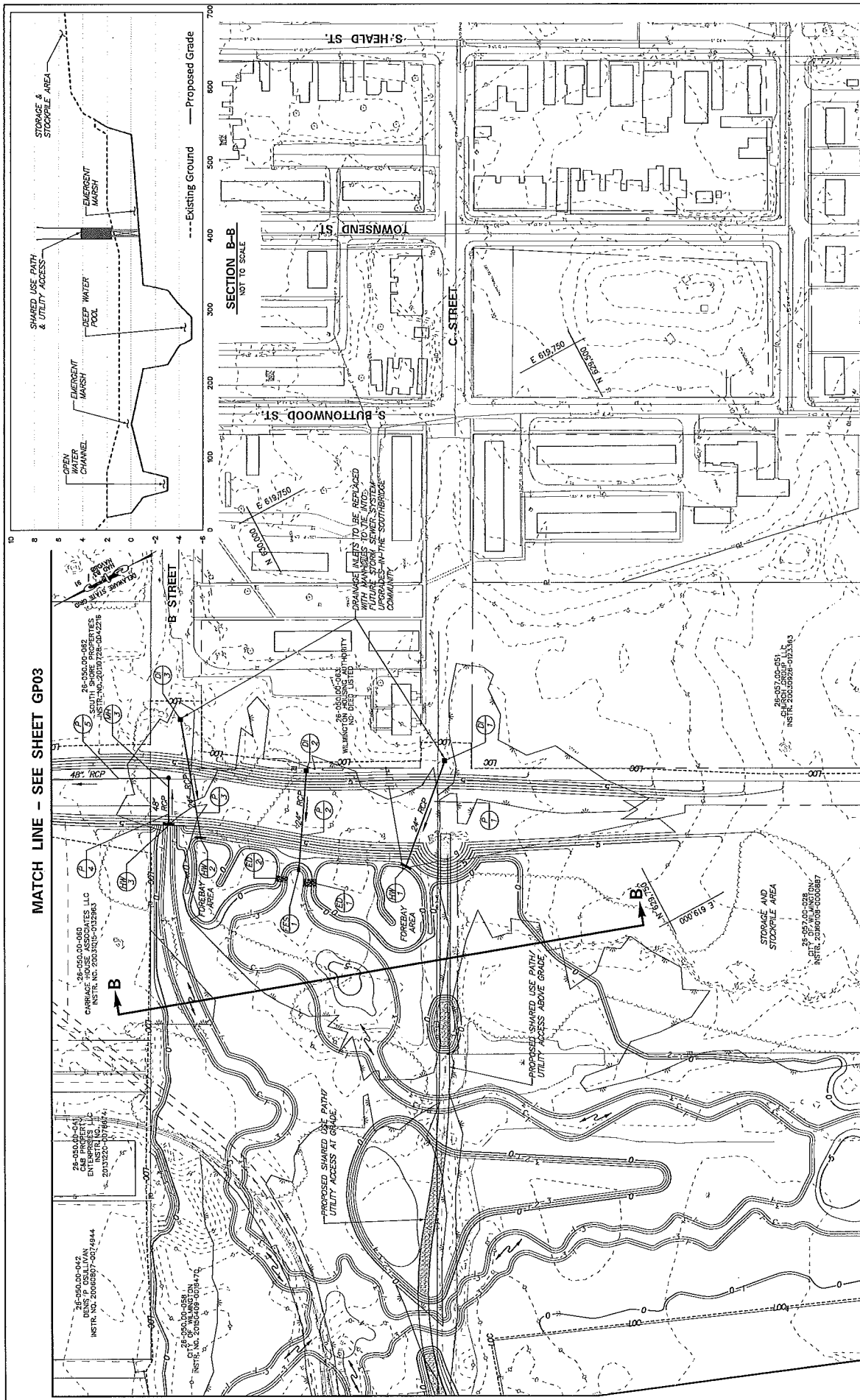
NO.	DATE	APPD	REVISION

DESIGNED: MRS
 DRAWN: RJP
 CHECKED: JTR

APPROVED

RK&K
 Rummel, Klepper & Kahl, LLP
 Engineers | Construction Managers
 Planners | Scientists
 81 Locher Street, Baltimore MD 21217-4250


MATCH LINE - SEE SHEET GP01

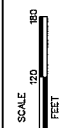


MATCH LINE - SEE SHEET GP03

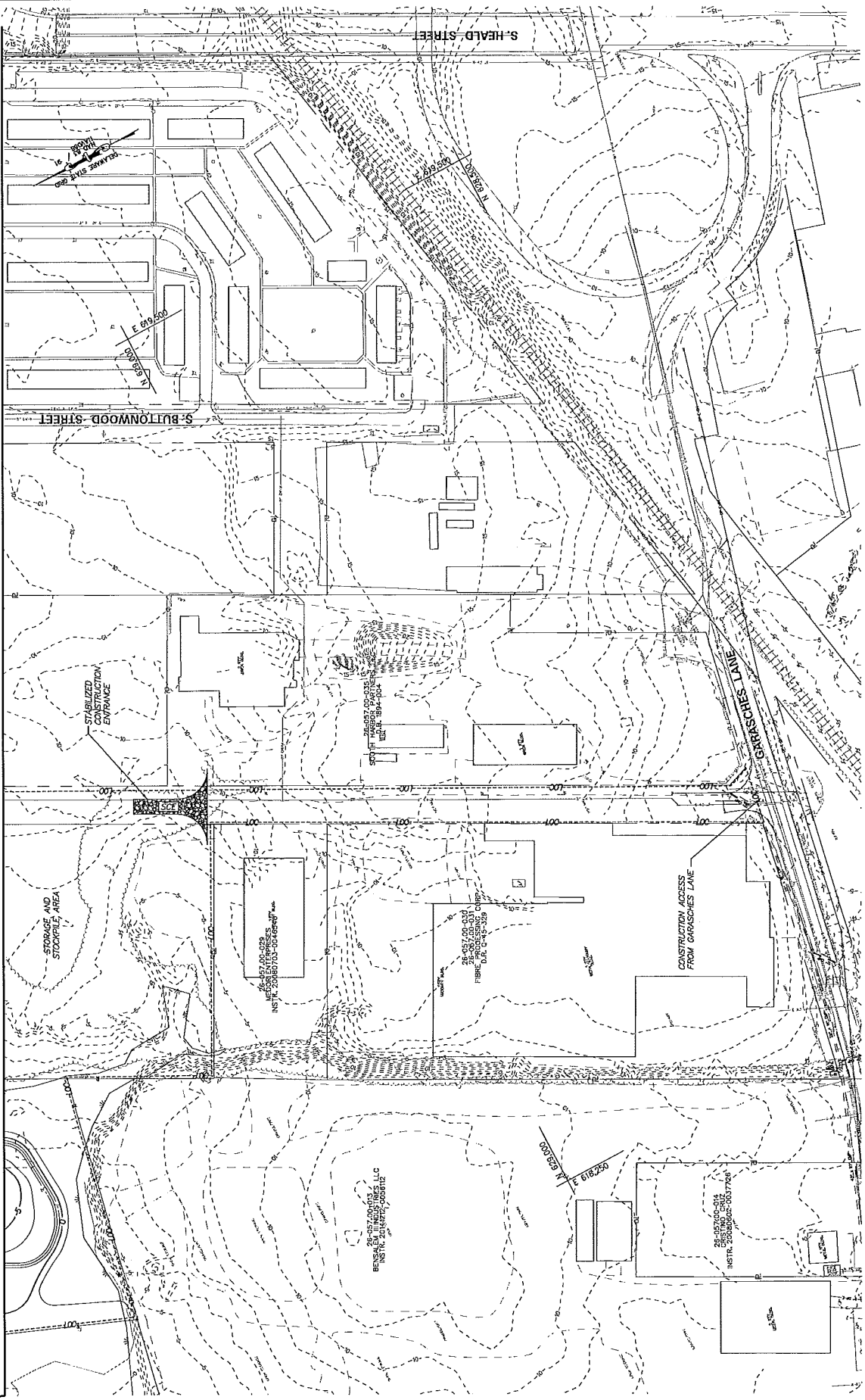
MATCH LINE - SEE SHEET GP05

MATCH LINE - SEE SHEET GP02

 RUMMEL, KLEPPER & KAHL, LLP Engineers Construction Managers 81 Market Street, Baltimore, MD 21217-4250	DESIGNED: MRS. RUP DRAWN: RUP CHECKED: JTR	APPROVED:	NO. DATE APPD REVISION
	SOUTH WILMINGTON WETLANDS PARK GRADING PLAN	CITY OF WILMINGTON DEPARTMENT OF PUBLIC WORKS JEFFREY J. STARKY, COMMISSIONER CONTRACT NO. N/A	FILE NAME: GP04_SWP.GPJ PING: GP04 SHEET NO.: 8 OF 21 DATE: 08/08/12 12:51:58



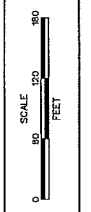
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FILE NAME: 000_000_000
 DWG: GP05
 SHEET NO. 0 OF 01
 DATE: 08/08/2013 11:25:11 AM

**SOUTH WILMINGTON
 WETLANDS PARK
 GRADING PLAN**

CITY OF WILMINGTON
 DEPARTMENT OF PUBLIC WORKS
 JEFFREY J. STARKY, COMMISSIONER
 CONTRACT NO. N/A



NO.	DATE	APPD.	REVISION

DESIGNED: MRS
 DRAWN: RJP
 CHECKED: JTR

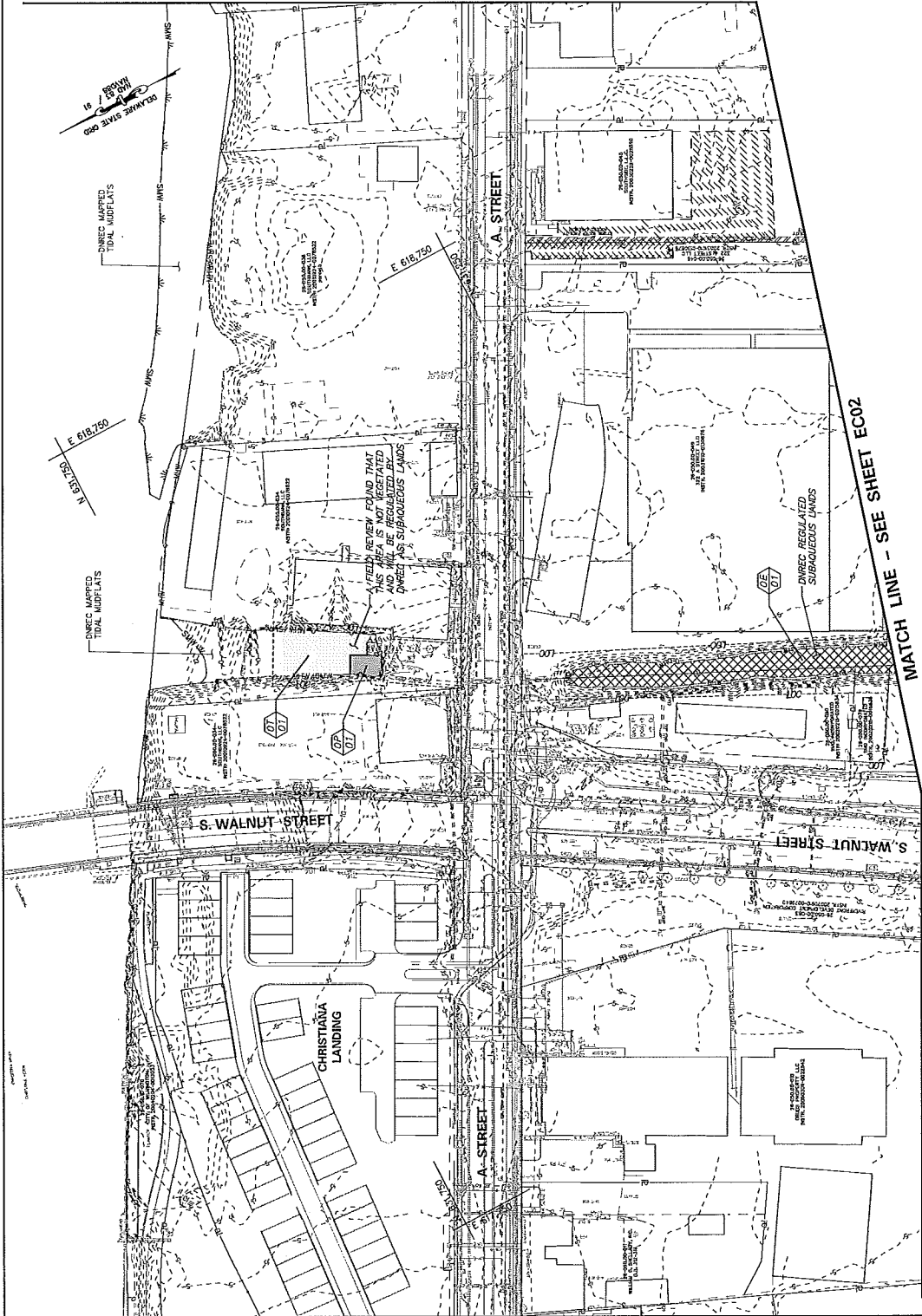
**RK&K RUMMEL KLEPPER
 & KAHL LLP**
 Engineers | Construction Managers
 Planners | Scientists
 81 Market Street | Baltimore MD 21201-4250

ENVIRONMENTAL SYMBOLS

	PERMANENT IMPACT AREA
	TEMPORARY IMPACT AREA
	WETLAND ENHANCEMENT AREA
	WETLAND CREATION AREA
	OPEN WATER ENHANCEMENT AREA
	OPEN WATER CREATION AREA
	USACE WETLAND BOUNDARY
	DNR/EC STATE MAPPED WETLAND
	USACE WETLAND AND DNR/EC STATE MAPPED WETLAND
	MEAN HIGH WATER
	ORDINARY HIGH WATER
	MEAN HIGH WATERED WETLAND LIMIT OF CONSTRUCTION
	IMPACT AREA ID. AND/OR NUMBER
	W = WETLAND - PERMANENT IMPACT
	T = WETLAND - TEMPORARY IMPACT
	E = WETLAND - ENHANCEMENT AREA
	C = WETLAND - CREATION AREA
	O = OPEN WATER - ENHANCEMENT AREA
	C = OPEN WATER - CREATION AREA
	P = OPEN WATER - PERMANENT IMPACT
	T = OPEN WATER - TEMPORARY IMPACT

NOTE:
SEE DWG EC03 FOR ALL SCHEDULES
CONTAINING ALL AREA CALCULATIONS.

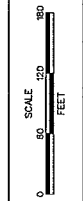
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FILE NAME: ec03.dwg
DWG: EC01
SHEET NO.: 10 OF 21
DATE: NOVEMBER 7, 2013 REV: 0

SOUTH WILMINGTON
WETLANDS PARK
ENVIRONMENTAL COMPLIANCE PLAN

CITY OF WILMINGTON
DEPARTMENT OF PUBLIC WORKS
JEFFREY A. STARKEY, COMMISSIONER
CONTRACT NO. N/A



NO.	DATE	APPD	REVISION

APPROVED
DESIGNED: MRS. RJP
DRAWN: JTR
CHECKED: JTR

RUMMEL, KLEPPER & KAHL, LLP
Engineers | Construction Managers
81 Mosher Street, Baltimore MD 21217-4250

ENVIRONMENTAL SYMBOLS

PERMANENT IMPACT AREA

TEMPORARY IMPACT AREA

WETLAND ENHANCEMENT AREA

WETLAND CREATION AREA

OPEN WATER ENHANCEMENT AREA

OPEN WATER CREATION AREA

USAGE WETLAND BOUNDARY

DNREC STATE MAPPED WETLAND

USAGE WETLAND AND DNREC STATE MAPPED WETLAND

MEAN HIGH WATER

ORDINARY HIGH WATER

DNREC STATE MAPPED WETLAND

IMPACT AREA TYPE ID. (SEE BELOW)

IMPACT AREA ID. AND/OR NUMBER

LOC - LIMIT OF CONSTRUCTION

PP = WETLAND - PERMANENT IMPACT

PT = WETLAND - TEMPORARY IMPACT

WE = WETLAND - ENHANCEMENT AREA

OE = OPEN WATER - ENHANCEMENT AREA

OC = OPEN WATER - CREATION AREA

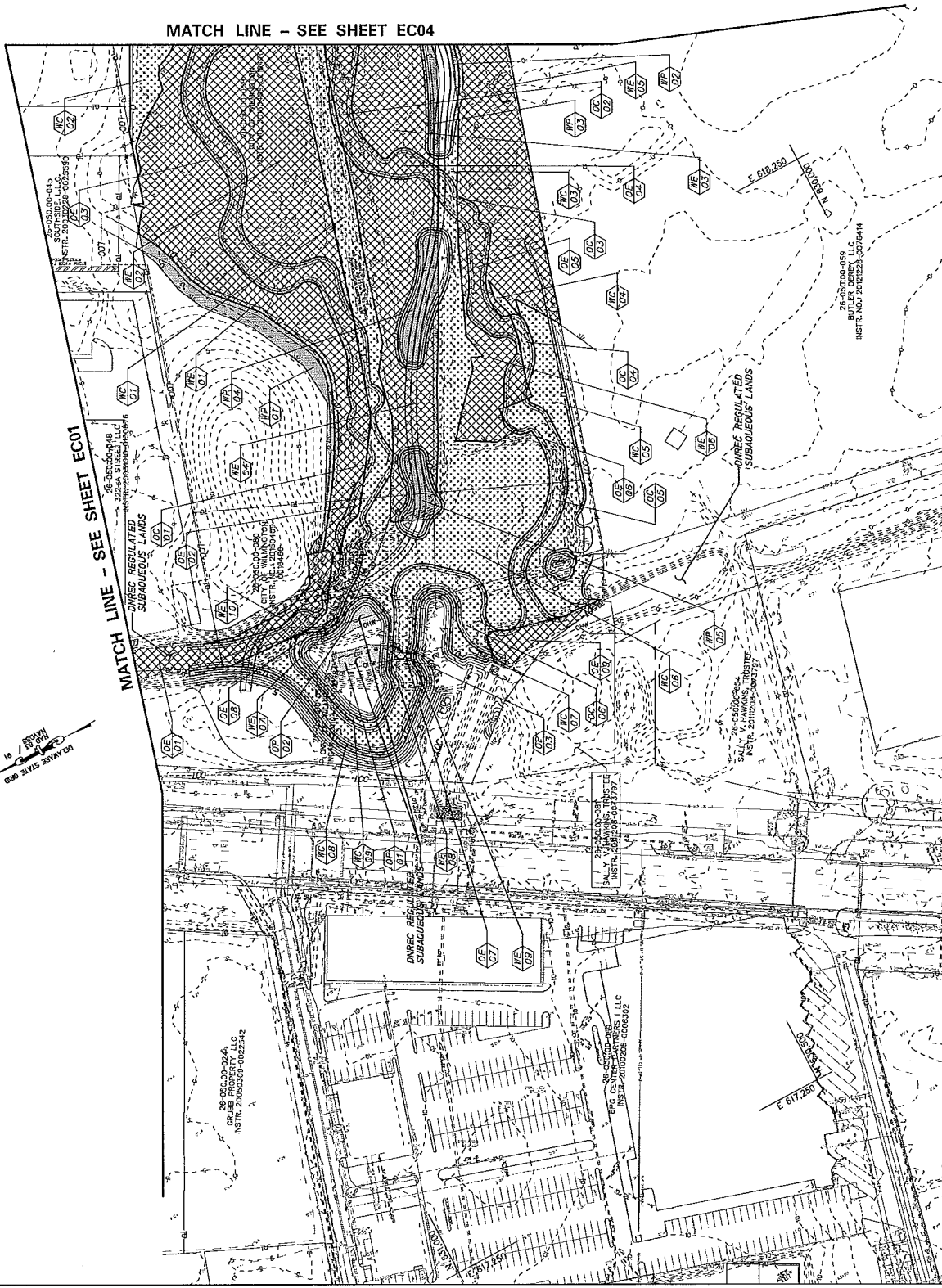
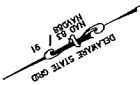
OP = OPEN WATER - PERMANENT IMPACT

OT = OPEN WATER - TEMPORARY IMPACT

NOTE:
SEE DWG EC05 FOR ALL SCHEDULES
CONTAINING ALL AREA CALCULATIONS.

MATCH LINE - SEE SHEET EC04

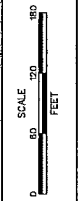
MATCH LINE - SEE SHEET EC01



FILE NAME: 4502.RWD.A01
DWG: EC02
SHEET NO.: 11 OF 21
DATE: 08/06/07 2:04:11 (REV. 0.0)

SOUTH WILMINGTON
WETLANDS PARK
ENVIRONMENTAL COMPLIANCE PLAN

CITY OF WILMINGTON
DEPARTMENT OF PUBLIC WORKS
JEFFREY A. SHARKEY COMMISSIONER
CONTRACT NO. N/A



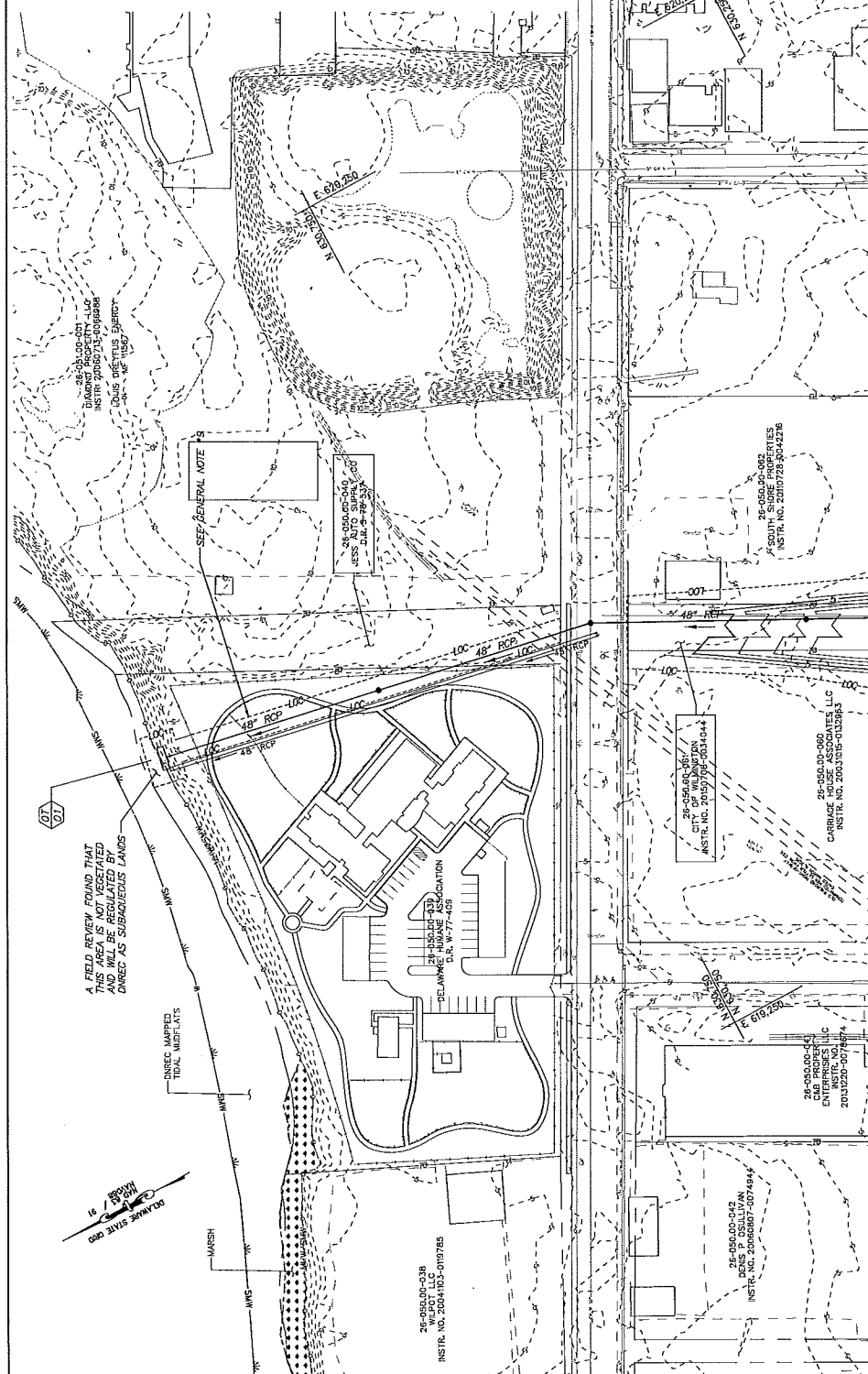
NO.	DATE	APPD.	REVISION

DESIGNED: MRS. RJP
DRAWN: RJP
CHECKED: JTR

APPROVED: _____
RUMMEL, KLEPPER & KAHL, LLP
Engineers | Construction Managers
1000 North Market Street
Baltimore, MD 21202-4250



ENVIRONMENTAL SYMBOLS	
	PERMANENT IMPACT AREA
	TEMPORARY IMPACT AREA
	WETLAND ENHANCEMENT AREA
	WETLAND CREATION AREA
	OPEN WATER ENHANCEMENT AREA
	OPEN WATER CREATION AREA
	USACE WETLAND BOUNDARY
	DNR/EC STATE MAPPED WETLAND
	USACE STATE MAPPED WETLAND
	MEAN HIGH WATER
	ORDINARY HIGH WATER
	WETLAND HIGH WATER
	WETLAND STATE MAPPED WETLAND
	LIMIT OF CONSTRUCTION
	IMPACT AREA ID. AND/OR NUMBER
	WETLAND - PERMANENT IMPACT
	WETLAND - TEMPORARY IMPACT
	WETLAND - ENHANCEMENT AREA
	WETLAND - CREATION AREA
	OPEN WATER - ENHANCEMENT AREA
	OPEN WATER - CREATION AREA
	OPEN WATER - PERMANENT IMPACT
	OPEN WATER - TEMPORARY IMPACT



A FIELD REVIEW FOUND THAT THIS AREA IS NOT REGULATED AND WILL BE REGULATED BY DNR/EC AS SUBAQUEOUS LANDS

SEE GENERAL NOTE

28-00-00-040-000
ISS. DATE: 03/14/2008

28-00-00-040-000
ISS. DATE: 03/14/2008

28-00-00-040-000
ISS. DATE: 03/14/2008

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ISS. DATE: 03/14/2008

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ISS. DATE: 03/14/2008

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ISS. DATE: 03/14/2008

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ISS. DATE: 03/14/2008

28-00-00-040-000
ISS. DATE: 03/14/2008

28-00-00-040-000
ISS. DATE: 03/14/2008

NOTE:
SEE DWG EC06 FOR ALL SCHEDULES
CONTAINING ALL AREA CALCULATIONS.

MATCH LINE - SEE SHEET EC04

MATCH LINE - SEE SHEET EC01

FILE NAME: 0003-0000-000
DWG: EC03
SHEET NO.: 12 OF 21
DATE: NOVEMBER 7, 2015 REV. 0

SOUTH WILMINGTON
WETLANDS PARK
ENVIRONMENTAL COMPLIANCE PLAN

CITY OF WILMINGTON
DEPARTMENT OF PUBLIC WORKS
JEFFREY A. STARKY, COMMISSIONER
CONTRACT NO. N/A



SCALE: 1" = 20'
0 20 40 60 80 100
FEET

NO.	DATE	APPD.	REVISION

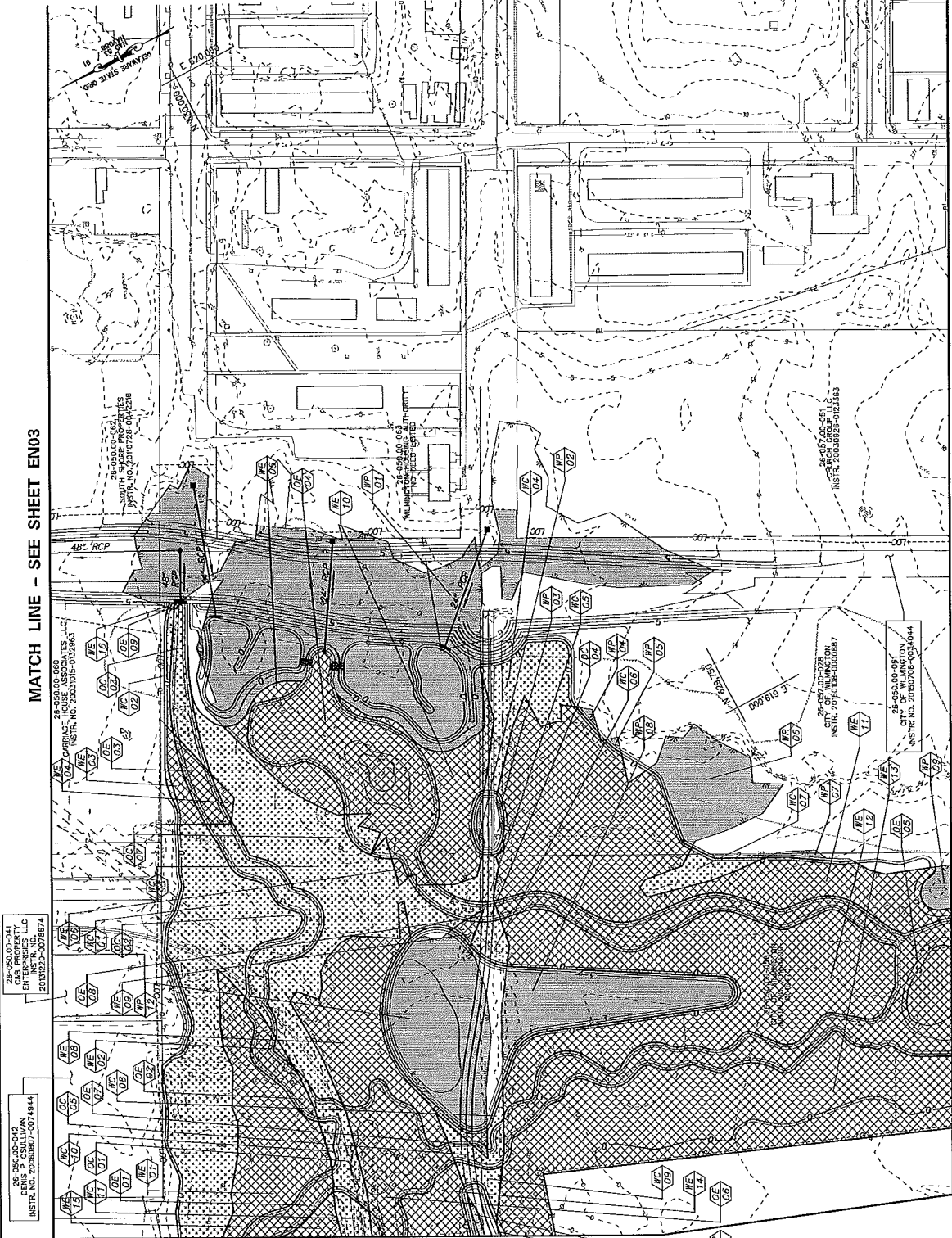
APPROVED

DESIGNED: MRS. RJP
DRAWN: RJP
CHECKED: JTR

RUMMEL, KLEPPER & KAHL LLP
Engineers | Construction Managers
Planners | Scientists
81 Mosher Street, Beltsville, MD 21717-4450

ENVIRONMENTAL SYMBOLS

[Symbol]	PERMANENT IMPACT AREA
[Symbol]	TEMPORARY IMPACT AREA
[Symbol]	WETLAND ENHANCEMENT AREA
[Symbol]	WETLAND CREATION AREA
[Symbol]	OPEN WATER ENHANCEMENT AREA
[Symbol]	OPEN WATER CREATION AREA
[Symbol]	USACE WETLAND BOUNDARY
[Symbol]	DNREC STATE MAPPED WETLAND
[Symbol]	USACE WETLAND AND DNREC STATE MAPPED WETLAND
[Symbol]	MEAN HIGH WATER
[Symbol]	ORDINARY HIGH WATER
[Symbol]	MEAN HIGH WATER / DNREC STATE MAPPED WETLAND
[Symbol]	LIMIT OF CONSTRUCTION
[Symbol]	IMPACT AREA ID. AND/OR NUMBER
[Symbol]	TP = WETLAND - PERMANENT IMPACT
[Symbol]	WT = WETLAND - TEMPORARY IMPACT
[Symbol]	WE = WETLAND - CREATION AREA
[Symbol]	OE = OPEN WATER - CREATION AREA
[Symbol]	OW = OPEN WATER - PERMANENT IMPACT
[Symbol]	OT = OPEN WATER - TEMPORARY IMPACT



NOTE:
SEE DWG EC05 FOR ALL SCHEDULES
CONTAINING ALL AREA CALCULATIONS.

MATCH LINE - SEE SHEET EN03

MATCH LINE - SEE SHEET EC05

28-0500-041
D&S ENTERPRISES, LLC
INSTR. NO. 20131215-007887-74

28-0500-041
D&S ENTERPRISES, LLC
INSTR. NO. 20131215-007887-74

28-0500-041
D&S ENTERPRISES, LLC
INSTR. NO. 20131215-007887-74

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D&S ENTERPRISES, LLC
INSTR. NO. 20131215-007887-74

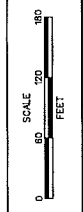
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D&S ENTERPRISES, LLC
INSTR. NO. 20131215-007887-74

28-0500-041
D&S ENTERPRISES, LLC
INSTR. NO. 20131215-007887-74

FILE NAME: 2013_0500_041.dwg
DWG: EC04
SHEET NO: 13 OF 21
DATE: NOVEMBER 12, 2013 (REV. 0)

SOUTH WILMINGTON
WETLANDS PARK
ENVIRONMENTAL COMPLIANCE PLAN

CITY OF WILMINGTON
DEPARTMENT OF PUBLIC WORKS
JEREMY J. STORREY, COMMISSIONER
CONTRACT NO. N/A



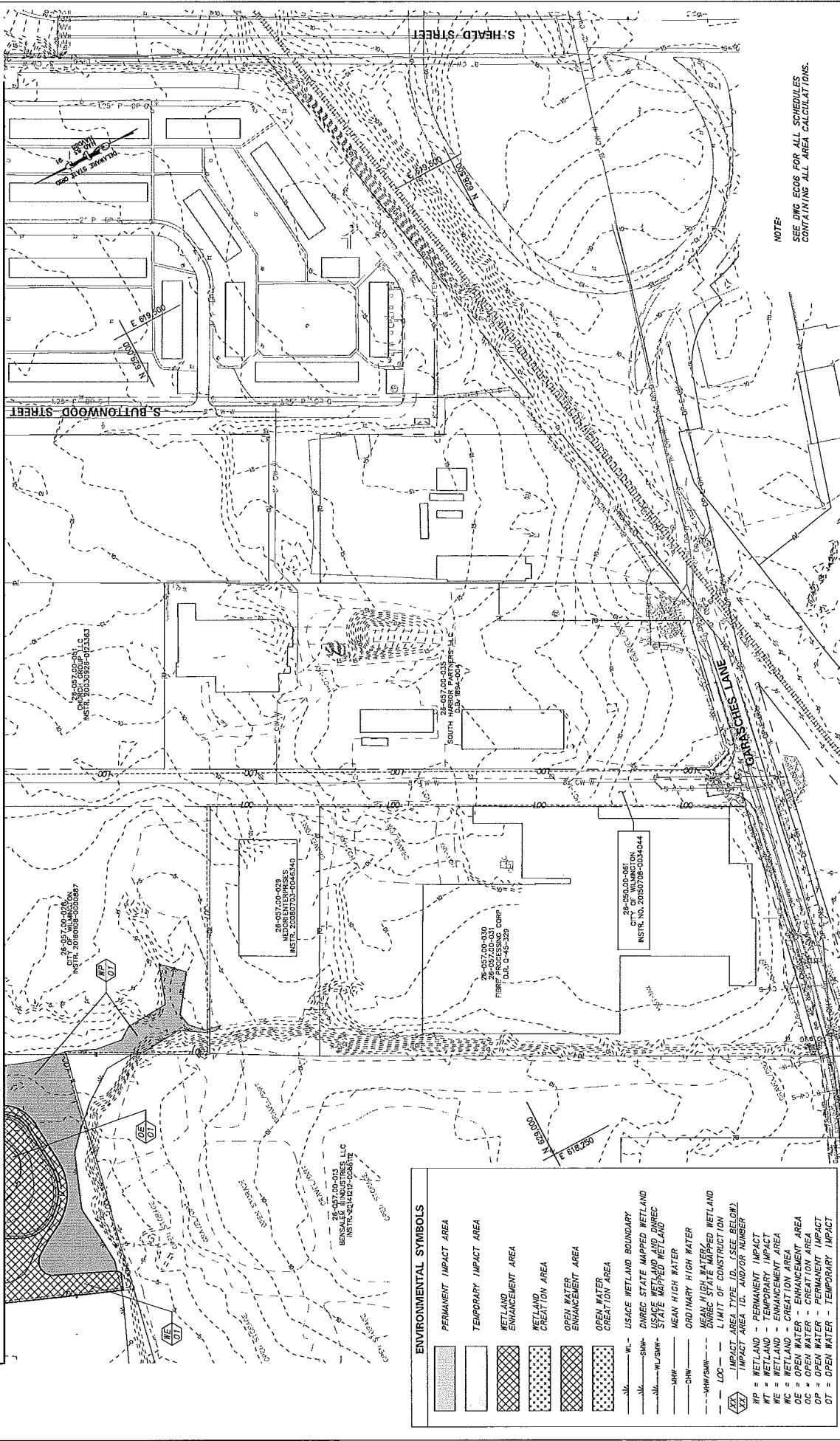
NO.	DATE	APPD	REVISION

DESIGNED: MRS
DRAWN: RJP
CHECKED: LTR

R&K RUMMEL, KLEPPER
& KAHL, LLP
Engineers, Planners, Scientists
81 Mosher Street, Baltimore, MD 21217-4450

MATCH LINE - SEE SHEET EC02

MATCH LINE - SEE SHEET EC04



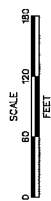
NOTE:
SEE DWG. EC06 FOR ALL SCHEDULES
CONTAINING ALL AREA CALCULATIONS.

ENVIRONMENTAL SYMBOLS	
	PERMANENT IMPACT AREA
	TEMPORARY IMPACT AREA
	WETLAND ENHANCEMENT AREA
	WETLAND CREATION AREA
	OPEN WATER ENHANCEMENT AREA
	OPEN WATER CREATION AREA
	USACE WETLAND BOUNDARY
	DIRREC STATE MAPPED WETLAND
	USACE WETLAND AND DIRREC STATE MAPPED WETLAND
	MEAN HIGH WATER
	ORDINARY HIGH WATER
	DIRREC STATE MAPPED WETLAND LIMIT OF CONSTRUCTION
	IMPACT AREA TYPE ID. (SEE BELOW)
	IMPACT AREA ID. AND/OR NUMBER
	WP = WETLAND - PERMANENT IMPACT
	WT = WETLAND - TEMPORARY IMPACT
	WC = WETLAND - ENHANCEMENT AREA
	OC = OPEN WATER - CREATION AREA
	OP = OPEN WATER - PERMANENT IMPACT
	OT = OPEN WATER - TEMPORARY IMPACT

FILE NAME: EC05.dwg
DWG. EC05
SHEET NO. 14 OF 21
DATE: FEBRUARY 11, 2014 10:51:53

SOUTH WILMINGTON
WETLANDS PARK
ENVIRONMENTAL COMPLIANCE PLAN

CITY OF WILMINGTON
DEPARTMENT OF PUBLIC WORKS
JEFFREY J. STARKY, COMMISSIONER
CONTRACT NO. N/A



NO.	DATE	APPD.	REVISION

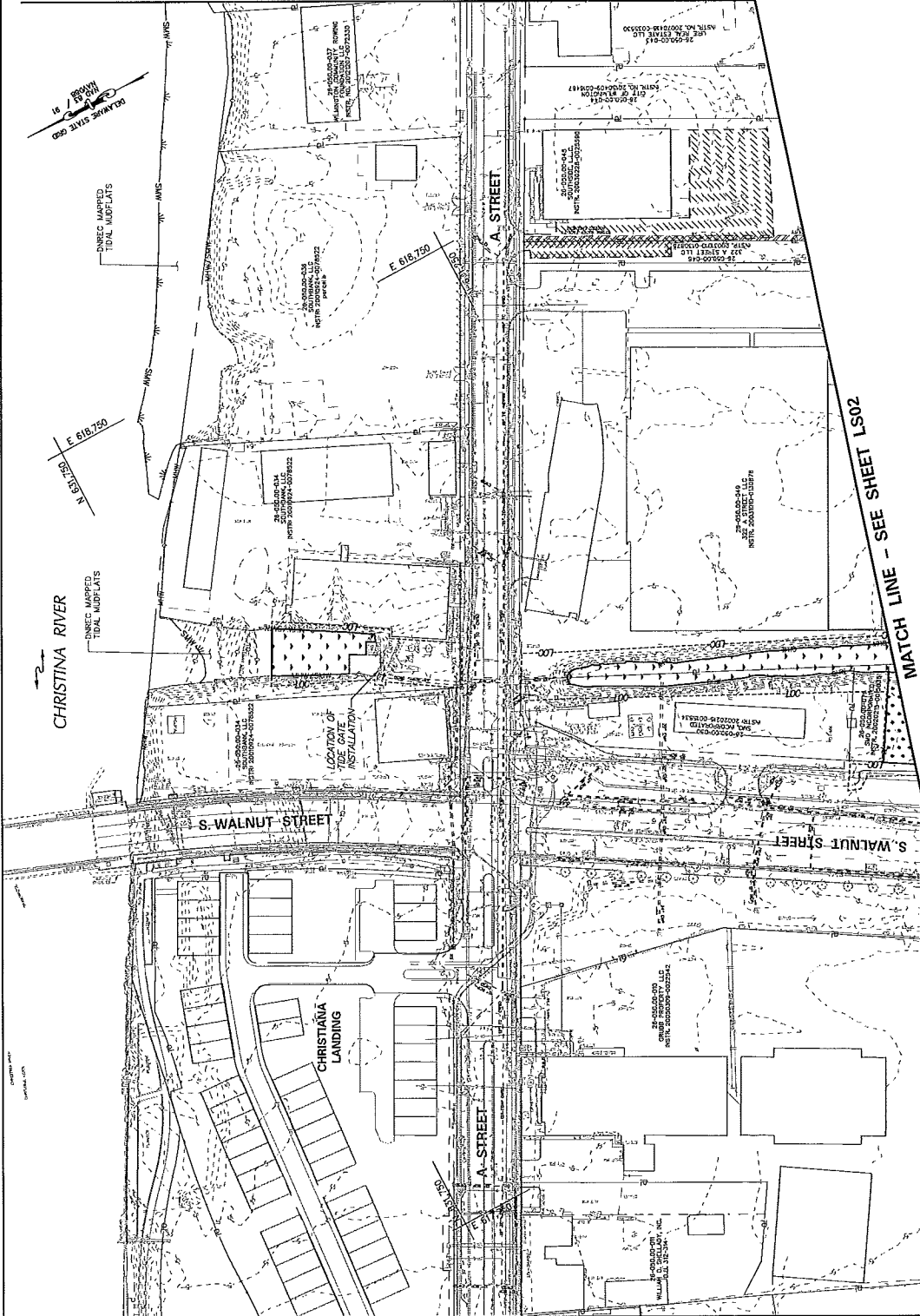
APPROVED

DESIGNED: MRS
DRAWN: RJP
CHECKED: JTR

RK&K
RUMMEL, KLEPPER
& KAHL, LLP
Engineers | Construction Managers
Pharmaceutical Services
81 Madison Street, Baltimore, MD 21201-4250

LEGEND	
	EMERGENT MARSH WITH WETLAND SEEDING ELEV. $-1.0'$ TO $1.0'$
	DECIDUOUS FORESTED WETLAND WITH WETLAND SEEDING ELEV. $-0.5'$ TO $1.0'$
	CONIFEROUS FORESTED WETLAND WITH WETLAND SEEDING ELEV. $-1.0'$ TO $1.0'$
	UPLAND DECIDUOUS FOREST WITH MEADOW SEEDING ELEV. $>1.0'$
	UPLAND SHRUB WITH MEADOW SEEDING ELEV. $>1.0'$
	UPLAND CONIFEROUS FOREST WITH MEADOW SEEDING ELEV. $>1.0'$
	TURFGRASS SEEDING ELEV. $>1.0'$
	OPEN WATER ELEV. $<-1.0'$
	STORMWATER MANAGEMENT FOREBAY

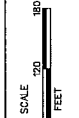
MATCH LINE - SEE SHEET LS03



FILE NAME: 9014_0000_001
 DWG: LS01
 SHEET NO.: 18 OF 21
 DATE: NOVEMBER 2, 2016 10:52:00

SOUTH WILMINGTON
 WETLANDS PARK
 LANDSCAPING PLAN

CITY OF WILMINGTON
 DEPARTMENT OF PUBLIC WORKS
 JEFFREY J. STARKY, COMMISSIONER
 CONTRACT NO. N/A



NO.	DATE	APPD.	REVISION

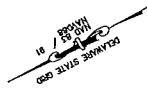
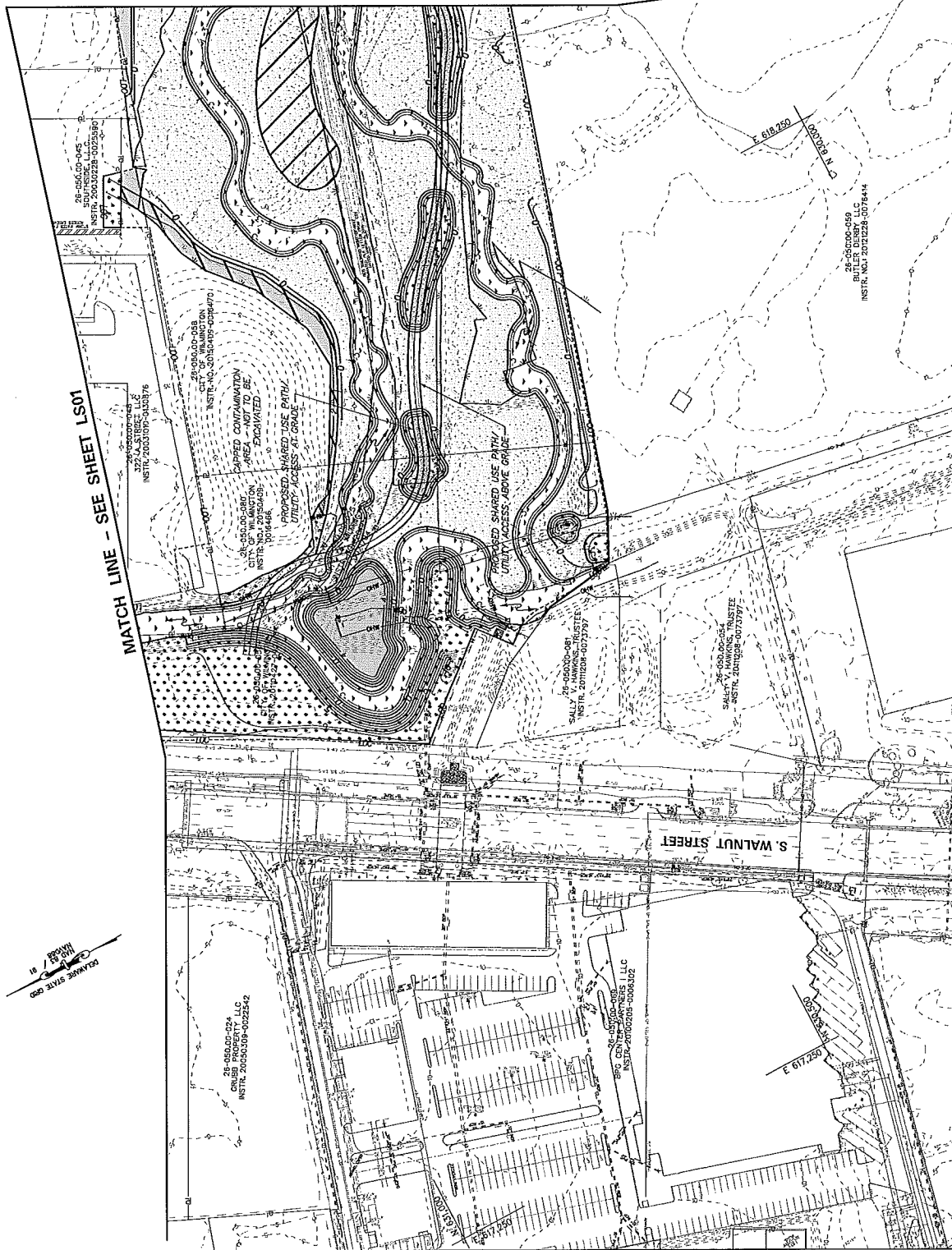
APPROVED: _____
 DESIGNED: MRS. _____
 DRAWN: R.P.P.
 CHECKED: J.T.R.

RK&K RUMMEL, KLEPPER & KAHL, LLP
 Engineers, Construction Managers
 Planning & Scenic Design
 81 Hooper Street, Baltimore, MD 21217-4250

LEGEND

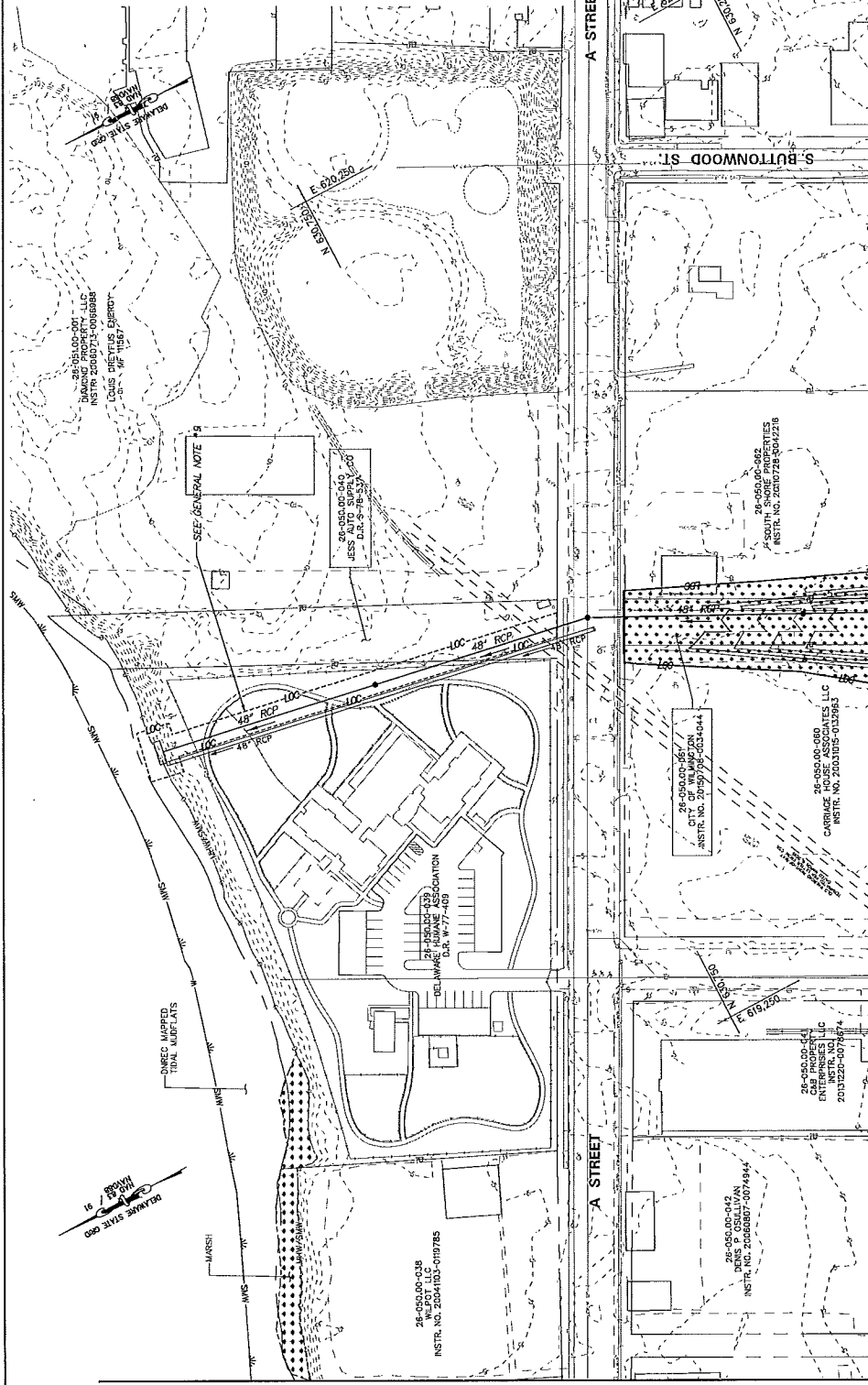
	EMERGENT MARSH WITH WETLAND SEEDING ELEV. >1.0' TO 1.0'
	DECIDUOUS FORESTED WETLAND WITH SEEDING ELEV. >6.5' TO 1.0'
	CONIFEROUS FORESTED WETLAND WITH SEEDING ELEV. >1.0' TO 1.0'
	UPLAND DECIDUOUS FOREST WITH MEADOW SEEDING ELEV. >1.0'
	UPLAND SHRUB WITH MEADOW SEEDING ELEV. >1.0'
	UPLAND CONIFEROUS FOREST WITH MEADOW SEEDING ELEV. >1.0'
	TURFGRASS SEEDING ELEV. >1.0'
	OPEN WATER ELEV. <-1.0'
	STORMWATER MANAGEMENT FOREBAY

MATCH LINE - SEE SHEET LS04



<p>RUMMEL KLEPPER & KAHL LLP Engineers Construction Managers Planners Scientists 81 Monner Street Baltimore MD 21277-4250</p>		<p>APPROVED: _____ DESIGNED: MRS. _____ DRAWN: _____ CHECKED: _____ DATE: _____</p>		<p>NO. DATE APPD REVISION</p>		<p>SCALE 1" = 30' 0 30 60 90 FEET</p>		<p></p>		<p>CITY OF WILMINGTON DEPARTMENT OF PUBLIC WORKS JERREY J. STARKY, COMMISSIONER CONTRACT NO. N/A</p>		<p>SOUTH WILMINGTON WETLANDS PARK LANDSCAPING PLAN</p>		<p>FILE NAME: DDP_1000.dwg PWS: LS02 SHEET NUMBER: 17 OF 21 DATE: FEBRUARY 7, 2017 10:31</p>	
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LEGEND	
	EMERGENT MARSH WITH WETLAND SEEDING ELEV. $-1.0'$ TO $1.0'$
	DECIDUOUS FORESTED WETLAND WITH WETLAND SEEDING ELEV. $-0.5'$ TO $1.0'$
	CONIFEROUS FORESTED WETLAND WITH WETLAND SEEDING ELEV. $-1.0'$ TO $1.0'$
	UPLAND DECIDUOUS FOREST WITH MEADOW SEEDING ELEV. $>1.0'$
	UPLAND SHRUB WITH MEADOW SEEDING ELEV. $>1.0'$
	UPLAND CONIFEROUS FOREST WITH SEEDING ELEV. $>1.0'$
	TURFGRASS SEEDING ELEV. $>1.0'$
	OPEN WATER ELEV. $<-1.0'$
	STORMWATER FOREBAY



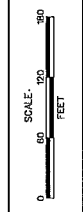
MATCH LINE - SEE SHEET LS04

MATCH LINE - SEE SHEET LS01

FILE NAME: 1603_16030509
 PWC: LS03
 SHEET NO.: 16 OF 21
 DATE: NOVEMBER 2, 2016 REV: 0

SOUTH WILMINGTON
 WETLANDS PARK
 LANDSCAPING PLAN

CITY OF WILMINGTON
 DEPARTMENT OF PUBLIC WORKS
 JEFFREY A. STORKEY, COMMISSIONER
 CONTRACT NO. N/A



NO.	DATE	APPD.	REASON

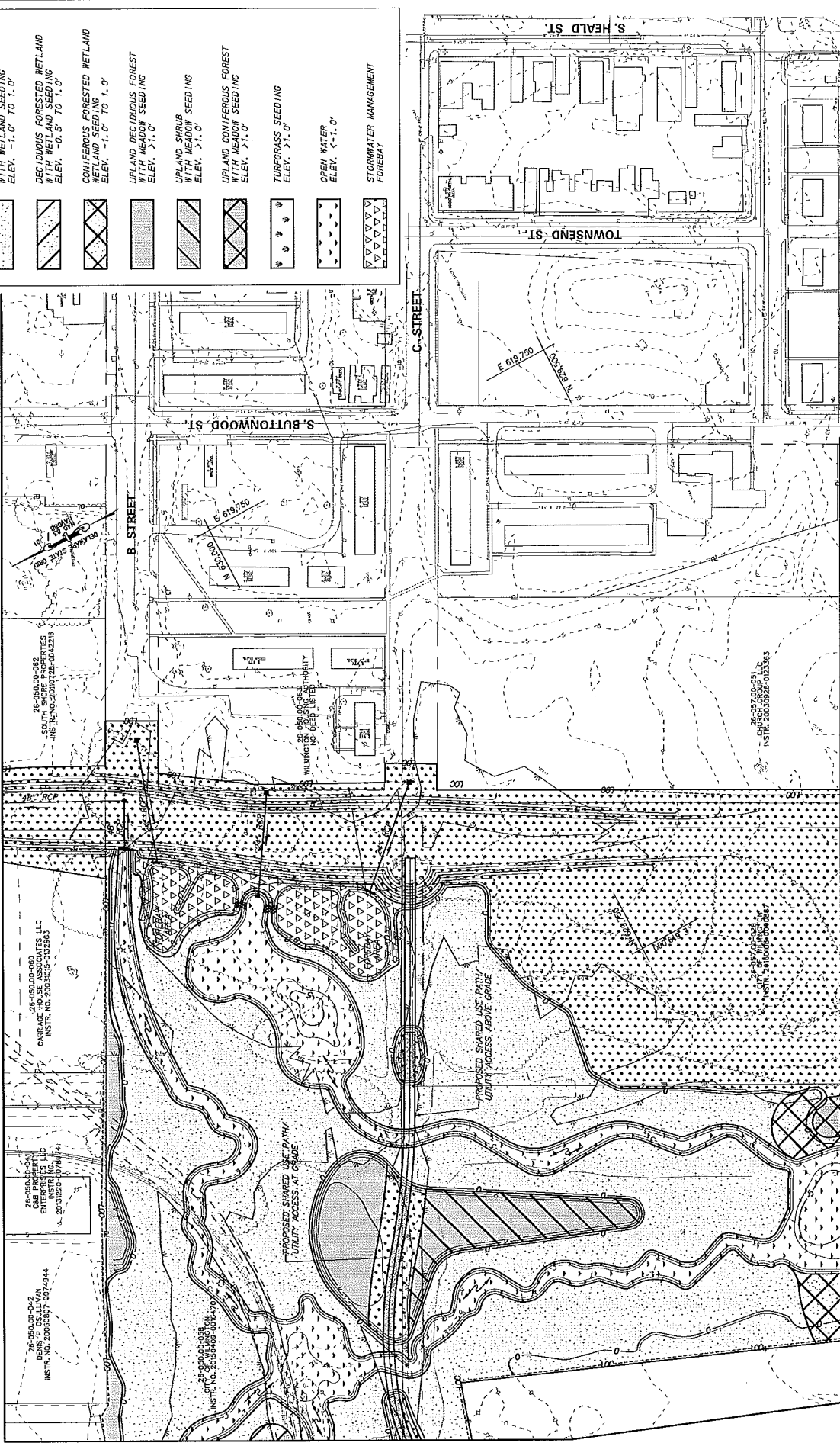
DESIGNED: MRS. RUP
 DRAWN: RUP
 CHECKED: JTR

APPROVED: [Signature]
RK&K
RUMMEL, KLEPPER & KAHL, LLP
 Engineers & Construction Managers
 81 Madaver Street, Baltimore, MD 21217-4420

LEGEND

	EMERGENT MARSH WITH WETLAND SEEDING ELEV. $-1.0'$ TO $1.0'$
	DECIDUOUS FORESTED WETLAND WITH WETLAND SEEDING ELEV. $-0.5'$ TO $1.0'$
	CONIFEROUS FORESTED WETLAND WITH WETLAND SEEDING ELEV. $-1.0'$ TO $1.0'$
	UPLAND DECIDUOUS FOREST WITH MEADOW SEEDING ELEV. $>1.0'$
	UPLAND SHRUB WITH MEADOW SEEDING ELEV. $>1.0'$
	UPLAND CONIFEROUS FOREST WITH MEADOW SEEDING ELEV. $>1.0'$
	TURFGRASS SEEDING ELEV. $>1.0'$
	OPEN WATER ELEV. $<-1.0'$
	STORMWATER MANAGEMENT FOREBAY

MATCH LINE - SEE SHEET LS03



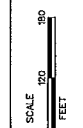
MATCH LINE - SEE SHEET LS02

MATCH LINE - SEE SHEET LS05

FILE NAME: R:\S1_2018\LS04.dwg
 DWG: LS04
 SHEET NO.: 19 OF 21
 DATE: NOVEMBER 21, 2018 REV: 0

SOUTH WILMINGTON
 WETLANDS PARK
 LANDSCAPING PLAN

CITY OF WILMINGTON
 DEPARTMENT OF PUBLIC WORKS
 JEFFREY J. STANLEY, COMMISSIONER
 CONTRACT NO. N/A

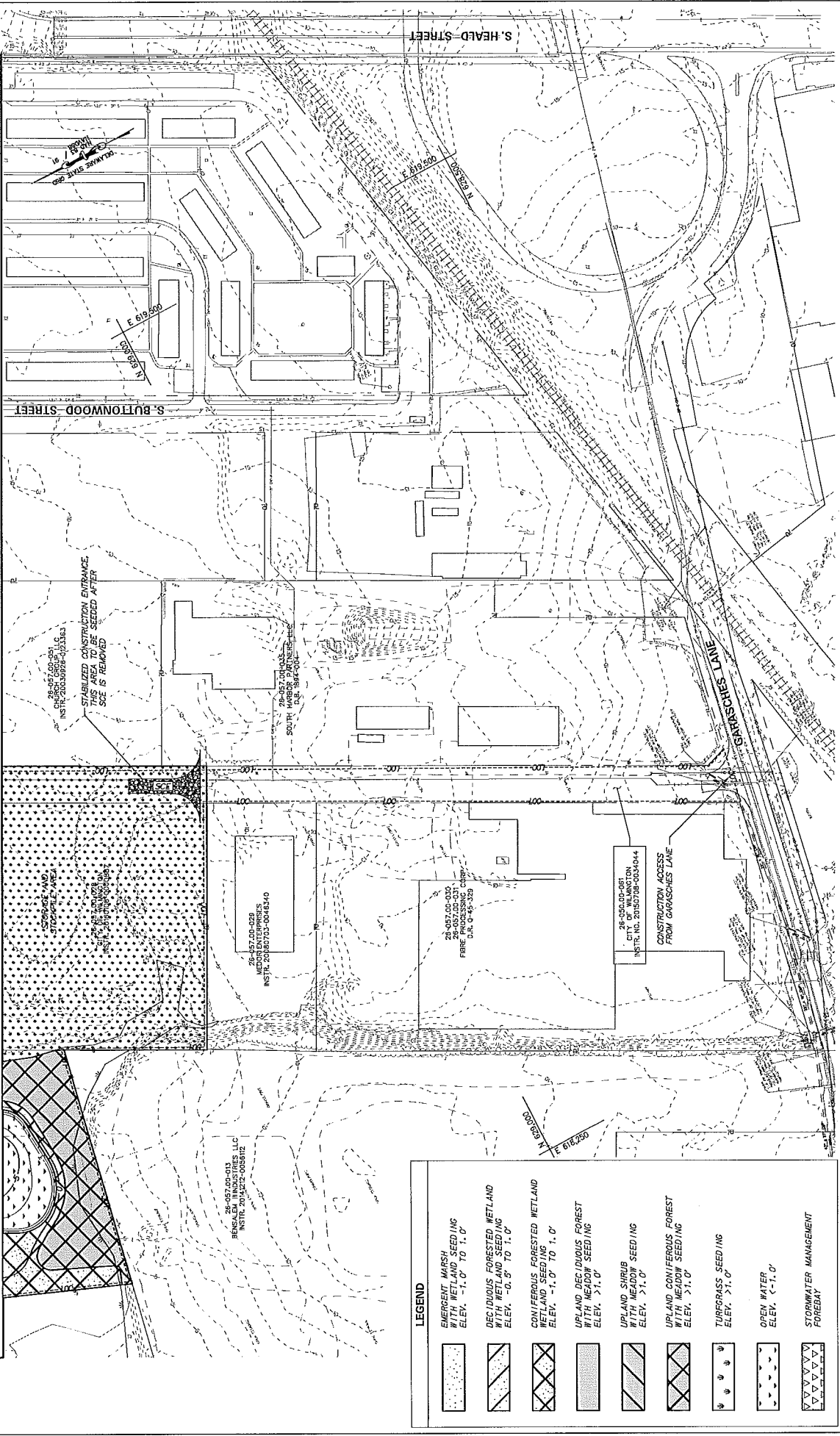


NO.	DATE	APPD.	REVISION


APPROVED: _____
 DESIGNED: MRS. RUP
 DRAWN: JTR
 CHECKED: JTR

RICK RUMMEL, KLEPPER & KAHL, LLP
 Engineers | Construction Managers
 Planners | Scientists
 81 Market Street, Baltimore, MD 21217-4650

MATCH LINE - SEE SHEET LS04




LEGEND	
	EMERGENT MARSH WITH WETLAND SEEDING ELEV. >1.0' TO 1.0'
	DECIDUOUS FORESTED WETLAND WITH WETLAND SEEDING ELEV. >0.0' TO 1.0'
	CONIFEROUS FORESTED WETLAND WITH WETLAND SEEDING ELEV. >1.0' TO 1.0'
	UPLAND DECIDUOUS FOREST WITH MEADOW SEEDING ELEV. >1.0'
	UPLAND SHRUB WITH MEADOW SEEDING ELEV. >1.0'
	UPLAND CONIFEROUS FOREST WITH MEADOW SEEDING ELEV. >1.0'
	TURFGRASS SEEDING ELEV. >1.0'
	OPEN WATER ELEV. <-1.0'
	STORMWATER MANAGEMENT FOREBAY


RUMMEL, KLEPPER & KAHL, LLP
 Engineers | Construction Managers
 Promoters | Scientists
 81 Meador Street, Baltimore, MD 21207-4250

DESIGNED: MRS. RJP
 DRAWN: RJP
 CHECKED: JTR

APPROVED: _____
 NO. DATE APP. REVISION

SCALE: 1" = 20' FEET
 0 50 100 200


 CITY OF WILMINGTON
 DEPARTMENT OF PUBLIC WORKS
 JEFFREY A. SHARKEY, COMMISSIONER
 CONTRACT NO. N/A

SOUTH WILMINGTON
 WETLANDS PARK
 LANDSCAPING PLAN

FILE NAME: J:\P5_2000.dwg
 DWG: LS05
 SHEET NO.: 20 OF 21
 DATE: 06/08/07 09:01:58

EMERGENT MARSH - Elevations -1.0 to 1.0

Wildflower Spacing: feet on center (OC)	Quantity per acre	Frequency (%)	Species Quantity	Vegetative Species/Species Name	Common Name	Wetland Indicator Status	TYPE	Comment
2	10,000	15	19,633	EMERGENT HERBACEOUS	Yellow pond-lily	ORL	Bare Soil	
					<i>Najas salicaria</i>			
					<i>Arundo donax</i>			
					<i>Phragmites australis</i>			
					<i>Scirpus americanus</i>			
					<i>Sagittaria arifolia</i>			
					<i>Sparganium angustifolium</i>			
					<i>Eleocharis acicularis</i>			
					<i>Eleocharis obtusa</i>			
					<i>Eleocharis tenuis</i>			
					<i>Eleocharis acicularis</i>			
					<i>Eleocharis tenuis</i>			
					<i>Eleocharis acicularis</i>			
					<i>Eleocharis tenuis</i>			
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